

HVAC products and building automation systems

Product Catalog 2011



Answers for infrastructure.

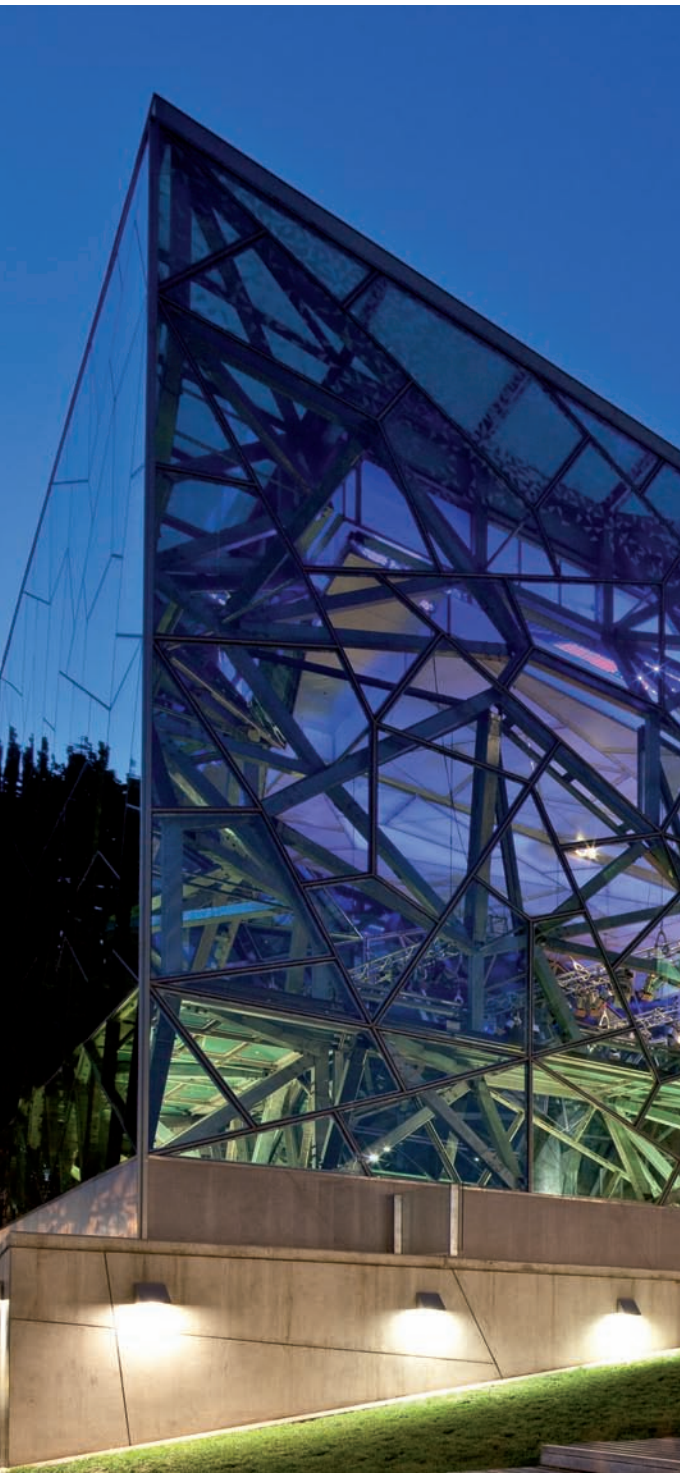
SIEMENS



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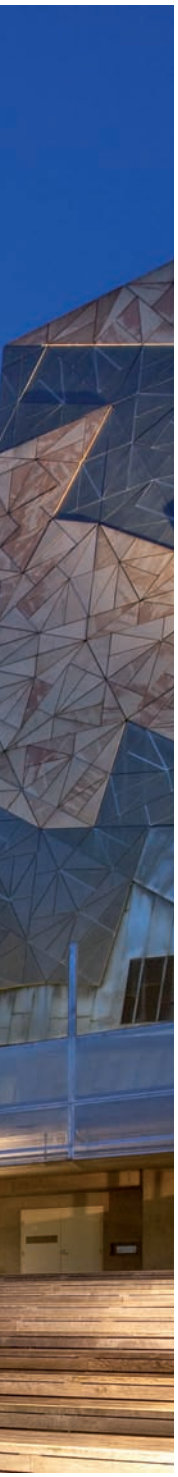






Stephan Bauer
CEO Control Products & Systems

HVAC products from Siemens – for high energy efficiency and enhanced comfort in buildings



Dear customers and business partners

The worldwide efforts aimed at cutting energy consumption and lowering CO_2 emissions gain in importance. For this reason, more and more emphasis is placed on the efficient use of energy in buildings which – worldwide – represent more than 40 percent of energy usage.

Control Products & Systems (CPS), Business Unit of the Building Technologies Division from Siemens, is a pioneer in this field. We play an active role in major standards committees and use our in-depth know-how to develop new applications. The building automation and control systems DESIGO and Synco, as well as the home automation system Synco living, already satisfy the requirements of energy efficiency class A conforming to EN 15232. The energy saving functions provided by these systems cut energy consumption by up to 30 percent without sacrificing comfort. We also attach great importance to the use of alternative sources of energy and new construction materials. The latest versions of the DESIGO building automation and control system and our controllers give consideration to these trends.

In addition to our consistent orientation toward energy-efficient products and systems, the market launch of the valves and actuators of the new Acvatix generation is started on schedule at the beginning of the new business year with large-stroke valves and actuators. The new range is made available in steps. With the new generation of products, the emphasis is placed on fast, simple, and safe handling from planning to installation, from commissioning and operation through to service. Furthermore, CPS will introduce additional combi valves and matching actuators in the course of 2011.

Decades of experience and our comprehensive know-how from more than 50 countries form the basis for the development of innovative products and systems. In pursuing this target, the Building Technologies Division works closely with leading universities in Europe, the U.S., and China. But our final objective is still the same: to deliver products, systems, and tools that offer you as much added value as possible, and to simplify the cooperation with us.

Stephan Bauer
CEO Control Products & Systems

Energy efficience

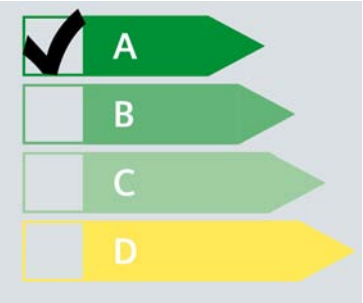
About 40% of the world's energy is consumed by buildings. Worldwide, buildings also account for 21% of greenhouse gas emissions. Building owners now face grow¬ing pressure globally to reduce energy consumption and minimize impact that such consumption has on the environment.

Energy savings of up to 30% thanks to intelligent building automation

Siemens as a leader in energy efficiency expertise for builings is prepared for the future with a comprehensive portfolio of HVAC products, systems and solutions designed to improve energy efficiency in buildings. The key to this is intelligent integrated building and room automation that brings about substantial energy savings without sacrificing comfort and that keeps costs to a minimum. An optimized building automation system can increase the energy efficiency of heating, air conditioning and water heating systems (for example, in commercial buildings) by up to 30%.

This corresponds to energy efficiency class A according to the EN 15232 European standard for "Energy performance of buildings – impact of building automation, controls and building management," which grades building automation according to energy efficiency classes ranging from A to D. Building Automation and Control Systems from Siemens deliver important prerequisits that ensure compliance with energyefficiency Class A. These flexible and energyefficient integrating and communicating systems cover all relevant building services, including lighting, window blinds, Heating-, Ventilating- and Air Conditioning plant, for example.

The ability to continuously record and evaluate energy consumption also enables building owners to realize potential savings and evaluate the success of their optimization measures.



Class A: **Highly energy-efficient building automation system**
- Networked room automation with automatic demand control
- Regular maintenance
- Monthly energy monitoring
- Sustainability of energy optimization by qualified specialists

Class B: **Developed building automation system**
- Networked room automation without automatic demand control
- Annual energy monitoring

Class C: **Standard building automation system**
- Building automation with networking of the primary plants
- No electronic room automation, e.g., thermostatic radiator valves
- No energy monitoring

Class D: **Building automation system with low energy efficiency**
- It is advisable to modernize building with such systems

	Saving potential (electrical)					
	D-A	D-B	D-C	C-A	C-B	B-A
Offices	54%	47%	34%	30%	20%	13%
Lecture halls	60%	40%	19%	50%	25%	33%
Educational buildings (schools)	33%	27%	17%	20%	12%	9%
Hospitals	34%	31%	24%	14%	9%	5%
Hotels	48%	35%	24%	32%	15%	20%
Restaurants	45%	37%	19%	32%	23%	12%
Commercial and retail building	62%	53%	36%	40%	27%	18%
Residential building	26%	20%	9%	19%	12%	8%

	Saving potential (thermal)					
	D-A	D-B	D-C	C-A	C-B	B-A
Offices	21%	15%	9%	13%	7%	6%
Lecture halls	16%	11%	6%	11%	6%	5%
Educational buildings (schools)	20%	13%	7%	14%	7%	8%
Hospitals	9%	7%	5%	4%	2%	2%
Hotels	16%	11%	7%	10%	5%	5%
Restaurants	12%	8%	4%	8%	4%	4%
Commercial and retail building	16%	12%	7%	9%	5%	4%
Residential building	15%	14%	7%	8%	7%	1%

8% of energy savings thanks “best in class” to eu.bac certified room controls

Huge potential savings can be achieved by using electronic individual room control systems to adjust radiators, fan coil units and cooling ceilings as required. For example, the DESIGO™ RX individual room controls have been certified by the European Building Automation and Controls Association (eu.bac) for their high control accuracy, which optimizes conditions in a room to ensure maximum comfort. Reducing the set temperature by just 1°C results in energy savings of up to 6%.

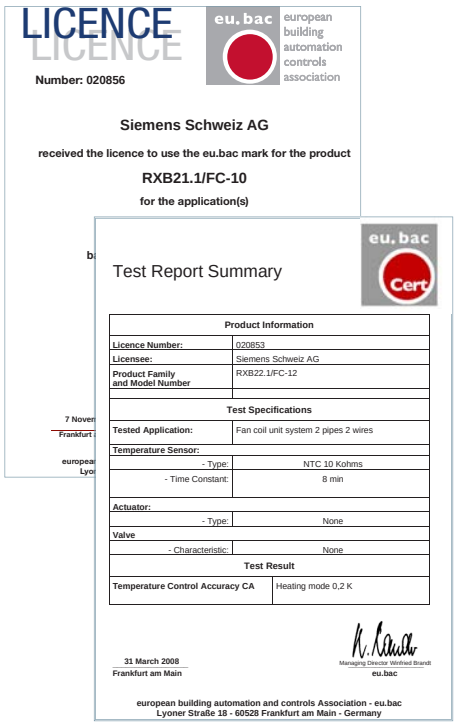
The single room controllers of Siemens achieve up to 8% more energy saving as “lowest in class” eu.bac certified controllers

eu.bac Cert for tested quality, control accuracy and energy efficiency

- eu.bac (European Building Automation & Controls Association) is an European platform to represent the interests of home and building automation in all issues concerning quality assurance
- eu.bac Cert is based on European standards, certification rules, accredited test house product performance testing, factory inspection and approval by recognised certifier bodies
- Qualified products, carrying the eu.bac certification mark exhibit assured levels of energy-efficient performance and quality assurance

The initiative has been driven by Siemens. Siemens is among the first companies whose products have been certified. We intend to obtain certification for all appropriate products as the eu.bac testing and certification programme develops

More information:
www.eubaccert.eu/licences-by-criteria.asp
www.siemens.com/energyefficiency



LICENCE

Number: 020856

eu.bac european building automation controls association

Siemens Schweiz AG

received the licence to use the eu.bac mark for the product

RXB21.1/FC-10

for the application(s)

Test Report Summary

eu.bac Cert

Product Information	
Licence Number:	020853
Licensee:	Siemens Schweiz AG
Product Family and Model Number	RXB22.1/FC-12
Test Specifications	
Tested Application:	Fan coil unit system 2 pipes 2 wires
Temperature Sensor:	
- Type:	NTC 10 Kohms
- Time Constant:	8 min
Actuator:	
- Type:	None
Valve	
- Characteristic:	None
Test Result	
Temperature Control Accuracy CA	Heating mode 0,2 K

31 March 2008
Frankfurt am Main

Managing Director Winfried Brandt
eu.bac

european building automation and controls Association - eu.bac
Lyoner Straße 18 - 60528 Frankfurt am Main - Germany

eu.bac Cert

Temperature Control Accuracy (CA): 1.4 K (lowest in class)







Energy efficience

The Building Technology from Siemens encompasses all components for the primary energy plant, transmission, and consumption, ensuring demand-based, efficient control and switching of HVAC Systems, lighting and solar protection for all building types.

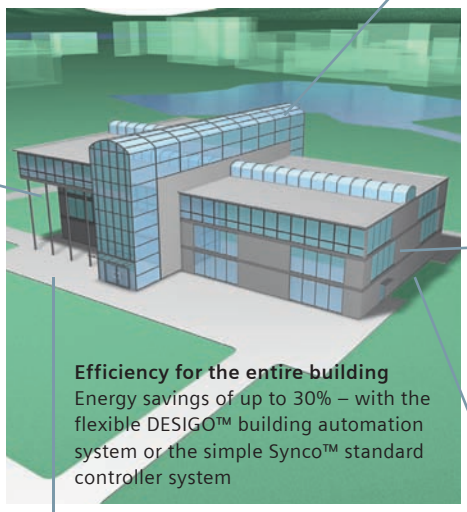


Optimum room climate
Regardless of the room requirements: on-demand control of heating,cooling, and ventilation ensure optimum room climate with minimum energy consumption – this can be achieved with various room thermostats, Symaro™ sensors, and RX room controllers with high control accuracy.



Illumination
By control the most used applications of the lighting with the building automation system DESIGO™ or the home automation system Synco™, it can be saved a magistral energy.

Blinds control
Intelligent blind control depending on solar state, ambient temperature and daylight, calculation of the solar trinkets after local time, time zone, degree of latitude and degree of longitude - with the building automation system DESIGO™ or Synco™, can be saved an adequate energy



Efficiency for the entire building
Energy savings of up to 30% – with the flexible DESIGO™ building automation system or the simple Synco™ standard controller system





Energy-saving HVAC control
Demand-based control and switching of the entire HVAC system:
HVAC controller range with energy saving functions for the primary power plant, combined with Acvatix™ valves and actuators, OpenAir™ damper actuators, heat meters, SED2 variable speed drives with an energy savings potential significant for energy distribution.



Central system monitoring and analysis
Monitor and analyze all processes and energy consumption values, and carry out optimizations from one central point – with the DESIGO INSIGHT management station or the Synco operating central communication unit.

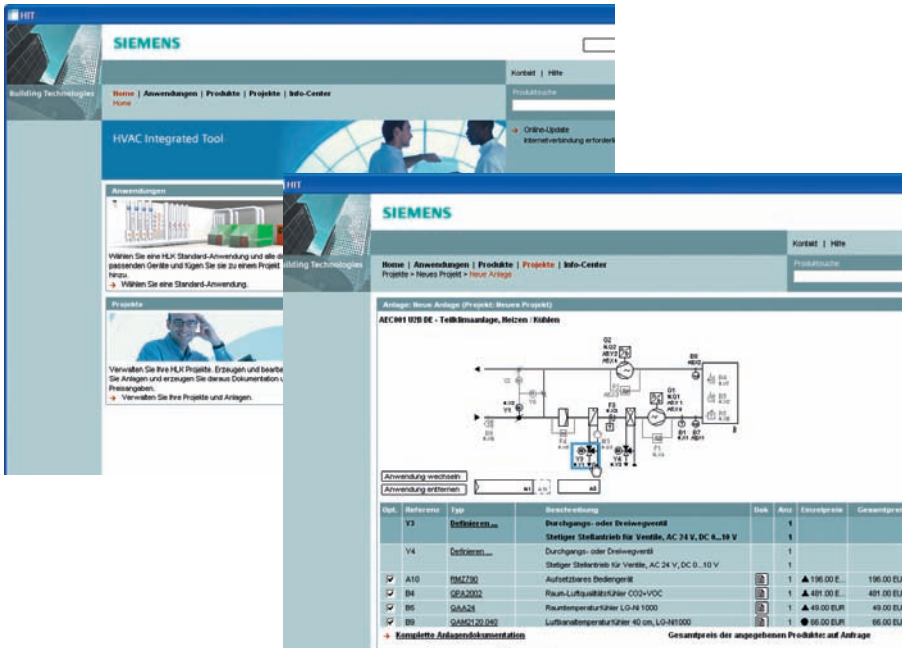
The commitments of Siemens:

eu.bac Cert · GreenBuilding · cen · ISO · U.S. Green Building Council Member · Clinton Foundation · Wirtschaft für Klimaschutz BDI initiativ

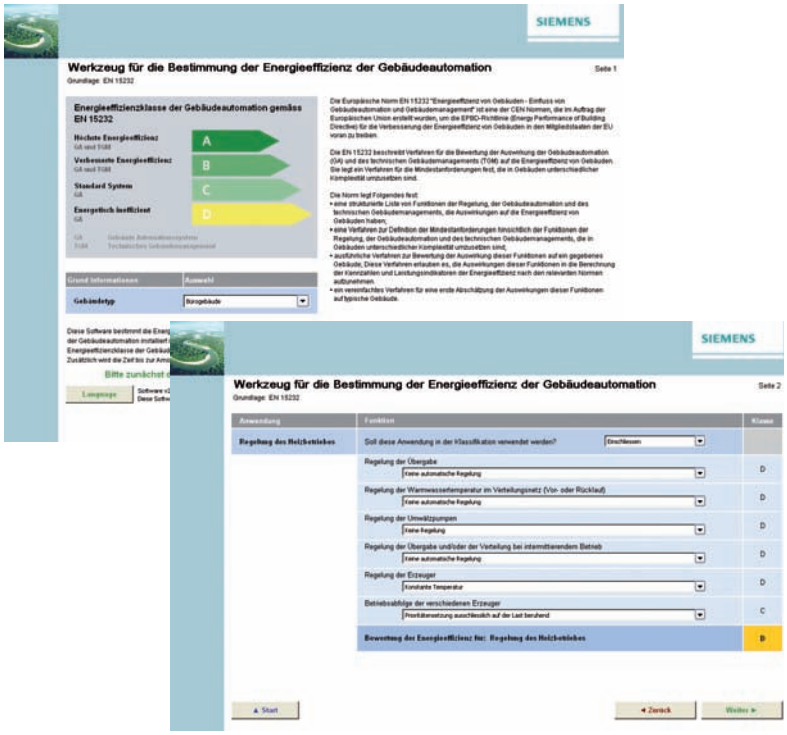
HIT (HVAC Integrated Tool) Support energy efficiency - Standard EN 15232

The tool offers more than 300 preconfigured standard HVAC applications classified according to their energy saving potential. This enables the user to select the application that comes closest to his requirements.

Documents linked to the applications also present the conditions to be met to ensure compliance with the corresponding energy efficiency class to EN 15232



Fir more information please visit:
www.siemens.com/hit



EPC (Energy Performance Classifcation Tool)

This tool has the following different major tasks:

- Acquire the actual state of an existing BACS and allocate the controls to energy performance classes A to D
- Determine the new state of BACS following modernization and allocate the controls to energy performance classes A to D
- Potential savings are derived as per Section 8 of EN 15232 (in Liters, kWh, CO_2)
- Determine annual potential savings and state in the respective currency
- Considerations on the potential profit of modernization
- Quicker establishment of customized documentation

Type Overview

Product Number	Description	Datasheet	Page
2WR9300-0AA11-0A	PappaWin software		17-40
421314160	Cable holder for protection pocket mounting	N1831	11-14
428616520	Water trap pipe	N1915	11-28
466017300	Sensor holder for pipe mounting	N1832	11-14
466017310	Sensor holder for collector mounting	N1832	11-14
6FL4303-2CA11	DESIGO touch panel 10" MP277	N9240	6-17
7411100280	Terminal covers		8-14
9956467001	Optical reading head for PC with 9-pin plug		17-40
ACS26	Readout software	N2870	17-45
ACS700	Operating, service and alarm software	N5641	8-9
ACS712	Operating, service and alarm software	N5643	8-10
ACS713	Operating, service and alarm software	N5644	8-10
ACS715	Operating, service, alarm and batchjob software	N5645	8-11
ACS741	Operating, service and alarm software	N5647	8-11
ACS785	Operating, service, alarm and batchjob software	N5648	8-12
ACS941	Calibration software for service	N5854	15-30
ACT20	Parameterizing and diagnostics software		8-20
ACT21	Parameterization software	N2870	17-45
ACT26	Setup and service software	N2870	17-45
ACX95.320/ALG	KNX power supply (LV)		4-17
ADN10	Two-port seat lockshield valve, PN10, DN10, 0..1.8	N2107	13-50
ADN15	Two-port seat lockshield valve, PN10, DN15, kvs 0..2.5	N2107	13-50
ADN20	Two-port seat lockshield valve, PN10, DN20, kvs 0..3.0	N2107	13-50
AEK84	Control module for WRV84..	N2833	8-27
AEN10	Angle lockshield valve, PN10, DN10, kvs 0..1.8	N2107	13-50
AEN15	Angle lockshield valve, PN10, DN15, kvs 0..2.5	N2107	13-50
AEN20	Angle lockshield valve, PN10, DN20, kvs 0..3.0	N2107	13-50
AEW2.1	Pulse adapter	N2831	8-19
AEW310.2	M-bus pulse adapter	N5383	8-20
AEW36.2	Siemeca™ AMR pulse adapter	N2873	17-44
AFK914/C01	Handheld control	N2731	5-18
AGS2S.200/109	Conduit box with surge protection for solar panel sensor	N2488	1-25
AL100	Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	13-19
AL40	Adapter for tamper-proof fitting for SSA.. actuators	N4893	13-39
AL41	Adapter for tamper-proof fitting for STA.., STP.. actuators	N4878	13-19
ALC30.128	Memory card 128 KB for OCI600 / OZW10 / OZW30	N2529	8-18
ALC30.512	Memory card 512 KB for OCI600 / OZW10 / OZW30	N2529	8-18
ALG122	Malleable cast iron fitting G ¾" / Rp ⅜", set of 2		12-61
ALG123	Malleable cast iron fitting G ¾" / Rp ⅜", set of 3		12-62
ALG132	Brass fitting G ½" / R ⅜", set of 2		12-61
ALG133	Brass fitting G ½" / R ⅜", set of 3		12-62
ALG142	Brass fitting G ¾" / R ½", set of 2		12-61
ALG143	Brass fitting G ¾" / R ½", set of 3		12-62
ALG152	Malleable cast iron fitting G 1" / Rp ½", set of 2		12-51
ALG152B	Brass fitting G 1" / Rp ½", 100°C, set of 2		12-51
ALG153	Malleable cast iron fitting G 1" / Rp ½", set of 3		12-51
ALG153B	Brass fitting G 1" / Rp ½", 100 °C, set of 3		12-51
ALG202	Malleable cast iron fitting G 1¼" / Rp ¾", set of 2		12-51
ALG202B	Brass fitting G 1¼" / Rp ¾", 100 °C, set of 2		12-51
ALG203	Malleable cast iron fitting G 1¼" / Rp ¾", set of 3		12-51
ALG203B	Brass fitting G 1¼" / Rp ¾", 100 °C, set of 3		12-51
ALG252	Malleable cast iron fitting G 1½" / Rp 1", set of 2		12-51
ALG252B	Brass fitting G 1½" / Rp 1", 100 °C, set of 2		12-51
ALG253	Malleable cast iron fitting G 1½" / Rp 1", set of 3		12-51
ALG253B	Brass fitting G 1½" / Rp 1", 100 °C, set of 3		12-51
ALG322	Malleable cast iron fitting G 2" / Rp 1¼", set of 2		12-51
ALG322B	Brass fitting G 2" / Rp 1¼", 100 °C, set of 2		12-51

NEW PRODUCT

Type Overview

Product Number	Description	Datasheet	Page
ALG323	Malleable cast iron fitting G 2" / Rp 1¼", set of 3		12-51
ALG323B	Brass fitting G 2" / Rp 1¼", 100 °C, set of 3		12-51
ALG402	Malleable cast iron fitting G 2¼" / Rp 1½", set of 2		12-51
ALG402B	Brass fitting G 2¼" / Rp 1½", 100 °C, set of 2		12-51
ALG403	Malleable cast iron fitting G 2¼" / Rp 1½", set of 3		12-51
ALG403B	Brass fitting G 2¼" / Rp 1½", 100 °C, set of 3		12-51
ALG502	Malleable cast iron fitting G 2¾" / Rp 2", set of 2		12-51
ALG502B	Brass fitting G 2 ¾" / Rp 2", 100 °C, set of 2		12-51
ALG503	Malleable cast iron fitting G 2¾" / Rp 2", set of 3		12-51
ALG503B	Brass fitting G 2 ¾" / Rp 2", 100 °C, set of 3		12-51
ALG80WRI	Mounting kit for WRV81/84 replacement	N2803	8-28
ALG83WRI	Mounting kit for WRV83 replacement	N2803	8-29
ALS152	Steel fitting G ¾", d=21.3 mm, set of 2		12-61
ALS202	Steel fitting G 1", d=26.8 mm, set of 2		12-61
ALS252	Steel fitting G 1¼", d=33.7 mm, set of 2		12-61
ALT-AB200	Protection pocket, perforated, 200 mm	N1193	9-6
ALT-C001	Mounting kit for RAK../RAZ..	N1193	9-6
ALT-DB100	Double protection pocket, 100 mm, MS63 nickel-plated, thread ½", PN10, 2 x LW7	N1194	9-8
ALT-DB150	Double protection pocket, 150 mm, MS63 nickel-plated, thread ½", PN10, 2 x LW7	N1194	9-8
ALT-DB280	Double protection pocket, 280 mm, MS63 nickel-plated, G ½", PN10, 2 x LW7	N1194	9-8
ALT-DB450	Double protection pocket, 450 mm, MS63 nickel-plated, G ½", PN10, 2 x LW7	N1194	9-8
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ALT-DS150	Protection pocket, 150 mm, stainless steel V4A, thread ½", PN16, LW15,	N1194	9-8
ALT-DS280	Protection pocket, 280 mm, stainless steel V4A, thread ½", PN16, LW15,	N1194	9-8
ALT-DS450	Protection pocket, 450 mm, stainless steel V4A, thread ½", PN16, LW15,	N1194	9-8
ALT-SB100	Protection pocket, 100 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	9-6
ALT-SB150	Protection pocket 150 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	9-6
ALT-SB200	Protection pocket 200 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	9-6
ALT-SB280	Protection pocket 280 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	9-6
ALT-SB450	Protection pocket 450 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	9-6
ALT-SS100	Protection pocket, 100 mm, G½" LW7, stainless steel V4A	N1194	9-6
ALT-SS150	Protection pocket 150 mm, stainless steel V4A, G½", PN16, LW7	N1194	9-6
ALT-SS280	Protection pocket 280 mm, stainless steel V4A, G½", PN16, LW7	N1194	9-6
ALT-SS450	Protection pocket 450 mm, stainless steel V4A, G½", PN16, LW7	N1194	9-6
ALT-SSF100	Protection pocket 100 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-SSF150	Protection pocket 150 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-SSF200	Protection pocket 200 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-SSF280	Protection pocket 280 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-SSF450	Protection pocket 450 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-SSF600	Protection pocket 600 mm, stainless steel V4A, G½", PN40, LW7	N1194	9-6
ALT-WM001	Wall mounting set for RAK.. and RAZ..	N1193	9-8
ALT35	Protection pocket 35 mm, R ⅜", for nominal pipe size DN20...DN40	N2821	8-29
ALT65	Protection pocket 65 mm, R ⅜", for nominal pipe size DN50...DN80	N2851	8-29
ALW84	Conduit box for WRV84..	N2824	8-26
AQB2000	Mounting bracket for differenential pressure sensor for air	N1916	11-24
AQB2001	Connection kit to mount QBE2002-P...	N1904	11-27
AQB2002	Connection kit to mount QBE63../64..	N1904	11-29
AQB21.2	Top hat rail adapter for differential pressure sensor for air	N1910	11-24
AQB22.1	Mounting bracket for pressure sensor QBE2002	N1909	11-27
AQE2102	Compression fitting with threaded nipple ½"	N1781	11-8
AQF3100	Radiation shield for exterior wall mounting	N1858	11-22
AQF3101	Filter cap for humidity sensor	N1858	11-19
AQF3150	Exchangeable measuring tip	N1858	11-19
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AQF4150	Exchangeable measuring tip, with calibration certificate	N1859	11-19
AQM63.0	Mounting flange, adjustable depth	N1193	9-14
AQM63.2	3 capillary supports and 3 spacers for QAF.. Mounting	N1821	9-14

NEW PRODUCT

Type Overview

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AQY2010	Remote sensing cable 3 m for sensor tip.	N1859	11-19
ARG10.DE	Operating set in German	N5362	8-21
ARG10.GB	Operating set in English	N5362	8-21
ARG22.1	Changeover cable holder for QAP..	N1831	11-14
ARG22.2	Aluminium bar attachment for QAP..	N1831	11-14
ARG30.DA	Operating set in Danish	N2841	8-25
ARG30.DE	Operating set in German	N2841	8-25
ARG30.FR	Operating set in French	N2841	8-25
ARG30.GB	Operating set in English	N2841	8-25
ARG30.IT	Operating set in Italian	N2841	8-25
ARG30.NL	Operating set in Dutch	N2841	8-25
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ARG600.DE	Operating set in German	N2529	8-18
ARG600.EN	Operating set in English	N2529	8-18
ARG62.22	Protective big enclosure for wall mounting		16-20
ARG70	Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	7-7
ARG70.1	Mounting plate 96 x 120 mm for 2 x 4" housing	N3009	7-7
ARG70.2	Mounting plate 112 x 130 mm for surface wiring	N3009	7-7
ARG70.3	Mounting plate 82 x 82 x 10 mm	N3009	7-38
ARG71	Conduit box	N3009	7-38
ARG86.3	Changeover cable holder for QAH11..	N1840	7-26
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ASC10.51	Auxiliary switch for SA..31../SA..61../SA..81..	N4501	12-15
ASC2.1/18	Auxiliary switch for SFA21.../ SFA71.../ SFP21.../ SFP71...	N4863	13-16
ASC36	Double auxiliary switch for SQL36E	N4505	12-80
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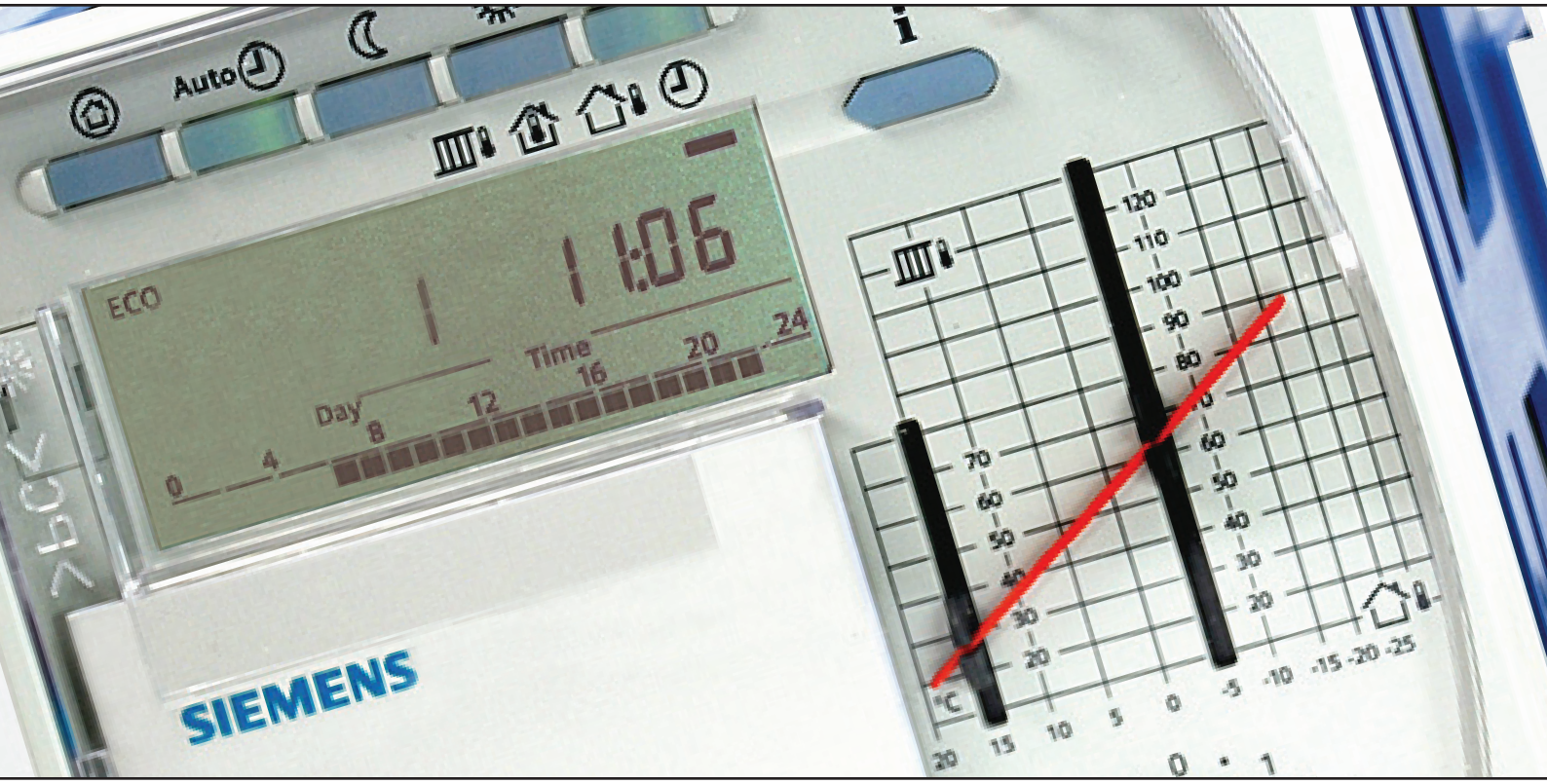
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NEW PRODUCT

Controllers for heating plants



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Overview of product details



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Heating group	■	■			■	■	■	■	■	■	■	■	■		■	■	■	■	■
Boiler control 1-stage					■	■													
2-stage									■	■	■	■	■		■	■	■	■	■
Multi-boiler system																			■
Domestic hot water	■	■	■	■		■		■	■	■	■	■	■			■	■	■	
Domestic water solar												■	■			■	■		
2nd heating group										■	■			■				■	
3rd heating group																		■	

Operation system	RLE..			RWD..	RVP..		RVP..					RVP..		RVL..				RMH..	RMK..
	132	162	127	32S	201	211	300	310	320	330	331	540	550	479	480	481	482	760	770
Type of operation analog	■	■	■		■	■													
digital				■			■	■	■	■	■	■	■	■	■	■	■	■	■
Heating curve bar														■	■	■	■		
Time switch analog					■	■													
digital					1)	1)	■	■	■	■	■	■	■	■	■	■	■	■	■
Programmed plant types			7	7			2	1	2	6	6	500	500	1	6	29	21	41	18
Yearly clock							■	■	■	■	■	■	■	■	■	■	■	■	■

1) Variant

Communication	RLE..			RWD..	RVP..		RVP..					RVP..		RVL..				RMH..	RMK..
	132	162	127	32S	201	211	300	310	320	330	331	540	550	479	480	481	482	760	770
Controller network LPB							■	■	■	■		■	■	■	■	■	■		
KNX																		■	■
Remote readout via PC							via OCI6..					via OCI6..		via OCI6..				via OZW77..	
Fax, SMS and pager function							via OCI6..					via OCI6..		via OCI6..				via OZW77..	

Sensors		RLE..			RWD..	RVP..		RVP..					RVP..		RVL..				RMH..	RMK..
		132	162	127	32S	201	211	300	310	320	330	331	540	550	479	480	481	482	760	770
Outside sensor	QAC22	■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Outside sensor	QAC32					■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Strap-on temp. sensor	QAD22			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Immersion temp. sensor	QAE2..			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Cable temp. sensor	QAP2..			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Room temp. sensor	QAA24							■	■	■	■	■			■	■	■	■	■	■
Room temp. sensor	QAA10					■	■						■	■						
Solar sensor	QLS60																	■	■	

Room units		RLE..			RWD..	RVP..		RVP..					RVP..		RVL..				RMH..	RMK..
		132	162	127	32S	201	211	300	310	320	330	331	540	550	479	480	481	482	760	770
Room unit analog	QAW50					■	■	■	■	■	■	■	■	■	■	■	■	■		
Room unit analog	QAW50.03										■	■								
Room unit digital	QAW70					■	■	■	■	■	■	■	■	■	■	■	■	■		
Room unit digital	QAW740																		■	■

Differential temperature controllers

RLE127..

Compact electronic controllers with immersion type temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for mains connection and controller out-put need to be laid. Supplied with protection pocket for indirect temperature sensing.



Application:
Differential temperature controller, with 2-position control signal and auxiliary relay. The RLE127 is ideally suited for control of the following heating plants:
- Solar energy plants with storage tanks
- Swimming pool heating systems with solar panels
- Heat storage plants with several storage tanks
- Multiboiler plants

Features:
- Pre-configured application types selected by DIP switch
- Changeover to a secondary heat source upon demand
- Minimum charging temperature option
- Absolute temperature setpoint
- Maximum temperature limitation
- Remote setpoint adjustment
- Test mode as commissioning aid
- Frost protection

Data sheet	N3337
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	4 VA
Analog input, signal	LG-Ni1000 0...1000 Ohm
Relay outputs	Changeover contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Setpoint setting range	0...30 K
Immersion length	150 mm
PN class	PN 10
Degree of protection	IP65
Dimensions (W x H x D)	125 × 152 × 78 mm

Range overview RLE127..

Product Title	Data sheet	Stock No.	Product No.
Differential temperature controller, AC 230 V, 2-position output	N3337	BPZ:RLE127	**RLE127**
Differential temperature controller, AC 230 V, 2-position output, with additional temperature sensor	N3337	BPZ:RLE127.QAZ	**RLE127.QAZ**

Field devices for RLE127..

Product Title	Data sheet	Stock No.	Product No.
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	N1991	BPZ:BSG21.1	**BSG21.1**
Complete range of scales for BSG..	N1991	BPZ:BSG-Z	**BSG-Z**
Strap-on temperature sensor LG-Ni1000	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor, passive	N1781	BPZ:QAE21..	**QAE21..**
Cable temperature sensor for high-temperature applications (180°C)	N1833	BPZ:QAP21.2	**QAP21.2**

Autonomous controllers - Synco™ 100
Immersion temperature controller RLE..

RLE132



Immersion temperature controller, AC 230 V, 3-position output

Compact electronic controller with immersion type temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for mains connection and controller output need to be laid. Supplied with protection pocket for indirect temperature sensing.

Application:
Modulating temperature controller, with 3-position control signal and auxiliary relay. The RLE132 is ideally suited for control of the following heating plants:
- Domestic hot water temperature
- Flow temperature control
- Calorifiers or heat exchangers

Features:
- Values for both normal and reduced temperature can be set
- Setpoint changeover via external contact or time switch
- Optional legionella function
- Auxiliary digital output for heat demand
- Connection for remote setting unit
- Minimum limitation of boiler return temperature
- Minimum or maximum limitation of the return temperature
- PI control (selectable)
- Service mode

Data sheet	N3334
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	4 VA
Analog input, signal	LG-Ni1000 0...1000 Ohm
Digital input, contact query	DC 3...6 mA DC 6...15 V
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	2 A
Setpoint setting range	0...130 °C
Setpoint readjustment range	0...50 K
Immersion length	150 mm
PN class	PN 10
Degree of protection	IP65
Dimensions (W x H x D)	125 × 152 × 78 mm

Stock No.	Product No.
BPZ:RLE132	**RLE132**

Field devices for RLE132

Product Title	Data sheet	Stock No.	Product No.
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	N1991	BPZ:BSG21.1	**BSG21.1**
Complete range of scales for BSG..	N1991	BPZ:BSG-Z	**BSG-Z**
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	**QAC22**

Immersion temperature controller, AC 24 V, DC 0...10 V output — RLE162



Compact electronic controller with immersion type temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for power supply connection and controller output need to be laid. Supplied with threaded nipple for direct temperature sensing.

Applications:
Modulating temperature controller, with 1 or 2 continuous DC 0…10 V output signals and auxiliary relay. The RLE162 is used for control and limiting of temperature in hot water, heating or cooling plants:
- Domestic hot water temperature
- Heating flow temperature
- Closed circuit heat exchangers
- Water-side control of HVAC units
- Chilled water temperature

Features:
- High or low temperature limitation
- Auxiliary digital output
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch
- Optional legionella function

Data sheet	N3333
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Analog outputs, number	2
Analog input, signal	LG-Ni1000 0...1000 Ohm DC 0...10 V
Digital input, contact query	DC 3...6 mA DC 6...15 V
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Setpoint setting range	-10...130 °C
Setpoint readjustment range	0...60 K
Immersion length	130 mm
PN class	PN 10
Degree of protection	IP65
Dimensions (W x H x D)	125 × 152 × 78 mm

Stock No.	Product No.
BPZ:RLE162	**RLE162**

Field devices for RLE162

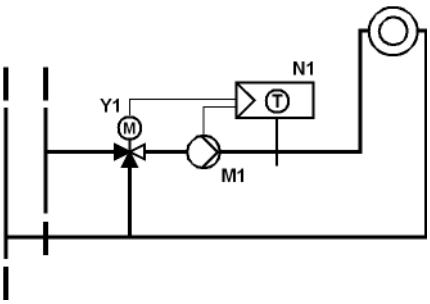
Product Title	Data sheet	Stock No.	Product No.
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	N1991	BPZ:BSG21.1	**BSG21.1**
Complete range of scales for BSG..	N1991	BPZ:BSG-Z	**BSG-Z**
Outside sensor LG-Ni1000	N1811	BPZ:QAC22	**QAC22**
Protection pocket 150 mm, MS63 nickel-plated, G½", PN10, LW7	N1194	BPZ:ALT-SB150	**ALT-SB150**

Application examples Synco™ 100

These are only a few examples of many applications that can be done with the with Synco™100 controllers: RLA.. / RLE.. / RLM..
More Synco™100 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLA.. / RLE.. / RLM.. data sheet.

RLE132

H0C003 LE1 HQ

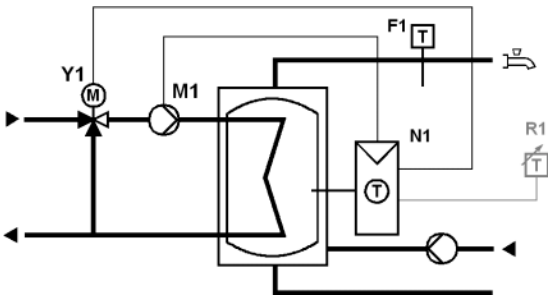


Heating Plant, Flow Temperature Control

- Controller (N1) with immersion built-in sensor to control the heating flow temperature via modulating control of the mixing valve (Y1)

RLE162

H00B01 LE1 HQ

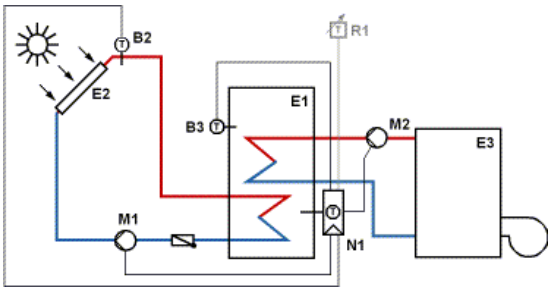


Domestic Hot Water Plant

- Controller (N1) with built-in immersion sensor to control the d.h.w. storage temperature via modulating control of the primary d.h.w. heating valve (Y1) and the circulating pump (M1).

RLE127

SA0002 LE1 HQ



Domestic Hot Water Plant

- Controller (N1) acquires the temperature in the hot water storage tank (E1) via its built-in immersion detector, and the temperature of the solar collector (E2) measured by the temperature detector B2.
- The measured temperature differential is compared with the desired Dt set-point set on the controller. If the measured differential exceeds the set value, the controller switches ON the circulating pump (M1) to load the storage tank.

Differential temperature controller, AC 230 V, with 2 relay outputs — RWD32S



Differential temperature controller, for use in solar heating applications, where water-side control takes place depending on a selected temperature differential.

Application
Differential temperature controller, with 2-position control signals. The RWD32S is ideally suited for control of the following heating plants:
- Solar energy plants with storage tanks
- Swimming pool heating systems with solar panels
- Heat storage plants with several storage tanks

Features
- Pre-configured applications
- Saving energy counter
- Changeover to a secondary heat source upon demand
- Minimum charging temperature option
- Absolute temperature setpoint
- Maximum temperature limitation
- Frost protection
- Relay output with delay time ajustable

Data sheet	N3344
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	6.5 VA
Digital input, contact query	DC 15 mA DC 15 V
Relay outputs	Changeover contacts, potential-free
Relay output, switching voltage	AC 24...230 V DC 5...30 V
Relay output, switching current	AC 0.02...4 (3) A DC 0.1...4 A
Degree of protection	IP20
Dimensions (W x H x D)	130 × 114 × 57 mm

	Stock No.	Product No.
	BPZ:RWD32S	**RWD32S**

Field devices for RWD32S

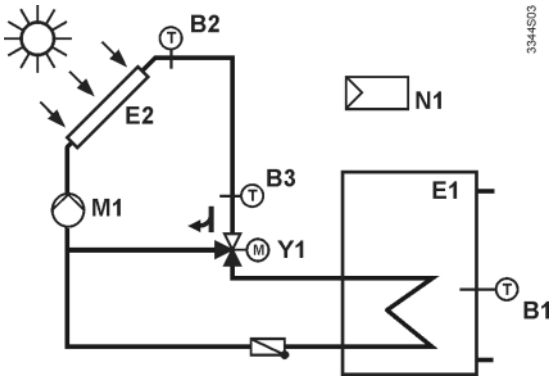
Product Title	s. page	Data sheet	Stock No.	Product No.
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor, passive	11-7	N1781	BPZ:QAE21..	**QAE21..**
Cable temperature sensor (6 x 40.5 mm) for HVAC applications	11-14	N1831	BPZ:QAP2..	**QAP..**

Application examples RWD..

These are only a few examples of many applications that can be done with the with controllers RWD..
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RWD.. data sheet.

RWD32S

SA0003 WD3 HQ

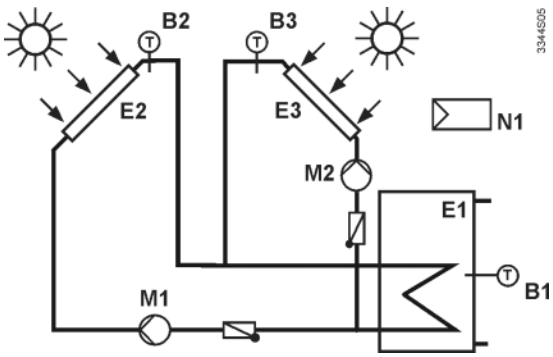


Solar System with Diverting Valve (Bypass)

- Differential temperature control of a storage tank with an additional sensor (B3) in the flow from the collector and a bypass valve (Y1).
- This application is used where the collector is a long way from the storage tank (e.g. on a high roof) and prevents cool water in the pipe work from being fed into the tank (typically on morning start up or after long periods without solar energy).

RWD32S

SA0005 WD3 HQ

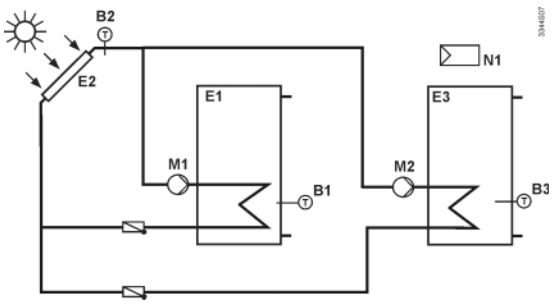


Hot water storage tank with solar heating, charging pump and non-return valve

- Basic differential temperature control of a hot water storage tank.
- This application allows differential temperature control of the storage tank by two different solar collectors (e.g. East and West facing) maximizing the solar energy throughout the day.

RWD32S

SA0007 WD3 HQ



Two independent hot water storage tanks and solar heating

- Basic differential temperature control of a hot water storage tank (each with charging pump and non-return valve).
- This application uses a single solar collector to charge two storage tanks. It is typically used where the sun's energy is very high or can be used for long periods

Heating controller — RVP102



Weather-compensated boiler temperature controller with direct switching of a 1-stage burner and circulating pump (with or without room influence).

7-day programs and selection of operating mode via QAW70 room unit.

The following settings can be made:
- Slope of heating curve
- Room temperature influence
- Frost protection for the plant
- Automatic ECO function
- Quick setback

Data sheet	N2466
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 x 96 x 115 mm

Stock No.	Product No.
BPZ:RVP102	**RVP102**

Heating controller with room unit, outside and flow temperature sensor — RVP102/SET



Heating control system for single-family houses and smaller plants, supplied in a packaged set comprising:
- Controller RVP102
- Room unit QAW70
- Flow temperature sensor QAD22
- Outside sensor QAC32

Data sheet	N2466

Stock No.	Product No.
BPZ:RVP102/SET	**RVP102/SET**

Multifunctional room operator unit — QAW70..



Programmable unit with display of date, time of day, room temperature, outside temperature, setting values and current 7-day program. With knob for manual setpoint readjustments and presence button for manually activating the savings program

Data sheet	N1637

Range overview QAW70..

Product Title	Data sheet	Stock No.	Product No.
Multifunctional room unit, instructions in en, de, fr, it	N1637	BPZ:QAW70-A	**QAW70-A**
Multifunctional room unit, instructions in nl, sv, el, pl	N1637	BPZ:QAW70-B	**QAW70-B**

QAD22

Strap-on temperature sensor LG-Ni1000



Data sheet	N1801
Measuring range, temperature	-30...130 °C
Sensing element, temperature	LG-Ni1000
Time constant	3 s
Connection cable	2-wire
Degree of protection	IP42

Supplied complete with strap for pipe diameters from 15...140 mm.

Stock No.	Product No.
BPZ:QAD22	**QAD22**

QAC32

Outside sensor NTC 575 Ohm



Data sheet	N1811
Sensing element, temperature	NTC 575
Measuring range, temperature	-50...70 °C
Measurement accuracy	±1 K at -10...+20 °C
Time constant	12 min
Degree of protection	IP54

Other technical data identical to QAC22

Stock No.	Product No.
BPZ:QAC32	**QAC32**

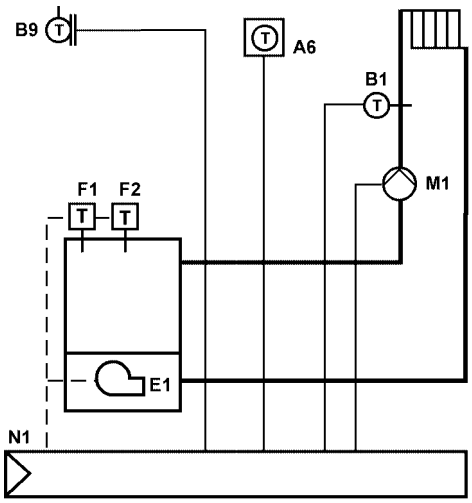
Application example RVP1..

These is only one example of many applications that can be done with the SIGMAGYR® family
More SIGMAGYR® applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications)

Weather-compensated heating system, heat generation, one heating circuit

RVP102/SET

- Weather-compensated flow temperature control acting on boiler with single-stage burner
- ECO function switches off heating depending on outside temperature
- Frost protection for building and plant
- Room unit with digital 7-day clock and for remote control from the living room
- Time switch program with 3 heating periods
- Maximum limitation of flow temperature
- Flow temperature control with room unit can be weather-compensated with room temperature influence
- Room temperature-dependent boost heating and quick setback (with room unit only)



Autonomous controllers - SIGMAGYR®
Heating controller range RVP2..

RVP201..





Heating controller with analog operating elements

Heating controllers for use in residential or smaller commercial buildings that have their own heat generation. Easy-to-understand analog operating elements for the enduser.

Key functions
Weather-compensated flow or boiler temperature control, with or without room influence or room temperature control. Control of 3- or 2-position actuators or direct control of a burner.

Additional settings
- Control of the heating pump
- Quick setback and boost heating
- Heating curve
- Room temperature influence
- Frost protection for the plant and the room
- Automatic ECO function for switching the heating system on and off depending on demand
- Maximum limitation of the flow or boiler temperature
- Pump overrun and pump kick
- Remote switching of operating mode via room unit or external switch

Operating modes
The following operating modes can be selected with the slider: Automatic/Protection, Automatic/Reduced, Setback, Normal operation and Protection.

Data sheet	N2464
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 115 mm

Range overview RVP201..

Product Title	Data sheet	Stock No.	Product No.
Controller without time switch	N2464	BPZ:RVP201.0	**RVP201.0**
Controller with 24-hour time switch	N2464	BPZ:RVP201.1	**RVP201.1**

Heating controller incl. DHW heating

RVP211..





Heating controller for use in residential or smaller commercial buildings that have their own heat generation and own DHW heating. Easy-to-understand analog operating elements for the enduser.

Key functions (same as RVP201)

Other settings (same as RVP201)

DHW heating functions
- Storage tank charging by control of a charging pump:
- Absolute priority: Heating circuit pump remains locked during DHW charging
- No priority (parallel): Heating circuit pump and DHW charging pump operate parallel
- Storage tank charging by control of a diverting valve
- Frost protection for DHW
- DHW temperature can be acquired via a temperature sensor or thermostat

Operating modes
The following operating modes can be selected with the slider: Automatic/Protection, Automatic/Reduced, Setback, Normal operation, Protection, or DHW heating only.

Data sheet	N2464
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	7 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 115 mm

Range overview RVP211..

Product Title	Data sheet	Stock No.	Product No.
Controller without time switch	N2464	BPZ:RVP211.0	**RVP211.0**
Controller with 24-hour time switch	N2464	BPZ:RVP211.1	**RVP211.1**

Accessories for RVP2..

Product Title	Data sheet	Stock No.	Product No.
Analog 24-hour time switch	N2464	BPZ:AUZ3.1	**AUZ3.1**
Analog 7-day time switch	N2464	BPZ:AUZ3.7	**AUZ3.7**
Digital time switch	N2464	BPZ:AUD3	**AUD3**

Field devices for RVP2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Multifunctional room operator unit	10-4	N1637	BPZ:QAW70..	**QAW70..**
Room temperature sensor, NTC, 5...30 °C	10-4	N1725	BPZ:QAA10	**QAA10**

Application example RVP2..

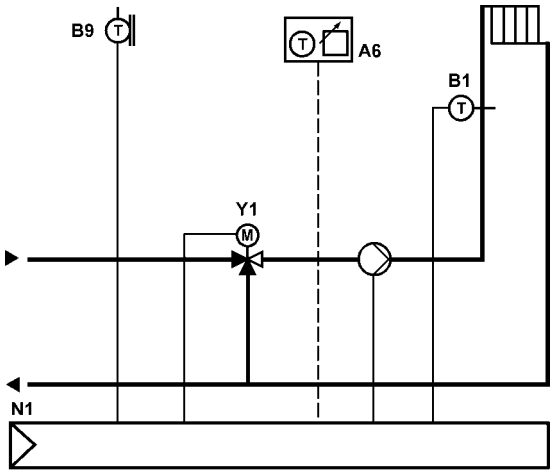
These are only a few examples of many applications that can be done with the SIGMAGYR® family of controllers: RVP2...
More SIGMAGYR® applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVP2.. data sheet.

Weather-compensated heating system, one heating circuit

RVP201.1

H0C001 VP2 HQ b

- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Time program with analog 24-hour time switch
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only)
- Maximum limitation of flow temperature

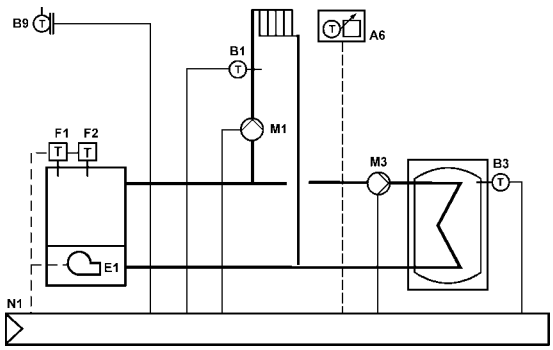


Weather-compensated heating system, heat generation, one heating circuit, d.h.w.

RVP211.1

HAAA01 VP2 HQ b

- Weather-compensated flow temperature control acting on boiler with single-stage burner
- Control of d.h.w. supply via pump-charged storage tank
- Frost protection for building and plant
- Time program with analog 24-hour time switch
- ECO function switches off heating depending on outside temperature



Autonomous controllers - SIGMAGYR®
Heating controller RVP331..

RVP331..



Heating controller for two heating circuits, DHW and boiler controller, without communication

Weather-compensated flow temperature control of 2 independent heating circuits, DHW heating and demand-dependent boiler temperature control (like RVP330) but without LPB communication for single buildings and standalone applications.

Data sheet	N2478
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	9 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 107 mm

Range overview RVP331..

Product Title	Data sheet	Stock No.	Product No.
Heating controller, instructions in de, fr, it, en	N2478	BPZ:RVP331-A	**RVP331-A**
Heating controller, instructions in fr, nl, es	N2478	BPZ:RVP331-B	**RVP331-B**
Heating controller, instructions in el	N2478	BPZ:RVP331-C	**RVP331-C**

Field devices for RVP331..

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Digital room unit with address selector	10-4	N1635	BPZ:QAW50.03	**QAW50.03**
Multifunctional room operator unit	10-4	N1637	BPZ:QAW70..	**QAW70..**
Wireless room temperature sensor	10-10	N1632	BPZ:QAW590	**QAW590**
Wireless room temperature sensor with setpoint readjuster	10-10	N1632	BPZ:QAW591	**QAW591**
Room temperature sensor LG-Ni1000	10-10	N1721	BPZ:QAA24	**QAA24**

Heating controller

RVP300..



Heating controller for residential and nonresidential buildings, suitable for weather-compensated flow temperature control of heating zones, with or without room influence.
Suitable for all combinations of heating systems (radiators, convectors, underfloor and ceiling heating and radiant panels)

Key functions
2 preprogrammed plant types which can be selected, each with automatic assignment of the functions required for each plant type.
- Weather-compensated flow temperature control through control of the slipper or seat valve (mixing) in a heating zone
- Weather-compensated flow temperature control through control of the 2-port valve in the primary return of a heating zone with district heat connection (substation)

Additional features
The RVP300 provides the following functions (no submodules or extra devices required):
- Optimum start / stop
- Quick setback and boost heating
- Automatic ECO function, depending on the outside temperature and the type of building construction
- One 7-day program with 3 heating periods per day
- Yearly time program for holidays
- Digital setting of the heating curve
- Pump kick and pump overrun
- Minimum and maximum limitation of the flow temperature
- District heating functions
- Multifunctional relay for heat demand signals
- Communication with other controllers via data bus (RVP of the 300 series, RVL of the 400 series, RVD of the 200 series, RVAxx)

Data sheet	N2474
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	8 VA
Analog input, signal	LG-Ni1000 NTC 575
Digital inputs	Status contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 107 mm

Range overview RVP300..

Product Title	Data sheet	Stock No.	Product No.
Heating controller, instructions in de, fr, it, en	N2474	BPZ:RVP300-A	**RVP300-A**
Heating controller, instructions in fr, nl, es	N2474	BPZ:RVP300-B	**RVP300-B**
Heating controller, instructions in da, el, fi, sv	N2474	BPZ:RVP300-C	**RVP300-C**

RVP310..



Heating controller with DHW control

Heating controller for residential and nonresidential buildings, suitable for weather-compensated flow temperature control of heating zones (with or without room influence) and DHW control.
Suitable for all combinations of heating systems (radiators, convectors, underfloor and ceiling heating and radiant panels)

Key functions
In addition to the functions provided by the RVP300, the RVP310 provides the following:
- 1 preprogrammed plant type with fixed assignment of the required functions:
- Weather-compensated flow temperature control through control of the slipper or seat valve (mixing) in a heating zone
- DHW heating through control of the charging pump
- Control of a circulating pump and of an electric immersion heater

DHW control
DHW control independent of the heating circuit. Control can be enabled as follows:
- According to its own 7-day program
- According to the switching program of the heating circuit (1 hour before space heating starts)
- According to the switching programs of the zone controllers on the data bus
- Permanently (24 hours a day)

DHW heating features a legionella function, which can be deactivated. Legionella protection is activated once a week. The DHW temperature is acquired with a sensor or thermostat.

Additional features
- One 7-day program with 3 heating periods per day
- One 7-day program for release of DHW
- Yearly program for holidays
- 1 multifunctional relay for heat demand signals
- Communication with other controllers via data bus (RVP of the 300 series, RVL of the 400 series, RVD of the 200 series)

Data sheet	N2475
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	8 VA
Analog input, signal	LG-Ni1000 NTC 575
Digital inputs	Status contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 107 mm

Range overview RVP310..

Product Title	Data sheet	Stock No.	Product No.
Heating controller, instructions in de, fr, it, en	N2475	BPZ:RVP310-A	**RVP310-A**
Heating controller, instructions in fr, nl, es	N2475	BPZ:RVP310-B	**RVP310-B**
Heating controller, instructions in da, el, fi, sv	N2475	BPZ:RVP310-C	**RVP310-C**

Heating controller with DHW and boiler control

RVP320..



Weather-compensated flow temperature control of heating circuits, with simultaneous DHW heating and demand-dependent boiler temperature control, with or without room influence.
Suitable for all combinations of heating systems (radiators, convectors, underfloor and ceiling heating and radiant panels)

Key functions
In addition to the functions of the RVP300, the RVP310 provides the following:
- 2 preprogrammed plant types can be selected, with automatic assignment of the functions required per plant type
- Weather-compensated flow temperature control through control of the seat or slipper valve (mixing) in a heating zone and demand-dependent control of the boiler temperature through control of the burner
- DHW heating through control of the charging pump
- Control of a circulating pump and of an electric immersion heater

Boiler temperature control
Boiler temperature control operates as demand-dependent 2-position control. The boiler temperature is controlled through cycling of a 1- or a 2-stage burner (direct burner control). When there is no heat request, the boiler will either be shut down or maintained at the minimum temperature (selectable). Both minimum and maximum limitation of the boiler temperature are adjustable.

Minimum limitation of the return temperature
Whether or not minimum limitation of the return temperature shall be active can be set on the RVP320. This function helps prevent flue gas condensation.

Data sheet	N2476
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	9 VA
Analog input, signal	LG-Ni1000 NTC 575
Digital inputs	Status contact
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 107 mm

Range overview RVP320..

Product Title	Data sheet	Stock No.	Product No.
Heating controller, Instructions in de, fr, it, en	N2476	BPZ:RVP320-A	**RVP320-A**
Heating controller, Instructions in fr, nl, es	N2476	BPZ:RVP320-B	**RVP320-B**
Heating controller, Instructions in da, el, fi, sv	N2476	BPZ:RVP320-C	**RVP320-C**

RVP330..

Heating controller for two heating circuits, DHW and boiler controller



Weather-compensated flow temperature control of 2 independent heating circuits with simultaneous DHW heating and demand-dependent boiler control, with or without room influence.
- Ideally suited for single- or multifamily houses and small buildings
- Suitable for all combinations of heating systems (radiators, convectors, underfloor and ceiling heating and radiant panels)

Key functions
6 preprogrammed plant types can be selected, with automatic assignment of the functions required for each plant type.

Additional features
The RVP330 provides the following functions (no submodules or extra devices required)
- Optimum start / stop
- Quick setback and boost heating
- Automatic ECO function, depending on the outside temperature and the type of building construction
- One 7-day program with 3 heating periods per day
- 7-day program for release of DHW
- Multifunctional relay
- Holiday program
- Digital setting of the heating curve
- Pump kick and pump overrun
- Minimum limitation of the return temperature
- Communication with other controllers via data bus (RVP of the 300 series, RVL of the 400 series, RVD of the 200 series)

The RVP330 is specially suited for interconnected plant consisting of:
- Central heat generation
- Plant consisting of several heating zones
- Central DHW heating

Data sheet	N2477
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	9 VA
Analog input, signal	LG-Ni1000 NTC 575
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 × 96 × 107 mm

Range overview RVP330..

Product Title	Data sheet	Stock No.	Product No.
Heating controller, instructions in de, fr, it, en	N2477	BPZ:RVP330-A	**RVP330-A**
Heating controller, instructions in fr, nl, es	N2477	BPZ:RVP330-B	**RVP330-B**
Heating controller, instructions in el	N2477	BPZ:RVP330-C	**RVP330-C**

Field devices for RVP3..

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Digital room unit with address selector	10-4	N1635	BPZ:QAW50.03	**QAW50.03**
Multifunctional room operator unit	10-4	N1637	BPZ:QAW70..	**QAW70..**
Wireless room temperature sensor	10-10	N1632	BPZ:QAW590	**QAW590**
Wireless room temperature sensor with setpoint readjuster	10-10	N1632	BPZ:QAW591	**QAW591**
Room temperature sensor LG-Ni1000	10-10	N1721	BPZ:QAA24	**QAA24**

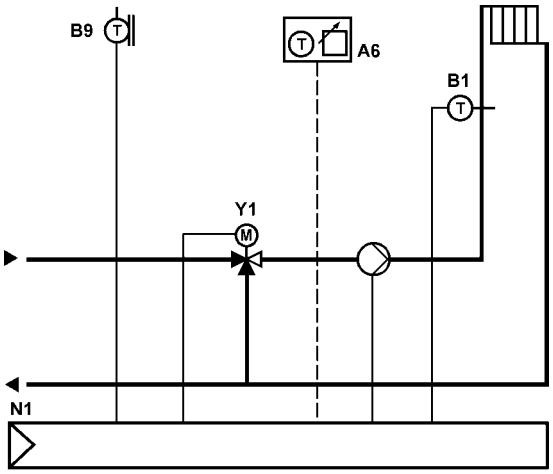
Application examples RVP3..

These are only a few examples of many applications that can be done with the SIGMAGYR® family of controllers: RVP3...
More SIGMAGYR® applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVP3.. data sheet.

RVP300..

Weather-compensated heating system, one heating circuit

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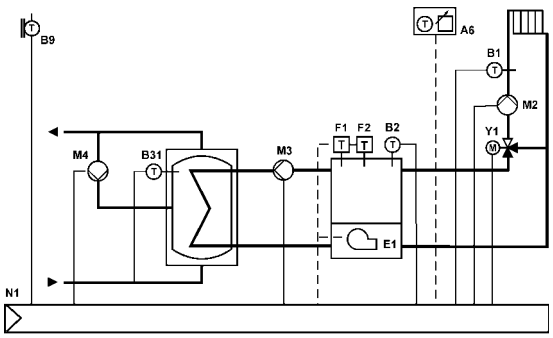


- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Digital yearly time switch
- Time switch program with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

RVP320..

Weather-compensated heating system, heat generation, one heating circuit and d.h.w

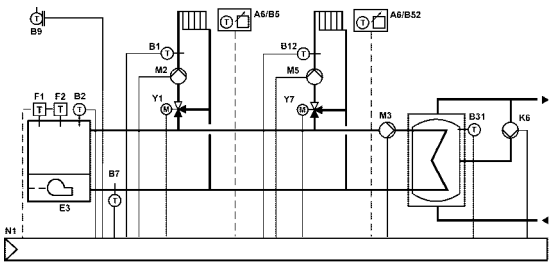
HACA01 VP3 HQ



- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependend flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

RVP331..

Weather-compensated heating system, heat generation, two heating circuits, d.h.w.



- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependend flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 2 time switch programs, each with 3 heating periods
- Separate time switch program for d.h.w.
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)

Multifunctional Heating Controllers

RVL4..

Multifunctional heating controller for use in all types of residential and nonresidential buildings, configured for all standard heating applications. The RVL controllers provide weather-compensated flow temperature control and preprogrammed plant types with automatic assignment of the functions required for each type of plant.
The RVL controllers are characterized by the easy-to-understand user interface, large display and setting features:
- Analog heating curve
- Room temperature setpoint knob
- Proven operating line principle
- Setting level fo the heating engineer
- Communication facilities
- Remote operation

Operating voltage	AC 230 V
Frequency	50 Hz
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Dimensions (W x H x D)	144 x 144 x 113 mm

Heating controller

RVL480



Key functions
Weather-compensated flow temperature control, with or without room influence
6 preprogrammed plant types are provided

Plant system
- Control of a mixing valve serving a heating zone (space heating)
- Control of a burner (1- or 2-stage)
- Control of a valve in the primary return of a heating zone with district heat connection
- Demand-dependent control (precontrol) of a mixing valve / of the boiler temperature / of a heat exchanger (heat demand signal via data bus)

Additional functions
The RVL480 offers the following functions (no submodules or extra devices required):
- Display of parameters, actual values, operating states and fault status signals
- 7-day program with 3 heating periods per day
- 2 additional programs, each with 3 switching periods per day
- Automatic summer/winter changeover
- Holiday program (up to 8 holiday periods per year)
- Optimum start/stop in accordance with the heating program (with or without room influence)
- Automatic ECO function, depending on the outside temperature and the type of building construction
- Optional remote selection of operating modes (via room unit or external switch)
- Scalable DC 0...10 V output for passing on the heat request to other devices
- Quick setback and boost heating
- Preselection of flow temperature setpoint via external contact
- Minimum and maximum limitation of the flow temperature
- Minimum and maximum limitation of the return temperature (shifting / constant)
- Maximum limitation of the room temperature
- Communication with other devices via the data bus
- Limitation of the return temperature differential (DRT) for district heat applications
- Frost protection and pump protection
- Flow temperature alarm

Data sheet	N2540
Power consumption	7 VA

	Stock No.	Product No.
	BPZ:RVL480	**RVL480**

RVL481



Heating controller with DHW control

Key functions
Weather-compensated flow temperature control, with or without room influence, with simultaneous demand-compensated boiler and DHW control.
29 preprogrammed plant types can be selected from a combination of 6 heating applications and 5 DHW applications.

Heating circuit plant types
- Control of a mixing valve serving a heating circuit (space heating)
- Control of a burner (1- or 2-stage)
- Control of a valve in the primary return of a heating zone with district heat connection
- Demand-dependent control (precontrol) of a mixing valve / of the boiler temperature / of a heat exchanger (heat demand signal via data bus)

DHW plant types
- Charging of DHW storage tank through control of a charging pump.
- Charging of DHW storage tank through control of a mixing valve
- Charging of DHW storage tank through control of a diverting valve
- DHW heating via heat exchanger through control of a 2-port valve in the primary return
- DHW heating with electric immersion heater only
- DHW heating with solar collector

Additional functions
In addition to the functions of the RVL480, the RVL481 offers the following functions (no submodules or extra devices required):
- 2 programs for heating and DHW, each with 3 heating periods per day
- 1 multifunctional relay for switching on/off the plant according to various parameters and functions

Data sheet	N2541
Power consumption	9 VA

Stock No.	Product No.
BPZ:RVL481	**RVL481**

Heating controller with DHW control

RVL482



Key functions

Weather-compensated flow temperature control, with or without room influence, with simultaneous demand-compensated boiler and DHW control.
21 preprogrammed plant types can be selected from a combination of 5 heating applications and 4 DHW applications.

Heating circuit plant types

- Control of space heating through control of a mixing valve in the heating circuit
- Control of space heating through control of a mixing valve with simultaneous demand-dependent control of the boiler temperature
- Control of space heating through control of mixing valve and boiler, plus minimum limitation of the boiler return temperature with own mixing valve
- Demand-dependent control (precontrol) of the boiler temperature (heat demand signal via bus)
- Demand-dependent control (precontrol) of the boiler temperature with minimum limitation of the boiler return temperature via mixing valve (heat demand signal via bus)

DHW plant types

- Charging of DHW storage tank through control of a charging pump.
- Charging of DHW storage tank through control of a mixing valve
- DHW heating via heat exchanger through control of a 2-port valve in the primary return
- DHW heating through electric immersion heater only
- DHW heating with solar collector

Additional functions

In addition to the functions of the RVL480 and RVL481, the RVL482 offers the following functions:

- 2 scalable DC 0...10 V inputs for heat demand signals from external consumers
- Connection facility for solar and wind sensor (refer to chapter "Sensors")
- Control of a boiler or circulating pump
- Optional selection of circulating pump/bypass pump
- Three 7-day programs, each with 3 heating periods per day

Data sheet	N2542
Power consumption	9 VA

	Stock No.	Product No.
	BPZ:RVL482	**RVL482**

Accessories for RVL481 and RVL482

Product Title	Stock No.	Product No.
Conduit box with surge protection for solar panel sensor	BPZ:AGS2S.200/1091	**AGS2S.200/109**

RVL479



Heating controller for a second heating zone

Application
Heating controller for use in all types of buildings that require specific control of a second heating zone at an attractive price.

Key functions
The RVL479 operates with a partner unit, for independent weather-compensated control of a second heating zone.
1 preprogrammed heating application: Space heating via control 3-position of a mixing valve.

Additional functions
- Dedicated control of the second heating zone makes it possible to use an independent user interface for diagnostics
- Separate 7-day program with 3 heating periods per day
- Separate holiday program
- Dedicated display of parameters for the second zone (operating state and fault status signals)
- Independent optimum start/stop for the second heating zone
- Minimum and maximum limitation of the flow temperature
- Minimum limitation of the return temperature
- Maximum limitation of the room temperature
- Communication with other devices via LPB data bus
- Transmission and common usage of data (outside temperature, heat demand, alarms, etc.)
- Frost protection and pump protection

Data sheet	N2543		
Power consumption	7 VA		
		Stock No.	Product No.
		BPZ:RVL479	**RVL479**

Suitable partner units for RVL479

Product Title	s. page	Data sheet	Stock No.	Product No.
Heating controller	1-23	N2540	BPZ:RVL480	**RVL480**
Heating controller with DHW control	1-24	N2541	BPZ:RVL481	**RVL481**
Heating controller with DHW control	1-25	N2542	BPZ:RVL482	**RVL482**

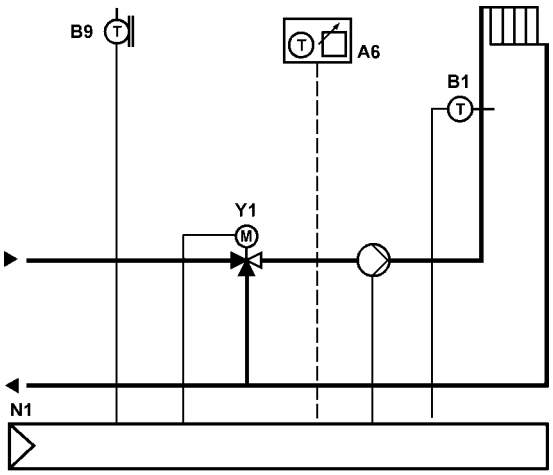
Field devices for RVL4..

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Cable temperature sensor for high-temperature applications (180°C)	11-11	N1833	BPZ:QAP21.2	**QAP21.2**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Solar sensor	11-13	N1943	BPZ:QLS60	**QLS60**
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Multifunctional room operator unit	10-4	N1637	BPZ:QAW70..	**QAW70..**
Wireless room temperature sensor	10-10	N1632	BPZ:QAW590	**QAW590**
Wireless room temperature sensor with setpoint readjuster	10-10	N1632	BPZ:QAW591	**QAW591**
Conduit box with surge protection for solar panel sensor		N2488	BPZ:AGS2S.200/1091	**AGS2S.200/109**

Application examples RVL4..

These are only a few examples of many applications that can be done with the SIGMAGYR® family of controllers: RVL4...
More SIGMAGYR® applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVL4.. data sheet.

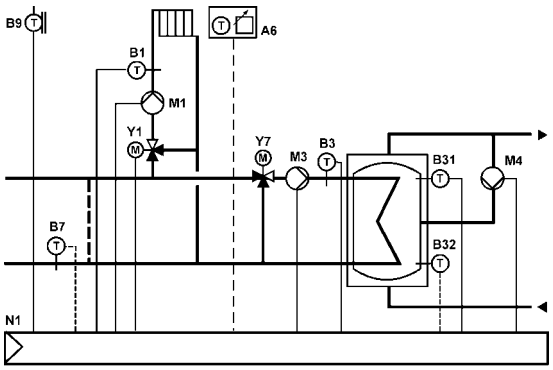
RVL480



Weather-compensated heating system, one heating circuit

- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Frost protection for building and plant
- Digital yearly time switch
- Time switch program with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- Analog setting of heating curve

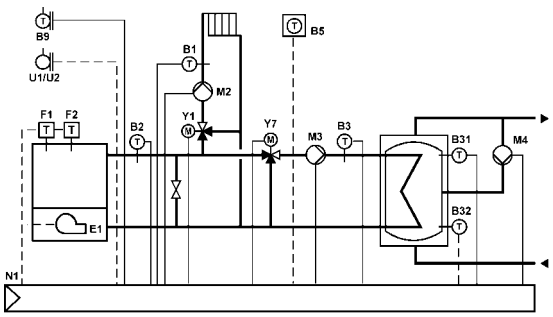
RVL481



Weather-compensated heating system, one heating circuit and d.h.w

- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Frost protection for building and plant
- Digital yearly time switch
- 3 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- Analog setting of heating curve and room temperature setpoint

RVL482



Weather-compensated heating system, heat generation, one heating circuit, d.h.w.

- Weather-compensated flow temperature control with 3-point actuator acting on mixing valve
- Demand-dependend flow temperature control acting on boiler with single- or two-stage burner
- Frost protection for building and plant
- Digital yearly time switch
- 3 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- Analog setting of heating curve and room temperature setpoint

Energy manager for max. 2 heat producers — RVP540



From 4 types of heat producers, any 2 can be selected: solar collectors, wood-fired boilers, heat pumps, or oil / gas boilers.

Building types:
- Single-family homes
- Multifamily houses
- Large building complexes with central heat generation
- Central energy handling plant
- Commercial and industrial buildings
- Buildings in which alternative energy sources are used

Plant types
- Solar collectors
- Wood-fired boilers
- Heat pumps
- Oil / gas burners (1- or 2-stage or modulating)
- Wall-hung gas boilers
- DHW heating
- Simple to complex buffer storage tanks
- Mixing or pump heating circuit

Key functions
500 preprogrammed plant types with more than 2,500 combinations can be selected.
In addition, a free PC tool is available, which permits fast and straightforward selection.

Communication
Communication is possible with the following units:
- All LPB-compatible devices from HVAC Products (Local Process Bus)
- Via point-to-point (PPS) interface with boiler management unit and room unit.

Tool
With the PC configuration tool (available on a CD), all applications can be identified in no time. The tool provides the basic plant type number, the terminal references and a list of the most important configuration parameters.
There is no direct connection from the tool to the controller, that is, configurations cannot be uploaded or downloaded. To select the required plant type, a small number of configuration parameters printed out by the configuration tool must be adopted.

Data sheet	N2488
Operating voltage	AC 230 V
Frequency	50 Hz
Power consumption	10 VA
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	1...2 (1...2) A
Dimensions (W x H x D)	144 × 96 × 107 mm

	Stock No.	Product No.
	BPZ:RVP540	**RVP540**

Energy manager for max. 3 heat producers — RVP550

The RVP550 provides the same functionality as the RVP540, but permitting 3 heat producers.

Data sheet	N2488

	Stock No.	Product No.
	BPZ:RVP550	**RVP550**

Field devices for RVP540 and RVP550

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor for high-temperature applications (180°C)	11-15	N1833	BPZ:QAP21.2	**QAP21.2**
Flue gas temperature sensor Pt1000	11-13	N1846	BPZ:FGT-PT1000	**FGT-PT1000**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Multifunctional room operator unit	1-9	N1637	BPZ:QAW70..	**QAW70..**
Room temperature sensor, NTC, 5...30 °C	10-4	N1725	BPZ:QAA10	**QAA10**
Conduit box with surge protection for solar panel sensor		N2488	BPZ:AGS2S.200/1091	**AGS2S.200/109**

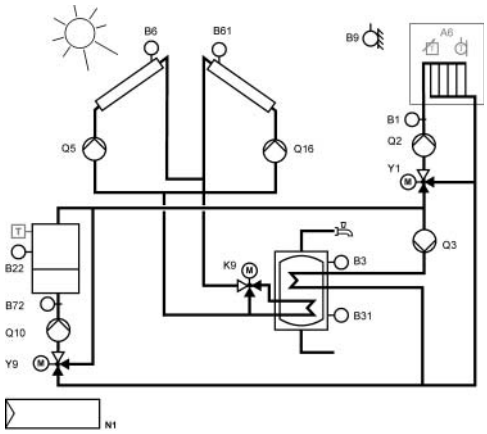
Application examples RVP5..

These are only a few examples of many applications that can be done with the SIGMAGYR® family of controllers: RVP5...
More SIGMAGYR® applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVP5.. data sheet.

Weather-compensated heating system, wood-fired boiler, one heating circuit, solar d.h.w.

RVP540

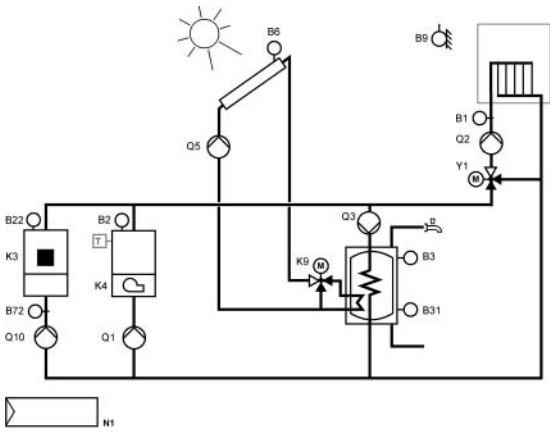
- Adjustable temperature differential of the wood-fired boiler
- Minimum and maximum limitation of the boiler temperature
- Protective boiler startup with impact on the consumers
- Strategy for the wood-fired boiler: boiler temperature setpoint constant or depending on demand
- Control of the collector pump according to temperature differential
- Collector's overtemperature and frost protection functions
- 2 buffer storage tank systems with selectable priority for heat transfer
- Weather-compensated flow temperature control with 3-position actuator
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- ECO function switches off heating depending on outside temperature
- Optimizations functions for the automatic shift of optimum start control
- Control of d.h.w. via pump-charged storage tank
- Adjustable boost of the setpoint for d.h.w. charging temperature
- Protection against Legionella bacteria with adjustable temperature level
- Selectable priority of d.h.w. charging: parallel to heating, or absolut resp. shifting priority
- Control of the circulation pump



Weather-compensated heating system, wood boiler, one heating circuit, solar d.h.w.

RVP550

- Adjustable temperature differential of the wood-fired boiler
- Minimum and maximum limitation of the boiler temperature
- Protective boiler startup with impact on the consumers
- Strategy for the wood-fired boiler: boiler temperature setpoint constant or depending on demand
- Control of the collector pump according to temperature differential
- Collector's overtemperature and frost protection functions
- 2 buffer storage tank systems with selectable priority for heat transfer
- Weather-compensated flow temperature control with 3-position actuator
- Room temperature-dependent boost heating and quick setback (with room unit only or with building model)
- ECO function switches off heating depending on outside temperature
- Optimizations functions for the automatic shift of optimum start control
- Control of d.h.w. via pump-charged storage tank
- Adjustable boost of the setpoint for d.h.w. charging temperature
- Protection against Legionella bacteria with adjustable temperature level
- Selectable priority of d.h.w. charging: parallel to heating, or absolut resp. shifting priority
- Control of the circulation pump



RMH760B..



Heating controller

- Heating controller as primary controller or main controller (district heat) or heating circuit controller
- Boiler temperature control
- Control of max. 3 heating circuits and DHW heating (7 variants available) with optional extension modules
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

Extension modules complement the Synco 700 heating controller and offer extra functions. Controller and extension modules are interconnected via plug-in connectors. The extension modules are attached to the controller and do not operate autonomously. Full operation from commissioning to enduser operation via the operator unit.

Available extension modules:
2 heating circuit modules RMZ782B
1 DHW module RMZ783B
1 universal module RMZ787
2 universal modules RMZ789
A total of 4 extension modules can simultaneously be used with the Synco 700 heating controller.

Available operator units:
- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3133
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	6
Universal input, signal	LG-Ni1000 2 x LG-Ni1000 T1 (PTC) Pt1000 NTC 575 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Digital pulse contact Potential-free digital status contact
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	5
Relay outputs	Potential-free switching contact
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)

Range overview RMH760B..

Product Title	Data sheet	Stock No.	Product No.
Heating controller with languages de, fr, it, es	N3133	BPZ:RMH760B-1	**RMH760B-1**
Heating controller with languages de, en, fr, nl	N3133	BPZ:RMH760B-2	**RMH760B-2**
Heating controller with languages da, fi, sv, no	N3133	BPZ:RMH760B-3	**RMH760B-3**
Heating controller with languages pl, cs, sk, hu, ru, bg	N3133	BPZ:RMH760B-4	**RMH760B-4**
Heating controller with languages sr, hr, sl, ro, el, tr	N3133	BPZ:RMH760B-5	**RMH760B-5**

Communicative controllers - Synco™ 700
Extension modules for RMH..

RMZ782B

Heating circuit module



- Weather-compensated flow temperature control via heating circuit's mixing valve
- Control of heating circuit pump

The available heating circuit control and supervisory functions are the same as those of the RMH760B

Data sheet	N3136
Voltage supply	Supply from controller module
Power consumption	2 VA
Universal inputs, number	3
Universal input, signal	LG-Ni1000 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Pt1000 NTC 575 T1 (PTC)
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	3
Relay outputs	Switching contact, potential-free
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A

Stock No.	Product No.
BPZ:RMZ782B	**RMZ782B**

RMZ783B

DHW module



- Control of the storage tank temperature
- Storage tank charging with integrated coil, with pump or mixing valve
- Storage tank charging with detached heat exchanger, with pump and mixing valve
- Storage tank charging according to a time program
- Control of the circulating pump according to a time program

The technical data correspond to the heating circuit module RMZ782B, except:

Data sheet	N3136
Universal inputs, number	4
Analog outputs, number	1
Relay outputs, number	5

Stock No.	Product No.
BPZ:RMZ783B	**RMZ783B**

Boiler sequence controller

RMK770..



Modular heating controller with integrated control and supervisory functions for:
- Up to 6 boilers
- Multistage or modulating burners
- Precontrol
- Heating circuit
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

Extension modules complement the Synco 700 boiler sequence controller and offer extra functions. The extension modules are attached to the controller. They do not operate autonomously. Full operation from commissioning to enduser operation via the operator unit.

Available extension modules:
3 universal modules RMZ785
3 universal modules RMZ787
3 universal modules RMZ788
3 universal modules RMZ789

A total of 3 extension modules can simultaneously be used with the Synco 700 boiler sequence controller.

Available operator units:
- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3132
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	8
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Digital inputs, number	2
Digital inputs	Potential-free input signal
Digital input, contact query	5 mA DC 15 V
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	7
Relay outputs	AC 19...265 V, max. 4(3) A Potential-free switching contact
Communication	KNX (KNX TP1)

Communicative controllers - Synco™ 700
Boiler sequence controllers RMK..

Range overview RMK770..

Product Title	Data sheet	Stock No.	Product No.
Boiler sequence controller with languages de, fr, it, es	N3132	BPZ:RMK770-1	**RMK770-1**
Boiler sequence controller with languages de, fr, en, nl	N3132	BPZ:RMK770-2	**RMK770-2**
Boiler sequence controller with languages da, fi, sv, no	N3132	BPZ:RMK770-3	**RMK770-3**
Boiler sequence controller with languages pl, cs, sk, hu, ru, bg	N3132	BPZ:RMK770-4	**RMK770-4**
Boiler sequence controller with languages sr, hr, sl, ro, el, tr	N3132	BPZ:RMK770-5	**RMK770-5**

Plug-in type operator unit — RMZ790

- Operator unit plugs into the Synco™ 700 controllers
- For displaying and changing plant data for service staff and enduser
- Clear-text operation
- Can be plugged in and removed during operation
- Power supply via the controller



Data sheet N3111

	Stock No.	Product No.
	BPZ:RMZ790	**RMZ790**

Detached operator unit with 3 m cable — RMZ791

Like plug-in type operator unit, but:
- Other mounting choices (typically for control panel door or wall mounting)
- Larger display
- Connection via a prefabricated 3 m cable, supplied as standard



Data sheet N3112

	Stock No.	Product No.
	BPZ:RMZ791	**RMZ791**

Bus operator unit — RMZ792

Communicating operator unit for operating up to 150 controllers, room units and central units from the Synco™ 700 range via KNX bus.
Favorite pages can be freely defined. Designed for fixed installation or mobile use.



Data sheet N3113

	Stock No.	Product No.
	BPZ:RMZ792	**RMZ792**

Memory card for bus operator unit — RMA792

Memory card with languages and device descriptions. 8 MB

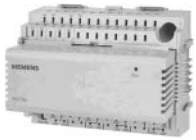


Data sheet N3113

	Stock No.	Product No.
	BPZ:RMA792	**RMA792**

Communicative controllers - Synco™ 700
Extension modules and operator units for RMH.. and RMK..

RMZ78..



Universal modules

Additional inputs and outputs required by the Synco™ 700 controllers can be provided by these modules. A description of the functions is given with the relevant controller module.

Data sheet	N3146
Power consumption	2 VA
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	switching contact, potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A

Range overview RMZ78..

Universal inputs, number	Analog outputs, number	Relay outputs, number	Stock No.	Product No.
8	0	0	BPZ:RMZ785	**RMZ785**
4	0	4	BPZ:RMZ787	**RMZ787**
4	2	2	BPZ:RMZ788	**RMZ788**
6	2	4	BPZ:RMZ789	**RMZ789**

RMZ780



Module connector

Module connector for detached mounting of extension modules within the control panel.
Distance for detached mounting: Maximum 10 m.

Data sheet	N3138

Stock No.	Product No.
BPZ:RMZ780	**RMZ780**

Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Strap-on temperature sensor with cable LG-Ni1000	11-11	N1802	BPZ:QAD26.220	**QAD26.220**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Solar sensor	11-13	N1943	BPZ:QLS60	**QLS60**
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	16-17	N1991	BPZ:BSG21.1	**BSG21.1**
Flue gas temperature sensor Pt1000	11-13	N1846	BPZ:FGT-PT1000	**FGT-PT1000**

Monitors

Product Title	s. page	Data sheet	Stock No.	Product No.
Flow switch for use in hydraulic systems	9-23	N1592	BPZ:QVE1900	**QVE1900**
Thermal reset limit thermostat	9-3	N1202	BPZ:RAK-TW.1..H	**RAK-TW.1..H**
Temperature limiter	9-4	N1206	BPZ:RAK-TB.1..M	**RAK-TB.1..M**
Safety limit thermostat	9-5	N1204	BPZ:RAK-ST..M	**RAK-ST..M**

Room units

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room unit with room temperature sensor and setpoint readjuster -3...3 K	10-3	N1721	BPZ:QAA27	**QAA27**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-4	N1722	BPZ:QAA64	**QAA64**
Room unit with KNX bus	10-14	N1633	BPZ:QAW740	**QAW740**

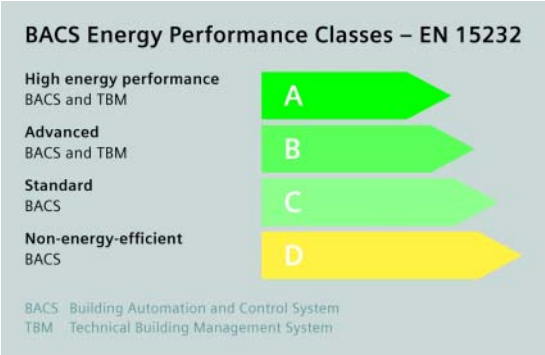
Transformers

Product Title	s. page	Data sheet	Stock No.	Product No.
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**

Service tool

Product Title	s. page	Data sheet	Stock No.	Product No.
Service tool for KNX/LPB	8-12	N5655	BPZ:OCI700.1	**OCI700.1**

Application examples RMH760B.. and RMK770..

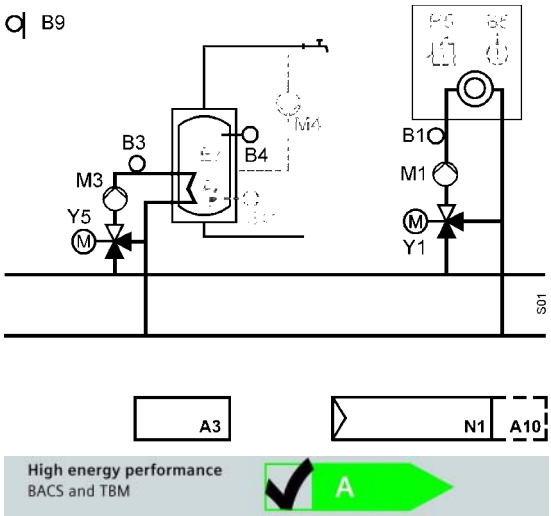


These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMH760B.. / RMK770..
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMH760B.. / RMK770.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2007. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.
www.siemens.com/hit

RMH760B..

H0CB02 H6B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

Weather-compensated heating control, one heating circuit, d.h.w

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Econo-my and Protective Mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to 16 periods
- 7-day program (maximum six switching points per day)
- Time switch program for the heating circuit
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Control of the storage tank charging temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating

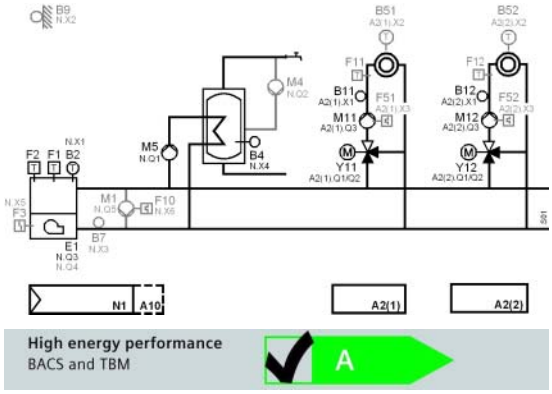
The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant Δp (The pump must have integrated output control)
- Variable temperature depending on the load (Heat demand signal required)

Weather-compensated heating control, heat generation, 2 heating circuits, d.h.w.

RMH760B..

HCDA01 H6B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Economy and Protective Mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to 16 periods
- 7-day program (maximum six switching points per day)
- Time switch programs for heating circuits 1 and 2
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Control of the storage tank temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating
- Demand-compensated boiler temperature control
- Protective boiler startup by reducing the consumer setpoints
- Control of a single-stage or 2-stage burner
- Control of the boiler temperature via modulating burner with DC 0...10 V control
- Burner fault contact

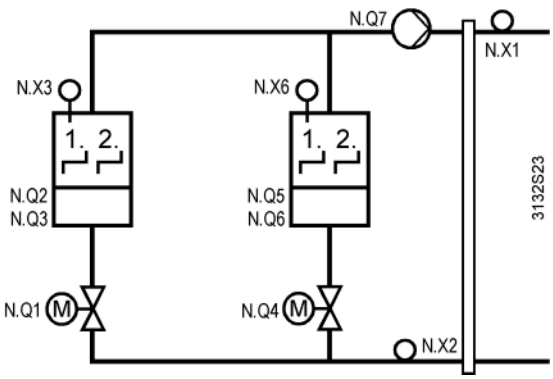
The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant Δp (The pump must have integrated output control)
- enerator; Variable temperature depending on the load

Boiler cascade, 2 boilers with 2-stage burners

RMK770..

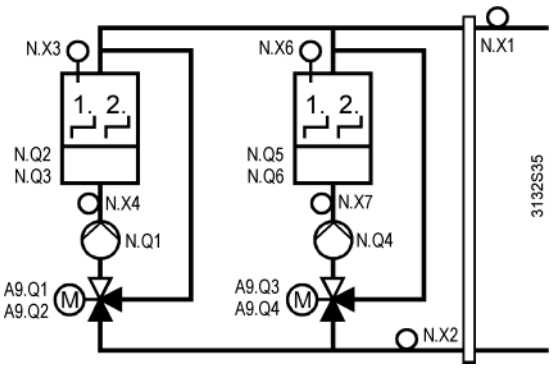
K2.2



- Control of the boiler temperature via 2-stage burner
- Control of the shutoff valves
- Common flow and return temperature control
- Control of the main pump

RMK770..

K6.2

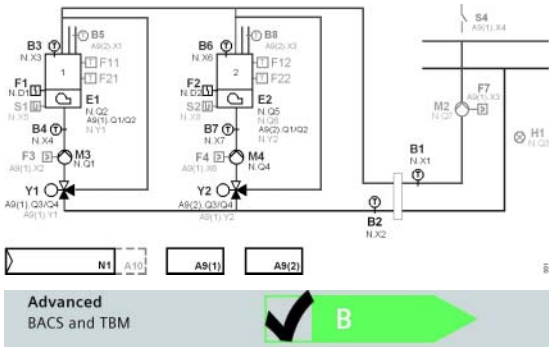


Boiler cascade, 2 boilers with 2-stage burners

- Control of the boiler temperature via 2-stage burner
- Controlled boiler return temperature with 3-port valve and 3-position or DC 0...10 V actuator
- Control of the boiler pumps
- Common flow and return temperature control
- Extension module RMZ789 needed

RMK770..

HFF003 MK7 HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

Dual-boiler plant, boiler pumps, boiler return with 3-port valve

- Control of the boiler sequence
- Automatic changeover of lead boiler depending on the number of boiler operating hours
- Control of the boiler pumps
- Control of the boiler temperature via modulating burner with 3-position or DC 0...10 V control
- Burner fault contact
- Limitation of the burner's minimum on time
- Controlled maintained boiler return temperature with 3-port valve and 3-position or DC 0...10 V actuator
- Protective boiler startup
- Maximum and minimum limitation of the boiler tempe-rature
- Selection of boiler operating mode
- Flue gas measuring mode, boiler testing mode
- Burner hours run and burner startup counter
- Minimum and maximum limitation of the flow tempera-ture
- Automatic changeover to summer operation
- (heating OFF)
- Pump overrun, pump kick
- Valve overrun, valve kick
- Acquisition and evaluation of heat requisition signals via Konnex bus

The indicated energy efficiency classification can be attained only if the following functions are implemented:

In connection with an application that fulfils the energy efficiency class B, necessary for:

- Emission control
- Control of distribution network hot watertemperature (supply or return)
- Control of distribution pumps
- Intermittent control of emission and/or distribution

Controllers for district heating plants



Overview and selection tools	Overview of product details	2-2
Autonomous controllers – SIGMAGYR®	District heating controllers RVD1..	2-3
	Application examples RVD1..	2-5
Communicative controllers – SIGMAGYR®	District heating controller range RVD2..	2-6
	Application examples RVD2..	2-9
Communicative controllers – Synco™ 700	Modular heating controllers RMH..	2-10
	Extension modules and operator units for RMH..	2-12
	Field devices for RMH..	2-15
	Application examples RMH..	2-16

Overview of product details







Preferential applications	RVD120	RVD140	RVD250	RVD260	RVP300	RVL480	RVL481	RMH760
Heating group	■	■	■	■	■	■	■	■
District heat exchanger	■	■	■	■	1)	1)	1)	■
Domestic hot water	■	■	■	■			■	■
Domestic water solar		■	■	■			■	
2nd heating group				■				■
3rd heating group								■

1) Variant

Operation system		RVD120	RVD140	RVD250	RVD260	RVP300	RVL480	RVL481	RMH760
Type of operation	analog								
	digital	■	■	■	■	■	■	■	■
Heating curve bar							■	■	
Time switch	analog								
	digital	■	■	■	■	■	■	■	■
Programmed plant types		3	8	28	14	2	6	29	41
Yearly clock		■	■	■	■	■	■	■	■

Communication	RVD120	RVD140	RVD250	RVD260	RVP300	RVL480	RVL481	RMH760
Controller network			LPB	LPB	LPB	LPB	LPB	KNX
M-bus slave			■	■				
Remote readout via PC	ext. Modbus-Interface	ext. Modbus-Interface	OZW1.. / OCI6..		via OCI6..	via OCI6..		OZW77..
Fax, SMS and pager function			via OCI6..		via OCI6..	via OCI6..		OZW77..

Sensors		RVD120	RVD140	RVD250	RVD260	RVP300	RVL480	RVL481	RMH760
Outside sensor	QAC22	■	■	■	■	■	■	■	■
Outside sensor	QAC32	■	■	■	■	■	■	■	■
Strap-on temp. sensor	QAD22	■	■	■	■	■	■	■	■
Immersion temp. sensor	QAE2..	■	■	■	■	■	■	■	■
Cable temp. sensor	QAP2..	■	■	■	■	■	■	■	■
Room temp. sensor	QAA24					■	■	■	■
Room temp. sensor	QAA10	■	■	■	■				
Solar sensor	QLS60								■
Pressure sensor	QBE2002..		■	■	■				

Room units		RVD120	RVD140	RVD250	RVD260	RVP300	RVL480	RVL481	RMH760
Room unit analog	QAW50	■	■	■	■	■	■	■	
Room unit analog	QAW50.03				■				
Room unit digital	QAW70	■	■	■	■	■	■	■	
Room unit digital	QAW740								■

District heating controller

RVD12..



Control of district heat substations, space heating and d.h.w. heating.
Optimized for low return temperatures in district heating networks.

- 3 ready programmed and preselected plant types
- Straightforward, easy-to-understand operation
- Analog adjustment of room temperature setpoint, other adjustments with operating lines
- Display of time of day, time program, setpoints, actual values, limitations, errors, etc.
- Optional remote operation via room unit
- 2 independent switching programs each with 3 occupancy times per day
- Holiday function (via room unit)
- DRT limitation for the reduction of peak loads
- Maximum limitation of the return temperature on the primary side
- Minimum and maximum limitation of the flow temperature
- Automatic summer / winter changeover
- Automatic ECO function
- Pump protection
- Legionella function
- Frost protection function
- Automatic monitoring of sensors with alarm indication
- Relay and sensor tests, manual operation
- Locking function for district heat parameters
- Communication via Modbus
- Display with background lighting

Plant-specific
- 1 pump heating circuit, control of the flow temperature, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating:
- Storage system with integrated heat exchanger and 1 storage tank sensor
- Charging pump

Data sheet	N2510
Operating voltage	AC 230 V
Analog input, signal	LG-Ni1000 NTC 575
Digital outputs	3 × AC 230 V 1(1) A 1 × AC 230 V 2(2) A
Dimensions (W x H x D)	144 x 96 x 109 mm

Range overview RVD12..

Product Title	Data sheet	Stock No.	Product No.
Controller, 3 programmed plant types, instructions in da, de, en, fi, fr, it, sv	N2510	S55370-C109	**RVD120-A**
Controller, 3 programmed plant types, instructions in bg, cs, el, pl, ro, ru	N2510	S55370-C110	**RVD120-C**

RVD14..



District heating controller

Same functionality as the RVD120, but with the following extra features:
- 8 ready programmed and preselected plant types
- Solar d.h.w. heating
- D.h.w. heating with electric immersion heater
- Refill function

Plant-specific
- Precontrol of internal control loops
- 1 pump or mixing heating circuit, flow temperature control, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating:
- Instantaneous system
- Storage tank charging system with 1 or 2 storage tank sensors
- Storage system with integrated heat exchanger
- 2 charging pumps
- Circulating pump
- Solar d.h.w. heating

Data sheet	N2510
Operating voltage	AC 230 V
Analog input, signal	LG-Ni1000 NTC 575 DC 0...10 V
Digital inputs, number	1
Digital inputs	Flow switch
Digital outputs	5 × AC 230 V 1(1) A 4 × AC 230 V 2(2) A
Dimensions (W x H x D)	144 x 96 x 109 mm

Range overview RVD14..

Product Title	Data sheet	Stock No.	Product No.
Controller, 8 programmed plant types, instructions in da, de, en, fi, fr, it, sv	N2510	S55370-C113	**RVD140-A**
Controller, 8 programmed plant types, instructions in bg, cs, el, pl, ro, ru	N2510	S55370-C114	**RVD140-C**

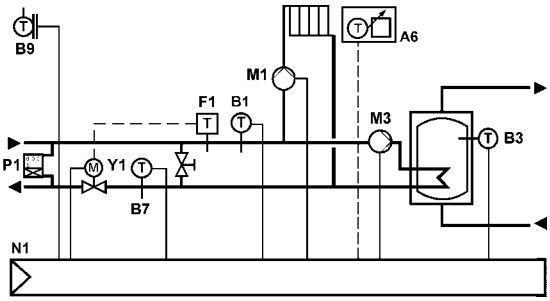
Application examples RVD1..

These are a few examples of applications that can be done with the SIGMAGYR® controllers RVD1..
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVD1.. data sheet.

Direct system, weather-compensated heating and d.h.w. — RVD12..

DAAA01 VD1 HQ

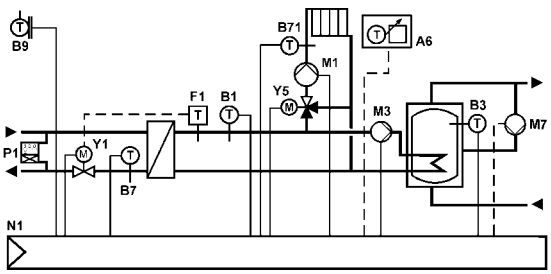
- Weather-compensated flow temperature control with pump heating circuit
- Demand-dependend flow temperature control with 3-position actuator acting on two-port valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- Digital 7-day time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on outside temperature
- Room temperature-dependent quick setback (with room sensor or with building model)
- Optional remote operation via room unit



Indirect system, weather-compensated heating and d.h.w. — RVD14..

DACA01 VD1 HQ

- Demand-dependent flow temperature control with 3-position actuator acting on primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- Digital 7-day time switch
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor or with building model)
- Optional remote operation via room unit



RVD25..



District heating controller

Multifunctional heating controller for use in district heating substations and district heating plants with LPB and M-bus communication. Suited for one heating circuit with d.h.w. heating in instantaneous systems or with storage tank. 28 programmed plant types. Operating voltage AC 230 V.

Key features:
- Optimized for low return temperatures in district heating networks.
- Display of time of day, time program, setpoints, actual values, limitations, errors, etc.
- Optional remote operation via room unit
- 2 independent switching programs each with 3 occupancy times per day
- Yearly clock with automatic summer- / wintertime changeover
- Power and / or volumetric flow limitation in combination with heat meter
- Pump and valve protection
- Automatic monitoring of sensors with display of alarm
- Locking function for district heat parameters
- Optional suppression of hydraulic creep
- Frost protection function
- DRT limitation for the reduction of peak loads and of idle heat
- Maximum limitation of the return temperature on the primary side
- Minimum and maximum limitation of the flow temperature
- Optimum start / stop control of the heating system
- Automatic ECO function
- Legionella function
- Forced charging function for plant with storage tank
- Cooling down protection for the primary supply lines
- Solar d.h.w. heating
- D.h.w. heating with electric immersion heater
- Refill function
- Selectable heating period

Plant-specific:
- Precontrol internal and interconnected
- 1 mixing or pump heating circuit
- D.h.w. heating with selectable priority:
- Instantaneous systems
- Storage charging system
- Storage system with integrated heat exchanger
- 2 charging pumps
- Circulating pump

Data sheet	N2513
Operating voltage	AC 230 V
Analog input, signal	DC 0...10 V LG-Ni1000 NTC 575
Digital inputs, number	1
Digital inputs	Pulse transmitter Status contact
Digital outputs	1 × PWM, DC 12 V 2 × AC 230 V 2(2) A 8 × AC 230 V 1(1) A
Communication	LPB (interconnected controller) M-bus (slave)
Dimensions (W x H x D)	144 x 96 x 109 mm

Range overview RVD25..

Product Title	Data sheet	Stock No.	Product No.
Controller, 28 programmed plant types, instructions in de, en, fr, it, da, fi, sv	N2513	S55370-C125	RVD250-A
Controller, 28 programmed plant types, instructions in pl, cs, el, ru, bg, ro	N2513	S55370-C126	RVD250-C

District heating controller

RVD26..



Multifunctional heating controller for use in district heating substations and district heating plants with LPB and M-bus communication. Suited for 2 heating circuits with d.h.w. heating in instantaneous systems or with storage tank. 14 programmed plant types. Operating voltage AC 230 V.

Same functionality as RVD250, but with the following extra features:
- 2 heating circuits
- Without precontrol in interconnected systems
- 3 independent switching programs each with 3 occupancy times per day

Plant-specific:
- Precontrol internal control loops
- 2 heating circuits (mixing and / or pump heating circuit): Control of flow temperature, optionally weather-compensated / weather- and room temperature-compensated / room temperature-compensated
- D.h.w. heating with selectable priority:
- Instantaneous systems
- Storage charging system
- Storage system with integrated heat exchanger
- Charging pump
- Circulating pump

Data sheet	N2515
Operating voltage	AC 230 V
Analog input, signal	DC 0...10 V LG-Ni1000 NTC 575
Digital inputs, number	1
Digital inputs	Pulse transmitter Status contact
Digital outputs	1 × PWM, DC 12 V 2 × AC 230 V 2(2) A 8 × AC 230 V 1(1) A
Communication	LPB (interconnected controller) M-bus (slave)
Dimensions (W x H x D)	144 x 96 x 109 mm

Range overview RVD26..

Product Title	Data sheet	Stock No.	Product No.
Controller, 14 programmed plant types, instructions in de, en, fr, it, da, fi, sv	N2515	S55370-C129	RVD260-A
Controller, 14 programmed plant types, instructions in pl, cs, el, ru, bg, ro	N2515	S55370-C130	RVD260-C

NEW PRODUCT

Field devices for RVD..

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Cable temperature sensor for high-temperature applications (180°C)	11-14	N1833	BPZ:QAP21.2	**QAP21.2**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Digital room unit	10-4	N1635	BPZ:QAW50	**QAW50**
Digital room unit with address selector	10-4	N1635	BPZ:QAW50.03	**QAW50.03**
Multifunctional room operator unit	10-4	N1637	BPZ:QAW70..	**QAW70..**
Wireless room temperature sensor	10-10	N1632	BPZ:QAW590	**QAW590**
Wireless room temperature sensor with setpoint readjuster	10-10	N1632	BPZ:QAW591	**QAW591**
Room temperature sensor, NTC, 5...30 °C	10-10	N1725	BPZ:QAA10	**QAA10**
Pressure sensor for liquids and gases	10-10	N1909	BPZ:QBE2002-P..	**QBE2002-P..**

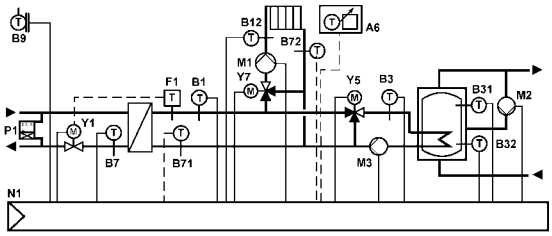
Application examples RVD2..

These are a few examples of applications that can be done with the SIGMAGYR® controllers RVD2...
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RVD2.. data sheet.

Indirect system, weather-compensated heating with mixing circuit and d.h.w

RVD25..

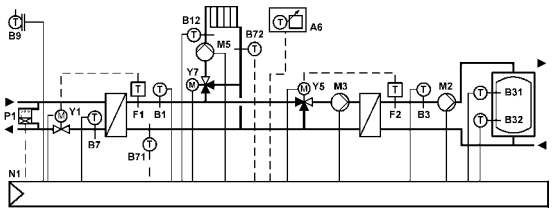
- Demand-dependent flow temperature control acting on 3-position actuator with primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank with mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)
- Control of d.h.w. circulation pump



Indirect system, weather-compensated heating with mixing circuit and d.h.w

RVD25..

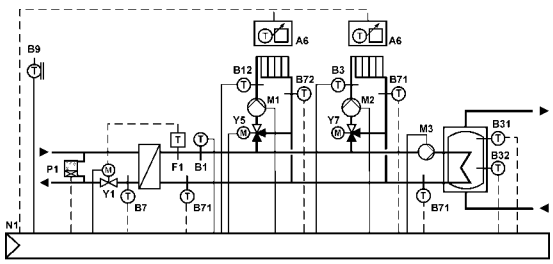
- Demand-dependent flow temperature control acting on 3-position actuator with primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank with exchanger and mixing valve
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 2 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)



Indirect system, weather-compensated heating with 2 mixing circuits and d.h.w

RVD26..

- Demand-dependent flow temperature control with 3-position actuator acting on primary two-port valve
- Weather-compensated flow temperature control with 3-position actuator acting on mixing valve
- D.h.w. temperature control - storage tank
- Maximum limitation of primary return temperature depending on the outside temperature
- Frost protection for building and plant
- 3 time switch programs, each with 3 heating periods
- Flow temperature limit control
- ECO function switches off heating depending on the outside temperature
- Room temperature-dependent quick setback (with room sensor only or with building model)



RMH760B..



Heating controller

- Heating controller as primary controller or main controller (district heat) or heating circuit controller
- Boiler temperature control
- Control of max. 3 heating circuits and DHW heating (7 variants available) with optional extension modules
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

Extension modules complement the Synco 700 heating controller and offer extra functions. Controller and extension modules are interconnected via plug-in connectors. The extension modules are attached to the controller and do not operate autonomously. Full operation from commissioning to enduser operation via the operator unit.

Available extension modules:
2 heating circuit modules RMZ782B
1 DHW module RMZ783B
1 universal module RMZ787
2 universal modules RMZ789
A total of 4 extension modules can simultaneously be used with the Synco 700 heating controller.

Available operator units:
- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operator unit RMZ792

Data sheet	N3133
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	6
Universal input, signal	LG-Ni1000 2 x LG-Ni1000 T1 (PTC) Pt1000 NTC 575 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Digital pulse contact Potential-free digital status contact
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	5
Relay outputs	Potential-free switching contact
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)

Range overview RMH760B..

Product Title	Data sheet	Stock No.	Product No.
Heating controller with languages de, fr, it, es	N3133	BPZ:RMH760B-1	**RMH760B-1**
Heating controller with languages de, en, fr, nl	N3133	BPZ:RMH760B-2	**RMH760B-2**
Heating controller with languages da, fi, sv, no	N3133	BPZ:RMH760B-3	**RMH760B-3**
Heating controller with languages pl, cs, sk, hu, ru, bg	N3133	BPZ:RMH760B-4	**RMH760B-4**
Heating controller with languages sr, hr, sl, ro, el, tr	N3133	BPZ:RMH760B-5	**RMH760B-5**

Communicative controllers - Synco™ 700
Extension modules and operator units for RMH..

RMZ790

Plug-in type operator unit



- Operator unit plugs into the Synco™ 700 controllers
- For displaying and changing plant data for service staff and enduser
- Clear-text operation
- Can be plugged in and removed during operation
- Power supply via the controller

Data sheet N3111

	Stock No.	Product No.
	BPZ:RMZ790	**RMZ790**

RMZ791

Detached operator unit with 3 m cable



Like plug-in type operator unit, but:
- Other mounting choices (typically for control panel door or wall mounting)
- Larger display
- Connection via a prefabricated 3 m cable, supplied as standard

Data sheet N3112

	Stock No.	Product No.
	BPZ:RMZ791	**RMZ791**

RMZ792

Bus operator unit



Communicating operator unit for operating up to 150 controllers, room units and central units from the Synco™ 700 range via KNX bus.
Favorite pages can be freely defined. Designed for fixed installation or mobile use.

Data sheet N3113

	Stock No.	Product No.
	BPZ:RMZ792	**RMZ792**

RMA792

Memory card for bus operator unit



Memory card with languages and device descriptions. 8 MB

Data sheet N3113

	Stock No.	Product No.
	BPZ:RMA792	**RMA792**

Heating circuit module

RMZ782B



- Weather-compensated flow temperature control via heating circuit's mixing valve
- Control of heating circuit pump

The available heating circuit control and supervisory functions are the same as those of the RMH760B

Data sheet	N3136
Voltage supply	Supply from controller module
Power consumption	2 VA
Universal inputs, number	3
Universal input, signal	LG-Ni1000 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Pt1000 NTC 575 T1 (PTC)
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	3
Relay outputs	Switching contact, potential-free
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A

Stock No.	Product No.
BPZ:RMZ782B	**RMZ782B**

DHW module

RMZ783B



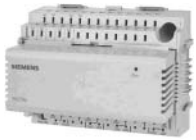
- Control of the storage tank temperature
- Storage tank charging with integrated coil, with pump or mixing valve
- Storage tank charging with detached heat exchanger, with pump and mixing valve
- Storage tank charging according to a time program
- Control of the circulating pump according to a time program

The technical data correspond to the heating circuit module RMZ782B, except:

Data sheet	N3136
Universal inputs, number	4
Analog outputs, number	1
Relay outputs, number	5

Stock No.	Product No.
BPZ:RMZ783B	**RMZ783B**

RMZ78..



Universal modules

Additional inputs and outputs required by the Synco™ 700 controllers can be provided by these modules. A description of the functions is given with the relevant controller module.

Data sheet	N3146
Voltage supply	Supply from controller module
Power consumption	2 VA
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	switching contact, potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A

Range overview RMZ78..

Universal inputs, number	Analog outputs, number	Relay outputs, number	Stock No.	Product No.
4	0	4	BPZ:RMZ787	**RMZ787**
6	2	4	BPZ:RMZ789	**RMZ789**

RMZ780



Module connector

Module connector for detached mounting of extension modules within the control panel.
Distance for detached mounting: Maximum 10 m.

Data sheet	N3138

Stock No.	Product No.
BPZ:RMZ780	**RMZ780**

Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside sensor NTC 575 Ohm	11-12	N1811	BPZ:QAC32	**QAC32**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Strap-on temperature sensor with cable LG-Ni1000	11-11	N1802	BPZ:QAD26.220	**QAD26.220**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Immersion temperature sensur Ø 4 mm with cable and fitting	11-9	N1790	BPZ:QAE26.9..	**QAE26.9..**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Solar sensor	11-13	N1943	BPZ:QLS60	**QLS60**
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	16-17	N1991	BPZ:BSG21.1	**BSG21.1**

Monitors

Product Title	s. page	Data sheet	Stock No.	Product No.
Flow switch for use in hydraulic systems	9-23	N1592	BPZ:QVE1900	**QVE1900**
Thermal reset limit thermostat	9-3	N1202	BPZ:RAK-TW.1..H	**RAK-TW.1..H**
Temperature limiter	9-4	N1206	BPZ:RAK-TB.1..M	**RAK-TB.1..M**
Safety limit thermostat	9-5	N1204	BPZ:RAK-ST..M	**RAK-ST..M**

Room units

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room unit with room temperature sensor and setpoint readjuster -3...3 K	10-3	N1721	BPZ:QAA27	**QAA27**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-4	N1722	BPZ:QAA64	**QAA64**
Room unit with KNX bus	10-14	N1633	BPZ:QAW740	**QAW740**

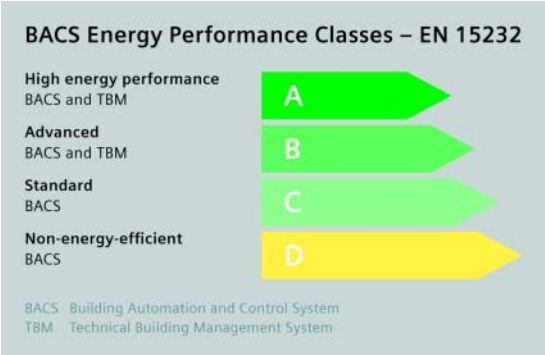
Transformers

Product Title	s. page	Data sheet	Stock No.	Product No.
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**

Service tool

Product Title	s. page	Data sheet	Stock No.	Product No.
Service tool for KNX/LPB	8-12	N5655	BPZ:OCI700.1	**OCI700.1**

Application examples RMH760B..

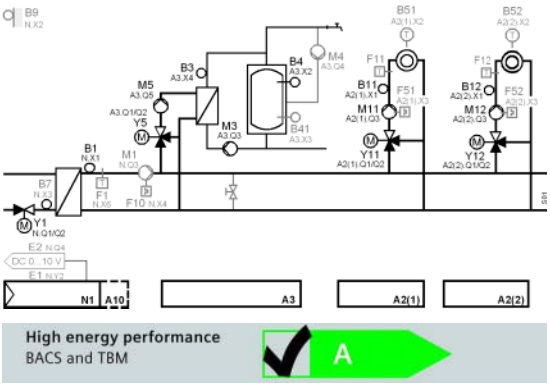


These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMH760B..
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMH760B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2007. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.
www.siemens.com/hit

RMH760B..

DADC04 H6B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

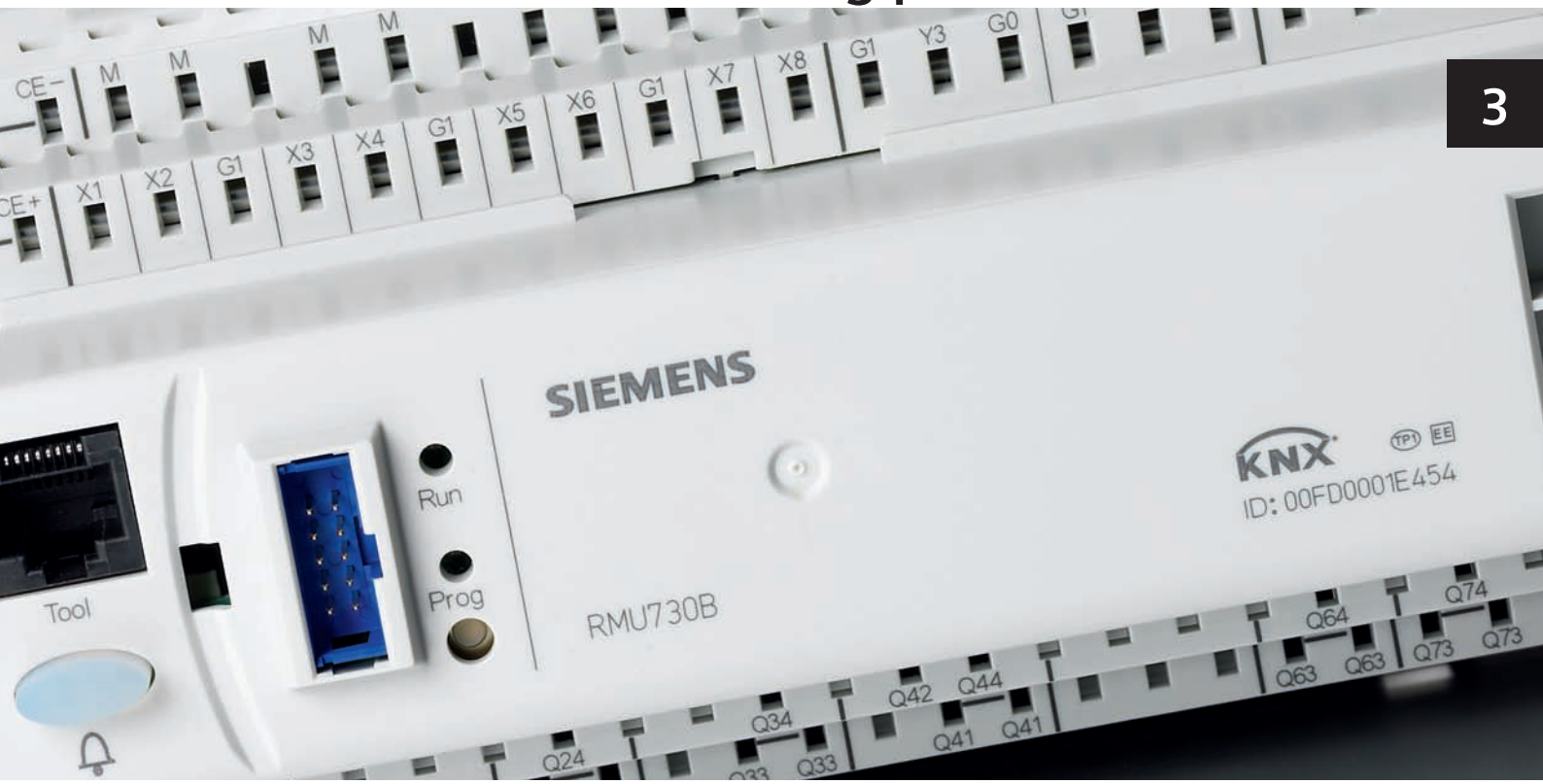
Weather-compensated heating system, district heating connection, 2 heating circuits, d.h.w

- Weather-compensated flow temperature control with adjustable setpoints for Comfort, Precomfort, Economy and Protective mode
- Frost protection for the building and the plant
- Changeover between 3 room temperature setpoints according to the time switch program
- Yearly clock
- Holiday and special day program with up to [SoftReturn]16 periods
- 7-day program (maximum six switching points [SoftReturn]per day)
- Time switch programs for the heating circuits
- Control of the storage tank charging temperature with adjustable setpoints for Normal, Reduced, Legionella and Protective mode
- Time switch program for DHW heating
- Limitation of the flow temperature
- Automatic heating limit with adjustable limits
- Optimum start control
- Quick setback
- Demand-compensated primary control

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Integrated individual room control including demand control "by occupancy, air quality, etc." (Heating circuits for precontrol in individual room control)
- Indoor temperature control (Room temperature in individual room control via KNX requires extra configuration)
- Variable speed pump control with constant Δp (The pump must have integrated output control)
- Intermittent control of emission and/or distribution, automatic control with optimum start/stop
- Generator; Variable temperature depending on the load

Controllers for heating, ventilation, air conditioning plants



Overview and selection tools	Overview of product details	3-2
Autonomous controllers – Synco™ 100	Room temperature controllers RLA..	3-3
	Duct temperature controllers RLM..	3.5
	Application examples RLA.. and RLM..	3-7
Universal controller	Controller RWD..	3-8
	Application examples RWD..	3-9
	Heat Pump Controller RWD..	3-10
Autonomous controllers – Synco™ 200	Universal controller RLU..	3-11
	Field devices for RLU..	3-12
	Application examples RLU..	3-15
Communicative controllers - Synco™ 700	Modular universal controllers RMU..	3-16
	Application examples RMU..	3-18
	Switching and monitoring device RMS..	3-27
	Extension modules and operator units for RMU.. and RMS..	3-31
	Field devices for RMU.. and RMS..	3-33

3

Synco™ 100, 200 and 700 controllers

Controllers for heating, ventilation, air conditioning plant







	RLM..	RLA..	RWD..				RLU..					RMU..			RMS..		RMZ..	
	162	162	32	82	62	68	202	220	222	232	236	710	720	730	705	785	787	788
	Air duct temperature controller	Room temperature controller	Universal controller, 1 control loop, 2DO	Universal controller, 1 control loop, 2DO	Universal controller, 1 control loop, 2AO	Universal controller, 1 control loop, 1AO, 1DO	Universal controller, 1 control loop, 2DO	Universal controller, 1 control loop, 2AO	Universal controller, 2 control loops, 2AO, 2DO	Universal controller, 2 control loops, 3AO, 2DO	Universal controller, 2 control loops, 3AO, 6DO	Modular universal controller, 1 control loop	Modular universal controller, 2 control loops	Modular universal controller, 3 control loops	Switching and Monitoring Device	Universal module, 8UI	Universal module, 4UI, 4DO	Universal module, 4UI, 2DO, 2AO
Option modules for RMU7.., RMS705												4[2]	4[2]	4[2]	4[2]	1[2]	2[2]	2[2]
Operation	■	■	■	■	■	■	■	■	■	■	■	■[1]	■[1]	■[1]	■[1]			
KNX communication												■	■	■	■			
7-day time switch and holiday/ special day program												■	■	■	■			
Supervision												■	■	■	■			
Logic functions												■	■	■	■			
Outputs																		
Step switch							■		■	■	■	■	■	■	■			
Relay	1	1[4]	2	2		1	2		2	2	6	2	4	6	6		4	2
3-position			1[3]	1[3]			1[3]		1[3]									
DC 0...10 V	2	2			2	1		2	2	3	3	2	3	4	4			2
Universal inputs																		
T1							■	■	■	■	■	■	■	■	■	■	■	■
Pt1000			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
DC 0...10 V			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Digital							■	■	■	■	■	■	■	■	■	■	■	■
LG-Ni 1000			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Number of universal inputs	-	-	2	2	2	2	4	4	4	5	5	6	8	8	8	8	4	4
Fixed inputs																		
DC 0...10 V	1	1																
Digital	2	1	1	1	1	1	1	1	1	2	2							
LG-Ni 1000	1	1																
Integrated LG-Ni 1000 sensor	1	1																
Controlled variable																		
Universal			■	■	■	■	■	■	■	■	■	■	■	■	■			
Temperature °C	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
Control mode																		
PID							■	■	■	■	■	■	■	■	■			
P/PI	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■			
Control loops																		
Cascade			■	■	■	■	■	■	■	■	■	■	■	■				
Number	1	1	1	1	1	1	1	1	2	2	2	1	2	3	3			

■ [1] Optional operation:
RMZ790: Plug-in operator unit
RMZ791: Detached operator unit
RMZ792: Bus operator unit

[2] Maximum number of option modules RMZ78x per controller

[3] 2 Relays or one 3-position

[4] RLA162.1 variant

AO Analog output
DO Digital output
UI Universal inputs

Room temperature controller, AC 24 V, 2 outputs DC 0...10 V

RLA162



Electronic controller designed for room mounting applications. It is configurable for heating and/or cooling applications and can operate as a single controller or together with duct mounted units (RLM) for limiting.

Application:
Modulating temperature controller, with 1 or 2 continuous DC 0...10 V output signals. The RLA162 is used for control and limiting of room temperatures in small HVAC plants.

The following units can be controlled:
- Heating (or cooling) valve actuators
- Air damper actuators
- Step controllers or current valves for electric heating
- Signal converters

Features:
- Low limitation input (supply air temperature)
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch

Data sheet	N3331
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Analog outputs, number	2
Analog input, signal	LG-Ni1000 DC 0...10 V
Digital input, contact query	DC 3...6 mA DC 6...15 V
Setpoint setting range	8...30 °C
Setpoint readjustment range	0...10 K
Degree of protection	IP30
Dimensions (W x H x D)	97 × 114 × 43 mm

	Stock No.	Product No.
	BPZ:RLA162	**RLA162**

Field devices for RLA162

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Air duct temperature controller, AC 24 V, 2 outputs DC 0...10 V	11-14	N3332	BPZ:RLM162	**RLM162**

3

RLA162.1



Room temperature controller, AC 24 V, 2 outputs DC 0...10 V, operating mode selector

Electronic controller designed for room mounting applications. It is configurable for heating and/or cooling applications with or without separate LG-Ni 1000 sensor.

Application:
Modulating temperature controller, with 1 or 2 continuous DC 0...10 V output signals. The RLA162.1 is used for control and limiting of room temperatures in small HVAC plants.

The following units can be controlled:
- Heating (or cooling) valve actuators
- Air damper actuators
- Step controllers or current valves for electric heating
- Signal converters

Features:
- Compensation via active outside sensor
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch
- Operating mode selector
- External temperature sensor input (LG-Ni 1000)

Data sheet	N3336
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Analog outputs, number	2
Analog input, signal	LG-Ni1000 DC 0...10 V
Digital input, contact query	DC 3...6 mA DC 6...15 V
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Setpoint setting range	8...30 °C
Setpoint readjustment range	0...10 K
Degree of protection	IP30
Dimensions (W x H x D)	97 × 114 × 43 mm

Stock No.	Product No.
BPZ:RLA162.1	**RLA162.1**

Field devices for RLA162.1

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside / room temperature sensor DC 0..10V	11-12	N1814	BPZ:QAC3161	**QAC3161**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**

Air duct temperature controller, AC 24 V, 2 outputs DC 0...10 V

RLM162



Compact electronic controller with integral duct mounted temperature sensor and setting unit combined in one device. It is designed for installation directly onto the plant. Only the wires for power supply connection and controller output need to be laid. Supplied complete with mounting flange.

Application:
Modulating temperature controller, with 1 or 2 continuous DC 0...10 V output signals. The RLM162 is used for control and limiting of extract or supply air temperatures in small HVAC plants:
- Restaurants, conference rooms, store rooms
- Lecture theatres, classrooms
- In conjunction with central air handling units

The following units can be controlled:
- Heating (or cooling) valve actuators
- Air damper actuators
- Step controllers or current valves for electric heating
- Signal converters
- DX cooling units

Features:
- Auxiliary digital output
- Compensation via outside sensor
- Connection for remote setting unit
- P or PI control (selectable)
- Service modes
- Heating and cooling modes available
- Setpoint changeover via external contact or time switch
- Heating/cooling changeover via external contact

Data sheet	N3332
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Analog outputs, number	2
Analog input, signal	LG-Ni1000 0...1000 Ohm DC 0...10 V
Digital input, contact query	DC 3...6 mA DC 6...15 V
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	2 A
Setpoint setting range	0...50 °C
Setpoint readjustment range	0...10 K
Probe length	400 mm
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	125 × 152 × 78 mm

Stock No.	Product No.
BPZ:RLM162	**RLM162**

3

Field devices for RLM162

Product Title	s. page	Data sheet	Stock No.	Product No.
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	16-17	N1991	BPZ:BSG21.1	**BSG21.1**
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**

3

Application examples Synco™ 100

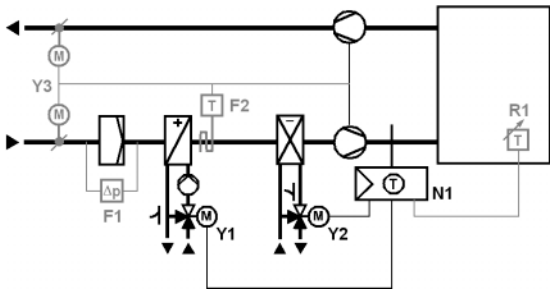
These are only a few examples of many applications that can be done with the with Synco™100 controllers: RLA.. / RLE.. / RLM..
More Synco™100 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLA.. / RLE.. / RLM.. data sheet.

Supply air temperature control

RLM162

ADC001 LM1 HQ

- Controller (N1) with built-in sensor to control the room temperature via sequential control of the heat-ing valve (Y1) or the cooling valve (Y2)
- Frost protection with frost thermostat F2 (indepen-dent of controller) to open the heating valve (Y1), close the outside air dampers (Y3) and deactivate the fans
- Air damper actuator with spring return (Y3) to control the fans with an auxiliary switch



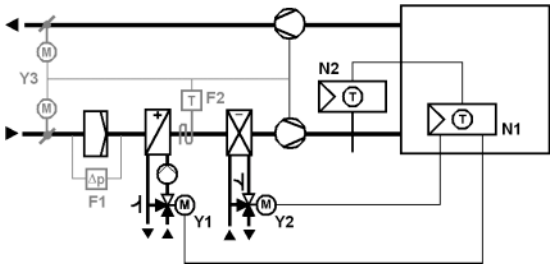
Room temperature control with limitation of supply air temperature

RLA162

RLM162

ADC002 LA1 HQ

- Room temperature control via control of the heating valve and the cooling valve
- Limitation of supply air temperature
- Outside temperature compensation



3

RWD Universal..



Universal controller for HVAC systems

Universal controller with P or PI action for heating, ventilation and air conditioning.

Auxiliary functions
- PI limiter function (absolute and relative limit)
- Remote setpoint
- Setpoint compensation
- Winter/summer mode changeover (analogue or digital input)
- Cascade control
- Maximum priority for cooling / dehumidifying

Frequency	50/60 Hz
Digital inputs	Potential-free input signal
Digital input, contact query	DC 15 mA DC 15 V
Digital inputs, number	1
Universal inputs, number	2
Universal input, signal	LG-Ni1000 DC 0...10 V Pt1000
Degree of protection	IP20

Range overview RWD..

Operating voltage [V]	Analog outputs, number	Relay outputs, number	Control loops, number	Data sheet	Stock No.	Product No.
AC 230		2	1	N3341	BPZ:RWD32	**RWD32**
AC 24		2	1	N3341	BPZ:RWD82	**RWD82**
AC 24	2		1	N3342	BPZ:RWD62	**RWD62**
AC 24	1	1	1	N3343	BPZ:RWD68	**RWD68**

Accessories for RWD..

Product Title	s. page	Data sheet	Stock No.	Product No.
Protective small enclosure for wall mounting, not applicable for RWD32	11-14		BPZ:ARG62.21	**ARG62.21**
Protective big enclosure for wall mounting	11-7		BPZ:ARG62.22	**ARG62.22**
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**

Field devices for RWD..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-14	N1721	BPZ:QAA24	**QAA24**
Outside sensor LG-Ni1000	11-7	N1811	BPZ:QAC22	**QAC22**
Duct temperature sensor 400 mm, LG-Ni1000	11-14	N1761	BPZ:QAM2120.040	**QAM2120.040**
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	11-14	N1991	BPZ:BSG21.1	**BSG21.1**

Application examples RWD..

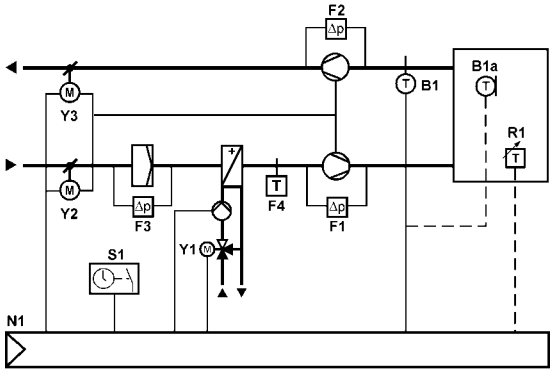
These are only a few examples of many applications that can be done with the with controllers RWD..
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RWD.. data sheet.

Return air temperature control

RWD62

ADA002 WC6 HQ a

- Room temperature control by modulating the heater battery valve
- Frost protection with frost protection thermostat (independent of controller) when tripped, heater battery valve fully opens, dampers close, fan switches off

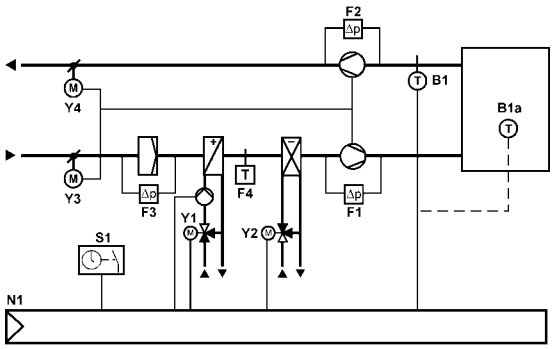


Return air temperature control

RWD62

ADC003 WC6 HQ a

- Return air temperature control by modulating the heater battery valve and the cooler battery valve in sequence
- Frost protection with frost protection thermostat (independent of controller): when tripped, heater battery valve fully opens, supply and extract fans switch off, outside air and extract air dampers close
- Use of an external time switch to provide day/night settings
- Summer compensation



3

RWD Heat Pump..



Temperature controllers for heat pump, heating and cooling applications

- Multistage heating and cooling temperature controllers
- Programmable controllers with standard pre-configured applications
- Programmable via push buttons or a software tool
- Suitable for 1, 2 or 3 compressor units
- Heat/cool or reversing valve output configuration
- Adjustable compressor time delays
- Selectable alarm inputs
- Economizer "Open Air" control for improved comfort and energy savings
- LED indicators for heat/cool

Auxiliary functions
The second analog input is used for the following functions:
- Standby (on/off)
- Remote setpoint adjustement
- Alarm
- Filter alarm
- Sepoint compensation
- Sensor averaging
- Winter/summer setpoint changeover (analog or digital input)
- Sensor select
- Active sensor

Digital functions
- Day/night changeover
- Standby
- Alarm
- Filter alarm

Frequency	50/60 Hz
Relay outputs, number	4
Relay outputs	potential-free switching contact AC 24...230 V 4(3) A
Mounting location	Panel mounting
Degree of protection	IP20
Dimensions (W x H x D)	130 x 106 x 56.5 mm

Range overview Heat Pump controller RWD..

Operating voltage	Universal inputs, number	Digital inputs, number	Analog outputs	Relay outputs, number	Data sheet	Stock No.	Product No.
AC 230		1		4	N3345	BPZ:RWD31	**RWD31**
AC 230	2	1		4	N3346	BPZ:RWD34	**RWD34**
AC 24	2	1		4	N3346	BPZ:RWD44	**RWD44**
AC 24	3	1	1	4	N3347	BPZ:RWD45	**RWD45**

Accessories for RWD..

Product Title	s. page	Data sheet	Stock No.	Product No.
Protective small enclosure for wall mounting, not applicable for RWD32	11-14		BPZ:ARG62.21	**ARG62.21**
Protective big enclosure for wall mounting	11-7		BPZ:ARG62.22	**ARG62.22**
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**

Universal controllers

RLU..



- Tested, predefined applications
- Flexible configuration
- Suited for the controlled variables temperature, relative / absolute humidity, pressure / differential pressure, air flow rate, indoor air quality, etc.
- Autonomous sequence controllers with P, PI or PID mode
- Integrated operation
- No commissioning tool required (optional)

Data sheet	N3101
Operating voltage	AC 24 V
Frequency	50/60 Hz
Digital inputs	Potential-free input signal
Digital input, contact query	5 mA DC 15 V
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	Potential-free switching contact
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A
Degree of protection	IP20

Range overview RLU..

Digital inputs, number	Universal inputs, number	Analog outputs, number	Relay outputs, number	Control loops, number	Stock No.	Product No.
1	4	0	2	1	BPZ:RLU202	**RLU202**
1	4	2	0	1	BPZ:RLU220	**RLU220**
1	4	2	2	2	BPZ:RLU222	**RLU222**
2	5	3	2	2	BPZ:RLU232	**RLU232**
2	5	3	6	2	BPZ:RLU236	**RLU236**

Accessories for RLU..

Product Title	Data sheet	Stock No.	Product No.
Front panel mounting frame	N3101	BPZ:ARG62.201	**ARG62.201**

3

Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside / room temperature sensor DC 0..10V	11-12	N1814	BPZ:QAC3161	**QAC3161**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Strap-on temperature sensor with cable LG-Ni1000	11-11	N1802	BPZ:QAD26.220	**QAD26.220**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Immersion temperature sensor 150 mm, LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.015	**QAE2120.015**
Immersion temperature sensor 100 mm, LG-Ni1000, without protection pocket	11-7	N1781	BPZ:QAE2121.010	**QAE2121.010**
Immersion temperature sensor 100 mm DC 0...10 V	11-8	N1782	BPZ:QAE2164.010	**QAE2164.010**
Immersion temperature sensor 150 mm DC 0...10 V	11-8	N1782	BPZ:QAE2164.015	**QAE2164.015**
Immersion temperature sensur Ø 4 mm with cable and fitting	11-9	N1790	BPZ:QAE26.9..	**QAE26.9..**
Duct temperature sensor 400 mm, Pt1000	11-5	N1761	BPZ:QAM2112.040	**QAM2112.040**
Duct temperature sensor 400 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.040	**QAM2120.040**
Duct temperature sensor 2000 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.200	**QAM2120.200**
Duct temperature sensor 6000 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.600	**QAM2120.600**
Frost sensor, modulating, capillary tube 2000 mm	9-12	N1821	BPZ:QAF63.2	**QAF63.2**
Frost sensor, modulating, capillary tube 6000 mm	9-12	N1821	BPZ:QAF63.6	**QAF63.6**
Cable temperature sensor for high-temperature applications (180°C)	11-15	N1833	BPZ:QAP21.2	**QAP21.2**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Window pane temperature sensor	11-13	N1830	BPZ:QAT22	**QAT22**
Solar sensor	11-13	N1943	BPZ:QLS60	**QLS60**
Differential pressure sensor for liquids and gases	11-28	N1923	BPZ:QBE61.3-DP..	**QBE61.3-DP..**
Differential pressure sensor for liquids and gase, DC 0...10 V	11-28	N1920	BPZ:QBE63-DP..	**QBE63-DP..**
Differential pressure sensor for liquids and gases 0...400 kPa	11-29	N1921	BPZ:QBE64-DP4	**QBE64-DP4**
Pressure sensor for refrigerants / DC 0...10 V	11-30	N1907	BPZ:QBE2001-P..U	**QBE2001-P..U**
Pressure sensor for liquids and gases	11-27	N1909	BPZ:QBE2002-P..	**QBE2002-P..**
Air duct differential pressure sensor, DC 0...10 V	11-23	N1916	BPZ:QBM65..	**QBM65..**
Differential pressure sensor, DC 0...10 V	11-25	N1910	BPZ:QBM66..	**QBM66..**

Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Duct sensor for humidity (DC 0...10 V)	11-20	N1864	BPZ:QFM2100	**QFM2100**
Duct sensor for humidity (0...10 V) and temperature (Ni1000)	11-20	N1864	BPZ:QFM2120	**QFM2120**
Duct sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V)	11-20	N1864	BPZ:QFM2160	**QFM2160**
Duct sensor for humidity (DC 0...10 V) for demanding requirements	11-21	N1882	BPZ:QFM3100	**QFM3100**
Duct sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V) for demanding requirements	11-21	N1882	BPZ:QFM3160	**QFM3160**
Duct sensor for humidity (0...10 V) and temperature (0...10 V) with calibration certificate	11-21	N1883	BPZ:QFM4160	**QFM4160**
Duct air quality sensor CO_2/ temperature / rel. Humidity / VOC	11-34	N1962	BPZ:QPM21..	**QPM..**
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	16-17	N1991	BPZ:BSG21.1	**BSG21.1**
Setpoint adjuster, passive, temperature ranges: -20...20 °C; 20...60 °C; -3...3 K	16-17	N1991	BPZ:BSG21.5	**BSG21.5**
Active setpoint adjuster 0...100 %, for flush panel mounting	16-17	N1992	BPZ:BSG61	**BSG61**
Flue gas temperature sensor Pt1000	11-13	N1846	BPZ:FGT-PT1000	**FGT-PT1000**
Duct sensor for air velocity	11-32	N1932	BPZ:QVM62.1	**QVM62.1**

Monitors

Product Title	s. page	Data sheet	Stock No.	Product No.
Frost monitor, air side, 2-point	9-13	N1283	BPZ:QAF64..	**QAF64..**
Frost monitor, 2-point	9-14	N1284	BPZ:QAF81..	**QAF81..**
Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device	9-18	N1518	BPZ:QFA1000	**QFA1000**
Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment	9-18	N1518	BPZ:QFA1001	**QFA1001**
Duct hygrostat, setpoint setting range 15...95 % r.h.	9-19	N1514	BPZ:QFM81.2	**QFM81.2**
Room hygrostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device	9-19	N1514	BPZ:QFM81.21	**QFM81.21**
Condensation monitor	9-20	N1542	BPZ:QXA2000	**QXA2000**
Differential pressure monitor	9-22	N1552	BPZ:QBM81..	**QBM81..**
Changeover thermostat, changeover, 30 °C / 19 °C, IP54	9-10	N1295	BPZ:RYT182	**RYT182**

Autonomous controllers - Synco™ 200
Field devices for RLU..

Room units

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room unit with room temperature sensor and setpoint adjuster	10-3	N1721	BPZ:QAA25	**QAA25**
Room unit with room temperature sensor and setpoint readjuster -3...3 K	10-3	N1721	BPZ:QAA27	**QAA27**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-4	N1722	BPZ:QAA64	**QAA64**
Room sensor for humidity (DC 0...10 V)	11-17	N1857	BPZ:QFA2000	**QFA2000**
Room sensor for humidity (DC 0...10 V) and temperature (LG-Ni1000)	11-17	N1857	BPZ:QFA2020	**QFA2020**
Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V)	11-17	N1857	BPZ:QFA2060	**QFA2060**
Room sensor for humidity (DC 0...10 V) for demanding requirements	11-18	N1858	BPZ:QFA3100	**QFA3100**
Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V) for demanding requirements	11-18	N1858	BPZ:QFA3160	**QFA3160**
Room sensor for humidity (DC 0..10V) and temperature (DC 0..10V) with calibration certificate	11-18	N1859	BPZ:QFA4160	**QFA4160**
Indoor air quality controller with integrated VOC sensor for mixed gas	9-24	N1571	BPZ:QPA84	**QPA84**
Room air quality sensor CO_2 / temperature / rel. Humidity / VOC	11-33	N1961	BPZ:QPA20..	**QPA..**

Step switches, signal converters, transformers and display

Product Title	s. page	Data sheet	Stock No.	Product No.
Digital time switch, 1-channel, with 7-day program	16-19	N5243	BPZ:SEH62.1	**SEH62.1**
Variable speed drive	16-5	N5192	BPZ:SED2..	**SED2..**
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**
Current valve	16-13	N4937	BPZ:SEA45.1	**SEA45.1**
Signal converter DC 0...10 V or DC 0 / 10 V in AC 0 / 24 V	16-14	N5102	BPZ:SEM61.4	**SEM61.4**
Signal converter with preprogrammed applications	16-16	N5146	BPZ:SEZ220	**SEZ220**
Universal digital indicator	16-18	N5312	BPZ:BAU200	**BAU200**

Service tool

Product Title	s. page	Data sheet	Stock No.	Product No.
Service tool for KNX/LPB	8-12	N5655	BPZ:OCI700.1	**OCI700.1**

3

Application examples Synco™ 200

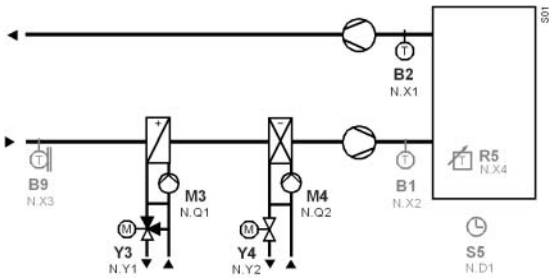
These are only a few examples of many applications that can be done with the with Synco™200 controllers: RLU..
More Synco™200 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RLU.. data sheet..

Extract air (room) temperature control

RLU222

ADC002 LU2 HQ

- Extract air (room) temperature control via the heating coil valve and cooling coil valve in sequence
- Control of the heating coil and cooling coil pumps
- Operating mode selection Comfort / Protection

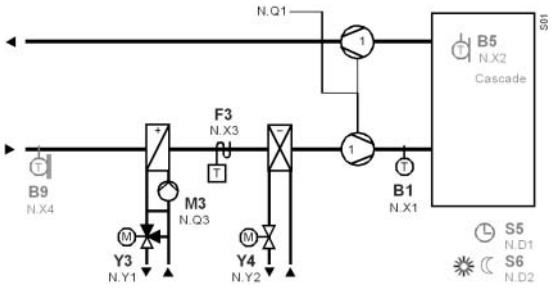


Supply air temperature control with frost protection and release of fan

RLU232

ADC015 LU3 HQ

- Supply air temperature control via the heating coil valve and cooling coil valve in sequence
- Control of the heating coil and cooling coil pumps
- Fan release via relay output
- Frost protection with frost protection monitor
- Operating mode selection Comfort / Protection
- Operating mode selection Comfort/Economy

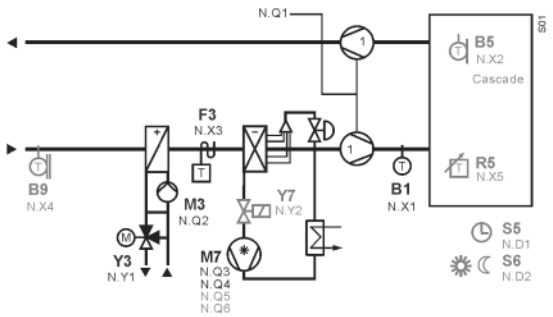


Supply air (room) temperature control with frost protection and release of fan

RLU236

ADC017 LU3 HQ

- Supply air temperature control via the heating coil valve and the direct expansion evaporator in sequence
- Control of the heating coil pump
- Fan release via relay output
- Frost protection with frost protection monitor
- Operating mode selection Comfort / Protection
- Operating mode selection Comfort/Economy



Communicative controllers - Synco™ 700
Modular universal controllers RMU..

RMUB..



Universal controller

- Universal controllers with integrated control and supervisory functions
- Tested, predefined applications (refer to Application Catalog)
- Flexible configuration
- Suited for the controlled variables temperature, relative / absolute humidity, pressure / differential, air flow rate, indoor air quality, etc.
- Autonomous sequence controllers with P, PI or PID mode
- Functions can be extended (extension modules)
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

Extension modules complement the Synco 700 universal controllers and offer extra functions. The extension modules are attached to the controller. Full operation from commissioning to enduser operation via the operator unit.

Available extension modules:
- 1 universal module RMZ785
- 2 universal modules RMZ787
- 2 universal modules RMZ788

Total maximal 4 extension modules per RMU7..B can be connected.

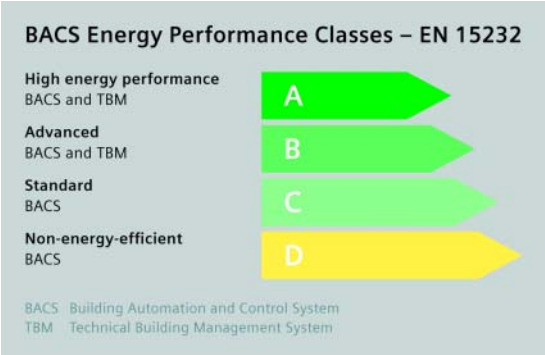
Available operator units:
- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791
- Bus operating unit RMZ792

Data sheet	N3150
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal input, signal	LG-Ni1000 2 x LG-Ni1000 T1 (PTC) Pt1000 0...1000 Ohm 1000...1175 Ohm DC 0...10 V Digital pulse contact Potential-free digital status contact
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	Potential-free switching contact
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)
Dimensions (W x H x D)	173 x 90 x 80 mm

Range overview RMU7..B..

Universal inputs, number	Analog outputs, number	Relay outputs, number	Control loops, number	Loaded languages	Stock No.	Product No.
6	2	2	1	de, fr, it, es	BPZ:RMU710B-1	**RMU710B-1**
6	2	2	1	de, en, fr, nl	BPZ:RMU710B-2	**RMU710B-2**
6	2	2	1	da, fi, sv, no	BPZ:RMU710B-3	**RMU710B-3**
6	2	2	1	cs, hu, pl, sk, ru, bg	BPZ:RMU710B-4	**RMU710B-4**
6	2	2	1	sr, hr, sl, ro, el, tr	BPZ:RMU710B-5	**RMU710B-5**
8	3	4	2	de, fr, it, es	BPZ:RMU720B-1	**RMU720B-1**
8	3	4	2	de, en, fr, nl	BPZ:RMU720B-2	**RMU720B-2**
8	3	4	2	da, fi, sv, no	BPZ:RMU720B-3	**RMU720B-3**
8	3	4	2	cs, hu, pl, sk, ru, bg	BPZ:RMU720B-4	**RMU720B-4**
8	3	4	2	sr, hr, sl, ro, el, tr	BPZ:RMU720B-5	**RMU720B-5**
8	4	6	3	de, fr, it, es	BPZ:RMU730B-1	**RMU730B-1**
8	4	6	3	de, en, fr, nl	BPZ:RMU730B-2	**RMU730B-2**
8	4	6	3	da, fi, sv, no	BPZ:RMU730B-3	**RMU730B-3**
8	4	6	3	cs, hu, pl, sk, ru, bg	BPZ:RMU730B-4	**RMU730B-4**
8	4	6	3	sr, hr, sl, ro, el, tr	BPZ:RMU730B-5	**RMU730B-5**

3



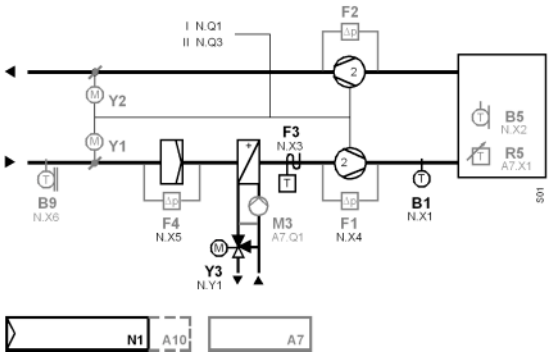
Application examples RMU710B..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU710B..
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU710B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2007. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.
www.siemens.com/hit

RMU710B..

ADA001 U1B HQ

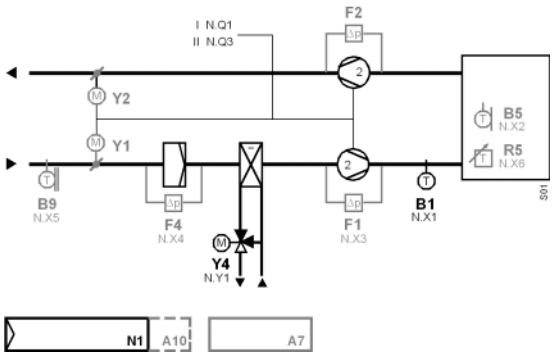


Room-supply air temperature cascade control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

RMU710B..

ADB001 U1B HQ





To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the cooling coil valve
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

The indicated energy efficiency classification can be attained only if the following functions are implemented:

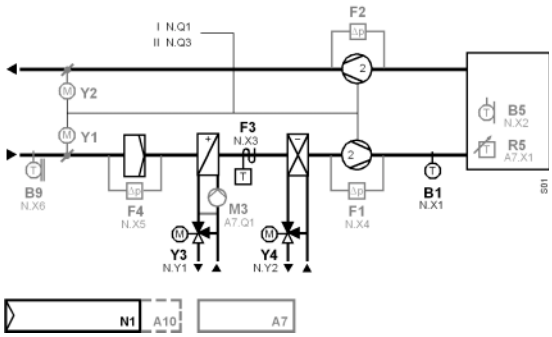
- Air flow control at the room level on demand (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply temperature control, variable set point with load dependant compensation
- Humidity control (Not applicable, as no humidity control)

Room-supply air temperature cascade control

RMU710B..

ADC001 U1B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and the cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor



Room-supply air temperature cascade control

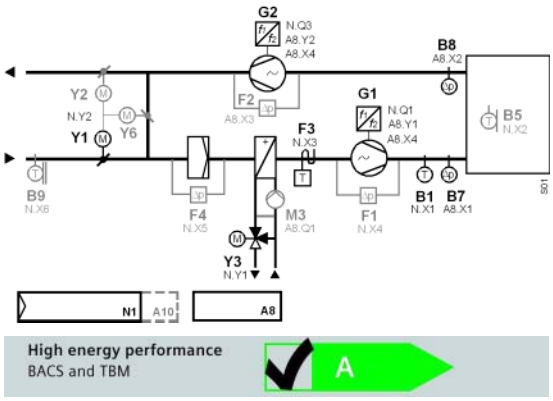
RMU710B..

AEA001 U1B DE

- 7-day time switch with holiday / special day program
- Control of a variable-speed fan
- Control of the supply air temperature via the mixed air dampers and the heating coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling (Not applicable due to lack of cooling sequence)
- Humidity control (Not applicable, as no humidity control)
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A

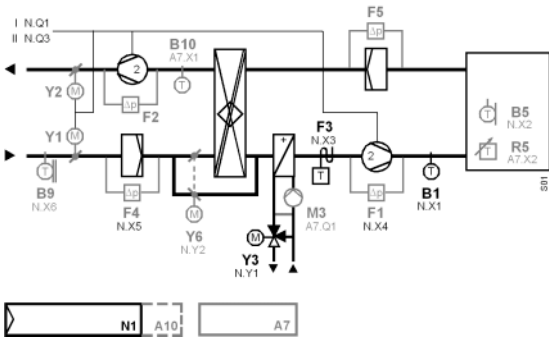


To fulfill the classification, the plant must be equipped with all indicated functions.

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RMU710B..

ADAE01 U1B HQ





To fulfill the classification, the plant must be equipped with all indicated functions.

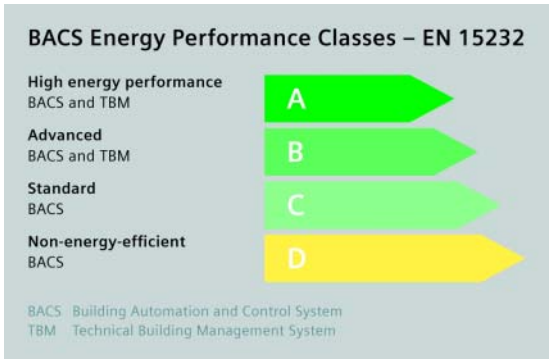
Room-supply air temperature cascade control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system and the heating coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- Heat exchanger overheating control
- Supply Temperature control (Variable set point with load dependant compensation)

Application examples RMU720B..



These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU720B..
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU720B.. data sheet.

The evaluation of the energy efficiency classification is based on EN15232:2007. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.
www.siemens.com/hit

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Room-supply air temperature cascade control

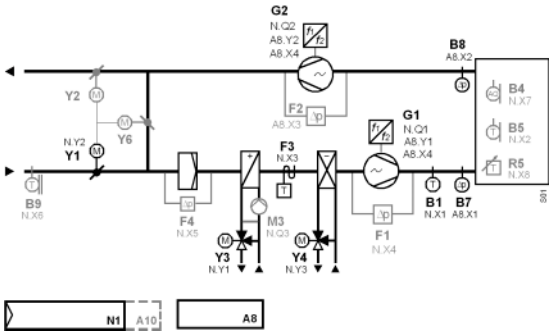
RMU720B..

AEC001 U2B DE

- 7-day time switch with holiday / special day program
- Control of a variable-speed fan
- Control of the supply air temperature via the mixed air dampers, the heating coil valve and cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply temperature control, variable set point with load dependant compensation





To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade control

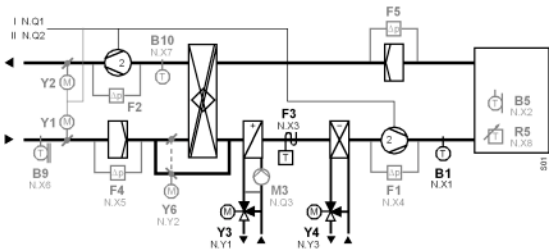
RMU720B..

ADCE01 U2B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and the cooling coil valve in sequence
- Frost protection with the frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filter with a differential pressure sensor

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation



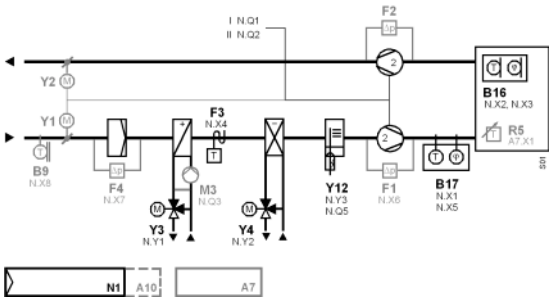


To fulfill the classification, the plant must be equipped with all indicated functions.

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RMU720B..

ADFB01 U2B HQ

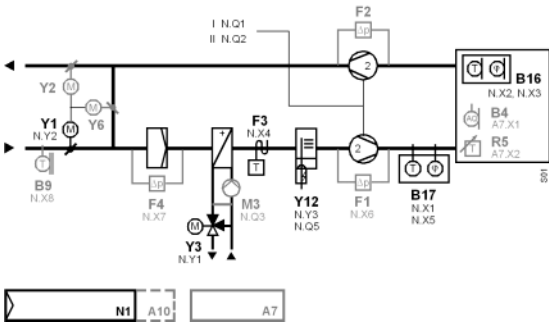


Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with differential pressure sensors
- Limitation of supply air humidity

RMU720B..

AEDB01 U2B HQ





To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the mixed air dampers and the heating coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

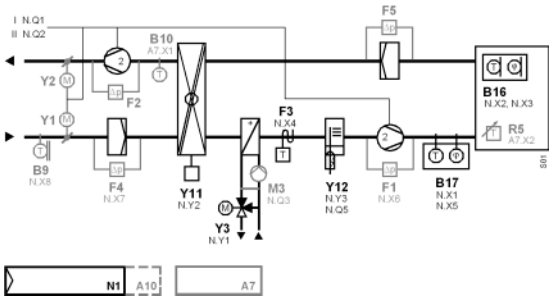
3

Room-supply air temperature cascade and humidity control

RMU720B..

ADDP01 U2B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system and the heating coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors
- Limitation of supply air humidity





To fulfill the classification, the plant must be equipped with all indicated functions.

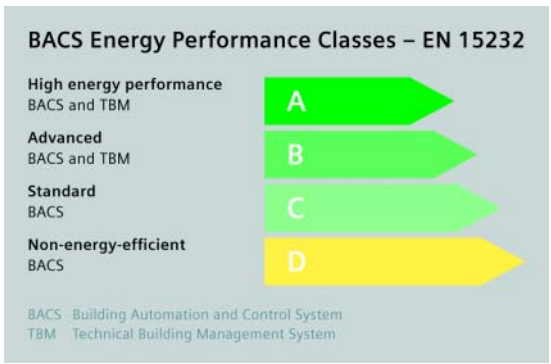
The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

Application examples RMU730B..

These are only a few examples of many applications that can be done with the with Synco™700 controllers: RMU730B..
More Synco™700 applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RMU730B.. data sheet.

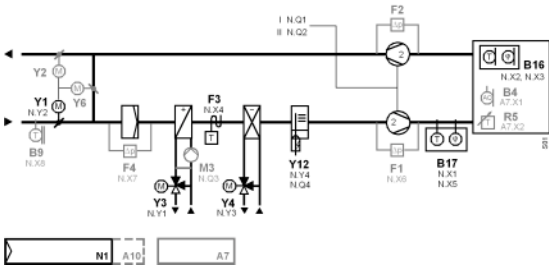
The evaluation of the energy efficiency classification is based on EN15232:2007. For a determination of the energy efficiency classification of the application, please use the "HIT Tool".
Further details are available in the manual "Building automation - impact on energy efficiency" in our HIT Online.
www.siemens.com/hit



3

RMU730B..

AEFB01 U3B HQ



Advanced
BACS and TBM

B

To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade and humidity control

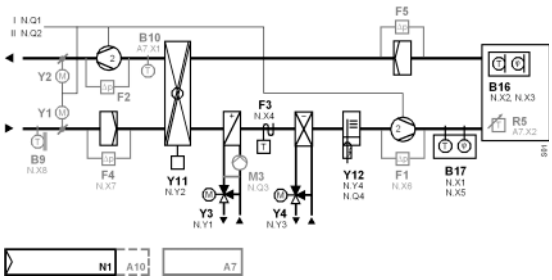
- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the mixed air dampers, the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

RMU730B..

ADFP01 U3B HQ



Advanced
BACS and TBM

B

To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Control of the supply air temperature via the heat recovery system, the heating coil valve and cooling coil valve in sequence
- Control of room humidity via the air humidifier (on command and modulating positioning signal)
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply and extract air filters with differential pressure sensors
- Limitation of the supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor must be integrated as an additional feature)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- Heat exchanger defrost control (Exhaust air temperature sensor required)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control

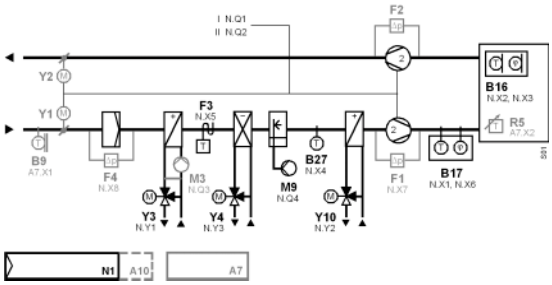
3

Room-supply air temperature cascade and humidity control

RMU730B..

ADZA01 U3B HQ

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the reheater valve and the cooling coil valve in sequence
- Control of the dewpoint temperature via the preheater valve and the cooling coil valve in sequence
- Control of room humidification via the air humidifier (on command)
- Control of room dehumidification by changing the outputs of dewpoint temperature control
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity by shutting down the preheater and by switching off the air humidifier in sequence



Room-supply air temperature cascade and humidity control

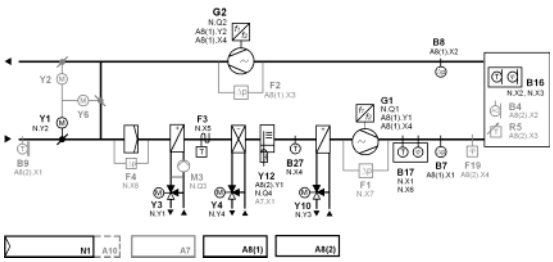
RMU730B..

AEZH01 U3B DE

- 7-day time switch with holiday / special day program
- Control of variable speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the mixed air dampers, the reheater valve and cooling coil valve in sequence
- Control of the dewpoint temperature via the mixed air dampers, the preheater valve and cooling coil valve in sequence
- Control of room humidification via the air humidifier (on command)
- Control of room dehumidification by changing the outputs of dewpoint temperature control
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset
- With heat exchanger overheating control
- Free mechanical cooling
- Supply Temperature control, variable set point with load dependant compensation
- Room or exhaust air humidity control
- Home automation / building automation and control system and technical home/building management required satisfying Efficiency Class A



High energy performance
BACS and TBM

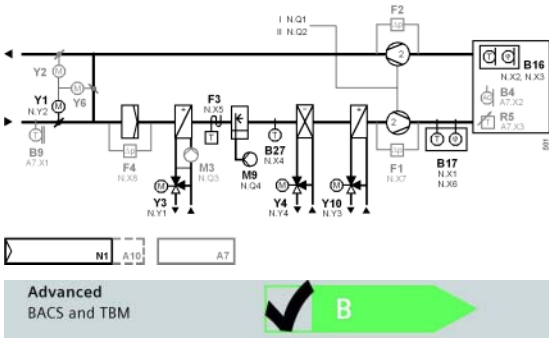
A

To fulfill the classification, the plant must be equipped with all indicated functions.

3

RMU730B..

AEZH02 U3B HQ



To fulfill the classification, the plant must be equipped with all indicated functions.

Room-supply air temperature cascade and humidity control

- 7-day time switch with holiday / special day program
- Control of a 2-speed fan
- Room (extract air)-supply air temperature cascade control with minimum and maximum limitation of the supply air temperature
- Control of the supply air temperature via the mixed air dampers, the reheater valve and the cooling coil valve in sequence
- Control of the dewpoint temperature via the mixed air dampers and the pre-heater valve in sequence
- Control of room humidification via the air humidifier (on command) and the cooling coil valve in sequence
- Frost protection with frost protection monitor
- Supervision of the supply and extract air fans with differential pressure sensors
- Supervision of the supply air filter with a differential pressure sensor
- Limitation of supply air humidity by switching off the air humidifier in sequence

The indicated energy efficiency classification can be attained only if the following functions are implemented:

- Air flow control at the room level, demand control (Air quality sensor required)
- Air flow control at the air handler level, automatic flow or pressure control with or without pressure reset (Automatic fan step switching corresponds to Efficiency Class B / Step 2 must be switched based on air quality)
- With heat exchanger overheating control
- Free mechanical cooling (Outside air temperature and room temperature sensor required)
- Supply Temperature control, variable set point with load dependant compensation
- With supply air humidity control

Switching and monitoring device

RMS705B..



In connection with the function blocks, the RMS705B complements the range of Synco700 products as a freely configurable unit for
- control and supervisory functions in heating, ventilation and refrigeration plant
- non-standard applications

and, for this reason, offers no predefined standard applications.

The RMS705B is especially suited for the following functions:
- Connection of additional universal alarm inputs
- Adding free inputs for display and supervision
- Event logging (e.g. legionella function)
- Additional time programs (ON / OFF) for basic functions
- Maximum and minimum selection
- Calculation of average
- Calculation of enthalpy, enthalpy differential, absolute humidity, dewpoint and wet bulb temperature
- Logic function blocks for switching on / off depending on different conditions
- Lead / lag control of pumps, fans, motors, chillers, etc., with automatic changeover
- Step switch with linear, binary or flexible functionality
- Autonomous sequence controllers with P, PI or PID mode

Available extension modules:
- 1 universal module RMZ785
- 2 universal modules RMZ787
- 2 universal modules RMZ788

Total maximal 4 extension modules per RMS705B can be connected.

Suitable types of operator units:
- Plug-in operator unit type RMZ790
- Detached operator unit type RMZ791
- Bus operating unit type RMZ792

Data sheet	N3124
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	8
Universal input, signal	LG-Ni1000 2 x LG-Ni1000 T1 (PTC) Pt1000 0…1000 Ohm DC 0…10 V Digital pulse contact Potential-free digital status contact
Analog outputs, number	4
Analog output, signal	DC 0…10 V
Analog output, current	Max. 1 mA
Relay outputs, number	6
Relay outputs	Potential-free switching contact
Relay output, switching voltage	AC 19…250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)
Degree of protection	IP20
Dimensions (W x H x D)	173 x 90 x 80 mm

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Range overview RMS705B..

Product Title	Data sheet	Stock No.	Product No.
Switching and monitoring device with languages de, fr, it, es, pt	N3124	S55370-C100	**RMS705B-1**
Switching and monitoring device with languages de, fr, nl, en	N3124	S55370-C101	**RMS705B-2**
Switching and monitoring device with languages da, fi, no, sv	N3124	S55370-C102	**RMS705B-3**
Switching and monitoring device with languages pl, cs, hu, ru, sk, bg	N3124	S55370-C103	**RMS705B-4**
Switching and monitoring device with languages el, ro, sl, sr, hr, tr	N3124	S55370-C104	**RMS705B-5**
Switching and monitoring device with language zh	N3124	S55370-C105	**RMS705B-6**

Switching and monitoring device

RMS705..



In connection with the function blocks, the RMS705 complements the range of Synco700 products as a freely configurable unit for
- control and supervisory functions in heating, ventilation and refrigeration plant
- non-standard applications

and, for this reason, offers no predefined standard applications. In the case of repeatedly used solutions, the parameter sets can be reused and archived.

The RMS705 is especially suited for the following functions:
- Connection of additional universal alarm inputs
- Adding free inputs for display and supervision
- Trend display of data
- Pulse counter (read only, not suited for billing purposes)
- Hours run counter
- Event logging (e.g. legionella function)
- Additional time programs (ON / OFF) for basic functions
- Logic function blocks for switching on / off depending on different conditions
- Lead / lag control of pumps, fans, motors, chillers, etc., with automatic changeover
- Step switch with linear, binary or flexible functionality
- Control of system pumps depending on heating or cooling demand
- Simple control loops

Suitable types of extension modules:
Total of 3 extension modules, selection of:
- Maximum 2 universal modules type RMZ785
- Maximum 2 universal modules type RMZ787

This means that in combination with the suitable extension modules, the following number of inputs and outputs are available:
- Maximum 28 universal inputs
- Maximum 14 control output relays
- Maximum 4 modulating outputs DC 0...10 V

Suitable types of operator units:
- Plug-in operator unit type RMZ790
- Detached operator unit type RMZ791
- Bus operating unit type RMZ792

Data sheet	N3123
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	8
Universal input, signal	0...1000 Ohm 2 x LG-Ni1000 DC 0...10 V Digital pulse contact Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog outputs, number	4
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	Potential-free switching contact
Relay outputs, number	6
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)

Communicative controllers - Synco™ 700
Switching and monitoring device RMS..

Range overview RMS705..

Product Title	Data sheet	Stock No.	Product No.
Switching and monitoring device with languages de, fr, it, es	N3123	BPZ:RMS705-1	**RMS705-1**
Switching and monitoring device with languages de, fr, en, nl	N3123	BPZ:RMS705-2	**RMS705-2**
Switching and monitoring device with languages da, fi, sv, no	N3123	BPZ:RMS705-3	**RMS705-3**
Switching and monitoring device with languages pl, cs, sk, hu, ru	N3123	BPZ:RMS705-4	**RMS705-4**
Switching and monitoring device with languages sr, hr, sl, ro, el	N3123	BPZ:RMS705-5	**RMS705-5**

3

Plug-in type operator unit — RMZ790

- Operator unit plugs into the Synco™ 700 controllers
- For displaying and changing plant data for service staff and enduser
- Clear-text operation
- Can be plugged in and removed during operation
- Power supply via the controller



Data sheet N3111

	Stock No.	Product No.
	BPZ:RMZ790	**RMZ790**

Detached operator unit with 3 m cable — RMZ791

Like plug-in type operator unit, but:
- Other mounting choices (typically for control panel door or wall mounting)
- Larger display
- Connection via a prefabricated 3 m cable, supplied as standard



Data sheet N3112

	Stock No.	Product No.
	BPZ:RMZ791	**RMZ791**

Bus operator unit — RMZ792

Communicating operator unit for operating up to 150 controllers, room units and central units from the Synco™ 700 range via KNX bus.
Favorite pages can be freely defined. Designed for fixed installation or mobile use.



Data sheet N3113

	Stock No.	Product No.
	BPZ:RMZ792	**RMZ792**

Memory card for bus operator unit — RMA792

Memory card with languages and device descriptions. 8 MB



Data sheet N3113

	Stock No.	Product No.
	BPZ:RMA792	**RMA792**

3

RMZ78..



Universal modules

Additional inputs and outputs required by the Synco™ 700 controllers can be provided by these modules. A description of the functions is given with the relevant controller module.

Data sheet	N3146
Voltage supply	Supply from controller module
Power consumption	2 VA
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	switching contact, potential-free
Relay output, switching voltage	AC 19...265 V
Relay output, switching current	4 (3) A

Range overview RMZ78..

Universal inputs, number	Analog outputs, number	Relay outputs, number	Stock No.	Product No.
8	0	0	BPZ:RMZ785	**RMZ785**
4	0	4	BPZ:RMZ787	**RMZ787**
4	2	2	BPZ:RMZ788	**RMZ788**

RMZ780



Module connector

Module connector for detached mounting of extension modules within the control panel.
Distance for detached mounting: Maximum 10 m.

Data sheet	N3138

Stock No.	Product No.
BPZ:RMZ780	**RMZ780**

Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Outside / room temperature sensor DC 0..10V	11-12	N1814	BPZ:QAC3161	**QAC3161**
Strap-on temperature sensor LG-Ni1000	11-11	N1801	BPZ:QAD22	**QAD22**
Strap-on temperature sensor with cable LG-Ni1000	11-11	N1802	BPZ:QAD26.220	**QAD26.220**
Immersion temperature sensor 100 mm LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.010	**QAE2120.010**
Immersion temperature sensor 150 mm, LG-Ni1000, with protection pocket	11-7	N1781	BPZ:QAE2120.015	**QAE2120.015**
Immersion temperature sensor 100 mm, LG-Ni1000, without protection pocket	11-7	N1781	BPZ:QAE2121.010	**QAE2121.010**
Immersion temperature sensor 150 mm LG-Ni1000, without protection pocket	11-7	N1781	BPZ:QAE2121.015	**QAE2121.015**
Immersion temperature sensor 100 mm DC 0...10 V	11-8	N1782	BPZ:QAE2164.010	**QAE2164.010**
Immersion temperature sensor 150 mm DC 0...10 V	11-8	N1782	BPZ:QAE2164.015	**QAE2164.015**
Immersion temperature sensur Ø 4 mm with cable and fitting	11-9	N1790	BPZ:QAE26.9..	**QAE26.9..**
Duct temperature sensor 400 mm, Pt1000	11-5	N1761	BPZ:QAM2112.040	**QAM2112.040**
Duct temperature sensor 400 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.040	**QAM2120.040**
Duct temperature sensor 2000 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.200	**QAM2120.200**
Duct temperature sensor 6000 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.600	**QAM2120.600**
Frost sensor, modulating, capillary tube 2000 mm	9-12	N1821	BPZ:QAF63.2	**QAF63.2**
Frost sensor, modulating, capillary tube 6000 mm	9-12	N1821	BPZ:QAF63.6	**QAF63.6**
Cable temperature sensor for high-temperature applications (180°C)	11-15	N1833	BPZ:QAP21.2	**QAP21.2**
Cable temperature sensor silicone 1.5 m, LG-Ni1000	11-14	N1831	BPZ:QAP21.3	**QAP21.3**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Window pane temperature sensor	11-13	N1830	BPZ:QAT22	**QAT22**
Solar sensor	11-13	N1943	BPZ:QLS60	**QLS60**
Differential pressure sensor for liquids and gases	11-28	N1923	BPZ:QBE61.3-DP..	**QBE61.3-DP..**
Differential pressure sensor for liquids and gase, DC 0...10 V	11-28	N1920	BPZ:QBE63-DP..	**QBE63-DP..**
Differential pressure sensor for liquids and gases 0...400 kPa	11-29	N1921	BPZ:QBE64-DP4	**QBE64-DP4**
Pressure sensor for refrigerants / DC 0...10 V	11-30	N1907	BPZ:QBE2001-P..U	**QBE2001-P..U**
Pressure sensor for liquids and gases	11-27	N1909	BPZ:QBE2002-P..	**QBE2002-P..**

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Sensors, setpoint adjusters

Product Title	s. page	Data sheet	Stock No.	Product No.
Air duct differential pressure sensor, DC 0...10 V	11-23	N1916	BPZ:QBM65..	**QBM65..**
Differential pressure sensor, DC 0...10 V	11-25	N1910	BPZ:QBM66..	**QBM66..**
Duct sensor for humidity (DC 0...10 V)	11-20	N1864	BPZ:QFM2100	**QFM2100**
Duct sensor for humidity (0...10 V) and temperature (Ni1000)	11-20	N1864	BPZ:QFM2120	**QFM2120**
Duct sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V)	11-20	N1864	BPZ:QFM2160	**QFM2160**
Duct sensor for humidity (DC 0...10 V) for demanding requirements	11-21	N1882	BPZ:QFM3100	**QFM3100**
Duct sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V) for demanding requirements	11-21	N1882	BPZ:QFM3160	**QFM3160**
Duct sensor for humidity (0...10 V) and temperature (0...10 V) with calibration certificate	11-21	N1883	BPZ:QFM4160	**QFM4160**
Duct air quality sensor CO_2/ temperature / rel. Humidity / VOC	11-34	N1962	BPZ:QPM21..	**QPM..**
Setpoint adjuster, passive, scale 0...50 °C (exchangeable)	16-17	N1991	BPZ:BSG21.1	**BSG21.1**
Setpoint adjuster, passive, temperature ranges: -20...20 °C; 20...60 °C; -3...3 K	16-17	N1991	BPZ:BSG21.5	**BSG21.5**
Active setpoint adjuster 0...100 %, for flush panel mounting	16-17	N1992	BPZ:BSG61	**BSG61**
Flue gas temperature sensor Pt1000	11-13	N1846	BPZ:FGT-PT1000	**FGT-PT1000**
Duct sensor for air velocity	11-32	N1932	BPZ:QVM62.1	**QVM62.1**

Monitors

Product Title	s. page	Data sheet	Stock No.	Product No.
Frost monitor, air side, 2-point	9-13	N1283	BPZ:QAF64..	**QAF64..**
Frost monitor, 2-point	9-14	N1284	BPZ:QAF81..	**QAF81..**
Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device	9-18	N1518	BPZ:QFA1000	**QFA1000**
Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment	9-18	N1518	BPZ:QFA1001	**QFA1001**
Duct hygrostat, setpoint setting range 15...95 % r.h.	9-19	N1514	BPZ:QFM81.2	**QFM81.2**
Room hygrostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device	9-19	N1514	BPZ:QFM81.21	**QFM81.21**
Condensation monitor	9-20	N1542	BPZ:QXA2000	**QXA2000**
Differential pressure monitor	9-22	N1552	BPZ:QBM81..	**QBM81..**
Temperature controller	9-3	N1205	BPZ:RAK-TR.1..H	**RAK-TR.1..H**
Thermal reset limit thermostat	9-3	N1202	BPZ:RAK-TW.1..H	**RAK-TW.1..H**
Temperature limiter	9-4	N1206	BPZ:RAK-TB.1..M	**RAK-TB.1..M**
Safety limit thermostat	9-5	N1204	BPZ:RAK-ST..M	**RAK-ST..M**
Temperature controller / thermal reset limit thermostat	9-7	N1191	BPZ:RAZ-TW.1..	**RAZ-TW.1..**
Temperature controller / safety limit thermostat	9-7	N1192	BPZ:RAZ-ST..	**RAZ-ST..**
Changeover thermostat, changeover, 30 °C / 19 °C, IP54	9-10	N1295	BPZ:RYT182	**RYT182**

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Room units

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room unit with room temperature sensor and setpoint adjuster	10-3	N1721	BPZ:QAA25	**QAA25**
Room unit with room temperature sensor and setpoint readjuster -3...3 K	10-3	N1721	BPZ:QAA27	**QAA27**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-4	N1722	BPZ:QAA64	**QAA64**
Room unit with KNX bus	10-14	N1633	BPZ:QAW740	**QAW740**
Room sensor for humidity (DC 0...10 V)	11-17	N1857	BPZ:QFA2000	**QFA2000**
Room sensor for humidity (DC 0...10 V) and temperature (LG-Ni1000)	11-17	N1857	BPZ:QFA2020	**QFA2020**
Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V)	11-17	N1857	BPZ:QFA2060	**QFA2060**
Room sensor for humidity (DC 0...10 V) for demanding requirements	11-18	N1858	BPZ:QFA3100	**QFA3100**
Room sensor for humidity (DC 0...10 V) and temperature (DC 0...10 V) for demanding requirements	11-18	N1858	BPZ:QFA3160	**QFA3160**
Room sensor for humidity (DC 0..10V) and temperature (DC 0..10V) with calibration certificate	11-18	N1859	BPZ:QFA4160	**QFA4160**
Indoor air quality controller with integrated VOC sensor for mixed gas	9-24	N1571	BPZ:QPA84	**QPA84**
Room air quality sensor CO_2 / temperature / rel. Humidity / VOC	11-33	N1961	BPZ:QPA20..	**QPA..**

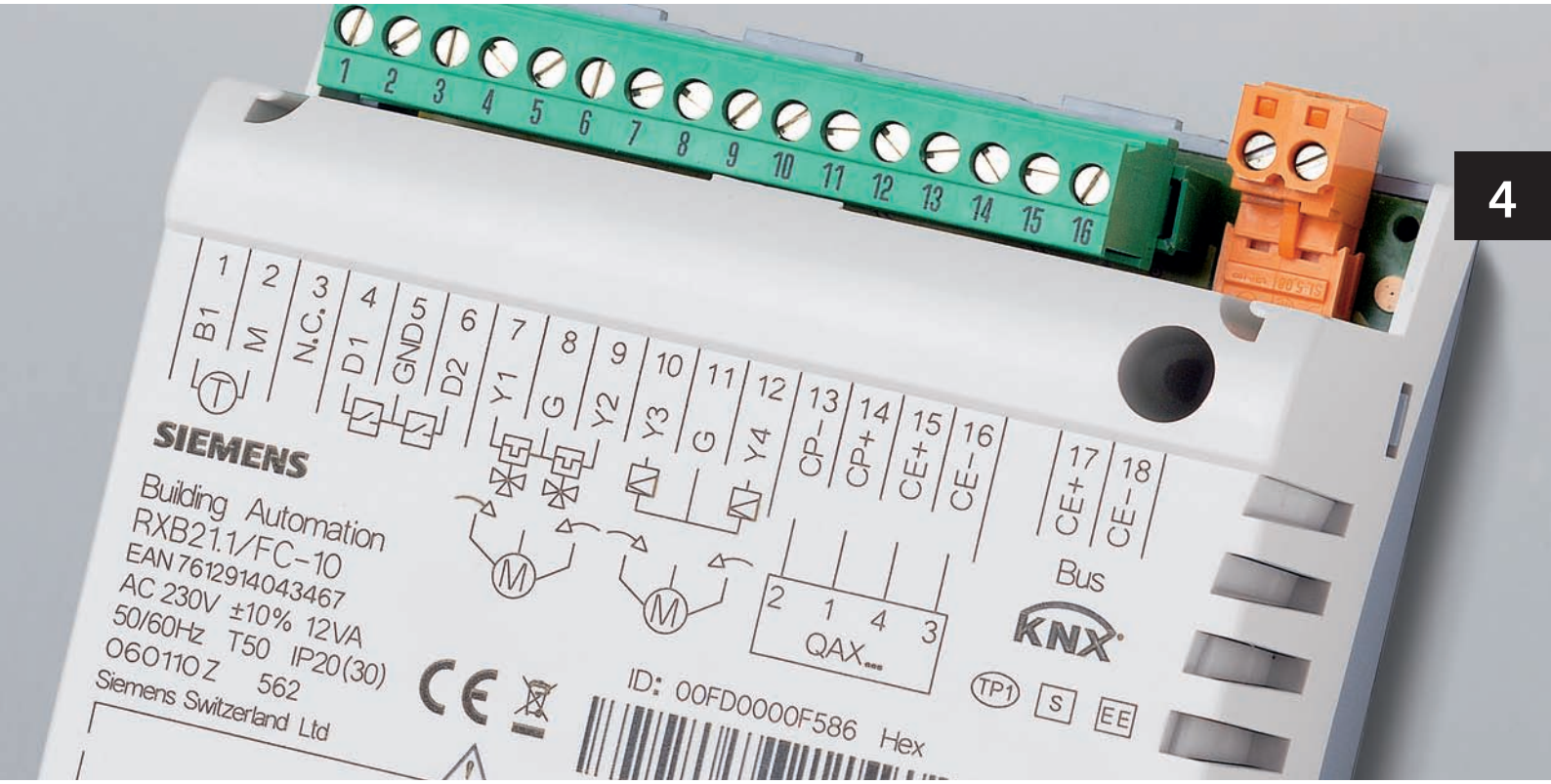
Step switches, signal converters and transformers

Product Title	s. page	Data sheet	Stock No.	Product No.
Variable speed drive	16-5	N5192	BPZ:SED2..	**SED2..**
Transformers	16-20	N5536	BPZ:SEM62..	**SEM62..**
Current valve	16-13	N4937	BPZ:SEA45.1	**SEA45.1**
Signal converter DC 0...10 V or DC 0 / 10 V in AC 0 / 24 V	16-14	N5102	BPZ:SEM61.4	**SEM61.4**
Signal converter with preprogrammed applications	16-16	N5146	BPZ:SEZ220	**SEZ220**

Service tool

Product Title	s. page	Data sheet	Stock No.	Product No.
Service tool for KNX/LPB	8-12	N5655	BPZ:OCI700.1	**OCI700.1**

Controllers for Roomautomation



Overview and selection tools	Product range overview	4-2
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	Field devices	4-18
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	For Fan coil, radiator, chilled ceiling	4-21
	Field devices	4-23
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	Transponder card: holder / reader / encoder	4-42

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Room Controller		RXA..	RXL..	RXB1..	RXB2..	RXC1..	RXC2..	RXC3..	RXC4..
No communications		■							
Via communications			Bus	KNX		LonWorks			
Fan coil systems									
2-pipe system with changeover	FNC02	■	■		■		■		
2-pipe system with changeover and electric air heater battery	FNC03	■	■		■		■		
4-pipe system	FNC04	■	■		■		■		
4-pipe system with electric air heater battery	FNC05	■	■		■				
4-pipe system with supply air temperature limit	FNC08	■	■		■		■		
2-pipe system with changeover and outside air damper	FNC10	■	■		■		■		
4-pipe system with outside air damper	FNC12	■	■		■		■		
2-pipe system and radiator	FNC18	■	■		■		■		
4-pipe system, with one air damper	FNC20	■	■		■		■		
Heated/chilled ceilings and radiators									
Chilled ceiling with dewpoint monitoring	CLC01		■		■	■	■		
Chilled ceiling (with dewpoint monitoring), radiator (with downdraft compensation)	CLC02		■	■	■	■	■		
Chilled ceiling and radiator	CLC03						■		
Chilled/heated ceiling, 2-pipe system with changeover via LonWorks bus	CLC06					■	■		
Chilled/heated ceiling, 2-pipe system with changeover via LonWorks bus and radiator	CLC07						■		
Chilled/heated ceiling, 4-pipe system and 2 ON / OFF valves for changeover	CLC08						■		
Divided chilled/heated ceiling: Cooling only and cooling/ heating with changeover via LonWorks bus	CLC09						■		
Radiator with downdraft compensation	RAD01		■		■	■	■		
Electric radiators	RAD03					■	■		
VAV systems									
Single duct supply or extract air system	VAV01			■		■		■	
Single duct supply air system with reheater/cooler	VAV02							■	
Single duct supply air system with electric reheater	VAV03							■	
Single duct supply and extract air system	VAV04							■	
Single duct supply and extract air system with reheater/ cooler	VAV05							■	
Single duct supply and extract air system with electric reheater	VAV06							■	
Single duct supply or exract air system with radiator	VAV07						■		
Single duct supply and extract air systems with radiator	VAV08							■	
Single duct supply and extract air system with electric reheater	VAV10							■	
Single duct supply and extract air systems with radiator/ chilled ceiling	VAV14							■	
Fan powered single duct supply air system with electric reheater	FPB05							■	
Electrical systems									
Lighting and blind control									■

RX..- Roomautomation



Features	QAX.. 30.1	31.1	32.1	33.1	34.1	34.3	39.1	84.1	50.1	51.1
Display					■	■		■	■	■
Mode selection			■	■	■	■		■	■	■
Fan switch				■	■	■		■	■	■
Setpoint adjuster		■	■	■	■	■	■	■	■	■
Operation of light/blindes									■	■
Temperature sensor NTC	■	■	■	■	■	■		■	■	■
Mounting										
Flush-mounted							■	■	■	■
Directly on wall	■	■	■	■	■	■				
Control panel(door)							■			
Communication										
Wireless										
PPS2	■	■	■	■	■	■	■	■		
LonWorks									■	■
KNX										
Controller										
RXA..	■	■	■	■	■	■	■	■		
RXL..	■	■	■	■	■	■	■	■		
RXB..	■	■	■	■	■	■	■	■		
RXC..	■	■	■	■	■	■	■	■	■	■

Wireless-Roomautomation



Features	90.1	91.1	95.1	96.1
Display				
Mode selection				
Fan switch				
Setpoint adjuster		■		■
Operation of light/blindes				
Temperature sensor NTC	■	■	■	■
Mounting				
Flush-mounted				
Directly on wall	■	■	■	■
Control panel(door)				
Communication				
Wireless	■	■	■	■
PPS2	■ [2]	■ [2]		
LonWorks			■ [1]	■ [1]
KNX			■ [1]	■ [1]
Controller				
RXA..	■	■		
RXL..	■	■		
RXB..	■	■	■	■
RXC..	■	■	■	■

[1] **Suitable receivers:** RXZ95.1/LON, RXZ97.1/KNX
[2] **Suitable receivers:** RXZ90.1

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RXA applications

RXA hardware

The product range comprises the compact room controllers RXA20.1, RXA21.1, RXA22.1 and RXA29.1 These controllers are optimized for fan coil applications thanks to their input/output configuration and mounting. They can be easily mounted in the fan coil unit, the panel or the frame. In addition, radiator applications are possible within the limits of the available applications.
Standard room units are used to operate the HVAC functions.

RXA software

Each RXA unit comes preloaded with application software comprising several applications. Each application offers different control programs. The desired application is selected on the controller. The RXA room controller controls the comfort conditions in rooms and closed zones based on the selected applications. Each room or zone can be operated as needed and desired, resulting in optimal comfort at lowest possible energy consumption.

HVAC

Fan-coils



QAX30.1..
QAX34.1
QAX34.3
QAX39.1
QAX84.1
QAX90.1 / QAX91.1

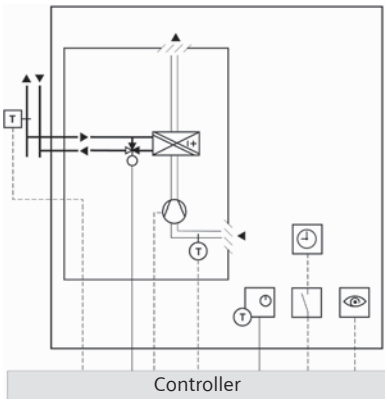


RXA20.1/FC-01
RXA21.1/FC-02
RXA22.1/FC-03
RXA29.1/FC-04 (without PPS2)

Room units ◄——► Compact room controllers

Fan coil systems with RXA

Application		Room controllers RXA..			
		20.1/FC-01	21.1/FC-02	22.1/FC-03	29.1/FC-04
FNC02	2-pipe system with changeover	■	■		■
FNC03	2-pipe system with changeover and electric air heater battery			■	
FNC04	4-pipe system	■	■		■
FNC05	4-pipe system with electric air heater battery			■	
FNC08	4-pipe system with supply air temperature limit		■		■
FNC10	2-pipe system with changeover and outside air damper	■	■		■
FNC12	4-pipe system with outside air damper		■		■
FNC18	2-pipe system (cooling) and radiator	■	■		■
FNC20	4-pipe system, with one air damper	■	■		■
	1-speed fan control	■	■	■	
	3-speed fan control		■	■	
Valves					
Thermal valves AC 24 V, PWM		■	■	■	■
Electromotoric valves AC 24 V			■		■
Relay for electric air heater battery				■	



Controller

RXL – Powerful room controllers for temperature control in individual rooms
RXL ensures individual demand-based comfort in public buildings, offices, schools, hotels, etc. Flexible control of all types of equipment in individual rooms calls for economical and convenient solutions that can be integrated into existing or new systems and will retain their compatibility long into the future.

Communicating controllers for individual rooms
The communicating room controllers RXL21.1, RXL22.1 and RXL24.1 are used for temperature control in individual rooms. Siemens actuator and sensor technology can be connected.

Easy commissioning with room operator unit
Commissioning and parameter-setting for RXL controllers is carried out directly on the controller, with the QAX34.3 room operator unit. There is no need for a network connection or a software tool. Mounting on a DIN rail is quick and simple.

User-friendly commissioning and service
The Service LED shows the operational status of the room controller at all times. For example, a flashing green LED is used to indicate normal, trouble-free operation, a continuous red LED for addressing mode and a flashing red LED to indicate a fault. With the service pin, all controllers can be easily identified for commissioning or maintenance purposes. As soon as the service pin is pressed, the red service LED on the controller lights up and the controller is displayed on a graphic of the building at the management station.

Complete range of standard room operating units
The extensive range of room operator units is available for direct operation and monitoring of setpoints and measured values in individual rooms. The range extends from very simple room temperature sensors to versatile room operator units with parameter-setting functions, with all devices being connected to the controller via the PPS2 interface.

Integration into the DESIGO™ building automation and control system
DESIGO™ PX KNX is used for the integration of the RXL controllers into the DESIGO™ building automation and control system, and hence acts as a gateway to BACnet. Integration into DESIGO™ provides access to other functions such as time schedules and central control of setpoints.
RXL thus fits into the overall expandable modular system, and ensures long-term cost-efficiency.

Integration into Synco™
The Synco™ Central control unit RMB795 is used for controlling and monitoring the RXL controllers in a Synco™ system.

HVAC

VAV

Chilled ceiling Radiator-type systems





Fan coil units

QAX30.1..
QAX34.1
QAX34.3
QAX39.1
QAX84.1
QAX90.1
QAX91.1

RXL21.1
RXL22.1
RXL24.1

Room units ◄——► Compact

Overview and selection tools
RXL applications

Fields of application

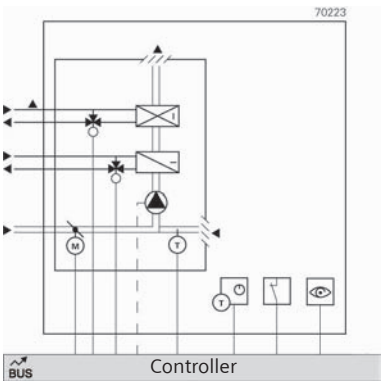
The scope of RXL is defined by the preprogrammed application software. The following pages provide an overview of the options and the corresponding devices. The devices are supplied preprogrammed with the applications. The required application can be selected by means of the Handy tool QAX34.3.

Due to the fact that the applications are predefined, engineering simply involves the definition of a small number of parameters, e. g.:

- ON / OFF or 3-point control of the valves and actuators
- Temperature setpoints
- Manual or automatic fan control

Fan coil systems

Application	Description	Devices
FNC02	2-pipe system with changeover	RXL21.1/FC-10
FNC03	2-pipe system with changeover and electrical reheater	RXL22.1/FC-12
FNC04	4-pipe system	RXL21.1/FC-10
FNC05	4-pipe system with electrical reheater	RXL22.1/FC-12
FNC08	4-pipe system with supply air temperature limitation	RXL21.1/FC-10
FNC10	2-pipe system with change over and outside air damper	RXL21.1/FC-11
FNC12	4-pipe system with outside damper	RXL21.1/FC-11
FNC18	2-pipe system with change over and radiator	RXL21.1/FC-11
FNC20	4-pipe system with air-side control	RXL21.1/FC-10

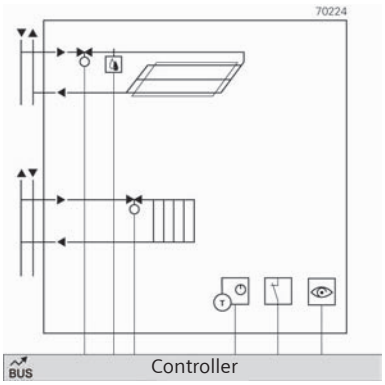


Common functions

- Window contact, occupancy detector, 4 operating modes
- Manual fan control with room unit
- Automatic fan control three-speed
- Options for 2-pipe systems: heating only, cooling only or changeover

Heated/chilled ceilings and radiators

Application	Description	Devices
CLC01	Chilled ceiling with dewpoint monitoring	RXL24.1/CC-02
CLC02	Chilled ceiling with dewpoint monitoring, radiator with downdraft compensation	RXL24.1/CC-02
RAD01	Radiator with downdraft compensation	RXL24.1/CC-02



Common functions

- Window contact, occupancy detector, 4 operating modes

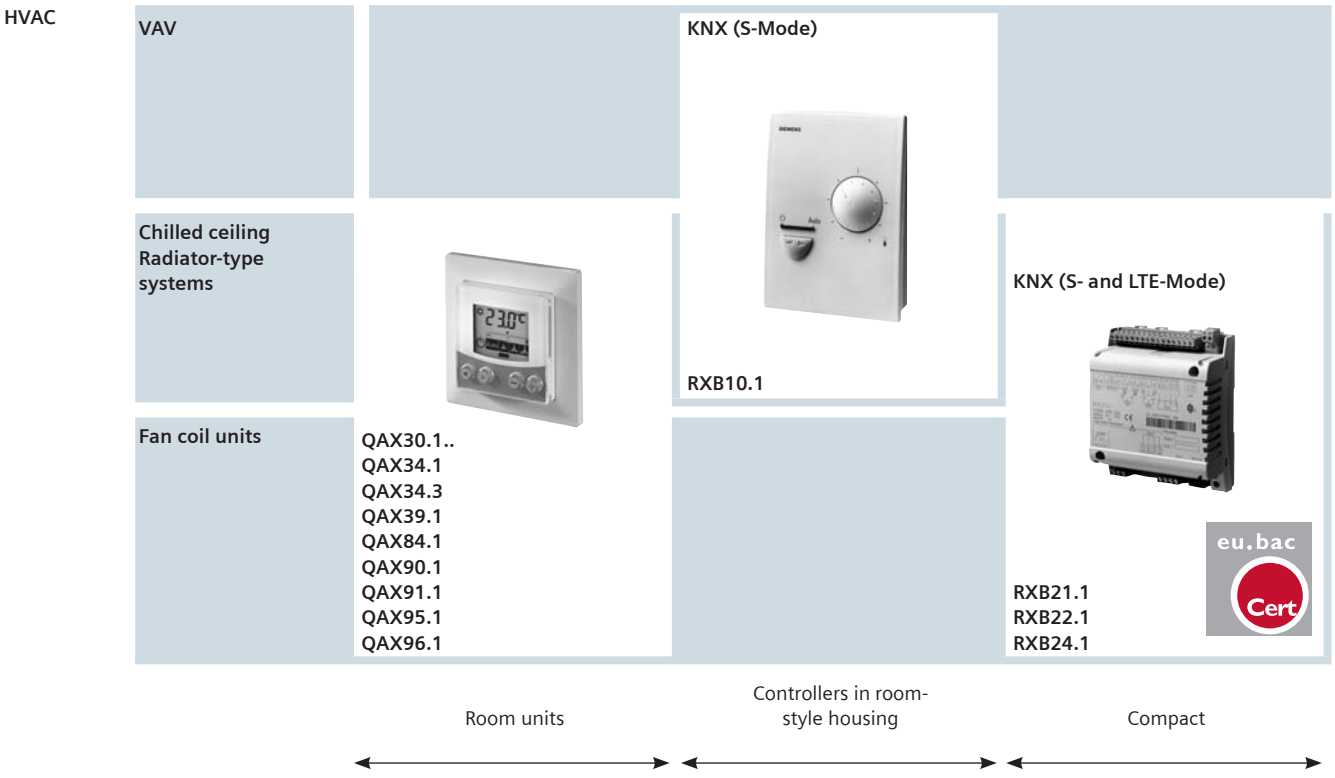
RXB applications

RXB hardware
The product range comprises compact controllers, room units for comfortable control as well as room controllers in room housings.
The compact room controllers are optimized to the respective application with regard to input/output configuration and building design type.
HVAC functions are operated via standard room units or controllers in a room housing.
Communication is based on KNX (S-mode). S-mode stands for system mode and is 100% downward compatible with existing EIB environments while serving as a common basis for Konnex.
The fan coil room controllers communication also in LTE mode. LTE mode is used for to communicate with control equipment from the Synco™ 700 product range.

RXB software
Each RXB unit comes with preloaded application software featuring one or several applications (see next page).
The ETS3 software helps engineer and commission a network with RXB units.
In addition, the Synco™ tool... (except for RXB10) and room unit QAX34.3 by Siemens can be used for commissioning and parameterization.

Integration into the DESIGO™ building automation and control system
DESIGO™ PX KNX is used for the integration of the RXB controllers into the DESIGO™ building automation and control system, and hence acts as a gateway to BACnet. Integration into DESIGO™ provides access to other functions such as time schedules and central control of setpoints.
RXB thus fits into the overall expandable modular system, and ensures long-term cost-efficiency.

Integration into Synco™
The Synco™ Central control unit RMB795 is used for controlling and monitoring the RBX controllers in a Synco™ system.



Overview and selection tools
RXB applications

Fields of application

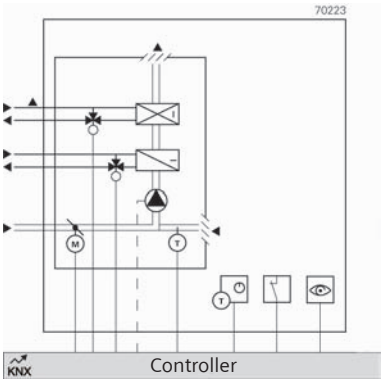
The scope of RXB is defined by the preprogrammed application software. The following pages provide an overview of the options and the corresponding devices, divided into different areas of application. The devices are supplied preprogrammed with the applications. The required application can be selected by means of the ETS, Synco™ tool or the Handy tool QAX34.3.

Due to the fact that the applications are predefined, engineering simply involves the definition of a small number of parameters, e. g.:

- ON / OFF or 3-point control of the valves and actuators
- Temperature setpoints
- Manual or automatic fan control

Fan coil systems

Application	Description	Devices
FNC02	2-pipe system with changeover	RXB21.1/FC-10
FNC03	2-pipe system with changeover and electrical reheater	RXB22.1/FC-12
FNC04	4-pipe system	RXB21.1/FC-10
FNC05	4-pipe system with electrical reheater	RXB22.1/FC-12
FNC08	4-pipe system with supply air temperature limitation	RXB21.1/FC-10
FNC10	2-pipe system with changeover and outside air damper	RXB21.1/FC-11
FNC12	4-pipe system with outside damper	RXB21.1/FC-11
FNC18	2-pipe system with change over and radiator	RXB21.1/FC-11
FNC20	4-pipe system with air-side control	RXB21.1/FC-10

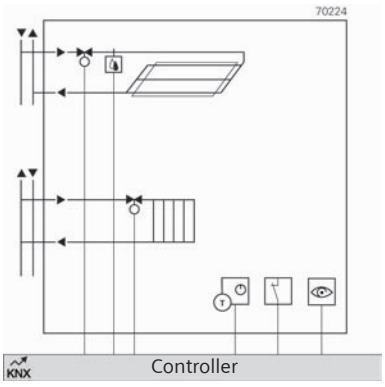


Common functions

- Window contact, occupancy detector, 4 operating modes
- Manual fan control with room unit
- Automatic fan control three-speed
- Options for 2-pipe systems: heating only, cooling only or change-over, via KNX bus

Heated/chilled ceilings and radiators

Application	Description	Devices
CLC01	Chilled ceiling with dewpoint monitoring	RXB24.1/CC-02
CLC02	Chilled ceiling and radiator	RXB10.1/CC-01
CLC02	Chilled ceiling with dewpoint monitoring and radiator	RXB24.1/CC-02
RAD01	Radiator with downdraft compensation	RXB24.1/CC-02

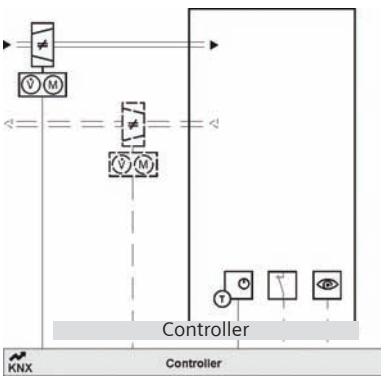


Common functions

- Window contact, occupancy detector, 4 operating modes

VAV systems

Application	Description	Devices
VAV01	Single duct supply or extract air system	RXB10.1/VV-01



Common functions

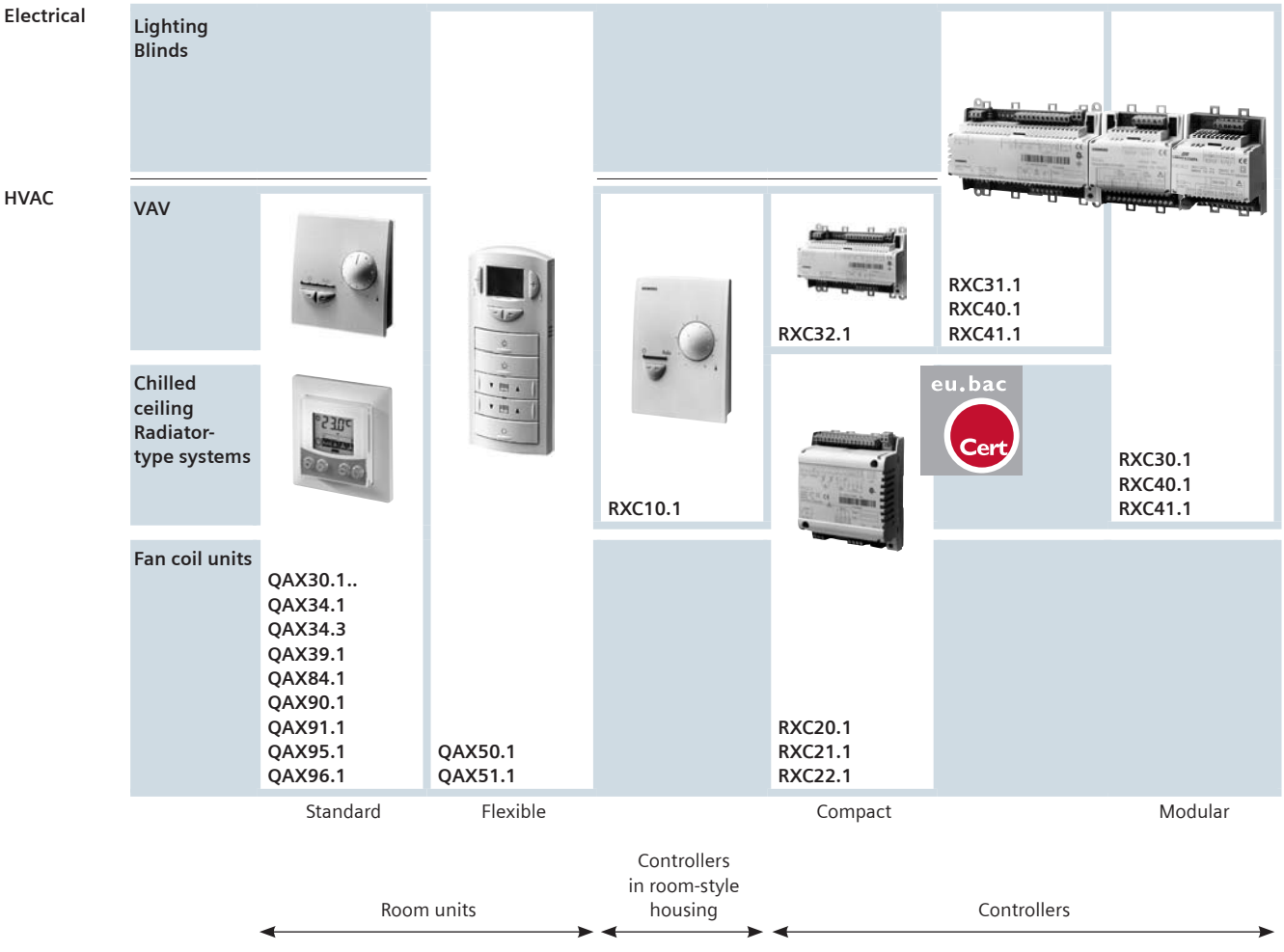
- Window contact, occupancy detector, 4 operating modes
- Control of compact volume controllers with DC 0...10 V (RXB10.1)

RXC applications

RXC hardware
RXC is a comprehensive range of room controllers for HVAC automation, extension modules for lighting and blinds, and a graded range of purposedesigned room units. LonWorks technology is used for data communications.
The range consists of compact and modular room controllers, user-friendly room operator units and controllers in room-style housings.

RXC software
Each room controller contains downloadable application software (referred to as the "application") with the optimum control programs for the room or area concerned.
Siemens maintains a comprehensive library of reliable, field-proven applications for HVAC and electrical applications.

Integration into the DESIGO™ building automation and control system
DESIGO™ PXX-L11 / PXX-L12 is used for the integration of the RXC controllers into the DESIGO™ building automation and control system, and hence acts as a gateway to BACnet. Integration into DESIGO™ provides access to other functions such as time schedules and central control of setpoints. RXC thus fits into the overall expandable modular system, and ensures long-term cost-efficiency.



Overview and selection tools
RXC applications

Fields of application

The scope of RXC is defined by the pre-programmed application software. The following pages provide an overview of the options and the corresponding devices, divided into different areas of application. The devices are supplied pre-programmed with the application required. Other applications can be loaded using the RXT10.3 commissioning and service tool, which contains the entire applications library.

Due to the fact that the applications are largely predefined, engineering simply involves the definition of a small number of parameters, e. g.:

- ON / OFF or 3-point control of the valves and actuators
- Temperature setpoints
- Manual or automatic fan control

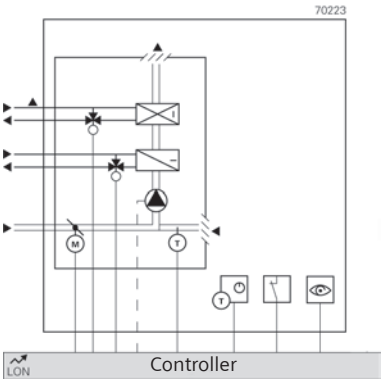
Basic applications

With the basic application software every RXC controller can also be used as an I/O module. The RXT10.3 commissioning and service tool can be used to observe the signals to the inputs or to process them further at the automation level or at the management station. Direct control of the controller outputs is also possible. Controllers ordered without reference to a specific application will be supplied factory-programmed with the appropriate basic application.

Application	Description
00010	Basic application for RXC10.3
00020	Basic application for RXC20.1
00021	Basic application for RXC21.1
00022	Basic application for RXC22.1
00030	Basic application for RXC30.1
00031	Basic application for RXC31.1
00032	Basic application for RXC32.1

Fan coil systems

Application	Description	Devices
FNC02	2-pipe system with changeover	RXC20.1 / RXC21.1
FNC03	2-pipe system with changeover and electric reheater	RXC20.1 / RXC21.1 / RXC22.1
FNC04	4-pipe system	RXC20.1 / RXC21.1
FNC08	4-pipe system with supply air temperature limitation	RXC21.1
FNC10	2-pipe system with changeover and outside air damper	RXC21.1
FNC12	4-pipe system with outside air damper	RXC21.1
FNC18	2-pipe system (cooling) and radiator	RXC20.1 / RXC21.1
FNC20	4-pipe system with air-side control	RXC20.1 / RXC21.1

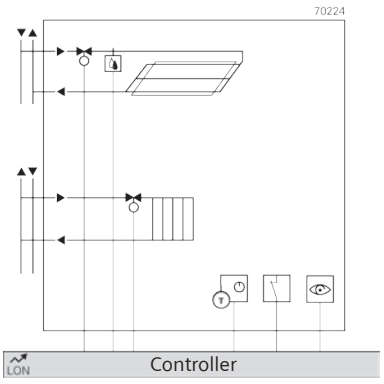


Common functions

- Window contact, occupancy detector, 4 operating modes
- Manual fan control with room unit
- Automatic fan control (RXC20.1 single-speed, RXC21.1, RXC21.1 three-speed)
- Options for 2-pipe systems: heating only, cooling only or change-over, via LonWorks bus

Heated/chilled ceilings and radiators

Application	Description	Devices
CLC01	Chilled ceiling	RXC20.1 / RXC10.3
CLC02	Chilled ceiling and radiator	RXC20.1 / RXC10.3
CLC03	Chilled ceiling and radiator	RXC20.1
CLC06	Chilled/heated ceiling, 2-pipe system with changeover via LonWorks bus	RXC20.1 / RXC10.1
CLC07	Chilled/heated ceiling, 2-pipe system with changeover via LonWorks bus and radiator	RXC20.1
CLC08	Chilled/heated ceiling, 4-pipe system and 2 ON / OFF valves for changeover	RXC21.1
CLC09	Divided chilled/heated ceiling: Cooling only and cooling/heating with changeover via LonWorks bus	RXC20.1 / RXC21.1
RAD01	LPHW radiators	RXC20.1 / RXC10.3
RAD03	Electric radiators	RXC20.1 / RXC10.3

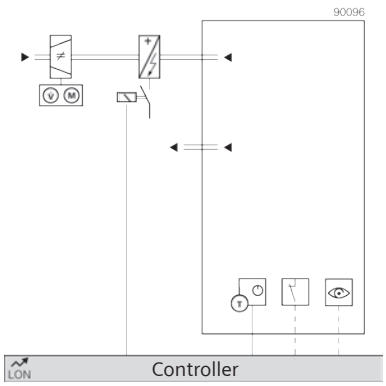


Common functions

- Window contact, occupancy detector, 4 operating modes
- Dewpoint sensor

VAV systems

Application	Description	Devices
VAV01	Single duct supply or extract air system	RXC10.1 / RXC32.1
VAV02	Single duct supply air system with reheater/cooler	RXC32.1
VAV03	Single duct supply air system with electric reheater	RXC32.1
VAV04	Single duct supply and extract air system	RXC31.1
VAV05	Single duct supply and extract air system with reheater/cooler	RXC31.1
VAV06	Single duct supply and extract air system with electric reheater	RXC31.1
VAV07	Single duct supply or extract air system with radiator	RXC10.1
VAV08	Single duct supply and extract air systems with radiator	RXC31.1
VAV10	Single duct supply and extract air system with electric reheater	RXC31.1
VAV14	Single duct supply and extract air systems with radiator/ chilled ceiling	RXC31.1
FPB05	Fan powered single duct supply air system with electric reheater	RXC31.1



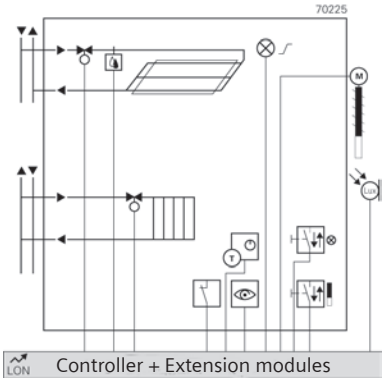
Common functions

- Window contact, occupancy detector, 4 operating modes
- Built-in pressure sensor (RXC32.1)
- DC 0...10 V inputs for external pressure sensors (RXC31.1)
- Control of compact volume controllers with DC 0...10 V (RXC10.1, RXC32.1)
- Direct control of damper actuators (RXC31.1, RXC32.1)

Combined applications

The HVAC applications covered by the RXC30.1 and RXC31.1 basic modules combine lighting and blind control (extension modules RXC40.1 and RXC41.1).
The combined applications consist of an HVAC application with one or more electrical functions.

Applica-tion	HVAC Application	Electrical function			Equipment			
		Group of lights ON / OFF [1]	Group of lights dimmed	Blinds up / down [2]	RXC30.1	RXC31.1	RXC40.1	RXC41.1
INT01	CLC02 [3]	2 x			1			
INT02	CLC02 [3]	4 x			1		1	
INT03	CLC02 [3]	2 x	2 x		1		1	
INT04	CLC02 [3]	2 x		2 x	1			1
INT05	CLC02 [3]	2 x		4 x	1			2
INT06	CLC02 [3]	4 x		2 x	1		1	1
INT07	CLC02 [3]	2 x	2 x	2 x	1		1	1
INT10	VAV08 [4]	2 x				1	1	
INT11	VAV08 [4]	4 x				1	1	1
INT12	VAV08 [4]		2 x			1	1	
INT15	VAV08 [4]	2 x		2 x		1	1	1
INT17	VAV08 [4]			2 x		1		1



[1] With or without daylight sensor via LonWorks bus, as required
[2] With or without slat adjustment, as required
[3] CLC02: Chilled ceiling and radiator
[4] VAV08: Single duct supply and extract air systems, see VAV systems above

Notes

Room controller for fan coil plants

RXA..



Individual room controllers for fan coils with integrated transformer.
- 2-pipe with changeover or 4-pipe
- Fan coils controlled on the air-side

Data sheet	N3881
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	12 VA
Control algorithm	PI
Communication	PPS2 (not with RXA29.1/FC-04)
Measuring range, temperature	0...50 °C
Setpoint readjustment range	±3 K
Changeover contact	Closed = changeover
Digital input, application	Window open = contact closed
Master-slave	Signal for parallel operation
Triac outputs	Damper actuators: 3-position, running time max. 7 min. Thermal valve actuators: Modulating (PWM)
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Relay outputs	Potential-free switching contacts
Relay output, switching voltage	AC 230 V
Relay output, switching current	4 A
Mounting	On DIN rail With screws
Dimensions (W x H x D)	112 x 62 x 167 mm

Range overview RXA..

Product Title	Triac outputs, number	Relay outputs, number	Stock No.	Product No.
Room controller for 1-speed fan with PPS2 interface	2	1	BPZ:RXA20.1/FC-01	**RXA20.1/FC-01**
Room controller for 3-speed fan with PPS2 interface	4	3	BPZ:RXA21.1/FC-02	**RXA21.1/FC-02**
Room controller for fan coils with electric reheater, PPS2 interface	2	4	BPZ:RXA22.1/FC-03	**RXA22.1/FC-03**
Room controller for fan coils without PPS2 interface	4	0	BPZ:RXA29.1/FC-04	**RXA29.1/FC-04**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Details of RXA29.1/FC-04 see datasheet 3382

Accessories for RXA..

Product Title	Data sheet	Stock No.	Product No.
Power amplifier for thermal actuators AC 24 V, PWM	N3591	BPZ:UA1T	**UA1T**
Terminal cover for RX	N3834	BPZ:RXZ20.1	**RXZ20.1**

4

Room units for RXA20.1, RXA21.1, RXA22.1

Product Title	s. page	Data sheet	Stock No.	Product No.
Room unit with sensor and PPS2 interface	10-6	N1741	BPZ:QAX30.1	**QAX30.1**
Room unit with sensor, setpoint adjuster and PPS2 interface	10-6	N1741	BPZ:QAX31.1	**QAX31.1**
Room unit with sensor, setpoint and operating mode selector and PPS2 interface	10-6	N1641	BPZ:QAX32.1	**QAX32.1**
Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface	10-7	N1642	BPZ:QAX33.1	**QAX33.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1645	BPZ:QAX34.1	**QAX34.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1640	BPZ:QAX34.3	**QAX34.3**
Flush-mounted room unit complete with PPS2 interface and white Siemens frame	10-8	N1649	BPZ:QAX84.1/PPS2	**QAX84.1/PPS2**
Wireless room unit with temperature sensor	10-9	N1643	BPZ:QAX90.1	**QAX90.1**
Wireless room unit with temperature sensor and setpoint adjuster	10-9	N1643	BPZ:QAX91.1	**QAX91.1**
Receiver for wireless room operator units with PPS2 interface	10-10	N1644	BPZ:RXZ90.1	**RXZ90.1**
Setpoint adjuster, passive, temperature ranges: -20...20 °C; 20...60 °C; -3...3 K	16-17	N1991	BPZ:BSG21.5	**BSG21.5**
Universal setpoint adjuster with PPS2 interface	10-7	N1646	BPZ:QAX39.1	**QAX39.1**

Room units for RXA29.1

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room unit with room temperature sensor and setpoint readjuster -3...3 K	10-3	N1721	BPZ:QAA27	**QAA27**

Sensors for RXA..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-14	N1722	BPZ:QAA64	**QAA64**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Duct temperature sensor 400 mm, LG-Ni1000	11-14	N1761	BPZ:QAM2120.040	**QAM2120.040**

Valve actuators for RXA..

Product Title	s. page	Data sheet	Stock No.	Product No.
Electrothermal actuator, 105 N, 1.5 m, AC/DC 24 V, 2P	13-42	N4875	BPZ:STA72E	**STA72E**
Electrothermal actuator, 105 N, AC/DC 24 V, 2P	13-20	N4876	BPZ:STP72E	**STP72E**
Electromotoric actuator, 100 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-38	N4893	BPZ:SSA81	**SSA81**
Electromotoric actuator, 200 N, 5.5 mm, AC 24 V, 1.5 m, 3P	13-29	N4891	BPZ:SSB81	**SSB81**
Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-23	N4864	BPZ:SSP81	**SSP81**

Damper actuators for RXA..

Product Title	s. page	Data sheet	Stock No.	Product No.
Rotary air damper actuators 5 Nm, without spring return	15-15	N4634	BPZ:GDB..1E	**GDB..1E**
Linear air damper actuators 125 N, without spring return	15-23	N4664	BPZ:GDB..2E	**GDB..2E**
Rotary air damper actuators 10 Nm, without spring return	15-16	N4634	BPZ:GLB..1E	**GLB..1E**
Linear air damper actuators 250 N, without spring return	15-24	N4664	BPZ:GLB..2E	**GLB..2E**

Communicative controllers - RXL (Bus)
For fan coil, radiator, chilled ceiling

RXL2..



Room controller with bus communication

The controllers RXL2.. are used for temperature control in individual rooms.
- For 2-pipe with changeover or 4-pipe fan coil systems
- Control of thermic valve actuators AC 24 V, PDM, valve and damper actuators AC 24 V (3-position)
- Volt-free relay contacts for fan speed control
- Relay for electric heating (RXL22.1 only)
- Bus communication

Application description fan coil: CM110677
Application description RAD/CLC: CM110676

Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	15 VA
Control algorithm	PI
Digital inputs, number	2
Triac outputs	ON/OFF PWM 3-position
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Relay output, switching voltage	AC 250 V
Relay output, switching current	5 (4) A
Communication	Bus Room unit: PPS2
Service plug	RXT20.1
Mounting location	Ceiling voids with cover Fan coil Panel
Mounting	On DIN rail With screws
Dimensions (W x H x D)	113 x 167 x 62 mm

Range overview RXL2..

Product Title	Triac outputs, number	Relay outputs, number	Data sheet	Stock No.	Product No.
Room controller for 3-speed fan	4	3	N3877	BPZ:RXL21.1/FC-10	**RXL21.1/FC-10**
Room controller for 3-speed fan	4	3	N3877	BPZ:RXL21.1/FC-11	**RXL21.1/FC-11**
Room controller with 3-speed fan and electric heating coil	2	4	N3877	BPZ:RXL22.1/FC-12	**RXL22.1/FC-12**
Room controller for chilled ceilings and radiators	4	0	N3878	BPZ:RXL24.1/CC-02	**RXL24.1/CC-02**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Set of room controller RXL21.1/FC-10 and flush-mounted room unit QAX84.1/PPS2

RXL21/QAX84-0

In this set a controller RXL21.1/FC-10 and a complete Room unit QAX84.1/PPS2 is included. QAX84.1/PPS2 consists of the front end, the PPS2 bus coupling unit and a white Siemens frame from DELTA line.



	Stock No.	Product No.
	BPZ:RXL21/QAX84-0	**RXL21/QAX84-0**

Accessories for RXL2..

Product Title	Data sheet	Stock No.	Product No.
Power amplifier for thermal actuators AC 24 V, PWM	N3591	BPZ:UA1T	**UA1T**
Terminal cover for RX	N3834	BPZ:RXZ20.1	**RXZ20.1**
KNX power supply (LV)		BPZ:ACX95.320/ALG	**ACX95.320/ALG**

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Room units for RXL2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room unit with sensor and PPS2 interface	10-6	N1741	BPZ:QAX30.1	**QAX30.1**
Room unit with sensor, setpoint adjuster and PPS2 interface	10-6	N1741	BPZ:QAX31.1	**QAX31.1**
Room unit with sensor, setpoint and operating mode selector and PPS2 interface	10-6	N1641	BPZ:QAX32.1	**QAX32.1**
Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface	10-7	N1642	BPZ:QAX33.1	**QAX33.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1645	BPZ:QAX34.1	**QAX34.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1640	BPZ:QAX34.3	**QAX34.3**
Flush-mounted room unit complete with PPS2 interface and white Siemens frame	10-8	N1649	BPZ:QAX84.1/PPS2	**QAX84.1/PPS2**
Wireless room unit with temperature sensor	10-9	N1643	BPZ:QAX90.1	**QAX90.1**
Wireless room unit with temperature sensor and setpoint adjuster	10-9	N1643	BPZ:QAX91.1	**QAX91.1**
Receiver for wireless room operator units with PPS2 interface	10-10	N1644	BPZ:RXZ90.1	**RXZ90.1**
Universal setpoint adjuster with PPS2 interface	10-7	N1646	BPZ:QAX39.1	**QAX39.1**

Temperature sensors for RXL2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-14	N1722	BPZ:QAA64	**QAA64**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Duct temperature sensor 400 mm, LG-Ni1000	11-14	N1761	BPZ:QAM2120.040	**QAM2120.040**

Dewpoint sensor for RXL2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Condensation monitor	9-20	N1542	BPZ:QXA2000	**QXA2000**
AC 230 V extension module for QXA2000	9-21	N1542	BPZ:AQX2000	**AQX2000**

Valve actuators for RXL2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Electrothermal actuator, 105 N, 1.5 m, AC/DC 24 V, 2P	13-42	N4875	BPZ:STA72E	**STA72E**
Electrothermal actuator, 105 N, AC/DC 24 V, 2P	13-20	N4876	BPZ:STP72E	**STP72E**
Electromotoric actuator, 100 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-38	N4893	BPZ:SSA81	**SSA81**
Electromotoric actuator, 200 N, 5.5 mm, AC 24 V, 1.5 m, 3P	13-29	N4891	BPZ:SSB81	**SSB81**
Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-23	N4864	BPZ:SSP81	**SSP81**

Damper actuators for RXL2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Rotary air damper actuators 5 Nm, without spring return	15-15	N4634	BPZ:GDB..1E	**GDB..1E**
Linear air damper actuators 125 N, without spring return	15-23	N4664	BPZ:GDB..2E	**GDB..2E**
Rotary air damper actuators 10 Nm, without spring return	15-16	N4634	BPZ:GLB..1E	**GLB..1E**
Linear air damper actuators 250 N, without spring return	15-24	N4664	BPZ:GLB..2E	**GLB..2E**

Communicative controllers - RXB (KNX)
For radiator, chilled ceiling, VAV

RXB10.1/..



Radiator, chilled ceilings, VAV room controllers with KNX (S-mode) communication

The RXB10.1 controller is used for temperature control in individual rooms.
- For chilled ceilings and radiators
- VAV
- PI control
- KNX (S-mode) bus communication
- Control of thermal valve actuators AC 24 V PWM (pulse-width modulation) and EIB valves

Application description: CA2A3891 / CA2A3893

Data sheet	N3870
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Control algorithm	PI
Digital inputs, number	2
Analog output, signal	DC 0...10 V
Triac outputs	ON/OFF
Triac outputs, number	2
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Communication	Bus: KNX (S-mode)
Service plug	RXT20.1
Mounting location	Inside rooms
Dimensions (W x H x D)	92 x 126 x 40 mm

Range overview RXB10.1/..

Product Title	Triac outputs, number	Analog outputs, number	Data sheet	Stock No.	Product No.
Room controller for radiators and chilled ceilings with KNX (S-mode) communication	2	0	N3870	BPZ:RXB10.1/CC-01	**RXB10.1/CC-01**
Room controller for VAV applications with KNX (S-mode) communication	2	1	N3870	BPZ:RXB10.1/VV-01	**RXB10.1/VV-01**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Room controller with KNX bus communication

RXB2..



The controllers are used for temperature control in individual rooms.
- For 2-pipe with changeover or 4-pipe fan coil systems
- For radiator and chilled ceiling (RXB24.1 only)
- Control of thermal valve actuators AC 24 V, PDM, valve and damper actuators AC 24 V (3-position) as well as EIB bus actuators
- Potential-free relay contacts for fan speed control
- Relay for electric heating (RXB22.1 only)
- KNX/EIB bus communication

Application description fan coil: CM110672
Application description RAD/CLC: CM110671

Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	Max. 12 VA
Control algorithm	PI
Digital inputs, number	2
Triac outputs	ON/OFF PWM 3-position
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Relay output, switching voltage	AC 250 V
Relay output, switching current	5 (4) A
Communication	Bus: KNX (S-mode and LTE mode) Room unit: PPS2
Service plug	RXT20.1
Mounting location	Ceiling voids with cover Fan coil Panel
Mounting	On DIN rail With screws
Dimensions (W x H x D)	113 x 167 x 62 mm

Range overview RXB2..

Product Title	Triac outputs, number	Relay outputs, number	Data sheet	Stock No.	Product No.
Room controller for 3-speed fan	4	3	N3873	BPZ:RXB21.1/FC-10	**RXB21.1/FC-10**
Room controller for 3-speed fan	4	3	N3873	BPZ:RXB21.1/FC-11	**RXB21.1/FC-11**
Room controller with 3-speed fan and electric heating coil	2	4	N3873	BPZ:RXB22.1/FC-12	**RXB22.1/FC-12**
Room controller for chilled ceilings and radiators	4	0	N3874	BPZ:RXB24.1/CC-02	**RXB24.1/CC-02**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Communicative controllers - RXB (KNX)
For fan coil, radiator, chilled ceiling

RXB21/QAX84-0



Set of room controller RXB21.1/FC-10 and flush-mounted room unit QAX84.1/PPS2

In this set a controller RXB21.1/FC-10 and a complete Room unit QAX84.1/PPS2 is included. QAX84.1/PPS2 consists of the front end, the PPS2 bus coupling unit and a white Siemens frame from DELTA line.

	Stock No.	Product No.
	BPZ:RXB21/QAX84-0	**RXB21/QAX84-0**

Accessories for RXB2..

Product Title	Data sheet	Stock No.	Product No.
Power amplifier for thermal actuators AC 24 V, PWM	N3591	BPZ:UA1T	**UA1T**
Terminal cover for RX	N3834	BPZ:RXZ20.1	**RXZ20.1**
KNX power supply (LV)		BPZ:ACX95.320/ALG	**ACX95.320/ALG**

Room units for RXB2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room unit with sensor and PPS2 interface	10-6	N1741	BPZ:QAX30.1	**QAX30.1**
Room unit with sensor, setpoint adjuster and PPS2 interface	10-6	N1741	BPZ:QAX31.1	**QAX31.1**
Room unit with sensor, setpoint and operating mode selector and PPS2 interface	10-6	N1641	BPZ:QAX32.1	**QAX32.1**
Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface	10-7	N1642	BPZ:QAX33.1	**QAX33.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1645	BPZ:QAX34.1	**QAX34.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1640	BPZ:QAX34.3	**QAX34.3**
Flush-mounted room unit complete with PPS2 interface and white Siemens frame	10-8	N1649	BPZ:QAX84.1/PPS2	**QAX84.1/PPS2**
Wireless room unit with temperature sensor	10-9	N1643	BPZ:QAX90.1	**QAX90.1**
Wireless room unit with temperature sensor and setpoint adjuster	10-9	N1643	BPZ:QAX91.1	**QAX91.1**
Receiver for wireless room operator units with PPS2 interface	10-10	N1644	BPZ:RXZ90.1	**RXZ90.1**
Radio frequency room unit with EnOcean interface, solar powered	10-10	N1660	S55623-H100	**QAX95.1**
Radio frequency room unit with EnOcean interface, solar powered, with setpoint adjuster	10-10	N1660	S55623-H101	**QAX96.1**
Radio frequency receiver with Gateway EnOcean/KNX, powered via KNX bus	10-10	N1662	S55842-Z101	**RXZ97.1/KNX**
Universal setpoint adjuster with PPS2 interface	10-7	N1646	BPZ:QAX39.1	**QAX39.1**

Temperature sensors for RXB2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-14	N1722	BPZ:QAA64	**QAA64**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**
Duct temperature sensor 400 mm, LG-Ni1000	11-14	N1761	BPZ:QAM2120.040	**QAM2120.040**

Dewpoint sensors for RXB2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Condensation monitor	9-20	N1542	BPZ:QXA2000	**QXA2000**
AC 230 V extension module for QXA2000	9-21	N1542	BPZ:AQX2000	**AQX2000**

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Valve actuators for RXB2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Electrothermal actuator, 105 N, 1.5 m, AC/DC 24 V, 2P	13-42	N4875	BPZ:STA72E	**STA72E**
Electrothermal actuator, 105 N, AC/DC 24 V, 2P	13-20	N4876	BPZ:STP72E	**STP72E**
Electromotoric actuator, 100 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-38	N4893	BPZ:SSA81	**SSA81**
Electromotoric actuator, 200 N, 5.5 mm, AC 24 V, 1.5 m, 3P	13-29	N4891	BPZ:SSB81	**SSB81**
Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-23	N4864	BPZ:SSP81	**SSP81**

Damper actuators for RXB..

Product Title	s. page	Data sheet	Stock No.	Product No.
Rotary air damper actuators 5 Nm, without spring return	15-15	N4634	BPZ:GDB..1E	**GDB..1E**
Linear air damper actuators 125 N, without spring return	15-23	N4664	BPZ:GDB..2E	**GDB..2E**
Rotary air damper actuators 10 Nm, without spring return	15-16	N4634	BPZ:GLB..1E	**GLB..1E**
Linear air damper actuators 250 N, without spring return	15-24	N4664	BPZ:GLB..2E	**GLB..2E**

Central control unit

RMB795..



- Central control unit with integrated control and supervisory functions for individual room control with RXB and RXL room controllers
- Individual time programs for room groups with RXB/RXL room controllers, preselected operating modes and setpoints, minimum / maximum temperature supervision and temperature supervision of RXB/RXL communication
- Operation and monitoring of individual RXB/RXL room controllers
- Trend and fault reporting functions for the input variables temperature, relative / absolute humidity, pressure / differential pressure, volumetric air flow, indoor air quality, etc.
- Heating / cooling changeover function for operation with 2-pipe systems
- Flexible configuration
- Functionality can be extended (extension modules)
- Clear-text operation with separate operator unit (plug-in type or detached)
- Integrated KNX bus communication
- No commissioning tool required

Extension modules complement the RMB795 central control unit and offer extra functions. The extension modules are attached to the RMB795 central control unit. Full operation from commissioning to enduser operation via operator unit.

Available extension modules:
- max. 1 universal module RMZ785
- max. 2 universal modules RMZ787

Available operator units:
- Plug-in type operator unit RMZ790
- Detached operator unit RMZ791

Data sheet	N3121
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	12 VA
Universal inputs, number	6
Universal input, signal	0...1000 Ohm 1000...1175 Ohm 2 x LG-Ni1000 DC 0...10 V Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs	Potential-free switching contact
Relay outputs, number	4
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	4 (3) A
Communication	KNX (KNX TP1)

Communicative central control unit (KNX)
Central control unit RMB.. for room controllers RXB.. and RXL..

Range overview RMB795..

Product Title	Stock No.	Product No.
Central control unit with languages de, fr, it, es	BPZ:RMB795-1	**RMB795-1**
Central control unit with languages de, fr, en, nl	BPZ:RMB795-2	**RMB795-2**
Central control unit with languages da, fi, sv, no	BPZ:RMB795-3	**RMB795-3**
Central control unit with languages pl, cs, sk, hu	BPZ:RMB795-4	**RMB795-4**
Central control unit with languages sr, hr, sl, ro	BPZ:RMB795-5	**RMB795-5**

Operator units for RMB..

Product Title	Data sheet	Stock No.	Product No.
Plug-in type operator unit	N3111	BPZ:RMZ790	**RMZ790**
Detached operator unit with 3 m cable	N3112	BPZ:RMZ791	**RMZ791**

Extension modules for RMB..

Product Title	Data sheet	Stock No.	Product No.
Universal modul (8UI)	N3146	BPZ:RMZ785	**RMZ785**
Universal module (4UI, 4DO)	N3146	BPZ:RMZ787	**RMZ787**
Module connector	N3138	BPZ:RMZ780	**RMZ780**

Interfaces and tools RXB and RXL

Product Title	Data sheet	Stock No.	Product No.
Service unit with LCD	N3851	BPZ:RXT20.1	**RXT20.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	N1640	BPZ:QAX34.3	**QAX34.3**

Communicative controllers - RXC (LonWorks)
For radiator, chilled ceiling, VAV

RXC10.1/..



Radiator, chilled ceilings and VAV room controllers with LonWorks communication and basic application OOO10

The RXC10.1 controller is used for temperature control in individual rooms.
- For chilled ceilings and radiators
- VAV
- PID control
- Loadable application software
- LonMark-compatible bus communications
- Integrated into the DESIGO INSIGHT building automation and control system
- Control of thermal valve actuators, AC 24 V, PDM*
- Operating voltage AC 24 V

* PDM = pulse duration modulation

Data sheet	N3830
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2 VA
Control algorithm	PI
Digital inputs, number	2
Position feedback	DC 0...10 V
Triac outputs, number	2
Triac outputs	ON/OFF
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Communication	Bus: LonWorks
Service plug	RXT10.., RXT20.1
Mounting location	In room
Dimensions (W x H x D)	92 x 126 x 40 mm

Range overview RXC10.1/..

Product Title	Stock No.	Product No.
Radiator, chilled ceilings and VAV room controllers with LonWorks communication and basic application OOO10	BPZ:RXC10.1/00010	**RXC10.1/00010**
Radiator, chilled ceilings and VAV room controllers with LonWorks communication and application CLC02	BPZ:RXC10.1/CLC02	**RXC10.1/CLC02**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Accessories for RXC1..

Product Title	s. page	Data sheet	Stock No.	Product No.
Power amplifier for thermal actuators AC 24 V, PWM	4-34	N3591	BPZ:UA1T	**UA1T**

Room controller with LonWorks communication

RXC20/21/22..



The RXC20.1, RXC21.1 and RXC22.1 controllers are used for temperature control in individual rooms.
- For 2- or 4-pipe fan coil systems with or without changeover
- For chilled ceilings and radiators
- Control of thermic valve actuators AC 24 V, PDM, valve and damper actuators AC 24 V (3-position) or electric air heater batteries
- Volt-free relay contacts for fan speed control
- LonMark-compatible bus communication
- Plug-in screw terminal

Application description: CA110300

Data sheet	N3834
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	12 VA
Control algorithm	PI
Digital inputs, number	2
Triac outputs	ON/OFF
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Relay output, switching voltage	AC 250 V
Relay output, switching current	5 (4) A
Communication	Bus: LonWorks Room unit: PPS2
Service plug	RXT10.3, RXT20.1
Mounting location	Ceiling voids with cover Fan coil Panel
Mounting	On DIN rail With screws
Dimensions (W x H x D)	113 x 167 x 62 mm

Communicative controllers - RXC (LonWorks)
For fan coil, radiator, chilled ceiling

Range overview RXC20/21/22..

Product Title	Triac outputs, number	Relay outputs, number	Electric reheater relay	Stock No.	Product No.
Room controller for fan coils with 1-speed fan or chilled ceiling/radiator with basic application OOO20	2	1	0	BPZ:RXC20.1/00020	**RXC20.1/00020**
Room controller with chilled ceiling application CLC02	2	1	0	BPZ:RXC20.1/CLC02	**RXC20.1/CLC02**
Room controller for fan coils with 3-speed fan and/or outside air damper with basic application OOO21	4	3	0	BPZ:RXC21.1/00021	**RXC21.1/00021**
Room controller for fan coils with 3-speed fan and/or outside air damper with application FNC04	4	3	0	BPZ:RXC21.1/FNC04	**RXC21.1/FNC04**
Room controller for fan coils with 3-speed fan and electric reheater with basic application OOO22	2	4	1	BPZ:RXC22.1/00022	**RXC22.1/00022**
Room controller for fan coils with 3-speed fan and electric reheater with application FNC03	2	4	1	BPZ:RXC22.1/FNC03	**RXC22.1/FNC03**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

RXC21/QAX84-0



Set of room controller RXC21.1/00021 and flush-mounted room unit QAX84.1/PPS2

In this set a controller RXC21.1/00021 and a complete Room unit QAX84.1/PPS2 is included. QAX84.1/PPS2 consists of the front end, the PPS2 bus coupling unit and a white Siemens frame from DELTA line.

	Stock No.	Product No.
	BPZ:RXC21/QAX84-0	**RXC21/QAX84-0**

Accessories for RXC2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Terminal cover for RX	4-13	N3834	BPZ:RXZ20.1	**RXZ20.1**
Power amplifier for thermal actuators AC 24 V, PWM	16-5	N3591	BPZ:UA1T	**UA1T**

Radiators, chilled ceilings, lighting, basic module with LonWorks communication

RXC30.1/..



The controllers are used for temperature and lighting control in individual rooms.
- PID control of chilled ceilings and radiators
- Extension modules for control of lighting and blinds
- LonMark-compatible bus communication
- Control of 2 thermic valve actuators AC 24 V (PDM) or 1 motorized valve actuator AC 24 V (3-position)
- Volt-free relay contacts for lighting control (16 A)
- Plug-in screw terminal

Data sheet	N3840
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	12 VA
Control algorithm	PI
Digital input, application	HVAC Light
Triac outputs	HVAC: ON/OFF
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Relay output, switching voltage	AC 250 V
Relay output, switching current	16 (12) A
Communication	Bus: LonWorks Room unit: PPS2
Service plug	RXT10.3, RXT20.1
Mounting location	Ceiling voids with cover Panel
Mounting	On DIN rail With screws
Dimensions (W x H x D)	152 x 120 x 62 mm

Range overview RXC30.1/..

Product Title	Stock No.	Product No.
Radiators, chilled ceilings, lighting, basic module with LonWorks communication	BPZ:RXC30.1/00030	**RXC30.1/00030**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Extension modules and accessories for RXC30..

Product Title	s. page	Data sheet	Stock No.	Product No.
Extension module for lighting control	4-34	N3842	BPZ:RXC40.1	**RXC40.1**
Extension module for blinds control	4-34	N3843	BPZ:RXC41.1	**RXC41.1**
Terminal cover for RXC3..	4-13	N3840	BPZ:RXZ30.1	**RXZ30.1**
Power amplifier for thermal actuators AC 24 V, PWM	16-5	N3591	BPZ:UA1T	**UA1T**

Communicative controllers - RXC (LonWorks)
For VAV and light

RXC31.1/..



VAV basic module with LonWorks communication

The RXC31.1 controller is used for VAV room temperature control in individual rooms.

- Control of supply and extract air, with volume control dampers or additional VAV compact controllers, with or without reheater
- Can be combined with extension modules for control of lighting and blinds
- Downloadable application software
- LonMark-compatible bus communication
- Integrated into the DESIGO INSIGHT building automation and control system
- Control of damper actuators with AC 24 V, 3-position or DC 0...10 V positioning signal
- Control of VAV compact controllers (with differential pressure sensor, volumetric flow controller and actuator) with DC 0...10 V signal
- Control of electric or LPHW reheaters with AC 24 V or AC 24 V 3-position signals
- Operating voltage AC 24 V
- Plug-in screw terminal

Data sheet	N3844
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	33 VA
Control algorithm	PI
Digital inputs, number	3
Analog inputs, number	3
Triac outputs	ON/OFF
Position feedback	DC 0...10 V
Mounting	On DIN rail With screws
Communication	Bus: LonWorks Room unit: PPS2
Service plug	RXT10.3, RXT20.1
Mounting location	Ceiling voids with cover Panel VAV box
Dimensions (W x H x D)	152 x 120 x 62 mm

Range overview RXC31.1/..

Product Title	Stock No.	Product No.
VAV basic module with LonWorks communication	BPZ:RXC31.1/00031	**RXC31.1/00031**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Accessories for RXC31..

Product Title	s. page	Data sheet	Stock No.	Product No.
Extension module for lighting control	4-34	N3842	BPZ:RXC40.1	**RXC40.1**
Extension module for blinds control	4-34	N3843	BPZ:RXC41.1	**RXC41.1**
Terminal cover for RXC3..		N3840	BPZ:RXZ30.1	**RXZ30.1**
Power amplifier for thermal actuators AC 24 V, PWM	16-5	N3591	BPZ:UA1T	**UA1T**

VAV room controller with LonWorks communication — RXC32.1/..



The RXC32.1 controller is used for VAV room temperature control in individual rooms.
- Control of the supply or extract air with volume control dampers, with or without reheater
- Downloadable application software
- LonMark-compatible bus communication
- For use in the DESIGO INSIGHT building automation and control system
- Control of damper actuators with AC 24 V, 3-position positioning signal
- Control of electric or LPHW reheaters with AC 24 V or AC 24 V 3-position signals
- Built-in air flow sensor
- Operating voltage AC 24 V
- Plug-in screw terminal

Data sheet	N3845
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	33 VA
Control algorithm	PI
Digital inputs, number	2
Triac outputs	ON/OFF
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.5 A
Measuring range	Flow: 0...300 Pa
Communication	Bus: LonWorks Room unit: PPS2
Service plug	RXT10.3, RXT20.1
Mounting location	Ceiling voids with cover Panel VAV box
Mounting	On DIN rail With screws
Dimensions (W x H x D)	152 x 120 x 62 mm

Range overview RXC32.1/..

Product Title	Stock No.	Product No.
VAV room controller with LonWorks communication	BPZ:RXC32.1/00032	**RXC32.1/00032**

The application determines the usable actuator (2-Pkt. /3-Pkt.) with the triac output

Accessories for RXC32..

Product Title	s. page	Data sheet	Stock No.	Product No.
Terminal cover for RXC3..	16-5	N3840	BPZ:RXZ30.1	**RXZ30.1**
Power amplifier for thermal actuators AC 24 V, PWM	16-5	N3591	BPZ:UA1T	**UA1T**

Communicative controllers - RXC (LonWorks)
Extension modules and accessories

RXC40.1

Extension module for lighting control



- Switching and dimming of 2 groups of lights

Data sheet	N3842
Voltage supply	From basic module
Digital inputs, number	4
Relay output, switching voltage	AC 250 V
Relay output, switching current	16 (12) A
Analog outputs, number	2
Interface for basic module	PE-bus for RXC3..
Mounting location	Ceiling voids with cover Panel
Mounting	On DIN rail
Dimensions (W x H x D)	80 x 120 x 62 mm

Stock No.	Product No.
BPZ:RXC40.1	**RXC40.1**

RXC41.1

Extension module for blinds control



- Control of 2 electric motors for blinds

Data sheet	N3843
Voltage supply	From basic module
Digital inputs, number	4
Relay output, switching voltage	AC 250 V
Relay output, switching current	16 (12) A
Interface for basic module	PE-bus for RXC3..
Mounting location	Ceiling voids with cover Panel
Mounting	On DIN rail
Dimensions (W x H x D)	80 x 120 x 62 mm

Stock No.	Product No.
BPZ:RXC41.1	**RXC41.1**

Accessories for RXC40.1, RXC41.1

Product Title	Data sheet	Stock No.	Product No.
Terminal cover for RXC4.. and AQX2000	N3842	BPZ:RXZ40.1	**RXZ40.1**

Room units for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room unit with sensor and PPS2 interface	10-6	N1741	BPZ:QAX30.1	**QAX30.1**
Room unit with sensor, setpoint adjuster and PPS2 interface	10-6	N1741	BPZ:QAX31.1	**QAX31.1**
Room unit with sensor, setpoint and operating mode selector and PPS2 interface	10-6	N1641	BPZ:QAX32.1	**QAX32.1**
Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface	10-7	N1642	BPZ:QAX33.1	**QAX33.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1645	BPZ:QAX34.1	**QAX34.1**
Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface	10-7	N1640	BPZ:QAX34.3	**QAX34.3**
Flush-mounted room unit complete with PPS2 interface and white Siemens frame	10-8	N1649	BPZ:QAX84.1/PPS2	**QAX84.1/PPS2**
Wireless room unit with temperature sensor	10-9	N1643	BPZ:QAX90.1	**QAX90.1**
Wireless room unit with temperature sensor and setpoint adjuster	10-9	N1643	BPZ:QAX91.1	**QAX91.1**
Receiver for wireless room operator units with PPS2 interface	10-10	N1644	BPZ:RXZ90.1	**RXZ90.1**
Versatile room unit with LonWorks interface	10-13	N1648	BPZ:QAX50.1	**QAX50.1**
Versatile room unit with LonWorks interface	10-13	N1648	BPZ:QAX51.1	**QAX51.1**
Radio frequency room unit with EnOcean interface, solar powered	10-7	N1660	S55623-H100	**QAX95.1**
Radio frequency room unit with EnOcean interface, solar powered, with setpoint adjuster	10-7	N1660	S55623-H101	**QAX96.1**
Radio frequency receiver with Gateway EnOcean/LonWorks, AC / DC 24 V, external antenna	10-7	N1661	S55842-Z100	**RXZ95.1/LON**
Universal setpoint adjuster with PPS2 interface	10-7	N1646	BPZ:QAX39.1	**QAX39.1**

Temperature sensors for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room temperature sensor LG-Ni1000	11-3	N1721	BPZ:QAA24	**QAA24**
Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes	11-5	N1722	BPZ:QAA64	**QAA64**
Duct temperature sensor 400 mm, LG-Ni1000	11-5	N1761	BPZ:QAM2120.040	**QAM2120.040**
Cable temperature sensor PVC 2 m, LG-Ni1000	11-14	N1831	BPZ:QAP22	**QAP22**

Indoor air quality sensors for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Room air quality sensor CO_2 / temperature / rel. Humidity / VOC	11-33	N1961	BPZ:QPA20..	**QPA..**
Duct air quality sensor CO_2/ temperature / rel. Humidity / VOC	11-34	N1962	BPZ:QPM21..	**QPM..**

Communicative controllers - RXC (LonWorks)
Field devices

Dewpoint sensors for RXB2..

Product Title	s. page	Data sheet	Stock No.	Product No.
Condensation monitor	9-20	N1542	BPZ:QXA2000	**QXA2000**
AC 230 V extension module for QXA2000	9-21	N1542	BPZ:AQX2000	**AQX2000**

Differential pressure sensors for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Air duct differential pressure sensor, DC 0...10 V	11-23	N1916	BPZ:QBM65..	**QBM65..**
Differential pressure sensor, DC 0...10 V	11-25	N1910	BPZ:QBM66..	**QBM66..**
Air duct differential pressure sensor with calibration certificate	11-24	N1919	BPZ:QBM65-../C	**QBM65-../C**

Valve actuators for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Electrothermal actuator, 105 N, 1.5 m, AC/DC 24 V, 2P	13-42	N4875	BPZ:STA72E	**STA72E**
Electrothermal actuator, 105 N, AC/DC 24 V, 2P	13-20	N4876	BPZ:STP72E	**STP72E**
Electromotoric actuator, 100 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-38	N4893	BPZ:SSA81	**SSA81**
Electromotoric actuator, 200 N, 5.5 mm, AC 24 V, 1.5 m, 3P	13-29	N4891	BPZ:SSB81	**SSB81**
Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 24 V, 3P	13-23	N4864	BPZ:SSP81	**SSP81**

Damper actuators for RXC..

Product Title	s. page	Data sheet	Stock No.	Product No.
Rotary air damper actuators 5 Nm, without spring return	15-15	N4634	BPZ:GDB..1E	**GDB..1E**
Linear air damper actuators 125 N, without spring return	15-23	N4664	BPZ:GDB..2E	**GDB..2E**
Rotary air damper actuators 10 Nm, without spring return	15-16	N4634	BPZ:GLB..1E	**GLB..1E**
Linear air damper actuators 250 N, without spring return	15-24	N4664	BPZ:GLB..2E	**GLB..2E**

Service units

Product Title	Data sheet	Stock No.	Product No.
Service unit with LCD	N3851	BPZ:RXT20.1	**RXT20.1**

Interfaces for use with DESIGO

Product Title	s. page	Data sheet	Stock No.	Product No.
System controller BACnet/LonTalk	6-18	N9222	BPZ:PXC00.D	**PXC00.D**
System controller BACnet/IP	6-18	N9222	BPZ:PXC00-E.D	**PXC00-E.D**

Room controller with hotel application — HRC3.1



Room controller for temperature, energy and access control, and for hotel room management
- For 2-pipe or 4-pipe fan-coil systems
- For radiators and cooling via 2-pipe fan-coil system
- Auxiliary heating for bathroom
- 2-pipe fan-coil systems with electric reheater (FNC03)
- Centrally programmable room temperature setpoint with individual setpoint adjustment from the guest's room
- Control of room lighting based on room occupancy
- Energy management for individual room control system based on room occupancy
- Room access control via magnetic, chip, or transponder card
- Access control for access to general areas such as car park and main doors
- Acquisition of messages and alarms and transfer to the database server
- Downloadable standard applications

Data sheet	N6313
Operating voltage	AC 24 V
Frequency	50/60 Hz
Communication	Bus Room unit: PPS2, RS485
Digital outputs, number	8
Digital outputs	Powered
Digital output, switching voltage	DC 12 V
Digital inputs, number	16
Digital inputs	No electrical isolation
Digital input, contact query	DC 12 V 5 mA
Relay outputs, number	6
Relay outputs	Powered
Relay output, switching voltage	AC 24 V
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Degree of protection	IP20
Mounting	On DIN rail With screws
Dimensions (W x H x D)	284 x 160 x 57 mm

Stock No.	Product No.
BPZ:HRC3.1	**HRC3.1**

Communicative controllers - Hotel Solution
For fan coil, radiator

HRC3.2



Room controller with hotel application

Room controller for temperature, energy and access control, and for management of the hotel room
- For 2-pipe or 4-pipe fan-coil systems
- For radiators and cooling via 2-pipe fan-coil system
- Auxiliary heating for bathroom
- Centrally programmable room temperature setpoint with individual setpoint adjustment from the guest's room
- Control of room lighting based on room occupancy
- Energy management for individual room control system based on room occupancy
- Room access control via magnetic card, chip card, or transponder card
- Access control for access to general areas such as car park and main doors
- Registration and transfer of messages and alarms to the database server
- Downloadable standard applications

Data sheet	N6314
Operating voltage	AC 24 V
Frequency	50/60 Hz
Communication	Bus Room unit: RS485
Digital inputs, number	8
Digital inputs	No electrical isolation
Digital input, contact query	DC 12 V 5 mA
Relay outputs, number	4
Relay outputs	Powered
Relay output, switching voltage	AC 230 V
Triac outputs, number	4
Triac output, switching voltage	AC 24 V
Degree of protection	IP20
Mounting	On DIN rail With screws
Dimensions (W x H x D)	150 x 110 x 62 mm

Stock No.	Product No.
BPZ:HRC3.2	**HRC3.2**

Room operator unit

HTC3.2..



Room unit to operate individual room control systems in hotel rooms:
- Displays room temperature setpoint and setpoint adjustment
- Individual setpoint adjustment with "plus" and "minus" membrane switches
- Individual manual fan-speed selection for fan control (up to 3 speeds) or selection of "Auto" operating mode
- Measurement of room temperature with a built-in or externally connected temperature sensor

Data sheet	N6320
Operating voltage	DC 9...15 V
Sensing element, temperature	NTC 10k
Communication	Room bus RS485
Degree of protection	IP20
Mounting location	Wall mounting (flush mounted or in a cavity wallbox)
Mounting	Mounting width: 3 modules

Shipment without frame

Range overview HTC3.2..

Product Title	Dimensions (W x H x D)	Stock No.	Product No.
Room operator unit for Bticino Living cover plate range	115 x 72 x 25 mm	BPZ:HTC3.2/BB	**HTC3.2/BB**
Room operator unit for Bticino Light cover plate range	114 x 72 x 25 mm	BPZ:HTC3.2/BW	**HTC3.2/BW**
Room operator unit for Vimar Idea cover plate range	118 x 75 x 26 mm	BPZ:HTC3.2/VB	**HTC3.2/VB**
Room operator unit for Vimar Plana or Ikon cover plate range	118 x 75 x 26 mm	BPZ:HTC3.2/VW	**HTC3.2/VW**

4

HCH3.2..

Chip card holder with doorbell speaker



Chipcard holder to register room occupancy status:
- Registers access code on chipcard
- Transfers access code to room controller
- Membrane switches for signals from hotel room
- Built-in optical display of messages from hotel room
- Messages indicated by LEDs above imprinted symbols
- Illuminated card slot for guidance when entering hotel room
- Built-in speaker for 3-tone chimes (doorbell feature)

Data sheet	N6333
Operating voltage	DC 9...15 V
Voltage supply	Supply from controller module
Communication	Room bus RS485
Degree of protection	IP20
Mounting location	Wall mounting (flush mounted or in a cavity wallbox)
Mounting	Mounting width: 3 modules

Shipment without frame

Range overview HCH3.2..

Product Title	Dimensions (W x H x D)	Stock No.	Product No.
Chip card holder for Bticino Living cover plate range	115 x 72 x 47 mm	BPZ:HCH3.2/BB	**HCH3.2/BB**
Chip card holder for Bticino Light cover plate range	115 x 72 x 47 mm	BPZ:HCH3.2/BW	**HCH3.2/BW**
Chip card holder for Vimar Idea cover plate range	118 x 75 x 48 mm	BPZ:HCH3.2/VB	**HCH3.2/VB**
Chip card holder for Vimar Plana or Ikon cover plate range	118 x 75 x 48 mm	BPZ:HCH3.2/VW	**HCH3.2/VW**

HCR3.2..

Chip card reader



Chipcard reader for hotel room access control:
- Reads access code on chipcard
- Transfers access code to room controller
- Built-in optical display of messages from hotel room
- Messages indicated by LEDs above imprinted symbols
- Membrane switch for doorbell feature
- Illuminated card slot

Data sheet	N6332
Operating voltage	DC 9...15 V
Voltage supply	Supply from controller module
Communication	Room bus RS485
Degree of protection	IP20
Mounting location	Wall mounting (flush mounted or in a cavity wallbox)
Mounting	Mounting width: 3 modules

Shipment without frame

Range overview HCR3.2..

Product Title	Dimensions (W x H x D)	Stock No.	Product No.
Chip card reader for Bticino Living cover-plate range	115 x 72 x 47 mm	BPZ:HCR3.2/BB	**HCR3.2/BB**
Chip card reader for Bticino Light cover-plate range	115 x 72 x 47 mm	BPZ:HCR3.2/BW	**HCR3.2/BW**
Chip card reader for Vimar Idea cover-plate range	118 x 75 x 48 mm	BPZ:HCR3.2/VB	**HCR3.2/VB**
Chip card reader for Vimar Plana or Ikon cover-plate range	118 x 75 x 48 mm	BPZ:HCR3.2/VW	**HCR3.2/VW**

Chip card encoder

HCW3.2



Chipcard encoder/reader with LCD panel:
- Programming of access code on chipcard
- Reading of access code from chipcard
- HOTEL SOLUTION database control
- Text instructions on 2-line LCD panel for user guidance

Data sheet	N6340
Operating voltage	DC 12 V
Interface	RS232 or TCP/IP
Dimensions (W x H x D)	58 x 105 x 175 mm

Shipment with power supply unit AC 100 ... 230 V / DC 12 V.

	Stock No.	Product No.
	BPZ:HCW3.2	**HCW3.2**

4

HTH3.1/B

Transponder card holder



Transponder card holder for identification of room occupancy status:
- Touch-free recognition of access code on transponder card
- Transfer of access code to HRC3.. room controller
- Built-in optical display for orientation upon entering hotel room
- Built-in speaker for three-tone chimes (doorbell feature)

Data sheet	N6336
Operating voltage	DC 12 V
Voltage supply	Supply from controller module
Communication	Room bus RS485
Degree of protection	IP20
Mounting	Mounting width: 3 modules
Mounting location	Wall mounting (flush mounted or in a cavity wallbox)
Dimensions (W x H x D)	51 x 74 x 62 mm

Shipment without frame

Stock No.	Product No.
BPZ:HTH3.1/B	**HTH3.1/B**

HTR3.1/B

Transponder card reader



Transponder card reader for hotel-room access control:
- Touch-free recognition of access code on transponder card
- Transfer of access code to HRC3.. room controller
- Built-in optical display of messages from hotel room
- Illuminated symbols for signal indication
- Pushbutton for doorbell feature

Data sheet	N6337
Operating voltage	DC 12 V
Voltage supply	Supply from controller module
Communication	Room bus RS485
Degree of protection	IP20
Mounting	Mounting width: 3 modules
Mounting location	Wall mounting (flush mounted or in a cavity wallbox)
Dimensions (W x H x D)	51 x 74 x 62 mm

Shipment without frame

Stock No.	Product No.
BPZ:HTR3.1/B	**HTR3.1/B**

Transponder card encoder

HTW3.1/B



Transponder card encoder/reader with LCD panel:
- Touch-free programming of access code on transponder card
- Touch-free reading of access code from transponder card
- HOTEL SOLUTION database control
- Text instructions on 2-line LCD panel for user guidance

Data sheet	N6338
Operating voltage	DC 12 V
Interface	RS232
Dimensions (W x H x D)	61 x 154 x 175 mm

Shipment with power supply unit AC 100 ... 240 V / DC 12 V.

	Stock No.	Product No.
	BPZ:HTW3.1/B	**HTW3.1/B**

Notes

Devices for Homeautomation



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5

Central apartment unit (1)



The heart and brain of the system. From here you can control all different functions for up to 12 rooms quickly and easily and monitor them via the display.

Room unit / room temperature sensor (2)



The room unit measures the room temperature and allows the settings entered into the central apartment unit, such as temperature and operating parameters, to be adjusted for individual rooms. The comfort settings can be extended at the push of a button.

The room temperature sensor measures the room temperature and communicates this by radio to the central apartment unit.

Radiator control actuator (3)



Measures room temperature, receives the pre-set desired temperature for this room by radio signal from the central apartment unit and regulates room temperature by adjusting the radiator valve. It can also be regulate up to 5 additional radiators per room, thereby ensuring an even temperature between radiators.

Heating circuit controller / Multicontroller / Consumption data interface (4)



Compares the actual values and setpoints for each room communicated to the central apartment unit via RF and regulates the temperature by adjusting the valve settings of the heat distributer.
For precontrol of up to 2 independent hydraulic room groups (e.g. radiators, floor heating) or control of ventilation plant with up to 3 stages.
The consumption data interface collects consumption meter data of heat/cool, electicity, water and gas

Web server (5)



Connects the home automation system to the internet, allowing you to access and operate the system from a remote location and remotely read the consumption data.

RF adapter plug, switching or dimming (6)



For remote control of electrical appliances or dimmable lights connected to power outlets. Operated via central apartment unit, a handheld remote control unit or external button, all via KNX RF. The RF adapter plugs are available in 4 different, country-specific versions.

Meteo sensor (7)



Acquires the outside temperature and atmospheric pressure and communicates this via RF to the central apartment unit.

Smoke detector (8)



Detects smoke in the event of a fire breaking out and sets off an alarm. It communicates the alarm by radio to the Synco™ living central control unit. From there the alarm can be sent by SMS, pager or e-mail to one or more recipients.

Lighting and blind control (9)



Wireless and therefore convenient control of lighting and blinds – centrally, locally in the room, or as a scene. Naturally, the components can also be operated automatically, e.g. via time programs or simulation of presence.

Door / window contact (10)



Monitors the status of windows, doors and gates and transmits the relevant data to the central apartment unit. In the case of deviations from the norm, the system can alert you in a variety of ways, increases comfort.

Use Synco™ living – and technology becomes your valued companion in the house

Synco™ living is the new modular Homeautomation system from Siemens. It offers central operation and adapts all parameters for comfortable living, such as optimum room temperatures, air and light conditions, safety and security, plus economical use of energy and financial resources, to individual needs. The system can be dynamically matched to changing living conditions. Information within the system is transmitted either wire-bound (KNX TP1) or via radio (KNX RF).

To be able to satisfy all kinds of requirements in the residential sector, today's Homeautomation systems must be compatible with a large number of systems on the market. Synco™ living offers absolute openness. This means that – now or later – you can integrate almost any type of system into your Synco™ living configuration conforming to European standards.



5

Synco™ living starter kit

The Synco living starter kit is a wireless room temperature control system for heating plants comprising up to 2 individual zones. A maximum of 6 radiator control actuators can be integrated in the system and the collected heat requests can be forwarded to heat generation.

KIT911



KIT914



Room unit (1)



Managed room heating control of up to 2 heating zones (rooms) and 6 SSA955 radiator control actuators. The unit ensures full control of the room heating functions and all data are clearly shown on the display. Furthermore, the QAW912 acquires the room temperature in the relevant room.

Radiator control actuator (2)



Acquires the room temperature, receives the preset desired temperature for this room via radio signal from the room unit and regulates the room temperature by adjusting the radiator valve. It can also regulate up to 5 additional radiators per room, thereby ensuring even temperatures between radiators.

RF adapter plugs, switching (3) Heating circuit controller (3)



Receives the heat request from the room unit via radio signal and switches heat generation.



Central apartment unit

QAX910..



The central apartment unit serves as an operator and display unit for an apartment.
It manages individual room control of up to 12 rooms, comfort ventilation, precontrol and DHW control, control of air conditioning equipment. Additional functions include the control of lights and blinds. Door and window contacts plus smoke detectors and water monitors can be integrated for monitoring purposes.

- Management of heating control for one apartment
  - Suited for heating plant with central heat distribution (e.g. underfloor heating) and radiators with decentral connections
  - Selection of operating mode, timer and holidays / special day function for the apartment
  - Independent time switches and operating modes for 12 rooms
  - Flow temperature control of 2 independent room groups including limitation (min. / max.) and maintained return temperature (high / low)
  - Increase of economy room temperature setpoint and minimum flow temperature setpoint depending on the composite outside temperature
  - Collection of heat requests from the individual rooms and forwarding to heat generation via wired bus, heat demand relay or DC 0...10 V output to RRV912 or RRV934
- Absence function (heating, cooling, ventilation, lights, blinds) with simulation of presence (lights)
- DHW heating with time switch and selection of operating mode
- Management of 3-stage ventilation plant via RRV934 multicontroller, incl. night cooling
- Control of air conditioners (split units) via universal outputs (locally and RRV91x) or via S-Mode (KNX TP1)
- Operation of lights and blinds via 4 softkeys, time switch and events
- Monitoring door contacts, window contacts and smoke detectors
- Display of meteorological data
- Presentation of key data on info pages
- Wireless communication with the devices of GAMMA wave and Hager tebis TX product ranges
- Remote access via Siemens web server OZW772.xx

Data sheet	N2707
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) and KNX TP1 (wired bus)
Indoor wireless range	30 m
Display	Full graphic backlit display
Universal input, signal	Digital 0/1 LG-Ni1000
Universal inputs, number	1
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Relay outputs, number	1
Degree of protection	IP20D
Dimensions (W x H x D)	230 x 130 x 29.7 mm

Synco™ living
Central apartment unit QAX9..

Range overview QAX910..

Product Title	Data sheet	Stock No.	Product No.
Central apartment unit in German Instructions in de; plain text output in de, en, fr, it, es, nl, pt	N2707	BPZ:QAX910-DE	**QAX910-DE**
Central apartment unit in English Instructions in en; plain text output in de, en, fr, it, es, nl, pt	N2707	BPZ:QAX910-EN	**QAX910-EN**
Central apartment unit in Dutch Instructions in nl; plain text output in de, en, fr, it, es, nl, pt	N2707	BPZ:QAX910-NL	**QAX910-NL**
Central apartment unit in French Instructions in fr; plain text output in de, en, fr, it, nl, es, pt	N2707	BPZ:QAX910-FR	**QAX910-FR**
Central apartment unit in Italian Instructions in it; plain text output in de, en, fr, it, es, nl, pt	N2707	BPZ:QAX910-IT	**QAX910-IT**
Central apartment unit in Polish Instructions in pl; plain text output in en, pl, cs, hu, ru, bg, sk	N2707	BPZ:QAX910-PL	**QAX910-PL**
Central apartment unit in Czech Instructions in cs; plain text output in en, pl, cs, hu, ru, bg, sk	N2707	BPZ:QAX910-CS	**QAX910-CS**
Central apartment unit in Hungarian Instructions in hu; plain text output in en, pl, cs, hu, ru, bg, sk	N2707	BPZ:QAX910-HU	**QAX910-HU**
Central apartment unit in Slovak Instructions in sk; plain text output in en, pl, cs, hu, ru, bg, sk	N2707	BPZ:QAX910-SK	**QAX910-SK**
Central apartment unit in Greek Instructions in el; plain text output in en, el, ro, tr, sl, sr, hr	N2707	BPZ:QAX910-EL	**QAX910-EL**
Central apartment unit in Turkish Instructions in tr; plain text output in en, el, ro, tr, sl, sr, hr	N2707	BPZ:QAX910-TR	**QAX910-TR**
Central apartment unit in Croatian Instructions in hr; plain text output in en, el, ro, tr, sl, sr, hr	N2707	BPZ:QAX910-HR	**QAX910-HR**
Central apartment unit in Slovenian Instructions in sl; plain text output in en, el, ro, tr, sl, sr, hr	N2707	BPZ:QAX910-SL	**QAX910-SL**

Central apartment unit with energy consumption data collection

QAX913..



The central apartment unit serves as an operator and display unit for an apartment.
It manages individual room control (heating/cooling) of up to 12 rooms, comfort ventilation, precontrol and DHW control, control of air conditioning equipment, and acquires the consumption data of heat, water, electricity and gas. Additional functions include the control of lights and blinds. Door and window contacts plus smoke detectors and water monitors can be integrated for monitoring purposes.

- Management of heating and cooling control for one apartment
  - Suited for heating and cooling plants with central distribution (e.g. underfloor heating) and radiators with decentral connections
  - Selection of operating mode, timer and holidays / special day function for the apartment
  - Independent time switches and operating modes for 12 rooms
  - Flow temperature control of 2 independent room groups including limitation (min. / max.) and maintained return temperature (high / low)
  - Increase of economy room temperature setpoint and minimum flow temperature setpoint depending on the composite outside temperature
  - Collection of heat / cooling requests from the individual rooms and forwarding the requests to the heat/cooling sources via wired bus, heat/cooling demand relay or DC 0...10 V output to the RRV912 or RRV934
- Absence function (heating, cooling, ventilation, lights) with simulation of presence (lights)
- DHW heating with time switch and selection of operating mode
- Management of 3-stage ventilation plant via RRV934 multicontroller, incl. night cooling
- Control of air conditioners (split units) via universal outputs (locally and RRV91x) or via S-Mode (KNX TP1)
- Operation of lights and blinds via 4 softkeys, time switch and events
- Monitoring door contacts, window contacts and smoke detectors
- Display of meteorological data
- Presentation of key data on info pages
- Wireless communication with the devices of GAMMA wave and Hager tebis TX product ranges
- Remote access via Siemens web server OZW772.xx
- Collection of meter data (heat / cool, electricity, water, gas) to support automated meter reading & billing

Data sheet	N2740
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) and KNX TP1 (wired bus)
Indoor wireless range	30 m
Display	Full graphic backlit display
Universal input, signal	Digital 0/1 LG-Ni1000
Universal inputs, number	1
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Relay outputs, number	1
Degree of protection	IP20D
Dimensions (W x H x D)	230 x 130 x 29.7 mm

Synco™ living
Central apartment unit QAX9..

Range overview QAX913..

Product Title	Data sheet	Stock No.	Product No.
Central apartment unit with energy consumption data collection in German	N2740	S55621-H111	QAX913-DE
Instructions in de; plain text output in de, en, fr, it, nl, es, pt			
Central apartment unit with energy consumption data collection in French	N2740	S55621-H114	QAX913-FR
Instructions in fr; plain text output in de, en, fr, it, nl, es, pt			
Central apartment unit with energy consumption data collection	N2740	S55621-H116	QAX913-IT
Instructions in it; plain text output in de, en, fr, it, es, nl, pt			

QAX903..



Central apartment unit for HVAC and energy consumption data collection

The central apartment unit serves as an operator and display unit for an apartment.
It manages individual room control (heating/cooling) of up to 12 rooms, comfort ventilation, precontrol, control of air conditioning equipment, and acquires the consumption data of heat, water, electricity and gas.

- Management of heating and cooling control for one apartment
- Suited for heating and cooling plants with central distribution (e.g. underfloor heating) and radiators with decentral connections
- Selection of operating mode, timer and holidays / special day function for the apartment
- Independent time switches and operating modes for 12 rooms
- Flow temperature control of 2 independent room groups including limitation (min. / max.) and maintained return temperature (high / low)
- Increase of economy room temperature setpoint and minimum flow temperature setpoint depending on the composite outside temperature
- Collection of heat / cooling requests from the individual rooms and forwarding the requests to the heat/cooling sources via wired bus, heat/cooling demand relay or DC 0...10 V output to the RRV912 or RRV934

- Absence function (heating, cooling, ventilation)
- Management of 3-stage ventilation plant via RRV934 multicontroller, incl. night cooling
- Control of air conditioners (split units) via universal outputs (locally and RRV91x) or via S-Mode (KNX TP1)
- Display of meteorological data
- Presentation of key data on info pages
- Remote access via Siemens web server OZW772.xx
- Collection of meter data (heat / cool, electricity, water, gas) to support automated meter reading & billing

Data sheet	N2741
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) and KNX TP1 (wired bus)
Indoor wireless range	30 m
Display	Full graphic backlit display
Universal input, signal	Digital 0/1 LG-Ni1000
Universal inputs, number	1
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Relay outputs, number	1
Degree of protection	IP20D
Dimensions (W x H x D)	230 x 130 x 29.7 mm

NEW PRODUCT

Range overview QAX903..

Product Title	Data sheet	Stock No.	Product No.
Central apartment unit for HVAC and energy consumption data collection in German	N2741	S55621-H110	QAX903-DE
Instructions in de; plain text output in de, en, fr, it, nl, es, pt			
Central apartment unit for HVAC and energy consumption data collection in French	N2741	S55621-H113	QAX903-FR
Instructions in fr; plain text output in de, en, fr, it, nl, es, pt			
Central apartment unit for HVAC and energy consumption data collection in Italian	N2741	S55621-H115	QAX903-IT
Instructions in it; plain text output in de, en, fr, it, nl, es, pt			

NEW PRODUCT

Synco™ living
Room unit QAW91.. and room sensor QAA91..

QAW910



Room unit

Wireless room unit.
The QAW910 is used for the operation and display of basic space heating functions. It also forwards the acquired room temperature to the central apartment unit QAX9.., either periodically or when changes occur. The room temperature is shown on the display of the QAW910.

- Operation and display of space heating functions
- Selection of room operating mode, timer function and room temperature setpoint readjustment
- Display of space heating function and status messages
- Acquisition of the room temperature
- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
- Renovation projects (old buildings, museums, churches, historical buildings, etc.)
- Difficult wall-mounting situations (sandstone, glass, etc.)
- Variable floor plans (different décors, furniture changes)
- New houses and buildings
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2703
Voltage supply	Mignon (2xAA) LR6
Battery life	3 years
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Measuring range, temperature	0...50 °C
Display	Segment LCD
Display size	Resolution 0.1 °C
Degree of protection	IP40
Dimensions (W x H x D)	84 x 130 x 23.6 mm

	Stock No.	Product No.
	BPZ:QAW910	**QAW910**

Room temperature sensor — QAA910



Wireless room temperature sensor for acquiring the room temperature.
During operation, the QAA910 forwards the acquired room temperature to the central apartment unit QAX9.., either periodically or in the case of changes.

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
- Renovation projects (old buildings, museums, churches, historical buildings, etc.)
- Difficult wall-mounting situations (sanddstone, glass, etc.)
- Variable floor plans (different décors, furniture changes)
- New construction projects
- RF communication based on KNX standard (868 MHz, unidirectional)

Data sheet	N2701
Voltage supply	Mignon (2xAA) LR6
Battery life	3 years
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz unidirectional (RF)
Indoor wireless range	30 m
Measuring range, temperature	0...50 °C
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 23 mm

Stock No.	Product No.
BPZ:QAA910	**QAA910**

5

SSA955



Radiator control actuator

RF-based actuator for radiator valves.
The SSA955 controls the room temperature based on the data forwarded by the central apartment unit QAX9...

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Silent mode (e.g. for use in sleeping rooms)
- Automatic identification of valve stroke
- Parallel connection of multiple actuators possible
- Integrated temperature sensor
- For direct mounting with coupling nut (no tools required)
- Manual adjustment
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2700
Voltage supply	Mignon (3xAA) LR6
Battery life	3 years (2 years in silent mode)
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Sound power level	Silent mode: <25 dB (A) Normal mode: <30 dB (A)
Stroke	2.5 mm
Positioning force	110 N
Medium temperature	1...110 °C
Measuring range, temperature	0...50 °C
Ambient temperature, operation	1...50 °C
Connecting thread	M30 x 1.5
Degree of protection	IP40
Mounting position	Upright to 90° inclined
Dimensions (W x H x D)	48 x 95 x 80.6 mm

Suitable adaptors for valves of other manufacturers types AV5 . and AV6 ., see chapter " Valves and actuators for room- and zone applications"

Stock No.	Product No.
BPZ:SSA955	**SSA955**

Heating circuit controller, 2 heating circuits — RRV912



RF-based heating circuit controller for up to 2 heating circuits and DHW heating.
In operation, the RRV912 maintains the required room temperature of the individual heating circuits.
The central apartment unit QAX9.. forwards the relevant data via RF.

- Suited for use in heating and cooling plants
- With central distributors (e.g. underfloor heating or soft steel piping system)
- For use with motorized radiator valves (e.g. with sill covers)
- Heating circuit control with 2- or 3-position actuators
- 2 universal relay outputs, e.g. for control of the room group pump and DHW heating
- 1 universal input, e.g. for connection of a DHW temperature sensor or an alarm
- 1 universal output DC 0...10 V for forwarding the heat / cooling demand signal
- RF communication based on KNX standard (868 MHz, bidirectional)

5

Data sheet	N2705
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Control algorithm	2-position: PID, 3-position: PID
Triac output, switching voltage	AC 230 V
Triac output, switching current	30 mA
Triac outputs, number	2
Universal output, signal	DC 0...10 V
Universal output, current	max. DC 1 mA
Universal outputs, number	1
Universal input, signal	Digital 0/1 LG-Ni1000
Universal inputs, number	1
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Relay outputs, number	2
Degree of protection	IP30
Mounting	On DIN rail With screws
Dimensions (W x H x D)	180 x 98 x 50 mm

Stock No.	Product No.
BPZ:RRV912	**RRV912**

5

RRV918

Heating circuit controller, 8 heating circuits



RF-based heating circuit controller for up to 8 heating circuits.
In operation, the RRV918 maintains the required room temperature of the individual heating circuits.
The central apartment unit QAX9.. forwards the relevant data via RF.

- Suited for use in heating and cooling plants
- With central distributors (e.g. underfloor heating or soft steel piping system)
- For use with motorized radiator valves (e.g. with sill covers)
- Connection facility for up to eight 2-position actuators
- 1 Universal relay output, e.g. for control of the room group pump and DHW heating
- 1 Universal input, e.g. for connection of a DHW temperature sensor or an alarm
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2706
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Control algorithm	2-position PID
Triac output, switching voltage	AC 230 V
Triac output, switching current	30 mA
Triac outputs, number	8
Universal input, signal	Digital 0/1 LG-Ni1000
Universal inputs, number	1
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0.02...2 (2) A
Relay outputs, number	1
Degree of protection	IP30
Mounting	On DIN rail With screws
Dimensions (W x H x D)	245 x 98 x 50 mm

Stock No.	Product No.
BPZ:RRV918	**RRV918**

Multicontroller

RRV934



RF-based multicontroller for precontrol of up to 2 room groups or control of ventilation plant with up to 3 stages. All inputs and outputs are also suited for universal use. The relevant data are forwarded wirelessly by the central apartment unit QAX9...

- Suited for use in heating and cooling plants for precontrol of up to 2 room groups
- 2 primary controllers each with a DC 0...10 V actuator
- 1 primary controller with a DC 0...10 V actuator and 1 primary controller with a 3-position actuator
  Flow and return temperature limitation, optional control of room group pumps and DHW heating
- Suited for control of 3-stage ventilation plant incl. HR bypass, with impact from humidity, indoor air quality or CO_2- level, incl. fault monitoring
- Forwarding the heat / cooling demand signal to primary energy plant
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2709
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Control algorithm	Precontroller: PI
Universal output, signal	DC 0...10 V
Universal output, current	max. DC 1 mA
Universal outputs, number	2
Universal input, signal	Digital 0/1 LG-Ni1000 DC 0...10 V
Universal inputs, number	4
Measuring range, temperature	0...120 °C
Relay output, switching voltage	AC 24...230 V NO - contact
Relay output, switching current	AC 0,02...2 (2) A
Relay outputs, number	4
Degree of protection	IP30
Mounting	On DIN rail With screws
Dimensions (W x H x D)	245 x 98 x 50 mm

Stock No.	Product No.
BPZ:RRV934	**RRV934**

Synco™ living
Consumption data interface

WRI982



Consumption data interface

The consumption data interface collects consumption (meter) data and communicates these data using KNX RF directly to the central apartment unit (QAX913 or QAX903). Meters may be connected either via Impulse inputs or via M-Bus (wired). There is an additional interface for communication with the Synergyr central communication device, OW30, for the purpose system migration.

- M-Bus MiniMaster for up to 3 M-Bus meters
- 2 Impulse inputs for impulse meters
- BatiBus communication to Synergyr OZW30
- KNX RF communication to QAX913 or QAX903

Data sheet	N2735
Operating voltage	AC 230 V
Power consumption	7 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF) BatiBus communication to Synergyr OZW30
Indoor wireless range	30 m
Degree of protection	IP30
Mounting	On DIN rail or with screws
Dimensions (W x H x D)	120 x 90 x 50 mm

Stock No.	Product No.
S55621-H112	WRI982

NEW PRODUCT

Web server for 1 KNX device

OZW772.01



The OZW772 web servers allow for remote operation and monitoring of plants via the web and send fault status signals, energy consumption data and system reports to e-mail recipients

- Operate web browser via PC/laptop and Smartphone
- Operate ACS (PC/laptop with ACS plant operating software)
- Local connection via USB
- Remote connection via Ethernet (DSL router)
- Operate and monitor via customized plant diagrams
- User accounts for web operation (user groups, operating language)
- Simultaneously support multiple users
- Display fault messages in the web browser
- Send fault messages to a maximum of 4 e-mail recipients
- Periodic transmission of energy consumption data to 2 e-mail recipients
- Periodically send system reports to e-mail recipients
- Save the last 500 faults and messages (history)
- Direct commissioning with web browser or ACS service tool
- Software update via USB connection

Data sheet	N5701
Operating voltage	Power pack: AC 230 V Web server: DC 24 V
Power consumption	
Communication	KNX TP1 (wire-Bus) Ethernet, RJ45 plug socket (shielded) USB V2.0 (universal serial bus)
Degree of protection	IP30
Mounting	On DIN rails With Screws
Dimensions (W x H x D)	87.5 x 90 x 40 mm
Additional info	Commissioning Instructions C5701 stored on web server Package insert: Installation Instructions G5701 Power pack AC 230 V / DC 24 V Ethernet-cable USB-cable 2 cable ties

Stock No.	Product No.
BPZ:OZW772.01	**OZW772.01**

Synco™ living
Water monitor QFP910 and handheld control AFK914/C01

QFP910

Water monitor



Wireless sensor for detecting water leaks.
The QFP910 sends its status (dry / water leak) to the Central Apartment Unit QAX913 periodically or if there is a change in status.

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- External water leak sensor
- RF communication based on KNX standard (868 MHz, unidirectional)

Data sheet	N2732
Voltage supply	Mignon (2xAA) LR6
Battery life	3 years
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz unidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x23 mm

Stock No.	Product No.
S55371-C100	QFP910

AFK914/C01

Handheld control



Handheld device for remotely operating predifined functions of the Central Apartment Unit QAX913

- Up to 4 different functions may be initiated, one for each of the four buttons
- The function of each button may be individually configured on the Central Apartment Unit
- Battery powered by commercially available lithium batteries (type CR2032)
- RF communication based on the KNX standard (868 MHz, bidirectional)
- Colored LEDs to indicate status and confirmation from the Central Apartment Unit

Data sheet	N2731
Voltage supply	Lithium button cell (1xCR2032)
Battery life	≥3 years (when operated 2.5 times per day)
Battery capacity	0.230 mAh
Communication	KNX RF-compatible, 868.3 MHz, bidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP41
Dimensions (W x H x D)	55 x 28 x 12 mm

Stock No.	Product No.
S55621-H105-C901	AFK914/C01

NEW PRODUCT

Meteo sensor — QAC910



Wireless sensor for acquiring outside temperature and atmospheric pressure.
In operation, the QAC910 forwards the acquired outside temperature and atmospheric pressure to the central apartment unit QAX9.., either periodically or when changes occur.

- Battery-powered by commercially available 1.5 V batteries (contained in the scope of delivery)
- Especially suited for:
- Renovation projects (old buildings, museums, churches, historical buildings, etc.)
- Difficult wall-mounting situations (sandstone, glass, etc.)
- Variable floor plans (different décors, other furniture)
- New houses or buildings
- RF communication based on KNX standard (868 MHz, unidirectional)
  2-Wire cable between meteo sensor and transmitter required

Data sheet	N2701
Voltage supply	Mignon (2xAA) LR6
Battery life	3 years
Battery capacity	2.5 Ah
Communication	KNX RF-compatible, 868.3 MHz unidirectional (RF)
Indoor wireless range	30 m
Measuring range, temperature	-50...50 °C
Degree of protection	IP40
Additional info	Dimensions (W x H x D): Outside sensor: 80 X 92 x 50 mm RF transmitter: 84 x 84 x 23 mm

Stock No.	Product No.
BPZ:QAC910	**QAC910**

RF repeater — ERF910



Wireless RF repeater for extending plant.
In operation, the ERF910 repeats the RF telegrams from the devices attuned to it.

- Extending and ensuring RF coverage in the Siemens Synco living system
- Especially suited for:
- Renovation projects (old buildings, museums, churches, historical buildings, etc.)
- Difficult wall-mounting situations (sandstone, glass, etc.)
- Variable floor plans (different décors, furniture changes)
- New houses and buildings
- External power pack
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2704
Operating voltage	AC 230 V
Power consumption	0.2 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 23 mm

Stock No.	Product No.
BPZ:ERF910	**ERF910**

5

KRF960..



RF adapter plug, switching

RF-based adapter plug for switching electrical consumers up to 10 A. The relevant data are forwarded wirelessly by the central apartment unit QAX910 or QAX913.

- For remote control of electrical appliances connected to power outlets
- Operation via KNX RF or manually
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2718
Operating voltage	AC 230 V
Power consumption	0.8 VA
Communication	KNX RF-compatible, 868.3 MHz bidirectional (RF)
Indoor wireless range	30 m
Relay outputs, number	1
Relay output, switching output	Incandescent lamps (AC 230 V): 2300 W Halogen lamps (AC 230 V): 2300 W Extra low-voltage Halogen (DC 12 V / 24 V) via ferromagnetic transformer: 1600 VA Extra low-voltage Halogen (DC 12 V / 24 V) via electronic transformer: 1200 VA Fluorescent lamps: 28 x 36 W: max. 120 µF
Degree of protection	IP30
Dimensions (W x H x D)	54 x 98 x 40 mm

Range overview KRF960..

Product Title	Stock No.	Product No.
RF adapter plug, switching, type E	BPZ:KRF960-E	**KRF960-E**
RF adapter plug, switching, type F	BPZ:KRF960-F	**KRF960-F**
RF adapter plug, switching, type J	BPZ:KRF960-J	**KRF960-J**
RF adapter plug, switching, type L	BPZ:KRF960-L	**KRF960-L**

KRF961..



RF adapter plug, dimming

RF-based adapter plug for switching and dimming electrical lights up to 300 W. The relevant data are forwarded wirelessly by the central apartment unit QAX910 or QAX913.

- For remote control of dimmable lights connected to power outlets
- Operation via KNX RF or manually
- RF communication based on KNX standard (868 MHz, bidirectional)

Data sheet	N2719
Operating voltage	AC 230 V
Power consumption	1.65 VA
Communication	KNX RF-commpatible, 868.3 MHz, bidirectional (RF)
Indoor wireless range	30 m
Triac outputs, number	1
Triac output, switching output	Incandescent lamps (AC 230 V): 20...300 W Halogen lamps (AC 230 V): 20...300 W Extra low-voltage Halogen (DC 12 V / 24 V) via ferromagnetic transformer: 20...200 VA Extra low-voltage Halogen (DC 12 V / 24 V) via electronic transformer: 20...200 VA
Degree of protection	IP30
Dimensions (W x H x D)	54 x 98 x 40 mm

Range overview KRF961..

Product Title	Stock No.	Product No.
RF adapter plug, dimming, type E	BPZ:KRF961-E	**KRF961-E**
RF adapter plug, dimming, type F	BPZ:KRF961-F	**KRF961-F**
RF adapter plug, dimming, type J	BPZ:KRF961-J	**KRF961-J**
RF adapter plug, dimming, type L	BPZ:KRF961-L	**KRF961-L**

Synco™ living
Starter Kit 91..

KIT91..





Starter kit

Wireless starter kit for radiator application, consisting of:
- One QAW912 room unit - 2 heating zones
- One or 4 SSA955 radiator control actuators

The starter kit can be complemented by additional SSA955 - up to a total of 6

Data sheet	N2720
Communication	KNX RF-compatible, bidirectional, 868.3 MHz
Indoor wireless range	30 m

Range overview KIT91..

Product Title	Packaging unit	Data sheet	Stock No.	Product No.
Starter kit with room unit and 1 radiator control actuator	1 x QAW912 + 1 x SSA955	N2720	S55621-H103	**KIT911**
Starter kit with room unit and 4 radiator control actuators	1 x QAW912 + 4 x SSA955	N2720	S55621-H104	**KIT914**

Room unit with KNX RF for 2 heating zones

QAW912



Wireless room unit
The QAW912 manages room heating control of up to 2 heating zones (rooms) and 6 SSA955 radiator control actuators. The unit facilitates full control of the room heating functions. All data are clearly shown on the display. Furthermore, the QAW912 acquires the room temperature in the relevant room.

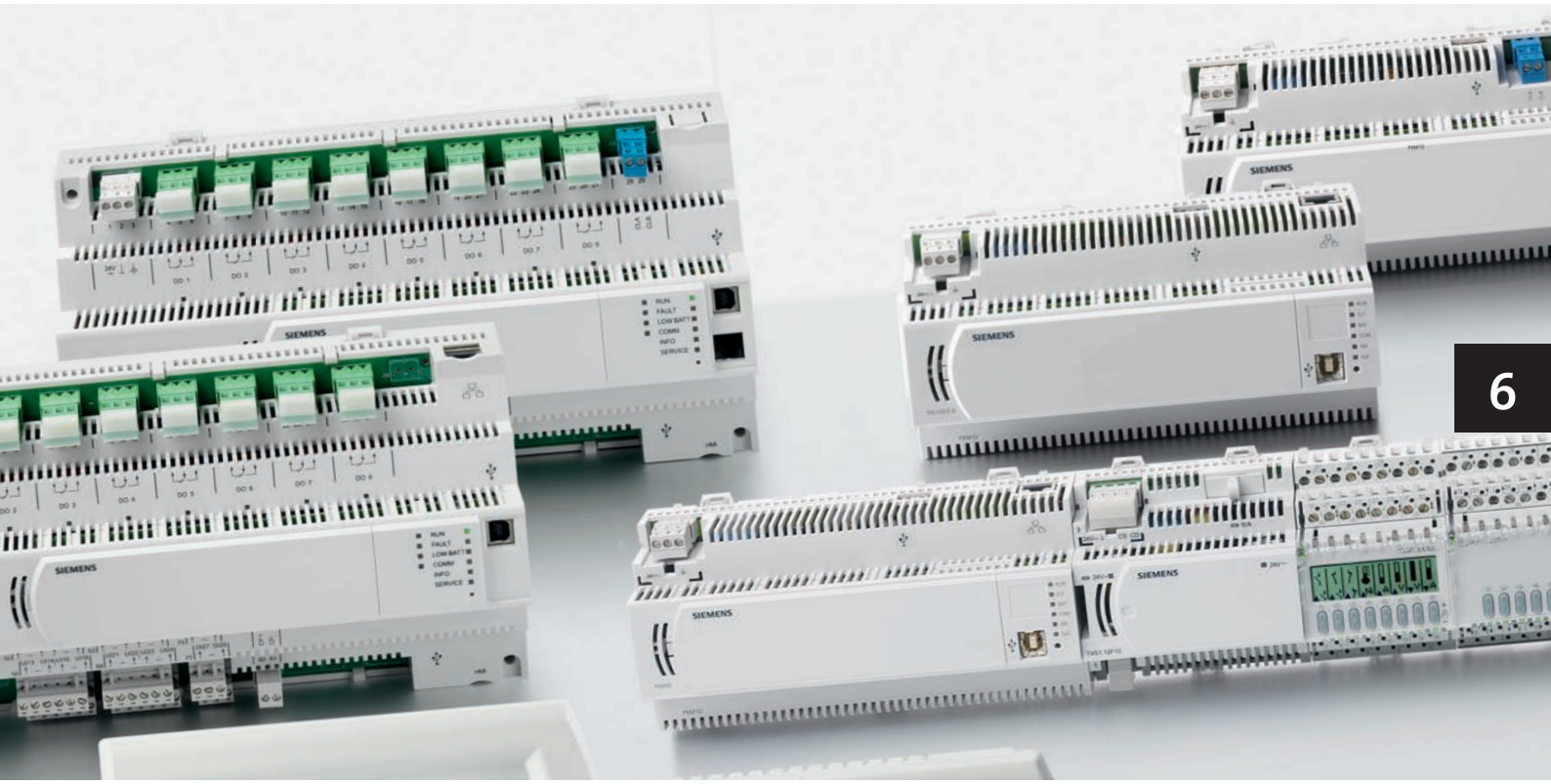
- Operation and display of the room heating functions of both heating zones:
  - Selection of room operating mode
  - Activation of comfort timer / absence timer
  - Setting of 7-day time switch, holiday period and room temperature setpoints
  - Display of room heating funtion and status messages (incl. all SSA955 connected via radio link)
- Acquisition of the room temperature in one room
- Battery-powered by commercially available 1.5 V batteries (supplied with the unit)
- Collection of heat requests from both rooms and forwarding them to heat generation via the KRF960 or RRV912
- Specifically suited:
  - For renovation projects (old building, museums, churches, historical building, etc)
  - When wall mounting is difficult (sandstone, glass, etc.)
  - If flexible floor plans are required (changing decor, different furniture)
  - For new buildings
- Radio communication based on KNX standard (868 MHz bidirectional)
- Commissioning via operating buttons - no tools required

Data sheet	N2720
Voltage supply	Mignon (2xAA) LR6
Battery life	Typically 2 years (with battery capacity ≥2.5 Ah)
Communication	KNX RF-compatible, bidirectional, 868.3 MHz
Indoor wireless range	30 m
Measuring range, temperature	0...50 °C
Display	Segment LCD
Display size	Resolution 0.1 °C
Degree of protection	IP40
Dimensions (W x H x D)	84 x 130 x 23.6 mm

Stock No.	Product No.
S55621-H102	**QAW912**

Notes

Programmable automation station

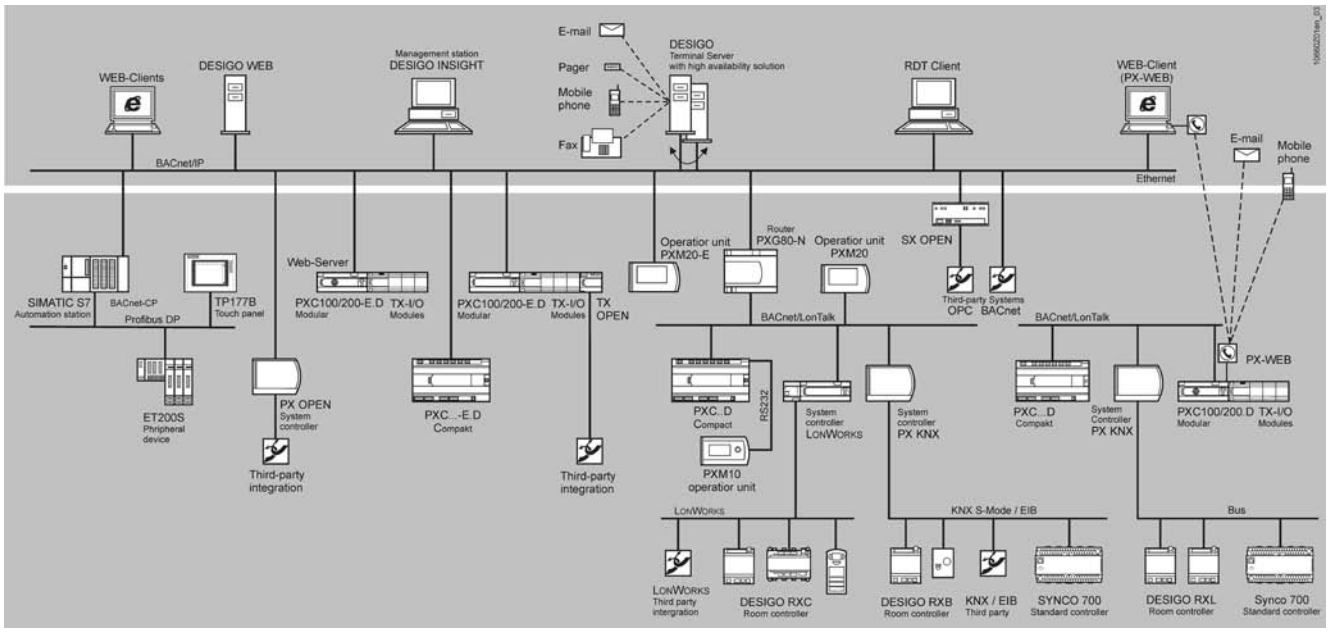


6

Overview and selection tools	System topology	6-2
	Overview	6-3
DESIGO™ PX	Compact series PXC..	6-5
	Modular series PXC..D	6-10
	Modular series PXC..U	6-12
	Accessories for compact and modular series PXC..	6-14
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DESIGO TX-I/O™	I/O modules TXM..	6-24
	DESIGO™ TX OPEN	6-28
	Accessories DESIGO TX-I/O™	6-29

6

DESIGO™ Overall topology

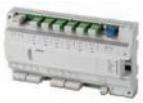


One of the key benefits of DESIGO™ is its seamless expansion capability, starting from the smallest system up to comprehensive and distributed large systems.

PX Automation stations and system controller overview

	PX Automation station series			PX System controllers		
	modular PXC100/200..D	modular PXC64/128-U	compact PXC..	PXC00..D with PXX-L..	PXC00-U with PXA30-K..	PXC00-U with PXA30-RS
HMI Automation level						
Web client (PX-WEB)	■	■	■	■	■	■
PXM20	■	■	■	■	■	■
PXM10	■	■	■			
QAX3..		■	■			
System functions (BACnet)						
Alarms	■	■	■	■	■	■
Time schedules	■	■	■	■	■	■
Trend	■	■	■	■	■	■
I/O with value objects	■	■	■	■	■	■
Programming with D-MAP	■	■	■	■	■	■
Subsystem	Bus for I/O modules	Bus for I/O modules	Direct connection via I/O	LONWORKS technologie	Konnex	Modbus, M-Bus, ...
Additioinal functions						
Grouping				■		

Overview of inputs and outputs of compact PXC.. automation stations





BACnet / LONTALK	PXC12.D	PXC22.D	PXC36.D	PXC36-S	PXC52	
BACnet / LONTALK and modem connection	PXC12-T.D	PXC22-T.D	PXC36-T.D			PXC10-TL
BACnet / IP	PXC12-E.D	PXC22-E.D	PXC36-E.D			
Number of I/Os complete	12	22	36	36	52	10
Universal inputs, number	4	12	18	12	16	4
Digital inputs, number	2	0	4	12	16	4
Digital outputs, number	2	6	8	6	12	2
Analog outputs, number	4	4	6	6	8	0

Functions of PXA40... / PXA30... for the modular PX automation stations and system controllers

	Modular PXC...D	Modular PXC...-E.D			Modular PXC...-U					
Functions	PXA40-T	PXA40-W0	PXA40-W1	PXA40-W2	PXA30-T	PXA30-N	PXA30-NT	PXA30-W0	PXA30-W1	PXA30-W2
Ethernet interface RJ45	■ 1)	■ 1)	■ 1)	■ 1)		■	■	■	■	■
Modem connection	■	■	■	■	■		■	■	■	■
BACnet on Ethernet / IP	■ 1)	■ 1)	■ 1)	■ 1)		■	■	■	■	■
Generic PX-WEB (ethernet or PPP)		■ 2)	■	■				■ 2)	■	■
Graphic PX-WEB (ethernet or PPP)		■ 2)		■				■ 2)		■
Remote management BACnet (PTP)	■ 3)	■ 3)	■ 3)	■ 3)	■ 3)		■ 3)	■ 3)	■ 3)	■ 3)
Remote management PX-WEB (PPP)		■ 3)	■ 3)	■ 3)			■ 3)	■ 3)	■ 3)	■ 3)
Deliver alarms via SMS over RS232		■ 3)	■ 3)	■ 3)				■ 3)	■ 3)	■ 3)
Deliver alarms via e-mail over ethernet		■	■	■				■	■	■

1) For the modular PXC ....-E.D the interface / operation is available on the automation station / system controller

2) For the connected automation station / system controller only

3) The modern connection can be configured as follows:
- either for Remote management (PTP)
- or for remote management PX WEB generic / graphic and Alarming via SMS

Overview TX-I/O™ module range TXM1..



Type	TXM1.8D	TXM1.16D	TXM1.8U	TXM1.8U-ML	TXM1.8X	TXM1.8X-ML	TXM1.6R	TXM1.6R-M	TXM1.8P
Number of I/Os	8	16	8	8	8	8	6	6	8
Functionality									
Local operation				■		■		■	
LC-Display				■		■			
3-colored I/O status LED	■							■	
Green colored I/O status LED		■	■	■	■	■	■		■
Digital inputs (DI)									
Message signal (open/closer)	■	■	■	■	■	■			
Message impulse	■	■	■	■	■	■			
Counter 10 Hz (with debouncing)	■	1-8 1)							
Counter 25 Hz (Bouncer free)			■	■	■	■			
Analog inputs (AI)									
LG-Ni1000			■	■	■	■			■
Pt 1000 / 0...2500 Ohm			■	■	■	■			■
T1			■	■	■	■			
DC O...10V			■	■	■	■			■ 3)
4...20 mA / 0...20 mA					■	■			■ 4)
Analog outputs (AO)									
DC 0...10 V			■	■	■	■			
4...20 mA					5-8 2)	5-8 2)			
Digital outputs (DO)									
Continuous contact on/off							■	■	
Continuous contact 3-stage							■	■	
3-point output (stroke model)							■	■	
Impulse on/off							■	■	
Impulse							■	■	
Impulse 3-stage							■	■	

All I/O points of a module are configurable on any, implemented functionality. The module TX1.OPEN enables the integration of Modbus, M-bus etc. via RS232, 485 on the PXC100/200..D.

1) On the TXM1.16D the counters are implemented only on the inputs 1 to 8
2) On the TXM1.8X.. the current exists 4...20 mA are implemented only on the I/Os 5 to 8
3) 0...250 Ohm
4) Pt100 4-wire

Notes

Automation station, compact series

PXC..D



Compact, freely programmable automation stations for HVAC and building services plant. The fixed data point mix makes the automation stations ideal for commonly used applications with standard signals.

- Direct connection of field devices
- Management functions (alarm management, scheduler programs, trend functions, remote management, access protection, etc.)
- Standalone application or for use with linked system or devices
- Device variants with modem interface: PXC..-T.D
- Connection of the PXM.. operator unit
- Connection of QAX.. room units
- BTL tested BACnet communication on LonTalk, PTP or IP acoording to BACnet standard (rev 1.5) include B-BC profile

Data sheet	N9215
Communication	Bus: BACnet / LonTalk, PTP (point to point) or IP Room unit: PPS2
Universal inputs	Configurable software
Digital input, contact query	7 mA DC 20...25 V
Relay outputs	Monostable, changeover contact
Analog output, signal	DC 0...10 V
Analog output, current	Source/sink current max.1.5 mA

Automation station with 12 data points and BACnet on LonTalk

PXC12.D



Fixed data point mix for 12 physical data points per automation station UI=4, DI=2, AO=4, DO=2.

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	Bus: BACnet on LonTalk Room unit: PPS2
Universal inputs, number	4
Digital inputs, number	2
Digital outputs, number	2
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

	Stock No.	Product No.
	BPZ:PXC12.D	**PXC12.D**

6

PXC12-T.D

Automation station with 12 data points and BACnet on LonTalk or PTP



Fixed data point mix for 12 physical data points per automation station UI=4, DI=2, AO=4, DO=2.

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	Bus: BACnet / LonTalk Bus: BACnet on PTP (point to point) Room unit: PPS2
Universal inputs, number	4
Digital inputs, number	2
Digital outputs, number	2
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

Stock No.	Product No.
BPZ:PXC12-T.D	**PXC12-T.D**

PXC12-E.D

Automation station with 12 data points and BACnet on IP



Fixed data point mix for 12 physical data points per automation station UI=4, DI=2, AO=4, DO=2.

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	24 VA
Communication	Bus: BACnet on IP Room unit: PPS2
Universal inputs, number	4
Digital inputs, number	2
Digital outputs, number	2
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

Stock No.	Product No.
BPZ:PXC12-E.D	**PXC12-E.D**

PXC22.D

Automation station with 22 data points and BACnet on LonTalk



Fixed data point mix for 22 physical data points per automation station UI=12, AO=6, DO=4

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	26 VA
Communication	Bus: BACnet on LonTalk Room unit: PPS2
Universal inputs, number	12
Digital outputs, number	6
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

Stock No.	Product No.
BPZ:PXC22.D	**PXC22.D**

Automation station with 22 data points and BACnet on LonTalk or PTP — PXC22-T.D

Fixed data point mix for 22 physical data points per automation station UI=12, AO=6, DO=4



Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	26 VA
Communication	Bus: BACnet / LonTalk Bus: BACnet on PTP (point to point) Room unit: PPS2
Universal inputs, number	12
Digital outputs, number	6
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

Stock No.	Product No.
BPZ:PXC22-T.D	**PXC22-T.D**

Automation station with 22 data points and BACnet on IP — PXC22-E.D

Fixed data point mix for 22 physical data points per automation station UI=8, DI=4, AO=4, DO=6



Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	26 VA
Communication	Bus: BACnet on IP Room unit: PPS2
Universal inputs, number	12
Digital outputs, number	6
Analog outputs, number	4
Dimensions (W x H x D)	272 x 150 x 62 mm

Stock No.	Product No.
BPZ:PXC22-E.D	**PXC22-E.D**

Automation station with 36 data points and BACnet on LonTalk — PXC36.D

Fixed data point mix for 36 physical data points per automation station UI=18, DI=4, AO=6, DO=8.



Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	30 VA
Communication	Bus: BACnet on LonTalk Room unit: PPS2
Universal inputs, number	18
Digital inputs, number	4
Digital outputs, number	8
Analog outputs, number	6
Dimensions (W x H x D)	293 x 176 x 77 mm

Stock No.	Product No.
BPZ:PXC36.D	**PXC36.D**

6

PXC36-T.D

Automation station with 36 data points and BACnet on LonTalk or PTP



Fixed data point mix for 36 physical data points per automation station UI=18, DI=4, AO=6, DO=8.

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	30 VA
Communication	Bus: BACnet / LonTalk Bus: BACnet on PTP (point to point) Room unit: PPS2
Universal inputs, number	18
Digital inputs, number	4
Digital outputs, number	8
Analog outputs, number	6
Dimensions (W x H x D)	293 x 176 x 77 mm

Stock No.	Product No.
BPZ:PXC36-T.D	**PXC36-T.D**

PXC36-E.D

Automation station with 36 data points and BACnet on IP



Fixed data point mix for 36 physical data points per automation station UI=18, DI=4, AO=6, DO=8.

Data sheet	N9215
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	30 VA
Communication	Bus: BACnet / IP Room unit: PPS2
Universal inputs, number	18
Digital inputs, number	4
Digital outputs, number	8
Analog outputs, number	6
Dimensions (W x H x D)	293 x 176 x 77 mm

Stock No.	Product No.
BPZ:PXC36-E.D	**PXC36-E.D**

PXC36-S

Automation station with 36 data points, BACnet on LonTalk and 4 manual switches



Fixed data point mix for 36 physical data points per automation station UI=12, DI=12, AO=6, DO=6

Data sheet	N9211
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	20 VA
Communication	Bus: BACnet on LonTalk Room unit: PPS2
Universal inputs, number	12
Digital inputs, number	12
Digital outputs, number	6
Analog outputs, number	6
Dimensions (W x H x D)	270 x 176 x 52 mm

Stock No.	Product No.
BPZ:PXC36-S	**PXC36-S**

Automation station with 52 data points and BACnet on LonTalk — PXC52

Fixed data point mix for 52 physical data points per automation station UI=16, DI=16, AO=8, DO=12.



Data sheet	N9211
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	26 VA
Communication	Bus: BACnet on LonTalk Room unit: PPS2
Universal inputs, number	16
Digital inputs, number	16
Digital outputs, number	12
Analog outputs, number	8
Dimensions (W x H x D)	343 x 176 x 52 mm

Stock No.	Product No.
BPZ:PXC52	**PXC52**

Automation station with 10 data points and BACnet on LonTalk — PXC10-TL

Fixed data point mix for 10 physical data points per automation station UI=4, DI=4, DO=2.



Data sheet	N9212
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	11 VA
Communication	Bus: BACnet / LonTalk Room unit: PPS2 Interface COM2: RS232 (modem)
Universal inputs, number	4
Digital inputs, number	4
Digital outputs, number	2
Dimensions (W x H x D)	144 x 144 x 139 mm

Stock No.	Product No.
BPZ:PXC10-TL	**PXC10-TL**

6

PXC100..D/PXC200..D

Automation stations, modular series PXC..D



The freely programmable modular series PXC..D automation stations with its free I/O configuration and DIN compliant construction are optimized for panel assembly. It primarily controls and monitors larger items of plant. The flexible TX-I/O modul product range for signaling, measuring, metering, switching and positioning can be seamlessly connect to the automation station.

- Management functions (alarm management, time schedules, trend functions, remote management, access protection etc.)
- Standalone application or for use in the device or system network
- Connection of the PXM.. operator unit
- BTL tested BACnet communication on LonTalk, PTP or IP according to BACnet standard (rev 1.5) incl. B-BC profile

Data sheet	N9222
Operating voltage	AC 24 V
Frequency	50/60 Hz
Degree of protection	IP20
Memory	Flash: 32 MB SDRAM: 64 MB
Rate of transmission	LON-bus: 78 kbps Ethernet / IP: 10/100 MBit/s
Battery life	4 years
Dimensions (W x H x D)	192 x 74 x 96 mm

Range overview PXC100..D/PXC200..D

Product Title	Communication	Data sheet	Stock No.	Product No.
Automation station BACnet/LonTalk, with up to 200 data points	Bus: BACnet / LonTalk	N9222	BPZ:PXC100.D	**PXC100.D**
Automation station BACnet/IP, with up to 200 data points	Bus: BACnet / IP	N9222	BPZ:PXC100-E.D	**PXC100-E.D**
Automation station BACnet/LonTalk, with more than 200 data points	Bus: BACnet / LonTalk	N9222	BPZ:PXC200.D	**PXC200.D**
Automation station BACnet/IP, with more than 200 data points	Bus: BACnet / IP	N9222	BPZ:PXC200-E.D	**PXC200-E.D**

Integration with DESIGO PX OPEN

Product Title	s. page	Data sheet	Stock No.	Product No.
System controllers for integration of DESIGO RXC or third-party devices	6-18	N9222	BPZ:PXC00..D	**PXC00..D**

Option modules PXA40..

PXA40-T

Option module with remote management via modem for automation stations



Option module for usage with modular automation stations PXC..D.

Data sheet	N9222
Communication	Modem
Degree of protection	IP20

Stock No.	Product No.
BPZ:PXA40-T	**PXA40-T**

Option modules with web functions (PX-WEB) for modular automation stations PXC..-E.D

PXA40-W..



Option modules for modular automation stations PXC..-E.D.

Data sheet N9222

Range overview PXA40-W..

Product Title	Stock No.	Product No.
Option module with Web function (generic/graphic) for one automation station	BPZ:PXA40-W0	**PXA40-W0**
Option module with Web function (generic) for all automation stations in the BACnet network	BPZ:PXA40-W1	**PXA40-W1**
Option module with Web function (generic/graphic) for all automation stations in the BACnet network	BPZ:PXA40-W2	**PXA40-W2**

6

PXC..-U

Automation station, modular series PXC..-U



The freely programmable automation stations of the PXC..-U modular series with its free I/O configuration are suitable for expanding existing plants and as PX OPEN system controller for connecting room automation (RXB, RXL) as well as integrating third-party devices. A range of extension modules supplies various additional functions such as PX-WEB or remote management.

- P-bus for the connection of external I/O modules
- Wide selection of DESIGO I/O modules
- Management functions (alarm management, time schedules, trend functions, remote management, access protection etc.)
- Standalone application or for use in the device or system network
- Connection of the PXM.. operator unit
- Connection of QAX... room units
- BTL tested BACnet communication on LonTalk, PTP or IP according to BACnet standard (rev 1.5) incl. B-BC profile

Data sheet	N9221
Operating voltage	AC 24 V
Frequency	50/60 Hz
Communication	Bus: BACnet / LonTalk, PTP (point to point) or IP
Dimensions (W x H x D)	210 x 150 x 136 mm

PXC64-U

Automation station with 64 load units



64 load units per automation station

Data sheet	N9221
Power consumption	45 VA
Load units	64

Stock No.	Product No.
BPZ:PXC64-U	**PXC64-U**

PXC128-U

Automation station with 128 load units



128 load units per automation station

Data sheet	N9221
Power consumption	95 VA
Load units	128

Stock No.	Product No.
BPZ:PXC128-U	**PXC128-U**

PXC00-U

System controller for the integration



Automation station for the Integration via PXA30-K11 or PXA30-RS, without a P-Bus interface and therefore without a connection for DESIGO I/O modules.

Data sheet	N9221
Power consumption	45 VA

Stock No.	Product No.
BPZ:PXC00-U	**PXC00-U**

Extension modules PXA30..

Extension module with modem connection **PXA30-T**

The extension module contains a modem interface with a 9-pin D-sub connector.

Data sheet N9261



	Stock No.	Product No.
	BPZ:PXA30-T	**PXA30-T**

Extension modules for BACnet on Ethernet/IP **PXA30..**

Extension modules for BACnet on Ethernet/IP operation for integration into modular PXC..-U automation stations

Data sheet N9202



Range overview PXA30..

Product Title	Data sheet	Stock No.	Product No.
Extension module for BACnet on Ethernet/IP	N9262	BPZ:PXA30-N	**PXA30-N**
Extension module for BACnet on Ethernet/IP with modem connection	N9263	BPZ:PXA30-NT	**PXA30-NT**
Extension module for BACnet on Ethernet/IP with modem connection and graphical web functions for one automation station	N9266	BPZ:PXA30-W0	**PXA30-W0**
Extension module for BACnet on Ethernet/IP with modem connection and generic web functions for all automation stations in the BACnet network	N9264	BPZ:PXA30-W1	**PXA30-W1**
Extension module BACnet on Ethernet/IP with modem and graphical web functions for all automation stations in the BACnet network	N9265	BPZ:PXA30-W2	**PXA30-W2**

Accessories for PXC..

Product Title	Data sheet	Stock No.	Product No.
Multifunction cover blade for panel door or wall mount		BPZ:PXA-H1	**PXA-H1**
Connecting cable RJ45 - RHJ45, cable length 3 m	N9234	BPZ:PXA-C1	**PXA-C1**
Adapter RJ45 - RS232 at computer	N9234	BPZ:PXA-C2	**PXA-C2**
Adapter USB - RS232		BPZ:PXA-C3	**PXA-C3**
Adapter from PXM20.. for firmware download	N9234	S55372-C108	**PXA-C4**

Operator unit with BACnet on LonTalk — PXM20

The network-capable PXM20 operator unit allows for homogenous operation of a multitude of building services plants at the automation level. The operator unit offers an operating keyboard and a high-resolution display for graphics and text. The PXM20 can be used on-site or remote for all plants connected via a network. The operator unit can be integrated in a panel or plugged into a modular automation station of the PXC..-U series.



Operating functions
Transparently organized function and quick-access keys allow even casual users to expertly operate the unit. The operator unit offers the following operator functions (among others):

- Easy-to-understand user instructions via the plant function
- Full access to all actual values, setpoints, plant and operating states, and parameters
- Complete data point operation and setpoint entry via clear text
- Optical and acoustic alarm indication.
- Alarm management with acknowledgement function and alarm memory
- Graphical display for scheduler program, exception day calendar, online trend heating curve
- Summary of all important values via Favorites
- Support of multi-level access protection

Data sheet	N9231
Operating voltage	AC 24 V DC 12...40 V
Frequency	50/60 Hz
Power consumption	4 W 9 VA
Display size	Display area: 123 x 68 mm No. of dots: 240 x 128 dots
Interface type	LON-bus RS 232-interface
Mounting	In panel On automation station PXC..-U On DIN rail
Degree of protection	IP40
Ambient temperature, operation	0...50 °C
Dimensions (W x H x D)	210 x 117 x 37 mm
Keyboard	Keypad with plastic membrane and pressure point

Stock No.	Product No.
BPZ:PXM20	**PXM20**

Operator unit with BACnet on IP — PXM20-E

Provides the same functionality as PXM20, but with BACnet/IP communication.

Data sheet N9234



Stock No.	Product No.
BPZ:PXM20-E	**PXM20-E**

PXM10



Operator unit, local

The PXM10 operator unit allows for operating and monitoring a DESIGO PX automation station. The unit offers user-friendly single-button operation via a turn/press button and a high-quality display. The operator unit can be integrated in a panel or a modular automation station of the PXC..-U series.

Operating functions
- Display for setpoints and actual values, plant and operating states
- Setpoint adjustment
- Optical fault indication
- Alarm display with acknowledgement function
- Graphical display of scheduler programs

Data sheet	N9230
Operating voltage	AC 24 V DC 12...40 V
Power consumption	0.7 W 1 VA
Display size	Display area: 82 x 42 mm No. of dots: 128 x 64 dots
Interface type	RS 232-interface
Cable length	3 m
Degree of protection	IP40
Ambient temperature, operation	0...50 °C
Dimensions (W x H x D)	210 x 117 x 37 mm
Weight (incl. packaging)	0.350 kg

	Stock No.	Product No.
	BPZ:PXM10	**PXM10**

Accessories for PXM20 / PXM20-E and PXM10

Product Title	Data sheet	Stock No.	Product No.
Multifunction cover blade for panel door or wall mount		BPZ:PXA-H1	**PXA-H1**
Connecting cable RJ45 - RHJ45, cable length 3 m	N9234	BPZ:PXA-C1	**PXA-C1**
Adapter RJ45 - RS232 at computer	N9234	BPZ:PXA-C2	**PXA-C2**
Adapter from PXM20.. for firmware download	N9234	S55372-C108	**PXA-C4**

DESIGO touch panel 10" MP277 — 6FL4303-2CA11



Used in conjunction with a modular PXC..D automation station with option module PXA40-W.. or PXC..-U automation station and the plug-in extension module PXA30-W.., the DESIGO Touch Panel is a convenient device for the display and operation of building services. The Web operator unit, which incorporates Internet Explorer, makes operation highly user-friendly.

Operating functions:
- Easy to operate, direct access to plant information
- Generic and graphics-based operation and display of plant functions (alarm handling, time schedules, calendars, setpoint adjustments, display of measured values, etc.)
- Supports uniform access protection throughout the DESIGO system

Data sheet	N9240
Operating voltage	DC 24 V
Display	TFT LCD
Communication	1 x Ethernet (RJ45)
Dimensions (W x H x D)	325 x 263 x 67 mm
Mounting	Panel front
Display size	10.4" Resolution: 640 x 480 pixels Colors: 64k

	Stock No.	Product No.
	BPZ:6FL4303-2CA11	**6FL4303-2CA11**

Option modules PXA40-W..

Product Title	s. page	Data sheet	Stock No.	Product No.
Option modules with web functions (PX-WEB) for modular automation stations PXC..-E.D	6-11	N9222	BPZ:PXA40-W..	**PXA40-W..**

Extension modules for BACnet on Ethernet/IP — PXA30..



Extension modules for BACnet on Ethernet/IP operation for integration into modular PXC..-U automation stations

Range overview PXA30..

Product Title	Data sheet	Stock No.	Product No.
Extension module for BACnet on Ethernet/IP with modem connection and graphical web functions for one automation station	N9266	BPZ:PXA30-W0	**PXA30-W0**
Extension module for BACnet on Ethernet/IP with modem connection and generic web functions for all automation stations in the BACnet network	N9264	BPZ:PXA30-W1	**PXA30-W1**
Extension module BACnet on Ethernet/IP with modem and graphical web functions for all automation stations in the BACnet network	N9265	BPZ:PXA30-W2	**PXA30-W2**

6

PXC00..D



System controllers for integration of DESIGO RXC or third-party devices

The LonWorks system controller of this series allows you to connect LonWorks devices such as DESIGO RXC room controllers and third-party devices. Depending on the used expansion module the system controller connect up to 60 or 120 LonWorks devices / RXC room controllers.

- BTL tested BACnet communication on LonTalk, PTP or IP according to BACnet standard (rev 1.5) incl. B-BC profile

Data sheet	N9222
Operating voltage	AC 24 V
Frequency	50/60 Hz
Degree of protection	IP20
Memory	Flash: 32 MB SDRAM: 64 MB
Rate of transmission	LON-bus: 78 kbps Ethernet / IP: 10/100 MBit/s
Battery life	4 years
Dimensions (W x H x D)	192 x 74 x 96 mm

Range overview PXC00..D

Product Title	Communication	Data sheet	Stock No.	Product No.
System controller BACnet/LonTalk	Bus: BACnet / LonTalk	N9222	BPZ:PXC00.D	**PXC00.D**
System controller BACnet/IP	Bus: BACnet / IP	N9222	BPZ:PXC00-E.D	**PXC00-E.D**

Hardware for PXC00..D

Product Title	Data sheet	Stock No.	Product No.
Extension module for up to 60 LonWorks devices / RXC room controllers Extension module for system controller LonWorks PXC00.D/PXC00-E.D.	N9282	BPZ:PXX-L11	**PXX-L11**
Extension module for up to 120 LonWorks devices / RXC room controllers Extension module for system controller LonWorks PXC00.D/PXC00-E.D.	N9282	BPZ:PXX-L12	**PXX-L12**

Option modules PXA40-W..

Product Title	s. page	Data sheet	Stock No.	Product No.
Option modules with web functions (PX-WEB) for modular automation stations PXC..-E.D	6-11	N9222	BPZ:PXA40-W..	**PXA40-W..**

PX KNX system controller

PX KNX



Integration of room controllers from the DESIGO RXB and DESIGO RXL product range and from KNX third-party systems into the DESIGO building automation and control system (interface functionality). Further functions: Grouping of rooms and performance of higher level system functions.

- BTL tested BACnet communication on LonTalk or IP acoording to BACnet standard (rev 1.5) include B-BC profile

Functions

KNX data points are mapped to BACnet data points and vice versa. The PX KNX system controller performs the following major tasks:

- Compression of DESIGO RXB room controller data and other KNX data points at the automation level
- Mapping of DESIGO RXB and other KNX applications to BACnet for monitoring and operation purposes (grouped according to function:HVAC, lighting and blinds)
- Performance of higher level functions for room automation: Room and supply-related groups, system functions such as changeover, summer/winter compensation, etc.

The RXB and KNX applications are mapped to the PX KNX system controller so that a room view is created. This allows for the grouping of rooms, e.g. for shared occupancy schedules, lighting or blind commands, etc

Hardware

Modular system controller PXC00-U with PXA30-K11 card.

- Without expansion module in the left slot the communication mode BACnet/LonTalk is activated.
- With the expansion module PXA30-N in the left slot the communication mode BACnet/IP is active. The expansion modules PXA30-T, -NT, and -W.. are also supported.

	Stock No.	Product No.
	BPZ:PX KNX	**PX KNX**

Hardware for PX KNX

Product Title	Data sheet	Stock No.	Product No.
PX KNX S-mode card Card for PX KNX automation station	N9280	BPZ:PXA30-K11	**PXA30-K11**
System controller for the integration	N9221	BPZ:PXC00-U	**PXC00-U**

PX M-bus system controller

PX M-Bus



M-bus datapoints are mapped to BACnet datapoints and vice-versa. The PX M-bus system controller performs the following major tasks.

- BTL tested BACnet communication on LonTalk or IP acoording to BACnet standard (rev 1.5) include B-BC profile

Functions

- Acquisition of consumption data and remote monitoring of max. 250 consumption meters and heat meters
- Compression of consumption and heat meter data volume at the automation level
- Mapping of M-bus data to BACnet
- Trend objects for meter monitoring

Hardware

Modular system controller PXC00-U with PXA30-RS.. card.

- Without expansion module in the left slot the communication mode BACnet/LonTalk is activated.
- With the expansion module PXA30-N in the left slot the communication mode BACnet/IP is active. The expansion modules PXA30-T, -NT, and -W.. are also supported.

	Stock No.	Product No.
	BPZ:PX M-Bus	**PX M-Bus**

Hardware for M-bus

Product Title	Data sheet	Stock No.	Product No.
Extension module for RS232 and RS485, up to 100 data points • Integration of third-party equipment and systems into the DESIGO building automation and control system at the automation level • Plugs into the PXC00-U modular system controller	N9281	BPZ:PXA30-RS	**PXA30-RS**
Extension module for RS232 and RS485, up to 400 data points	N9281	BPZ:PXA30-RS1	**PXA30-RS1**
Extension module for RS232 and RS485, up to 2000 data points	N9281	BPZ:PXA30-RS2	**PXA30-RS2**
System controller for the integration	N9221	BPZ:PXC00-U	**PXC00-U**

PX Modbus



PX Modbus system controller

The PX Modbus provides a platform for the integration of various third-party systems and devices. It allows for the exchange of information with the DESIGO building automation and control system at the automation level.

- BTL tested BACnet communication on LonTalk or IP acoording to BACnet standard (rev 1.5) include B-BC profile

Functions

PX Modbus supports the following Modbus function codes and data formats:

- Function codes:01 , 02 , 03 , 04 , 05 , 06 , 15 , 16.
- Data formats:
  - 16-bit signed and unsigned integers
  - 32-bit signed and unsigned integers
  - 32-bit signed and unsigned 'Modulus-10000'
  - Real 32-bit (IEEE floating point)
  - ACM 16-bit
  - BCD 16-bit and 32-bit

Master or slave

- The PX Modbus can be configured as either a master or slave. It supports up to 2000 third-party system data points

Hardware

Modular system controller PXC00-U with PXA30-RS.. card.

- Without expansion module in the left slot the communication mode BACnet/LonTalk is activated.
- With the expansion module PXA30-N in the left slot the communication mode BACnet/IP is active. The expansion modules PXA30-T, -NT, and -W.. are also supported.

	Stock No.	Product No.
	BPZ:PX Modbus	**PX Modbus**

Hardware for PX Modbus

Product Title	Data sheet	Stock No.	Product No.
Extension module for RS232 and RS485, up to 100 data points • Integration of third-party equipment and systems into the DESIGO building automation and control system at the automation level • Plugs into the PXC00-U modular system controller	N9281	BPZ:PXA30-RS	**PXA30-RS**
Extension module for RS232 and RS485, up to 400 data points	N9281	BPZ:PXA30-RS1	**PXA30-RS1**
Extension module for RS232 and RS485, up to 2000 data points	N9281	BPZ:PXA30-RS2	**PXA30-RS2**
System controller for the integration	N9221	BPZ:PXC00-U	**PXC00-U**

Extension modules for PX OPEN with PXC..-U

Product Title	Data sheet	Stock No.	Product No.
Extension module with modem connection	N9261	BPZ:PXA30-T	**PXA30-T**
Extension module for BACnet on Ethernet/IP	N9262	BPZ:PXA30-N	**PXA30-N**
Extension module for BACnet on Ethernet/IP with modem connection	N9263	BPZ:PXA30-NT	**PXA30-NT**
Extension module for BACnet on Ethernet/IP with modem connection and graphical web functions for one automation station	N9266	BPZ:PXA30-W0	**PXA30-W0**
Extension module for BACnet on Ethernet/IP with modem connection and generic web functions for all automation stations in the BACnet network	N9264	BPZ:PXA30-W1	**PXA30-W1**
Extension module BACnet on Ethernet/IP with modem and graphical web functions for all automation stations in the BACnet network	N9265	BPZ:PXA30-W2	**PXA30-W2**

PXG80-N



BACnet router

The BACnet router transmits data via the LONWORKS BACnet protocol on Ethernet/IP. In this process a BACnet network is created at each end. Only packets that need to be transferred from one BACnet network to another are transmitted. Local broadcasts are limited to the local network; global broadcasts are unlimited.

BBMD
Further, the BACnet router supports BBMD functionality (BACnet Broadcast Management Device) to distribute BACnet broadcasts via IP routers.
The BACnet router has its own device object and can be operated from a BACnet client (PXM20 , DESIGO XWORKS plus, PX WEB or DESIGO INSIGHT). The current operating state, date, time and statistics on the packets sent are stored in the device object.
These values can be read from the device object using simple Read services.

Construction
The compact build allows for mounting the BACnet router in very restricted spaces.
It is especially suitable for compact control panels or for equiment with integrated panels.

Data sheet	N9260
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	6 VA
Communication	Bus: BACnet / LonTalk or BACnet / IP
Dimensions (W x H x D)	216 x 176 x 52 mm

Stock No.	Product No.
BPZ:PXG80-N	**PXG80-N**

Accessories for PXG80-N

Product Title	Data sheet	Stock No.	Product No.
Bus terminator 52.3 Ohm for LonWorks bus	N3861	BPZ:RXZ01.1	**RXZ01.1**
Bus terminator 105 Ohm for LonWorks bus	N3861	BPZ:RXZ02.1	**RXZ02.1**
Connecting cable RJ45 - RHJ45, cable length 3 m	N9234	BPZ:PXA-C1	**PXA-C1**
Adapter RJ45 - RS232 at computer	N9234	BPZ:PXA-C2	**PXA-C2**

Automation station for INTEGRAL migration, intgrates 64 data points in DESIGO

PXC-NRUF



In existing INTEGRAL plants, you can replace compact automation units NRUE/A, NRUF/A and NRUT/A with the PXC NRUF automation station.
Fixed data point mix for 64 physical data points per automation station UI=16, DI=24, DO=16, UO=8.

- BTL tested BACnet communication on LonTalk or PTP acoording to BACnet standard (rev 1.5) include B-BC profile

Data sheet	N9760
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	26 VA
Communication	Bus: BACnet / LonTalk Bus: BACnet / PTP (point to point) Room unit: PPS2
Dimensions (W x H x D)	265 x 295 x 100 mm
Universal inputs, number	16
Universal outputs, number	8
Digital inputs, number	24
Digital outputs, number	16

Stock No.	Product No.
BPZ:PXC-NRUF	**PXC-NRUF**

Adapter plug-in circuit board for INTEGRAL NK modules, intgrates 48 data points in DESIGO

PXC-NRUD



This adapter, combined with an automation station PXC64-U / PXC128-U and a P bus interface module TXB1.P-BUS, serves as a replacement for the modular automation stations NRUA/A, NRUB/A, NRUC/A and NRUD/A.
Fixed data point mix for 48 physical data points per adapter DI=8, DO=8, UI/UO=32.

The adapter consists of a plug-in circuit board with front plate.
It is inserted into an existing card housing NHGB.

Data sheet	N9761
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	18 VA
Communication	Bus: TX-I/O island bus to TXB1.PBUS
Universal inputs, number	16
Universal outputs, number	16
Digital inputs, number	8
Digital outputs, number	8

Stock No.	Product No.
BPZ:PXC-NRUD	**PXC-NRUD**

6

TXM1..

TX-I/O™ modules



Simple planning and executions:
- Slim, easy-to-understand I/O product range
- Highest flexibility for I/O point mix and decentralized I/O points
- Software-based I/O simulation
- Software-based operation and display
- Simple and reliable third-party integration for a flexible data point mix (from DESIGO V4)

Efficient panel construction:
- Small space requirements thanks to very compact construction
- DIN form eases panel construction using standard components
- Self-learning bus connections of the TX-I/O™ module
- Direct connection with interchange pins

Fast commissioning and service:
- Easiest possible addressing
- Fast servicing: plug-in I/O module exchange without tools or rewiring
- permute proof terminal bases

Easy-to-understand operation:
- Local priority operation as per VDI3814
- Simple display concept with LCD and colored LEDs

Investment protection:
- Compatibility to DESIGO V2.37 and higher, VISONIK BPS V12 (PRV1 V6) and higher and UNIGYR from V3 and higher

Operating voltage	DC 22.5 ... 26 V
Dimensions (W x H x D)	64 x 77.5 x 98 mm

TXM1.8D

8 Digital Input Module



Digital Input module with 8 inputs, signaling per input with three-colored LED (greed, yellow, red). Each input individually configurable as message signal, message impulse with storage functions or counter impulse for up to a maximum of 10 Hertz.

Data sheet	N8172
Operating voltage	DC 22.5...26 V
Power consumption	1.1 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.164 kg

Stock No.	Product No.
BPZ:TXM1.8D	**TXM1.8D**

TXM1.16D

16 Digital Input Module



Digital input module with 16 inputs, signaling per input with green LED. Each input individually configurable as message signal, message impulse with storage functions, or 8 inputs as counter impulse for up to a maximum of 10 Hertz.

Data sheet	N8172
Operating voltage	DC 22.5...26 V
Power consumption	1.4 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.199 kg

Stock No.	Product No.
BPZ:TXM1.16D	**TXM1.16D**

8 Universal I/O Module — TXM1.8U

8 inputs/outputs signaled with green LED, without local operation



8 universal I/O points, individually configurable as:
DI: Message signal, message impulse or counter impulse (25 Hertz)
AI: Temperature sensor or DC 0..10V
AO: DC 0..10V

Data sheet	N8173
Operating voltage	DC 22.5...26 V
Power consumption	1.5 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.179 kg

Stock No.	Product No.
BPZ:TXM1.8U	**TXM1.8U**

8 Universal I/O Module, Override and LCD — TXM1.8U-ML

8 inputs/outputs signaled with green LED, with local operation as per ISO 16484 with LCD signal display.
8 universal I/O points, individually configurable as:
DI: Message signal, message impulse or counter impulse (25 Hertz)
AI: Temperature sensor or DC 0..10V
AO: DC 0..10V



Data sheet	N8173
Operating voltage	DC 22.5...26 V
Power consumption	1.8 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.202 kg

Stock No.	Product No.
BPZ:TXM1.8U-ML	**TXM1.8U-ML**

8 Universal I/O Module, 4-20mA, — TXM1.8X

8 Inputs/outputs signaled with green LED, without local operation (same functionality as TXM1.8U, but with current input/output).



8 universal I/O points, individually configurable as:
DI: Message signal, message impulse (with storage function) or counter impulse (25 Hz)
AI: Temperature sensor, DC 0..10V, or 4..20mA
AO: DC 0..10V, 4..20mA (for 4 I/O points)

Data sheet	N8174
Operating voltage	DC 22.5...26 V
Power consumption	2.2 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.194 kg

Stock No.	Product No.
BPZ:TXM1.8X	**TXM1.8X**

6

TXM1.8X-ML

8 Universal I/O Module, 4-20mA, Override and LCD



8 Inputs/outputs signaled with green LED, with local operation as per ISO 16484 with LCD signal display (same functionality as TXM1.8U-ML, but with current input/output).

8 universal I/O points, individually configurable as:
DI: Message signal, message impulse (with storage function) or counter impulse (25 Hertz)
AI: Temperature sensor, DC 0..10V, or 4..20mA
AO: DC 0..10V, 4..20mA (for 4 I/O points)

Data sheet	N8174
Operating voltage	DC 22.5...26 V
Power consumption	2.3 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.211 kg

Stock No.	Product No.
BPZ:TXM1.8X-ML	**TXM1.8X-ML**

TXM1.8P

Resistance measuring module with 8 inputs



8 inputs with LED signal / fault display. 8 resistance measuring inputs with individual configuration of resistance or temperature measurement:
- Pt100 (4-wire)
- Pt1000, Ni1000
- Resistamce 250 ohm or 2500 ohm (2-wire)

Data sheet	N8176
Operating voltage	DC 22.5...26 V
Power consumption	1.2 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.219 kg

Stock No.	Product No.
BPZ:TXM1.8P	**TXM1.8P**

TXM1.6R

6 Relay Output Module



6 outputs signaled with green LED, without local operation.

6 DO (relay switch), individually configurable as:
Continuous or impulse contact
Single-stage or multi-stage
Three-point positioning output with internal stroke model
Hardware bolting device is by means of external wiring the two-way contacts.

Data sheet	N8175
Operating voltage	DC 22.5...26 V
Power consumption	1.7 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.231 kg

Stock No.	Product No.
BPZ:TXM1.6R	**TXM1.6R**

6 Relay output module with Override

TXM1.6R-M



6 outputs, signaling per output with three-colored LED (greed, yellow, red), with local operation as per ISO 16484.

6 DO (relay switch), individually configurable as:
Continuous or impulse contact
Single-stage or multi-stage
Three-point positioning output with internal stroke model
Hardware bolting device is by means of external wiring the two-way contacts.

Data sheet	N8175
Operating voltage	DC 22.5…26 V
Power consumption	1.9 W
Dimensions (W x H x D)	64 x 77.5 x 98 mm
Weight	0.241 kg

	Stock No.	Product No.
	BPZ:TXM1.6R-M	**TXM1.6R-M**

6

TXI1.OPEN



TX OPEN RS232/485 module for integrating third-party systems and devices to DESIGO

RS232/485 module as platform to integrate third-party systems and devices to the DESIGO building automation and control system via modular automation stations PXC..D (Version 4 or higher).

- With LED's to monitor operating and communication status
- USB interface for connecting the TX OPEN Tool
- Easy installation and setup
- Simple, fast diagnostics
- Suitable for operation using pre-defined applications for the following systems:

- Modbus
- M-Bus
- SED2
- Grundfos- and Wilo pumps

Data sheet	N8185
Operating voltage	DC 24 V
Power consumption	1.32 W
Communication	RS232 RS485
Weight	0.168 kg
Dimensions (W x H x D)	96 x 77.5 x 98 mm

Stock No.	Product No.
S55661-J100	**TXI1.OPEN**

Island bus expansion module for decentralized sub-islands with TX-I/O-modules

TXA1.IBE



- Expand island bus to a distance of up to 2 x 200 meters
- Compact design per DIN 43 880, requires little space
- With LED to monitor communication status
- Easy installation and setup:
- Mounted on standard rails
- Self-connecting bus (island bus) for the easiest possible installation
- Plug-in screw terminals for island bus expansion
- No programming / parameterization tool required

Data sheet	N8184
Dimensions (W x H x D)	32 x 77.5 x 98 mm
Weight	0.064 kg

Stock No.	Product No.
BPZ:TXA1.IBE	**TXA1.IBE**

TX-I/O Power Supply Modules 24 VDC Supply 1200 mA, 10 A Fuse

TXS1.12F10



Up to 4 power supply modules can be operated in parallel
AC 24 Volt input
Generation / transfer of DC 24 V, 1.2A for the supply of TX-I/O modules and field devices
Fresh provision of AC 24 V for field device supply
Transfer of the bus signal

Data sheet	N8183
Dimensions (W x H x D)	96 x 77.5 x 98 mm
Weight	0.309 kg

Stock No.	Product No.
BPZ:TXS1.12F10	**TXS1.12F10**

BUS Connection Module, 10A Fuse

TXS1.EF10



Transfer of DC 24 V for the supply of TX-I/O modules and field devices
Fresh provision of AC / DC 12 ... 24 V for field device supply
Transfer of the bus signal

Data sheet	N8183
Dimensions (W x H x D)	32 x 77.5 x 98 mm
Weight	0.082 kg

Stock No.	Product No.
BPZ:TXS1.EF10	**TXS1.EF10**

TXB1.PBUS

P-bus interface module



- Interface between the automation station PXC64-U/PXC128-U and the bus of the TX-I/O modules
- Integrated DC 24 V, 1.2 A to supply power to TX-I/O modules and field devices
- USB port for tool connection

Data sheet	N8180
Dimensions (W x H x D)	128 x 77.5 x 98 mm
Weight	0.28 kg

Stock No.	Product No.
BPZ:TXB1.PBUS	**TXB1.PBUS**

6

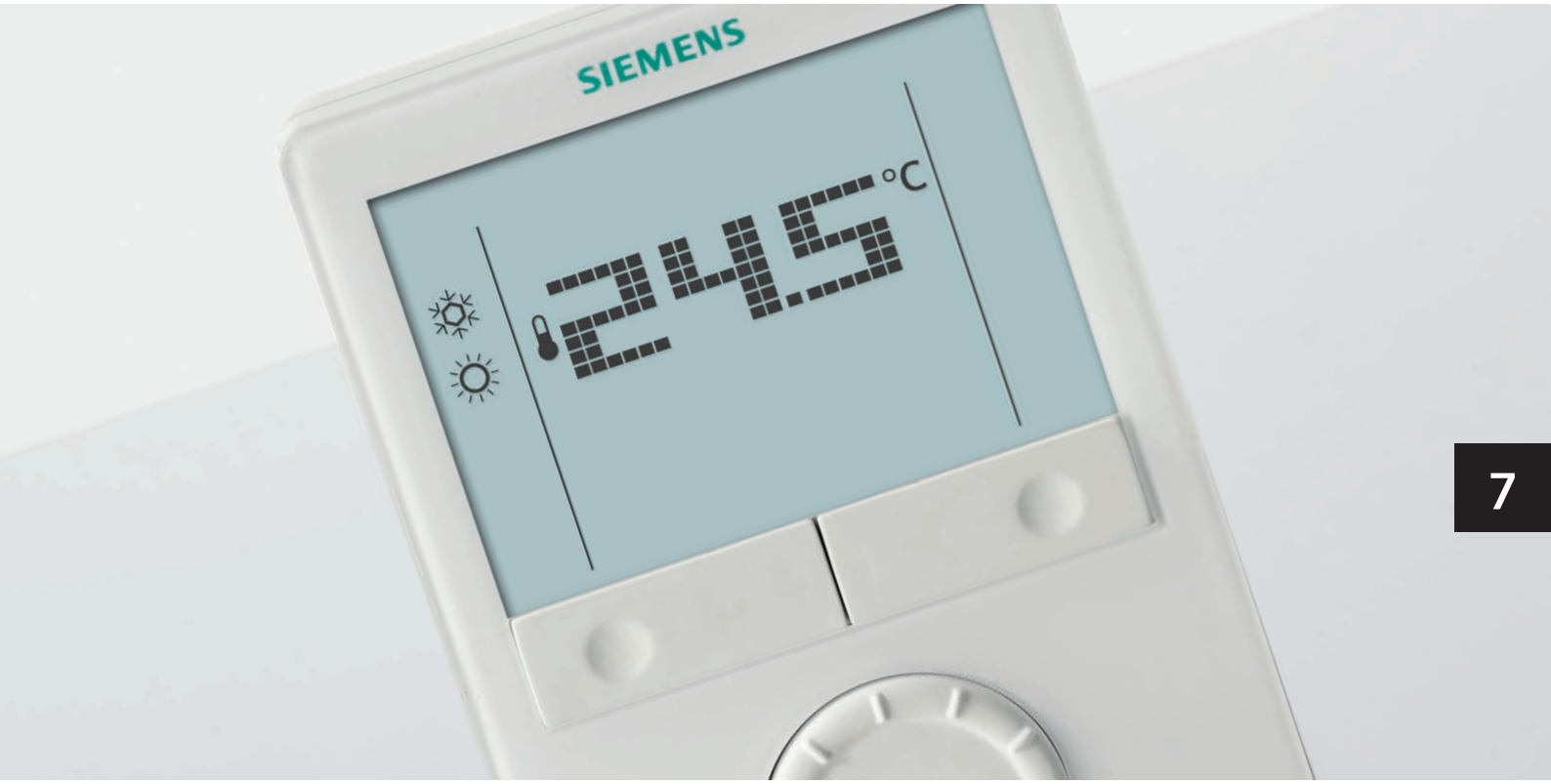
Set of address plugs

Product Title	Data sheet	Stock No.	Product No.
Address Keys 1-12 + reset key	N8170	BPZ:TXA1.K12	**TXA1.K12**
Address Keys 1-24 + 2 reset keys	N8170	BPZ:TXA1.K24	**TXA1.K24**
Address keys 25-48 + 2 reset keys	N8170	BPZ:TXA1.K-48	**TXA1.K-48**
Address keys 49-72 + 2 reset keys	N8170	BPZ:TXA1.K-72	**TXA1.K-72**
Address keys 73-96 + 2 reset keys	N8170	S55661-J101	**TXA1.K-96**
Address keys 97-120 + 2 reset keys	N8170	S55661-J102	**TXA1.K-120**
Address key 5, 10 ... 120 + 2 reset keys	N8170	BPZ:TXA1.5K120	**TXA1.5K120**

Labeling material

Product Title	Data sheet	Stock No.	Product No.
Labels (sheet A4 with 9 labels)	N8170	BPZ:TXA1.LA4	**TXA1.LA4**
Replacement Label Holders	N8170	BPZ:TXA1.LH	**TXA1.LH**

Room thermostats



7

Overview and selection tools	Product range overview	7-2
For heating and/or cooling systems	Standard room thermostats: RAA.. / RCU..	7-5
	Room thermostats with display: RDD.. / RDH..	7-9
	Room thermostats with time clock: REV.. / RDJ.. / RDE.. / RAV.. / REA..	7-12
	Application examples REV..	7-20
For fan coil units	Standard room thermostats: RAB.. / RCC..	7-21
	Application examples RAB../RCC..	7-27
	Room thermostats with display: RDG1.. / RDF..	7-29
	Room thermostats with display RDF..Semi Flush Mount	7-35
For VAV systems	Room thermostats: RCU.. / RDG.. / RDU..	7-39
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For heat pump systems	Room thermostats with display RDX..	7-43
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For VAV systems - Communicative KNX thermostat	Room thermostats with display RDU..Semi Flush Mount	7-47

Room thermostats

Siemens is a leading supplier of room temperature controllers for a wide range of heating, ventilation and cooling applications in residential buildings, hotels, office and commercial buildings.

Siemens solutions meet every budget: Basic electromechanical on/off units, advanced touchscreen products, OpenTherm, RF-based or infrared controllers, as well as controllers with modulating outputs. Programmable controllers with 24-hour or 7-day programs and non-programmable room temperature controllers are available as analog or digital products with displays.

Quality, reliability, outstanding functionality, ease of installation and use: Our room controls satisfy your needs. The unique and acclaimed Siemens design is an additional stylish feature.

Proudly made around the world.

- Quality really is the issue
- R&D the lifeblood of innovation
- Standards are not negotiable
- Product lifecycles and environment in partnership

7

Heating / Colling applications												
	Basic		With display			With time switch						
												
	RAA	RCU	RDG	RDD	RDH	RDE	RDJ	RAV	REA	REV	REVxx00	
Housing												
Setpoint knob	□	■	■		✪		✪	■				
Setpoint buttons				■		■			■	■	■	
Mechanical clock								✪				
LED indicators	□							■				
Digital display			✪	■	■	■	■		■	■	■	
Touchscreen											✪	
Programming menu									✪			
Programming slider							■			✪		
Wiring												
Mains-independet	✪											
Battery-powered				□	■	□	■	■	■	■	■	
Mains-powered	□	■	□	□	*	□	*			*	*	
OpenTherm bus									■			
Radio frequency transmission					□		□		□	□	□	
Modulating heating valve control		✪	□							□	□	
Remote control input									■	■	■	
Analog output		□	□									
Relay output	■	□		■	■	■	■	■	■	■	■	
Functionalities												
Heating plants	■	■	■	■	■	■	■	■	■	■	■	
Cooling plants	■	■	■	■	■				□	□	□	
Domestic hot water control				□		□						
Time clock Timer				✪								
Time clock Daily							■	□		□	□	
Time clock Weekly			□			✪		□	■	□	□	
Operating mode Comf. mode	■	■	■	■	■	■	■	■	■	■	■	
Operating mode Eco mode		■		■		■	■	■	■	■	■	
Operating mode Standby.		■	■			■						
Operating mode Frost protect.				□		□	■	■	■	■	■	
Operating mode Holidays			■						■	□	■	
Control loop	2-point	2-point	2-point/PI	2-point	2-point	2-point	2-pointl	2-point PID	2-point PID	2-point/PID or PI	2-point/PID or PI	

■ Valid for all variants □ Depending on variants ✪ **Main feature** *Radio frequency receiver only

Fan-coils applications

	Basic		With display		With time switch		
							
	RAB	RCC	RDG1	RDF3xx	RDG100T	RDF2xx	RDF4xx
Housing							
Setpoint knob	■	■	■		■		
LED indicators	□	✪					
Digital display			✪	■	■	■	■
Auto fan speed			■	■	■	■	■
Semi-flush mounting				✪			✪
Wiring							
Mains-independet	✪						
Mains-powered		■	□	■	□	■	■
Multifunctional input			■		■		
Sensor input		□	■		■	■	
Changeover input		■	■		■	■	
Analog output		□	□		□		
Relay output (on/off)	■	□	□	■		■	■
Triac 2-p/3-p/PWM			□		■		
Functionalities							
2-pipe-system	□	□	■	■	■	■	■
4-pipe system	□	□	■		■		
Electric heater		□	□		□		
Radiator			■		■		
7-day time switch			□		✪	✪	✪
Modes Comfort	■	■	■	■	■	■	■
Modes Economy		■	■	■	■	■	■
Modes Standby/Prot.	□	■	■	■	■	■	■
Modes Frost protect.		□	■	■	■	■	■
Control loop	2-point	2-point or PI	2-point or PI	2-point	2-point or PI	2-point	2-point
Infrared remote control			□	□	■	□	□

Heat Pumps applications

	White Display	With time switch	
			
	RDG110	RDX32.21 / RDX43.2	RDF2xx
Housing			
Digital display	■	■	■
Fan speed command	3		3
Wiring			
Mains-powered	■	□	■
Sensor input	■		□
Relay output	■	■	■
Functionalities			
Electric heater	■		
DX compressor		□	■
Manuel Heat / Cool changeover	■		
Weekly time clock		■	■
Operating mode Comf. mode	■	■	■
Operating mode Eco mode	■	■	■
Operating mode Standby.			■
Operating mode Frost protect.	■	■	■
Control loop	2-point	2-point	2-point

■ Valid for all variants □ Depending on variants ✪ **Main feature** *Radio frequency receiver only [1)] suppress

Overview and selection tools
Product range overview

VAV applications			
	Basic	With display	
			
	RCU5x	RDU340	RDG400
Housing			
Setpoint knob	■		■
Digital display		■	■
Semi-flush mounting		■	
Wiring			
Mains-powered	■	■	■
Senor input		■	■
Changeover input	□	■	■
Analog output	■	■	■
Relay output	□	■	
Functionalities			
Manuel Heat / Cool changeover	□	■	■
External setpoint shift	□		
Vmin Cooling	■	■	■
Operating mode: Comf. mode	■	■	■
Operating mode: Eco mode	■	■	■
Operating mode: Sandby/Prot.	■	■	■
Operating mode: Frost protect.	■	■	■
Control loop	2-point	P/PI	P/PI

■ Valid for all variants □ Depending on variants ✪ **Main feature** *Radio frequency receiver only 1)suppress

Electromechanical room thermostats — RAA..

2-position controller for controlling the room temperature. The required temperature is adjusted with the setting knob on the front of the unit.
- Gas-filled diaphragm
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	8...30 °C
Switching differential	1 K
Relay outputs	Change-over contact, potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	0.2...6 (2) A
Relay outputs, number	1

Electromechanical room thermostat, public sector model — RAA10

- Heating only or cooling only
- No operating elements on the front of the unit



Data sheet	N3001
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA10	**RAA10**

Electromechanical room thermostat, basic model — RAA20

- Heating only or cooling only
- Setpoint adjustment with knob



Data sheet	N3002
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA20	**RAA20**

Electromechanical room thermostat, large model — RAA200

- Heating or cooling
- Specific large housing and setpoint knob



Data sheet	N3002
Dimensions (W x H x D)	105 x 124 x 44 mm

Stock No.	Product No.
BPZ:RAA200	**RAA200**

For heating and/or cooling systems
Standard room thermostats: RAA.. / RCU..

RAA30

Electromechanical room thermostat with on/off switch



- Heating only or cooling only
- Setpoint adjustment with knob
- On / off switch

Data sheet	N3003
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA30	**RAA30**

RAA30.16/GR

Electromechanical room thermostat with on/off switch and LED



Same functionality as RAA30 plus mode indication (red LED, needed AC 230 V)

Data sheet	N3003
Operating voltage	AC 230 V
Power consumption	<4 VA
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA30.16	**RAA30.16/GR**

RAA30.26/GR

Electromechanical room thermostat with on/off switch and LED, auxillary switch and LED



Same functionality as RAA30 plus 2 mode indications (red LED, needed AC 230 V) and additional independent on / off switch.

Data sheet	N3003
Operating voltage	AC 230 V
Power consumption	<4 VA
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA30.26	**RAA30.26/GR**

RAA40

Electromechanical room thermostat with selector heating/off/cooling, 1 output



- Heating or cooling
- Setpoint adjustment with knob
- Switch for cooling / off / heating

Data sheet	N3004
Dimensions (W x H x D)	96 x 100 x 43 mm

Stock No.	Product No.
BPZ:RAA40	**RAA40**

Electromechanical room thermostat with selector heating/off/cooling, 2 outputs — RAA40.2



- Heating and cooling
- Setpoint adjustment with knob
- Switch for heating / off / cooling

Data sheet	N3000
Dimensions (W x H x D)	96 x 100 x 43 mm

	Stock No.	Product No.
	BPZ:RAA40.2	**RAA40.2**

Accessories for RAA..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	BPZ:ARG70.2	**ARG70.2**

Universal room temperature controllers for heating and cooling systems — RCU.. Universal

- Electronic room temperature controller for heating and cooling operation
- PI control
- Operating mode changeover input for remote control
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	8...30 °C
Dimensions (W x H x D)	97 x 114 x 43 mm

Universal room temperature controller for 4-pipe systems, AC 230 V, positioning signal 2 pt or PWM — RCU10



- Heating and cooling sequence
- 2nd heating sequence
- Selectable P-band
  (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Selectable dead zone (2 K or 5 K)
- Frost protection function

Data sheet	N3041
Operating voltage	AC 230 V
Triac outputs	PWM or ON/OFF
Triac output, switching voltage	AC 230 V
Triac output, switching current	0.02...1 A

	Stock No.	Product No.
	BPZ:RCU10	**RCU10**

For heating and/or cooling systems
Standard room thermostats: RAA.. / RCU..

RCU10.1



Universal room temperature controller for 4-pipe systems, AC 230 V, positioning signal 2 pt or PWM, operating mode selector

Same functionality and technical data as RCU10

In addition:
- Manual operating mode selector

Data sheet N3041

	Stock No.	Product No.
	BPZ:RCU10.1	**RCU10.1**

RCU15



Universal room temperature controller for 4-pipe systems, AC 24 V, positioning signal 2 pt or PWM

Same functionality and technical data as RCU10

In addition:
- Optional control depending on the room or return air temperature (with sensor QAH11.1)

Data sheet	N3048
Operating voltage	AC 24 V
Triac outputs	PWM or ON/OFF
Triac output, switching voltage	AC 24 V
Triac output, switching current	0.02...1 A

	Stock No.	Product No.
	BPZ:RCU15	**RCU15**

RCU20



Universal room temperature controller for 2-pipe systems, AC 230 V, positioning signal 3 pt

- Heating or cooling sequence
- Automatic heating / cooling changeover (with sensor QAH11.1)
- Fixed P-band (4 K heating, 2 K cooling)
- 3-position positioning signal output

Data sheet	N3042
Operating voltage	AC 230 V
Triac output, switching voltage	AC 230 V
Triac output, switching current	0.02...1 A
Triac outputs	3-position

	Stock No.	Product No.
	BPZ:RCU20	**RCU20**

Accessories for RCU..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	BPZ:ARG70.2	**ARG70.2**

Simple electronic room temperature controllers with LCD — RDD..

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation and energy saving mode
- Automatic operating mode changeover as an option
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	5...35 °C
Switching differential	1 K
Relay outputs	Change-over contact, potential-free
Relay output, switching current	5 (2) A

Simple electronic room temperature controller with LCD — RDD10

Data sheet	N3031
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Dimensions (W x H x D)	96 x 119 x 24 mm



Stock No.	Product No.
BPZ:RDD10	**RDD10**

Simple electronic room temperature controller with LCD — RDD10.1

Data sheet	N3031
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...250 V
Dimensions (W x H x D)	96 x 119 x 24 mm



Stock No.	Product No.
BPZ:RDD10.1	**RDD10.1**

Simple electronic room temperature controller with LCD and DHW control — RDD10.1DHW

- 2-position control with on / off positioning signal output for heating
- Operating modes: Normal operation, energy saving mode and frostprotection
- Independent ON / OFF control for "Domestic Hot Water" boiler or equipment

Data sheet	N3033
Voltage supply	Mignon (2xAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...250 V
Dimensions (W x H x D)	102 x 128 x 30 mm

Stock No.	Product No.
BPZ:RDD10.1DHW	**RDD10.1DHW**

For heating and/or cooling systems
Room thermostats with display: RDD.. / RDH..

RDD310

Semi flush-mounted room temperature controllers with LCD



- Operating voltage AC 230 V
- 2-position control with On / Off control output
- Input for an external temperature sensor (QAH11.1 / QAA32)
- Temperature limitation function for heating, controlled by external temperature sensor (optional)
- Operating modes: Comfort, Energy Saving and Frost Protection
- Manual changeover of current operating mode
- Maximum and minimum setpoint limitation
- Backlit LCD
- Mounting on recessed rectangular conduit box, fixing center at 60.3mm

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Data sheet	N3077
Operating voltage	AC 230 V
Setpoint setting range	5...40 °C
Digital output, switching voltage	AC 230 V
Dimensions (W x H x D)	96 x 119 x 24 mm

Stock No.	Product No.
S55770-T107	RDD310

Accessories for RDD..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	BPZ:ARG70.2	**ARG70.2**
High current switching relay, maximum 16 A resistive	BPZ:SEZ16	**SEZ16**

RDH..

Electronic room temperature controllers, LCD, setting knob



Mains independent, battery powered electronic room temperature controller with 2-position output.
The required temperature is adjusted with the large setting knob on the front of the unit.

- Easy operation by large setting knob and large display
- for heating or cooling
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Voltage supply	Mignon (2xAA)
Operating voltage	DC 3 V
Battery life	1 year
Setpoint setting range	5...30 °C
Relay outputs, number	1
Relay outputs	Change-over contact, potential-free
Relay output, switching voltage	24...250 V
Relay output, switching current	0.2...5 (2) A
Switching differential	1 K
Dimensions (W x H x D)	120 x 90 x 35 mm

Range overview RDH..

Product Title	Data sheet	Stock No.	Product No.
Room temperature controller, LCD, setting knob	N3069	BPZ:RDH10	**RDH10**
Room temperature controller radio frequency set (transmitter and receiver), LCD, setting knob	N3070	BPZ:RDH10RF/SET	**RDH10RF/SET**

Accessories for RDH..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**

For heating and/or cooling systems
Room thermostats with time clock: REV.. / RDJ.. / RDE.. / RAV.. / REA..

REV..



Electronic room temperature controllers with time switch, LCD and selection slider

Mains-independent, battery-operated room temperature controllers featuring user-friendly operation, easy-to-read display and large numbers

- Self-learning two-position controller with PID response (REV13.., REV17.., REV24..)
- 3-position controller with PI response (for REV34..)
- Remote operation (REV13.., REV17.., REV24, REV24DC, REV34..)
- Override button
- Sensor calibration and reset function
- Frost protection function and minimum limitation of setpoint
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: grey RAL7038

Operating mode selection:

- Automatic modes with time switch program
- Automatic mode with one or two heating phases (REV13..)
- Automatic mode with up to three comfort phases (REV17.., REV24.., REV34..)
- Exception day mode with up to three comfort phases (REV17.., REV24.., REV34..)
- Continuous comfort mode
- Continuous energy saving mode
- Frost protection

Operating voltage	DC 3 V
Battery life	2 years
Setpoint setting range	3...35 °C
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	0.1...6 (2.5) A For RF versions: 0.2...16 (2) A

Range overview REV.. Slider

Product Title	Dimensions (H x W x D) [mm]	Data sheet	Stock No.	Product No.
Room temperature controller with 2-point control and 24-hour time switch, batteries, only heating	130 x 94 x 30	N2201	BPZ:REV13	**REV13**
Room temperature controller with 2-point control and 24-hour time switch, batteries, only heating, receive time signal DCF77	130 x 94 x 30	N2201	BPZ:REV13DC	**REV13DC**
Room temperature controller with 2-point control and 7-day time switch, batteries, only heating	134.5 x 94 x 30	N2203	BPZ:REV17	**REV17**
Room temperature controller with 2-point control and 7-day time switch, batteries, only heating, receive time signal DCF77	134.5 x 94 x 30	N2203	BPZ:REV17DC	**REV17DC**
Room temperature controller with 2-point control and 7-day time switch, batteries, heating and cooling	134.5 x 94 x 30	N2205	BPZ:REV24	**REV24**
Room temperature controller with 2-point control and 7-day time switch, batteries, heating and cooling, receive time signal DCF77	134.5 x 94 x 30	N2205	BPZ:REV24DC	**REV24DC**
Room temperature controller with 2-point control and 7-day time switch, receiver with relay outputs (RF set), batteries, heating or cooling, receive time signal DCF77	134.5 x 94 x 30	N2206	BPZ:REV24RFDC/SET	**REV24RFDC/SET**
Room temperature controller with 2-point control and 7-day time switch, receiver with relay outputs (RF set), batteries, heating or cooling	134.5 x 94 x 30	N2206	BPZ:REV24RF/SET	**REV24RF/SET**
Room temperature controller with 3-point control and with 7-day time switch, batteries, only heating	134.5 x 94 x 30	N2208	BPZ:REV34	**REV34**
Room temperature controller with 3-point control and with 7-day time switch, batteries, only heating, receive time signal DCF77	134.5 x 94 x 30	N2208	BPZ:REV34DC	**REV34DC**

For heating and/or cooling systems
Room thermostats with time clock: REV.. / RDJ.. / RDE.. / RAV.. / REA..

REV100/200/300..



Electronic room temperature controllers with time switch and LCD touch screen

- Mains-independent, electronic PID controller with 2-position output, battery-powered
- Self-explanatory touch screen
- Programmable with digital 24-hour or 7-day time switch
- Self-learning 2-position controller with PID control (patented)
- Remote operation (REV100.., REV200, REV300)
- Override button
- Sensor calibration and reset function
- Locking of display to facilitate cleaning or to prevent tampering
- Frost protection function and minimum limitation of setpoint

Operating modes:
- Automatic mode with up to 2 heating periods per day (REV100..)
- Automatic modes with up to 3 comfort periods per day (REV200.., REV300)
- Continuous Comfort mode
- Continuous Economy mode
- Standby with frost protection

Voltage supply	Mignon (2xAA)
Operating voltage	DC 3 V
Setpoint setting range	3...29 °C
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	8 (3.5) A

Range overview REV.. Touch screen

Product Title	Dimensions (W x H x D) [mm]	Data sheet	Stock No.	Product No.
Room temperature controller with 2-point control and 24-hour time switch, batteries, housing signal white	120 x 98 x 31	N2211	BPZ:REV100	**REV100**
Room temperature controller with 2-point control and 24-hour time switch, batteries, housing silver	120 x 98 x 31	N2211	BPZ:REV100S	**REV100S**
Room temperature controller with 2-point control and 7-day time switch, batteries, housing signal white	130 x 110 x 33	N2212	BPZ:REV200	**REV200**
Room temperature controller with 2-point control and 7-day time switch, batteries, housing silver	130 x 110 x 33	N2212	BPZ:REV200S	**REV200S**
Room temperature controller with 2-point control and 7-day time switch, receiver with relay outputs (RF set), batteries, housing signal white		N2214	BPZ:REV200RF/SET	**REV200RF/SET**
Room temperature controller with 3-point control and with 7-day time switch, batteries, housing signal white	130 x 110 x 33	N2213	BPZ:REV300	**REV300**

Electronic room temperature controllers with 24-hour time switch, LCD, setting knob — RDJ..



Mains independent, battery powered electronic room temperature controller with 2-position output.
The required temperature is adjusted with the large setting knob on the front of the unit.
- Easy operation by large setting knob and large display
- for heating or cooling
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Voltage supply	Mignon (2xAA)
Operating voltage	DC 3 V
Battery life	1 year
Setpoint setting range	5...30 °C
Relay outputs	Change-over contact, potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	0.2...5 (2) A
Relay outputs, number	1
Switching differential	1 K
Dimensions (W x H x D)	120 x 90 x 35 mm

Range overview RDJ..

Product Title	Data sheet	Stock No.	Product No.
Room temperature controller with 24-hour time switch, LCD, setting knob	N3071	BPZ:RDJ10	**RDJ10**
Room temperature controller radio frequency set (transmitter and receiver) with 24-hour time switch, LCD, setting knob	N3072	BPZ:RDJ10RF/SET	**RDJ10RF/SET**

Accessories for RDJ..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**

Electronic room temperature controller with 7-day time switch and LCD — RDE..

- 2-position control with on/off output for heating
- Operating modes: Normal and energy-saving mode
- Programmable 7-day time switch and manual operation
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	5...35 °C
Switching differential	1 K
Dimensions (W x H x D)	119 x 96 x 24 mm

Room temperature controller with 7-day time switch and LCD — RDE10



Data sheet	N3035
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact, potential-free

Stock No.	Product No.
BPZ:RDE10	**RDE10**

For heating and/or cooling systems
Room thermostats with time clock: REV.. / RDJ.. / RDE.. / RAV.. / REA..

RDE10.1

Room temperature controller with 7-day time switch and LCD



Data sheet	N3035
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact, potential-free

Stock No.	Product No.
BPZ:RDE10.1	**RDE10.1**

RDE10.1DHW

Room temperature controller with 7-day time switch, LCD and DHW control



- 2-position control with ON / OFF output for heating
- Independent ON / OFF control of DHW
- Operating modes: Auto, normal operation, energy saving and frost protection
- 7-day time switch and manual control

Data sheet	N3038
Voltage supply	Mignon (2xAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contacts, potential-free
Switching differential	1 K

Stock No.	Product No.
BPZ:RDE10.1DHW	**RDE10.1DHW**

RDE20.1

Room temperature controller with 7-day time switch and LCD



Same functionality and technical data as RDE10.1, but with connection facility for external QAH11 sensor.

Data sheet	N3036
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	5 (2) A
Relay outputs	Change-over contact, potential-free

Stock No.	Product No.
BPZ:RDE20.1	**RDE20.1**

Semi flush-mounted room temperature controllers with LCD — RDE410



- Operating voltage AC 230 V
- 2-position control with On / Off control output
- Input for an external temperature sensor (QAH11.1 / QAA32)
- Temperature limitation function for heating, controlled by external temperature sensor (optional)
- Operating modes: Comfort, Energy Saving and Frost Protection
- Manual changeover of current operating mode
- Maximum and minimum setpoint limitation
- Backlit LCD
- Mounting on recessed rectangular conduit box, fixing center at 60.3mm
- Auto Timer mode with 8 programmable timers

Data sheet	N3077
Operating voltage	AC 230 V
Setpoint setting range	5...40 °C
Digital output, switching voltage	AC 230 V
Dimensions (W x H x D)	96 x 119 x 24 mm

	Stock No.	Product No.
	S55770-T108	RDE410

Accessories for RDE..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	BPZ:ARG70.2	**ARG70.2**
High current switching relay, maximum 16 A resistive	BPZ:SEZ16	**SEZ16**

Electronic touch screen room temperature controller with time switch and LCD — REV26..



- Mains-independent, electronic PID controller with 2-position output, battery-powered
- With digital 7-day time switch
- Version for wall mounting
- Self-learning 2-position controller with PID control (patented)
- Optimum start control for the first heating period
- Selectable operating action: heating or cooling

Operating modes:
- Automatic operation with up to 3 heating or cooling periods per day
- Continuous normal temperature
- Continuous economy temperature
- Standby with frost protection

Data sheet	N2242
Voltage supply	Micro (2xAAA)
Operating voltage	DC 3 V
Battery life	2 years
Setpoint setting range	3...29 °C
Relay outputs	Change-over contact, potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	6 (2.5) A
Relay outputs, number	1

NEW PRODUCT

For heating and/or cooling systems
Room thermostats with time clock: REV.. / RDJ.. / RDE.. / RAV.. / REA..

Range overview REV26..

Product Title	Data sheet	Stock No.	Product No.
Room temperature controller with 2-point control and 7-day time switch, batteries, flush mounted, housing anthracite grey	N2242	BPZ:REV26	**REV26**
Room temperature controller with 2-point control and 7-day time switch, batteries, flush mounted, housing fokker grey	N2242	BPZ:REV26GF-I	**REV26GF-I**

RAV11..

Room temperature controller with 24-hour or 7-day time switch



- Mains-independent, electronic PID controller with 2-position output, battery-powered
- With analog 24-hour time switch
- Self-learning 2-position controller with PID control (patented)
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Operating modes:
- 24-hour or 7-day mode with heating periods according to the analog time switch
- Continuous Comfort mode
- Continuous Economy mode
- Stanby with frost protection

Data sheet	N2224
Operating voltage	DC 3 V
Battery life	2.5 years
Setpoint setting range	5...30 °C
Relay outputs	N.O. contact, Potential-free
Relay output, switching voltage	AC 24...250 V
Relay output, switching current	8 (3.5) A
Relay outputs, number	1
Dimensions (W x H x D)	128 x 104 x 37 mm

Range overview RAV11..

Product Title	Data sheet	Stock No.	Product No.
Room temperature controller with 24-hour time switch	N2224	BPZ:RAV11.1	**RAV11.1**
Room temperature controller with 7-day time switch	N2224	BPZ:RAV11.7	**RAV11.7**

REA23/101

Room temperature controller with 7-day time switch and LCD



Mains-independent, battery powered electronic room temperature PID controller with two-position output
- "Albatros Design"
- Straightforward, self-explanatory menu selection via rotary selector
- without front cover, without company logo

Data sheet N2216

Stock No.	Product No.
BPZ:REA23/101	**REA23/101**

Room temperature controller with 7-day time switch and LCD, OpenTherm Plus compatible

REA23M/101



OpenTherm Plus capable electronic room temperature PID controller
- "Albatros Design"
- Straightforward, self-explanatory menu selection via rotary selector
- without front cover, without company logo

Data sheet N2217

	Stock No.	Product No.
	BPZ:REA23M/101	**REA23M/101**

Radio frequency room temperature controller set (transmitter + receiver) with 7-day time switch and LCD

REA23R/ST/101





Radio frequency controller set consisting of room temperature controller REA23.03RF/101 (with integrated radio transmitter) and receiver unit REA-R.03/1/101.

REA23.03RF/101: Electronic radio frequency room temperature controller with 7-day time switch and LCD. Same functionality as REA23/101 without remote operation.
- Room controller "Albatros Design
- Straightforward, self-explanatory menu selection via rotary selector
- without front cover, without company logo

Technical data:
- PID controller
- SRD band: 868.7 to 869.2 MHz
- Transmission frequency: 868.95 MHz
- Max. transmitter power: < 10mW / typical 4 mW
- Dimensions (W x H x D): 140 x 99 x 30 mm

REA-R.03/1/101: Radio frequency receiver with mode indication (868 MHz).
- Dimensions (W x H x D): 84 x 104 x 32 mm

Data sheet N2218

	Stock No.	Product No.
	BPZ:REA23R/ST/101	**REA23R/ST/101**

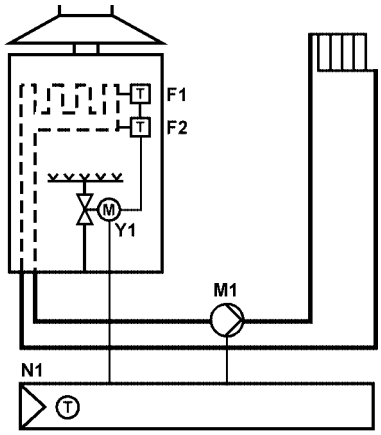
7

Application examples REV..

These are only a few examples of many applications that can be done with the thermostat REV...
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the REV.. data sheet..

REV24

HAA001 EV2 HQ

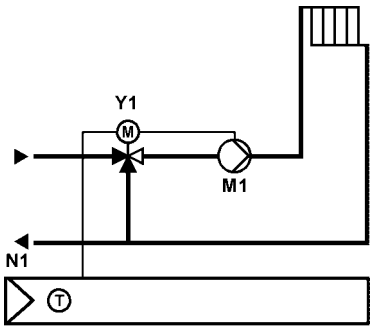


Room temperature controller with 7-day time switch, acting on on/off device

- 7-day time switch programme
- Three different 24-hour operating modes
- Continuous normal temperature mode
- Continuous economy temperature mode
- Standby with frost protection mode
- Holiday mode
- Override mode button
- Sensor calibration
- Installer parameter setting for pump kick and cooling
- Installer parameter setting for optimum start control in the morning
- Installer parameter setting for minimum limitation of set point
- Digital user interface
- Installer choice of algorithm: PID self learning; PID 12; PID 6; or 2-point

REV34

H0C002 EV3 HQ



Room temperature controller with 7-day time switch, acting on 3-position valve actuator

- 3-position controller with PI control
- 7-day time switch programme
- Three different 24-hour operating modes
- Continuous comfort temperature mode
- Continuous economy temperature mode
- Standby with frost protection mode
- Holiday mode
- Override mode button
- Digital user interface
- Sensor calibration
- Installer parameter setting for optimum start control in he morning
- Installer parameter setting for minimum limitation of set point
- Installer parameter setting for room size and heating capacity

Electromechanical room thermostats for fan coils — RAB..

Electromechanical room temperature controllers for fan coil for heating and/or cooling applications. Manual three-speed fan control. The required room temperature is adjusted with the setpoint knob on the front of the unit.

- Gas-filled diaphragm
- 2-position control
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Setpoint setting range	8...30 °C
Switching differential	1 K
Relay output, switching voltage	AC 250 V
Relay output, switching current	0.2...6 (2) A
Dimensions (W x H x D)	97 x 113 x 43 mm

Electromechanical room thermostat for 2-pipe fan coils, selector heating/cooling — RAB10



- Heating or cooling applications
- Selector for heating or cooling mode
- Selector for manual 3-speed fan operation
- Manual fan operation or automatic fan operation parallel with the valve can be configured inside the unit

Data sheet N3011

	Stock No.	Product No.
	BPZ:RAB10	**RAB10**

Electromechanical room thermostat for 2-pipe fan coils, selector heating/cooling/fan only — RAB10.1



Same functionality and technical data as RAB10. Additional selector position for ventilation (heating and cooling inactive).

Data sheet N3011

	Stock No.	Product No.
	BPZ:RAB10.1	**RAB10.1**

Electromechanical room thermostat for 2-pipe fan coils, selector heating/cooling, fan release externally — RAB10.2



Same functionality and technical data as RAB10. Additional selector position for ventilation (heating and cooling inactive) and externally fan release.

Data sheet N3010

	Stock No.	Product No.
	BPZ:RAB10.2	**RAB10.2**

For fan coil units
Standard room thermostats: RAB.. / RCC..

RAB20

Electromechanical room thermostat for 2-pipe fan coils, basic model



- Heating or cooling applications
- Selector for manual 3-speed fan operation
- Changeover function, heating or cooling (with external automatic aquastat)
- Manual fan operation or automatic fan operation parallel with cooling / heating mode can be configured inside the unit

Data sheet N3012

	Stock No.	Product No.
	BPZ:RAB20	**RAB20**

RAB20.1

Electromechanical room thermostat for 2-pipe fan coils, selector heating-cooling/fan only



Same functionality and technical data as RAB20. Additional selector for changeover between heating / cooling and ventilation.

Data sheet N3012

	Stock No.	Product No.
	BPZ:RAB20.1	**RAB20.1**

RAB30

Electromechanical room thermostat for 4-pipe fan coils, selector heating/cooling



- Heating or cooling applications
- Selector for heating or cooling mode
- Selector for 3-speed fan operation
- Manual fan operation or automatic fan operation parallel with heating / cooling mode (depending on the selector's position) can be configured inside the unit

Data sheet N3013

	Stock No.	Product No.
	BPZ:RAB30	**RAB30**

RAB30.1

Electromechanical room thermostat for 4-pipe fan coils, selector heating/cooling/fan only



Same functionality and technical data as RAB30. Additional selector position for ventilation (heating and cooling inactive).

Data sheet N3013

	Stock No.	Product No.
	BPZ:RAB30.1	**RAB30.1**

Electromechanical room thermostat for 2-pipe fan coils, selector cooling/fan/off

RAB40.1



- On / off output for cooling
- Outputs for 3-speed fan
- Manual switch for cooling and fan operation, fan only operation or off
- Selector for manual 3-speed fan operation

Data sheet N3014

	Stock No.	Product No.
	BPZ:RAB40.1	**RAB40.1**

Fan speed switch, 3-stage

RAB90

Selector for 3-speed fan operation



Data sheet N3019

	Stock No.	Product No.
	BPZ:RAB90	**RAB90**

Fan speed switch, 3-stage, additional ouptut

RAB90.1

Selector for 3-speed fan operation with additional output for release signal



Data sheet N3019

	Stock No.	Product No.
	BPZ:RAB90.1	**RAB90.1**

Accessories for RAB..

Product Title	Stock No.	Product No.
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	BPZ:ARG70.2	**ARG70.2**

Electronic room temperature controllers for fan coils

RCC..

- For heating and cooling applications
- Operating mode selector
- LEDs for indicating the operating state
- Setting knob for room temperature adjustment
- External operating mode changeover contact
- Various operating modes (normal and energy saving mode, etc.)

Setpoint setting range	8...30 °C
Relay output, switching voltage	AC 230 V
Dimensions (W x H x D)	97 x 114 x 43 mm

For fan coil units
Standard room thermostats: RAB.. / RCC..

RCC10



Room temperature controller for 2-pipe fan coils, AC 230 V, positioning signal 2 pt, return air sensor

- Heating or cooling sequence
- Automatic heating/cooling changeover (with sensor QAH11.1)
- Operating mode changeover input for remote control
- Outputs for 3-speed fan (0 / I / II / III)
- 2-position control
- Selectable switching differential
  (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Input for return temperature sensor (QAH11.1)
- Frost protection mode

Data sheet	N3021
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A
Relay outputs	Fan: 3-position switch with N.O. contacts, non-floating Valve: change-over contact, non-floating

Stock No.	Product No.
BPZ:RCC10	**RCC10**

RCC10.1



Room temperature controller for 2-pipe fan coils, AC 230 V, positioning signal 2 pt

Same functionality and technical data as RCC10
- Without input for return air temperature sensor
- Without frost protection function
- Fixed switching differential (2 K heating, 1 K cooling)

Data sheet	N3021

Stock No.	Product No.
BPZ:RCC10.1	**RCC10.1**

Room temperature controller for 2-pipe fan coils, AC 230 V, positioning signal 2 pt, return air sensor, el. heater

RCC20



- Heating or cooling sequence
- Automatic heating/cooling changeover (with sensor QAH11.1)
- Operating mode changeover input for remote control
- Output for electrical heater
- 2-position control
- Selectable switching differential (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Selectable dead zone (2 K or 5 K)
- Input for return air temperature sensor (QAH11.1)
- Frost protection mode
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3022
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A Electric heater: 0.1...5.4 A
Relay outputs	Fan: 3-position switch with N.O. contacts, non-floating Valve and electric heater: NO contacts, non-floating

Stock No.	Product No.
BPZ:RCC20	**RCC20**

Room temperature controller for 4-pipe fan coils, AC 230 V, positioning signal 2 2 pt, return air sensor

RCC30



- Heating and cooling sequence
- Operating mode changeover input for remote control
- 2-position control
- Selectable switching differential (1 K heating, 0.5 K cooling, or 4 K heating, 2 K cooling)
- Input for return air temperature sensor (QAH11.1)
- Frost protection mode
- Selectable dead zone (2 K or 5 K)
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3023
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	Fan: 0.1...2.6 A Valve: 0.1...1.3 A
Relay outputs	Fan: 3-position switch with N.O. contacts Valve: N.O. contacts, non-floating

Stock No.	Product No.
BPZ:RCC30	**RCC30**

For fan coil units
Standard room thermostats: RAB.. / RCC..

RCC50.1



Room temperature controller for 2-pipe fan coils, AC 24 V, positioning signal DC 0...10 V

- Heating or cooling sequence
- Automatic heating / cooling changeover (with sensor QAH11.1)
- Operating mode changeover input for remote control
- Function for preventing damage due to moisture
- PI control
- Fixed switching differential (4 K heating, 2 K cooling)
- DC 0...10 V output
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3025
Operating voltage	AC 24 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	Fan: 0.1...2.6 A
Relay outputs	Fan: 3-position switch with N.O. contacts, potential-free
Analog outputs	Heating or cooling
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA

Stock No.	Product No.
BPZ:RCC50.1	**RCC50.1**

RCC60.1



Room temperature controller for 2-pipe fan coils, AC 230 V, positioning signal 3 pt

- Heating or cooling sequence
- Automatic heating / cooling changeover (with sensor QAH11.1)
- External operating mode changeover
- Function for preventing damage due to moisture
- PI control
- Fixed switching differential (4 K heating, 2 K cooling)
- Output for 3-position valve actuator
- Outputs for 3-speed fan (0 / I / II / III)

Data sheet	N3026
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	Fan: 0.1...2.6 A
Relay outputs	Fan: 3-position switch with N.O. contacts, non-floating Valve: change-over contact, non-floating
Triac output, switching voltage	AC 230 V
Triac output, switching current	Valve: 0.02...2 A
Triac outputs	3-position

Stock No.	Product No.
BPZ:RCC60.1	**RCC60.1**

Field devices for RCC..

Product Title	Data sheet	Stock No.	Product No.
Cable temperature sensor PVC 2.5 m, NTC 3 kOhm, with connectors 2.8 x 0.8 mm	N1840	BPZ:QAH11	**QAH11**
Changeover cable holder for QAH11..	N1840	BPZ:ARG86.3	**ARG86.3**

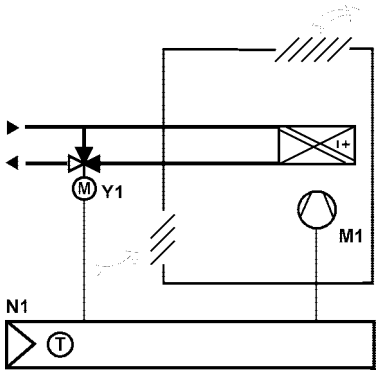
Application examples RAB..

These are only a few examples of many applications that can be done with the thermostat RAB...
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RAB.. data sheet.

2-pipe fan coil, manual heating / cooling changeover — RAB10

TAAE01 AB1 HQ

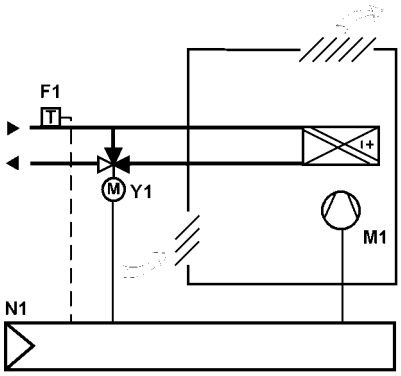
- 2-position control algorithm for heating or cooling systems
- Setting range of setpoint knob can be limited
- Operating mode selector for heating and cooling
- 4-position fan speed selector (I/II/III/off)



2-pipe fan coil, automatic heating / cooling changeover — RAB20

TAAE01 AB2 HQ

- 2-position control for heating or cooling systems
- Setting range of setpoint knob can be limited
- 4-position fan speed selector (I/II/III/off)
- Heating/cooling changeover (aquastat)



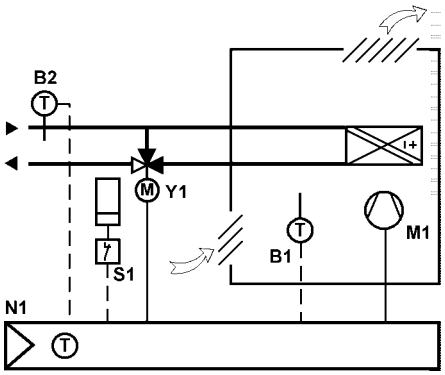
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Application examples RCC..

These are only a few examples of many applications that can be done with the thermostat RCC...
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RCC.. data sheet.

RCC10

TAAE01 CC1 HQ

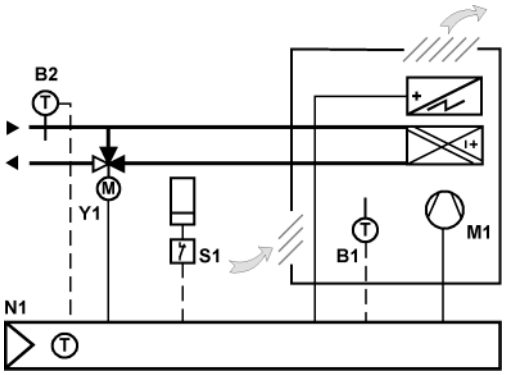


2-pipe fan coil, automatic heating / cooling changeover on/off output

- 2-position control algorithm for heating or cooling systems
- Output for ON/OFF valve actuator
- 4-position fan speed selector (I/II/III/standby)
- Status LED for heating, cooling and fan
- Setting range of setpoint knob can be limited
- Parameter setting by installer for: Fan control, operating mode changeover operating mode switch condition, frost protection, switching differential for heating or cooling
- Automatic heating/cooling changeover with external temperature sensor (QAH11.1)
- Operating mode changeover for remote control with external switch
- Temperature control according to integrated sensor or external temperature sensor QAH11.1 or QAA32)

RCC20

TAAZ01 CC2 HQ



2-pipe fan coil, automatic heating / cooling changeover and electrical heater

- 2-position control algorithm for heating or cooling systems
- Outputs for ON/OFF valve actuator and electrical heater
- 4-position fan speed selector (I/II/III/standby)
- Status LED for heating, cooling and fan
- Setting range of setpoint knob can be limited
- Parameter setting by installer for: Fan control, operating mode changeover operating mode switch condition, frost protection, switching differential for heating or cooling, dead zone, setpoint differential, operation of electrical heater in cooling or heating mode
- Automatic heating/cooling changeover with external temperature sensor (QAH11.1)
- Operating mode changeover for remote control withexternal switch
- Temperature control according to integrated sensor or external temperature sensor (QAH11.1 or QAA32)

Room thermostats for fan coil units, universal applications and heat pump applications — RDG1..

- Operating modes: Comfort, Energy Saving and Protection
- 2-position, 3-position, PWM or DC 0...10V control outputs
- Automatic or manual fan speed for 1-speed or 3-speed fan
- 3 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 4-pipe system with electrical heater (only RDG100)
- 2-stage heating or cooling system

Data sheet	N3181
Setpoint setting range	5...40 °C
Switching differential	Heating: 0.5...6 K Cooling: 0.5...6 K
Analog inputs, number	2
Digital inputs, number	1
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Room thermostat, AC 230 V, for fan coil units and universal applications — RDG100



Operating voltage	AC 230 V
Relay outputs, number	3
Relay outputs	Fan: 1- or 3-speed
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (4) A
Triac outputs, number	3
Triac outputs	Valve, el. heater 2-position, PWM, 3-position
Triac output, switching voltage	AC 230 V
Triac output, switching current	Max. 1 A

Stock No.	Product No.
S55770-T158	**RDG100**

For fan coil units
Room thermostats with display: RDG1.. / RDF..

RDG110

Room thermostat, AC 230 V, for fan coil units and heat pump applications



Operating voltage	AC 230 V
Relay outputs, number	5
Relay outputs	Valve, compressor or el. heater: 2 outputs (SPDT), 2-position Fan: 1- or 3-speed
Relay output, switching voltage	AC 230 V
Relay output, switching current	Valve, compressor or el. heater: 5 (3) A Fan: 5 (4) A

Stock No.	Product No.
S55770-T160	**RDG110**

RDG140

Room thermostat, AC 24 V, for fan coil units and universal applications, analog outputs DC 0...10 V



Operating voltage	AC 24 V
Analog outputs, number	2
Analog outputs	Valve, el. heater
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA
Relay outputs, number	3
Relay outputs	Fan: 1- or 3-speed
Relay output, switching voltage	AC 24...230 V
Relay output, switching current	5 (4) A

Stock No.	Product No.
S55770-T161	**RDG140**

RDG160

Room thermostat, AC 24 V, for fan coil units and universal applications, analog outputs DC 0...10 V / ECM fan



Operating voltage	AC 24 V
Analog outputs, number	3
Analog outputs	Valve, el. heater: 2 Fan: 1 (ECM)
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA

Stock No.	Product No.
S55770-T162	**RDG160**

Room thermostat, AC 230 V, for fan coil units and universal applications, 7-day time switch

RDG100T



- Operating modes: Auto timer, Comfort, Energy Saving and Protection
- Auto Timer mode with 8 programmable timers
- 2-position, 3-position or PWM control outputs
- Automatic or manual fan speed for 1-speed or 3-speed fan
- 3 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Infrared remote control receiver
- Backlit display

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 4-pipe system with electrical heater
- 2-stage heating or cooling system

Data sheet	N3181
Operating voltage	AC 230 V
Setpoint setting range	5...40 °C
Switching differential	Heating: 0.5...6 K Cooling: 0.5...6 K
Analog inputs, number	2
Digital inputs, number	1
Relay outputs, number	3
Relay outputs	Fan: 3 or 1-position switch
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (4) A
Triac outputs, number	3
Triac outputs	Valve, el. heater 2-position, PWM, 3-position
Triac output, switching current	Max. 1 A
Triac output, switching voltage	AC 230 V

Stock No.	Product No.
S55770-T159	**RDG100T**

Accessories for RDG1..

Product Title	Data sheet	Stock No.	Product No.
Infrared Remote Control for room thermostats	N3060	S55770-T166	**IRA211**
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	N3009	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	**ARG70.2**

For fan coil units
Room thermostats with display: RDG1.. / RDF..

RDF..

Room temperature controller

- Electronic room temperature controller with LCD for fan coil units and depending on the type for compressors in DX-type equipment
- For heating and/or cooling applications
- ON/OFF, 3-position or modulating output
- Operating mode changeover input for remote control
- Various operating modes (normal, energy saving and stand-by)
- Outputs for 3-speed fan
- Selectable installation and control parameters
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Operating voltage	AC 230 V
Setpoint setting range	5...40 °C
Relay output, switching voltage	AC 230 V
Relay output, switching current	4 (2) A
Relay outputs	Fan: N.O. contacts, non-floating Valve: change-over contact, non-floating
Dimensions (W x H x D)	102 x 128 x 30 mm

RDF110



Room temperature controller for 2-pipe fan coils or DX-type equipment, return air temperature sensor

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Sensor input either for automatic heating / cooling changeover or return air temperature (with sensor QAH11.1)
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby
- Operating mode changeover input for remote control

Data sheet	N3057

Stock No.	Product No.
BPZ:RDF110	**RDF110**

RDF110/IR



Room temperature controller for 2-pipe fan coils or DX-type equipment, return air temperature sensor, infrared remote control

Same functionality and technical data as RDF110 and:
- With infrared receiver for remote control; remote control not included

Data sheet	N3057

Stock No.	Product No.
BPZ:RDF110/IR	**RDF110/IR**

Room temperature controller for 2-pipe fan coils or DX-type equipment — RDF110.2

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Manual heating/Cooling change-over
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby



Data sheet N3057

	Stock No.	Product No.
	BPZ:RDF110.2	**RDF110.2**

Room temperature controller for 2-pipe fan coils or DX-type equipment, infra-red remote control — RDF110.2/IR

Same functionality and technical data as RDF110.2 and:
- With infrared receiver for remote control; remote control not included



Data sheet N3057

	Stock No.	Product No.
	BPZ:RDF110.2/IR	**RDF110.2/IR**

Room temperature controller for 2-pipe fan coils or DX-type equipment, return air temperature sensor, 7-day time switch — RDF210

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Sensor input either for automatic heating / cooling changeover or return air temperature (with sensor QAH11.1)
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby
- 8 Timers with a 7-day programmable schedule



Data sheet N3058

	Stock No.	Product No.
	BPZ:RDF210	**RDF210**

For fan coil units
Room thermostats with display: RDG1.. / RDF..

RDF210/IR



Room temperature controller for 2-pipe fan coils or DX-type equipment, return air temperature sensor, infrared remote control, 7-day time switch

Same functionality and technical data as RDF210 and:
- With infrared receiver for remote control; remote control not included

Data sheet N3058

Stock No.	Product No.
BPZ:RDF210/IR	**RDF210/IR**

RDF210.2



Room temperature controller for 2-pipe fan coils or DX-type equipment, 7-day time switch

- Output for an on / off valve actuator or compressor
- Outputs for a 3-speed fan
- Control depending on the room or return air temperature (with sensor QAH11.1)
- 2-position control
- Manual heating/cooling change-over
- Automatic or manual three-speed fan control
- Operating modes: normal, energy-saving and standby
- 8 Timers with a 7-day programmable schedule

Data sheet N3058

Stock No.	Product No.
BPZ:RDF210.2	**RDF210.2**

RDF210.2/IR



Room temperature controller for 2-pipe fan coils or DX-type equipment, infrared remote control, 7-day time switch

Same functionality and technical data as RDF210.2 and:
- With infrared receiver for remote control; remote control not included

Data sheet N3058

Stock No.	Product No.
BPZ:RDF210.2/IR	**RDF210.2/IR**

Accessories for RDF..

Product Title	Data sheet	Stock No.	Product No.
Infrared Remote Control for room thermostats	N3060	S55770-T166	**IRA211**
Mounting plate 120 x 120 mm for 4 x 4" housing	N3009	BPZ:ARG70	**ARG70**
Mounting plate 96 x 120 mm for 2 x 4" housing	N3009	BPZ:ARG70.1	**ARG70.1**
Mounting plate 112 x 130 mm for surface wiring	N3009	BPZ:ARG70.2	**ARG70.2**

Semi Fush-mount room temperature controllers

RDF..Semi Flush Mount

Semi Flush Mount room temperature controller with LCD for fan coil units and compressors in DX-type equipment
- For heating and/or cooling applications
- Outputs for 3-speed fan
- Selectable installation and control parameters

Setpoint setting range	5...40 °C
Mounting	Semi Flush-mounting with recessed rectangular conduit box Fixing center 60.3 mm (BS4662)
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 57 mm

Semi Flush-mount room temperature controller for 2-/4-pipe fan coils or DX type equipment

RDF300



Semi Flush Mount room temperature controller with LCD for fan coil units and compressors in DX-type equipment
- 2 or 3-position control outputs
- Output for 3-speed or 1-speed fan
- Two multifunctional inputs for keycard contact, external sensor, etc.
- Operating modes: Comfort, Energy Saving and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: signal white (RAL 9003)

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3076
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating

	Stock No.	Product No.
	BPZ:RDF300	**RDF300**

Semi Flush-mount room temperature controller for 2-/4-pipe fan coils or DX type equipment, backlit LCD

RDF300.02



Same functionality and technical data as RDF300 and:
- Backlit display

Data sheet	N3076

	Stock No.	Product No.
	BPZ:RDF300.02	**RDF300.02**

For fan coil units
Room thermostats with display RDF..Semi Flush Mount

RDF300.02/SL



Semi Flush-mount room temperature controller for 2-/4-pipe fan coils or DX type equipment, backlit LCD, housing silver

Same functionality and technical data as RDF300 and:
- Backlit display
- Color of housing: silver

Data sheet	N3076

Stock No.	Product No.
BPZ:RDF300.02/SL	**RDF300.02/SL**

RDF310.2



Semi Flush-mount room temperature controller for 2-pipe fan coils or DX type equipment

Semi Flush Mount room temperature controller with LCD for fan coil units and compressors in DX-type equipment
- 2-position control outputs
- 3-speed fan control: Automatic or manual
- Manual heating / cooling changeover or continuous Cooling only / Heating only
- Operation modes: Comfort and Protection
- Adjustable commissioning and control parameters
- Optional display of room temperature or setpoint
- Minimum and maximum setpoint limitation
- Color of housing: signal white (RAL 9003)

Data sheet	N3067
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	4 (2) A
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating

Stock No.	Product No.
BPZ:RDF310.2	**RDF310.2**

RDF310.21



Semi Flush-mount room temperature controller for 2-pipe fan coils or DX type equipment, infrared remote control, backlit LCD

Same functionality and technical data as RDF310.2 and:
- Backlit display
- With infrared receiver for remote control, remote control not included

Data sheet	N3067

Stock No.	Product No.
BPZ:RDF310.21	**RDF310.21**

Semi Flush-mount room temperature controller for 2-/4-pipe fan coils — RDF340



Semi Flush Mount room temperature controller with LCD for fan coil units
- Output for 3-speed or 1-speed fan
- Two multifunctional inputs for keycard contact, external sensor, etc.
- Operating modes: Comfort, Energy Saving and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Color of housing: signal white (RAL 9003)

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3076
Operating voltage	AC 24 V
Analog output, signal	DC 0...10 V
Analog outputs	Heating/Cooling
Analog output, current	Max. ±1 mA
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	Fan: N.O. contacts, non-floating

Stock No.	Product No.
BPZ:RDF340	**RDF340**

Semi Flush-mount room temperature controller for 2-/4-pipe fan coils or DX type equipment, infrared remote control, 7-day time switch, backlit LCD — RDF400.01



Semi Flush Mount room temperature controller with LCD for fan coil units and compressors in DX-type equipment
- Backlit display
- 8 Timers with a 7-day programmable schedule
- 2 or 3-position control outputs
- Output for 1-speed or 3-speed fan
- Two multifunctional inputs for keycard contact, external sensor, etc.
- Operating modes: Comfort, Energy Saving and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- With infrared receiver for remote control, remote control not included.
- Color of housing: signal white (RAL 9003)

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3076
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating

Stock No.	Product No.
BPZ:RDF400.01	**RDF400.01**

For fan coil units
Room thermostats with display RDF..Semi Flush Mount

RDF400.01/SL



Semi Flush-mount room temperature controller for 2-/4-pipe fan coils or DX type equipment, infrared remote control, 7-day time switch, backlit LCD, housing silver

Same functionality and technical data as RDF400.01 and :
- Color of housing: silver (RAL 9006)

Data sheet	N3076

Stock No.	Product No.
BPZ:RDF400.01/SL	**RDF400.01/SL**

RDF410.21



Semi Flush-mount room temperature controller for 2-pipe fan coils or DX type equipment, infrared remote control, 7-day time switch, backlit LCD

Same functionality and technical data as RDF310.2 and:
- Backlit display
- With infrared receiver for remote control, remote control not included.
- 8 Timers with a 7-day programmable schedule

Data sheet	N3067
Operating voltage	AC 230 V
Relay output, switching voltage	AC 230 V
Relay output, switching current	4 (2) A
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contact, non-floating

Stock No.	Product No.
BPZ:RDF410.21	**RDF410.21**

Accessories for RDF..Semi Flush Mount

Product Title	Data sheet	Stock No.	Product No.
Infrared Remote Control for room thermostats	N3060	S55770-T166	**IRA211**
Mounting plate 82 x 82 x 10 mm	N3009	BPZ:ARG70.3	**ARG70.3**
Conduit box	N3009	S55770-T137	**ARG71**

Electronic room temperature controllers for VAV and CAV systems — RCU..VAV

- Electronic room temperature controller for heating and cooling operation
- P control
- Setpoint shifting
- On/off, 3-position or modulating outputs
- Color of housing front: signal white RAL9003 (NCS S 0502-G)
- Color of baseplate: light grey RAL7035 (NCS 2801-Y43R)

Operating voltage	AC 24 V
Setpoint setting range	8...30 °C
Analog outputs	Heating or cooling
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA
Dimensions (W x H x D)	97 x 114 x 43 mm

Room temperature controller for VAV and CAV systems, AC 24 V, positioning signal DC 0...10 V — RCU50



- Heating and cooling sequence
- Automatic heating / cooling changeover (with sensor QAH11.1)
- DC 0...10 V output (max. ±1 mA)
- Operating mode changeover input for remote control
- Adjustable minimum limitation for cooling output
- Active input for setpoint shift
- Normal, energy saving and frost protection mode

Data sheet N3045

Stock No.	Product No.
BPZ:RCU50	**RCU50**

Room temperature controller for VAV and CAV systems, AC 24 V, positioning signal DC 0...10 V, operating mode selector — RCU50.1



Same functionality and technical data as RCU50
- With manual operating mode selector

Data sheet N3045

Stock No.	Product No.
BPZ:RCU50.1	**RCU50.1**

Room temperature controller for VAV and CAV systems, AC 24 V, positioning signal DC 0...10 V, manual changeover heating/cooling/off — RCU50.2



Same functionality and technical data as RCU50
- Manual heating / cooling changeover and OFF position
- Signal inversion of output signal
- No setpoint shift
- No operating mode changeover input for remote control
- No adjustable minimum limitation for cooling output
- No frost protection

Data sheet N3045

Stock No.	Product No.
BPZ:RCU50.2	**RCU50.2**

RDG400

Room thermostat, AC 24 V, VAV heating and cooling systems



- Modulating PI control
- Control depending on the room or the return air temperature
- Output DC 0...10 V for VAV actuator and auxiliary output ON/OFF, PWM or 3-position or 3-position for VAV actuator and auxiliary output DC 0...10 V
- Automatic or manual heating / cooling changeover
- Operating modes: Comfort, Energy Saving and Protection
- 3 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Minimum and maximum limitation of air flow signal
- Output signal inversion (DC 0...10 V) as an option
- Backlit display

Application selectable:
- Single-duct system
- Single-duct system with electrical heater
- Single-duct system and radiator / floor heating
- Single-duct system with heating / cooling coil

Data sheet	N3182
Operating voltage	AC 24 V
Control algorithm	P / PI
Setpoint setting range	5...40 °C
Analog inputs, number	2
Digital inputs, number	1
Analog outputs, number	1
Analog outputs	VAV actuator, electric heater
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA
Triac outputs, number	1
Triac outputs	VAV actuator, valve, el. heater 2-position, PWM, 3-position
Triac output, switching voltage	AC 24 V
Triac output, switching current	Max. 1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm

Stock No.	Product No.
S55770-T164	**RDG400**

Semi Flush-mount room temperature controllers with LCD for VAV application RDU340



- Modulating PI control
- Control depending on the room or the return air temperature
- Output for a DC 0...10 V actuator and AC 230V electrical heater (ON-OFF)
- Automatic or manual heating/cooling changeover
- Operating modes: Comfort, Energy Saving and Protection
- 2 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Adjustable minimum and maximum limitation for air flow signal DC 0...10V
- Output signal inversion as an option
- Mounting on recessed rectangular conduit box, 60.3 mm fixing centers

Application selectable:
- Single-duct system
- Single-duct system with electrical heater

Data sheet	N3078
Operating voltage	AC 24 V
Setpoint setting range	5...40 °C
Analog inputs, number	2
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	1
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 230 V
Relay output, switching current	Max. 5 (2) A
Type of fixing	Recessed rectangular conduit box BS4662 with fixing centres of 60.3 mm
Dimensions (W x H x D)	86 x 86 x 57 mm

Stock No.	Product No.
BPZ:RDU340	**RDU340**

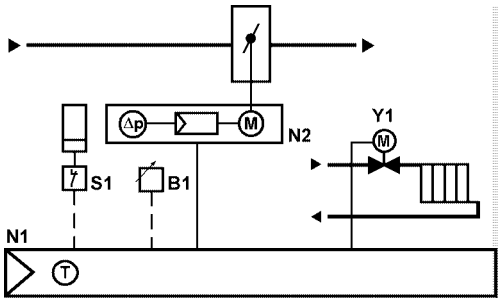
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Application examples RDG..

These are only a few examples of many applications that can be done with the room thermostats RDG...
More applications are described in "HIT" (the HVAC project engineering tool with a library of over 300 pre-configured HVAC-applications) and in the RDG.. data sheet

RDG400

TCCE01 DG4 HQ



VAV box, automatic heating/cooling changeover with radiator, mod. PI-control, DC 0...10 V for cooling

- Modulating PI control algorithm for heating and cooling systems
- Outputs for DC 0...10 V and ON/OFF, PWM, 3-postion
- Setting range of setpoint knob can be limited
- Manual operating mode button
- Parameter setting by installer
- Temperature control according to integrated sensor
- Adjustable minimum limitation of cooling output (air flow)
- Operating mode changeover for remote control with external switch/sensor
- Operating voltage AC 24 V
- Backlit display

Room temperature controller with 7-day time switch, batteries — RDX33.21



- Operating modes: Auto Timer, Comfort, Energy Saving, and Protection
- Potential-free output (ON / OFF) for release of a heat pump or control of actuating devices
- Potential-free output (ON / OFF) for selection of heating or cooling
- Manual heating / cooling changeover
- 8 programmable time switches
- Selectable commissioning and control parameters
- Selectable display of room temperature or setpoint
- Minimum and maximum setpoint limitation
- Operating voltage: Batteries DC 3 V

Data sheet	N3075
Operating voltage	Mignon (2 x AA)
Battery life	1 year
Setpoint setting range	5...40 °C
Switching differential	0.5...4 K
Positioning signal	2-position
Relay outputs, number	2
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	NO contacts, potential-free
Degree of protection	IP30
Dimensions (W x H x D)	102 x 128 x 30 mm

Stock No.	Product No.
BPZ:RDX33.21	**RDX33.21**

Room temperature controller with 7-day time switch, AC 230 V — RDX43.2



- Operating modes: Auto Timer, Comfort, Energy Saving, and Protection
- Potential-free output (ON / OFF) for release of a heat pump or control of actuating devices
- Potential-free output (ON / OFF) for selection of heating or cooling
- Output for control of auxiliary electric heating (RDX43.2)
- Manual heating / cooling changeover
- 8 programmable time switches
- Selectable commissioning and control parameters
- Selectable display of room temperature or setpoint
- Minimum and maximum setpoint limitation

Data sheet	N3075
Operating voltage	AC 230 V
Power consumption	8 VA
Setpoint setting range	5...40 °C
Switching differential	0.5...4 K
Positioning signal	2-position
Relay outputs, number	3
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Relay outputs	NO and changeover contacts, potential-free
Degree of protection	IP30
Dimensions (W x H x D)	102 x 128 x 30 mm

Stock No.	Product No.
BPZ:RDX43.2	**RDX43.2**

For fan coil units - Communicative KNX thermostat
Room thermostats with display: RDG

RDG100KN



Room thermostat with KNX communications, AC 230 V, for fan coil units and universal applications

- Operating modes: Comfort, Energy Saving and Protection
- 2-position, 3-position or PWM control outputs
- Automatic or manual fan speed for 1-speed or 3-speed fan
- 3 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Automatic or manual heating / cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 2-pipe system and radiator / floor heating
- 4-pipe system
- 4-pipe system with electrical heater
- 2-stage heating or cooling system

Data sheet	N3191
Operating voltage	AC 230 V
Switching differential	Heating: 0.5...6 K Cooling: 0.5...6 K
Setpoint setting range	5...40 °C
Analog inputs, number	2
Analog input, signal	NTC 3k Switch
Digital inputs, number	1
Relay outputs, number	3
Relay outputs	Fan: 1- or 3-speed
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (4) A
Triac outputs, number	3
Triac outputs	Valve, el. heater 2-position, PWM, 3-position
Triac output, switching voltage	AC 230 V
Triac output, switching current	Max. 1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)

Stock No.	Product No.
S55770-T163	**RDG100KN**

Semi Flush-mount room thermostats with KNX communications

RDF301..



Semi Flush Mount room thermostat with LCD for fan coil units and compressors in DX-type equipment
- For heating and/or cooling applications
- KNX communications
- 2 or 3-position control outputs
- Output for 1-speed or 3-speed fan
- 2 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Operating modes: Comfort, Energy Saving and Protection
- Automatic or manual heating/cooling changeover
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Backlit display
- Color of housing: signal white (RAL 9003)

Application selectable:
- 2-pipe system
- 2-pipe system with electrical heater
- 4-pipe system

Data sheet	N3171
Operating voltage	AC 230 V
Setpoint setting range	5...40 °C
Analog inputs, number	2
Relay outputs, number	5
Relay outputs	Fan: N.O. contacts, non-floating Valve: N.O. contacts, non-floating
Relay output, switching voltage	AC 230 V
Relay output, switching current	5 (2) A
Type of fixing	Recessed rectangular conduit box BS4662 with fixing centres of 60.3 mm
Degree of protection	IP30
Dimensions (W x H x D)	86 x 86 x 57 mm
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)

Range overview RDF301..

Product Title	Stock No.	Product No.
Semi Flush-mount room thermostat with KNX communications, 2-/4-pipe fan coils or DX type equipment	S55770-T104	**RDF301**
Semi Flush-mount room thermostat with KNX communications, 2-/4-pipe fan coils or DX type equipment, four buttons for switching lights and blinds	S55770-T105	**RDF301.50**

For VAV systems - Communicative KNX thermostat
Room thermostats with display: RDG

RDG400KN



Room thermostat with KNX communications, AC 24 V, VAV heating and cooling systems

- Modulating PI control
- Control depending on the room or the return air temperature
- Output DC 0...10 V for VAV actuator and auxiliary output ON/OFF, PWM or 3-position or 3-position for VAV actuator and auxiliary output DC 0...10 V
- Automatic or manual heating / cooling changeover
- Operating modes: Comfort, Energy Saving and Protection
- 2 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- 1 input DC 0...10 V for damper position feedback
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Minimum and maximum limitation of air flow signal
- Output signal inversion (DC 0...10 V) as an option
- Backlit display

Application selectable:
- Single-duct system
- Single-duct system with electrical heater
- Single-duct system and radiator / floor heating
- Single-duct system with heating / cooling coil

Data sheet	N3192
Operating voltage	AC 24 V
Setpoint setting range	5...40 °C
Analog inputs, number	2
Analog input, signal	NTC 3k DC 0...10 V
Digital inputs, number	1
Analog outputs, number	1
Analog outputs	VAV actuator, electric heater
Analog output, signal	DC 0...10 V
Analog output, current	Max. ±1 mA
Triac outputs, number	1
Triac outputs	VAV actuator, valve, el. heater 2-position, PWM, 3-position
Triac output, switching voltage	AC 24 V
Triac output, switching current	Max. 1 A
Type of fixing	Wall mounting with screws
Degree of protection	IP30
Dimensions (W x H x D)	93 x 128 x 30.8 mm
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)

Stock No.	Product No.
S55770-T165	**RDG400KN**

Semi Flush-mount room thermostat with KNX communications, for VAV application

RDU341



Semi Flush-mount room thermostat for VAV application
- Modulating PI control
- Control depending on the room or the return air temperature
- Output for a DC 0...10 V actuator and AC 230V electrical heater (ON-OFF)
- Automatic or manual heating/cooling changeover
- Operating modes: Comfort, Energy Saving and Protection
- 2 multifunctional inputs for keycard contact, external room / return air temperature, heat / cool changeover, operation mode changeover, window contact on/off, dewpoint monitor, electrical heater enabled, fault contact
- Adjustable commissioning and control parameters
- Minimum and maximum setpoint limitation
- Adjustable minimum and maximum limitation for air flow signal DC 0...10V
- Output signal inversion as an option
- KNX communications

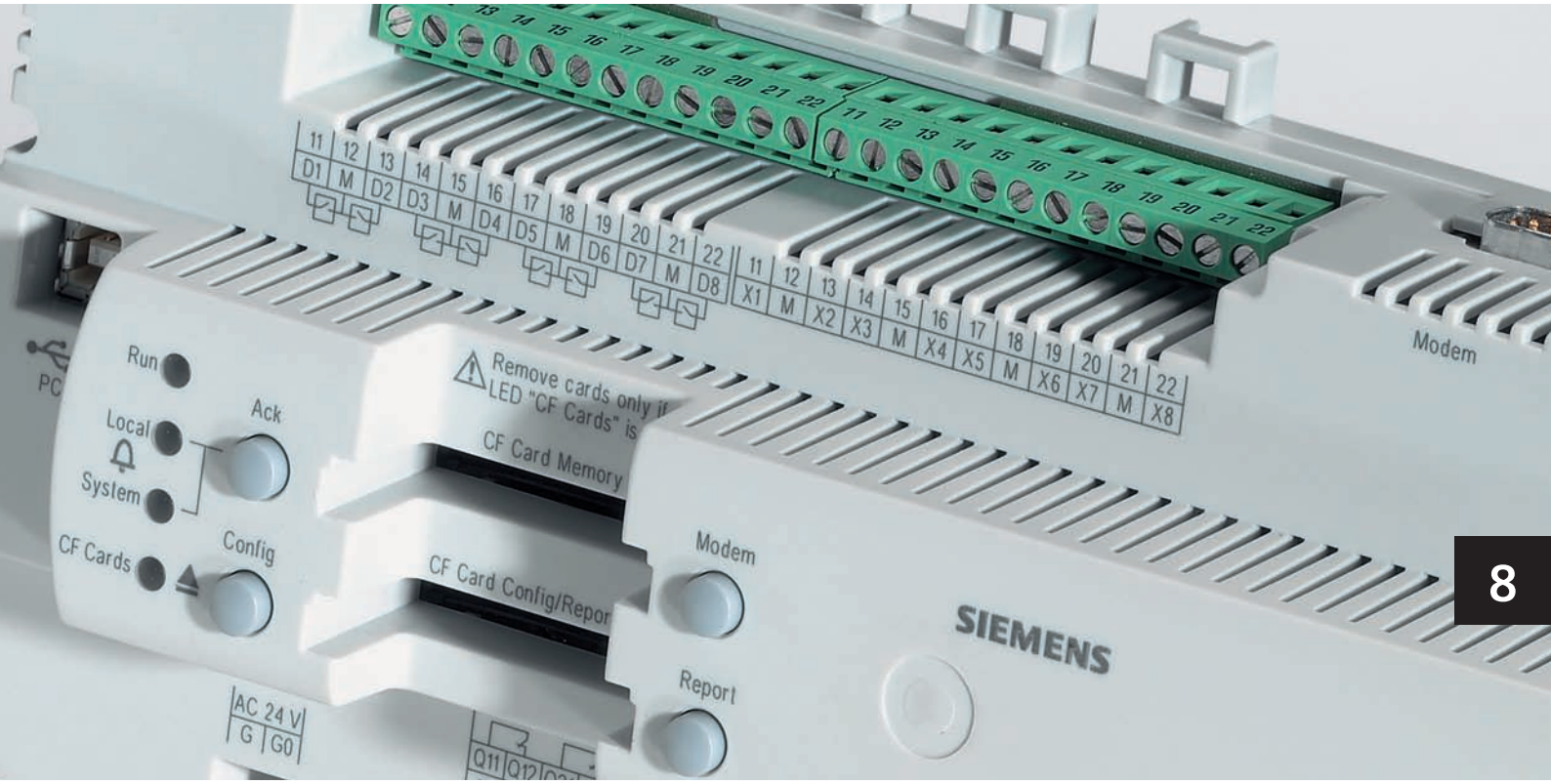
Application selectable:
- Single-duct system
- Single-duct system with electrical heater

Data sheet	N3172
Operating voltage	AC 24 V
Setpoint setting range	5...40 °C
Analog inputs, number	2
Analog outputs, number	1
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Relay outputs, number	1
Relay outputs	N.O. contact, potential-free
Relay output, switching voltage	AC 230 V
Relay output, switching current	Max. 5 (2) A
Type of fixing	Recessed rectangular conduit box BS4662 with fixing centres of 60.3 mm
Dimensions (W x H x D)	86 x 86 x 57 mm
Communication	Bus: KNX (S-mode and LTE mode with Synco 700)

Stock No.	Product No.
S55770-T106	**RDU341**

Notes

ACS Software and central communication units



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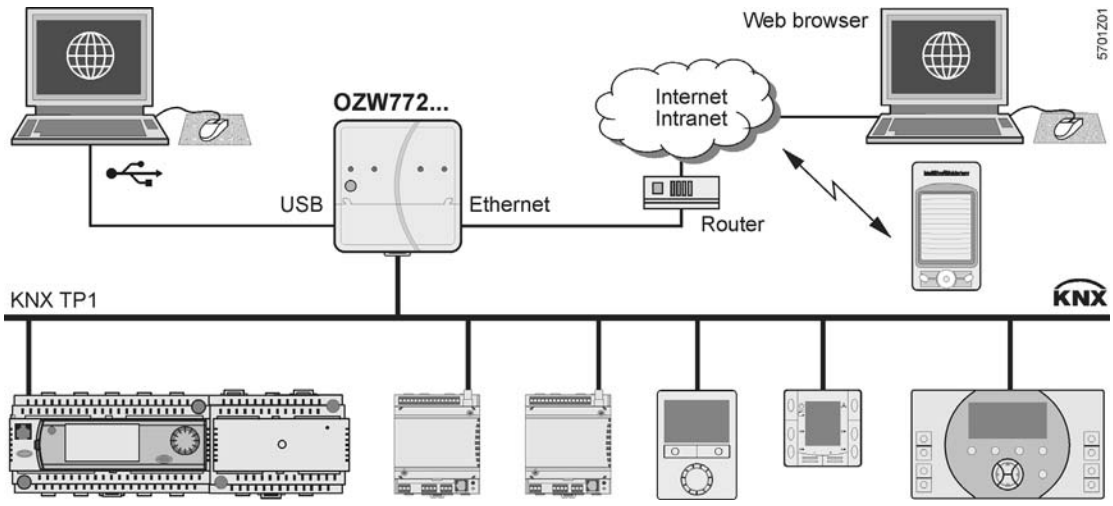
Overview and selection tools	Product range overview	8-2
	Overview of product details	8-3
Commission-, operation- and service software	For HVAC plants: ACS.. / OCI..	8-9
Central communication units	For remote control via KNX: OZW7.. / OZZ7..	8-13
	For remote control via LPB: OCI6.. / AEW.. / QAB..	8-17
	For remote control via M-Bus: OZW1.. / WZC.. / AEW3.. / WHZ3.. / WFZ.M..	8-20
	For control and energy cost allocation system SYNERGYR@ : OZW3.. / WRI.. / ALW.. / AEW.. / AEK.. / QAW..	8-25

Overview standard systems

Communication	KNX (Konnex)	LPB (Local process bus)	M-Bus (Metering bus)	SYNERGYR® bus
Standard systems for:	**Heating, ventilation or air conditioning**	**Heating plants**	**District heating and meter readout**	**Control and energy cost allocation**
Communication central unit	OZW775 OZW772.. OZW771..	OCI600 OCI611...	OZW10 OZW111	OZW30
Software	ACS7..	ACS7..	ACS7..	ACS30
Service Tool	OCI700.1	OCI700.1		AZW30 / ACS30T
Heating controllers	Synco™ ■ RMH760 Heating controllers ■ RMK770 Boiler sequence controllers	■ RVL400 Heating controllers ■ RVP300 Heating controllers ■ RVP500 Energy manager ■ RVD200 District heating controllers	■ RVD200 District heating controllers	■ RVL400 Heating controllers ■ RVP300 Heating controllers ■ RVP500 Energy manager ■ RVD200 District heating controllers
Ventilation and air conditioning controllers	Synco™ series ■ RMU700 Universal controllers			
Switching and Monitoring Device	Synco™ ■ RMS705			
Room controllers	Synco™ ■ RMB795 Control center ■ RXB / RXL Room controllers			WRI80 Control and heat meter interface
Home Automation System	Synco™ living ■ QAX910			
Energy meters			SONOHEAT® Heat meters Siemeca Heat meters Siemeca AMR-Radio system	WRI80 Control and heat meter interface

KNX system

Standard systems for heating, ventilation or air conditioning Synco™ (KNX)
Low engineering system to easily build complex applications with flexible and modular combinations of standard controllers Synco™ 700. Standard Systems for HVAC plants are capable to be remote operated and can generate alarms to service centers. Full control without extensive engineering.

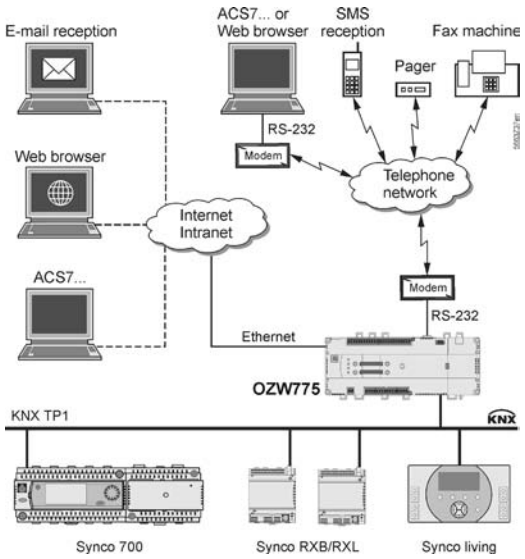


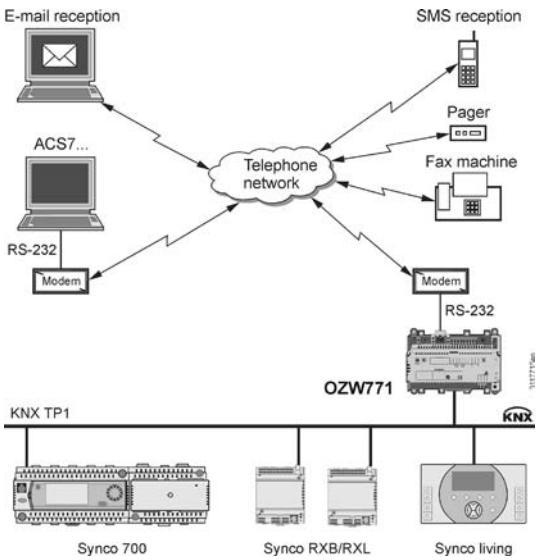
Communication central units	OZW772			
Device versions	OZW772.01	OZW772.04	OZW772.16	OZW772.64
No. of comm. devices [1]	1	4	16	64
Plant operation				
ACS software	Yes			
Web Browser	Yes			
Interface	Ethernet, USB			
Alarming				
Max. message receivers	4			
ACS alarm via PC	No			
Fax	No			
Pager	No			
SMS	No			
e-Mail	Yes (Ethernet)			
Offline trend function	Yes			
Digital inputs (potential free)	None			
Universal inputs (UI)	None			
As alarm input	No			
As pulse counter	No			
As counter (operating hours)	No			
Digital output	None			
Local device operation	Button / Switch			
Bus power supply	No			
General device data				
Operating voltage	AC 230 V ±10 %			
Frequency	50/60 Hz			
Power consumption	3 VA			
Degree of protection	IP30			

[1] Synco™ controller series 700, QAW740, RXB / RXL, RDG, RDF, Synco™ living QAX910

KNX system

Standard systems for heating, ventilation or air conditioning Synco™ (KNX)
Low engineering system to easily build complex applications with flexible and modular combinations of standard controllers Synco™ 700. Standard Systems for HVAC plants are capable to be remote operated and can generate alarms to service centers. Full control without extensive engineering.



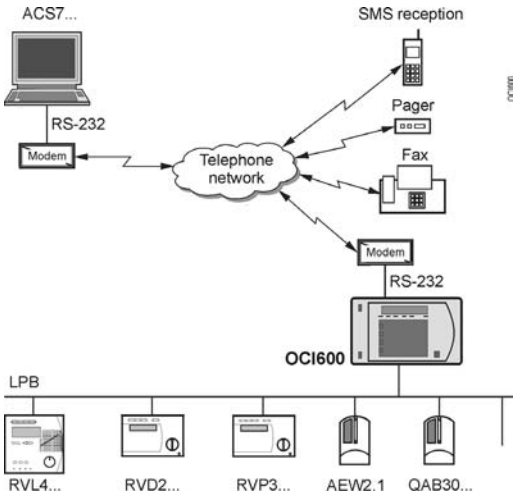


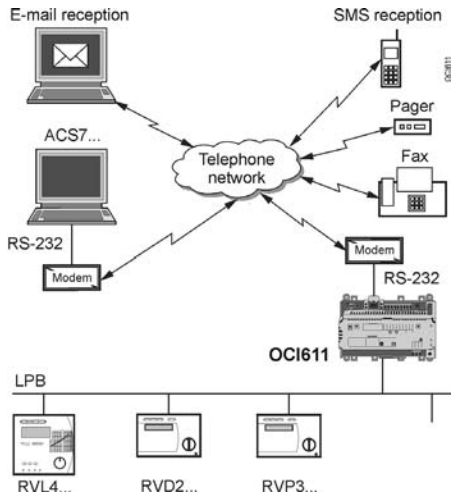
Communication central units	OZW775	OZW771		
Device versions		OZW771.04	OZW771.10	OZW771.64
No. of comm. devices [1]	250	4	10	64
Plant operation				
ACS software	Yes		Yes	
Web Browser (as of V2.0)	Yes		No	
Interface	RS232, Ethernet, USB		RS232	
Alarming				
Max. message receivers	4		2	
ACS alarm via PC	Yes		Yes	
Fax	Yes (Modem)		with SMS via GSM	
Pager	Yes (Modem)		Yes	
SMS	Yes (Modem)		Yes	
e-Mail	Yes (Ethernet)		with SMS via GSM	
Offline trend function	Yes		No	
Digital inputs (potential free)	8		2	
Universal inputs (UI)	8			
As alarm input	Yes		Yes	
As pulse counter	8 UI		No	
As counter (operating hours)	Yes		No	
Digital output	6		None	
Local device operation	Button / Switch		Button / Switch	
Bus power supply	Yes		No	
General device data				
Operating voltage	AC 24 V ±20 %		AC 230 V ±10 %	
Frequency	50/60 Hz		50/60 Hz	
Power consumption	60 VA		5 VA	
Degree of protection	IP20		IP20 [2]	

[1] Synco™ controller series 700, QAW740, RXB / RXL, RDG, RDF, Synco™ living QAX910
[2] IP30 with terminal covers

LPB system

Standard system for heating plants (LPB)
Low engineering system to easily build complex applications with flexible combinations of standard controllers Series RVL400, RVP300, RVP500 and RVD200. Standard Systems for heating plants are capable to be remote operated and can generate alarms to service centres: Full control without extensive engineering.





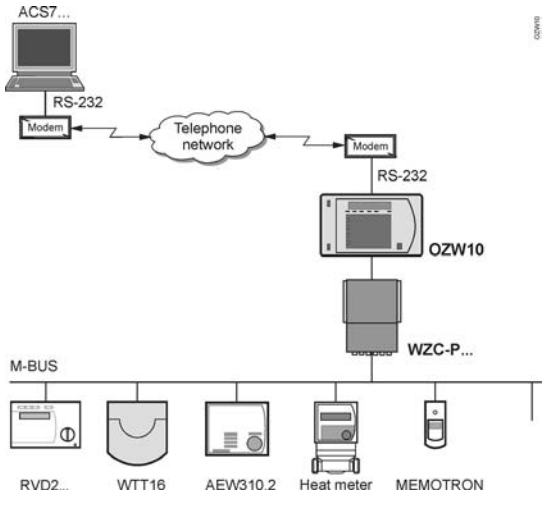
Communication central units	OCI600	OCI611		
Device versions	OCI600	OCI611.01	OCI611.05	OCI611.16
No. of communication contollers	16	1	5	16
No. of external meter modules [1]	6			
No. of ext. temperature sensor adapters [2]	2			
Plant operation				
ACS software	Yes		Yes	
Interface	RS232		RS232	
Alarming				
Max. message receivers	4		2	
ACS alarm via PC	Yes		Yes	
Fax	Yes		mit SMS via GSM	
Pager	Yes		mit SMS via GSM	
SMS	Yes		Yes	
Printer	Yes		No	
e-Mail	No		with SMS via GSM	
Offline trend funktion	Yes [3]		No	
Digital inputs (potential free)	4		2	
As alarm input	Yes		Yes	
As counter (operating hours)	Yes		No	
Digital outputs	2 (max. AC 24 V)		None	
Local device operation	LCD / Operating cards / Button		Button / Switch	
Bus power supply	Yes		No	
General device data				
Operation voltage	AC 24 V		AC 230 V ±10 %	
Frequency	50/60 Hz		50/60 Hz	
Power consumption	8 VA		5 VA	
Degree of protection	IP40		IP20 [4]	

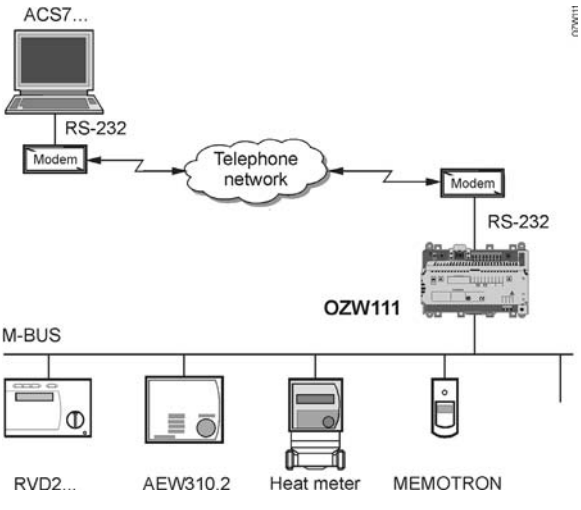
[1] AEW2.1 with 2 pulse inputs
[2] QAB30.600 with 2 temperature inputs
[3] Together with the memory card
[4] IP30 with terminal covers

8

M-Bus system

Standard system for district heating and meter (M-Bus)
The M-Bus central unit is used for consumption cost billing and remote monitoring of community and district heating systems as well as multi-family houses.





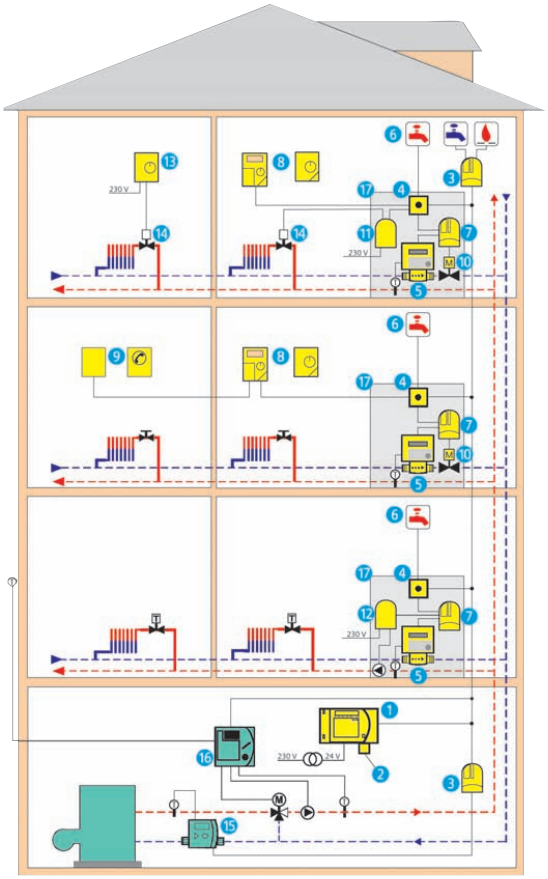
Communication central units	OZW10	OZW111
No. of communication devices	Up to 700	5
Plant operation		
ACS software	Yes	Yes
Interface	RS232	RS232
Alarming		
No. of management stations	2	2
ACS alarm via PC	Yes	Yes
Consumption data		
Data storage	Yes	No
Read out via RS-232	Yes	Yes
Read out via memory card	Yes	No
Digital alarm input (potential free)	4	2
Alarm relay	1	-
Local device operation	LCD / Operating cards / Button	Button / Switch
Bus power supply	No [1)]	Yes
M-Bus support		
Adressing	Primary and secondary	Primary and secondary
Baud rate	300, 2400, 9600	300, 2400
General device data		
Operating voltage	AC 24 V	AC 230 V ±10 %
Frequency	50/60 Hz	50/60 Hz
Power consumption	8 VA	5 VA
Degree of protection	IP40	IP20 [2)]

1) Bus power supply / Singal converter WZC-P60 or WZC-P250 necessary. Using the bus power supply WZC-P250 a network extension with repeater WZC-R250 is possible.
2) IP30 with terminal covers

SYNERGYR® system

Standard system for control and energy cost SYNERGYR®
Heat metering and billing system with integrated room temperature control, especially for new apartment blocks that use horizontal piping. Central acquisition of water and heat at the heating inlet to the apartment.

Following versions are available:
- Comfort: Heat metering system with individual room control.
- Eco: Heat metering system with integrated reference room control.
- Standard: Proper heat metering system without room temperature control.



1 Central unit OZW30
2 Memory card ALC30...
3 Pulse adapter AEW2.1
4 Conduit box ALW84
5 Heat meter WFQ21... / WFM21...
6 Consumption meter
7 Control and heat meter interface WRI80
8 Room unit QAW10 or QAW20
9 Remote sensor QAW44 or Teleswitch
10 Valve with actuator
VVP47 with SSP81 or VVP45 with SS.81
11 Control module AEK84 for radiator valve
12 Control module AEK84 for apartment pum
13 Room thermostat RAA... / RAA0...
14 Electrothermal actuator STA71
15 Group heat meter with pulse output
16 Heating controller
17 Cabinet / cable riser

Communication central units	OZW30
No. of communication devices	Up to 96 (user units) and 6 meters (general)
Digital inputs	2 as counter or alarm inputs 2 as fixed alarm inputs
Digital alarm relais	1
Local device operation	LCD, Operating cards
Bus power supply	Yes
Alarming	
No. of management stations	2
ACS alarm via PC	Yes
Consumption data	
Data storage	Yes
Read out via RS-232	Yes
Read out via memory card	Yes
Data exchange	With LPB controllers
General devices data	
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	10 VA
Degree of protection	IP40

Software

ACS7.. standard packages
ACS7.. are available in a number of standard versions and can be ordered directly by giving the type reference. They are optimized for user groups and different sizes of plant:

	Service	Alarm	Operation											Batch-job	Demo	Dongle
	Commissioning, diagnostics	Alarm reporting Display and archiving	Popcards standard, user-defined	Plant diagrams user-defined	Plant diagrams standard	Trend online	Trend offline, (Trend facility in central communication unit)	Parameter set reading / writing, comparing	Navigation device view	Navigation plant-view (user-defined)	File transfer Reading consumption data	Commissioning report	Plant size	Scheduled tasks	Scope of demo	Dongle-protected
ACS700	■	■	■	■				■	■				medium		■	
ACS712	■	■	■	■			■	■	■				medium		■	■
ACS713	■	■	■	■	■		■	■	■	■	■	■	medium		■	■
ACS715	■	■	■	■	■	■	■	■	■	■	■	■	medium	■	■	■
ACS741	■	■	■	■				■	■		■		large		■	■
ACS785	■	■	■	■	■	■	■	■	■	■	■	■	very large	■	■	■

Plant operating software

ACS7..



PC software for remote operation, supervision and commissioning of HVAC- and district heating plants and for remote readout of consumption data. Contains Operating, Service, Alarm and Batchjob software for standard systems with central units of:
- KNX system (Synco™ 700): OZW771, OZW772, OZW775
- LPB system (SIGMAGYR®): OCI600, OCI611
- M-bus system: OZW10, OZW111
- Service tool OCI700.1 (KNX and LPB systems)

Remote management with OZW771, OZW772 and OZW775 central communication units:
- Remote operation and monitoring of HVAC plant whose devices (controllers, room units and RXB individual room controllers) are connected via KNX

Remote management with OCI600 and OCI611 central communication units :
- Remote operation and monitoring of HVAC plants whose devices (controllers, pulse counters, temperature sensor adapters, digital input modules and relay modules) are connected via LPB (Local Process Bus)

Remote management with M-bus central unit OZW10 or OZW111:
- Remote operation and supervision of M-bus-compatible devices (controllers, meters) in substations of community and district heating systems
- Acquisition of consumption data of M-bus-compatible meters for consumption cost billing

Service software via OCI700 communication interface:
- Diagnostic and commissioning of Synco™ 200 and 700, Synco™ living Home Automation System and SIGMAGYR® controllers

Data sheet N5640

8

Range overview of ACS7..

Operating, service and alarm software

ACS700

Consisting of:
CD-ROM, contains:
- Service software
- Alarm software
- Operating software including:
- Popcard (standard and user-defined)
- Parameter settings
- Plant navigation (device view)
- Plant diagrams (user-defined)
- Connections (directly and via modem)
- Device credits: 200

Data sheet N5641

	Stock No.	Product No.
	BPZ:ACS700	**ACS700**

Commission-, operation- and service software
For HVAC plants: ACS.. / OCI..

ACS712

Operating, service and alarm software

Consisting of:
CD-ROM, contains:
- Service software
- Alarm software
- Operating software including:
  - Popcard (standard and user-defined)
  - Trend function (offline)
  - Parameter settings
  - Plant navigation (device view)
  - Plant diagrams (user-defined)
  - Connections (directly and via modem)
  - Device credits: 200

Dongle
Diskette with license

Data sheet N5643

	Stock No.	Product No.
	BPZ:ACS712	**ACS712**

ACS713

Operating, service and alarm software

Consisting of:
CD-ROM, contains:
- Service software
- Alarm software
- Operating software including:
  - Popcard (standard and user-defined)
  - Trend function (offline)
  - File transfer function
  - Parameter settings
  - Commissioning protocol
  - Plant navigation (device and plant view)
  - Plant diagrams (standard and user-defined)
  - Connections (directly and via modem)
  - Device credits: 200

Dongle
Diskette with license

Data sheet N5644

	Stock No.	Product No.
	BPZ:ACS713	**ACS713**

Operating, service, alarm and batchjob software **ACS715**

Consisting of:
CD-ROM, contains:
- Service software
- Alarm software
- Operating software including:
- Popcard (standard and user-defined)
- Trend function (online and offline)
- File transfer function
- Parameter settings
- Commissioning protocol
- Plant navigation (device and plant view)
- Plant diagrams (standard and user-defined)
- Connections (directly and via modem)
- Device credits: 200
- Batchjob software

Dongle
Diskette with license

Data sheet N5645

	Stock No.	Product No.
	BPZ:ACS715	**ACS715**

Operating, service and alarm software **ACS741**

Consisting of:
CD-ROM contains:
- Service software
- Alarm software
- Operating software including:
- Popcard (standard and user-defined)
- File transfer function
- Parameter settings
- Plant navigation (device view)
- Plant diagrams (user-defined)
- Connections (directly and via modem)
- Device credits: 1,300

Dongle
Diskette with license

Data sheet N5647

	Stock No.	Product No.
	BPZ:ACS741	**ACS741**

Commission-, operation- and service software
For HVAC plants: ACS.. / OCI..

ACS785

Operating, service, alarm and batchjob software

Consisting of:
CD-ROM contains:
- Service software
- Alarm software
- Operating software including:
  - Popcard (standard and user-defined)
  - Trend function (online and offline)
  - File transfer function
  - Parameter settings
  - Commissioning protocol
  - Plant navigation (device and plant view)
  - Plant diagrams (standard and user-defined)
  - Connections (directly and via modem)
  - Device credits: 3,900
- Batchjob software

Dongle
Diskette with license

Data sheet N5648

	Stock No.	Product No.
	BPZ:ACS785	**ACS785**

OCI700.1



Service tool for KNX/LPB

The service tool consists of:
- ACS700 plant operating software
- OCI700 service interface
- USB cable
- Service cable for Synco™ controllers
- Service cable for SIGMAGYR® and ALBATROS controllers

Commissioning and diagnostics of the following types of units:

KNX devices:
- Central communication units OZW771, OZW772 and OZW775
- Heating controllers RMH of the 700-series
- Boiler sequence controllers RMK of the 700-series
- Universal controllers RMU of the 700-series
- Universal controllers RLU of the 200-series
- Switching and monitoring devices RMS of the 700-series
- Room unit QAW740
- Central control units RMB of the 700-series
- Individual room controllers RXB... / RXL...
- Signal converter SEZ220
- Synco™ living central apartment unit QAX910

LPB devices:
- Central communication units OCI600 and OCI611
- Heating controllers RVL of the 400-series
- Heating controllers RVP of the 300-series
- Energy managers RVP of the 500-series
- District heating controllers RVD of the 200-series
- Heating controllers of the RVA- and RVS-series
- Ventilation controllers of the RWI65-series

Data sheet N5655

	Stock No.	Product No.
	BPZ:OCI700.1	**OCI700.1**

KNX standard systems main components

The KNX standard system consists of the following main components:

Product Title	s. page	Data sheet	Stock No.	Product No.
Plant operating software	8-9	N5640	BPZ:ACS7..	**ACS7..**
Central communication unit OZW771..	8-13	N3117	BPZ:OZW771..	**OZW771..**
Web server	8-13	N5701	BPZ:OZW772..	**OZW772..**
Central communication unit OZW775	8-15	N5663	BPZ:OZW775	**OZW775**
Heating controller	1-32	N3133	BPZ:RMH760B..	**RMH760B..**
Boiler sequence controller	1-35	N3132	BPZ:RMK770..	**RMK770..**
Universal controller		N3150	BPZ:RMUB..	**RMUB..**
Switching and monitoring device		N3123	BPZ:RMS705..	**RMS705..**
Room unit with KNX bus	10-14	N1633	BPZ:QAW740	**QAW740**
Central control unit	4-25	N3121	BPZ:RMB795..	**RMB795..**
Room controller for 3-speed fan	4-21	N3873	BPZ:RXB21.1/FC-10	**RXB21.1/FC-10**
Room controller for 3-speed fan	4-21	N3873	BPZ:RXB21.1/FC-11	**RXB21.1/FC-11**
Room controller with 3-speed fan and electric heating coil	4-21	N3873	BPZ:RXB22.1/FC-12	**RXB22.1/FC-12**
Room controller for chilled ceilings and radiators	4-21	N3874	BPZ:RXB24.1/CC-02	**RXB24.1/CC-02**
Room controller for 3-speed fan	4-16	N3877	BPZ:RXL21.1/FC-10	**RXL21.1/FC-10**
Room controller for 3-speed fan	4-16	N3877	BPZ:RXL21.1/FC-11	**RXL21.1/FC-11**
Room controller with 3-speed fan and electric heating coil	4-16	N3877	BPZ:RXL22.1/FC-12	**RXL22.1/FC-12**
Room controller for chilled ceilings and radiators	4-16	N3878	BPZ:RXL24.1/CC-02	**RXL24.1/CC-02**
Central apartment unit	5-5	N2707	BPZ:QAX910..	**QAX910..**

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Central communication unit OZW771..

OZW771..



The OZW771... central communication unit is a component of the Synco™ system. It is used for the remote operation and supervision of plants with Synco™ 700 Synco™ RXB... and Synco™ living units in KNX network systems.
Alarm messages can be delivered to
- ACS operating station (ACS alarm)
- SMS receivers
- Fax machines*
- Pagers
- E-mail receivers*

* Only possible with GSM modem, depending also on the telephone provider

Data sheet	N3117
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	5 VA
Digital inputs, number	2
Dimensions (W x H x D)	161 x 110 x 62 mm

Central communication units
For remote control via KNX: OZW7.. / OZZ7..

Range overview OZW771..

Product Title	Data sheet	Stock No.	Product No.
Central communication unit, max. 4 controllers	N3117	BPZ:OZW771.04	**OZW771.04**
Central communication unit, max. 10 controllers	N3117	BPZ:OZW771.10	**OZW771.10**
Central communication unit, max. 64 controllers	N3117	BPZ:OZW771.64	**OZW771.64**

Accessory for OZW771..

Product Title	Stock No.	Product No.
Terminal covers	BPZ:7411100280	**7411100280**

Refer to the central unit data sheet for details

OZW772..



Web server

The OZW772 web servers allow for remote operation and monitoring of plants via the web and send fault status signals, energy consumption data and system reports to e-mail recipients

- Operate web browser via PC/laptop and Smartphone
- Operate ACS (PC/laptop with ACS plant operating software)
- Local connection via USB
- Remote connection via Ethernet (DSL router)
- Operate and monitor via customized plant diagrams
- User accounts for web operation (user groups, operating language)
- Simultaneously support multiple users
- Display fault messages in the web browser
- Send fault messages to a maximum of 4 e-mail recipients
- Periodic transmission of energy consumption data to 2 e-mail recipients
- Periodically send system reports to e-mail recipients
- Save the last 500 faults and messages (history)
- Direct commissioning with web browser or ACS service tool
- Software update via USB connection

Data sheet	N5701
Operating voltage	Power pack: AC 230 V Web server: DC 24 V
Communication	KNX TP1 (wire-Bus) Ethernet, RJ45 plug socket (shielded) USB V2.0 (universal serial bus)
Mounting	On DIN rails With Screws
Dimensions (W x H x D)	87.5 x 90 x 40 mm

Range overview OZW772..

Product Title	Stock No.	Product No.
Web server for 1 KNX device	BPZ:OZW772.01	**OZW772.01**
Web server for 4 KNX devices	BPZ:OZW772.04	**OZW772.04**
Web server for 16 KNX devices	BPZ:OZW772.16	**OZW772.16**
Web server for 64 KNX devices	BPZ:OZW772.64	**OZW772.64**

Central communication unit OZW775

OZW775



with integrated web server function

The central communication unit OZW775 is a component of the Synco™ system. It is for use in plants in connection with Synco 700 devices, RXB / RXL room controllers and the Synco living central apartment unit. Key features of the OZW775 are the following:

- Remote control and monitoring of up to 250 Synco devices in a KNX network with ACS and / or web browser (CD with ACS700 software included in delivery)
- Link to an operator station (PC / laptop with ACS) via direct connection (USB) or telephony (RS-232 modem)
- Link to a web browser via Ethernet (Ethernet card OZZ7E5 required) and / or direct connection or telephony
- Operation and monitoring via customized plant diagrams
- Definable user profile for web operation
- Definable user text for inputs, outputs and function blocks
- Delivery of fault status messages to operator stations, SMS recipients, pagers, fax machines, or e-mail recipients (message receivers)
- Periodic forwarding of system reports to message receivers
- Storage of the least 500 faults and messages (history)
- 4 message receivers with configurable types of receivers and transmission times
- 8 digital inputs for fault and operational status contacts
- 8 universal inputs, configurable for analog, digital and pulse signals
- 5 hours run meters, automatic delivery of service alarms
- 8 meters for pulse signals received from heat, water, gas or electricity meters
- 4 seven-day time switches for switching consumers via relays
- 6 relays for use with 7-day time switches or as fault relays
- 5 offline trends with 50,000 recorded values

Data sheet	N5663
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	20 VA
Digital inputs, number	8
Digital input, contact query	8 mA DC 16.5 V
Universal inputs, number	8
Universal input, signal	DC 0...10 V Potential-free digital pulse contact Potential-free digital status contact LG-Ni1000 Pt1000 T1 (PTC)
Relay outputs, number	6
Relay outputs	2 NO contacts 4 NC contacts
Relay output, switching voltage	AC 19...250 V
Relay output, switching current	NO 4(3) A NC 2(2) A
Degree of protection	IP20
Communication	KNX bus: TP1 Modem: RS-232 PC interface: USB V1.1
Dimensions (W x H x D)	298 x 128 x 77 mm

Stock No.	Product No.
BPZ:OZW775	**OZW775**

Central communication units
For remote control via KNX: OZW7.. / OZZ7..

OZZ7E5

Ethernet card for OZW775



The OZZ7E5 card has an RJ45 jack and enables communication via Ethernet TCP/IP.

Data sheet N5663

	Stock No.	Product No.
	BPZ:OZZ7E5	**OZZ7E5**

OZZ7CF

CF card for OZW775



The latest firmware and web server data are saved on the CF card (compact flash card).

Data sheet N5663

	Stock No.	Product No.
	BPZ:OZZ7CF	**OZZ7CF**

LPB standard system main components

The LPB standard system consists of the following main components:

Product Title	s. page	Data sheet	Stock No.	Product No.
Plant operating software	8-9	N5640	BPZ:ACS7..	**ACS7..**
Central communication unit	8-17	N2529	BPZ:OCI600	**OCI600**
Central communication unit	8-18	N2533	BPZ:OCI611..	**OCI611..**
Heating controller for a second heating zone	1-26	N2543	BPZ:RVL479	**RVL479**
Heating controller	1-23	N2540	BPZ:RVL480	**RVL480**
Heating controller with DHW control	1-24	N2541	BPZ:RVL481	**RVL481**
Heating controller with DHW control	1-25	N2542	BPZ:RVL482	**RVL482**
Heating controller	1-17	N2474	BPZ:RVP300..	**RVP300..**
Heating controller with DHW control	1-18	N2475	BPZ:RVP310..	**RVP310..**
Heating controller with DHW and boiler control	1-19	N2476	BPZ:RVP320..	**RVP320..**
Heating controller for two heating circuits, DHW and boiler controller	1-20	N2477	BPZ:RVP330..	**RVP330..**
District heating controller	2-6	N2513	BPZ:RVD25..	**RVD25..**
District heating controller	2-7	N2515	BPZ:RVD26..	**RVD26..**
Energy manager for max. 2 heat producers	1-29	N2488	BPZ:RVP540	**RVP540**
Energy manager for max. 3 heat producers	1-29	N2488	BPZ:RVP550	**RVP550**
Pulse adapter	8-19	N2831	BPZ:AEW2.1	**AEW2.1**
Bus-compatible temperature sensor/adapter	8-19	N2528	BPZ:QAB30.600	**QAB30.600**

Central communication unit

OCI600



Interface for communication between the devices connected to the bus and the PC using the ACS.. operating software.
Alarm messages can be delivered to the PC using the ACS.. alarm software, to a fax machine, printer, mobile phone and pager.

- 4 digital inputs
- 2 digital outputs

Networked with

- Up to 16 controllers, e.g.
- RVL heating controllers of the 400-series
- RVP heating controllers of the 300-series
- RVP energy managers of the 500-series
- RVD district heating controllers of the 200-series
- Maximum of 6 pulse adapters AEW2.1
- Maximum of 2 QAB30.600 temperature sensor/adapters
- Maximum of 4 digital input modules (no longer available)
- Maximum of 4 relay modules (no longer available)

Data sheet	N2529
Operating voltage	AC 24 V
Power consumption	8 VA
Relay output, switching voltage	AC 24 V

Stock No.	Product No.
BPZ:OCI600	**OCI600**

NEW PRODUCT

Central communication units
For remote control via LPB: OCI6.. / AEW.. / QAB..

Operating set for OCI600

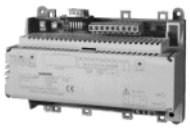
Operating set for LPB central unit OCI600 consisting of one set of operating cards and operating manual.

Product Title	Data sheet	Stock No.	Product No.
Operating set in German	N2529	BPZ:ARG600.DE	**ARG600.DE**
Operating set in English	N2529	BPZ:ARG600.GB	**ARG600.EN**

Memory cards for OCI600

Product Title	Data sheet	Stock No.	Product No.
Memory card 128 KB for OCI600 / OZW10 / OZW30	N2529	BPZ:ALC30.128	**ALC30.128**
Memory card 512 KB for OCI600 / OZW10 / OZW30	N2529	BPZ:ALC30.512	**ALC30.512**

OCI611..



Central communication unit

Interface for the communication between the devices connected to the bus and the operator PC with ACS... software.

- Alarm messages can be delivered to
- ACS operating station (ACS alarm)
- SMS receivers
- Fax machines*
- Pagers*
- E-mail receivers*

  * Only possible with GSM modem, depending also on the telephone provider
- 2 digital inputs
- Connected to:
- RVL heating controllers of the 400-series
- RVP heating controllers of the 300-series
- RVP energy managers of the 500-series
- RVD district heating controllers of the 200-series

Data sheet	N2533
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	5 VA

Range overview OCI611..

Product Title	Data sheet	Stock No.	Product No.
Central communication unit, max. 1 controller	N2533	BPZ:OCI611.01	**OCI611.01**
Central communication unit, max. 5 controllers	N2533	BPZ:OCI611.05	**OCI611.05**
Central communication unit, max. 16 controllers	N2533	BPZ:OCI611.16	**OCI611.16**

Accessory for OCI611..

Product Title	Stock No.	Product No.
Terminal covers	BPZ:7411100280	**7411100280**

Refer to the central unit data sheet for details

Pulse adapter — AEW2.1

Acquires and stores the pulses from 2 additional meters with pulse output (Reed contact with or without Namur circuitry), e.g. for hot water, cold water or gas meters, monitors the connections to them, delivers the cumulated consumption values, error messages, etc., to the building bus. Designed for mounting in control cabinets, on the wall, or on DIN rails.



Data sheet	N2831
Operating voltage	AC 24 V
Dimensions (W x H x D)	136 x 96 x 42 mm
Power consumption	1.2 VA

Stock No.	Product No.
BPZ:AEW2.1	**AEW2.1**

Bus-compatible temperature sensor/adapter — QAB30.600

The temperature sensor/adapter facilitates supervision of the immersion temperature sensor connected to the unit and of an optional second sensor. On the OCI600 central communication unit, the upper and lower limit value of each temperature acquired can be set and signaled.



Data sheet	N2528

Stock No.	Product No.
BPZ:QAB30.600	**QAB30.600**

8

Central communication units
For remote control via M-Bus: OZW1.. / WZC.. / AEW3..

M-bus standard system main components

Operating and parameterisation tools:

Product Title	s. page	Data sheet	Stock No.	Product No.
Plant operating software	8-9	N5640	BPZ:ACS7..	**ACS7..**
PappaWin software	17-40		BPZ:2WR9300-0AA11-0A	**2WR9300-0AA11-0A**
Parameterizing and diagnostics software	8-24		BPZ:ACT20	**ACT20**
USB tool set	8-24		BPZ:WHZ3.USB	**WHZ3.USB**
PC connecting cable	8-24		BPZ:WFZ.MBM	**WFZ.MBM**

M-Bus central communication units:

Product Title	s. page	Data sheet	Stock No.	Product No.
M-bus central unit	8-22	N5363	BPZ:OZW111	**OZW111**
M-bus central unit	8-21	N5362	BPZ:OZW10	**OZW10**

Signal converters and repeater:

Product Title	s. page	Data sheet	Stock No.	Product No.
M-Bus signal converter for max 60 devices	8-21	N5382	BPZ:WZC-P60	**WZC-P60**
M-Bus signal converter for max 250 devices	8-21	N5365	BPZ:WZC-P250	**WZC-P250**
M-Bus signal converter	8-21	N5364	BPZ:WZC-S250	**WZC-S250**
M-Bus repeater	8-23	N5366	BPZ:WZC-R250	**WZC-R250**

Controllers:

Product Title	s. page	Data sheet	Stock No.	Product No.
District heating controller	2-6	N2513	BPZ:RVD25..	RVD25..
District heating controller	2-7	N2515	BPZ:RVD26..	RVD26..

M-Bus meters:

Product Title	s. page	Data sheet	Stock No.	Product No.
SONOHEAT® ultrasonic heat meters	17-37	UH 106-000	BPZ:UH50..	**UH50..**
Siemeca™ electronic heat meter, wall mounted	17-24	N5333	BPZ:WFM2..	**WFM2../WFQ2..**
Siemeca™ electronic heat and cooling energy meter, wall mounted	17-27	N5338	BPZ:WFN2..	**WFN2..WFR2..**
Siemeca™ electronic water meter, wall mounted	17-17	N5341	BPZ:WFC2..	**WFC2../WFH2..**
Siemeca™ electronic water meter, recessed mounting	17-22	N5343	BPZ:WMC2..	**WMC2../WMH2..**
M-bus pulse adapter	8-23	N5383	BPZ:AEW310.2	**AEW310.2**

Radio meters:

Product Title	s. page	Data sheet	Stock No.	Product No.
Battery-powered network node	17-44	N2874	BPZ:WTT16	**WTT16**
Mains-powered network node	17-44	N2874	BPZ:WTX16	**WTX16**
Siemeca™ electronic heat meter, recessed mounting	17-33	N5347	BPZ:WMM3..	**WMM3..**
Siemeca™ electronic heat and cooling energy meter, recessed mounting	17-34	N5348	BPZ:WMN3..	**WMN3..**
Siemeca™ electronic water meter, round, wall mounting	17-16	N5328	BPZ:WFC3..	**WF.3..**
Siemeca™ electronic water meter, round, recessed mounting	17-21	N5329	BPZ:WMC3..	**WM.3..**
Siemeca™ AMR electronic heat cost allocator	17-8	N2877	BPZ:WHE46..	**WHE46..**
Siemeca™ AMR pulse adapter	17-44	N2873	BPZ:AEW36.2	**AEW36.2**

8

M-bus central unit

OZW10



The M-bus central unit is used for remote readout, remote operation and supervision of M-bus plant with consumption meters and controllers with M-bus connection facility to EN 1434/3.

The M-bus central unit:
- controls and monitors up to 700 devices
- identifies connected M-bus devices with automatic search run
- acquires and stores the consumption data of the M-bus devices periodically
- shows the stored consumption values on the display
- copies the stored consumption values to a billing file of the memory card at the press of a button
- facilitates access
  - to the stored consumption data
  - to the memory card
  - directly to the M-bus devices by means of a PC (with V3.0 or higher) connected either directly or via modem
- monitors periodically the M-bus devices and 4 potential-free digital inputs
- delivers alarms
  - to the display
  - via alarm relay
  - to a PC (with V3.0 or higher) either directly or via modem

The use of an M-bus central unit OZW10 always necessitates a WZC-P... signal converter.

Data sheet	N5362
Operating voltage	AC 24 V
Power consumption	8 VA
Frequency	50/60 Hz

Stock No.	Product No.
BPZ:OZW10	**OZW10**

Operating set for OZW10

Operating set for M-bus central unit OZW10 consisting of one set of operating cards and operating manual.

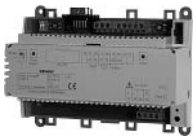
Product Title	Data sheet	Stock No.	Product No.
Operating set in German	N5362	BPZ:ARG10.DE	**ARG10.DE**
Operating set in English	N5362	BPZ:ARG10.GB	**ARG10.GB**

Central communication units
For remote control via M-Bus: OZW1.. / WZC.. / AEW3..

Memory cards for OZW10

Product Title	Data sheet	Stock No.	Product No.
Memory card 128 KB for OCI600 / OZW10 / OZW30	N2529	BPZ:ALC30.128	**ALC30.128**
Memory card 512 KB for OCI600 / OZW10 / OZW30	N2529	BPZ:ALC30.512	**ALC30.512**

OZW111



M-bus central unit

The M-bus central unit is used for the remote readout, remote operation and supervision of an M-bus plant with a maximum of 5 consumption meters or controllers featuring an M-bus connection facility to EN 1434-3.

The M-bus central unit:
- identifies connected M-bus devices with the automatic search run
- facilitates direct access to the M-bus devices by means of a PC connected either directly or via modem
- monitors periodically the M-bus devices and 2 potential-free digital inputs
- delivers alarms to a PC, either directly or via modem
- provides a clock function for alarms

The M-bus central unit OZW111 requires no M-bus signal converter WZC-P...

Data sheet	N5363
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	5 VA

Stock No.	Product No.
BPZ:OZW111	**OZW111**

Accessory for OZW111

Product Title	Stock No.	Product No.
Terminal covers	BPZ:7411100280	**7411100280**

Refer to the central unit data sheet for details

WZC-P60



M-Bus signal converter for max 60 devices

The M-bus signal converter is a component of the M-bus system. It serves for connecting an M-bus central unit with an RS-485 port to the M-bus.

Data sheet	N5382
Operating voltage	DC 20...45 V
Power consumption	16 VA

Stock No.	Product No.
BPZ:WZC-P60	**WZC-P60**

M-Bus signal converter for max 250 devices — WZC-P250

The M-bus signal converter is a component of the M-bus system. It serves for the connection of an M-bus central unit with an RS-485 port to the M-bus.



Data sheet	N5365
Operating voltage	AC 42 V
Power consumption	25 VA

Stock No.	Product No.
BPZ:WZC-P250	**WZC-P250**

M-Bus repeater — WZC-R250

The M-bus repeater is a component of the M-bus system. It is designed for use in plants where extensive bus lines are required, or where large numbers of meters need to be connected, for example in district heat networks that supply heat to entire sections of towns.



Data sheet	N5366
Operating voltage	DC 42 V
Power consumption	25 VA

Stock No.	Product No.
BPZ:WZC-R250	**WZC-R250**

M-Bus signal converter — WZC-S250

The M-bus signal converter is a component of the M-bus system. It serves for the connection of a PC-M-bus central unit with an RS-232 port to the M-bus.



Data sheet	N5364
Operating voltage	AC 230 V
Power consumption	25 VA

Stock No.	Product No.
BPZ:WZC-S250	**WZC-S250**

M-bus pulse adapter — AEW310.2

Module for acquiring and storing the pulses received from consumption meters with pulse output. It can handle pulses from heat, gas, hot water, chilled water, electricity or hours run meters.



Features:
- Operation without power pack
- Supervision of the meter's connection (Namur circuitry)
- Connections: 2 meters with pulse output (Reed contact, Namur circuitry)

Data sheet	N5383
Dimensions (W x H x D)	80 x 80 x 28 mm

Stock No.	Product No.
BPZ:AEW310.2	**AEW310.2**

Central communication units
For remote control via M-Bus: OZW1.. / WZC.. / AEW3..

ACT20

Parameterizing and diagnostics software

- for heat cost allocators
- for water meters
- for heat meters
- for heat / cooling energy meters
- for pulse adapters

	Stock No.	Product No.
	BPZ:ACT20	**ACT20**

WHZ3.USB

USB tool set



Programming cable set for programming:
- heat cost allocators WHE2.., WHE3.. and WHE4..
- water meters WFC.., WFH.., WMC.. and WMH..
- heat meters WFM.., WFQ.. and WMM..
- heat/cooling energy meters WFN.., WFR.. and WMN...
- pulse adapters AEW21.2 and AEW3..
- network nodes WTT16.. and WTX16..

	Stock No.	Product No.
	BPZ:WHZ3.USB	**WHZ3.USB**

WFZ.MBM

PC connecting cable



For connecting to the PC:
- network nodes WTT16.. and WTX16..
- water meters WFC2.., WFH2.., WMC2.. and WMH2..
- heat meters WMF2.. and WMM3..
- heat/cooling energy meters WFN2.. and WMN3..
- pulse adapters AEW3..

PC requires a COM and a PS/2 port

	Stock No.	Product No.
	BPZ:WFZ.MBM	**WFZ.MBM**

Remote readout of consumption data and support

With the remote readout systems we make it comfortable for operation, monitoring and commissioning of heating, ventilation and district heating plant and for remote readout of consumption data

Product Title	s. page	Data sheet	Stock No.	Product No.
Operating, service and alarm software	8-11	N5647	BPZ:ACS741	**ACS741**
Operating, service, alarm and batchjob software	8-12	N5648	BPZ:ACS785	**ACS785**

SYNERGYR control & metering system

Synergyr Control..

The system offers a very high level of convenience for the enduser while affording central readout of consumption data. The system acquires heating costs and, at the same time, provides heating control with a single device, the combined heating cost allocation and control valve WRV.. These central components have 3 different operating levels: The Standard system, which is used exclusively for the precise acquisition of consumption costs, the Eco variant with convenient reference room control, and the Comfort variant. This system variant is especially suited for individual room control in connection with floor heating systems.

Central unit

OZW30



Central mains-powered data acquisition and control unit.
The central unit collects the billing data from the apartments, produces an image of the heat consumption of each apartment and makes it available for readout.
- Has an influence on room temperature control in the apartments
- Has an influence on heat generation, depending on the demand for heat from the apartments
- Acquires messages about operating states, actual values and faults

Functions:
- Central readout and storage of all consumption data from the individual apartments
- Display and logging of faults
- Straightforward readout with the help of the memory card

Interfaces:
- Building bus interface, for data exchange between the SYNERGYR® components
- LPB interface, for communication with heating controllers RVL4..
- RS-232 port, for communication with external partners

Data sheet	N2841
Operating voltage	AC 24 V
Power consumption	10 VA

	Stock No.	Product No.
	BPZ:OZW30	**OZW30**

Operating sets ARG30... for the central unit

Consisting of one set of operating cards and one operating manual.

Product Title	Data sheet	Stock No.	Product No.
Operating set in German	N2841	BPZ:ARG30.DE	**ARG30.DE**
Operating set in English	N2841	BPZ:ARG30.GB	**ARG30.GB**
Operating set in French	N2841	BPZ:ARG30.FR	**ARG30.FR**
Operating set in Dutch	N2841	BPZ:ARG30.NL	**ARG30.NL**
Operating set in Italian	N2841	BPZ:ARG30.IT	**ARG30.IT**
Operating set in Swedish	N2841	BPZ:ARG30.SV	**ARG30.SV**
Operating set in Danish	N2841	BPZ:ARG30.DA	**ARG30.DA**

Central communication units
For control and energy cost allocation system SYNERGYR® : OZW30 / WRI.. / QAW..

WRI80

Control and heat meter interface



Electronic control and heat meter interface. Controls the room temperature through control of a valve, reads heat energy consumption from the connected M-bus heat meter, acquires pulses from third-party devices, stores data and communicates with other SYNERGYR devices via the building bus.

- Controls the room temperature of the reference room in connection with the QAW... room unit through control of a zone and / or room valve
- Central night setback
- Boost heating and quick setback
- Minimum and maximum limitation of the volumetric flow
- Release of zone valve for DHW charging
- Control of an apartment pump
- Frost protection for the apartment
- Periodic pump and valve kick
- Reads the consumption data and measured values from the connected M-bus heat meters
- Acquires pulses from third-party meters
- Stores the meter readings on the set days and at the end of the months
- Hours run counter
- Transmits all relevant data to the central unit
- Indication of operating state via LED

Data sheet	N2827
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	2.4 VA
Degree of protection	IP54

Stock No.	Product No.
BPZ:WRI80	**WRI80**

ALW84

Conduit box for WRV84..



For direct connection of the WRV84../WRV85.. to the building bus, control module AEK84 and field devices. Designed for mounting in control cabinets, on the wall, or on DIN rails.
Components:

- Base, terminal block, sealable cover
- 5 connection terminals each for maximum 4 wires (1.5 mm²)
- 3 connection terminals each for maximum 2 wires (1.5 mm²)

Data sheet	N2824
Dimensions (W x H x D)	136 x 96 x 42 mm

Stock No.	Product No.
BPZ:ALW84	**ALW84**

AEW2.1

Pulse adapter



Acquires and stores the pulses from 2 additional meters with pulse output (Reed contact with or without Namur circuitry), e.g. for hot water, cold water or gas meters, monitors the connections to them, delivers the cumulated consumption values, error messages, etc., to the building bus. Designed for mounting in control cabinets, on the wall, or on DIN rails.

Data sheet	N2831
Operating voltage	AC 24 V
Dimensions (W x H x D)	136 x 96 x 42 mm
Power consumption	1.2 VA

Stock No.	Product No.
BPZ:AEW2.1	**AEW2.1**

Central communication units
For control and energy cost allocation system SYNERGYR® : OZW30 / WRI.. / QAW..

Control module for WRV84.. AEK84

Electronic control unit for the control of a thermal actuator by means of the low-voltage control signal delivered by the WRV84... Designed for mounting in control cabinets, on the wall, or on DIN rails.



Data sheet N2833

Dimensions (W x H x D) 136 x 96 x 42 mm

	Stock No.	Product No.
	BPZ:AEK84	**AEK84**

Bus-compatible temperature measuring unit QAB30

Facilitates connection of a QAC22 outside sensor to the building bus for the display of the outside temperature on the QAW20 digital room unit.

Designed for wall mounting or an DIN rails.



Data sheet N2851

Dimensions (W x H x D) 136 x 96 x 42 mm

	Stock No.	Product No.
	BPZ:QAB30	**QAB30**

Analog room unit QAW10

Analog room unit for operating the control and heat cost allocation valve WRV8... Room temperature acquisition, direct setpoint readjustment by +/- 3 °C with knob on the unit, Economy button for setpoint changeover between Comfort and Reduced mode, 2-wire connection, color is pure-white RAL 9010.



Data sheet N2811

	Stock No.	Product No.
	BPZ:QAW10	**QAW10**

Central communication units
For control and energy cost allocation system SYNERGYR® : OZW30 / WRI.. / QAW..

QAW20

Digital room unit with setpoint adjuster



Programmable room unit for operating the control and heat cost allocation valve WRV8... Room temperature acquisition, 7-day heating program, adjustable temperature setpoints, direct setpoint readjustment, economy button for setpoint changeover between comfort and reduced temperature, detection of airing, holiday programming, permanent memory for individually programmed values, time of day with 12 h backup. Operating mode selector and info button, 2-wire connection, color pure-white RAL 9010.
Connection facility for additional remote temperature sensor QAW44 or remote telephone switch for setpoint changeover.

LCD with the following displays:
- Temperatures and heating program
- Weekday and time of day
- Current meter readings
- Meter readings on the set day
- Heat consumption trend
- Current outside temperature

Data sheet N2812

Stock No.	Product No.
BPZ:QAW20	**QAW20**

QAW44

Remote room temperature sensor



For weighted averaging of the room temperature with the digital room unit QAW20 (SYNERGYR) and QAW70 (SIGMAGYR).

Data sheet

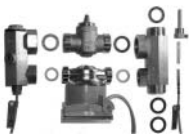
Stock No.	Product No.
BPZ:QAW44	**QAW44**

Field devices for Synergyr

Product Title	s. page	Data sheet	Stock No.	Product No.
Outside sensor LG-Ni1000	11-12	N1811	BPZ:QAC22	**QAC22**
Electromechanical room thermostats	7-5	N3000	BPZ:RAA..	**RAA..**
Electrothermal actuator, 105 N, 1.2 m, AC/DC 24 V, 2P	13-41	N4877	BPZ:STA71	**STA71**

ALG80WRI

Mounting kit for WRV81/84 replacement



Using the ALG80WRI, heat meter and small valve (complete with actuator) can be installed in very confined spaces, analogous to the WRV mounting dimensions.
The ALG80WRI consists of 2 hydraulic diversion pieces with fittings, a built-in immersion sleeve and the necessary sealings.

Data sheet N2803

Stock No.	Product No.
BPZ:ALG80WRI	**ALG80WRI**

Mounting kit for WRV83 replacement

ALG83WRI

Using the ALG83WRI, a WRV83 valve can be hydraulically replaced by a heat meter without having to modify the existing piping.
The ALG83WRI consists of 2 threaded adapters (from ¾" to 1"), an immersion sleeve and the necessary sealings.



Data sheet N2803

	Stock No.	Product No.
	BPZ:ALG83WRI	**ALG83WRI**

Protection pockets

Product Title	Data sheet	Stock No.	Product No.
Protection pockets and accessories	N1194	BPZ:ALT..	**ALT..**
Protection pocket 35 mm, R ⅜", for nominal pipe size DN20...DN40	N2821	BPZ:ALT35	**ALT35**
Protection pocket 65 mm, R ⅜", for nominal pipe size DN50...DN80	N2851	BPZ:ALT65	**ALT65**

Address plugs

Product Title	Data sheet	Stock No.	Product No.
Addresses 1...16	N8105	BPZ:PTG1.16	**PTG1.16**
Addresses 1...32	N8105	BPZ:PTG1.32	**PTG1.32**
Addresses 33...64	N8105	BPZ:PTG1.64	**PTG1.64**
Addresses 65...96	N8105	BPZ:PTG1.96	**PTG1.96**
Addresses 97...128	N8105	BPZ:PTG1.128	**PTG1.128**

Notes

Detection, limitation and control devices



9

Overview and selection tools	Overview of product details	9-2
Temperature	Controller / monitor / limiter: RAK.. / RAZ.. / RYT.. / TKM..	9-3
	Frost protection units: QAF.. / RAK.. / TKM..	9-12
	Coild probe thermostats TRG..	9-15
Humidity	Room and duct hygrostats: QFA.. / QFM..	9-18
Condensation	Condensation monitor QXA..	9-20
Pressure	Differential pressure monitor QBM..	9-22
Flow	Flow switch QVE..	9-23
Air quality	Indoor air quality controller QPA..	9-24

Overview

Type	Data sheet	Function: Control thermostat (TR)	Function: Thermal reset limit thermostat (TW)	Function: Limit thermostat (TB)	Function: Safety limit thermostat (STB)	Setting range: TR /TW: Set point [°C] TB / STB: Setpoint cut-out temperature [°C]	Capillary length [mm]	Switching cap. AC 24...250 V: 1 - 2: 10 (2,5) A 1 - 3: 6 (2,5) A [TB / STB: 0,5 A]	Switching cap. AC 24...250 V: 1 - 2: 16 (2,5) A 1 - 3: 6 (2,5) A [STB: 2 (0,5) A]	Approvals: CE (73/23/EEC, 89/336/EEC, EN60730)	Approvals: ENEC (European Norms Elec. Certif.)	Approvals: PED (Pressure Equipment Directive)	Approvals: EN14597 (old approval: DIN3440)	Approvals: ISPESL	Approvals: C-Tick	IP: Degree of protection (IP)	Set: Pocket ALT-SB100 / ALT-DB100 (length mm)	Set: Clamping band for piping up to Ø 105 mm	Set: Clamping spring for piping Ø 9,5...16 mm	Sensor element / mounting: Remote line – Sensor with capillary line	Sensor element / mounting: Surface thermostat – Sensor attached to housing	Sensor element / mounting: Ductwork – The entire capillary as sensor (at least 30 cm for detection)	Sensor element / mounting: Immersion – immersion sensor	Sensor element / mounting: Room thermostat – Helix sensor	Applications 4): Temperature control	Applications 4): Temperature limitation	Applications 4): Frost protection	Applications 4): Air conditioning	Applications 4): Heating boilers	Applications 4): Domestic hot water heating	Applications 4): Heat exchangers	Applications 4): Floor heating
RAK-ST.010FP	N1189				■	95	700	■		■	■	■	■	■	■	43	100			■	■		■			■			■				
RAK-ST.020FP	N1189				■	100	700	■		■	■	■	■		■	43	100			■	■		■			■			■				
RAK-ST.030FP	N1189				■	110	700	■		■	■	■	■		■	43	100			■	■		■			■			■				
RAK-ST.1430S	N1189				■	80...100	700	■		■	■	■	■		■	43		■		■	■		■			■			■				
RAK-ST.1310P	N1189				■	90...110	700	■		■	■	■	■		■	43	100			■	■		■			■			■				
RAK-ST.1300P	N1189				■	120...130	700	■		■	■	■	■		■	43	100			■	■		■			■			■				
RAK-TB.1400S	N1190			■		45...60	700	■		■	■	■			■	43		■		■	■		■			■			■				■
RAK-TB.1410B	N1190			■		50...70	700	■		■	■	■			■	43	100	■		■	■		■			■			■				
RAK-TB.1420S	N1190			■		65...80	700	■		■	■	■			■	43		■		■	■		■			■			■				
RAK-TR.1000B	N1186	■				15...95	700	■		■	■	■	■		■	43	100	■		■	■		■		■			■	■	■	■		
RAK-TR.1000S	N1186	■				15...95	700	■		■	■	■	■		■	43		■		■	■		■		■			■	■	■	■		
RAK-TR.1210B	N1186	■				15...82	700	■		■	■	■	■	■	■	43	100	■		■	■		■		■			■	■	■	■		
RAK-TW.1000B	N1187		■			15...95	700	■		■	■	■	■		■	43	100	■		■	■		■		■			■	■	■	■		
RAK-TW.1000S	N1187		■			15...95	700	■		■	■	■	■		■	43		■		■	■		■		■			■	■	■	■		
RAK-TW.1200B	N1187		■			40...120	700	■		■	■	■	■		■	43	100	■		■	■		■		■			■	■	■	■		
RAK-TW.1200S	N1187		■			40...120	700	■		■	■	■	■		■	43		■		■	■		■		■			■	■	■	■		
RAK-TW.5000S [3]	N1188		■			65...5	1600	■		■	■	■	nr	nr	■	43		■		■	■		■		■		■	■					
RAK-TW.5010S [3]	N1188		■			50...-10	1600	■		■	■	■	nr	nr	■	43		■		■	■		■		■		■	■					
RAK-TW.5000HS [3]	N1203		■			65...5	1600		■	■		■	nr	nr		65		■		■	■		■		■		■	■					
RAK-TW.1200HP	N1202		■			40...120	700		■	■		■	■			65	100	■		■	■		■		■			■	■	■	■		
RAK-TW.1000HB	N1202		■			15...95	700		■	■		■	■			65	100	■		■	■		■		■			■	■	■	■		
RAK-ST.1600MP	N1204				■	95...130	700		■	■		■	■			54	100			■	■		■			■			■				
RAK-ST.1385M	N1204				■	40...70	700		■	■		■	■			54				■	■		■			■			■				
RAZ-ST.010FP	N1181	■			■	TR: 15...95 STB: 95	700	■		■	■	■	■		■	43	100			■			■		■	■			■				
RAZ-ST.011FP	N1181	■			■	TR: 15...82 STB: 95	700	■		■	■	■	■	■	■	43	100			■			■		■	■			■				
RAZ-ST.020FP	N1181	■			■	TR: 15...95 STB: 100	700	■		■	■	■	■		■	43	100			■			■		■	■			■				
RAZ-ST.030FP	N1181	■			■	TR: 15...95 STB: 110	700	■		■	■	■	■		■	43	100			■			■		■	■			■				
RAZ-ST.1510P	N1181	■			■	TR: 15...95 STB: 90...110	700	■		■	■	■	■		■	43	100			■			■		■	■			■				
RAZ-ST.1500P	N1181	■			■	TR: 15...95 STB: 120...130	700	■		■	■	■	■		■	43	100			■			■		■	■			■				
RAZ-TW.1000P	N1191	■	■			TR: 15...95 STB: 15...95	700	■		■	■	■	■		■	43	100			■			■		■				■				
RAZ-TW.1200P	N1191	■	■			TR: 40...120 STB: 40...120	700	■		■	■	■	■		■	43	100			■			■		■				■				
TKM2	N1291		■			20...110	-	10 (2) A		■						54	200			■					■			■					
TKM2D [2]	N1224		■			-10...35	2400	10 (2) A		■						54				■			■		■			■	■	■	■		
TTM2D [2]	N1223		■			-10...80	-	10 (2) A		■						54	150						■		■			■	■	■	■	■	
TTW2D [2]	N1223		■			20...150	-	10 (2) A		■						54	150						■		■			■	■	■	■	■	
TTW2DL [2]	N1223		■			20...150	-	10 (2) A		■						54	400						■		■			■	■	■	■	■	
RYT182	N1295	Change-over thermostat 30 °C, 19 °C					-	3 A		■						54			■						■								
QAF63.2 [1]	N1821	Sensor				0...15	2000	refer to data sheet		■	nr	nr	nr	nr		42					■					■							
QAF63.6 [1]	N1821	Sensor				0...15	6000	refer to data sheet		■	nr	nr	nr	nr		42					■					■							
QAF64.2 [1]	N1283		■	■		0...15	2000	refer to data sheet		■	nr	nr	nr	nr		42					■			■	■	■	■					
QAF64.6 [1]	N1283		■	■		0...15	6000	refer to data sheet		■	nr	nr	nr	nr		42					■			■	■	■	■					
QAF81.3	N1284		■			-5...15	3000	10 (2) A		■	nr	nr	nr	nr		54					■			■		■	■					
QAF81.6	N1284		■			-5...15	6000	10 (2) A		■	nr	nr	nr	nr		54					■					■	■					
QAF81.6M	N1284			■		-5...15	6000	10 (2) A		■	nr	nr	nr	nr		54					■				■	■						
TRG2 [2]	N1329	■				-5...50	-	10 (2) A		■						54								■	■			■				
TRG22	N1329	■				-5...50	-	10 (2) A		■						54								■	■			■				

1) Electronic frost protection unit with 0...10 V (0...15 °C) output signal / manual or automatic reset function
2) With variable switching differential TKM2D: 2...6 K; TTM / TTW: 2...12 K; TRG2: 0,7..6 K
3) An ALT-AB200 protection pocket is generally used for ductwork
4) This field should not be considered complete or all encompassing. Various other applications are possible.
nr) not required

Temperature controller

RAK-TR.1..H

External scale, 1 changeover contact, immersion and strap-on thermostat in one.



Data sheet	N1205
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.1...16 (2.5) A
Switching differential	6 K
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 72 mm

Range overview RAK-TR.1..H

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
15...95	PN 10, 100 mm, G ½"	700	S55700-P111	**RAK-TR.1000B-H**
15...95	---	700	S55700-P112	**RAK-TR.1000S-H**
15...82	PN 10, 100 mm, G ½"	700	S55700-P113	**RAK-TR.1210B-H**

Note to protection pocket: Brass, nickel-plated

Thermal reset limit thermostat

RAK-TW.1..H

Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.



Data sheet	N1202
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (2.5) A Contact 1-3: 0.1...6 (2.5) A
Switching differential	6 K
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 64 mm

Range overview RAK-TW.1..H

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
15...95	PN 10, 100 mm, G ½"	700	S55700-P114	**RAK-TW.1000B-H**
15...95	---	700	S55700-P116	**RAK-TW.1000S-H**
40...120	PN 10, 100 mm, G ½"	700	S55700-P117	**RAK-TW.1200B-H**
40...120	---	700	S55700-P119	**RAK-TW.1200S-H**

Note to protection pocket: Brass, nickel-plated

RAK-TW.1..H.. Thermal reset limit thermostat



Immersion, strap-on and remote thermostat in one

Data sheet	N1202
Sensing element	Liquid expansion sensor
Digital outputs	1-pole Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact connection 1-2: 0.1...16 (2.5) A Contact connection 1-3: 0.1...6(2.5) A
Switching differential	6 K
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 64 mm

Range overview RAK-TW.1..H..

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
40...120	PN 10, 100 mm, G½"	700	S55700-P118	**RAK-TW.1200HP**
15...95	PN 10, 100 mm, G½"	700	S55700-P115	**RAK-TW.1000HB**

Note to protection pocket: Brass, nickel-plated

RAK-TB.1..M Temperature limiter



Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.

Data sheet	N1206
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Switchover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 0.1...16 (2.5) A Contact 11-13: 2 (0.4) A
Reset temperature	Min. 15 K under the switch-off point
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 67 mm

Range overview RAK-TB.1..M

Switch-off point [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
45...60	---	700	S55700-P108	**RAK-TB.1400S-M**
50...70	PN 10, 100 mm, G½"	700	S55700-P109	**RAK-TB.1410B-M**
65...80	---	700	S55700-P110	**RAK-TB.1420S-M**

Note to protection pocket: Brass, nickel-plated

Safety limit thermostat

RAK-ST..M

Internal scale, 1 changeover contact, failsafe capillary, immersion and strap-on thermostat in one, with ambient temperature compensation.



Data sheet	N1204
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Switchover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 0.1...16 (2.5) A Contact 11-13: 2 (0.4) A
Reset temperature	Min. 15 K under the switch-off point
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 67 mm

Range overview RAK-ST..M

Switch-off point [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
95	PN 10, 100 mm, G ½"	700	S55700-P100	**RAK-ST.010FP-M**
100	PN 10, 100 mm, G ½"	700	S55700-P101	**RAK-ST.020FP-M**
110	PN 10, 100 mm, G ½"	700	S55700-P102	**RAK-ST.030FP-M**
120...130	PN 10, 100 mm, G ½"	700	S55700-P103	**RAK-ST.1300P-M**
90...110	PN 10, 100 mm, G ½"	700	S55700-P104	**RAK-ST.1310P-M**
80...100	---	1600	S55700-P106	**RAK-ST.1430S-M**

Note to protection pocket: Brass, nickel-plated

Safety limit thermostat

RAK-ST.1..M..

Immersion, strap-on and remote thermostat in one



Data sheet	N1204
Sensing element	Liquid expansion sensor
Digital outputs	1-pole Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 11-12: 16 (2,5) A Contact 11-13: 2 (0,4) A
Reset temperature	~7 K under the switch-off point
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 67 mm

Range overview RAK-ST.1..M..

Switch-off point [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
Adjustable: 95...130	PN 10, 100 mm, G ½"	700	S55700-P107	**RAK-ST.1600MP**
Adjustable: 40...70	---	700	S55700-P105	**RAK-ST.1385M**

Note to protection pocket: Brass, nickel-plated

Protection pockets for RAK-T and RAK-S

Packaging unit	Protection pocket [LW7]	Material	PN class	Data sheet	Stock No.	Product No.
1 pc	100 mm, G½"	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB100	**ALT-SB100**
1 pc	150 mm, G½"	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB150	**ALT-SB150**
1 pc	200 mm, G½"	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB200	**ALT-SB200**
1 pc	280 mm, G½"	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB280	**ALT-SB280**
1 pc	450 mm, G½"	Brass, nickel-plated	PN 10	N1194	BPZ:ALT-SB450	**ALT-SB450**
1 pc	100 mm, G½"	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS100	**ALT-SS100**
1 pc	150 mm, G½"	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS150	**ALT-SS150**
1 pc	280 mm, G½"	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS280	**ALT-SS280**
1 pc	450 mm, G½"	Stainless steel V4A	PN 16	N1194	BPZ:ALT-SS450	**ALT-SS450**
1 pc	100 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF100	**ALT-SSF100**
1 pc	150 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF150	**ALT-SSF150**
1 pc	200 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF200	**ALT-SSF200**
1 pc	280 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF280	**ALT-SSF280**
1 pc	450 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF450	**ALT-SSF450**
1 pc	600 mm, G½" (with flange)	Stainless steel V4A	PN 40	N1194	BPZ:ALT-SSF600	**ALT-SSF600**

Accessories for RAK-T and RAK-S

Packaging unit	Product Title	Material	Data sheet	Stock No.	Product No.
1 pc	Protection pocket, perforated, 200 mm	Steel, galvanized	N1193	BPZ:ALT-AB200	**ALT-AB200**
1 bag	Mounting kit for RAK../RAZ..		N1193	BPZ:ALT-C001	**ALT-C001**
1 pcs.	Mounting flange, adjustable depth	PA66GF35	N1193	BPZ:AQM63.0	**AQM63.0**
1 box	Terminal housing		N1207	S55700-P131	**RAK-H-M**

Temperature controller/ thermal reset limit thermostat

RAZ-TW.1..H



Combination of control thermostat (TR) and thermal reset limit thermostat (TW).

External scale (TR), internal scale (TW), 2 changeover contacts. Immersion thermostat and wall mounting.

Data sheet	N1208
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.1...16 (4) A
Switching differential	6 K
Degree of protection	IP43
Dimensions (W x H x D)	103 x 99 x 64 mm

Range overview RAZ-TW.1..H

Setpoint setting range [°C]	Protection pocket [LW7]	Capillary length [mm]	Stock No.	Product No.
TR: 0...90 TW: 0...90	PN 10, 100 mm, G ½" 2x	700	S55700-P129	**RAZ-TW.1000P-H**
TR: 30...120 TW: 30...120	PN 10, 100 mm, G ½" 2x	700	S55700-P130	**RAZ-TW.1200P-H**

Note to protection pocket: Double pocket 2 x LW7, Brass, nickel-plated

Temperature controller/ safety limit thermostat

RAZ-ST..M



Combination of control thermostat (TR) and safety limit thermostat (STB).

External scale (TR), internal scale (STB), 2 changeover contacts, failsafe capillary, STB with ambient temperature compensation. Immersion thermostat and wall mounting.

Data sheet	N1209
Sensing element	Liquid expansion sensor
Switching differential	TR: 6 K
Reset temperature	Min. 15 Kelvin under the switch-off point
Capillary length	700 mm
Degree of protection	IP43
Dimensions (W x H x D)	103 x 99 x 64 mm

Range overview RAZ-ST..M

Setpoint setting range [°C]	Switch-off point [°C]	Protection pocket [LW7]	Stock No.	Product No.
TR: 0...90	100	PN 10, 100 mm, G ½"	S55700-P124	**RAZ-ST.011FP-M**
TR: 0...90	110	PN 10, 100 mm, G ½"	S55700-P126	**RAZ-ST.030FP-M**
TR: 0...90	110...130	PN 10, 100 mm, G ½"	S55700-P127	**RAZ-ST.1500P-M**
TR: 0...90	90...110	PN 10, 100 mm, G ½"	S55700-P128	**RAZ-ST.1510P-M**

Note to protection pocket: Double pocket 2 x LW7, Brass, nickel-plated

Accessories for RAZ-T.., RAZ-S.. and RAK..

Product Title	Material	PN class	Data sheet	Stock No.	Product No.
Double protection pocket, 100 mm, MS63 nickel-plated, thread ½", PN10, 2 x LW7	Brass nickel-plated	PN 10	N1194	BPZ:ALT-DB100	**ALT-DB100**
Double protection pocket, 150 mm, MS63 nickel-plated, thread ½", PN10, 2 x LW7	Brass nickel-plated	PN 10	N1194	BPZ:ALT-DB150	**ALT-DB150**
Double protection pocket, 280 mm, MS63 nickel-plated, G ½", PN10, 2 x LW7	Brass nickel-plated	PN 10	N1194	BPZ:ALT-DB280	**ALT-DB280**
Double protection pocket, 450 mm, MS63 nickel-plated, G ½", PN10, 2 x LW7	Brass nickel-plated	PN 10	N1194	BPZ:ALT-DB450	**ALT-DB450**
Protection pocket, 100 mm,stainless steel V4A, thread ½", PN16, LW15	Stainless steel V4A	PN 16	N1194	BPZ:ALT-DS100	**ALT-DS100**
Protection pocket, 150 mm, stainless steel V4A, thread ½", PN16, LW15,	Stainless steel V4A	PN 16	N1194	BPZ:ALT-DS150	**ALT-DS150**
Protection pocket, 280 mm, stainless steel V4A, thread ½", PN16, LW15,	Stainless steel V4A	PN 16	N1194	BPZ:ALT-DS280	**ALT-DS280**
Protection pocket, 450 mm, stainless steel V4A, thread ½", PN16, LW15,	Stainless steel V4A	PN 16	N1194	BPZ:ALT-DS450	**ALT-DS450**
Mounting kit for RAK../RAZ..			N1193	BPZ:ALT-C001	**ALT-C001**
Wall mounting set for RAK.. and RAZ..			N1193	S55700-P132	**ALT-WM001**

Strap-on temperature controller, 0...90 °C, fixing spring, setpoint adjuster externally

RAM-TR.2000M



Electromechanical temperature control (TR) with single-pole changeover microswitch:
- Set point externally adjustable
- Controlled medium: water, oil

Data sheet	N1197
Sensing element	Bimetall
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.2...16 A
Setpoint setting range	0...90 °C
Mounting location	Surface-mounted on pipes or storage tanks
Degree of protection	IP40
Dimensions (W x H x D)	38 x 105 x 42 mm

Stock No.	Product No.
BPZ:RAM-TR.2000M	**RAM-TR.2000M**

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Strap-on temperature limitation, 0...90 °C, fixing spring, setpoint adjuster internally

RAM-TW.2000M



Electromechanical temperature limitation (TW) with single-pole changeover microswitch:
- Set point internally adjustable
- Controlled medium: water, oil

Data sheet	N1197
Sensing element	Bimetal
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	0.2...16 A
Setpoint setting range	0...90 °C
Mounting location	Surface-mounted on pipes or storage tanks
Degree of protection	IP40
Dimensions (W x H x D)	38 x 105 x 42 mm

Stock No.	Product No.
BPZ:RAM-TW.2000M	**RAM-TW.2000M**

Temperature
Controller / monitor / limiter: RAK.. / RAZ.. / RAM.. / RYT.. / TKM..

RYT182

Changeover thermostat, changeover, 30 °C / 19 °C, IP54



For changeover of controller's operating action (heating / cooling) depending on the flow temperature.

Data sheet	N1295
Cooling mode *1)	t_{VI} < 19 °C
Heating mode *2)	t_{VI} > 30 °C
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 230 V
Digital output, switching current	0.1...3 A
Degree of protection	IP54

Stock No.	Product No.
BPZ:RYT182	**RYT182**

Cooling mode: closed contact between white-blue
Heating mode: closed contact between white-black

TT..2..

Immersion thermostats



Data sheet	N1223
Digital outputs	AC 250 V; 10(2) A Potential-free, 1-pin Switchover contact
Mounting position	Any
Connecting thread	G ½ "
PN class	PN 16
Switching differential	2...12 K adjustable
Degree of protection	IP54
Dimensions (W x H x D)	60 x 98 x 75 mm
Material, protection pocket	Brass, nickel-plated

Range overview TT..2D..

Setpoint setting range [°C]	Immersion length [mm]	Measuring range, temperature [°C]	Digital output, switching current [A]	Stock No.	Product No.
-10...80	150	-10...80	0.2...10 (2)	BPZ:TTM2D	**TTM2D**
20...150	150	20...150	0.2...10 (2)	BPZ:TTW2D	**TTW2D**
20...150	400	20...150	0.2...10 (2)	BPZ:TTW2DL	**TTW2DL**

Note to protection pocket: Brass, nickel-plated

Thermal reset limit thermostat for air ducts, 20...110 °C; perforated protection pocket 200mm

TKM2



Data sheet	N1291
Setpoint setting range	20...110 °C
Switching differential	2 K
Digital outputs	1-pin Potential-free Changover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	0.2...10 (2) A
Mounting position	Any
Ambient temperature head	Max. 100 °C
Ambient temperature, operation	120 °C
Ambient temperature sensor	Max. 10 % above setpoint setting range
Degree of protection	IP54
Dimensions (W x H x D)	60 x 120 x 55 mm

	Stock No.	Product No.
	BPZ:TKM2	**TKM2**

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Accessory for TKM2

Product Title	Material	Packaging unit	Data sheet	Stock No.	Product No.
Protection pocket, perforated, 200 mm	Steel, galvanized	1 pc	N1193	BPZ:ALT-AB200	**ALT-AB200**

Temperature
Frost protection units: QAF.. / RAK.. / TKM..

QAF63..



Frost sensor, modulating

- For fitting to the air duct
- Fully active capillary tube sensor
- With capillary tube entry

Data sheet	N1821
Operating voltage	AC 24 V
Power consumption	5 VA
Analog output, signal	DC 0...10 V
Measuring range, temperature	0...15 °C
Min. active length	250 mm
Ambient temperature, operation	-15...60 °C
Connection cable	3-wire
Degree of protection	IP42
Dimensions (W x H x D)	96 x 136 x 67 mm

In addition to direct mounting, the frost sensor can be fitted to the air duct using the AQM63.0 snap-on mounting flange (accessory).

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Range overview QAF63..

Capillary length [mm]	Data sheet	Stock No.	Product No.
2000	N1821	BPZ:QAF63.2	**QAF63.2**
6000	N1821	BPZ:QAF63.6	**QAF63.6**

Frost monitor, air side, 2-point

QAF64..

- Modulating and 2-position
- Fully active capillary type sensing element
- Indication of frost with red LED
- Test switch for simulation of frost
- Selector for automatic or manual reset function
- Modulating P-controller for startup
- Limit value contact for plant control



Data sheet	N1283
Operating voltage	AC 24 V
Power consumption	6 VA
Analog inputs	Control input
Analog output, signal	DC 0...10 V
Analog input, signal	0.1 mA DC 0...10 V
Setpoint setting range	1...10 °C
Measuring range, temperature	0...15 °C
Min. active length	250 mm
Digital outputs	Potential-free Switchover contact
Digital output, switching voltage	DC 5 V / AC 5...250 V
Digital output, switching current	6 (4) A
Ambient temperature, operation	-15...60 °C
Connection cable	6 (8)-wire
Degree of protection	IP42
Dimensions (W x H x D)	96 x 136 x 67 mm

In addition to direct mounting, the frost monitor can be fitted to the air duct using the AQM63.0 snap-on mounting flange (accessory).

Range overview QAF64..

Capillary length [mm]	Data sheet	Stock No.	Product No.
2000	N1283	BPZ:QAF64.2	**QAF64.2**
6000	N1283	BPZ:QAF64.6	**QAF64.6**

Accessories for QAF63.. and QAF64..

AQM63.0



Mounting flange, adjustable depth

Data sheet N1193

Packaging unit 1 pcs.

Accessories for QAM21.., QAF63.. and QAF64..

Stock No.	Product No.
BPZ:AQM63.0	**AQM63.0**

AQM63.2

3 capillary supports and 3 spacers for QAF.. Mounting

3 capillary tube clamps and 3 spacers
With 2 m capillary tube: Use 1 AQM63.2
With 6 m capillary tube: Use 2 AQM63.2

Data sheet N1821

Stock No.	Product No.
BPZ:AQM63.2	**AQM63.2**

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QAF81..



Frost monitor, 2-point

For temperature supervision on the air side of air heating coils in ventilation and air conditioning plants to provide protection against frost.

Data sheet	N1284
Setpoint setting range	-5...+15 °C
Switching differential	2 K
Digital outputs	1-pin Potential-free Switchover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	10 (2) A
Mounting position	Any
Min. active length	300 mm
Degree of protection	IP54
Dimensions (W x H x D)	106 x 113 x 37 mm

Range overview QAF81..

Capillary length [mm]	Data sheet	Stock No.	Product No.
3000	N1284	BPZ:QAF81.3	**QAF81.3**
6000	N1284	BPZ:QAF81.6	**QAF81.6**
6000	N1284	BPZ:QAF81.6M	**QAF81.6M**

QAF81.6M, with lock-out and manual reset

Accessories for QAF81..

Product Title	Data sheet	Stock No.	Product No.
6 Capillary tube clamps for QAF../QAM.. mounting	N1284	BPZ:AQM63.3	**AQM63.3**

Frost protection monitor

RAK-TW.5..H

Internal scale, 1 changeover contact, immersion and strap-on thermostat in one.



Data sheet	N1203
Sensing element	Liquid expansion sensor
Digital outputs	1-pin Potential-free Switching contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact 1-2: 0.1...16 (2.5) A Contact 1-3: 0.1...6 (2.5) A
Switching differential	5 K
Degree of protection	IP43
Dimensions (W x H x D)	55 x 156 x 64 mm

Perforated protection pocket must be ordered as a separate item: ALT-AB200

Range overview RAK-TW.5..H

Setpoint setting range [°C]	Capillary length [mm]	Stock No.	Product No.
5...65	1600	S55700-P121	**RAK-TW.5000S-H**
-10...50	1600	S55700-P122	**RAK-TW.5010S-H**

Frost protection monitor

RAK-TW.5..H..

Immersion, strap-on and remote thermostat in one



Data sheet	N1203
Sensing element	Liquid expansion sensor
Digital outputs	1-pole Potential-free Changeover contact
Digital output, switching voltage	AC 24...250 V
Digital output, switching current	Contact connection 1-2: 0.1...16 (2.5) A Contact connection 1-3: 0.1...6 (2.5) A
Switching differential	5 K
Degree of protection	IP65
Dimensions (W x H x D)	55 x 156 x 64 mm

Perforated protection pocket must be ordered as a separate item: ALT-AB200

Range overview RAK-TW.5..H..

Setpoint setting range [°C]	Capillary length [mm]	Stock No.	Product No.
5...65	1600	S55700-P120	**RAK-TW.5000HS**

Accessories for RAK-TW.5.. and RAK-TW.5..H..

Product Title	Material	Packaging unit	Data sheet	Stock No.	Product No.
Protection pocket, perforated, 200 mm	Steel, galvanized	1 pc	N1193	BPZ:ALT-AB200	**ALT-AB200**

TKM2D

Frost protection limit thermostat -10...35 °C; variable switching difference 2..6 K



Data sheet	N1224
Setpoint setting range	-10...35 °C
Switching differential	Adjustable 2...6 K
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	10 (2) A
Mounting position	Any
Ambient temperature head	Max. 100 °C
Ambient temperature sensor	Max. 10 % above setpoint setting range
Degree of protection	IP54
Dimensions (W x H x D)	60 x 120 x 65 mm

Stock No.	Product No.
BPZ:TKM2D	**TKM2D**

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Accessories for TKM2D

Product Title	Data sheet	Stock No.	Product No.
Protection pocket, perforated, 200 mm	N1193	BPZ:ALT-AB200	**ALT-AB200**
Protection pockets made of stainless steel, 400 mm	N1223	BPZ:Z620	**Z620**
6 Capillary tube clamps for QAF../QAM.. mounting	N1284	BPZ:AQM63.3	**AQM63.3**

Room thermostat with helix sensor, TR -5..50 °C — TRG2



For commercial and industrial applications.

Data sheet	N1329
Setpoint setting range	-5...50 °C
Switching differential	Adjustable: 0.7...6 K
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	0.2...10 (2) A
Mounting position	Horizontal
Degree of protection	IP54
Dimensions (W x H x D)	98 x 95 x 63 mm

Stock No.	Product No.
BPZ:TRG2	**TRG2**

Room thermostat with helix sensor, TR -5..50 °C, 2 switches on 2 steps 2..12 K difference — TRG22



For commercial and industrial applications.

Data sheet	N1329
Setpoint setting range	-5...50 °C
Switching differential	2 K
Switching interval	2...12 K
Digital outputs	2 Changeover contacts, 1-pole Potential-free
Digital output, switching voltage	AC 250 V
Digital output, switching current	0.2...10 (2) A
Mounting position	horizontal
Degree of protection	IP54
Dimensions (W x H x D)	98 x 135 x 67 mm

Note on switching interval:
Adjustable temperature difference between step 1 and step 2.

Stock No.	Product No.
BPZ:TRG22	**TRG22**

QFA1001



Room hygrostat, setpoint setting range 30...90 % r.h., external setpoint adjustment

2-position controller with humidity sensor
External setpoint adjustment

Data sheet	N1518
Setpoint setting range	30...90 % r.h.
Switching differential	6 % r.h.
Time constant	At v = 0.2 m/s: 5 min
Digital outputs	1-pin Potential-free Changeover contact
Connection, electrical	Screw terminals
Digital output, switching voltage	AC 230 V
Digital output, switching current	5 (3) A
Degree of protection	IP20
Dimensions (W x H x D)	76 x 76 x 34 mm

Stock No.	Product No.
BPZ:QFA1001	**QFA1001**

QFA1000



Room hygrostat, setpoint setting range 30...90 % r.h., setpoint adjuster inside device

2-position controller with humidity sensor
Setpoint adjuster inside device

Data sheet	N1518
Setpoint setting range	30...90 % r.h.
Switching differential	6 % r.h.
Time constant	At v = 0.2 m/s: 5 min
Digital outputs	1-pin Potential-free Changeover contact
Connection, electrical	Screw terminals
Digital output, switching voltage	AC 230 V
Digital output, switching current	5 (3) A
Degree of protection	IP20
Dimensions (W x H x D)	76 x 76 x 34 mm

Stock No.	Product No.
BPZ:QFA1000	**QFA1000**

Duct hygrostat, setpoint setting range 15...95 % r.h. — QFM81.2



On / off hygrostat with humidity sensor.
External setpoint adjustment.

Data sheet	N1514
Setpoint setting range	15...95 % r.h.
Switching differential	4 % r.h.
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	5 (3) A
Immersion length	130...156 mm
Degree of protection	IP30
Dimensions (W x H x D)	73 x 140 x 64 mm

Supplied complete with mounting flange.

Stock No.	Product No.
BPZ:QFM81.2	**QFM81.2**

Room hygrostat, setpoint setting range 15...95 % r.h., setpoint adjuster inside device — QFM81.21



On / off hygrostat with humidity sensor.
Setpoint adjuster inside device.

Data sheet	N1514
Setpoint setting range	15...95 % r.h.
Switching differential	4 % r.h.
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC 250 V
Digital output, switching current	5 (3) A
Immersion length	130...156 mm
Degree of protection	IP55
Dimensions (W x H x D)	73 x 140 x 64 mm

Stock No.	Product No.
BPZ:QFM81.21	**QFM81.21**

Condensation
Condensation monitor QXA..

QXA2000

Condensation monitor



For monitoring and preventing condensation in buildings with chilled ceilings or in ventilation, air conditioning and heating plant.

Data sheet	N1542
Operating voltage	AC 24 V DC 24 V
Power consumption	1 VA
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC/DC 1...48 V
Digital output, switching current	0.001...0.5 A
Switching point	95 ±4 % r.h.
Connection, electrical	Screw terminals
Degree of protection	IP40

Stock No.	Product No.
BPZ:QXA2000	**QXA2000**

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QXA2001

Condensation monitor with remote sensor head (cable length 1.5 m)



For monitoring and preventing condensation in buildings with chilled ceilings or in ventilation, air conditioning and heating plant.

Data sheet	N1542
Operating voltage	AC 24 V DC 24 V
Power consumption	1 VA
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	AC/DC 1...48 V
Digital output, switching current	0.001...0.5 A
Switching point	95 ±4 % r.h.
Connection, electrical	Screw terminals
Degree of protection	IP40

Stock No.	Product No.
BPZ:QXA2001	QXA2001

AC 230 V extension module for QXA2000

AQX2000



The extension module facilitates connection of the QXA2000 to the DESIGO room controllers RXC20.1, 21.1, 22.1 and 30.1 and direct switching of voltages up to AC/DC 250 V.

Data sheet	N1542
Primary voltage	AC 230 V
Secondary voltage	AC 24 V
Digital input, contact query	DC 37 V
Dimensions (W x H x D)	80 x 110 x 62 mm
Relay outputs, number	1
Relay outputs	Potential-free Changeover contact
Relay output, switching voltage	AC/DC 12...250 V
Relay output, switching current	0.01...6 A
Power consumption	4 VA
Connection, electrical	Screw terminals
Degree of protection	IP20

	Stock No.	Product No.
	BPZ:AQX2000	**AQX2000**

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Accessories for AQX2000

Product Title	Data sheet	Stock No.	Product No.
Terminal cover for RXC4.. and AQX2000	N3842	BPZ:RXZ40.1	**RXZ40.1**

Pressure
Differential pressure monitor QBM..

QBM81..



Differential pressure monitor

Used as a flow switch or filter monitor in air ducts.

Data sheet	N1552
Digital outputs	1-pin Potential-free Switchover contact
Digital output, switching voltage	DC 24 V / AC 24...250 V
Digital output, switching current	0.01...5 (3) A
Permissible operating pressure	7500 Pa
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	88 x 110 x 90 mm
Pressure conneciton	Connection branch, 6.2 mm dia.
Ambient temperature, operation	-30...85 °C
Mounting position	Diaphragm vertical, pressure connection pointing downward

Supplied complete with set of 2 air duct connectors (plastic)
and 2 m long PVC tube.

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Range overview QBM81..

Measuring range, pressure	Stock No.	Product No.
20...300 Pa	BPZ:QBM81-3	**QBM81-3**
50...500 Pa	BPZ:QBM81-5	**QBM81-5**
100...1000 Pa	BPZ:QBM81-10	**QBM81-10**
500...2000 Pa	S55720-S125	QBM81-20
1000...5000 Pa	S55720-S126	QBM81-50

Accessories for QBM81..

Product Title	Data sheet	Stock No.	Product No.
Air duct probe for simple, quick and airtight mounting	N1589	BPZ:FK-PZ1	**FK-PZ1**
Air duct probe for accurate measurements	N1589	BPZ:FK-PZ2	**FK-PZ2**
Air duct probe for differential pressure sensor, fixed length	N1589	BPZ:FK-PZ3	**FK-PZ3**

Flow switch for use in hydraulic systems — QVE1900

For monitoring operation of systems using liquids or gases.



Data sheet	N1592
Digital outputs	1-pin Potential-free Changeover contact
Digital output, switching voltage	250 VAC
Digital output, switching current	15 (8) A
Nominal size, piping	DN32 - DN200
Connecting thread	R 1 " thread
PN class	PN 10
Medium temperature	-20...120 °C
Ambient temperature, operation	-20...85 °C
Material, valve body	Brass
Connection, electrical	Screw terminals
Degree of protection	IP65
Dimensions (W x H x D)	108 x 70 x 132 mm

Stock No.	Product No.
BPZ:QVE1900	**QVE1900**

Flow switch for use in hydraulic systems — QVE1901

For monitoring operation of systems using liquids or gases.



Data sheet	N1594
Digital outputs	1-pin Potential-free On / Off
Digital output, switching voltage	230 VAC, 48 VDC
Digital output, switching current	1 A
Nominal size, piping	DN20 - DN200
Connecting thread	G ½ " thread
PN class	PN 25
Medium temperature	-20...110 °C
Ambient temperature, operation	-20...80 °C
Material, valve body	Brass
Connection, electrical	Screw terminals
Degree of protection	IP65
Dimensions (W x H x D)	120 x 38 x 92 mm
Additional info	Maximum switching capacity AC 26 VA, DC 20 W

Stock No.	Product No.
BPZ:QVE1901	**QVE1901**

QPA84

Indoor air quality controller with integrated VOC sensor for mixed gas



In ventilation plant to optimize indoor air quality and consumption of energy by means of demand-controlled ventilation.

Data sheet	N1571
Operating voltage	AC 230 V
Power consumption	0.5 VA
Measured variable	Mixed gas (VOC)
Digital outputs	Non-floating Switching contact
Digital output, switching voltage	AC 230 V
Digital output, switching current	8 (6.8) A
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	96 x 101 x 39 mm

Stock No.	Product No.
BPZ:QPA84	**QPA84**

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Room operating units



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Overview and selection tools	Overview of product details	10-2
With measuring element LG-Ni1000	For controllers in HVAC- and district heating plants QAA..	10-3
With communication	For controllers in HVAC- and district heating plants (PPS) QAW..	10-4
	For controllers RX.. (PPS2): QAX3.. / QAX8..	10-6
	For controllers RX.. (EnOcean and wireless): QAX9.. / QAW59..	10-9
	For automation station PX.. (LON) QAX5..	10-13
	For controllers RM.. (KNX) QAW74..	10-14

Overview and selection tools
Overview of product details






	Room units and room sensors																								
	QAA..			QAW..										QAX..											
Controllers	25	26	27	10	20	44	50	50.03	70	590	591	740	30.1	31.1	32.1	33.1	34.1	34.3	39.	84.1	50.1	51.1	90.1	91.1	95.1	96.1
DESIGO™ PX	■	■	■										■	■	■	■	■	■	■	■			■	■		
RXA			■										■	■	■	■	■	■	■	■			■	■		
RXL													■	■	■	■	■	■	■	■			■	■		
RXB													■	■	■	■	■	■	■	■			■	■	■	■
RXC													■	■	■	■	■	■	■	■	■	■	■	■	■	■
SIGMAGYR® RVP, RVL, RVD							■	■	■	■	■															
SYNERGY®				■	■	■																				
Synco™ 200	■		■																							
Synco™ 700	■		■									■														
Features																										
LG-Ni1000 temperature sensor	■	■	■																							
LG-Ni1000 setpoint potentiom	■	■																								
LG-Ni1000 setpoint adjuster			■																							
Temperature sensor				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
Setpoint adjuster				■	■		■	■	■		■	■		■	■	■	■	■	■	■	■	■		■		■
Indication/ display					■				■			■					■	■		■	■	■				
Time switch					■				■																	
Occupancy button				■	■		■	■	■						■	■	■	■		■	■	■				
Mode selection switch				■	■		■	■	■			■			■	■	■	■		■	■	■				
Fan switch																■	■	■		■	■	■				
KNX												■													■[1]	■[1]
LonWorks interface																					■	■			■[1]	■[1]
PPS interface							■	■	■	■	■															
PPS 2 interface										■	■		■	■	■	■	■	■	■	■			■[2]	■[2]		
EnOcean																									■	■
Radio										■	■												■	■	■	■
Solar-powered																									■	■

[1] **Suitable receivers:** RXZ95.1/LON, RXZ97.1/KNX
[2] **Suitable receivers:** RXZ90.1

Room unit with room temperature sensor and setpoint adjuster QAA25



Data sheet	N1721
Setpoint setting range	5...35 °C
Measuring range, temperature	0...50 °C
Degree of protection	IP30
Sensing element, temperature	LG-Ni1000
Time constant	7 min
Connection, electrical	Screw terminals

For Synco™ and DESIGO™PX applications

Stock No.	Product No.
BPZ:QAA25	**QAA25**

Room unit with room temperature sensor and setpoint adjuster 5..30 °C QAA26



Data sheet	N1721
Setpoint setting range	5...30 °C
Measuring range, temperature	0...50 °C
Degree of protection	IP30
Sensing element, temperature	LG-Ni1000
Time constant	7 min
Connection, electrical	Screw terminals

For DESIGO™PX applications

Stock No.	Product No.
BPZ:QAA26	**QAA26**

Room unit with room temperature sensor and setpoint readjuster -3...3 K QAA27



Data sheet	N1721
Setpoint readjustment range	-3...3 K
Measuring range, temperature	0...50 °C
Degree of protection	IP30
Sensing element, temperature	LG-Ni1000
Time constant	7 min
Connection, electrical	Screw terminals

For Synco™, DESIGO™PX and DESIGO™ RXA applications

Stock No.	Product No.
BPZ:QAA27	**QAA27**

With communication
For controllers in HVAC- and district heating plants (PPS) QAW..

QAW50

Digital room unit



With 3 analog operating elements:
- Operating mode selector
- Occupancy button
- Knob for setpoint readjustments

Data sheet	N1635
Setpoint readjustment range	±3 K
Measuring range, temperature	0...32 °C
Degree of protection	IP30
Communication	PPS
Connection cable	2-wire

Stock No.	Product No.
BPZ:QAW50	**QAW50**

QAW50.03

Digital room unit with address selector



Same function as QAW50, but addressable

Data sheet	N1635

Stock No.	Product No.
BPZ:QAW50.03	**QAW50.03**

QAW70..

Multifunctional room operator unit



Programmable unit with display of date, time of day, room temperature, outside temperature, setting values and current 7-day program. With knob for manual setpoint readjustments and presence button for manually activating the savings program

Data sheet	N1637

Range overview QAW70..

Product Title	Data sheet	Stock No.	Product No.
Multifunctional room unit, instructions in en, de, fr, it	N1637	BPZ:QAW70-A	**QAW70-A**
Multifunctional room unit, instructions in nl, sv, el, pl	N1637	BPZ:QAW70-B	**QAW70-B**

Remote room temperature sensor — QAW44

For weighted averaging of the room temperature with the digital room unit QAW20 (SYNERGYR) and QAW70 (SIGMAGYR).



	Stock No.	Product No.
	BPZ:QAW44	**QAW44**

With communication
For controllers RX.. (PPS2): QAX3.. / QAX8..

QAX3.. Room unit with PPS2 interface

Room units for acquiring the room temperature and operation of individual room control.

Power consumption	0.10 VA
Interface for controller	PPS2
Interface for service	LonWorks and PPS2 on RJ45
Sensing element, temperature	NTC
Measuring range, temperature	0...40 °C
Time constant	≤8 min
Measurement accuracy	±0.25 K at 25 °C ±0.5 K at 5...30 °C
Setpoint readjustment range	±12 K
Degree of protection	IP30
Mounting location	Indoors
Mounting	In recessed or top-mounted conduit box

QAX30.1 Room unit with sensor and PPS2 interface



- Acquisition of room temperature

Data sheet	N1741
Voltage supply	PPS2
Dimensions (W x H x D)	90 x 100 x 32 mm

	Stock No.	Product No.
	BPZ:QAX30.1	**QAX30.1**

QAX31.1 Room unit with sensor, setpoint adjuster and PPS2 interface



- Acquisition of room temperature
- Setpoint adjuster for room temperature

Data sheet	N1741
Dimensions (W x H x D)	90 x 100 x 36 mm

	Stock No.	Product No.
	BPZ:QAX31.1	**QAX31.1**

QAX32.1 Room unit with sensor, setpoint and operating mode selector and PPS2 interface



- Acquisition of room temperature
- Setpoint adjuster for room temperature
- Rocker switch for mode selection (Off / Auto)

Data sheet	N1641
Dimensions (W x H x D)	90 x 100 x 36 mm

	Stock No.	Product No.
	BPZ:QAX32.1	**QAX32.1**

Room unit with sensor, setpoint and operating mode selector, fan speed selection, and PPS2 interface — QAX33.1



- Acquisition of room temperature
- Setpoint adjuster for room temperature
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)

Data sheet N1642

Dimensions (W x H x D) 90 x 100 x 36 mm

	Stock No.	Product No.
	BPZ:QAX33.1	**QAX33.1**

Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface — QAX34.1



- Acquisition of room temperature
- Rocker switch for adjustment of room temperature setpoint
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and control mode

Data sheet N1645

Dimensions (W x H x D) 90 x 100 x 36 mm

	Stock No.	Product No.
	BPZ:QAX34.1	**QAX34.1**

Room unit with sensor, setpoint and operating mode selector, display and PPS2 interface — QAX34.3



- Acquisition of room temperature
- Rocker switch for adjustment of room temperature setpoint
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and control mode
- Together with the new RXB and RXL controllers for parameter setting

Data sheet N1640

Dimensions (W x H x D) 96 x 119 x 24 mm

	Stock No.	Product No.
	BPZ:QAX34.3	**QAX34.3**

Universal setpoint adjuster with PPS2 interface — QAX39.1



- Setpoint adjuster for room temperature

Data sheet N1646

Dimensions (W x H x D) 48 x 48 x 15 mm

	Stock No.	Product No.
	BPZ:QAX39.1	**QAX39.1**

With communication
For controllers RX.. (PPS2): QAX3.. / QAX8..

QAX84.1/PPS2



Flush-mounted room unit complete with PPS2 interface and white Siemens frame

The flush-mounted room unit QAX84.1/PPS2 consists of QAZ84.1 as front end, RXZ80.1/PPS2 as bus coupling unit and Siemens DELTA-i bezel in titanium white. The functionality is the same as QAX34.1:

- Acquisition of room temperature
- Rocker switch for adjustment of room temperature setpoint
- Rocker switch for mode selection (Off/Auto) and for manual fan control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and control mode

Data sheet	N1649
Voltage supply	PPS2
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC
Degree of protection	IP30
Dimensions (W x H x D)	80 x 80 x 30.5 mm
Mounting	Flush or wall-mounted conduit box

Stock No.	Product No.
BPZ:QAX84.1/PPS2	**QAX84.1/PPS2**

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Wireless room unit with temperature sensor — QAX90.1



The wireless room unit is used to measure the room temperature.
- for use with DESIGO RX room controller in conjunction with the RXZ90.1 receiver
- wireless transmission of the room temperature

Data sheet	N1643
Voltage supply	Mignon (2xAA)
Operating voltage	3 V
Sensing element, temperature	NTC
Measuring range, temperature	0...40 °C
Measurement accuracy	At 25 °C: ±0.25 K At 5...30: ±0.5 K
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 32 mm
Weight	0.07 kg

Stock No.	Product No.
BPZ:QAX90.1	**QAX90.1**

Wireless room unit with temperature sensor and setpoint adjuster — QAX91.1



The wireless room unit is used to measure the room temperature and for adjustment of the room temperature setpoint.
- for use with DESIGO RX room controller in conjunction with the RXZ90.1 receiver
- wireless transmission of the room temperature

Data sheet	N1643
Voltage supply	Mignon (2xAA)
Operating voltage	3 V
Sensing element, temperature	NTC
Measuring range, temperature	0...40 °C
Time constant	≤8 min
Measurement accuracy	At 25 °C: ±0.25 K At 5...30: ±0.5 K
Setpoint readjustment range	±12 K
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Weight	0.17 kg

Stock No.	Product No.
BPZ:QAX91.1	**QAX91.1**

With communication
For controllers RX.. (EnOcean and wireless): QAX9.. / QAW59..

RXZ90.1

Receiver for wireless room operator units with PPS2 interface



For use with DESIGO RX room controller in conjunction with wireless room units QAX90.1 and QAX91.1 for transmission of the room temperature in the 868 MHz frequency band.

Data sheet	N1644
Operating voltage	DC 12...15 V
Power consumption	0.12 VA
Ambient temperature, operation	0...50 °C
Ambient temperature, storage	-25...70 °C
Ambient humidity, operation	<85 % r.h.
Voltage supply	PPS2
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 32 mm
Weight	0.13 kg

Stock No.	Product No.
BPZ:RXZ90.1	**RXZ90.1**

QAW590

Wireless room temperature sensor



Set consisting of transmitter QAX90.1 and receiver RXZ90.1

Data sheet	N1632
Measuring range, temperature	0...50 °C
Indoor wireless range	30 m
Degree of protection	IP30
Communication	PPS, PPS2
Connection cable	2-wire

Stock No.	Product No.
BPZ:QAW590	**QAW590**

QAW591

Wireless room temperature sensor with setpoint readjuster



Set consisting of QAX91.1 transmitter and RXZ90.1 receiver

Same function as QAW590 but with knob for setpoint readjustment, range ± 3 K

Data sheet	N1632

Stock No.	Product No.
BPZ:QAW591	**QAW591**

Radio frequency room unit with EnOcean interface, solar powered — QAX95.1



- Acquisition of the room temperature
- Powered by solar cell
- A gateway is mandatory (EnOcean / LON or EnOcean / KNX)
- Optional use of battery if light conditions are insufficient

For use with units from the following product ranges:
- RXC (together with gateway EnOcean/LONWORKS, RXZ95.1/LON)
- RXB (together with gateway EnOcean/KNX, RXZ97.1/KNX)
- Devices with KNX or LONWORKS® Communication

Data sheet	N1660
Voltage supply	Solar cell
Measuring range, temperature	0...50 °C
Measurement accuracy	±0.4 K
Time constant	≤17 min
Degree of protection	IP30
Dimensions (W x H x D)	81 x 81 x 16 mm
Weight	0.07 kg

Stock No.	Product No.
S55623-H100	**QAX95.1**

Radio frequency room unit with EnOcean interface, solar powered, with set-point adjuster — QAX96.1



- Acquisition of the room temperature
- Room temperature setpoint adjustment
- Powered by solar cell
- A gateway is mandatory (EnOcean / LON or EnOcean / KNX
- Optional use of battery if light conditions are insufficient

For use with units from the following product ranges:
- RXC (together with gateway EnOcean/LONWORKS, RXZ95.1/LON)
- RXB (together with gateway EnOcean/KNX, RXZ97.1/KNX)
- Devices with KNX or LONWORKS® Communication

Data sheet	N1660
Voltage supply	Solar cell
Measuring range, temperature	0...50 °C
Measurement accuracy	±0.4 K
Time constant	≤17 min
Setpoint readjustment range	±10 K
Degree of protection	IP30
Dimensions (W x H x D)	81 x 81 x 16 mm
Weight	0.07 kg

Stock No.	Product No.
S55623-H101	**QAX96.1**

With communication
For controllers RX.. (EnOcean and wireless): QAX9.. / QAW59..

RXZ95.1/LON



Radio frequency receiver with Gateway EnOcean/LonWorks, AC / DC 24 V, external antenna

- Wireless receiver with LONWORKS® interface FTT10A
- Evaluation of up to 9 EnOcean room units (room temperature and setpoint adjustment)

For use with:
- DESIGO RXC
- Devices / systems with LONWORKS® communication

An external antenna is included in the delivery.

Data sheet	N1661
Operating voltage	DC 24 V AC 24 V
Voltage supply	LonWorks bus (LPT10)
Power consumption	0.82 VA
Ambient temperature, operation	-20...60 °C
Ambient humidity, operation	<70 % r.H.
Degree of protection	IP42
Dimensions (W x H x D)	58 x 78 x 46 mm
Weight	0.173 kg

Stock No.	Product No.
S55842-Z100	**RXZ95.1/LON**

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RXZ97.1/KNX



Radio frequency receiver with Gateway EnOcean/KNX, powered via KNX bus

- Wireless receiver with KNX interface
- Evaluation of up to 32 EnOcean room units (Room temperature and setpoint adjustment)
- With RXB, other EnOcean functions may also be integrated: switches, window contacts, motion detectors
- Other EnOcean functions (dimming, blinds, light sensors) can be realized in KNX systems
- Powered via KNX bus
- With internal antenna

Can be used with:
- DESIGO RXB
- Devices / Systems with KNX Communication

Data sheet	N1662
Operating voltage	DC 24 V
Voltage supply	KNX bus
Power consumption	0.6 VA
Ambient temperature, operation	-5...45 °C
Ambient humidity, operation	5...93 % r.H.
Degree of protection	IP20
Dimensions (W x H x D)	71 x 71 x 27 mm
Weight	0.07 kg

Stock No.	Product No.
S55842-Z101	**RXZ97.1/KNX**

Versatile room units with LonWorks interface — QAX5..



Versatile room units with LONWORKS bus communication.
- Acquisition of room temperature
- Buttons for adjustment of room temperature setpoint
- Rocker switch for selecting the HVAC operating state (Off / Auto) and for manual fan speed control with fan coil systems (up to 3 speeds)
- LCD with display of room temperature and operating state
- Configurable keypad for operation of lighting and blinds
- LONMark-compatible bus communication

Data sheet	N1648
Voltage supply	LonWorks bus (LPT10)
Communication	Bus: LonWorks
Mounting location	Indoors
Mounting	Directly on wall In recessed or top-mounted conduit box
Dimensions (W x H x D)	80 x 187 x 20 mm

Versatile room unit with LonWorks interface — QAX50.1

For operating HVAC systems and controlling lighting systems (on / off) and blinds.

Data sheet N1648

Stock No.	Product No.
BPZ:QAX50.1	**QAX50.1**

Versatile room unit with LonWorks interface — QAX51.1

For operating HVAC systems and controlling lighting systems (dimmed) and blinds.

Data sheet N1648

Stock No.	Product No.
BPZ:QAX51.1	**QAX51.1**

With communication
For controllers RM.. (KNX) QAW74..

QAW740



Room unit with KNX bus

Configurable unit with display of operating mode, timer, temperatures and fault.

With 3 operating elements:
- Knob for setpoint readjustments
- Operating mode button
- Timer button

Data sheet	N1633
Setpoint readjustment range	±3 K
Measuring range, temperature	0...50 °C
Degree of protection	IP20
Communication	KNX TP1 EE
Connection cable	2-wire

Stock No.	Product No.
BPZ:QAW740	**QAW740**

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Sensors



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Overview sensors

Temperature









Model		Room sensors	Duct sensors	Immersion sensors	Outside sensors	Outside sensors	Strap-on sensors	Cable sensors
Type reference		QAA	QAM	QAE	QAC	QAC	QAD	QAP
Category:	Standard	■	■	■		■	■	■
	High Quality				■			

Humidity









Model		Room sensors	Room sensors	Room sensors	Room sensors	Duct sensors	Duct sensors	Outside sensors
Type reference		QFA	QFA..D	QFA	QFA..D	QFM	QFM..D	QFA
Category	Standard	■	■			■		
	High Quality			■	■	■	■	■
	Certified			■	■	■		

Air quality






Model		Room sensors		Room sensors	Air duct sensors		Air duct sensors
Type reference		QPA		QPA..D	QPM		QPM..D
Measured value	VOC	■			■		
	CO_2		■			■	
	CO_2 / VOC		■	■		■	■
	CO_2 / T		■	■		■	■
	CO_2 / H / T		■	■		■	■
Display				■			■
Category	Basic	■			■		
	Standard		■	■		■	■

Pressure








Model		Differential pressure sensors	Differential pressure sensors	Differential pressure sensors	Differential pressure sensors	Absolute pressure sensors	Absolute pressure sensors
Medium		Air	Air	Liquids / gases	Liquids / gases	Liquids / gases	Refrigeration
Type reference		QBM65/75	QBM66	QBE63	QBE64	QBE2002-P	QBE2001-P
Category	Standard		■	■	■	■	■
	High Quality	■					
	Certified	■					

Xtra





Model		Solar sensors	Flue gas temperature sensors	Air velocity sensor
Type reference		QLS60	FGT-PT1000	QVM62.1
Medium			Air	Air
Measured value		Intensity of radiation	Flue gas temperature	Velocity, volumetric flow
Category	Standard	■		■
	High Quality		■	

Room temperature sensor, passive

QAA2..

Measuring range, temperature	0...50 °C
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 32 mm



Range overview QAA2..

Sensing element, temperature	Time constant [min]	Measurement accuracy [°C]	Data sheet	Stock No.	Product No.
LG-Ni1000	7	At 0...50 °C: ±0.8	N1721	BPZ:QAA24	**QAA24**
Pt100	7	At 0...50 °C: ±0.6	N1745	BPZ:QAA2010	**QAA2010**
Pt1000	7	At 0...50 °C: ±0.6	N1745	BPZ:QAA2012	**QAA2012**
NTC 10k	7	At 0...50 °C: ±0.8	N1745	BPZ:QAA2030	**QAA2030**

Room temperature sensor, active

QAA20..1

Data sheet	N1749
Measuring range	0...50 °C
Measurement accuracy	at AC 24 V in the range of -25 °C...+25 °C ± 0.75 K -50 °C...+50 °C ±0.9 K
Time constant	7 min
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm



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Range overview QAA20..1

Analog output, signal	Operating voltage	Display	Stock No.	Product No.
DC 0...10 V	DC 13.5...35 V	---	BPZ:QAA2061	**QAA2061**
DC 4...20 mA	DC 13.5...35 V	---	BPZ:QAA2071	**QAA2071**
DC 0...10 V	DC 13.5...35 V	LCD	BPZ:QAA2061D	**QAA2061D**

Symaro™ Temperature
Room sensors QAA..

QAA64

Room temperature sensor LG-Ni1000 for mounting on recessed conduit boxes



For mounting on recessed conduit boxes.
Not suited for cooling in VAV installations.

Data sheet	N1722
Measuring range, temperature	0...50 °C
Sensing element, temperature	LG-Ni1000
Measurement accuracy	At 0...50 °C: ±0.8 K
Time constant	6.5 min
Connection, electrical	Screw terminals
Degree of protection	IP40
Dimensions (W x H x D)	84 x 84 x 25 mm

Stock No.	Product No.
BPZ:QAA64	**QAA64**

QAA32

Room temperature sensor NTC 3 kOhm



Data sheet	N1747
Measuring range, temperature	0...40 °C
Sensing element, temperature	NTC 3k
Measurement accuracy	At 25 °C: ±0.3 K
Time constant	6 min
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	97 × 100 × 36 mm

Stock No.	Product No.
BPZ:QAA32	**QAA32**

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Accessories for QAA32

Product Title	Stock No.	Product No.
Mounting plate 96 x 120 mm for 2 x 4" housing	BPZ:ARG70.1	**ARG70.1**
Mounting plate 120 x 120 mm for 4 x 4" housing	BPZ:ARG70	**ARG70**

Duct temperature sensor, passive

QAM21..

Fully active, flexible probe for averaging.



Data sheet	N1761
Time constant	At v = 2 m/s: 30 s
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP42

Note on fixing:
Supplied complete with mounting flange.

Range overview QAM21..

Probe length [mm]	Sensing element, temperature	Measuring range, temperature [°C]	Measurement accuracy [K]	Stock No.	Product No.
400	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.040	**QAM2120.040**
2000	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.200	**QAM2120.200**
6000	LG-Ni1000	-50...80	At -50...80 °C: ±1.8	BPZ:QAM2120.600	**QAM2120.600**
400	Pt100	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2110.040	**QAM2110.040**
400	Pt1000	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2112.040	**QAM2112.040**
2000	Pt1000	-50...80	At -50...80 °C: ±0.7	BPZ:QAM2112.200	**QAM2112.200**
400	NTC 10k	-40...80	At -40...80 °C: ±1.2	BPZ:QAM2130.040	**QAM2130.040**

Duct temperature sensor active

QAM21..1..

Fully active, flexible probe for averaging.



Data sheet	N1762
Measuring range, temperature	-50...50 °C
Measurement accuracy	At -50...50 °C: ±0.9 K
Time constant	30 s at v = 2 m/s
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP54
Power consumption	≤ 1 VA

Note on fixing:
Supplied complete with mounting flange.

Range overview QAM21..1..

Analog output, signal	Operating voltage	Probe length [mm]	Stock No.	Product No.
DC 0...10 V	DC 13.5...35 V	400	BPZ:QAM2161.040	**QAM2161.040**
DC 4...20 mA	DC 13.5...35 V	400	BPZ:QAM2171.040	**QAM2171.040**

Accessories for QAM21.. and QAM21..1..

Product Title	Data sheet	Stock No.	Product No.
Mounting flange, adjustable depth	N1193	BPZ:AQM63.0	**AQM63.0**
3 capillary supports and 3 spacers for QAF.. Mounting	N1821	BPZ:AQM63.2	**AQM63.2**
6 Capillary tube clamps for QAF../QAM.. mounting	N1284	BPZ:AQM63.3	**AQM63.3**

FK-TP/200

Duct temperature sensor Pt100, for high temperature



With connecting head to DIN.
No protection pocket required.

Data sheet	N1778
Measuring range, temperature	-60...300 °C
Sensing element, temperature	Pt100
Time constant	<100 s at v = 1 m/s
Connection, electrical	Screw terminals
Type of fixing	Flange
Material, immersion pocket	Stainless steel
Immersion length	200 mm
Degree of protection	IP54
Dimensions (W x H x D)	60 x 80 x 83 mm
Sensing element, temperature	Pt100

Supplied complete with mounting flange.

Stock No.	Product No.
BPZ:FK-TP/200	**FK-TP/200**

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Immersion temperature sensor, passive

QAE21..



Data sheet	N1781
Time constant	With protection pocket: 30 s Without protection pocket: 8 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Dimensions (W x H x D)	80 x 60 x 31 mm

Fixing is made by protection pocket or compression fitting. If for the nominal pressure no entry can be found in the table, no protection pocket is included as standard and the nominal pressure depends on the protection pocket used (see accessories). By using the compression fitting AQE2102 the nominal pressure is 16 bar (PN16).

Range overview QAE21.. Immersion temperature sensor with protection pocket:

Sensing element, temperature	Measuring range, temperature [°C]	Immersion length [mm]	Measurement accuracy [K]	Degree of protection	PN class	Stock No.	Product No.
LG-Ni1000	-30...130	100	At -30...130 °C: ±1.3	IP42	PN 10	BPZ:QAE2120.010	**QAE2120.010**
LG-Ni1000	-30...130	150	At -30...130 °C: ±1.3	IP42	PN 10	BPZ:QAE2120.015	**QAE2120.015**

Range overview QAE21.. Immersion temperature sensor without protection pocket:

Sensing element, temperature	Measuring range, temperature [°C]	Immersion length [mm]	Measurement accuracy [K]	Degree of protection	PN class	Stock No.	Product No.
Pt100	-30...130	100	At -30...130 °C: ±0,95	IP42	---	BPZ:QAE2111.010	**QAE2111.010**
Pt100	-30...130	150	At -30...130 °C: ±0.95	IP42	---	BPZ:QAE2111.015	**QAE2111.015**
Pt1000	-30...130	100	At -30...130 °C: ±0.95	IP42	---	BPZ:QAE2112.010	**QAE2112.010**
Pt1000	-30...130	150	At -30...130 °C: ±0.95	IP42	---	BPZ:QAE2112.015	**QAE2112.015**
LG-Ni1000	-30...130	100	At -30...130 °C: ±1.3	IP42	---	BPZ:QAE2121.010	**QAE2121.010**
LG-Ni1000	-30...130	150	At -30...130 °C: ±1,3	IP42	---	BPZ:QAE2121.015	**QAE2121.015**
NTC 10k	-30...125	100	At -30...125 °C: ±1.7	IP42	---	BPZ:QAE2130.010	**QAE2130.010**
NTC 10k	-30...125	150	At -30...125 °C: ±1.7	IP42	---	BPZ:QAE2130.015	**QAE2130.015**

Protecktion pocket are not included and needs to be ordered seperately

Symaro™ Temperature
Immersion sensors: QAE.. / FT-TP..

QAE21..4

Immersion temperature sensor active



Data sheet	N1782
Measuring range, temperature	-10…120 °C
Time constant	With protection pocket: 30 s
Material, immersion pocket	Stainless steel
Connection, electrical	Screw terminals
Measurement accuracy	At 0…70 °C: ±1 K At -40…120 °C: ±1.4 K
Power consumption	≤ 1 VA
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 39 mm

Fixing is made by protection pocket or compression fitting. No protection pocket is included as standard. The nominal pressure depends on the protection pocket used (see accessories). By using the compression fitting AQE2102 the nominal pressure is 16 bar (PN 16).

Range overview QAE21..4

Analog output, signal	Operating voltage	Immersion length [mm]	Stock No.	Product No.
DC 0…10 V	AC 24 V DC 13.5…35 V	100	BPZ:QAE2164.010	**QAE2164.010**
DC 0…10 V	AC 24 V DC 13.5…35 V	150	BPZ:QAE2164.015	**QAE2164.015**
DC 4…20 mA	DC 13.5…35 V	100	BPZ:QAE2174.010	**QAE2174.010**
DC 4…20 mA	DC 13.5…35 V	150	BPZ:QAE2174.015	**QAE2174.015**

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Accessories for QAE21..

Packaging unit	Protection pocket [LW7]	Material	PN class	Stock No.	Product No.
1 pc	100 mm, G½"	Stainless steel V4A	PN 16	BPZ:ALT-SS100	**ALT-SS100**
1 pc	150 mm, G½"	Stainless steel V4A	PN 16	BPZ:ALT-SS150	**ALT-SS150**
1 pc	100 mm, G½" (with flange)	Stainless steel V4A	PN 40	BPZ:ALT-SSF100	**ALT-SSF100**
1 pc	150 mm, G½" (with flange)	Stainless steel V4A	PN 40	BPZ:ALT-SSF150	**ALT-SSF150**
1 pc	100 mm, G½"	Brass, nickel-plated	PN 10	BPZ:ALT-SB100	**ALT-SB100**
1 pc	150 mm, G½"	Brass, nickel-plated	PN 10	BPZ:ALT-SB150	**ALT-SB150**

Product Title	Data sheet	Stock No.	Product No.
Compression fitting with threaded nipple ½"	N1781	BPZ:AQE2102	**AQE2102**

Immersion temperature sensor Ø 6 mm with cable and fitting — QAE26.9

With connecting cable



Data sheet	N1790
Measuring range, temperature	-40...180 °C
Sensing element, temperature	LG-Ni1000
Time constant	<3 s
Connection cable	Silicone, 2-wire
Cable length	1.2 m
Material, immersion pocket	Stainless steel
Immersion length	25...260 mm
Diameter	6 mm
Type of fixing	Thread R ¼ "
PN class	PN 40
Degree of protection	IP64

Stock No.	Product No.
BPZ:QAE26.9	**QAE26.9**

Immersion temperature sensur Ø 4 mm with cable and fitting — QAE26.9..

With connecting cable



Data sheet	N1790
Time constant	<2.5 s
Cable length	2 m
Type of fixing	R¼ " thread
PN class	PN 16
Measurement accuracy	At -50...180 °C: ±1.75 K
Diameter	4 mm
Degree of protection	IP64
Material, immersion pocket	Stainless steel
Sensing element, temperature	LG-Ni1000

Other technical data identical to QAE26.9

Packaging unit QAE1020.024 100 pieces

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Range overview QAE26.9..

Immersion length [mm]	Measuring range, temperature [°C]	Connection cable	Stock No.	Product No.
15...65	-50...180	Silicone	BPZ:QAE26.90	**QAE26.90**
15...125	-50...180	Silicone	BPZ:QAE26.91	**QAE26.91**
15...240	-50...180	Silicone	BPZ:QAE26.93	**QAE26.93**
15...465	-50...180	Silicone	BPZ:QAE26.95	**QAE26.95**
15...240	-5...105	PVC	BPZ:QAE1020.024	**QAE1020.024**

Symaro™ Temperature
Immersion sensors: QAE.. / FT-TP..

QAE3..

Immersion temperature sensor for high temperature



With connection head made of die-cast aluminium.
No protection pocket required.

Data sheet	N1794
Sensing element, temperature	Pt100
Time constant	25 s
Connection, electrical	Screw terminals
Material, immersion pocket	Stainless steel
Type of fixing	Protection pocket G½ "
Material, housing	Die-cast aluminum
PN class	PN 40
Degree of protection	IP65
Dimensions (W x H x D)	69 x 92 x 81 mm

Range overview QAE3..

Measuring range, temperature [°C]	Analog output, signal	Immersion length [mm]	Operating voltage	Stock No.	Product No.
-50...200	Passive	100	-	BPZ:QAE3010.010	**QAE3010.010**
-50...200	Passive	160	-	BPZ:QAE3010.016	**QAE3010.016**
0...200	DC 4...20 mA	100	DC 7.5...30	BPZ:QAE3075.010	**QAE3075.010**
0...200	DC 4...20 mA	160	DC 7.5...30	BPZ:QAE3075.016	**QAE3075.016**

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FT-TP/..

Immersion temperature sensor Pt100, short time constant, for high temperature



With connecting head to DIN.
No protection pocket required.

Data sheet	N1797
Measuring range, temperature	-100...450 °C
Sensing element, temperature	Pt100
Time constant	Air v = 1 m/s: <100 s Water v = 0,4 m/s: <5 s
Connection, electrical	Screw terminals
Type of fixing	Protection pocket G ½ "
Material, immersion pocket	Stainless steel
PN class	PN 40
Degree of protection	IP54
Dimensions (W x H x D)	60 x 80 x 85 mm

Range overview FT-TP/..

Immersion length [mm]	Stock No.	Product No.
100	BPZ:FT-TP/100	**FT-TP/100**
400	BPZ:FT-TP/400	**FT-TP/400**

Strap-on temperature sensor

QAD2..



Data sheet	N1801
Connection, electrical	Screw terminals
Degree of protection	IP42
Dimensions (W x H x D)	60 x 67 x 43 mm

Supplied complete with strap for pipe diameters from 15...140 mm.

Range overview QAD2..

Sensing element, temperature	Measuring range, temperature [°C]	Time constant [s]	Stock No.	Product No.
LG-Ni1000	-30...130	3	BPZ:QAD22	**QAD22**
Pt100	-30...130	3	BPZ:QAD2010	**QAD2010**
Pt1000	-30...130	3	BPZ:QAD2012	**QAD2012**
NTC 10k	-30...125	6	BPZ:QAD2030	**QAD2030**

Strap-on temperature sensor with cable LG-Ni1000

QAD26.220

With cable, without housing



Data sheet	N1802
Measuring range, temperature	-35...90 °C
Sensing element	LG-Ni 1000
Time constant	<10 s
Connection cable	2-wire
Cable length	2 m
Degree of protection	IP65

Supplied complete with strap for pipe diameters from 10...50 mm.

	Stock No.	Product No.
	BPZ:QAD26.220	**QAD26.220**

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Symaro™ Temperature
Outside sensors QAC..

QAC..



Outside sensor, passive

For acquiring the outside temperature and – to a lesser degree – solar radiation, the effect of wind and the temperature of the wall.

Data sheet	N1811
Connection, electrical	Screw terminals
Degree of protection	IP54
Material	Plastic (ASA)

Range overview QAC..

Measuring range, temperature [°C]	Sensing element, temperature	Measurement accuracy [°C]	Time constant [min]	Stock No.	Product No.
-50...70	Pt100	±0.3 K at 0	14	BPZ:QAC2010	**QAC2010**
-50...70	Pt1000	±0.3 K at 0	14	BPZ:QAC2012	**QAC2012**
-50...70	LG-Ni1000	±0.4 K at 0	14	BPZ:QAC22	**QAC22**
-50...70	NTC 575	±1 K at -10...+20	12	BPZ:QAC32	**QAC32**
-40...70	NTC 10k	±0,46 K at 25	14	BPZ:QAC2030	**QAC2030**

QAC31..



Outside temperature sensor active

The QAC31.. may be used as an high-quality room sensor.

Data sheet	N1814
Measuring range, temperature	-50...50 °C
Time constant	20 min
Connection, electrical	Screw terminals
Degree of protection	IP65
Sensing element, temperature	Pt1000

Range overview QAC31..

Analog output, signal	Operating voltage	Measurement accuracy [K]	Stock No.	Product No.
DC 0...10 V	AC 24 V DC 13.5...35 V	At -50...50 °C: ±0.9	BPZ:QAC3161	**QAC3161**
DC 4...20 mA	DC 13.5...35 V	At -50...50 °C: ±0.9	BPZ:QAC3171	**QAC3171**

Window pane temperature sensor — QAT22



Data sheet	N1830
Cable length	1.5 m
Measurement accuracy	At 0 °C: ±0.4 K
Measuring range, temperature	-10...50 °C
Sensing element, temperature	LG-Ni1000
Time constant	30 s
Connection cable	2-wire

Stock No.	Product No.
BPZ:QAT22	**QAT22**

Solar sensor — QLS60

For measuring the solar radiation intensity.



Data sheet	N1943
Operating voltage	AC 24 V DC 18...30 V
Power consumption	2.5 VA
Analog output, signal	DC 0...10 V DC 4...20 mA
Measuring range	0...1000 W/m²
Time constant	≤2 s
Connection, electrical	Screw terminals
Degree of protection	IP65
Dimensions (W x H x D)	51 x 92 x 46 mm

Stock No.	Product No.
BPZ:QLS60	**QLS60**

Flue gas temperature sensor Pt1000 — FGT-PT1000

For measuring the flue gas temperature in flueways.



Data sheet	N1846
Sensing element, temperature	Pt1000
Measuring range, temperature	-20...400 °C
Connection cable	2-wire, 1.5 m, teflon with steel wire mesh
Material	Stainless steel V4A
Cable length	1.5 m
Material, immersion pocket	Sensor sleeve, stainless steel

Stock No.	Product No.
BPZ:FGT-PT1000	**FGT-PT1000**

Symaro™ Temperature
Cable sensors: QAP.. / QAZ.. / QAH..

QAP..



Cable temperature sensor (6 x 40.5 mm) for HVAC applications

Data sheet	N1831
Time constant	Fitted to pipe: <20 s
Material, protection pocket	Stainless steel
Type of fixing	Cable tie or with accessories
Degree of protection	IP65
Protection pocket	40,5 x 6 mm

Range overview QAP..

Cable length [m]	Sensing element, temperature	Connection cable	Measurement accuracy [K]	Measuring range, temperature [°C]	Stock No.	Product No.
1.5	LG-Ni1000	Silicone	At -30...130 °C: ±1.3	-30...130	BPZ:QAP21.3	**QAP21.3**
8	LG-Ni1000	Silicone	At -30...130 °C: ±1.3	-30...130	BPZ:QAP21.3/8000	**QAP21.3/8000**
1.5	Pt100	Silicone	At -30...130 °C: ±0.95	-30...130	BPZ:QAP2010.150	**QAP2010.150**
1.5	Pt1000	Silicone	At -30...130 °C: ±0.95	-30...130	BPZ:QAP2012.150	**QAP2012.150**
2	LG-Ni1000	PVC	At -30...130 °C: ±1.3	-25...95	BPZ:QAP22	**QAP22**
2	NTC 10k	PVC	At -25...95 °C: ±1.4	-25...95	BPZ:QAP1030.200	**QAP1030.200**

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Accessories for QAP..

Product Title	Packaging unit	Data sheet	Stock No.	Product No.
Changeover cable holder for QAP..	Set of 10 pieces	N1831	BPZ:ARG22.1	**ARG22.1**
Aluminium bar attachment for QAP..	Set of 5 pieces	N1831	BPZ:ARG22.2	**ARG22.2**
Terminal housing		N1207	S55700-P131	**RAK-H-M**
Cable holder for protection pocket mounting		N1831	BPZ:421314160	**421314160**
Sensor holder for pipe mounting		N1832	BPZ:466017300	**466017300**
Sensor holder for collector mounting		N1832	BPZ:466017310	**466017310**

Cable temperature sensor for high-temperature applications (180°C) QAP21.2

For acquiring the water temperature in flat solar collectors



Data sheet	N1833
Measuring range, temperature	-30...180 °C
Measurement accuracy	At -30...180 °C: ±1.65 K
Sensing element, temperature	LG-Ni1000
Time constant	Fitted to pipe: <20 s
Connection cable	Silicone
Cable length	1.5 m
Material, protection pocket	Stainless steel
Degree of protection	IP67
Protection pocket	50 x 6 mm

Stock No.	Product No.
BPZ:QAP21.2	**QAP21.2**

Cable temperature sensor for use in refrigeration plants (-50 °C) QAZ21.68..



Data sheet	N1848
Measuring range, temperature	-50...80 °C
Sensing element, temperature	LG-Ni1000
Time constant	Fitted to pipework <20 s
Connection cable	Silicone, 2-wire
Material, protection pocket	Stainless steel
Degree of protection	IP67
Protection pocket	50 x 6 mm

Supplied complete with 2 cable ties and sleeve coated with thermal conductive wax for fitting to pipework.

Range overview QAZ21.68..

Cable length [m]	Packaging unit	Stock No.	Product No.
2	1 piece	BPZ:QAZ21.682/101	**QAZ21.682/101**
5	100 pieces	BPZ:QAZ21.685/101	**QAZ21.685/101**

Cable sensor for fan coil applications QAH11..

For installation in fan coil units as
- a return air temperature sensor
- a changeover sensor



Data sheet	N1840
Measuring range	For fixed cable
Measuring range, temperature	-20...70 °C
Sensing element, temperature	NTC 3k
Time constant	1.5 min at v = 0 m/s
Cable length	2.5 m

Symaro™ Temperature
Cable sensors: QAP.. / QAZ.. / QAH..

Range overview QAH11..

Connection cable	Packaging unit	Stock No.	Product No.
2-wire, cable complete with connectors	10 pieces	BPZ:QAH11	**QAH11**
2-wire, with ferrules	10 pieces	BPZ:QAH11.1	**QAH11.1**

Accessories for QAH11..

Product Title	Packaging unit	Data sheet	Stock No.	Product No.
Changeover cable holder for QAH11..	Set of 10 pieces	N1840	BPZ:ARG86.3	**ARG86.3**

Room sensor for rel. humidity / temperature

QFA20..



For relative humidity and temperature

Data sheet	N1857
Measuring range, humidity	0...95 % r.h.
Measurement accuracy	At 0...95 % r.h. and 23 °C: ±5 % At 30...70 % r.h. and 23 °C: ±3 %
Time constant	Humidity <20 s Temperature <8.5 min
Connection, electrical	Screw terminals
Degree of protection	IP30

Range overview QFA20..

Signal output humidity	Signal output temperature	Operating voltage	Measuring range, temperature	Display	Stock No.	Product No.
DC 0...10 V		AC 24 V DC 13.5...35 V			BPZ:QFA2000	**QFA2000**
DC 4...20 mA		DC 13.5...35 V			S55720-S114	QFA2001
DC 0...10 V	LG-Ni1000	AC 24 V DC 13.5...35 V	0...50 °C		BPZ:QFA2020	**QFA2020**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C		BPZ:QFA2060	**QFA2060**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C	LCD	BPZ:QFA2060D	**QFA2060D**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C		S55720-S115	QFA2071

Room sensors for rel. Humidity / temperature for demanding requirements

QFA31..



For relative humidity and temperature

Data sheet	N1858
Measuring range, humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature: <8.5 min
Measuring range, temperature	0...50 °C -35...35 °C -40...70 °C
Connection, electrical	Screw terminals
Degree of protection	IP65

NEW PRODUCT

Symaro™ Humidity and temperature Room sensors QFA..

Range overview QFA31..

Signal output humidity	Signal output temperature	Operating voltage	Measuring range, temperature	Display	Stock No.	Product No.
DC 0...10 V		AC 24 V DC 13.5...35 V	---	---	BPZ:QFA3100	**QFA3100**
DC 4...20 mA		DC 13.5...35 V	---	---	BPZ:QFA3101	**QFA3101**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C	---	BPZ:QFA3160	**QFA3160**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C	LCD	BPZ:QFA3160D	**QFA3160D**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V	0...50 °C -35...35 °C -40...70 °C	---	BPZ:QFA3171	**QFA3171**
DC 4...20 mA	DC 4...20 mA	DC 13,5...35 V	0...50 °C -35...35 °C -40...70 °C	LCD	BPZ:QFA3171D	**QFA3171D**

QFA41..



Room sensors for rel. humidity / temperature for demanding requirements, with calibration certificate

For relative humidity and temperature

Data sheet	N1859
Measuring range, humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature: <8.5 min
Measuring range, temperature	0...50 °C -35...35 °C -40...70 °C
Connection, electrical	Round connector
Degree of protection	IP65

Range overview QFA41..

Signal output humidity	Signal output temperature	Operating voltage	Display	Stock No.	Product No.
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	---	BPZ:QFA4160	**QFA4160**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13,5...35 V	LCD	BPZ:QFA4160D	**QFA4160D**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V	---	BPZ:QFA4171	**QFA4171**
DC 4...20 mA	DC 4...20 mA	DC 13,5...35 V	LCD	BPZ:QFA4171D	**QFA4171D**

Accessories for QFA..

Product Title	Data sheet	Stock No.	Product No.
Filter cap for humidity sensor	N1858	BPZ:AQF3101	**AQF3101**
Exchangeable measuring tip	N1858	BPZ:AQF3150	**AQF3150**
Remote sensing cable 3 m for sensor tip.	N1859	BPZ:AQY2010	**AQY2010**
Exchangeable measuring tip, with calibration certificate	N1859	BPZ:AQF4150	**AQF4150**

Radiation shield for exterior wall mounting **AQF3100**

In combination with QFA31... room sensors.

Data sheet N1858



Stock No.	Product No.
BPZ:AQF3100	**AQF3100**

Service-Set **AQF3153**

The service set comprises three measuring tips without sensor element. Each tip signals a predefined temperature and humidity value to the basic unit:
- 85%, 40 °C
- 50%, 23 °C
- 20%, 5 °C

The fixed values are available at the signal outputs. The accuracy is the same as for the test function. The measuring tips can be exchanged in operation.

Data sheet N1858

Stock No.	Product No.
BPZ:AQF3153	**AQF3153**

Symaro™ Humidity and temperature Duct sensors QFM..

QFM21..

Duct sensor for rel. humidity / temperature



For relative humidity and temperature

Data sheet	N1864
Measuring range, humidity	0...95 % r.h.
Measurement accuracy	Humidity at 30...70 % r.h. and 23 °C: ±3 % r.h. Temperature, at 15...35 °C: ±0.8 K Temperature, at 35...50 °C: ±1.0 K
Time constant	Humidity: <20 s Temperature in with 2 m/s moved air: <3.5 min
Measuring range, temperature	0...50 °C -35...35 °C -40...70 °C
Immersion length	90...154 mm
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 39 mm

Range overview QFM21..

Signal output humidity	Signal output temperature	Operating voltage	Stock No.	Product No.
DC 0...10 V		AC 24 V DC 13.5...35 V	BPZ:QFM2100	**QFM2100**
DC 4...20 mA		DC 13.5...35 V	BPZ:QFM2101	**QFM2101**
DC 0...10 V	LG-Ni1000	AC 24 V DC 13.5...35 V	BPZ:QFM2120	**QFM2120**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	BPZ:QFM2160	**QFM2160**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V	BPZ:QFM2171	**QFM2171**

QFM31..

Duct sensors for rel. humidity / temperature for demanding requirements



For relative humidity and temperature.

Data sheet	N1882
Measuring range, humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature in with 2 m/s moved air: <3.5 min
Measuring range, temperature	0...50 °C -35...35 °C -40...70 °C
Immersion length	90...206 mm
Connection, electrical	Screw terminals
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	80 x 88 x 39 mm

Range overview QFM31..

Signal output humidity	Signal output temperature	Operating voltage	Display	Stock No.	Product No.
DC 0...10 V		AC 24 V DC 13.5...35 V		BPZ:QFM3100	**QFM3100**
DC 4...20 mA		DC 13.5...35 V		BPZ:QFM3101	**QFM3101**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V		BPZ:QFM3160	**QFM3160**
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	LCD	BPZ:QFM3160D	**QFM3160D**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V		BPZ:QFM3171	**QFM3171**
DC 4...20 mA	DC 4...20 mA	DC 13,5...35 V	LCD	BPZ:QFM3171D	**QFM3171D**

Duct sensor for rel. humidity/temperature for demanding requirements, with calibration certificate

QFM41..



For relative humidity and temperature

Data sheet	N1883
Measuring range, humidity	0...100 % r.h.
Measurement accuracy	Humidity at 0...100 % r.h. and 23 °C: ±2 % r.h. Temperature, at 15...35 °C: ±0.6 K Temperature, at 40...70 °C: ±0.8 K
Time constant	Humidity: <20 s Temperature in with 2 m/s moved air: <3.5 min
Measuring range, temperature	0...50 °C -35...35 °C -40...70 °C
Immersion length	90...206 mm
Connection, electrical	Round connector
Type of fixing	Flange
Degree of protection	IP65
Dimensions (W x H x D)	80 x 117 x 39 mm

Range overview QFM41..

Signal output humidity	Signal output temperature	Operating voltage	Stock No.	Product No.
DC 0...10 V	DC 0...10 V	AC 24 V DC 13.5...35 V	BPZ:QFM4160	**QFM4160**
DC 4...20 mA	DC 4...20 mA	DC 13.5...35 V	BPZ:QFM4171	**QFM4171**
DC 4...20 mA		DC 13.5...35 V	BPZ:QFM4101	QFM4101

NEW PRODUCT

Accessories for QFM..

Product Title	Data sheet	Stock No.	Product No.
Filter cap for humidity sensor	N1858	BPZ:AQF3101	**AQF3101**
Exchangeable measuring tip	N1858	BPZ:AQF3150	**AQF3150**
Exchangeable measuring tip, with calibration certificate	N1859	BPZ:AQF4150	**AQF4150**

AQF3153

Service-Set

The service set comprises three measuring tips without sensor element. Each tip signals a predefined temperature and humidity value to the basic unit:

- 85%, 40 °C
- 50%, 23 °C
- 20%, 5 °C

The fixed values are available at the signal outputs. The accuracy is the same as for the test function. The measuring tips can be exchanged in operation.

Data sheet N1858

Stock No.	Product No.
BPZ:AQF3153	**AQF3153**

Air duct differential pressure sensor, DC 0...10 V

QBM65..



For use with air or nonaggressive gases, for extremely demanding accuracy and quality requirements.
With diaphragm sensing element.
Availabe with pressure-linear or extracting-the-root characteristic and digital display. With extracting-the-root characteristic, the pressure measuring range is adjustable.

Data sheet	N1916
Operating voltage	AC 24 V DC 13.5...33 V
Power consumption	0.5 VA
Analog output, signal	DC 0...10 V
Sensing element	Pressure diaphragm
Response time	<10 ms
Pressure conneciton	Connection branch, 6.2 mm dia.
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	101 x 86 x 49 mm

CE-, UL- and CSA-listed.
Supplied complete with PVC connecting tube of 2 m.

Range overview QBM65.. with pressure-linear characteristic

Measuring range, pressure [Pa]	Max. permissible pressure [kPa]	Measurement accuracy [% FS]	Stock No.	Product No.
0...100	5	±3	BPZ:QBM65-1	**QBM65-1**
-50...50	5	±3	BPZ:QBM65-1U	**QBM65-1U**
0...300	5	±1.5	BPZ:QBM65-3	**QBM65-3**
0...500	10	±1.5	BPZ:QBM65-5	**QBM65-5**
0...1000	10	±1.5	BPZ:QBM65-10	**QBM65-10**
0...2500	20	±1.5	BPZ:QBM65-25	**QBM65-25**

Note on max. permissible pressure: overpressure on one side

Range overview QBM65.. with digital display and pressure-linear characteristic

Measuring range, pressure [Pa]	Max. permissible pressure [kPa]	Measurement accuracy [% FS]	Stock No.	Product No.
0...100	5	±3	BPZ:QBM65.1-1	**QBM65.1-1**
0...300	5	±1.5	BPZ:QBM65.1-3	**QBM65.1-3**
0...500	10	±1.5	BPZ:QBM65.1-5	**QBM65.1-5**
0...1000	10	±1.5	BPZ:QBM65.1-10	**QBM65.1-10**
0...2500	20	±1.5	BPZ:QBM65.1-25	**QBM65.1-25**

Note on max. permissible pressure: overpressure on one side

With the QBM65.1-10 and QBM65.1-25 the value displayed x 10 = measured value

Symaro™ Pressure
Differential pressure sensor air and non-aggressive gas QBM..

Range overview QBM65.. with extracting-the-root characteristic

Measuring range, pressure [Pa]	Max. permissible pressure [kPa]	Adjustable end value [Pa]	Stock No.	Product No.
0...100	5	40...100	BPZ:QBM65.2-1	**QBM65.2-1**
0...300	5	120...300	BPZ:QBM65.2-3	**QBM65.2-3**
0...500	10	200...500	BPZ:QBM65.2-5	**QBM65.2-5**
0...1000	10	400...1000	BPZ:QBM65.2-10	**QBM65.2-10**
0...2500	20	1000...2500	BPZ:QBM65.2-25	**QBM65.2-25**

For measurement accuracy, refer to data sheet N1916
Note on max. permissible pressure: overpressure on one side

QBM65-../C

Air duct differential pressure sensor with calibration certificate



Technical data and accessories identical to QFM65...
With plug-in connection.

Data sheet N1919

Range overview QBM65-../C

Measuring range, pressure [Pa]	Max. permissible pressure [kPa]	Measurement accuracy [% FS]	Stock No.	Product No.
0...100	5	±3	BPZ:QBM65-1/C	**QBM65-1/C**
0...300	5	±1.5	BPZ:QBM65-3/C	**QBM65-3/C**
0...1000	10	±1.5	BPZ:QBM65-10/C	**QBM65-10/C**
0...2500	20	±1.5	BPZ:QBM65-25/C	**QBM65-25/C**

Note on max. permissible pressure: overpressure on one side

Accessories for QBM65..

Product Title	Data sheet	Stock No.	Product No.
Mounting bracket for differenential pressure sensor for air	N1916	BPZ:AQB2000	**AQB2000**
Top hat rail adapter for differential pressure sensor for air	N1910	BPZ:AQB21.2	**AQB21.2**
Air duct probe for simple, quick and airtight mounting	N1589	BPZ:FK-PZ1	**FK-PZ1**
Air duct probe for accurate measurements	N1589	BPZ:FK-PZ2	**FK-PZ2**
Air duct probe for differential pressure sensor, fixed length	N1589	BPZ:FK-PZ3	**FK-PZ3**

Differential pressure sensor, DC 0...10 V

QBM66..



With pressure-linear characteristic.
For use with air or nonaggressive gases, for general HVAC applications. With diaphragm sensing element and selectable pressure measuring ranges.

Data sheet	N1910
Operating voltage	AC 24 V DC 13.5...33 V
Power consumption	0.5 VA
Sensing element	Pressure diaphragm
Time constant	<1 s
Measurement accuracy	Measuring range 2: ±3 % FS
Connection, electrical	Screw terminals
Degree of protection	IP42
Dimensions (W x H x D)	92 x 94 x 49 mm
Analog output, signal	DC 0...10 V
Pressure conneciton	Connection branch, 6.2 mm dia.

Supplied complete with set of 2 air duct connectors
and PVC tube of 2 m.

Range overview QBM66..

Measuring range, pressure [Pa]	Max. permissible pressure [kPa]	Stock No.	Product No.
0...100 0...200	5	BPZ:QBM66.201	**QBM66.201**
0...250 0...500	10	BPZ:QBM66.202	**QBM66.202**
0...1500 0...3000	20	BPZ:QBM66.203	**QBM66.203**
0...500 0...1000	10	BPZ:QBM66.204	**QBM66.204**

Note on max. permissible pressure: overpressure on one side

Accessories for QBM66..

Product Title	Data sheet	Stock No.	Product No.
Mounting bracket for differenential pressure sensor for air	N1916	BPZ:AQB2000	**AQB2000**
Top hat rail adapter for differential pressure sensor for air	N1910	BPZ:AQB21.2	**AQB21.2**

Symaro™ Pressure
Differential pressure sensor air and non-aggressive gas QBM..

QBM75../C



Air duct differential pressure sensor, DC 4...20 mA, with calibration certificate

For use with air and nonaggressive gases. For extremely demanding accuracy and quality requirements. With diaphragm sensing element.

Data sheet	N1919
Operating voltage	DC 11...33 V
Sensing element	Pressure diaphragm
Max. permissible pressure	5 kPa
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	186 x 86 x 49
Analog output, signal	DC 4...20 mA
Pressure conneciton	Connecting branch, 6.2 mm dia.

CE-, UL- and CSA-listed.
Supplied complete with PVC connecting tube of 2 m.

Accessories for QBM75../C are identical to those for QBM65...

Range overview QBM75../C

Measuring range, pressure [Pa]	Measurement accuracy [% FS]	Display	Stock No.	Product No.
-50...50	±3	No	BPZ:QBM75-1U/C	**QBM75-1U/C**
0...100	< ±2	Yes (digital)	BPZ:QBM75.1-1/C	**QBM75.1-1/C**

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Accessories for QBM75../C

Product Title	Data sheet	Stock No.	Product No.
Mounting bracket for differenential pressure sensor for air	N1916	BPZ:AQB2000	**AQB2000**
Top hat rail adapter for differential pressure sensor for air	N1910	BPZ:AQB21.2	**AQB21.2**
Air duct probe for simple, quick and airtight mounting	N1589	BPZ:FK-PZ1	**FK-PZ1**
Air duct probe for accurate measurements	N1589	BPZ:FK-PZ2	**FK-PZ2**
Air duct probe for differential pressure sensor, fixed length	N1589	BPZ:FK-PZ3	**FK-PZ3**

Pressure sensor for liquids and gases

QBE2002-P..

With threaded connection G½".



Data sheet	N1909
Operating voltage	AC 24 V DC 18...33 V
Current consumption	<4 mA
Connection cable	3-wire
Cable length	1.5 m
Pressure conneciton	External thread G½ "
Analog output, signal	DC 0...10 V
Time constant	<5 ms
Max. overpressure	2 x scale end value
Medium temperature	-40...80 °C
Mounting position	Any
Connection, electrical	Cable
Degree of protection	IP65

Suited for use with oil-containing media.

Range overview QBE2002-P..

Measuring range, pressure	Stock No.	Product No.
0...100 kPa 0...1 bar	BPZ:QBE2002-P1	**QBE2002-P1**
0...200 kPa 0...2 bar	BPZ:QBE2002-P2	**QBE2002-P2**
0...400 kPa 0...4 bar	BPZ:QBE2002-P4	**QBE2002-P4**
0...500 kPa 0...5 bar	BPZ:QBE2002-P5	**QBE2002-P5**
0...1 MPa 0...10 bar	BPZ:QBE2002-P10	**QBE2002-P10**
0...1.6 MPa 0...16 bar	BPZ:QBE2002-P16	**QBE2002-P16**
0...2 MPa 0...20 bar	BPZ:QBE2002-P20	**QBE2002-P20**
0...2.5 MPa 0...25 bar	BPZ:QBE2002-P25	**QBE2002-P25**
0...4 MPa 0...40 bar	BPZ:QBE2002-P40	**QBE2002-P40**

Accessories for QBE2002-P..

Product Title	Data sheet	Stock No.	Product No.
Mounting bracket for pressure sensor QBE2002	N1909	BPZ:AQB22.1	**AQB22.1**
Connection kit to mount QBE2002-P...	N1904	S55720-S116	AQB2001

NEW PRODUCT

Symaro™ Pressure
Pressure sensors for liquids and gases QBE..

QBE61.3-DP..



Differential pressure sensor for liquids and gases

For slightly aggressive liquids and gases, highly resistant to overpressure. Suitable for use with hot water and chilled water.
With threaded connections G½" and wall mounting bracket.

Data sheet	N1923
Operating voltage	DC 18...33 V
Analog output, signal	DC 0...10 V
Sensing element	Pressure diaphragm
Medium temperature	-15...80 °C
Mounting position	Any
Connection, electrical	Screw-free terminals
Pressure conneciton	External thread G ½ "
PN class	PN 40
Degree of protection	IP54
Dimensions (W x H x D)	126 x 135 x 60 mm

Not suitable for use with ammonia or freones.

Range overview QBE61.3-DP..

Measuring range, pressure [bar]	Max. permissible pressure [bar]	Measurement accuracy [% FS]	Stock No.	Product No.
0...2	12	±1	BPZ:QBE61.3-DP2	**QBE61.3-DP2**
0...5	20	±1	BPZ:QBE61.3-DP5	**QBE61.3-DP5**
0...10	20	±0,5	BPZ:QBE61.3-DP10	**QBE61.3-DP10**

For a smaller measuring range see QBE63-DP..
Note on max. permissible pressure: overpressure on one side.

Accessories for QBE61.3-DP..

Product Title	Data sheet	Stock No.	Product No.
Water trap pipe	N1915	BPZ:428616520	**428616520**

QBE63-DP..



Differential pressure sensor for liquids and gase, DC 0...10 V

For slightly aggressive liquids and gases, highly resistant to overpressure. With threaded connections G1/8"
Supplied complete with mounting bracket.

Data sheet	N1920
Operating voltage	AC 24 V DC 20...30 V
Analog output, signal	DC 0...10 V
Medium temperature	-10...80 °C
Connection, electrical	Screw terminals
Pressure conneciton	Internal thread G 1/8 "
Degree of protection	IP65
Dimension (Ø x L)	65 x 94 mm

Not suitable for use with ammonia or freones.

Range overview QBE63-DP..

Measuring range, pressure [kPa]	Max. permissible pressure [bar]	Stock No.	Product No.
0...10	10	BPZ:QBE63-DP01	**QBE63-DP01**
0...20	10	BPZ:QBE63-DP02	**QBE63-DP02**
0...50	20	BPZ:QBE63-DP05	**QBE63-DP05**
0...100	20	BPZ:QBE63-DP1	**QBE63-DP1**

For wider measuring range, see QBE64-DP4
Note on max. permissible pressure: overpressure on one side

Differential pressure sensor for liquids and gases 0...400 kPa — QBE64-DP4

For slightly aggressive liquids and gases (wider measuring range than QBE63-DP...). With threaded connections G1/8".
Including mounting bracket and 2 screwed fittings for copper pipe, 6 mm dia.



Data sheet	N1921
Operating voltage	AC 24 V DC 18...33 V
Analog output, signal	DC 0...10 V
Measuring range, pressure	0...4 bar 0...400 kPa
Connection cable	3-wire
Connection, electrical	Cable
Medium temperature	-15...80 °C
Cable length	1.5 m
Pressure conneciton	Internal thread 1/8 "
Degree of protection	IP65
Max. overpressure	One sid: 8 bar

Not suitable for use with ammonia or freones.

Stock No.	Product No.
BPZ:QBE64-DP4	**QBE64-DP4**

Accessories for QBE63-DP.. and QBE64-DP4

Product Title	Data sheet	Stock No.	Product No.
Connection kit to mount QBE63../64..	N1904	S55720-S117	AQB2002

NEW PRODUCT

Symaro™ Pressure
Pressure sensors refrigerant QBE..

QBE2001-P..U

Pressure sensor for refrigerants / DC 0...10 V



With internally threaded pressure connection UNF7/16-20.

Data sheet	N1907
Operating voltage	DC 16...33 V
Current consumption	<4 mA
Connection cable	3-wire
Cable length	1.5 m
Pressure conneciton	Internal thread UNF7/16-20
Analog output, signal	DC 0...10 V
Connection, electrical	Cable
Time constant	<2 ms
Medium temperature	-40...150 °C
Mounting position	Any
Degree of protection	IP67

For use with all media, including ammonia.

Range overview QBE2001-P..U

Measuring range, pressure	Max. permissible pressure [kPa]	Stock No.	Product No.
-1...9 bar -100...900 kPa	30 bar / 3000	BPZ:QBE2001-P10U	**QBE2001-P10U**
-1...24 bar -100...2400 kPa	75 bar / 7500	BPZ:QBE2001-P25U	**QBE2001-P25U**
-1...29 bar -100...2900 kPa	120 bar / 12000	BPZ:QBE2001-P30U	**QBE2001-P30U**

QBE2101-P..U

Pressure sensors for refrigerants / DC 4...20 mA



With internally threaded pressure connection UNF7/16-20.

Data sheet	N1907
Operating voltage	DC 8...33 V
Analog output, signal	DC 4...20 mA
Connection cable	2-wire
Cable length	1.5 m
Pressure conneciton	Internal thread UNF7/16-20
Time constant	<2 ms
Medium temperature	-40...150 °C
Mounting position	Any
Connection, electrical	Cable
Degree of protection	IP67

Suitable for all media, including ammonia

Range overview QBE2101-P..U

Measuring range, pressure	Max. permissible pressure [kPa]	Stock No.	Product No.
-1...9 bar -100...900 kPa	30 bar / 3000	BPZ:QBE2101-P10U	**QBE2101-P10U**
-1...24 bar -100...2400 kPa	75 bar / 7500	BPZ:QBE2101-P25U	**QBE2101-P25U**
-1...29 bar -100...2900 kPa	120 bar / 12000	BPZ:QBE2101-P30U	**QBE2101-P30U**

Accessories for QBE2001-P..U and QBE2101-P..U

Product Title	Data sheet	Stock No.	Product No.
Connection set, thread ½" for pressure sensor for refrigerant	N1907	BPZ:FT-PZ1	**FT-PZ1**

Symaro™ Flow
Duct sensor QVM..

QVM62.1



Duct sensor for air velocity

For measuring air velocities or volumetric flow in air ducts. Suited for primary plant (presetting the volumetric flow).

Data sheet	N1932
Operating voltage	AC 24 V
Analog output, signal	DC 0...10 V
Power consumption	5 VA
Cable length	1 m
Measuring range	0...10 m/s 0...15 m/s 0...5 m/s
Measurement accuracy	At 20 °C, 45 % r.h., 1013 hPa: ±0.65 m/s
Immersion length	30...300 mm
Connection, electrical	Screw terminals
Degree of protection	IP42

Sensor detached, ready wired, including pipe extension for different immersion lengths and mounting flange.

	Stock No.	Product No.
	BPZ:QVM62.1	**QVM62.1**

Room air quality sensor CO_2 / temperature / rel. Humidity / VOC

QPA..



Data sheet	N1961
Operating voltage	AC 24 V DC 15...35 V
Power consumption	2 VA
Analog output, signal	DC 0...5 V DC 0...10 V
Ambient temperature, operation	0...50 °C
Connection, electrical	Screw terminals
Degree of protection	IP30
Dimensions (W x H x D)	90 x 100 x 36 mm
Time constant	CO_2: <5 min Humidity: <20 s Temperature: <8.5 min

Note:Not suited for safety-related applications!

Range overview QPA..

Measuring range	Measuring range, temperature	Measuring range, humidity	Display	Stock No.	Product No.
VOC: 0...100 %				S55720-S119	QPA1000
CO_2: 0...2000 ppm				BPZ:QPA2000	**QPA2000**
CO_2: 0...2000 ppm CO_2+VOC: 0...2000 ppm				BPZ:QPA2002	**QPA2002**
CO_2: 0...2000 ppm CO_2+VOC: 0...2000 ppm			LCD	BPZ:QPA2002D	**QPA2002D**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C			BPZ:QPA2060	**QPA2060**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C		LCD	BPZ:QPA2060D	**QPA2060D**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C	0...95 % r.H.		BPZ:QPA2062	**QPA2062**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C	0...95 % r.H.	LCD	BPZ:QPA2062D	**QPA2062D**
CO_2: 0...2000 ppm	passiv			S55720-S121	QPA2080
CO_2: 0...2000 ppm	passiv		LCD	S55720-S122	QPA2080D

NEW PRODUCT

Symaro™ Air quality sensors
Room and duct sensors: QPA.. / QPM..

QPM..



Duct air quality sensor CO_2/ temperature / rel. Humidity / VOC

Data sheet	N1962
Operating voltage	AC 24 V DC 15...35 V
Power consumption	2 VA
Analog output, signal	DC 0...5 V DC 0...10 V
Ambient temperature, operation	-5...45 °C
Max. air velocity	≤ 10 m/s
Connection, electrical	Screw terminals
Degree of protection	IP54
Dimensions (W x H x D)	80 x 88 x 274 mm
Time constant	CO_2: <5 min Humidity: <20 s Temperature: <3.5 min

Note: Not suited for safety-related applications!

Range overview QPM..

Measuring range	Measuring range, temperature	Measuring range, humidity	Immersion length [mm]	Display	Stock No.	Product No.
VOC: 0...100 %			70...135		S55720-S123	QPM1100
CO_2: 0...2000 ppm			70...135		BPZ:QPM2100	**QPM2100**
CO_2: 0...2000 ppm CO_2+VOC: 0...2000 ppm			70...135		BPZ:QPM2102	**QPM2102**
CO_2: 0...2000 ppm CO_2+VOC: 0...2000 ppm			70...135	LCD	BPZ:QPM2102D	**QPM2102D**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C		100...165		BPZ:QPM2160	**QPM2160**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C		100...165	LCD	BPZ:QPM2160D	**QPM2160D**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C	0...95 % r.H.	100...165		BPZ:QPM2162	**QPM2162**
CO_2: 0...2000 ppm	0...50 °C -35...35 °C	0...95 % r.H.	100...165	LCD	BPZ:QPM2162D	**QPM2162D**
CO_2: 0...2000 ppm	passiv		100...165		S55720-S124	QPM2180

NEW PRODUCT

Valves and actuators for central HVAC plants



Overview and selection tools	Product range overview and recommended applications	12-2
Acvatix™ Actuators for valves with 20 / 40 mm stroke	Electromotoric, positioning force 800 N: SAX..	12-15
	Electromotoric, positioning force 700 N: SQX..	12-16
	Electrohydraulic, positioning force 1000 N / 2800 N: SKD.. / SKB.. / SKC..	12-17
	Accessories for SKD.. / SKB.. / SKC..	12-21
Acvatix™ Flanged valves with 20 / 40 mm stroke	2-port, PN6: VVF21..	12-22
	3-port, PN6: VXF21..	12-23
	2-port, PN10: VVF31..	12-25
	3-port, PN10: VXF31..	12-26
	2-port, PN16: VVF40..	12-29
	3-port, PN16: VXF40..	12-30
	2-port, PN16: VVF41..	12-33
	3-port, PN16: VXF41..	12-35
	2-port, PN16: VVF45..	12-38
	2-port, PN25: VVF52..	12-40
	2-port, PN40: VVF61..	12-43
	3-port, PN40: VXF61..	12-45
Acvatix™ Threaded valves with 20 mm stroke	2-port, PN16: VVG41..	12-48
	3-port, PN16: VXG41..	12-49
	Threaded fittings for valves	12-51
Acvatix™ Actuators for threaded valves with 5.5 mm stroke	Positioning force 400 N: SQS..	12-52
	Positioning force 200 N: SSC..	12-53
Acvatix™ Threaded valves with 5.5 mm stroke	2-port, PN16: VVG44..	12-54
	3-port, PN16: VXG44..	12-55
	2-port, 3-port, PN16: VVP45.. / VXP45..	12-57
	2-port, PN25: VVG55..	12-59
	Fittings	12-61
Acvatix™ Actuators for combi valves	Positioning force 250 N: SSD..	12-63
	Positioning force 400 N: SQD..	12-65
Acvatix™ Combi valves	Combi valves, PN 25: VPI45..	12-66
Acvatix™ Rotary actuators for ball valves	Torque 2 Nm, with spring-return: GQD..9A	12-68
	Torque 5 Nm, without spring-return: GDB..9E	12-69
	Torque 7 Nm, with spring-return: GMA..9E	12-70
	Torque 10 Nm, without spring-return: GLB..9E	12-71
Acvatix™ Ball valves	2-port, PN40: VAI61..	12-72
	3-port, PN40: VBI61..	12-75
Acvatix™ Actuators for slipper and butterfly valves	Torque 5...40 Nm: SQK.. / SQL..	12-77
	Torque 40...1200 Nm: SQL36..	12-80
Acvatix™ Flanged slipper valves	3-port, PN6: VBF21..	12-81
Acvatix™ Externally threaded slipper valves	3-port PN10: VBG31..	12-82
Acvatix™ Internally threaded slipper valves	3-port, PN10: VBI31..	12-83
	4-port, PN10: VCI31..	12-84
Acvatix™ Butterfly valves	PN6, PN10, PN16: VKF41.. / VKF46..	12-85

										Recommended media											
		2-port valve	3-port valve	4-port valve	PN class	Type of connection	Silicon-free grease	Closed circuits	Open circuits	Chilled water	Cooling water [3]	Drinking water	Low temperature hot water	High temperature hot water	Water with anti-freeze [2]	Brines	Saturated steam	Superheated steam	Heat transfer oil	Air	
Central HVAC plants	VAI61..	■			40	IT	■	■		■			■	■	■						
	VBF21..		■		6	F		■					■	■							
	VBG31..		■		10	ET		■					■	■							
	VBI31..		■		10	IT		■					■	■							
	VBI61..		■		40	IT	■	■		■			■	■	■						
	VCI31..			■	10	IT		■					■	■							
	VKF41..	■			16	F		■		■			■	■	■	■					
	VKF46..	■			16	F		■	■	■	■		■		■	■				■	
	VPI45..	■			25	IT		■		■			■		■						
	VVF21..	■			6	F	■	■		■			■	■	■	■					
	VVF31..	■			10	F	■	■		■			■	■	■	■					
	VVF40..	■			16	F	■	■		■			■	■	■	■					
	VVF41..	■			16	F	■	■	■	■	■		■	■	■	■					
	VVF41..4	■			16	F		■						■	■	■	■	■	■		
	VVF41..5	■			16	F	■	■	■	■	■		■	■	■	■	■	■	■		
	VVF45..	■			16	F	■	■	■	■	■		■	■	■	■					
	VVF45..4	■			16	F		■	■					■	■	■	■	■	■		
	VVF52..	■			25	F	■	■	■	■	■		■	■	■	■					
	VVF52..A	■			25	F		■						■	■	■			■		
	VVF52..G	■			25	F		■	■								■	■			
	VVF52..M	■			25	F	■	■	■	■	■		■	■	■	■			■		
	VVF61..	■			40	F		■	■	■	■		■	■	■	■	■	■	■		
	VVF61..2	■			40	F		■											■		
	VVF61..5	■			40	F	■	■	■	■	■		■	■	■	■	■	■	■		
	VVG41..	■			16	ET	■	■	■	■	■		■	■	■	■	■	■			
	VVG44..	■			16	ET	■	■		■			■		■						
	VVG55..	■			25	ET	■	■		■			■	■	■						
	VXF21..		■		6	F	■	■		■			■	■	■	■					
	VXF31..		■		10	F	■	■		■			■	■	■	■					
	VXF40..		■		16	F	■	■		■			■	■	■	■					
	VXF41..		■		16	F	■	■	■	■	■		■	■	■	■					
	VXF41..4		■		16	F		■						■	■	■			■		
	VXF41..5		■		16	F	■	■	■	■	■		■	■	■	■			■		
	VXF61..		■		40	F		■	■	■	■		■	■	■	■			■		
	VXF61..2		■		40	F		■											■		
	VXF61..5		■		40	F	■	■	■	■	■		■	■	■	■			■		
	VXG41..		■		16	ET	■	■	■	■	■		■	■	■	■					
	VXG41..01 [1]		■		16	ET	■	■	■	■	■	■	■	■	■	■					
	VXG44..		■		16	ET	■	■		■			■		■						

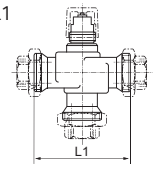
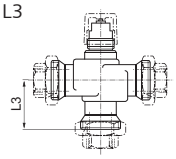
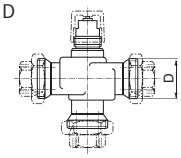
Recommendation: Water treatment according to VDI 2035
[1] Tight bypass
[2] E.g. ethylene and propylene glycols
[3] Open circuits
IT = internally threaded connection
ET = externally threaded connection
F = flanged connection

Permissible medium temperature [°C]																	Generation				Distribution				
-25	-20	-10	0	1	...	90	100	110	120	130	150	180	220	350	Boiler plant	District heating	Chiller plants	Cooling towers [3]	Domestic hot water (DHW)	Heating groups	Air handling units		
															■		■		■	■	■	VAI61..	Central HVAC plants
															■					■		VBF21..	
															■					■		VBG31..	
															■					■		VBI31..	
															■		■		■	■	■	VBI61..	
															■					■		VCI31..	
															■		■			■		VKF41..	
															■		■	■	■	■		VKF46..	
																				■	■	VPI45..	
															■		■		■	■	■	VVF21..	
															■	■	■		■	■	■	VVF31..	
															■	■	■		■	■	■	VVF40..	
															■	■	■	■	■	■	■	VVF41..	
															■	■					■	VVF41..4	
															■	■	■	■	■	■	■	VVF41..5	
															■	■	■		■	■	■	VVF45..	
															■	■					■	VVF45..4	
															■	■	■		■	■	■	VVF52..	
															■	■				■	■	VVF52..A	
															■	■					■	VVF52..G	
															■	■	■		■	■	■	VVF52..M	
															■	■	■		■	■	■	VVF61..	
															■					■		VVF61..2	
															■	■	■	■	■	■	■	VVF61..5	
															■	■	■		■	■	■	VVG41..	
															■	■	■		■	■	■	VVG44..	
																■	■		■	■	■	VVG55..	
															■		■		■	■	■	VXF21..	
															■		■		■	■	■	VXF31..	
															■		■	■	■	■	■	VXF40..	
															■		■	■	■	■	■	VXF41..	
															■						■	VXF41..4	
															■		■	■	■	■	■	VXF41..5	
															■		■	■	■	■	■	VXF61..	
															■					■		VXF61..2	
															■		■	■	■	■	■	VXF61..5	
															■		■	■	■	■	■	VXG41..	
															■		■	■	■	■	■	VXG41..01 [1]	
															■		■		■	■	■	VXG44..	

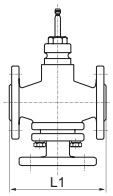
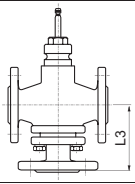
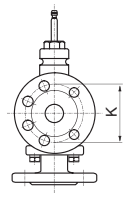
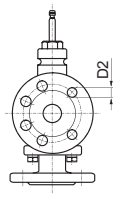
[1] Tight bypass
[3] Open circuits

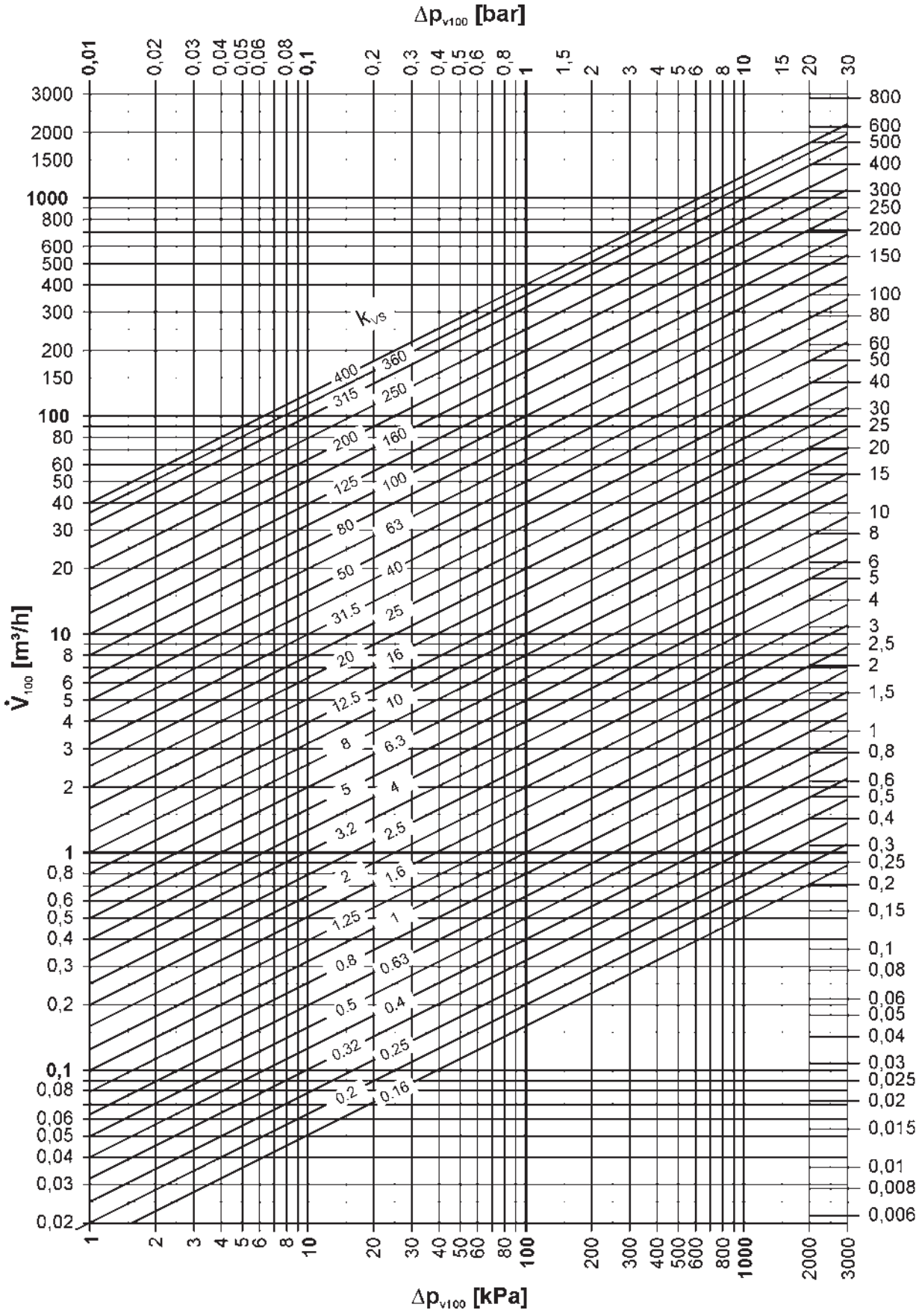
12

Dimensions threaded valves [mm]

	Typ	PN	DN10	DN15	DN20	DN25	DN32	DN40	DN50
L1 	V..G41..	16	–	100	100	105	105	130	150
	V..G44..	16	–	100	100	105	105	130	–
	VVP45../VXP45..	16	60	65	80	80/105	105	130	–
	VVG55..	25	–	65	70	75	–	–	–
L3 	VXG41..	16	–	50	50	52.5	52.5	65	75
	VXG44..	16	–	50	50	52.5	52.5	65	–
	VP45../VXP45..	16	30	32.5	40	40/52.5	52.5	65	–
D 	V..G41..	16	–	G 1B	G 1¼B	G 1½B	G 2B	G 2¼B	G 2¾B
	V..G44..	16	–	G 1B	G 1¼B	G 1½B	G 2B	G 2¼B	–
	VVG55..	25	–	G ¾B	G 1B	G 1¼B	–	–	–
	VP45../VXP45..	16	G ½B	G ¾B	G 1B	G 1¼B/G 1½B	G 2B	G 2¼B	–

Dimensions flanged valves [mm]

	Typ	PN	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150
L1 	V..F21..	6	–	–	150	–	180	200	240	260	300	–	–
	V..F31..	10	130	–	160	–	200	230	290	310	350	400	480
	V..F40..	16	130	–	160	–	200	230	290	310	350	400	480
	V..F41..	16	130	–	160	–	200	230	290	310	350	400	480
	VVF45..	16	–	–	–	–	–	230	290	310	350	400	480
	VVF52..	25	130	–	160	–	200	–	–	–	–	–	–
	V..F61..	40	130	–	160	–	200	230	290	310	350	400	480
L3 	VXF21..	6	–	–	75	–	90	100	120	130	150	–	–
	VXF31..	10	65	–	80	–	100	115	145	155	175	200	240
	VXF40..	16	65	–	80	–	100	115	145	155	175	200	240
	VXF41..	16	114	–	118	–	140	145	180	200	225	255	290
	VXF61..	40	65	–	80	–	162	170	215	230	250	280	305
K 	V..F21..	6	–	–	75	–	100	110	130	150	170	–	–
	V..F31..	10	65	–	85	–	110	125	145	160	180	210	240
	V..F40..	16	65	–	85	–	110	125	145	160	180	210	240
	V..F41..	16	65	–	85	–	110	125	145	160	180	210	240
	VVF45..	16	–	–	–	–	–	125	145	160	180	210	240
	VVF52..	25	65	–	85	–	110	–	–	–	–	–	–
	V..F61..	40	65	–	85	–	110	125	145	160	190	220	250
D2 	V..F21..	6	–	–	11 (4x)	–	14 (4x)	14 (4x)	14 (4x)	19 (4x)	19 (4x)	–	–
	V..F31..	10	14 (4x)	–	14 (4x)	–	19 (4x)	19 (4x)	19 (4x)	19 (8x)	19 (8x)	19 (8x)	23 (8x)
	V..F40..	16	14 (4x)	–	14 (4x)	–	19 (4x)	19 (4x)	19 (4x)	19 (8x)	19 (8x)	19 (8x)	23 (8x)
	V..F41..	16	14 (4x)	–	14 (4x)	–	19 (4x)	19 (4x)	19 (4x)	19 (8x)	19 (8x)	19 (8x)	23 (8x)
	VVF45..	16	–	–	–	–	–	19 (4x)	19 (4x)	19 (8x)	19 (8x)	19 (8x)	23 (8x)
	VVF52..	25	14 (4x)	–	14 4x)	–	19 (4x)	–	–	–	–	–	–
	V..F61..	40	14 (4x)	–	14 (4x)	–	18 (4x)	18 (4x)	18 (8x)	22 (8x)	22 (8x)	26 (8x)	26 (8x)



Please refere to data sheet.

Flanged 2-port and 3-port valves with 20/40 mm actuators

Typical applications
- Heating plants
- Ventilation and air conditioning plants
- Heat and cooling generation
- Heat and cooling distribution

Actuators	Data sheet
SAX..	N4501
SKD..	N4561
SKB..	N4564
SKC..	N4566

Operating voltage	Positioning signal	Positioning time [s] SAX	SKD	SKB/SKC	Spring return function	20 mm 800 N	20 mm 1000 N	20 mm 2800 N	40 mm 2800 N
AC 230 V	3-position	120	120	120	–	SAX31.00	SKD32.50	SKB32.50	SKC32.60
	3-position	–	120	120	✓	–	SKD32.51	SKB32.51	SKC32.61
	3-position	30	–	–	–	SAX31.03	–	–	–
	3-position	–	30	–	✓	–	SKD32.21	–	–
AC 24 V [1]	3-position	120	120	120	–	SAX81.00	SKD82.50	SKB82.50	SKC82.60
	3-position	–	120	120	✓	–	SKD82.51	SKB82.51	SKC82.61
	3-position	30	–	–	–	SAX81.03	–	–	–
	0...10 V, 4...20 mA	–	30	120	–	–	SKD60	SKB60	SKC60
	0...10 V, 4...20 mA	–	30	120	✓	–	SKD62	SKB62	SKC62
AC/DC 24 V	0...10 V, 4...20 mA	30	–	–	–	SAX61.03			

PN 6	-10...150 °C		DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4310	N4410										
	VVF21.22..25 [2]	VXF21.22..25 [2]	25	1.9 / 3 / 5 / 7.5	600	300	600	300	600	300	–	–
	VVF21.25-.. [3]	VXF21.25-.. [3]	25	2.5 / 4 / 6.3 / 10	600	300	600	300	600	300	–	–
	VVF21.39..40 [2]	VXF21.39..40 [2]	40	12 / 19	500	300	600	300	600	300	–	–
	VVF21.40-..	VXF21.40-..	40	16 / 25	500	300	600	300	600	300	–	–
	VVF21.50	VXF21.50	50	31	300	300	450	300	600	300	–	–
	VVF21.50-40	VXF21.50-40	50	40	300	300	450	300	600	300	–	–
	VVF21.65	VXF21.65	65	49	175	175	275	275	600	300	–	–
	VVF21.65-63	VXF21.65-63	65	63	175	175	275	275	600	300	–	–
	VVF21.80	VXF21.80	80	78	100	100	175	175	500	300	–	–
	VVF21.80-100	VXF21.80-100	80	100	100	100	175	175	500	300	–	–
	VVF21.90	VXF21.90	100	124	–	–	–	–	–	–	300	200
	VVF21.100-160	VXF21.100-160	100	160	–	–	–	–	–	–	300	200

PN 10	-10...150 °C		DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4320	N4420										
	VVF31.15-.. [3]	VXF31.15-.. [3]	15	2.5 / 4	1000	300	1000	300	1000	300	–	–
	VVF31.24..25 [2]	VXF31.24..25 [2]	25	5 / 7.5	1000	300	1000	300	1000	300	–	–
	VVF31.25-..	VXF31.25-..	25	6.3 / 10	1000	300	1000	300	1000	300	–	–
	VVF31.39..40 [2]	VXF31.39..40 [2]	40	12 / 19	525	300	775	300	1000	300	–	–
	VVF31.40-..	VXF31.40-..	40	16 / 25	525	300	775	300	1000	300	–	–
	VVF31.50	VXF31.50	50	31	325	300	475	300	1000	300	–	–
	VVF31.50-40	VXF31.50-40	50	40	325	300	475	300	1000	300	–	–
	VVF31.65	VXF31.65	65	49	175	175	275	275	750	300	–	–
	VVF31.65-63	VXF31.65-63	65	63	175	175	275	275	750	300	–	–
	VVF31.80	VXF31.80	80	78	100	100	175	175	500	300	–	–
	VVF31.80-100	VXF31.80-100	80	100	100	100	175	175	500	300	–	–
	VVF31.90	VXF31.90	100	124	–	–	–	–	–	–	300	200
	VVF31.100-160	VXF31.100-160	100	160	–	–	–	–	–	–	300	200
	VVF31.91	VXF31.91	125	200	–	–	–	–	–	–	200	150
	VVF31.125-250	VXF31.125-250	125	250	–	–	–	–	–	–	200	150
	VVF31.92	VXF31.92	150	300	–	–	–	–	–	–	125	100
	VVF31.150-315	VXF31.150-315	150	315	–	–	–	–	–	–	125	100

PN 16	-10...150 °C		DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4330	N4430										
	VVF40.15-.. [3]	VXF40.15-.. [3]	15	1.9 / 2.5 / 3 / 4	1600	300	1600	300	1600	300	–	–
	VVF40.25-..	VXF40.25-..	25	5 / 6.3 / 7.5 / 10	1550	300	1600	300	1600	300	–	–
	VVF40.40-..	VXF40.40-..	40	12 / 16 / 19 / 25	525	300	775	300	1600	300	–	–
	VVF40.50-..	VXF40.50-..	50	31 / 40	325	300	475	300	1300	300	–	–
	VVF40.65-..	VXF40.65-..	65	49 / 63	175	175	275	275	750	300	–	–
	VVF40.80-..	VXF40.80-..	80	78 / 100	100	100	175	175	500	300	–	–
	VVF40.100-..	VXF40.100-..	100	124 / 160	–	–	–	–	–	–	300	200
	VVF40.125-..	VXF40.125-..	125	200 / 250	–	–	–	–	–	–	200	150
	VVF40.150-..	VXF40.150-..	150	300 / 315	–	–	–	–	–	–	125	100

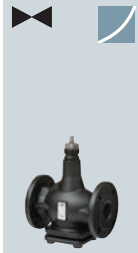
PN 16	-10...150 °C (180 °C)		DN	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4340	N4440										
	–	VXF41.14..15	15	1.9 / 3	–	800	–	800	–	800	–	–
	–	VXF41.24..25	25	5 / 7.5	–	800	–	800	–	800	–	–
	–	VXF41.39..40	40	12 / 19	–	500	–	750	–	800	–	–
	VVF41.49..50	VXF41.49..50	50	19 / 31	350 –	300 350	500 –	400 500	1400 –	1000 800	–	–
	VVF41.65	VXF41.65	65	49	–	–	–	–	–	–	800 –	600 500
	VVF41.80	VXF41.80	80	78	–	–	–	–	–	–	500 –	400 350
	VVF41.90	VXF41.90	100	124	–	–	–	–	–	–	300	250
	VVF41.91	VXF41.91	125	200	–	–	–	–	–	–	200	175
	VVF41.92	VXF41.92	150	300	–	–	–	–	–	–	125	100

[1] SAX81..: AC/DC 24 V [2] For 22...25, 24...25, 39...40, 49...50 = insert number in place of k_{vs} value [3] .. = insert k_{vs} value

Flanged 2-port and 3-port valves with 20/40 mm actuators

Typical applications	Actuators	Data sheet				Spring return function	20 mm			40 mm
– Heating plants – Ventilation and air conditioning plants – Heat and cooling generation – Heat and cooling distribution	**SAX..** **SKD..** **SKB..** **SKC..**	N4501 N4561 N4564 N4566					800 N	1000 N	2800 N	2800 N
	Operating voltage	**Positioning signal**	**Positioning time [s]**							
			SAX	SKD	SKB/SKC					
	AC 230 V	3-position	120	120	120	–	**SAX31.00**	**SKD32.50**	**SKB32.50**	**SKC32.60**
		3-position	–	120	120	✓	**–**	**SKD32.51**	**SKB32.51**	**SKC32.61**
		3-position	30	–	–	–	**SAX31.03**	**–**	**–**	**–**
		3-position	–	30	–	✓	**–**	**SKD32.21**	**–**	**–**
	AC 24 V [1]	3-position	120	120	120	–	**SAX81.00**	**SKD82.50**	**SKB82.50**	**SKC82.60**
		3-position	–	120	120	✓	**–**	**SKD82.51**	**SKB82.51**	**SKC82.61**
		3-position	30	–	–	–	**SAX81.03**	**–**	**–**	**–**
		0...10 V, 4...20 mA	–	30	120	–	**–**	**SKD60**	**SKB60**	**SKC60**
		0...10 V, 4...20 mA	–	30	120	✓	**–**	**SKD62**	**SKB62**	**SKC62**
	AC/DC 24 V	0...10 V, 4...20 mA	30	–	–	–	**SAX61.03**	**–**	**–**	**–**

[1] SAX81..: AC/DC 24 V

PN 16	-10...150 °C (180 °C)			**DN**	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4345												
	**VVF45.49..50** [2]			50	19 / 31	–	–	–	–	1600	1200	–	–
	VVF45.65			65	49	–	–	–	–	–	–	1600	1000
	VVF45.80			80	78	–	–	–	–	–	–	1600	700
	VVF45.90			100	124	–	–	–	–	–	–	1600	450
	VVF45.91			125	200	–	–	–	–	–	–	1600	300
	VVF45.92			150	300	–	–	–	–	–	–	1600	200
PN 25	-20...150 °C (180 °C)			**DN**	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4373												
	**VVF52.15-..** [3]			15	0.16 / 0.2 / 0.25	2500	1600	2500	1600	2500	1600	–	–
	VVF52.15-..			15	0.32 / 0.4 / 0.5	2500	1600	2500	1600	2500	1600	–	–
	VVF52.15-..			15	0.63 / 0.8 / 1	2500	1600	2500	1600	2500	1600	–	–
	VVF52.15-..			15	1.25 / 1.6 / 2	2500	1600	2500	1600	2500	1600	–	–
	VVF52.15-..			15	2.5 / 3.2 / 4	2500	1600	2500	1600	2500	1600	–	–
	VVF52.25-..			25	5 / 6.3 / 8 / 10	1500	1200	2250	1600	2500	1600	–	–
	VVF52.40-..			40	12.5 / 16 / 20 / 25	500	400	750	700	2000	1600	–	–
PN 40	-25...220 °C (350 °C)			**DN**	k_{vs} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4382		N4482										
	**VVF61.09..11** [2]		–	15	0.19 / 0.3 / 0.45	–	–	4000	1600	4000	1600	–	–
	VVF61.12..13 [2]		–	15	0.7 / 1.2	–	–	4000	1600	4000	1600	–	–
	VVF61.14..15 [2]		**VXF61.14..15** [2]	15	1.9 / 3	–	–	4000 –	1600 1200	4000 –	1600 1600	–	–
	VVF61.23..25 [2]		**VXF61.24..25** [2]	25	3 / 5 / 7.5 5 / 7.5	–	–	2250 –	1600 1200	4000 –	1600 1600	–	–
	VVF61.39..40 [2]		**VXF61.39..40** [2]	40	12 / 19	–	–	–	–	4000 –	1600 1200	–	–
	VVF61.49..50 [2]		**VXF61.49..50** [2]	50	19 / 31	–	–	–	–	4000 –	1600 1000	–	–
	VVF61.65		**VXF61.65**	65	49	–	–	–	–	–	–	4000 –	1000 800
	VVF61.80		**VXF61.80**	80	78	–	–	–	–	–	–	4000 –	700 500
	VVF61.90		**VXF61.90**	100	124	–	–	–	–	–	–	4000 –	450 300
	VVF61.91		**VXF61.91**	125	200	–	–	–	–	–	–	4000 –	300 200
	VVF61.92		**VXF61.92**	150	300	–	–	–	–	–	–	4000 –	200 125

[2] For 09...15, 12...13, 14...15, 23...25, 24...25, 39...40, 49...50 = insert number in place of k_{vs} value

[3] .. = insert k_{vs} value

Δp_{max} refers to operation in mixing mode

12

Threaded 2-port and 3-port valves with 20 mm actuators

Typical applications	Actuators	Data sheet				Spring return function	20 mm		
– Heating plants – Ventilation and air conditioning plants – Heat generation – Heat distribution – District heating	**SAX..** **SKD..** **SKB..**	N4501 N4561 N4564					800 N 	1000 N 	2800 N 
	Operating voltage	**Positioning signal**	**Positioning time [s]**						
			SAX	SKD	SKB				
	AC 230 V	3-position	120	120	120	–	**SAX31.00**	**SKD32.50**	**SKB32.50**
		3-position	–	120	120	✓	–	**SKD32.51**	**SKB32.51**
		3-position	30	–	–	–	**SAX31.03**	–	–
		3-position	–	30	–	✓	–	**SKD32.21**	–
	AC 24 V [1]	3-position	120	120	120	–	**SAX81.00**	**SKD82.50**	**SKB82.50**
		3-position	–	120	120	✓	–	**SKD82.51**	**SKB82.51**
		3-position	30	–	–	–	**SAX81.03**	–	–
		0...10 V, 4...20 mA	–	30	120	–	–	**SKD60**	**SKB60**
		0...10 V, 4...20 mA	–	30	120	✓	–	**SKD62**	**SKB62**
	AC/DC 24V	0...10 V, 4...20 mA	30	-	-	–	**SAX61.03**		

[1] SAX81..: AC/DC 24 V

PN 16	-25...150 °C											
Data sheet	N4363		N4463				Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]	Δp_s [kPa]	Δp_{max} [kPa]
	VVG41.11..12		–	–	15	G 1B	0.63 / 1	1600	800	1600	800	1600	800
	VVG41.13		–	**VXG41.1301**	15	G 1B	1.6	1600	800	1600	800	1600	800
	VVG41.14		–	**VXG41.1401**	15	G 1B	2.5	1600	800	1600	800	1600	800
	VVG41.15		**VXG41.15**	**VXG41.1501**	15	G 1B	4	1600	800	1600	800	1600	800
	VVG41.20		**VXG41.20**	**VXG41.2001**	20	G 1¼B	6.3	1600	800	1600	800	1600	800
	VVG41.25		**VXG41.25**	**VXG41.2501**	25	G 1½B	10	1550	800	1600	800	1600	800
	VVG41.32		**VXG41.32**	**VXG41.3201**	32	G 2B	16	875	800	1275	800	1600	800
	VVG41.40		**VXG41.40**	**VXG41.4001**	40	G 2¼B	25	525	525	775	775	1600	800
	VVG41.50		**VXG41.50**	**VXG41.5001**	50	G 2¾B	40	300	300	450	450	1225	800

Δp_s Maximum permissible differential pressure at which the motorized valve will close securely against the pressure (close off pressure)
Δp_{max} Maximum permissible differential pressure across the valve's control path, valid for the entire actuating range of the motorized valve

Threaded 2-port and 3-port valves with 5.5 mm actuators

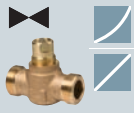
Typical applications	Actuators	Data sheet					5.5 mm	
– Heating plants – District heating – Ventilation and air conditioning plants	SQS..	N4573					400 N 	400 N 
	Operating voltage	Positioning signal	Positioning time [s]		Spring return function			
	AC 230 V	3-position	150	150	✓	–	**SQS35.50**	**SQS35.00**
		3-position	35	35	✓	–	**SQS35.53**	**SQS35.03**
	AC 24 V	3-position	–	150	–	–	–	**SQS85.00**
		3-position	–	35	–	–	–	**SQS85.03**
		0...10 V	35	35	✓	–	**SQS65.5**	**SQS65**
		2...10 V	–	35	–	–	–	**SQS65.2**

PN 16	1...120 °C			DN	G [Inch]	k_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4364		N4464					
	**VVG44.15-..** [3]		**VXG44.15-..**	15	G 1B	0.25 / 0.4 / 0.63	1600	400
	VVG44.15-..		**VXG44.15-..**	15	G 1B	1 / 1.6	725	400
	VVG44.15-..		**VXG44.15-..**	15	G 1B	2.5 / 4	400	400
	VVG44.20-6.3		**VXG44.20-6.3**	20	G 1¼B	6.3	750	400
	VVG44.25-10		**VXG44.25-10**	25	G 1½B	10	400	400
	VVG44.32-16		**VXG44.32-16**	32	G 2B	16	250	250
	VVG44.40-25		**VXG44.40-25**	40	G 2¼B	25	125	125
PN 25	1...130 °C			**DN**	**G** [Inch]	**k_{vs}** [m^3/h]	**Δp_s** [kPa]	**Δp_{max}** [kPa]
Data sheet	N4379							
	**VVG55.15-..**			15	G ¾B	0.25 / 0.4 / 0.63	2500	1200
	VVG55.15-..			15	G ¾B	1 / 1.6 / 2.5	2000	1200
	VVG55.20-4			20	G 1B	4	1000	1000
	VVG55.25-6.3			25	G 1¼B	6.3	800	800

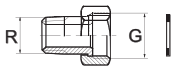
[3] .. = insert k_{vs} value

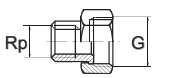
Threaded 2-port and 3-port valves with 5.5 mm actuators

Typical applications	Actuators	Data sheet					5.5 mm
– Heating plants – Ventilation plants	SSC..	N4895					300 N 
	Operating voltage	Positioning signal	Positioning time [s]		Spring return function		
	AC 230 V	3-position	150	–	–	–	**SSC31**	–
	AC 24 V	3-position	150	–	–	–	**SSC81**	–
	AC/DC 24 V	0...10 V	30	30	–	✓	**SSC61**	**SSC61.5**

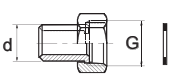
PN 16	1...110 °C			DN	G [Inch]	k_{vs} [m^3/h]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4845		N4845					
	**VVP45.20-4**		**VXP45.20-4**	20	G 1B	4	350	350
	VVP45.25-6.3		**VXP45.25-6.3**	25	G 1¼B	6.3	300	300
	VVP45.25-10		**VXP45.25-10**	25	G 1½B	10	300	300
	VVP45.32-16		**VXP45.32-16**	32	G 2B	16	175	175
	VVP45.40-25		**VXP45.40-25**	40	G 2¼B	25	75	75

Union nuts for threaded valves





Type		G [Inch]	R, Rp [Inch]	Material
Set of 2	Set of 3			
ALG132	**ALG133**	G ½B	R ⅜ (externally threaded)	Brass
ALG142	**ALG143**	G ¾B	R ½ (externally threaded)	Brass
ALG122	**ALG123**	G ¾B	Rp ⅜	Malleable cast iron
ALG152	**ALG153**	G 1B	Rp ½	Malleable cast iron
ALG152B	**ALG153B**	G 1B	Rp ½	Brass
ALG202	**ALG203**	G 1¼B	Rp ¾	Malleable cast iron
ALG202B	**ALG203B**	G 1¼B	Rp ¾	Brass
ALG252	**ALG253**	G 1½B	Rp 1	Malleable cast iron
ALG252B	**ALG253B**	G 1½B	Rp 1	Brass
ALG322	**ALG323**	G 2B	Rp 1¼	Malleable cast iron
ALG322B	**ALG323B**	G 2B	Rp 1¼	Brass
ALG402	**ALG403**	G 2¼B	Rp 1½	Malleable cast iron
ALG402B	**ALG403B**	G 2¼B	Rp 1½	Brass
ALG502	**ALG503**	G 2¾B	Rp 2	Malleable cast iron
ALG502B	**ALG503B**	G 2¾B	Rp 2	Brass



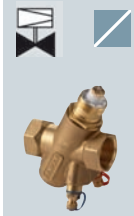
Typ		G [Inch]	d [mm]	Material
Set of 2				
ALS152		G ¾B	21.3	Steel, weldable
ALS202		G 1B	26.8	Steel, weldable
ALS252		G 1¼B	33.7	Steel, weldable

Valve side: cylindrical thread G according to ISO 228-1, pipe side: ALG.. with cylindrical Rp- or tapered R-thread according to ISO 7-1, Pipe side: ALS.. with welded connection

Combi valves with actuators

Typical applications	Actuators	Data sheet			5.5 mm	6.5 mm
– Air handling units	SQD..	N4540			250 N	400 N
	SSD..	N4861				
	Operating voltage	Positioning signal	Positioning time [s]			
	AC 230 V	3-position	150	170	**SSD31**	**SQD35.00**
	AC 24 V	3-position	150	43	**SSD81**	**SQD85.03**
		0...10 V	–	43	**–**	**SQD65**
	AC/DC 24 V	0...10 V	75	–	**SSD61**	**–**
		0...10 V	75	–	**SSD61EP** [1]	**–**
		2...10 V	75	–	**SSD61.2**	**–**

[1] For equal-percentage valve characteristic

PN 25	1...120 °C	DN	Rp	$\dot{V}_{min}$	$\dot{V}$	Δp_{min}	Δp_{max}	Δp_{min}	Δp_{max}
Data sheet	N4853		[Inch]	[l/h]	[l/h]	[kPa]	[kPa]	[kPa]	[kPa]
	**VPI45.25F1.5**	25	Rp 1	280	1720	16	400	–	–
	VPI45.25F1.5Q [2]	25	Rp 1	280	1720	16	400	–	–
	VPI45.25F2	25	Rp 1	350	2040	22	400	–	–
	VPI45.25F2Q [2]	25	Rp 1	350	2040	22	400	–	–
	VPI45.32F3	32	Rp 1 1/4	560	3050	18	400	–	–
	VPI45.32F3Q [2]	32	Rp 1 1/4	560	3050	18	400	–	–
	VPI45.40F7	40	Rp 1 1/2	2355	7105	–	–	26	400 [3]
	VPI45.40F7Q	40	Rp 1 1/2	2355	7105	–	–	26	400 [3]
	VPI45.50F8.5	50	Rp 2	2664	8586	–	–	32	400 [3]
	VPI45.50F8.5Q	50	Rp 2	2664	8586	–	–	32	400 [3]

[2] Fitted with pressure testing points
[3] For Δp_{max} = 400 kPa: leakage rate > 0.05% of volumetric flow $\dot{V}_{100}$. For Δp_{max} = 230 kPa: leakage rate 0...0.05% of volumetric flow $\dot{V}_{100}$

2-port and 3-port ball valves with rotary actuators

Typical applications	Actuators	Data sheet					Spring return function	2 Nm	5 Nm	7 Nm	10 Nm
– Heating plants	GQD..9A	N4659									
– Ventilation and air conditioning plants	GDB..9E	N4657									
	GMA..9E	N4658									
– Heat and cooling generation	GLB..9E	N4657									
– Heat and cooling distribution	Operating voltage	Positioning signal	Positioning time [s] GQD	GDB	GMA	GLB					
	AC 230 V	3-position	–	150	–	150	–	**–**	**GDB331.9E**	**–**	**GLB331.9E**
	AC 24 V	3-position	–	150	–	150	–	**–**	**GDB131.9E**	**–**	**GLB131.9E**
		0...10 V	–	150	–	150	–	**–**	**GDB161.9E**	**–**	**GLB161.9E**
	AC/DC 24 V	3-position	30 / 15	–	90 / 15	–	✓	**GQD131.9A**	**–**	**GMA131.9E**	**–**
		0...10 V	30 / 15	–	90 / 15	–	✓	**GQD161.9A**	**–**	**GMA161.9E**	**–**

PN 40	1...120 °C			DN	Rp	k_{vs}	Δp_s	Δp_{max}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
Data sheet	N4211		N4211		[Inch]	[m^3/h]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
	**VAI61.15-..** [3]		**VBI61.15-..**	15	Rp 1/2	1.6 / 2.5 / 4 / 6.3	1400	350	1400	350	1400	350
	VAI61.15-..		**–**	15	Rp 1/2	1 / 10	1400	350	1400	350	1400	350
	VAI61.20-..		**VBI61.20-..**	20	Rp 3/4	4 / 6.3	1400	350	1400	350	1400	350
	VAI61.20-..		**–**	20	Rp 3/4	10	1400	350	1400	350	1400	350
	VAI61.25-..		**VBI61.25-..**	25	Rp 1	10	–	–	1400	350	1400	350
	VAI61.25-..		**–**	25	Rp 1	6.3 / 16	–	–	1400	350	1400	350
	VAI61.32-..		**VBI61.32-..**	32	Rp 1 1/4	16	–	–	–	–	1000	240
	VAI61.32-..		**–**	32	Rp 1 1/4	10	–	–	–	–	1000	350
	VAI61.32-..		**–**	32	Rp 1 1/4	25	–	–	–	–	1000	240
	VAI61.40-..		**–**	40	Rp 1 1/2	16	–	–	–	–	800	350
	VAI61.40-..		**VBI61.40-..**	40	Rp 1 1/2	25	–	–	–	–	800	240
	VAI61.40-..		**–**	40	Rp 1 1/2	40	–	–	–	–	800	240
	VAI61.50-..		**–**	50	Rp 2	25	–	–	–	–	600	350
	VAI61.50-..		**VBI61.50-..**	50	Rp 2	40	–	–	–	–	600	240
	VAI61.50-..		**–**	50	Rp 2	63	–	–	–	–	600	240

[3] .. = insert k_{vs} value
VBI61..: For low noise operation, the Δp_{max} value of 200 kPa should not be exceeded

3-port and 4-port slipper valves with rotary actuators

Typical applications	Actuators	Data sheet				5 Nm	5 Nm	10 Nm / 12.5 Nm	
– Small to medium-size heating plants	**SQK34../84..** **SQK33..** **SQL33../83..**	N4508 N4506 N4506							
	Operating voltage	**Positioning signal**	**Positioning time [s]**						
			SQK	SQK33	SQL				
	AC 230 V	3-position	135	125	125	**SQK34.00**	**SQK33.00**	**SQL33.00**	
		3-position	–	–	30	–	–	**SQL33.03**	
	AC 24 V	3-position	135	–	125	**SQK84.00**	–	**SQL83.00**	
	Mounting set					**direkt**	**ASK32**	**ASK31**	**ASK32**

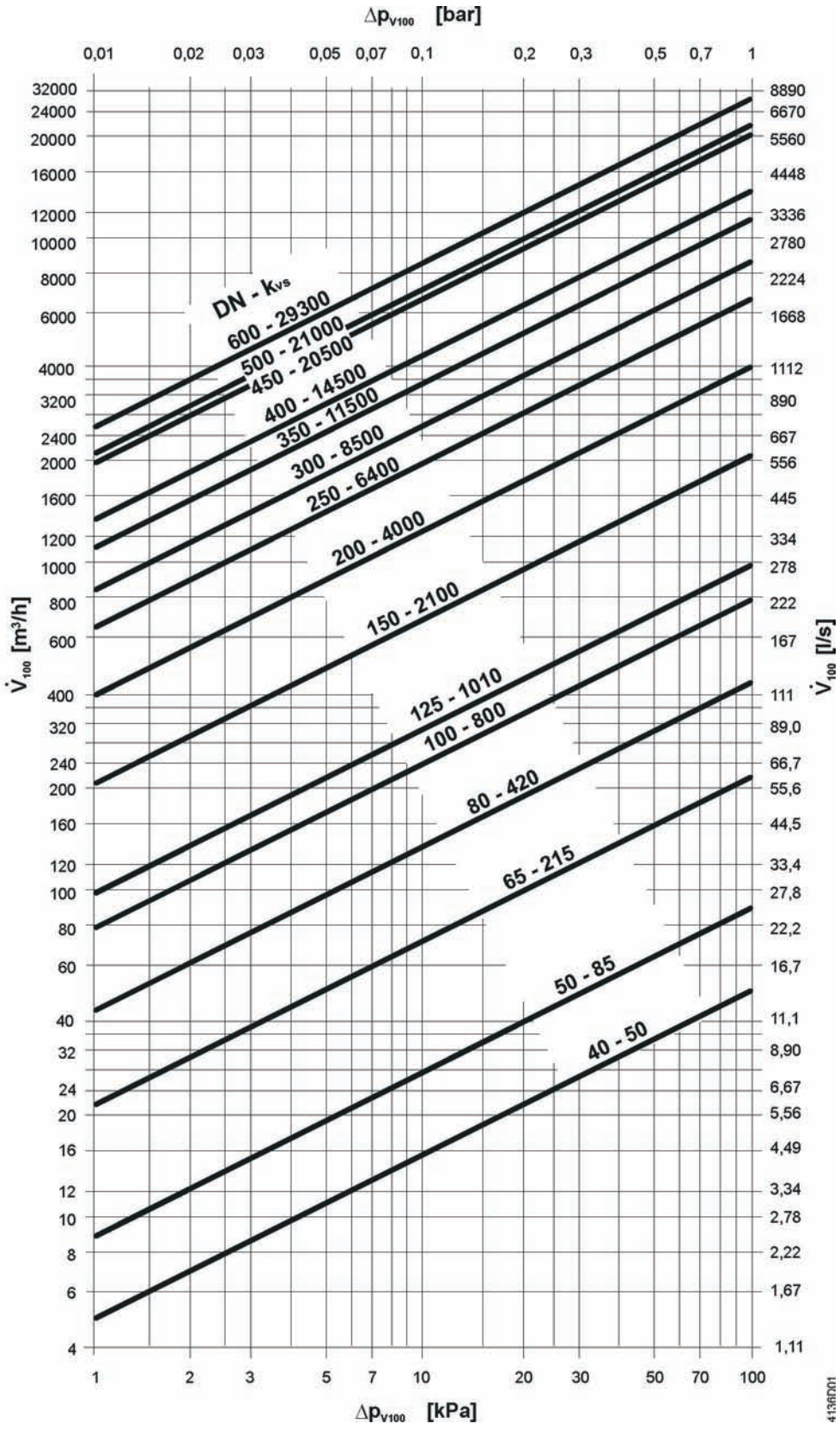
PN 6 Data sheet	1...120 °C N4241	**DN**	k_{vs} [m^3/h]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
	**VBF21.40**	40	25	30	30	–	30
	VBF21.50	50	40	30	30	–	30
	VBF21.65	65	63	–	–	30	–
	VBF21.80	80	100	–	–	30	–
	VBF21.100	100	160	–	–	30	–
	VBF21.125	125	550	–	–	30	–
	VBF21.150	150	820	–	–	30	–

PN 10 Data sheet	1...120 °C N4233	**DN**	**G** [Inch]	k_{vs} [m^3/h]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
	**VBG31.20**	20	G 1¼B	6.3	30	30	–	30
	VBG31.25	25	G 1½B	10	30	30	–	30
	VBG31.32	32	G 2B	16	30	30	–	30
	VBG31.40	40	G 2¼B	25	30	30	–	30

PN 10 Data sheet	1...120 °C N4232	**DN**	**Rp** [Inch]	k_{vs} [m^3/h]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
	**VBI31.20**	20	Rp ¾	6.3	30	30	–	30
	VBI31.25	25	Rp 1	10	30	30	–	30
	VBI31.32	32	Rp 1¼	16	30	30	–	30
	VBI31.40	40	Rp 1½	25	30	30	–	30

PN 10 Data sheet	1...120 °C N4252	**DN**	**Rp** [Inch]	k_{vs} [m^3/h]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]	Δp_{max} [kPa]
	**VCI31.20**	20	Rp ¾	6.3	30	30	–	30
	VCI31.25	25	Rp 1	10	30	30	–	30
	VCI31.32	32	Rp 1¼	16	30	30	–	30
	VCI31.40	40	Rp 1½	25	30	30	–	30

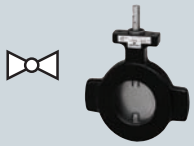
Mounting sets ASK40, ASK41 for products of other manufacturers: mounting sets for SQK33../SQL33../SQL83.. for 3-port and 4-port slipper valves from AXA, BUDERUS, CENTRA, ESBE/SHUNT AB, LOELL, MUEHLENBERG, ONDAMIX and VIESSMANN. For additional details, see data sheet N4291.



Please refer to data sheet.

Butterfly valves with rotary actuators, for mounting between flanges

Typical applications	Actuators	Data sheet	Rotation angle / Torque	90 ° 12.5 Nm	20 Nm	5 Nm
– For shut-off or control – in open and closed circuits	**SQL33../83..** **SQL35../85..**	N4506 N4505				
	Operating voltage	**Positioning signal**	**Positioning time [s]**			
	AC 230 V	3-position	135	–	–	**SQK33.00**
		3-position	125	**SQL33.00**	**SQL35.00**	–
		3-position	30	**SQL33.03** [1]	–	–
	AC 24 V	3-position	125	**SQL83.00**	**SQL85.00**	–
	Mounting set			**ASK33**	**ASK35**	**ASK33**

PN16	-10...120 °C			k_{vs}	Δp_s	Δp_s	Δp_s
Data sheet	N4131		**DN**	[m^3/h]	[kPa]	[kPa]	[kPa]
		**VKF41.40**	40	50	500	–	200
		VKF41.50	50	80	500	–	–
		VKF41.65	65	200	500	–	–
		VKF41.80	80	400	500	–	–
		VKF41.100	100	760	500	–	–
		VKF41.125	125	1'000	300	–	–
		VKF41.150	150	2'100	250	500	–
		VKF41.200	200	4'000	125	300	–

[1] Torque 10 Nm

Recommended maximum flow velocity VKF41.. 4 m/s for water, 40 m/s for gas

Δp_s Maximum permissible differential pressure at which the motorized valve will close securely against the pressure (close off pressure)

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Butterfly valves with rotary actuators, for mounting between flanges

Typical applications	Actuators	Data sheet	Rotation angle / Torque	12.5 Nm	20 Nm	90° 40 Nm		100 Nm	400 Nm	1200 Nm
– For shut-off or control – in open and closed circuits	SQL33../83.. SQL35../85.. SQL36..	N4506 N4505 N4505								
	Operating voltage	**Positioning signal**	**Positioning time [s]**							
	AC 230 V	3-position	6 [1]	–	–	–	–	SQL36E65	–	–
		3-position	12 [1]	–	–	–	–		SQL36E110	–
		3-position	24 [1]	–	–	–	–	–	–	SQL36E160
		3-position	25 [1]	–	–	SQL36E50..		–	–	–
		3-position	125	SQL33.00	SQL35.00	F04	F05			
		3-position	30	SQL33.03		–	–	–	–	–
	AC 24 V	3-position	125	SQL83.00	SQL85.00	–	–	–	–	–
	Mounting set			ASK33	ASK35.1	ASK35.2	direct	direct	direct	direct	direct

[1] With auxiliary module SEZ31.1 variable positioning time: SQL36E65: 30..180 s, SQL36E110: 60..360 s, SQL36E160: 120..720 s

PN16	-10...120 °C			k_{vs}	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s
Data sheet			DN	[m³/h]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
N4136		**VKF46.40**	40	50	–	1600	–	1600	–	–	–	
		VKF46.50	50	85	–	1600	–	1600	–	–	–	
		VKF46.65	65	215	–	1600	–	1600	–	–	–	
		VKF46.80	80	420	–	–	1600	–	1600	–	–	
		VKF46.100	100	800	–	–	1600	–	1600	–	–	
		VKF46.125	125	1010	–	–	1000	–	1000	–	–	
		VKF46.150	150	2100	–	–	–	–	–	1600	–	
		VKF46.200	200	4000	–	–	–	–	–	1000	–	
		VKF46.250	250	6400	–	–	–	–	–	–	1000	
		VKF46.300	300	8500	–	–	–	–	–	–	1000	
		VKF46.350	350	11500	–	–	–	–	–	–	600	
		VKF46.400	400	14500	–	–	–	–	–	–	300	
		VKF46.450	450	20500	–	–	–	–	–	–	–	300
		VKF46.500	500	21000	–	–	–	–	–	–	–	300
		VKF46.600	600	29300	–	–	–	–	–	–	–	300
PN16	-10...120 °C			k_{vs}	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s	Δp_s
Data sheet	N4136		DN	[m³/h]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]	[kPa]
		VKF46.350TS	350	11'500	–	–	–	–	–	–	–	1000
		VKF46.400TS	400	14'500	–	–	–	–	–	–	–	1000
		VKF46.450TS	450	20'500	–	–	–	–	–	–	–	1000
		VKF46.500TS	500	21'000	–	–	–	–	–	–	–	1000
		VKF46.600TS	600	29'300	–	–	–	–	–	–	–	1000

Recommended maximum flow velocity VKF46.. 4.5 m/s for water, 60 m/s for gas

Δp_s Maximum permissible differential pressure at which the motorized valve will close securely against the pressure (close off pressure)

Electromotoric actuators 800 N for valve with 20 mm stroke

SAX..



Electromotoric actuator for the operation of Siemens 2-port and 3-port valves, types VVF.., VVG.., VXF.. and VXG.. with 20 mm stroke as control and safety shut-off valves in heating, ventilation and air conditioning systems.
With manual adjuster and position indicator, status indication per LED.
Optional functions with auxiliary switches, potentiometer, functional module and stem heater.

SAL81.., SAL61.. are UL listed.

Data sheet	N4501
Positioning force	800 N
Stroke	20 mm
Degree of protection	IP54
Ambient temperature, operation	-15...55 °C
Medium temperature	-25...150 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SA..6..)

Range overview SAX31../61../81..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Stock No.	Product No.
AC 230 V	3-position	3.5	120	S55150-A105	SAX31.00
AC 230 V	3-position	8	30	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	8	30	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	3.5	120	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	8	30	S55150-A103	SAX81.03

Accessories for actuators

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SA..31../SA..61../SA..81..	N4501	S55845-Z103	ASC10.51
Potentiometer 0...1000 Ohm for SA..31../SA..81..	N4501	S55845-Z106	ASZ7.5/1000
Potentiometer 0...200 Ohm for SA..31../SA..81..	N4501	S55845-Z105	ASZ7.5/200
Potentiometer 0...135 Ohm for SA..31../SA..81..	N4501	S55845-Z104	ASZ7.5/135
Funtion module for SA..61.., sequence control/changeover of acting direction	N4501	S55845-Z107	AZX61.1
Stem heating element for media < 0 °C	N4501	S55845-Z108	ASZ6.6
Weathershield for SAX../SAL..	N4501	S55845-Z109	ASK39.1

NEW PRODUCT

Acvatix™ Actuators for valves with 20 / 40 mm stroke
Electromotoric, positioning force 700 N: SQX..

SQX..



Electromotoric actuators 700 N for valves with 20 mm stroke

Manual control with automatic reset to control mode. Overload-proof through force-dependent switching off in the end position. Housing and yoke made of die-cast aluminium, for valves with a stroke of 20 mm.

SQX62U, SQX82..U are UL listed.
Available up to September 2011 order afterwards SAX.. actuators.

Data sheet	N4554
Positioning force	700 N
Stroke	20 mm
Degree of protection	IP54
Ambient temperature, operation	-15...50 °C
Medium temperature	-25...150 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V (SQX62) DC 4...20 mA (SQX62)

Range overview SQX32../SQX62../SQX82..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Stock No.	Product No.
AC 230 V	3-position	3.5	150	BPZ:SQX32.00	**SQX32.00**
AC 230 V	3-position	6.5	35	BPZ:SQX32.03	**SQX32.03**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	8	35	BPZ:SQX62	**SQX62**
AC 24 V	3-position	6.5	150	BPZ:SQX82.00	**SQX82.00**
AC 24 V	3-position	6.5	35	BPZ:SQX82.03	**SQX82.03**

Accessories for actuators

Product Title	Data sheet	Stock No.	Product No.
Double auxiliary switch for SQL33../83../35../85.., SQX32../82..	N4554	BPZ:ASC9.4	**ASC9.4**
Auxiliary switch for SQK33.., SQL33../83../35../85.., SQX32../82..	N4554	BPZ:ASC9.5	**ASC9.5**
1 auxiliary switch and 1 potentiometer for SQX32../SQX82../SQL33../SQL83../SQL35../SQL85..	N4554	BPZ:ASZ7.4	**ASZ7.4**
Stem heating element for media < 0 °C		BPZ:ASZ6.5	**ASZ6.5**

Electrohydraulic actuators 1000 N for valves with 20 mm stroke

SKD32../SKD82..



Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.

Data sheet	N4561
Positioning force	1000 N
Stroke	20 mm
Spring return function	SKD32.21, SKD32.51, SKD82.51
Degree of protection	IP54
Ambient temperature, operation	-15...50 °C
Medium temperature	-25...150 °C
Mounting position	Upright to horizontal

Range overview SKD32../SKD82..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 230 V	3-position	20	Close 10	Yes (8 s)	BPZ:SKD32.21	**SKD32.21**
AC 230 V	3-position	16	120	No	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	21	120	Yes (8 s)	BPZ:SKD32.51	**SKD32.51**
AC 24 V	3-position	13	120	No	BPZ:SKD82.50	**SKD82.50**
AC 24 V	3-position	18	120	Yes (8 s)	BPZ:SKD82.51	**SKD82.51**
AC 24 V	3-position	13	120	No	BPZ:SKD82.50U	**SKD82.50U**
AC 24 V	3-position	18	120	Yes (8 s)	BPZ:SKD82.51U	**SKD82.51U**

Actuators SKD 82.50U and SKD82.51U are UL-listed.

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Electrohydraulic actuators 1000 N for valves with 20 mm stroke

SKD60/SKD62..



Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional function with one auxiliary switch. With manual control.

Data sheet	N4561
Positioning force	1000 N
Stroke	20 mm
Spring return function	SKD62..
Degree of protection	IP54
Ambient temperature, operation	-15...50 °C
Medium temperature	-25...150 °C
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V DC 4...20 mA

Acvatix™ Actuators for valves with 20 / 40 mm stroke
Electrohydraulic, positioning force 1000 N / 2800 N: SKD.. / SKB.. / SKC..

Range overview SKD60/SKD62..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	13	Open 30 Close 15	No	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	17	Close 15	Yes (15 s)	BPZ:SKD62	**SKD62**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	17	Open 30 Close 15	Yes (15 s)	BPZ:SKD62U	**SKD62U**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	17	Open 30 Close 15	Yes (15 s)	BPZ:SKD62UA	**SKD62UA**

Actuators with type suffix ..U /..UA are UL-listed. Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.

SKB32../SKB82..



Electrohydraulic actuators 2800 N for valves with 20 mm stroke

Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.

Data sheet	N4564
Positioning force	2800 N
Stroke	20 mm
Spring return function	SKB32.51, SKB82.51
Degree of protection	IP54
Ambient temperature, operation	-15...55 °C
Medium temperature	-25...220 °C (350 °C)
Mounting position	Upright to horizontal

Range overview SKB32../SKB82..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 230 V	3-position	10	120	No	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	15	120	Yes (10 s)	BPZ:SKB32.51	**SKB32.51**
AC 24 V	3-position	13	120	No	BPZ:SKB82.50	**SKB82.50**
AC 24 V	3-position	18	120	Yes (10 s)	BPZ:SKB82.51	**SKB82.51**
AC 24 V	3-position	13	120	No	BPZ:SKB82.50U	**SKB82.50U**
AC 24 V	3-position	18	120	Yes (10 s)	BPZ:SKB82.51U	**SKB82.51U**

Actuators with type suffix ..U are UL-listed.

Electrohydraulic actuators 2800 N for valves with 20 mm stroke

SKB60/62..

Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 20 mm stroke. Optional function with one auxiliary switch. With manual control.



Data sheet	N4564
Positioning force	2800 N
Stroke	20 mm
Spring return function	SKB62..
Degree of protection	IP54
Ambient temperature, operation	-15...55 °C
Medium temperature	-25...220 °C (350 °C)
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V DC 4...20 mA

Range overview SKB60/SKB62..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	18	Open 120 Close 10	No	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	18	Open 120 Close 10	Yes (10 s)	BPZ:SKB62	**SKB62**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	18	Open 120 Close 10	Yes (10 s)	BPZ:SKB62U	**SKB62U**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	18	Open 120 Close 10	Yes (10 s)	BPZ:SKB62UA	**SKB62UA**

Actuators with type suffix ..U /..UA are UL-listed. Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.

Electrohydraulic actuators 2800 N for valves with 40 mm stroke

SKC32../SKC82..

Overload-proof through travel-dependent, fixed switching off in end position. With die-cast aluminium housing and yoke for valves with 40 mm stroke. Optional functions: one auxiliary switch or one potentiometer. With manual control.



Data sheet	N4566
Positioning force	2800 N
Stroke	40 mm
Spring return function	SKC32.61, SKC82.61
Degree of protection	IP54
Ambient temperature, operation	-15...55 °C
Medium temperature	-25...220 °C (350 °C)
Mounting position	Upright to horizontal

Acvatix™ Actuators for valves with 20 / 40 mm stroke
Electrohydraulic, positioning force 1000 N / 2800 N: SKD.. / SKB.. / SKC..

Range overview SKC32../82..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 230 V	3-position	19	120	No	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	24	120	Yes (18 s)	BPZ:SKC32.61	**SKC32.61**
AC 24 V	3-position	19	120	No	BPZ:SKC82.60	**SKC82.60**
AC 24 V	3-position	24	120	Yes (18 s)	BPZ:SKC82.61	**SKC82.61**
AC 24 V	3-position	19	120	No	BPZ:SKC82.60U	**SKC82.60U**
AC 24 V	3-position	24	120	Yes (18 s)	BPZ:SKC82.61U	**SKC82.61U**

Actuators with type suffix ..U are UL-listed.

SKC60/SKC62..

Electrohydraulic actuators 2800 N for valves with 40 mm stroke



Overload-proof through travel-dependent, electronic switching off in end position. With die-cast aluminium housing and yoke for valves with 40 mm stroke. Optional function with one auxiliary switch. With manual control.

Data sheet	N4566
Positioning force	2800 N
Stroke	40 mm
Spring return function	SKC62..
Degree of protection	IP54
Ambient temperature, operation	-15...55 °C
Medium temperature	-25...220 °C (350 °C)
Mounting position	Upright to horizontal
Position feedback	DC 0...10 V DC 4...20 mA

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Range overview SKC60/SKC62..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	28	Open 120 Close 20	No	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	28	Open 120 Close 20	Yes (20 s)	BPZ:SKC62	**SKC62**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	28	Open 120 Close 20	Yes (20 s)	BPZ:SKC62U	**SKC62U**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	28	Open 120 Close 20	Yes (20 s)	BPZ:SKC62UA	**SKC62UA**

Actuators with type suffix ..U /..UA are UL-listed. Actuators type ..UA provide additional functions: Signal inversion, stroke limitation, and adjustable starting point and operating range.

Accessories for actuators

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SKB6../ SKC6../ SKD6..	N4566	BPZ:ASC1.6	**ASC1.6**
Double auxiliary switch for SKB/ C/ D32../82..	N4561	BPZ:ASC9.3	**ASC9.3**
Stroke inverter for SKD..	N4561	BPZ:ASK50	**ASK50**
Stroke inverter for SKB..	N4564	BPZ:ASK51	**ASK51**
Stem heating element for media < 0 °C		BPZ:ASZ6.5	**ASZ6.5**
Potentiometer 0...1000 Ohm for SKB/ C/ D32../82..	N4564	BPZ:ASZ7.3	**ASZ7.3**
Potentiometer 0...135 Ohm for SKB/ C/ D32../82..	N4564	BPZ:ASZ7.31	**ASZ7.31**
Potentiometer 0...200 Ohm for SKB/ C/ D32../82..	N4564	BPZ:ASZ7.32	**ASZ7.32**

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN6: VVF21..

VVF21..



2-port seat valves PN6 with flanged connections

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4310
Stroke	From DN 100: 40 mm To DN 80: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Equal percentage
Rangeability	DN 25...40: >50 DN 50...100: >100
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 40: CrNi steel/brass > DN 50: CrNi steel/Rg5
PN class	PN 6

Range overview 2-port valves VVF21..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	600	300	600	300	600			25	1.9	BPZ:VVF21.22	**VVF21.22**
300	600	300	600	300	600			25	2.5	BPZ:VVF21.25-2.5	**VVF21.25-2.5**
300	600	300	600	300	600			25	3	BPZ:VVF21.23	**VVF21.23**
300	600	300	600	300	600			25	4	BPZ:VVF21.25-4	**VVF21.25-4**
300	600	300	600	300	600			25	5	BPZ:VVF21.24	**VVF21.24**
300	600	300	600	300	600			25	6.3	BPZ:VVF21.25-6.3	**VVF21.25-6.3**
300	600	300	600	300	600			25	7.5	BPZ:VVF21.25	**VVF21.25**
300	600	300	600	300	600			25	10	BPZ:VVF21.25-10	**VVF21.25-10**
300	500	300	600	300	600			40	12	BPZ:VVF21.39	**VVF21.39**
300	500	300	600	300	600			40	16	BPZ:VVF21.40-16	**VVF21.40-16**
300	500	300	600	300	600			40	19	BPZ:VVF21.40	**VVF21.40**
300	500	300	600	300	600			40	25	BPZ:VVF21.40-25	**VVF21.40-25**
300	300	300	450	300	600			50	31	BPZ:VVF21.50	**VVF21.50**
300	300	300	450	300	600			50	40	BPZ:VVF21.50-40	**VVF21.50-40**
175	175	275	275	300	600			65	49	BPZ:VVF21.65	**VVF21.65**
175	175	275	275	300	600			65	63	BPZ:VVF21.65-63	**VVF21.65-63**
100	100	175	175	300	500			80	78	BPZ:VVF21.80	**VVF21.80**
100	100	175	175	300	500			80	100	BPZ:VVF21.80-100	**VVF21.80-100**
						200	300	100	124	BPZ:VVF21.90	**VVF21.90**
						200	300	100	160	BPZ:VVF21.100-160	**VVF21.100-160**

3-port seat valves PN6 with flanged connections

VXF21..

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	N4410
Stroke	To DN 80: 20 mm From DN 100: 40 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0.5...2 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	DN 25...40: >50 DN 50...100: >100
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 40: CrNi steel/brass > DN 50: CrNi steel/Rg5
PN class	PN 6

Range overview 3-port valves VXF21..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	300	300		25	1.9	BPZ:VXF21.22	**VXF21.22**
300	300	300		25	2.5	BPZ:VXF21.25-2.5	**VXF21.25-2.5**
300	300	300		25	3	BPZ:VXF21.23	**VXF21.23**
300	300	300		25	4	BPZ:VXF21.25-4	**VXF21.25-4**
300	300	300		25	5	BPZ:VXF21.24	**VXF21.24**
300	300	300		25	6.3	BPZ:VXF21.25-6.3	**VXF21.25-6.3**
300	300	300		25	7.5	BPZ:VXF21.25	**VXF21.25**
300	300	300		25	10	BPZ:VXF21.25-10	**VXF21.25-10**
300	300	300		40	12	BPZ:VXF21.39	**VXF21.39**
300	300	300		40	16	BPZ:VXF21.40-16	**VXF21.40-16**
300	300	300		40	19	BPZ:VXF21.40	**VXF21.40**
300	300	300		40	25	BPZ:VXF21.40-25	**VXF21.40-25**
300	300	300		50	31	BPZ:VXF21.50	**VXF21.50**
300	300	300		50	40	BPZ:VXF21.50-40	**VXF21.50-40**
175	275	300		65	49	BPZ:VXF21.65	**VXF21.65**
175	275	300		65	63	BPZ:VXF21.65-63	**VXF21.65-63**
100	175	300		80	78	BPZ:VXF21.80	**VXF21.80**
100	175	300		80	100	BPZ:VXF21.80-100	**VXF21.80-100**
			200	100	124	BPZ:VXF21.90	**VXF21.90**
			200	100	160	BPZ:VXF21.100-160	**VXF21.100-160**

Δp_{max}-ratings are valid for mixing applications.
Replacement sealing glands:
VVF/VXF21.., DN25...DN80: part no. 4 284 8806 0
VVF/VXF21.., DN100: part no. 4 679 5629 0

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN6: VXF21..

Field of application for VVF21.. / VXF21..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free
Chilled water/brine	down to -10 °C	EPDM O-ring, silicon-free

Water with anti-freeze
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

Combinable actuator to VVF21.. / VXF21..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

2-port seat valves PN10 with flanged connections

VVF31..

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	N4320
Stroke	From DN 100: 40 mm To DN 80: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Equal percentage
Rangeability	DN 25...40: >50 DN 50...150: >100
Permissible operating pressure	1000 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 40: CrNi steel/brass > DN 50: CrNi steel/Rg5
PN class	PN 10

Range overview 2-port valves VVF31..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	1000	300	1000	300	1000			15	2.5	BPZ:VVF31.15-2.5	**VVF31.15-2.5**
300	1000	300	1000	300	1000			15	4	BPZ:VVF31.15-4	**VVF31.15-4**
300	1000	300	1000	300	1000			25	5	BPZ:VVF31.24	**VVF31.24**
300	1000	300	1000	300	1000			25	6.3	BPZ:VVF31.25-6.3	**VVF31.25-6.3**
300	1000	300	1000	300	1000			25	7.5	BPZ:VVF31.25	**VVF31.25**
300	1000	300	1000	300	1000			25	10	BPZ:VVF31.25-10	**VVF31.25-10**
300	525	300	775	300	1000			40	12	BPZ:VVF31.39	**VVF31.39**
300	525	300	775	300	1000			40	16	BPZ:VVF31.40-16	**VVF31.40-16**
300	525	300	775	300	1000			40	19	BPZ:VVF31.40	**VVF31.40**
300	525	300	775	300	1000			40	25	BPZ:VVF31.40-25	**VVF31.40-25**
300	325	300	475	300	1000			50	31	BPZ:VVF31.50	**VVF31.50**
300	325	300	475	300	1000			50	40	BPZ:VVF31.50-40	**VVF31.50-40**
175	175	275	275	300	750			65	49	BPZ:VVF31.65	**VVF31.65**
175	175	275	275	300	750			65	63	BPZ:VVF31.65-63	**VVF31.65-63**
100	100	175	175	300	500			80	78	BPZ:VVF31.80	**VVF31.80**
100	100	175	175	300	500			80	100	BPZ:VVF31.80-100	**VVF31.80-100**
						200	300	100	124	BPZ:VVF31.90	**VVF31.90**
						200	300	100	160	BPZ:VVF31.100-160	**VVF31.100-160**
						150	200	125	200	BPZ:VVF31.91	**VVF31.91**
						150	200	125	250	BPZ:VVF31.125-250	**VVF31.125-250**
						100	125	150	300	BPZ:VVF31.92	**VVF31.92**
						100	125	150	315	BPZ:VVF31.150-315	**VVF31.150-315**

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN10: VXF31..

VXF31..



3-port seat valves PN10 with flanged connections

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4420
Stroke	To DN 80: 20 mm From DN 100: 40 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0.5...0.2% of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Bypass: linear
Rangeability	DN 25...40: >50 DN 50...150: >100
Permissible operating pressure	1000 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	> DN 50: CrNi steel/Rg5
PN class	PN 10

Range overview 3-port valves VXF31..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	300	300		15	2.5	BPZ:VXF31.15-2.5	**VXF31.15-2.5**
300	300	300		15	4	BPZ:VXF31.15-4	**VXF31.15-4**
300	300	300		25	5	BPZ:VXF31.24	**VXF31.24**
300	300	300		25	6.3	BPZ:VXF31.25-6.3	**VXF31.25-6.3**
300	300	300		25	7.5	BPZ:VXF31.25	**VXF31.25**
300	300	300		25	10	BPZ:VXF31.25-10	**VXF31.25-10**
300	300	300		40	12	BPZ:VXF31.39	**VXF31.39**
300	300	300		40	16	BPZ:VXF31.40-16	**VXF31.40-16**
300	300	300		40	19	BPZ:VXF31.40	**VXF31.40**
300	300	300		40	25	BPZ:VXF31.40-25	**VXF31.40-25**
300	300	300		50	31	BPZ:VXF31.50	**VXF31.50**
300	300	300		50	40	BPZ:VXF31.50-40	**VXF31.50-40**
175	275	300		65	49	BPZ:VXF31.65	**VXF31.65**
175	275	300		65	63	BPZ:VXF31.65-63	**VXF31.65-63**
100	175	300		80	78	BPZ:VXF31.80	**VXF31.80**
100	175	300		80	100	BPZ:VXF31.80-100	**VXF31.80-100**
			200	100	124	BPZ:VXF31.90	**VXF31.90**
			200	100	160	BPZ:VXF31.100-160	**VXF31.100-160**
			150	125	200	BPZ:VXF31.91	**VXF31.91**
			150	125	250	BPZ:VXF31.125-250	**VXF31.125-250**
			100	150	300	BPZ:VXF31.92	**VXF31.92**
			100	150	315	BPZ:VXF31.150-315	**VXF31.150-315**

Δp_{max}-ratings are valid for mixing applications.

Replacement sealing glands for VVF31.. / VXF31..

VVF/VXF31.., DN15...DN80: part no. 4 284 8806 0
VVF/VXF31.., DN100...DN150: part no. 4 679 5629 0

Field of application for VVF31.. / VXF31..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free
Chilled water/brine	down to -10 °C	EPDM O-ring, silicon-free

Water with anti-freeze
For media < 0° C, stem heating element ASZ6.5 or ASZ6.6 is required.

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN10: VXF31..

Combinable actuator to VVF31.. / VXF31..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

2-port seat valves PN16 with flanged connections

VVF40..

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits



Data sheet	N4330
Stroke	From DN 100: 40 mm To DN 80: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Equal percentage
Rangeability	DN 15...40: >50 DN 50...150: >100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 40: CrNi steel/brass > DN 50: CrNi steel/Rg5
PN class	PN 16

Range overview 2-port valves VVF40..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	1600	300	1600	300	1600			15	1.9	BPZ:VVF40.15-1.9	**VVF40.15-1.9**
300	1600	300	1600	300	1600			15	2.5	BPZ:VVF40.15-2.5	**VVF40.15-2.5**
300	1600	300	1600	300	1600			15	3	BPZ:VVF40.15-3	**VVF40.15-3**
300	1600	300	1600	300	1600			15	4	BPZ:VVF40.15-4	**VVF40.15-4**
300	1550	300	1600	300	1600			25	5	BPZ:VVF40.25-5	**VVF40.25-5**
300	1550	300	1600	300	1600			25	6.3	BPZ:VVF40.25-6.3	**VVF40.25-6.3**
300	1550	300	1600	300	1600			25	7.5	BPZ:VVF40.25-7.5	**VVF40.25-7.5**
300	1550	300	1600	300	1600			25	10	BPZ:VVF40.25-10	**VVF40.25-10**
300	525	300	775	300	1600			40	12	BPZ:VVF40.40-12	**VVF40.40-12**
300	525	300	775	300	1600			40	16	BPZ:VVF40.40-16	**VVF40.40-16**
300	525	300	775	300	1600			40	19	BPZ:VVF40.40-19	**VVF40.40-19**
300	525	300	775	300	1600			40	25	BPZ:VVF40.40-25	**VVF40.40-25**
300	325	300	475	300	1300			50	31	BPZ:VVF40.50-31	**VVF40.50-31**
300	325	300	475	300	1300			50	40	BPZ:VVF40.50-40	**VVF40.50-40**
175	175	275	275	300	750			65	49	BPZ:VVF40.65-49	**VVF40.65-49**
175	175	275	275	300	750			65	63	BPZ:VVF40.65-63	**VVF40.65-63**
100	100	175	175	300	500			80	78	BPZ:VVF40.80-78	**VVF40.80-78**
100	100	175	175	300	500			80	100	BPZ:VVF40.80-100	**VVF40.80-100**
						200	300	100	124	BPZ:VVF40.100-124	**VVF40.100-124**
						200	300	100	160	BPZ:VVF40.100-160	**VVF40.100-160**
						150	200	125	200	BPZ:VVF40.125-200	**VVF40.125-200**
						150	200	125	250	BPZ:VVF40.125-250	**VVF40.125-250**
						100	125	150	300	BPZ:VVF40.150-300	**VVF40.150-300**
						100	125	150	315	BPZ:VVF40.150-315	**VVF40.150-315**

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN16: VXF40..

VXF40..



3-port seat valves PN16 with flanged connections

- With flanged connections to ISO 7005
- For chilled, low and high temperature water and brine in closed circuits

Data sheet	N4430
Stroke	From DN 100: 40 mm To DN 80: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0.5...2 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	DN 15...40: >50 DN 50...150: >100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 40: CrNi steel/brass > DN 50: CrNi steel/Rg5
PN class	PN 16

Range overview 3-port valves VXF40..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	300	300		15	1.9	BPZ:VXF40.15-1.9	**VXF40.15-1.9**
300	300	300		15	2.5	BPZ:VXF40.15-2.5	**VXF40.15-2.5**
300	300	300		15	3	BPZ:VXF40.15-3	**VXF40.15-3**
300	300	300		15	4	BPZ:VXF40.15-4	**VXF40.15-4**
300	300	300		25	5	BPZ:VXF40.25-5	**VXF40.25-5**
300	300	300		25	6.3	BPZ:VXF40.25-6.3	**VXF40.25-6.3**
300	300	300		25	7.5	BPZ:VXF40.25-7.5	**VXF40.25-7.5**
300	300	300		25	10	BPZ:VXF40.25-10	**VXF40.25-10**
300	300	300		40	12	BPZ:VXF40.40-12	**VXF40.40-12**
300	300	300		40	16	BPZ:VXF40.40-16	**VXF40.40-16**
300	300	300		40	19	BPZ:VXF40.40-19	**VXF40.40-19**
300	300	300		40	25	BPZ:VXF40.40-25	**VXF40.40-25**
300	300	300		50	31	BPZ:VXF40.50-31	**VXF40.50-31**
300	300	300		50	40	BPZ:VXF40.50-40	**VXF40.50-40**
175	275	300		65	49	BPZ:VXF40.65-49	**VXF40.65-49**
175	275	300		65	63	BPZ:VXF40.65-63	**VXF40.65-63**
100	175	300		80	78	BPZ:VXF40.80-78	**VXF40.80-78**
100	175	300		80	100	BPZ:VXF40.80-100	**VXF40.80-100**

Δp_{max}-ratings are valid for mixing applications.

Range overview 3-port valves VXF40..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
			200	100	124	BPZ:VXF40.100-124	**VXF40.100-124**
			200	100	160	BPZ:VXF40.100-160	**VXF40.100-160**
			150	125	200	BPZ:VXF40.125-200	**VXF40.125-200**
			150	125	250	BPZ:VXF40.125-250	**VXF40.125-250**
			100	150	300	BPZ:VXF40.150-300	**VXF40.150-300**
			100	150	315	BPZ:VXF40.150-315	**VXF40.150-315**

Δp_{max}-ratings are valid for mixing applications.

Replacement sealing glands for VVF40.. / VXF40..

VVF/VXF40.., DN15...DN80: Bestellnummer 4 284 8806 0
VVF/VXF40.., DN100...DN150: Bestellnummer 4 679 5629 0

Field of application for VVF40.. / VXF40..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free
Chilled water/brine	down to -10 °C	EPDM O-ring, silicon-free

Water with anti-freeze
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN16: VXF40..

Combinable actuator for VVF40.. / VXF40..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

2-port seat valves PN16 with flanged connections

VVF41..



- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils and saturated steam in open and closed circuits
- VVF41...4: Sealing gland with PTFE sleeve for temperatures up to 180 °C
- VVF41...5: Sealing gland with PTFE sleeve, silicon-free version, for temperatures up to 180 °C

Available up to spring 2011 order afterwards VVF53.. respectively VVF43.. 2-port valves.

Data sheet	N4340
Stroke	From DN65: 40 mm DN50: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-10...150 °C
Valve characteristic	Equal percentage
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel
PN class	PN 16

Range overview 2-port valves VVF41..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
300	350	400	500	1000	1400			50	19	BPZ:VVF41.49	**VVF41.49**
300	350	400	500	1000	1400			50	31	BPZ:VVF41.50	**VVF41.50**
						600	800	65	49	BPZ:VVF41.65	**VVF41.65**
						400	500	80	78	BPZ:VVF41.80	**VVF41.80**
						250	300	100	124	BPZ:VVF41.90	**VVF41.90**
						175	200	125	200	BPZ:VVF41.91	**VVF41.91**
						100	125	150	300	BPZ:VVF41.92	**VVF41.92**

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN16: VVF41..

Field of application for VVF41..

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free	
High-temperature hot water	up to 180 °C	Teflon	4
High-temperature hot water	up to 180 °C	Teflon, silicon-free	5
Thermooil	up to 180 °C	Teflon	4
Saturated steam	up to 150 °C / 200 kPa	EPDM O-ring, silicon-free	
Superheated steam	up to 180 °C / 200 kPa	Teflon	4
Chilled water / brine	up to -10 °C	EPDM O-ring, silicon-free	

Water with anti-freeze
When ordering, please give Product No. with type suffix, if required, e.g. VVF41.504
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

3-port seat valves PN16 with flanged connections

VXF41..



- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine and heat transfer oils in open and closed circuits

- VXF41...4: Sealing gland with PTFE sleeves for up to 180 °C
- VXF41...5: Sealing gland with PTFE sleeves, silicon-free version, for up to 180 °C

Available up to spring 2011 order afterward VXF43.. or VXF53.. 3-port valves.

Data sheet	N4440
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0.5...2 % of k_{vs} value DN 15...50 with SAX..: 0...0.02 %
Medium temperature	-10...150 °C (180 °C)
Valve characteristic	Bypass: linear
Rangeability	DN 15: >50 DN 25...150: >100
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel
PN class	PN 16

Range overview 3-port valves VXF41..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
800	800	800		15	1.9	BPZ:VXF41.14	**VXF41.14**
800	800	800		15	3	BPZ:VXF41.15	**VXF41.15**
800	800	800		25	5	BPZ:VXF41.24	**VXF41.24**
800	800	800		25	7.5	BPZ:VXF41.25	**VXF41.25**
500	750	800		40	12	BPZ:VXF41.39	**VXF41.39**
500	750	800		40	19	BPZ:VXF41.40	**VXF41.40**
350	500	800		50	19	BPZ:VXF41.49	**VXF41.49**
350	500	800		50	31	BPZ:VXF41.50	**VXF41.50**
			500	65	49	BPZ:VXF41.65	**VXF41.65**
			350	80	78	BPZ:VXF41.80	**VXF41.80**
			250	100	124	BPZ:VXF41.90	**VXF41.90**
			175	125	200	BPZ:VXF41.91	**VXF41.91**
			100	150	300	BPZ:VXF41.92	**VXF41.92**

Δp_{max}- ratings are valid for mixing applications.

Replacement sealing glands for VVF41.. / VXF41..

VXF41.., DN15...DN40: part no. 4 284 8806 0
VXF41..4, DN15...DN40: part no. 4 284 8829 0
VXF41..5, DN15...DN40: part no. 4 284 9538 0
VVF/VXF41.., DN50...DN150: part no. 4 679 5629 0
VVF/VXF41..4, DN50...DN150: part no. 4 679 5630 0
VVF/VXF41..5, DN50...DN150: part no. 4 284 9540 0

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN16: VXF41..

Field of application for VXF41..

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free	
High-temperature hot water	up to 180 °C	Teflon	4
High-temperature hot water	up to 180 °C	Teflon, silicon-free	5
Thermooil	up to 180 °C	Teflon	4
Chilled water / brine	down to -10 °C	EPDM O-ring, silicon-free	

Water with anti-freeze
When ordering, please give type reference with type suffix, if required, e.g. VXF41.504
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

Combinable actuator for VVF41.. / VXF41..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

NEW PRODUCT

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN16: VVF45..

VVF45..



2-port seat valves PN16 with flanged connections

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits
- VVF45...4: Sealing gland with PTFE sleeve for temperatures up to 180 °C

Available up to spring 2011 order afterwards VVF43.. or VVF53.. 2-port valves.

Data sheet	N4345
Stroke	From DN65: 40 mm DN50: 20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-10...150 °C (180 °C)
Valve characteristic	Equal percentage
Rangeability	>100
Permissible operating pressure	1600 kPa
Material, valve body	Nodular cast iron EN-GJS-400-15
Material, inside set	CrNi steel
PN class	PN 16

Range overview 2-port valves VVF45..

SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
1200	1600			50	19	BPZ:VVF45.49	**VVF45.49**
1200	1600			50	31	BPZ:VVF45.50	**VVF45.50**
		1000	1600	65	49	BPZ:VVF45.65	**VVF45.65**
		700	1600	80	78	BPZ:VVF45.80	**VVF45.80**
		450	1600	100	124	BPZ:VVF45.90	**VVF45.90**
		300	1600	125	200	BPZ:VVF45.91	**VVF45.91**
		200	1600	150	300	BPZ:VVF45.92	**VVF45.92**

Replacement sealing glands::
VVF45..: part no. 4 679 5629 0
VVF45..4: part no. 4 679 5630 0

Field of application for VVF45..

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free	
High-temperature hot water	up to 180 °C	Teflon	4
Thermooil	up to 180 °C	Teflon	4
Saturated and super-heated steam	up to 180 °C / 600 kPa	Teflon	4
Chilled water / brine	down to -10 °C	EPDM O-ring, silicon-free	

Water with anti-freeze
When ordering, please give Product No. with type suffix, if required, e.g. VVF45.504
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

Combinable actuator for VVF45..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN25: VVF52..

VVF52..



2-port seat valves PN25 with flanged connections

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits

Control devices MK..5.. (water) or MK..5..G (steam) are TÜV tested control devices with safety shut-off function per DIN EN 14597.

- VVF52...A: Sealing gland with PTFE sleeve for temperatures up to 180 °C
- VVF52...G: Sealing gland with PTFE sleeve for steam up to 180 °C, available for $k_{vs} \geq 1.25$ m^3/h
- VVF52...M: Sealing gland with PTFE sleeve, silicon-free version, for temperatures up to 180 °C

Available up to spring 2011 order afterwards VVF53.. 2-port valves.

Data sheet	N4373
Stroke	20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-20...150 °C (180 °C)
Valve characteristic	Equal percentage
Rangeability	DN25...40: >100
Permissible operating pressure	2500 kPa
Material, valve body	Nodular cast iron EN-GJS-400-18-LT
Material, inside set	CrNi steel
PN class	PN 25

Range overview 2-port valves VVF52..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
1600	2500	1600	2500	1600	2500	15	0.16	BPZ:VVF52.15-0.16	**VVF52.15-0.16**
1600	2500	1600	2500	1600	2500	15	0.2	BPZ:VVF52.15-0.2	**VVF52.15-0.2**
1600	2500	1600	2500	1600	2500	15	0.25	BPZ:VVF52.15-0.25	**VVF52.15-0.25**
1600	2500	1600	2500	1600	2500	15	0.32	BPZ:VVF52.15-0.32	**VVF52.15-0.32**
1600	2500	1600	2500	1600	2500	15	0.4	BPZ:VVF52.15-0.4	**VVF52.15-0.4**
1600	2500	1600	2500	1600	2500	15	0.5	BPZ:VVF52.15-0.5	**VVF52.15-0.5**
1600	2500	1600	2500	1600	2500	15	0.63	BPZ:VVF52.15-0.63	**VVF52.15-0.63**
1600	2500	1600	2500	1600	2500	15	0.8	BPZ:VVF52.15-0.8	**VVF52.15-0.8**
1600	2500	1600	2500	1600	2500	15	1	BPZ:VVF52.15-1	**VVF52.15-1**
1600	2500	1600	2500	1600	2500	15	1.25	BPZ:VVF52.15-1.25	**VVF52.15-1.25**
1600	2500	1600	2500	1600	2500	15	1.6	BPZ:VVF52.15-1.6	**VVF52.15-1.6**
1600	2500	1600	2500	1600	2500	15	2	BPZ:VVF52.15-2	**VVF52.15-2**
1600	2500	1600	2500	1600	2500	15	2.5	BPZ:VVF52.15-2.5	**VVF52.15-2.5**
1600	2500	1600	2500	1600	2500	15	3.2	BPZ:VVF52.15-3.2	**VVF52.15-3.2**
1600	2500	1600	2500	1600	2500	15	4	BPZ:VVF52.15-4	**VVF52.15-4**
1200	1500	1600	2250	1600	2500	25	5	BPZ:VVF52.25-5	**VVF52.25-5**
1200	1500	1600	2250	1600	2500	25	6.3	BPZ:VVF52.25-6.3	**VVF52.25-6.3**
1200	1500	1600	2250	1600	2500	25	8	BPZ:VVF52.25-8	**VVF52.25-8**
1200	1500	1600	2250	1600	2500	25	10	BPZ:VVF52.25-10	**VVF52.25-10**
400	500	700	750	1600	2000	40	12.5	BPZ:VVF52.40-12.5	**VVF52.40-12.5**
400	500	700	750	1600	2000	40	16	BPZ:VVF52.40-16	**VVF52.40-16**
400	500	700	750	1600	2000	40	20	BPZ:VVF52.40-20	**VVF52.40-20**
400	500	700	750	1600	2000	40	25	BPZ:VVF52.40-25	**VVF52.40-25**

Control devices MK..5.. (water) or MK..5..G (steam) are TÜV tested per DIN EN 14597 and can therefore be used as control devices with safety shut-off function for protection against excessive temperature and pressure.

Replacement sealing glands for VVF52..

VVF52..: part no. 4 284 8806 0
VVF52..A, VVF52..G: part no. 4 284 8829 0
VVF52..M: part no. 4 284 9538 0

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN25: VVF52..

Field of application for VVF52..

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free	
Chilled water / brine	down to -20 °C	EPDM O-ring, silicon-free	
High-temperature hot water	up to 180 °C	Teflon	A
High-temperature hot water	up to 180 °C	Teflon, silicon-free	M
Thermooil	up to 180°C	Teflon	A
Satured and superheated steam	up to 180°C / 600 kPa	Teflon	G [1)]

Water with anti-freeze
When ordering, please give type reference with type suffix, e.g. VVF52.25-8G
For media < 0° C, stem heating element ASZ6.5 or ASZ6.6 is required.
[1)] Available from k_{vs} 1.25 m^3/h

Combinable actuator to VVF52..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

2-port seat valves PN40 with flanged connections

VVF61..

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine, heat transfer oils, saturated steam and superheated steam in open and closed circuits

Control devices MK..6.. (water, steam) are TÜV tested control devices with safety shut-off function per DIN EN 14597.



Data sheet	N4382
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-25...220 °C (350 °C)
Valve characteristic	Equal percentage
Rangeability	DN 15...40: >50 DN 50...150: >100
Permissible operating pressure	4000 kPa
Material, valve body	Cast steel GP240GH
Material, inside set	CrNi steel
PN class	PN 40

Range overview 2-port valves VVF61..

SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	SKC.. Δp_{max} [kPa]	SKC.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
1600	4000	1600	4000			15	0.19	BPZ:VVF61.09	**VVF61.09**
1600	4000	1600	4000			15	0.3	BPZ:VVF61.10	**VVF61.10**
1600	4000	1600	4000			15	0.45	BPZ:VVF61.11	**VVF61.11**
1600	4000	1600	4000			15	0.7	BPZ:VVF61.12	**VVF61.12**
1600	4000	1600	4000			15	1.2	BPZ:VVF61.13	**VVF61.13**
1600	4000	1600	4000			15	1.9	BPZ:VVF61.14	**VVF61.14**
1600	4000	1600	4000			15	3	BPZ:VVF61.15	**VVF61.15**
1600	2250	1600	4000			25	3	BPZ:VVF61.23	**VVF61.23**
1600	2250	1600	4000			25	5	BPZ:VVF61.24	**VVF61.24**
1600	2250	1600	4000			25	7.5	BPZ:VVF61.25	**VVF61.25**
		1600	4000			40	12	BPZ:VVF61.39	**VVF61.39**
		1600	4000			40	19	BPZ:VVF61.40	**VVF61.40**
		1600	4000			50	19	BPZ:VVF61.49	**VVF61.49**
		1600	4000			50	31	BPZ:VVF61.50	**VVF61.50**
				1000	4000	65	49	BPZ:VVF61.65	**VVF61.65**
				700	4000	80	78	BPZ:VVF61.80	**VVF61.80**
				450	4000	100	124	BPZ:VVF61.90	**VVF61.90**
				300	4000	125	200	BPZ:VVF61.91	**VVF61.91**
				200	4000	150	300	BPZ:VVF61.92	**VVF61.92**

Control devices MK..6.. (water, steam) are TÜV tested per DIN EN 14597 and can therefore be used as control devices with safety shut-off function for protection against excessive temperature and pressure.

Acvatix™ Flanged valves with 20 / 40 mm stroke 2-port, PN40: VVF61..

Field of application for VVF61..

Medium	Temperature	Valve packing	Type suffix
High-temperature hot water	up to 220 °C	Teflon	
High-temperature hot water	up to 220 °C	Teflon, silicon-free	5
Thermooil	up to 220 °C	Teflon	
Thermooil	up to 350 °C	Teflon	2 [1)]
saturated steam / superheated steam	up to 220 °C / 17 bar abs DN 15...25	Teflon	
saturated steam / superheated steam	up to 220 °C / 11 bar abs DN 40...150	Teflon	
Chilled water / brine	down to -25 °C	Teflon	

Water with anti-freeze
For media < 0 °C, stem heating element ASZ6.5 is required.
1) Special versions with extended neck are available for applications with thermooil up to 350 °C (only for types VVF61.13 to VVF61.92 and VXF61.14 to VXF61.92).
When ordering, please give Product No. with type suffix, e.g. VVF61.252

3-port seat valves PN40 with flanged connections

VXF61..

- With flanged connections to ISO 7005
- For cooling, chilled, low and high temperature water, brine and heat transfer oils in open and closed circuits



Data sheet	N4482
Stroke	To DN 50: 20 mm From DN 65: 40 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0.5...2 % of k_{vs} value
Medium temperature	-25...220 °C (350 °C)
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	DN 15...40: >50 DN 50...150: >100
Permissible operating pressure	4000 kPa
Material, valve body	Cast steel GP240GH
Material, inside set	CrNi steel
PN class	PN 40

Range overview 3-port valves VXF61..

SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	SKC.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
1200	1600		15	1.9	BPZ:VXF61.14	**VXF61.14**
1200	1600		15	3	BPZ:VXF61.15	**VXF61.15**
1200	1600		25	5	BPZ:VXF61.24	**VXF61.24**
1200	1600		25	7.5	BPZ:VXF61.25	**VXF61.25**
	1200		40	12	BPZ:VXF61.39	**VXF61.39**
	1200		40	19	BPZ:VXF61.40	**VXF61.40**
	1000		50	19	BPZ:VXF61.49	**VXF61.49**
	1000		50	31	BPZ:VXF61.50	**VXF61.50**
		800	65	49	BPZ:VXF61.65	**VXF61.65**
		500	80	78	BPZ:VXF61.80	**VXF61.80**
		300	100	124	BPZ:VXF61.90	**VXF61.90**
		200	125	200	BPZ:VXF61.91	**VXF61.91**
		125	150	300	BPZ:VXF61.92	**VXF61.92**

Δp_{max}-ratings are valid for mixing applications.

Replacement sealing glands for VVF61.. / VXF61..

VVF/VXF.., DN15...DN25: part no. 4 284 8829 0
VVF/VXF.., DN40...DN150: part no. 4 679 5630 0
VVF/VXF61..2, DN15...DN150: part no. 4 284 8829 0
VVF/VXF61..5, DN15...25: part no. 4 284 9538 0
VVF/VXF61..5, DN40...DN150: part no. 4 284 9540 0

Acvatix™ Flanged valves with 20 / 40 mm stroke 3-port, PN40: VXF61..

Field of application for VXF61..

Medium	Temperature	Valve packing	Type suffix
High-temperature hot water	up to 220 °C	Teflon	
High-temperature hot water	up to 220 °C	Teflon, silicon-free	5
Thermooil	up to 220 °C	Teflon	
Thermooil	up to 350 °C	Teflon	2 [1)]
Chilled water / brine	down to -25 °C	Teflon	

Water with anti-freeze
For media < 0 °C, stem heating element ASZ6.5 is required.
[1)] Special versions with extended neck are available for applications with thermooil up to 350 °C (only for types VVF61.13 to VVF61.92 and VXF61.14 to VXF61.92).
When ordering, please give Product No. with type suffix, e.g. VVF61.252

Combinable actuator for VVF61.. / VXF61..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**
AC 230 V	3-position	120	No	N4566	BPZ:SKC32.60	**SKC32.60**
AC 230 V	3-position	120	Yes (18 s)	N4566	BPZ:SKC32.61	**SKC32.61**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	No	N4566	BPZ:SKC60	**SKC60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 20	Yes (20 s)	N4566	BPZ:SKC62	**SKC62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

Acvatix™ Threaded valves with 20 mm stroke 2-port, PN16: VVG41..

VVG41..



2-port seat valves PN16 with externally threaded connections

- With threaded connections to ISO 228/1
- For cooling, chilled, low and high temperature water, brine and saturated steam in open and closed circuits

Data sheet	N4363
Stroke	20 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	-25...150 °C
Valve characteristic	Equal percentage
Rangeability	DN 15: >50 DN 20...50: >100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CuSn5Zn5Pb2
Material, inside set	CrNi steel
PN class	PN 16

Range overview 2-port valves VVG41..

SAX.. Δp_{max} [kPa]	SAX.. Δp_s [kPa]	SKD.. Δp_{max} [kPa]	SKD.. Δp_s [kPa]	SKB.. Δp_{max} [kPa]	SKB.. Δp_s [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
800	1600	800	1600	800	1600	G 1 B "	15	0.63	BPZ:VVG41.11	**VVG41.11**
800	1600	800	1600	800	1600	G 1 B "	15	1	BPZ:VVG41.12	**VVG41.12**
800	1600	800	1600	800	1600	G 1 B "	15	1.6	BPZ:VVG41.13	**VVG41.13**
800	1600	800	1600	800	1600	G 1 B "	15	2.5	BPZ:VVG41.14	**VVG41.14**
800	1600	800	1600	800	1600	G 1 B "	15	4	BPZ:VVG41.15	**VVG41.15**
800	1600	800	1600	800	1600	G 1¼ B "	20	6.3	BPZ:VVG41.20	**VVG41.20**
800	1550	800	1600	800	1600	G 1½ B "	25	10	BPZ:VVG41.25	**VVG41.25**
800	875	800	1275	800	1600	G 2 B "	32	16	BPZ:VVG41.32	**VVG41.32**
525	525	775	775	800	1600	G 2¼ B "	40	25	BPZ:VVG41.40	**VVG41.40**
300	300	450	450	800	1225	G 2¾ B "	50	40	BPZ:VVG41.50	**VVG41.50**

ALG..2 fittings must be ordered as individual items and will be delivered seperately.

Field of application

Medium	Temperature	Valve packing
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free
Saturated steam	up to 150 °C / 300 kPa	EPDM O-ring, silicon-free
Chilled water / brine	down to -25 °C	EPDM O-ring, silicon-free

Water with anti-freeze
For media < 0°C, stem heating element ASZ6.5 or ASZ6.6 is required.

Accessories for VVG41..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-51	BPZ:ALG..	**ALG..**

3-port seat valves PN16 with externally threaded connections

VXG41..

- With threaded connections to ISO 228-1
- For drinking, cooling and chilled water, low and high temperature hot water and brine in open and closed circuits



Data sheet	N4463
Stroke	20 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	Standard version: 0.5...2 % of k_{vs} value Special version: 0...0.02 % of k_{vs} value (VXG41..01)
Medium temperature	-25...150 °C
Valve characteristic	Bypass: linear
Rangeability	DN 15: > 50 DN 20...50: > 100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CuSn5Zn5Pb2
Material, inside set	CrNi steel
PN class	PN 16

Range overview 3-port valves VXG41..

SAX.. Δp_{max} [kPa]	SKD.. Δp_{max} [kPa]	SKB.. Δp_{max} [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
800	800	800	G 1 B "	15	1.6	BPZ:VXG41.1301	**VXG41.1301**
800	800	800	G 1 B "	15	2.5	BPZ:VXG41.1401	**VXG41.1401**
800	800	800	G 1 B "	15	4	BPZ:VXG41.15	**VXG41.15**
800	800	800	G 1 B "	15	4	BPZ:VXG41.1501	**VXG41.1501**
800	800	800	G 1¼ B "	20	6.3	BPZ:VXG41.20	**VXG41.20**
800	800	800	G 1¼ B "	20	6.3	BPZ:VXG41.2001	**VXG41.2001**
800	800	800	G 1½ B "	25	10	BPZ:VXG41.25	**VXG41.25**
800	800	800	G 1½ B "	25	10	BPZ:VXG41.2501	**VXG41.2501**
800	800	800	G 2 B "	32	16	BPZ:VXG41.32	**VXG41.32**
800	800	800	G 2 B "	32	16	BPZ:VXG41.3201	**VXG41.3201**
525	775	800	G 2¼ B "	40	25	BPZ:VXG41.40	**VXG41.40**
525	775	800	G 2¼ B "	40	25	BPZ:VXG41.4001	**VXG41.4001**
300	450	800	G 2¾ B "	50	40	BPZ:VXG41.50	**VXG41.50**
300	450	800	G 2¾ B "	50	40	BPZ:VXG41.5001	**VXG41.5001**

VXG41..01 are DVGW approved
VXG41..01 are supplied with tight bypass
Δp_{max}-ratings are valid for mixing applications.
ALG..3 fittings must be ordered as individual items and will be delivered separately.

Replacement sealing gland fro VVG41.. / VXG41..

VVG/VXG41.., DN15...50: Bestellnummer 4 284 8874 0

Acvatix™ Threaded valves with 20 mm stroke 3-port, PN16: VXG41..

Field of application for VXG41..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 150 °C	EPDM O-ring, silicon-free
Chilled water / brine	down -25 °C	EPDM O-ring, silicon-free
Drinking water	up to 90 °C	EPDM O-ring, silicon-free

Water with anti-freeze
For media < 0°C, stem heating element ASZ6.5 or ASZ6.5 is required.

Accessories for VXG41..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-51	BPZ:ALG..	**ALG..**

Combinable actuator to VXG41..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	120	no	N4501	S55150-A105	SAX31.00
AC 230 V	3-position	30	no	N4501	S55150-A106	SAX31.03
AC 24 V DC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	30	no	N4501	S55150-A100	SAX61.03
AC 24 V DC 24 V	3-position	120	no	N4501	S55150-A102	SAX81.00
AC 24 V DC 24 V	3-position	30	no	N4501	S55150-A103	SAX81.03
AC 230 V	3-position	120	No	N4561	BPZ:SKD32.50	**SKD32.50**
AC 230 V	3-position	120	Yes (8 s)	N4561	BPZ:SKD32.51	**SKD32.51**
AC 230 V	3-position	Close 10	Yes (8 s)	N4561	BPZ:SKD32.21	**SKD32.21**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Open 30 Close 15	No	N4561	BPZ:SKD60	**SKD60**
AC 24 V	DC 0...10 V DC 4...20 mA 0...1000 Ohm	Close 15	Yes (15 s)	N4561	BPZ:SKD62	**SKD62**
AC 230 V	3-position	120	No	N4564	BPZ:SKB32.50	**SKB32.50**
AC 230 V	3-position	120	Yes (10 s)	N4564	BPZ:SKB32.51	**SKB32.51**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	No	N4564	BPZ:SKB60	**SKB60**
AC 24 V	DC 0...10 V 4...20 mA 0...1000 Ohm	Open 120 Close 10	Yes (10 s)	N4564	BPZ:SKB62	**SKB62**

Further information to the actuators please see "Actuators for valves with 20 / 40 mm stroke"

Fittings with threaded connections: Set of 2

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..2 consists of 2 cap nuts, 2 insert nuts and 2 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG152	**ALG152**
G 1 "	Rp ½ "	Brass	S55846-Z100	**ALG152B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG202	**ALG202**
G 1¼ "	Rp ¾ "	Brass	S55846-Z102	**ALG202B**
G 1½ "	Rp 1 "	Phosphated malleable cast iron	BPZ:ALG252	**ALG252**
G 1½ "	Rp 1 "	Brass	S55846-Z104	**ALG252B**
G 2 "	Rp 1¼ "	Phosphated malleable cast iron	BPZ:ALG322	**ALG322**
G 2 "	Rp 1¼ "	Brass	S55846-Z106	**ALG322B**
G 2¼ "	Rp 1½ "	Phosphated malleable cast iron	BPZ:ALG402	**ALG402**
G 2¼ "	Rp 1½ "	Brass	S55846-Z108	**ALG402B**
G 2¾ "	Rp 2 "	Phosphated malleable cast iron	BPZ:ALG502	**ALG502**
G 2¾ "	Rp 2 "	Brass	S55846-Z110	**ALG502B**

Fittings with threaded connections: Set of 3

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..3 consists of 3 cap nuts, 3 insert nuts and 3 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG153	**ALG153**
G 1 "	Rp ½ "	Brass	S55846-Z101	**ALG153B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG203	**ALG203**
G 1¼ "	Rp ¾ "	Brass	S55846-Z103	**ALG203B**
G 1½ "	Rp 1 "	Phosphated malleable cast iron	BPZ:ALG253	**ALG253**
G 1½ "	Rp 1 "	Brass	S55846-Z105	**ALG253B**
G 2 "	Rp 1¼ "	Phosphated malleable cast iron	BPZ:ALG323	**ALG323**
G 2 "	Rp 1¼ "	Brass	S55846-Z107	**ALG323B**
G 2¼ "	Rp 1½ "	Phosphated malleable cast iron	BPZ:ALG403	**ALG403**
G 2¼ "	Rp 1½ "	Brass	S55846-Z109	**ALG403B**
G 2¾ "	Rp 2 "	Phosphated malleable cast iron	BPZ:ALG503	**ALG503**
G 2¾ "	Rp 2 "	Brass	S55846-Z111	**ALG503B**

Applications requiring union fittings with DVGW approval must be delivered by thirds.

Acvatix™ Actuators for threaded valves with 5.5 mm stroke
Positioning force 400 N: SQS..

SQS..



Electromotoric actuators for threaded valves with a stroke of 5.5 mm

Manual control with automatic reset to control mode. Overload-proof through force-dependent switching off in the end position. With plastic housing and cap nut for fitting on threaded valves with a stroke of 5.5 mm.

Data sheet	N4573
Positioning force	400 N
Stroke	5.5 mm
Spring return function	SQS35.50, SQS35.53, SQS65.5
Degree of protection	IP54
Ambient temperature, operation	-5...50 °C
Medium temperature	1...130 °C
Mounting position	Upright to horizontal

Range overview SQS35.. /SQS65../SQS85..

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Position feedback	Stock No.	Product No.
AC 230 V	3-position	2.5	150	No		BPZ:SQS35.00	**SQS35.00**
AC 230 V	3-position	3.5	35	No		BPZ:SQS35.03	**SQS35.03**
AC 230 V	3-position	5	150	Yes (8 s)		BPZ:SQS35.50	**SQS35.50**
AC 230 V	3-position	6	35	Yes (8 s)		BPZ:SQS35.53	**SQS35.53**
AC 24 V	0...1000 Ohm	4.5	35	No	DC 0...10	BPZ:SQS65	**SQS65**
AC 24 V	0...1000 Ohm	4.5	35	No	DC 0...10	BPZ:SQS65.2	**SQS65.2**
AC 24 V	0...1000 Ohm	7	35	Yes (8 s)	DC 0...10	BPZ:SQS65.5	**SQS65.5**
AC 24 V	3-position	2	150	No		BPZ:SQS85.00	**SQS85.00**
AC 24 V	3-position	2	35	No		BPZ:SQS85.03	**SQS85.03**

Actuators with spring-return function have a position indication in place of the manual control lever.
Actuators SQS65 and SQS65.5 are UL-listed (only 60 Hz); type suffix U, e.g. SQS65U.

Accessories for SQS35../SQS85..

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SQS35../85.., SQD35../85..	N4573	BPZ:ASC9.6	**ASC9.6**
Adapter to upgrade older Landis&Gyr valves	N4573	BPZ:ASK30	**ASK30**

Electromotoric actuators 300 N for valves with 5.5 mm stroke

SSC..

Manual control with automatic reset to control mode. Overload-proof through force-dependent switching off in the end position. With plastic housing and cap nut for fitting on threaded valves with 5.5 mm stroke.



Data sheet	N4895
Positioning force	300 N
Stroke	5.5 mm
Degree of protection	IP40
Ambient temperature, operation	5...50 °C
Medium temperature	1...110 °C
Mounting position	Upright to horizontal

SSC...U are UL listed.

Range overview SSC31/SSC61/SSC81

Operating voltage	Positioning signal	Power consumption [VA]	Positioning time [s]	Spring return function	Stock No.	Product No.
AC 24 V	3-position	0.8	150	No	BPZ:SSC81	**SSC81**
AC 24 V DC 24 V	DC 0...10 V	2	30	No	BPZ:SSC61	**SSC61**
AC 24 V DC 24 V	DC 0...10 V	2	30	Yes (15 s)	BPZ:SSC61.5	**SSC61.5**
AC 230 V	3-position	6	150	No	BPZ:SSC31	**SSC31**

SSC61.5: Power consumption when connecting power for the first time 3 VA

Accessories for SSC..

Product Title	Data sheet	Stock No.	Product No.
Adapter to upgrade older Landis&Gyr valves	N4573	BPZ:ASK30	**ASK30**

Acvatix™ Threaded valves with 5.5 mm stroke 2-port, PN16: VVG44..

VVG44..

2-port seat valves PN16 with externally threaded connections



- With threaded connections to ISO 228/1
- For chilled water and low-temperature hot water in closed circuits

Data sheet	N4364
Stroke	5.5 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	1...120 °C
Valve characteristic	Linear
Rangeability	DN 15: >50...100
Permissible operating pressure	1600 kPa
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel / Rg5, brass
PN class	PN 16

Range overview 2-port valves VVG44..

Δp_{max} [kPa]	Δp_s [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
400	1600	G 1 B "	15	0.25	BPZ:VVG44.15-0.25	**VVG44.15-0.25**
400	1600	G 1 B "	15	0.4	BPZ:VVG44.15-0.4	**VVG44.15-0.4**
400	1600	G 1 B "	15	0.63	BPZ:VVG44.15-0.63	**VVG44.15-0.63**
400	725	G 1 B "	15	1	BPZ:VVG44.15-1	**VVG44.15-1**
400	725	G 1 B "	15	1.6	BPZ:VVG44.15-1.6	**VVG44.15-1.6**
400	400	G 1 B "	15	2.5	BPZ:VVG44.15-2.5	**VVG44.15-2.5**
400	400	G 1 B "	15	4	BPZ:VVG44.15-4	**VVG44.15-4**
400	750	G 1¼ B "	20	6.3	BPZ:VVG44.20-6.3	**VVG44.20-6.3**
400	400	G 1½ B "	25	10	BPZ:VVG44.25-10	**VVG44.25-10**
250	250	G 2 B "	32	16	BPZ:VVG44.32-16	**VVG44.32-16**
125	125	G 2¼ B "	40	25	BPZ:VVG44.40-25	**VVG44.40-25**

Δp_{max}/Δp_s-ratings refer to actuators SQS35/65/85 of the D-series with a positioning force of 400 N.
Fittings ALG..2 must be ordered as separae items and are also supplied as such.

Field of application for VVG44..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 120 °C	EPDM O-ring
Chilled water	above 1 °C	EPDM O-ring

Water with anti-freeze

Accessories for VVG44..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-61	BPZ:ALG..	**ALG..**

3-port seat valves PN16 with externally threaded connections

VXG44..

- With threaded connections to ISO 228/1
- For chilled water or low-temperature hot water in closed circuits



Data sheet	N4464
Stroke	5.5 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0...0.02 % of k_{vs} value
Medium temperature	1...120 °C
Valve characteristic	Throughport: equal-percentage
Rangeability	DN ≥ 20: >100
Permissible operating pressure	1600 kPa
Material, valve body	Bronze CC491K (Rg5)
Material, inside set	CrNi steel/Rg5/brass
PN class	PN 16

Range overview 3-port valves VXG44..

Δp_{max} [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
400	G 1 B "	15	0.25	BPZ:VXG44.15-0.25	**VXG44.15-0.25**
400	G 1 B "	15	0.4	BPZ:VXG44.15-0.4	**VXG44.15-0.4**
400	G 1 B "	15	0.63	BPZ:VXG44.15-0.63	**VXG44.15-0.63**
400	G 1 B "	15	1	BPZ:VXG44.15-1	**VXG44.15-1**
400	G 1 B "	15	1.6	BPZ:VXG44.15-1.6	**VXG44.15-1.6**
400	G 1 B "	15	2.5	BPZ:VXG44.15-2.5	**VXG44.15-2.5**
400	G 1 B "	15	4	BPZ:VXG44.15-4	**VXG44.15-4**
400	G 1¼ B "	20	6.3	BPZ:VXG44.20-6.3	**VXG44.20-6.3**
400	G 1½ B "	25	10	BPZ:VXG44.25-10	**VXG44.25-10**
250	G 2 B "	32	16	BPZ:VXG44.32-16	**VXG44.32-16**
125	G 2¼ B "	40	25	BPZ:VXG44.40-25	**VXG44.40-25**

Δp_{max}-ratings are valid for mixing applications. The ratings refer to actuators SQS35/65/85 of the D-series with a positioning force of 400N. Fittings ALG..3 must be ordered as separate items and are also supplied as such.

Field of application for VXG44..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 120 °C	EPDM O-ring
Chilled water	above 1 °C	EPDM O-ring

Water with anti-freeze

Accessories for VXG44..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-62	BPZ:ALG..	**ALG..**

Acvatix™ Threaded valves with 5.5 mm stroke 3-port, PN16: VXG44..

Combinable actuator for VVG44.. / VXG44..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	No	N4573	BPZ:SQS35.00	**SQS35.00**
AC 230 V	3-position	35	No	N4573	BPZ:SQS35.03	**SQS35.03**
AC 230 V	3-position	150	Yes (8 s)	N4573	BPZ:SQS35.50	**SQS35.50**
AC 230 V	3-position	35	Yes (8 s)	N4573	BPZ:SQS35.53	**SQS35.53**
AC 24 V	3-position	150	No	N4573	BPZ:SQS85.00	**SQS85.00**
AC 24 V	3-position	35	No	N4573	BPZ:SQS85.03	**SQS85.03**
AC 24 V	0...1000 Ohm	35	No	N4573	BPZ:SQS65	**SQS65**
AC 24 V	0...1000 Ohm	35	No	N4573	BPZ:SQS65.2	**SQS65.2**
AC 24 V	0...1000 Ohm	35	Yes (8 s)	N4573	BPZ:SQS65.5	**SQS65.5**

Further information to the actuators please see "Actuators for threaded valves with 5.5 mm stroke"

2-port, 3-port and 3-port seat valves with bypass, PN16

V..P45..

2-port, 3-port and 3-port seat valves with bypass, with threaded connections for the control of terminal units, chilled ceilings or heating zones.
Suitable media: Water (to VDI 2035), water with anti-freeze.







Data sheet	N4845
Stroke	5.5 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	1...110 °C
Valve characteristic	Throughport: equal-percentage
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel, brass
PN class	PN 16
Permissible operating pressure	1600 kPa

V..P45.. valves are only used as mixing or 2-port valves, not as diverting valves.
They are also suitable for SERTO® compression fittings.
The V..P45.. are also available for Conex® compression fittings, type suffix S:
VVP45..S and VMP45..S for k_{vs} values 0.63, 1, 1.6, 2.5 m³/h, datasheet N4845

Range overview 2-port valves VVP45..

SSB.. Δp_{max} [kPa]	SSB.. Δp_s [kPa]	GQD..9A Δp_s [kPa]	SSC.. Δp_s [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Δp_s [kPa]	Stock No.	Product No.
400	725	400	725	G ½ B "	10	0.25	725	BPZ:VVP45.10-0.25	**VVP45.10-0.25**
400	725	400	725	G ½ B "	10	0.4	725	BPZ:VVP45.10-0.4	**VVP45.10-0.4**
400	725	400	725	G ½ B "	10	0.63	725	BPZ:VVP45.10-0.63	**VVP45.10-0.63**
400	725	400	725	G ½ B "	10	1	725	BPZ:VVP45.10-1	**VVP45.10-1**
400	725	400	725	G ½ B "	10	1.6	725	BPZ:VVP45.10-1.6	**VVP45.10-1.6**
350	350	400	350	G ¾ B "	15	2.5	350	BPZ:VVP45.15-2.5	**VVP45.15-2.5**
350	350	350	350	G 1 B "	20	4	350	BPZ:VVP45.20-4	**VVP45.20-4**
300	300	300	300	G 1¼ B "	25	6.3	300	BPZ:VVP45.25-6.3	**VVP45.25-6.3**
		300	300	G 1½ B "	25	10	300	BPZ:VVP45.25-10	**VVP45.25-10**
		175	175	G 2 B "	32	16	175	BPZ:VVP45.32-16	**VVP45.32-16**
		75	75	G 2¼ B "	40	25	75	BPZ:VVP45.40-25	**VVP45.40-25**

$\Delta p_{max}/\Delta p_s$-ratings refer to actuators SSC31/61/81 with a positioning force of 300 N.
Fittings ALG..2 must be ordered as separate items and are also supplied as such.
For valves VVP45.10-0.25 to VVP45.25-6.3 it is possible to use SSB.. actuators.

Acvatix™ Threaded valves with 5.5 mm stroke 2-port, 3-port, PN16: VVP45.. / VXP45..

Range overview 3-port valves VXP45..

SSB.. Δp_{max} [kPa]	GQD..9A Δp_s [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
400	400	G ½ B "	10	0.25	BPZ:VXP45.10-0.25	**VXP45.10-0.25**
400	400	G ½ B "	10	0.4	BPZ:VXP45.10-0.4	**VXP45.10-0.4**
400	400	G ½ B "	10	0.63	BPZ:VXP45.10-0.63	**VXP45.10-0.63**
400	400	G ½ B "	10	1	BPZ:VXP45.10-1	**VXP45.10-1**
400	400	G ½ B "	10	1.6	BPZ:VXP45.10-1.6	**VXP45.10-1.6**
350	400	G ¾ B "	15	2.5	BPZ:VXP45.15-2.5	**VXP45.15-2.5**
350	350	G 1 B "	20	4	BPZ:VXP45.20-4	**VXP45.20-4**
300	300	G 1¼ B "	25	6.3	BPZ:VXP45.25-6.3	**VXP45.25-6.3**
	300	G 1½ B "	25	10	BPZ:VXP45.25-10	**VXP45.25-10**
	175	G 2 B "	32	16	BPZ:VXP45.32-16	**VXP45.32-16**
	75	G 2¼ B "	40	25	BPZ:VXP45.40-25	**VXP45.40-25**

Δp_{max}-ratings are valid for mixing applications. The ratings refer to actuators SSC31/61/81 with a positioning force of 300 N.
Fittings ALG..3 must be ordered as separate items and are also supplied as such.
For valves VXP45.10-0.25 to VXP45.25-6.3 it is possible to use SSB.. actuators.

Field of applications

Medium	Temperature	Valve packing
Low-temperature hot water	up to 110 °C	EPDM O-ring
Chilled water	above 1 °C	EPDM O-ring

Water with anti-freeze

Accessories for V..P45..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-61	BPZ:ALG..	**ALG..**

Combinable actuator for V..P45..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	No	N4895	BPZ:SSC31	**SSC31**
AC 24 V DC 24 V	DC 0...10 V	30	No	N4895	BPZ:SSC61	**SSC61**
AC 24 V DC 24 V	DC 0...10 V	30	Yes (15 s)	N4895	BPZ:SSC61.5	**SSC61.5**
AC 24 V	3-position	150	No	N4895	BPZ:SSC81	**SSC81**

Further information to the actuators please see "Actuators for threaded valves with 5.5 mm stroke"

2-port seat valves PN25 with externally threaded connections

VVG55..

- With threaded connections to ISO 228/1
- For chilled water and low-temperature hot water in closed circuits, especially for district heat applications



Data sheet	N4379
Stroke	5.5 mm
Leakage rate	0...0.02 % of k_{vs} value
Medium temperature	1...130 °C
Valve characteristic	Equal percentage
Rangeability	From DN 20: >100 DN 15: >50...100
Permissible operating pressure	2500 kPa
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel

Range overview 2-port valves VVG55..

Δp_{max} [kPa]	Δp_s [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
1200	2500	G ¾ B "	15	0.25	BPZ:VVG55.15-0.25	**VVG55.15-0.25**
1200	2500	G ¾ B "	15	0.4	BPZ:VVG55.15-0.4	**VVG55.15-0.4**
1200	2500	G ¾ B "	15	0.63	BPZ:VVG55.15-0.63	**VVG55.15-0.63**
1200	2000	G ¾ B "	15	1	BPZ:VVG55.15-1	**VVG55.15-1**
1200	2000	G ¾ B "	15	1.6	BPZ:VVG55.15-1.6	**VVG55.15-1.6**
1200	2000	G ¾ B "	15	2.5	BPZ:VVG55.15-2.5	**VVG55.15-2.5**
1000	1000	G 1 B "	20	4	BPZ:VVG55.20-4	**VVG55.20-4**
800	800	G 1¼ B "	25	6.3	BPZ:VVG55.25-6.3	**VVG55.25-6.3**

Field of application for VVG55..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 130 °C	EPDM O-ring
Chilled water	above 1 °C	EPDM O-ring

Water with anti-freeze

Accessories for VVG55..

Product Title	s. page	Stock No.	Product No.
Fittings, pipe-side with threaded connection	12-61	BPZ:ALG..	**ALG..**
Fittings, pipeside with welding connection	12-61	BPZ:ALS..	**ALS..**

Acvatix™ Threaded valves with 5.5 mm stroke 2-port, PN25: VVG55..

Combinable actuator for VVG44.. / VXG44..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	No	N4573	BPZ:SQS35.00	**SQS35.00**
AC 230 V	3-position	35	No	N4573	BPZ:SQS35.03	**SQS35.03**
AC 230 V	3-position	150	Yes (8 s)	N4573	BPZ:SQS35.50	**SQS35.50**
AC 230 V	3-position	35	Yes (8 s)	N4573	BPZ:SQS35.53	**SQS35.53**
AC 24 V	3-position	150	No	N4573	BPZ:SQS85.00	**SQS85.00**
AC 24 V	3-position	35	No	N4573	BPZ:SQS85.03	**SQS85.03**
AC 24 V	0...1000 Ohm	35	No	N4573	BPZ:SQS65	**SQS65**
AC 24 V	0...1000 Ohm	35	No	N4573	BPZ:SQS65.2	**SQS65.2**
AC 24 V	0...1000 Ohm	35	Yes (8 s)	N4573	BPZ:SQS65.5	**SQS65.5**

Further information to the actuators please see "Actuators for threaded valves with 5.5 mm stroke"

Fittings with weldable connections: Set of 2

Cylindric thread to ISO 228-1 on valve side. Welded connection on the pipe side.
Each ALS.. set consists of 2 cap nuts, 2 inserts and 2 flat seals.

Connecting thread, valve side	Pipe diameter	Material	Stock No.	Product No.
G ¾ "	21.3 mm	Weldable steel	BPZ:ALS152	**ALS152**
G 1 "	26.8 mm	Weldable steel	BPZ:ALS202	**ALS202**
G 1¼ "	33.7 mm	Weldable steel	BPZ:ALS252	**ALS252**

Fittings with threaded connections: Set of 2

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..2 consists of 2 cap nuts, 2 insert nuts and 2 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG132	**ALG132**
G ¾ "	R ½ "	Brass	BPZ:ALG142	**ALG142**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG122	**ALG122**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG152	**ALG152**
G 1 "	Rp ½ "	Brass	S55846-Z100	**ALG152B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG202	**ALG202**
G 1¼ "	Rp ¾ "	Brass	S55846-Z102	**ALG202B**
G 1½ "	Rp 1 "	Phosphated malleable cast iron	BPZ:ALG252	**ALG252**
G 1½ "	Rp 1 "	Brass	S55846-Z104	**ALG252B**
G 2 "	Rp 1¼ "	Phosphated malleable cast iron	BPZ:ALG322	**ALG322**
G 2 "	Rp 1¼ "	Brass	S55846-Z106	**ALG322B**
G 2¼ "	Rp 1½ "	Phosphated malleable cast iron	BPZ:ALG402	**ALG402**
G 2¼ "	Rp 1½ "	Brass	S55846-Z108	**ALG402B**
G 2¾ "	Rp 2 "	Phosphated malleable cast iron	BPZ:ALG502	**ALG502**
G 2¾ "	Rp 2 "	Brass	S55846-Z110	**ALG502B**

Acvatix™ Threaded valves with 5.5 mm stroke
Fittings

Fittings with threaded connections: Set of 3

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..3 consists of 3 cap nuts, 3 insert nuts and 3 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG133	**ALG133**
G ¾ "	R ½ "	Brass	BPZ:ALG143	**ALG143**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG123	**ALG123**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG153	**ALG153**
G 1 "	Rp ½ "	Brass	S55846-Z101	**ALG153B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG203	**ALG203**
G 1¼ "	Rp ¾ "	Brass	S55846-Z103	**ALG203B**
G 1½ "	Rp 1 "	Phosphated malleable cast iron	BPZ:ALG253	**ALG253**
G 1½ "	Rp 1 "	Brass	S55846-Z105	**ALG253B**
G 2 "	Rp 1¼ "	Phosphated malleable cast iron	BPZ:ALG323	**ALG323**
G 2 "	Rp 1¼ "	Brass	S55846-Z107	**ALG323B**
G 2¼ "	Rp 1½ "	Phosphated malleable cast iron	BPZ:ALG403	**ALG403**
G 2¼ "	Rp 1½ "	Brass	S55846-Z109	**ALG403B**
G 2¾ "	Rp 2 "	Phosphated malleable cast iron	BPZ:ALG503	**ALG503**
G 2¾ "	Rp 2 "	Brass	S55846-Z111	**ALG503B**

Applications requiring union fittings with DVGW approval must be delivered by thirds.

Electromotoric actuators 250 N for combi valves VPI45..

SSD..



Electromotoric actuators for modulating or 3-position control of combi valves VPI45.. for water-side control of hot and cooling water in heating, ventilation and air conditioning systems. With position indication, manual control and plug-in type connecting cables.
Available are actuators types for modulating control DC 0/2...10 V and DC 0...10 V (SSD61EP) for equal-percentage valve characteristic.

Data sheet	N4861
Positioning force	250 N
Stroke	5.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined

For fitting to the valve: Cap nut M30 x 1.5.
SSD81.., SSD61.. are CE, C-tick, UL and cUL listed.

Range overview actuators SSD..

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Cable length [m]	Stock No.	Product No.
AC 230 V	6	3-position	150	1.5	BPZ:SSD31	**SSD31**
AC 24 V DC 24 V	2.5	DC 0...10 V	75	1.5	BPZ:SSD61	**SSD61**
AC 24 V DC 24 V	2.5	DC 2...10 V	75	1.5	BPZ:SSD61.2	SSD61.2
AC 24 V DC 24 V	2.5	DC 0...10 V	75	1.5	BPZ:SSD61EP	SSD61EP
AC 24 V	0.8	3-position	150	1.5	BPZ:SSD81	**SSD81**
AC 230 V	6	3-position	150		BPZ:SSD31/00	**SSD31/00**
AC 24 V DC 24 V	2.5	DC 0...10 V	75		BPZ:SSD61/00	**SSD61/00**
AC 24 V DC 24 V	2.5	DC 2...10 V	75		BPZ:SSD61.2/00	SSD61.2/00
AC 24 V DC 24 V	2.5	DC 0...10 V	75		BPZ:SSD61EP/00	SSD61EP/00
AC 24 V	0.8	3-Punkt	150		BPZ:SSD81/00	**SSD81/00**

SSD../00: Cable selection see accessories for SSD..
SSD61EP.. for equal-percentage valve characteristics

NEW PRODUCT

Acvatix™ Actuators for combi valves
Positioning force 250 N: SSD..

Accessories for SSD..

Product Title	Data sheet	Stock No.	Product No.
Connecting cable 1.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L15	**ASY3L15**
Connecting cable 2.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L25	**ASY3L25**
Connecting cable 4.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L45	**ASY3L45**
Connecting cable 1.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L15	**ASY6L15**
Connecting cable 2.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L25	**ASY6L25**
Connecting cable 4.5 m, DC 0..10 V, AC/DC 24 V	N4891	BPZ:ASY6L45	**ASY6L45**
Connecting cable 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY6L45HF	**ASY6L45HF**
Connecting cable 1.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L15	**ASY8L15**
Connecting cable 2.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L25	**ASY8L25**
Connecting cable 2.5 m, 3-position, AC 24 V, with Batigyr connector		BPZ:ASY8L25B	**ASY8L25B**
Connecting cable 4.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L45	**ASY8L45**
Connecting cable 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY8L45HF	**ASY8L45HF**
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..		BPZ:ASY99	**ASY99**
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	N4864	BPZ:ASY100	**ASY100**

Accessories for SSP.. (N4864), SSA.. (N4893), SSB.. (N4891) and SSD.. (N4861)

Electromotoric actuators for threaded valves with a stroke of 6.5 mm

SQD..



For operation of Siemens Combi valves VPI45.., DN40/50 with 6.5 mm stroke for water-side control of low temperature hot water and cooling water in heating, ventilation and air conditioning systems. Manual control with automatic reset to control mode. Overload-proof through force-dependent switching off in the end position.

Data sheet	N4540
Positioning force	400 N
Stroke	6.5 mm
Degree of protection	IP54
Ambient temperature, operation	-5...50 °C
Mounting position	Upright to horizontal

Range overview actuators SQD..

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Stock No.	Product No.
AC 230 V	2.5	3-position	170	BPZ:SQD35.00	**SQD35.00**
AC 24 V	4.5	DC 0...10 V 0...1000 Ohm	43	BPZ:SQD65	**SQD65**
AC 24 V	2	3-position	43	BPZ:SQD85.03	**SQD85.03**

Accessories for SQD..

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SQS35../85.., SQD35../85..	N4573	BPZ:ASC9.6	**ASC9.6**

Acvatix™ Combi valves
Combi valves, PN 25: VPI45..

VPI45..



Combi valves PN25

Pre-adjustable 2-port combi valves, internally threaded connections to ISO 7-1, for rooms, zones, air handling units as well as small to medium heating, ventilation and airconditioning systems. For cold and warm water in closed circuits. Volumetric flow 90...8500 l/h. With or without plugs for differential pressure measurements. Suitable media: water (to VDE 2035), water with anti-freeze.

Data sheet	N4853
Stroke	To DN 32: 5 mm From DN 40: 6.5 mm
Medium temperature	1...120 °C
Permissible operating pressure	2500 kPa
Valve characteristic	
Material, valve body	Dezincification resistant brass, DR, CW602N
Material, inside set	Dezincification resistant brass, DR, CW602N, CrNi steel
PN class	PN 25

Range overview 2-port combi valves VPI45..

DN	Connecting thread	Volumetric flow Vmin [l/h]	Volumetric flow V [l/h]	Stock No.	Product No.
25	Rp 1 "	280	1720	BPZ:VPI45.25F1.5	**VPI45.25F1.5**
25	Rp 1 "	280	1720	BPZ:VPI45.25F1.5Q	**VPI45.25F1.5Q**
25	Rp 1 "	350	2040	BPZ:VPI45.25F2	**VPI45.25F2**
25	Rp 1 "	350	2040	BPZ:VPI45.25F2Q	**VPI45.25F2Q**
32	Rp 1¼ "	560	3050	BPZ:VPI45.32F3	**VPI45.32F3**
32	Rp 1¼ "	560	3050	BPZ:VPI45.32F3Q	**VPI45.32F3Q**
40	Rp 1½ "	2355	7105	BPZ:VPI45.40F7	**VPI45.40F7**
40	Rp 1½ "	2355	7105	BPZ:VPI45.40F7Q	**VPI45.40F7Q**
50	Rp 2 "	2664	8586	BPZ:VPI45.50F8.5	**VPI45.50F8.5**
50	Rp 2 "	2664	8586	BPZ:VPI45.50F8.5Q	**VPI45.50F8.5Q**

The VPI45...Q types are equipped with P/T Plugs

Overview differential pressures

SSD.. Δp_{min} [kPa]	SSD.. Δp_{max} [kPa]	SQD.. Δp_{min} [kPa]	SQD.. Δp_{max} [kPa]	Product No.
16	400			**VPI45.25F1.5**
16	400			**VPI45.25F1.5Q**
22	400			**VPI45.25F2**
22	400			**VPI45.25F2Q**
18	400			**VPI45.32F3**
18	400			**VPI45.32F3Q**
		26	400	**VPI45.40F7**
		26	400	**VPI45.40F7Q**
		32	400	**VPI45.50F8.5**
		32	400	**VPI45.50F8.5Q**

Up to Δp_{max} = 400 kPa: leakage rate > 0,05% of volumetric flow V_{100}; Up to Δp_{max} = 230 kPa: leakage rate 0...0,05% of volumetric flow V_{100}

Field of application for VPI45..

Medium	Temperature	Valve packing
Low-temperature hot water	up to 120 °C	EPDM 281 O-ring
Chilled water	above 1 °C	EPDM 281 O-ring
Water with anti-freeze		

Combinable actuator to VPI45..

Operating voltage	Positioning signal	Positioning time [s]	Cable length	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	1.5	N4861	BPZ:SSD31	**SSD31**
AC 24 V DC 24 V	DC 0...10 V	75	1.5	N4861	BPZ:SSD61	**SSD61**
AC 24 V DC 24 V	DC 2...10 V	75	1.5	N4861	BPZ:SSD61.2	**SSD61.2**
AC 24 V DC 24 V	DC 0...10 V	75	1.5	N4861	BPZ:SSD61EP	**SSD61EP**
AC 24 V	3-position	150	1.5	N4861	BPZ:SSD81	**SSD81**
AC 230 V	3-position	150		N4861	BPZ:SSD31/00	**SSD31/00**
AC 24 V DC 24 V	DC 0...10 V	75		N4861	BPZ:SSD61/00	**SSD61/00**
AC 24 V DC 24 V	DC 2...10 V	75		N4861	BPZ:SSD61.2/00	**SSD61.2/00**
AC 24 V DC 24 V	DC 0...10 V	75		N4861	BPZ:SSD61EP/00	**SSD61EP/00**
AC 24 V	3-Punkt	150		N4861	BPZ:SSD81/00	**SSD81/00**
AC 230 V	3-position	170		N4540	BPZ:SQD35.00	**SQD35.00**
AC 24 V	3-position	43		N4540	BPZ:SQD85.03	**SQD85.03**
AC 24 V	DC 0...10 V 0...1000 Ohm	43		N4540	BPZ:SQD65	**SQD65**

Further information to the actuators please see "Actuators for combi valves"

NEW PRODUCT

Acvatix™ Rotary actuators for ball valves
Torque 2 Nm, with spring-return: GQD..9A

GQD..9A



Rotary actuators 2 Nm with spring return for ball valves VAI61.. and VBI61..

Electromotoric actuators for 3-position and modulating control, with spring-return, pre-wired with 0.9 m long connection cables.

Data sheet	N4659
Torque	2 Nm
Ambient temperature, operation	-32...55 °C
Degree of protection	IP40
Angular rotation	90 °
Positioning time	Opening with motor: 30 s Closing with spring: 15 s
Mounting position	Upright to horizontal
Spring return function	Yes

Range overview GQD..9A

Operating voltage [V]	Power consumption	Positioning signal	Stock No.	Product No.
AC 24 DC 24	4 VA 2.5 W	3-position	BPZ:GQD131.9A	**GQD131.9A**
AC 24 DC 24	4.5 VA 3 W	DC 0...10 V	BPZ:GQD161.9A	**GQD161.9A**

Rotary actuators 5 Nm without spring return for ball valves VAI61.. and VBI61.. GDB..9E

Electromotoric actuators for 3-position and modulating control, without spring return, pre-wired with 0.9 m long connection cables.



Data sheet	N4657
Torque	5 Nm
Ambient temperature, operation	-32...55 °C
Degree of protection	IP54
Angular rotation	90 °
Positioning time	150 s
Mounting position	Upright to horizontal
Spring return function	No

Range overview GDB..9E

Operating voltage [V]	Power consumption	Positioning signal	Stock No.	Product No.
AC 24	2 VA 1 W	3-position	BPZ:GDB131.9E	**GDB131.9E**
AC 24	3 VA 2 W	DC 0...10 V	BPZ:GDB161.9E	**GDB161.9E**
AC 230	2 VA 1 W	3-position	BPZ:GDB331.9E	**GDB331.9E**

Acvatix™ Rotary actuators for ball valves
Torque 7 Nm, with spring-return: GMA..9E

GMA..9E



Rotary actuators 7 Nm with spring return for ball valves VAI61.. and VBI61..

Electromotoric actuators for 3-position and modulating control, with spring-return, pre-wired with 0.9 m long connection cables.

Data sheet	N4658
Torque	7 Nm
Ambient temperature, operation	-32...55 °C
Degree of protection	IP54
Angular rotation	90 °
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Mounting position	Upright to horizontal
Spring return function	Yes

Range overview GMA..9E

Operating voltage [V]	Power consumption	Positioning signal	Stock No.	Product No.
AC 24 DC 24	5 VA 3.5 W	3-position	BPZ:GMA131.9E	**GMA131.9E**
AC 24 DC 24	5 VA 3.5 W	DC 0...10 V	BPZ:GMA161.9E	**GMA161.9E**

Rotary actuators 10 Nm without spring return for ball valves VAI61.. and VBI61..

GLB..9E

Electromotoric actuators for 3-position and modulating control, without spring return, pre-wired with 0.9 m long connection cables.



Data sheet	N4657
Torque	10 Nm
Ambient temperature, operation	-32...55 °C
Degree of protection	IP54
Angular rotation	90 °
Positioning time	150 s
Mounting position	Upright to horizontal
Spring return function	No

Range overview GLB..9E

Operating voltage [V]	Power consumption	Positioning signal	Stock No.	Product No.
AC 24	2 VA 1 W	3-position	BPZ:GLB131.9E	**GLB131.9E**
AC 24	3 VA 2 W	DC 0...10 V	BPZ:GLB161.9E	**GLB161.9E**
AC 230	2 VA 1 W	3-position	BPZ:GLB331.9E	**GLB331.9E**

Acvatix™ Ball valves
2-port, PN40: VAI61..

VAI61..



2-port ball valves, internally threaded, PN40

Internally threaded connections Rp.. as per ISO 7-1.
For use in heating, ventilating and air conditioning plants as a control or safety shutoff valve. For closed circuits.

Data sheet	N4211
Leakage rate	0...0.001 % of k_{vs} value
Angular rotation	90 °
Medium temperature	1...120 °C
Valve characteristic	Equal-percentage
Rangeability	> 500
Permissible operating pressure	1600 kPa
Material, valve body	Brass UNS C35330 (DZR)
Material, inside set	Brass UNS C35330 (DZR), chromium-plated
PN class	PN 40

Range overview VAI61.. with rotary actuators GMA..9E and GLB..9E

GMA../GLB..9E Δp_{max} [kPa]	GMA../GLB..9E Δp_s [kPa]	DN	k_{vs}	Stock No.	Product No.
350	1400	15	1	BPZ:VAI61.15-1	**VAI61.15-1**
350	1400	15	1.6	BPZ:VAI61.15-1.6	**VAI61.15-1.6**
350	1400	15	2.5	BPZ:VAI61.15-2.5	**VAI61.15-2.5**
350	1400	15	4	BPZ:VAI61.15-4	**VAI61.15-4**
350	1400	15	6.3	BPZ:VAI61.15-6.3	**VAI61.15-6.3**
350	1400	15	10	BPZ:VAI61.15-10	**VAI61.15-10**
350	1400	20	4	BPZ:VAI61.20-4	**VAI61.20-4**
350	1400	20	6.3	BPZ:VAI61.20-6.3	**VAI61.20-6.3**
350	1400	20	10	BPZ:VAI61.20-10	**VAI61.20-10**
350	1400	25	6.3	BPZ:VAI61.25-6.3	**VAI61.25-6.3**
350	1400	25	10	BPZ:VAI61.25-10	**VAI61.25-10**
350	1400	25	16	BPZ:VAI61.25-16	**VAI61.25-16**
350	1000	32	10	BPZ:VAI61.32-10	**VAI61.32-10**
240	1000	32	16	BPZ:VAI61.32-16	**VAI61.32-16**
240	1000	32	25	BPZ:VAI61.32-25	**VAI61.32-25**
350	800	40	16	BPZ:VAI61.40-16	**VAI61.40-16**
240	800	40	25	BPZ:VAI61.40-25	**VAI61.40-25**
240	800	40	40	BPZ:VAI61.40-40	**VAI61.40-40**
350	600	50	25	BPZ:VAI61.50-25	**VAI61.50-25**
240	600	50	40	BPZ:VAI61.50-40	**VAI61.50-40**
240	600	50	63	BPZ:VAI61.50-63	**VAI61.50-63**

Range overview VAI61.. with rotary actuators GQD..9A and GDB..9E

GQD..9A Δp_{max} [kPa]	GQD..9A Δp_s [kPa]	GDB..9E Δp_{max} [kPa]	GDB..9E Δp_s [kPa]	DN	k_{vs}	Stock No.	Product No.
350	1400	350	1400	15	1	BPZ:VAI61.15-1	**VAI61.15-1**
350	1400	350	1400	15	1.6	BPZ:VAI61.15-1.6	**VAI61.15-1.6**
350	1400	350	1400	15	2.5	BPZ:VAI61.15-2.5	**VAI61.15-2.5**
350	1400	350	1400	15	4	BPZ:VAI61.15-4	**VAI61.15-4**
350	1400	350	1400	15	6.3	BPZ:VAI61.15-6.3	**VAI61.15-6.3**
350	1400	350	1400	15	10	BPZ:VAI61.15-10	**VAI61.15-10**
350	1400	350	1400	20	4	BPZ:VAI61.20-4	**VAI61.20-4**
350	1400	350	1400	20	6.3	BPZ:VAI61.20-6.3	**VAI61.20-6.3**
350	1400	350	1400	20	10	BPZ:VAI61.20-10	**VAI61.20-10**
		350	1400	25	6.3	BPZ:VAI61.25-6.3	**VAI61.25-6.3**
		350	1400	25	10	BPZ:VAI61.25-10	**VAI61.25-10**
		350	1400	25	16	BPZ:VAI61.25-16	**VAI61.25-16**

Combinable actuator to VAI61..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 24 V DC 24 V	3-position	Opening with motor: 30 Closing with spring: 15	Yes	N4659	BPZ:GQD131.9A	**GQD131.9A**
AC 24 V DC 24 V	DC 0...10 V	Opening with motor: 30 Closing with spring: 15	Yes	N4659	BPZ:GQD161.9A	**GQD161.9A**
AC 230 V	3-position	150	No	N4657	BPZ:GDB331.9E	**GDB331.9E**
AC 24 V	3-position	150	No	N4657	BPZ:GDB131.9E	**GDB131.9E**
AC 24 V	DC 0...10 V	150	No	N4657	BPZ:GDB161.9E	**GDB161.9E**
AC 24 V DC 24 V	3-position	Opening with motor: 90 Closing with spring: 15	Yes	N4658	BPZ:GMA131.9E	**GMA131.9E**
AC 24 V DC 24 V	DC 0...10 V	Opening with motor: 90 Closing with spring: 15	Yes	N4658	BPZ:GMA161.9E	**GMA161.9E**
AC 230 V	3-position	150	No	N4657	BPZ:GLB331.9E	**GLB331.9E**
AC 24 V	3-position	150	No	N4657	BPZ:GLB131.9E	**GLB131.9E**
AC 24 V	DC 0...10 V	150	No	N4657	BPZ:GLB161.9E	**GLB161.9E**

Acvatix™ Ball valves
2-port, PN40: VAI61..

Accessories for VAI61..

Product Title	Stock No.	Product No.
Mounting kit for rotary actuators GMA..1E with spring-return	BPZ:ASK77.2	**ASK77.2**
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return	BPZ:ASK77.3	**ASK77.3**
Mounting kits for rotary actuators GQD..1A with spring-return	BPZ:ASK77.4	**ASK77.4**

3-port ball valves, internally threaded, PN40

VBI61..

Internally threaded connections Rp.. as per ISO 7-1.
For use in heating, ventilating and air conditioning plants as a control or safety shutoff valve. For closed circuits.



Data sheet	N4211
Leakage rate	0...0.001 % of k_{vs} value
Leakage rate bypass	< 1 % of k_{vs} value
Angular rotation	90 °
Medium temperature	1...120 °C
Valve characteristic	Throughport: equal-percentage Bypass: linear
Rangeability	> 500
Permissible operating pressure	1600 kPa
Material, valve body	Brass UNS C35330 (DZR)
Material, inside set	Brass UNS C35330 (DZR), chromium-plated
PN class	PN 40

Range overview VBI61..

GQD..9A Δp_{max} [kPa]	GDB..9E Δp_{max} [kPa]	GMA../GLB..9E Δp_{max} [kPa]	DN	k_{vs}	Stock No.	Product No.
350	350	350	15	1.6	BPZ:VBI61.15-1.6	**VBI61.15-1.6**
350	350	350	15	2.5	BPZ:VBI61.15-2.5	**VBI61.15-2.5**
350	350	350	15	4	BPZ:VBI61.15-4	**VBI61.15-4**
350	350	350	15	6.3	BPZ:VBI61.15-6.3	**VBI61.15-6.3**
350	350	350	20	4	BPZ:VBI61.20-4	**VBI61.20-4**
350	350	350	20	6.3	BPZ:VBI61.20-6.3	**VBI61.20-6.3**
	350	350	25	10	BPZ:VBI61.25-10	**VBI61.25-10**
		240	32	16	BPZ:VBI61.32-16	**VBI61.32-16**
		240	40	25	BPZ:VBI61.40-25	**VBI61.40-25**
		240	50	40	BPZ:VBI61.50-40	**VBI61.50-40**

Acvatix™ Ball valves
3-port, PN40: VBI61..

Combinable actuator to VBI61..

Operating voltage	Positioning signal	Positioning time [s]	Spring return function	Data sheet	Stock No.	Product No.
AC 24 V DC 24 V	3-position	Opening with motor: 30 Closing with spring: 15	Yes	N4659	BPZ:GQD131.9A	**GQD131.9A**
AC 24 V DC 24 V	DC 0...10 V	Opening with motor: 30 Closing with spring: 15	Yes	N4659	BPZ:GQD161.9A	**GQD161.9A**
AC 230 V	3-position	150	No	N4657	BPZ:GDB331.9E	**GDB331.9E**
AC 24 V	3-position	150	No	N4657	BPZ:GDB131.9E	**GDB131.9E**
AC 24 V	DC 0...10 V	150	No	N4657	BPZ:GDB161.9E	**GDB161.9E**
AC 24 V DC 24 V	3-position	Opening with motor: 90 Closing with spring: 15	Yes	N4658	BPZ:GMA131.9E	**GMA131.9E**
AC 24 V DC 24 V	DC 0...10 V	Opening with motor: 90 Closing with spring: 15	Yes	N4658	BPZ:GMA161.9E	**GMA161.9E**
AC 230 V	3-position	150	No	N4657	BPZ:GLB331.9E	**GLB331.9E**
AC 24 V	3-position	150	No	N4657	BPZ:GLB131.9E	**GLB131.9E**
AC 24 V	DC 0...10 V	150	No	N4657	BPZ:GLB161.9E	**GLB161.9E**

Accessories for VBI61..

Product Title	Stock No.	Product No.
Mounting kit for rotary actuators GMA..1E with spring-return	BPZ:ASK77.2	**ASK77.2**
Mounting kit for rotary actuators GDB..1E and GLB..1E without spring-return	BPZ:ASK77.3	**ASK77.3**
Mounting kits for rotary actuators GQD..1A with spring-return	BPZ:ASK77.4	**ASK77.4**

Electromotoric actuators 5...40 Nm for rotary valves

SQK../SQL..



With reversible synchronous motor. Changeover button for manual / automatic control and manual override. With die-cast aluminium housing and plastic cover. Can be combined with ASK3.. mounting sets to motorize butterfly and slipper valves (corresponding mounting sets must be ordered as separate items).
SQK33../SQL33../SQL83..: Angle of rotation adjustable between 70° and 180°.

Angular rotation	90 °
Positioning signal	3-position
Degree of protection	IP44
Mounting position	Upright to horizontal
Ambient temperature, operation	-15...55 °C

All actuators have 2 built-in end switches and space for 1 ancillary unit (auxiliary switch or potentiometer).

Range overview actuators SQK.. / SQL..

Operating voltage	Power consumption [VA]	Positioning time [s]	Torque [Nm]	Data sheet	Stock No.	Product No.
AC 230 V	3	135	5	N4508	BPZ:SQK34.00	**SQK34.00**
AC 24 V	3	135	5	N4508	BPZ:SQK84.00	**SQK84.00**
AC 230 V	3	125	5	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	4	125	12.5	N4506	BPZ:SQL33.00	**SQL33.00**
AC 230 V	6.5	30	10	N4506	BPZ:SQL33.03	**SQL33.03**
AC 24 V	4	125	12.5	N4506	BPZ:SQL83.00	**SQL83.00**
AC 230 V	6.5	125	20	N4505	BPZ:SQL35.00	**SQL35.00**
AC 24 V	6.5	125	20	N4505	BPZ:SQL85.00	**SQL85.00**

Accessories auxiliary switch for actuators

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SQK34../84..	N4508	BPZ:ASC9.7	**ASC9.7**
Auxiliary switch for SQK33.., SQL33../83../35../85.., SQX32../82..	N4554	BPZ:ASC9.5	**ASC9.5**
Double auxiliary switch for SQL33../83../35../85.., SQX32../82..	N4554	BPZ:ASC9.4	**ASC9.4**
1 auxiliary switch and 1 potentiometer for SQX32../SQX82../SQL33../SQL83../SQL35../SQL85..	N4554	BPZ:ASZ7.4	**ASZ7.4**

Acvatix™ Actuators for slipper and butterfly valves Torque 5...40 Nm: SQK.. / SQL..

Mounting sets

Product Title	Data sheet	Stock No.	Product No.
Mounting set for SQL33.. / 83.. / 35.. / 85.. and slipper valves VBF21..from DN65	N4506	BPZ:ASK31	**ASK31**
Mounting set for SQK33.. / SQL33.. / 83.. and slipper valves VBI31.. / VBG31.. / VCI31.. / VBF21.. up to DN50	N4506	BPZ:ASK32	**ASK32**
Mounting set for SQK33.. / SQL33.. / 83.. and butterfly valves VKF41..	N4506	BPZ:ASK33	**ASK33**
Mounting set for SQL35.. / 85.. and butterfly valves VKF41.., DN150 and DN200	N4131	BPZ:ASK35	**ASK35**
Mounting set for SQL35.. / 85.. and butterfly valves VKF46.., DN40 to DN65	N4136	BPZ:ASK35.1	**ASK35.1**
Mounting set for SQL35.. / 85.. and butterfly valves VKF46.., DN80 to DN125	N4136	BPZ:ASK35.2	**ASK35.2**

ASK40



Mounting sets for SQK33.. / SQL33.. / 83.. for third-party devices

- Suitable for use with the following types of 3-port slipper valves:
  - CENTRA DIFFERENTIAL: DR.., DRG.. (DN15...125)
  - CENTRA KOMPAKT: DRK.. (DN 15...40), DFK.. (DN25...32)
  - ESBE / SHUNT AB: Threaded: R¾"...R½", R2" / flanged: DN20...25, 32...50

- Suitable for use with the following types of 4-port slipper valves:
  - CENTRA DUPLEX: ZR.. (DN15...200)
  - CENTRA KOMPAKT: ZRK.. (DN20...40)
  - ESBE / SHUNT AB: Threaded: R¾"...R½", R2" / flanged: DN20...25, 32...50

Data sheet N4291

Stock No.	Product No.
BPZ:ASK40	**ASK40**

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Mounting sets for SQK33.. / SQL33.. / 83.. for third-party devices

ASK41



- Suitable for use with the following types of 3-port slipper valves:

- AXA: F3, G3, S3 (DN20...65)
- BUDERUS: 3M (DN20...32), 3F (DN 25...50)
- LOELL: LG3, LF3 (DN20...40)
- MUEHLENBERG: AM3 (DN15...50)
- ONDAMIX (ONDAL): MDM (DN25...32)
- VIESSMANN: DN20...25, 32...40

- Suitable for use with the following types of 4-port slipper valves:

- AXA: F4, G4, S4 (DN20...65)
- BUDERUS: 4M (DN20...32), 4F (DN25...50)
- LOELL: LG4, LF4 (DN20...50)
- MUEHLENBERG: AM4 (DN20...50)
- ONDAMIX (ONDAL): DN20...50
- VIESSMANN: DN20...25, 32...40

Data sheet N4291

	Stock No.	Product No.
	BPZ:ASK41	**ASK41**

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Acvatix™ Actuators for slipper and butterfly valves
Torque 40...1200 Nm: SQL36..

SQL36..



Electromotoric actuators 40...1200 Nm for butterfly valves

With reversible asynchronous motor. Direct-acting manual control. Die-cast aluminium housing and plastic manual knob. For VKF46 butterfly valves from DN40 mm, no mounting kits required.

Data sheet	N4505
Angular rotation	90 °
Operating voltage	AC 230 V
Positioning signal	3-position
Degree of protection	IP67
Mounting position	Any
Ambient temperature, operation	-20...70 °C

The actuators have built-in end switches. 1 double auxiliary switch, 1 potentiometer and 1 positioning time module (without SQL36E50..) can be retrofitted.

Range overview actuators SQL36..

Operating voltage [V]	Power consumption [VA]	Positioning time [s]	Torque [Nm]	Stock No.	Product No.
AC 230 V	25	25	40	BPZ:SQL36E50F04	**SQL36E50F04**
AC 230 V	25	25	40	BPZ:SQL36E50F05	**SQL36E50F05**
AC 230 V	166	6	100	BPZ:SQL36E65	**SQL36E65**
AC 230 V	235	12	400	BPZ:SQL36E110	**SQL36E110**
AC 230 V	235	24	1200	BPZ:SQL36E160	**SQL36E160**

Running time with auxiliary module SEZ31.1: variable positioning time 30...180 s (SQL35E65), 60...360 s (SQL36E110) resp. 120...720 s (SQL36E160)

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Accessories for SQL36E..

Product Title	Data sheet	Stock No.	Product No.
Auxiliary module, variable positioning time for SQL36E..	N4505	BPZ:SEZ31.1	**SEZ31.1**
Double auxiliary switch for SQL36E	N4505	BPZ:ASC36	**ASC36**
Potentiometer 1000 Ohm for SQL36E..	N4505	BPZ:ASZ36	**ASZ36**

3-port slipper valves PN6 with flanged connections

VBF21..



- With flanged connections to ISO 7005
- For chilled or low-temperature hot water in closed circuits

Data sheet	N4241
Angular rotation	90 °
Leakage rate	DN40...100: 0...0.1 % of k_{vs} value DN125...150: 0...0,5 % of k_{vs} value
Medium temperature	1...120 °C
Valve characteristic	Linear
Permissible operating pressure	600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	< DN 100: CrNi steel/brass > DN 125: CrNi steel/Rg5
PN class	PN 6

VBF21.40 / VBF21.50 are shipped with manual adjuster.
VBF21.., DN40/50, with SQK34.., SQK84..: Direct mounting

Range overview 3-port slipper valves VBF21..

SQK.. Δp_{max} [kPa]	SQL33../83.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Required mounting set	Stock No.	Product No.
30	30	40	25	ASK32	BPZ:VBF21.40	**VBF21.40**
30	30	50	40	ASK32	BPZ:VBF21.50	**VBF21.50**
	30	65	63	ASK31	BPZ:VBF21.65	**VBF21.65**
	30	80	100	ASK31	BPZ:VBF21.80	**VBF21.80**
	30	100	160	ASK31	BPZ:VBF21.100	**VBF21.100**
	30	125	550	ASK31	BPZ:VBF21.125	**VBF21.125**
	30	150	820	ASK31	BPZ:VBF21.150	**VBF21.150**

DN40...50, series 02
DN65...150, series 01

Combinable actuator to VBF21.40 and VBF21.50

Operating voltage	Torque [Nm]	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	5	ASK32	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	5		N4508	BPZ:SQK34.00	**SQK34.00**
AC 24 V	5		N4508	BPZ:SQK84.00	**SQK84.00**

Combinable actuator to VBF21.65 ... VBF21.150

Operating voltage	Torque [Nm]	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	12.5	ASK31	N4506	BPZ:SQL33.00	**SQL33.00**
AC 230 V	10	ASK31	N4506	BPZ:SQL33.03	**SQL33.03**
AC 24 V	12.5	ASK31	N4506	BPZ:SQL83.00	**SQL83.00**

The mounting sets are not included.

Acvatix™ Externally threaded slipper valves 3-port PN10: VBG31..

VBG31..



3-port slipper valves PN10 with externally threaded connections

- With externally threaded connections to ISO 228/1
- For chilled or low-temperature hot water in closed circuits
- With manual adjuster
- With screwed fittings

Data sheet	N4233
Angular rotation	90 °
Leakage rate	0...0.1 % of k_{vs} value
Medium temperature	1...120 °C
Valve characteristic	Linear
Permissible operating pressure	1000 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	Stainless steel/brass
PN class	PN 10

VBG31.. are supplied with malleable cast iron fittings.

SQK34.., SQK84..: Direct mounting

Range overview 3-port slipper valves VBG31..

SQK../SQL.. Δp_{max} [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Required mounting set	Stock No.	Product No.
30	G 1¼ B "	20	6.3	ASK32	BPZ:VBG31.20	**VBG31.20**
30	G 1½ B "	25	10	ASK32	BPZ:VBG31.25	**VBG31.25**
30	G 2 B "	32	16	ASK32	BPZ:VBG31.32	**VBG31.32**
30	G 2¼ B "	40	25	ASK32	BPZ:VBG31.40	**VBG31.40**

DN20...40, series 02

Combinable actuator to VBG31..

Operating voltage	Torque [Nm]	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	5	ASK32	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	5		N4508	BPZ:SQK34.00	**SQK34.00**
AC 24 V	5		N4508	BPZ:SQK84.00	**SQK84.00**
AC 230 V	10	ASK32	N4506	BPZ:SQL33.03	**SQL33.03**
AC 230 V	12.5	ASK32	N4506	BPZ:SQL33.00	**SQL33.00**
AC 24 V	12.5	ASK32	N4506	BPZ:SQL83.00	**SQL83.00**

4-port slipper valves PN10 with internally threaded connections

VBI31..



- Internally threaded connections to ISO 7/1
- For chilled or low-temperature hot water in closed circuits
- With manual adjuster

Data sheet	N4232
Angular rotation	90 °
Leakage rate	0...0.1 % of k_{vs} value
Medium temperature	1...120 °C
Valve characteristic	Linear
Permissible operating pressure	1000 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	Stainless steel/brass
PN class	PN 10

SQK34.., SQK84..: Direct mounting

Range overview 3-port slipper valves VBI31..

SQK../SQL.. Δp_{max} [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Required mounting set	Stock No.	Product No.
30	Rp ¾ "	20	6.3	ASK32	BPZ:VBI31.20	**VBI31.20**
30	Rp 1 "	25	10	ASK32	BPZ:VBI31.25	**VBI31.25**
30	Rp 1¼ "	32	16	ASK32	BPZ:VBI31.32	**VBI31.32**
30	Rp 1½ "	40	25	ASK32	BPZ:VBI31.40	**VBI31.40**

DN20...40, series 02

Combinable actuator to VBI31..

Operating voltage	Torque [Nm]	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	5	ASK32	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	5		N4508	BPZ:SQK34.00	**SQK34.00**
AC 24 V	5		N4508	BPZ:SQK84.00	**SQK84.00**
AC 230 V	10	ASK32	N4506	BPZ:SQL33.03	**SQL33.03**
AC 230 V	12.5	ASK32	N4506	BPZ:SQL33.00	**SQL33.00**
AC 24 V	12.5	ASK32	N4506	BPZ:SQL83.00	**SQL83.00**

Acvatix™ Internally threaded slipper valves 4-port, PN10: VCI31..

VCI31..



4-port slipper valves with internally threaded connections, PN10

- Internally threaded connections to ISO 7/1
- For chilled and low-temperature hot water in closed circuits
- With manual adjuster

Data sheet	N4252
Angular rotation	90 °
Medium temperature	1...120 °C
Valve characteristic	Linear
Permissible operating pressure	1000 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	Brass
PN class	PN 10

SQK34.., SQK84..: Direct mounting

Range overview 4-port slipper valves VCI31..

SQK../SQL.. Δp_{max} [kPa]	Connecting thread	DN	k_{vs} [m³/h]	Required mounting set	Stock No.	Product No.
30	Rp ¾ "	20	6.3	ASK32	BPZ:VCI31.20	**VCI31.20**
30	Rp 1 "	25	10	ASK32	BPZ:VCI31.25	**VCI31.25**
30	Rp 1¼ "	32	16	ASK32	BPZ:VCI31.32	**VCI31.32**
30	Rp 1½ "	40	25	ASK32	BPZ:VCI31.40	**VCI31.40**

DN20...40, series 02

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Combinable actuator to VCI31..

Operating voltage	Torque [Nm]	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	5	ASK32	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	5		N4508	BPZ:SQK34.00	**SQK34.00**
AC 24 V	5		N4508	BPZ:SQK84.00	**SQK84.00**
AC 230 V	10	ASK32	N4506	BPZ:SQL33.03	**SQL33.03**
AC 230 V	12.5	ASK32	N4506	BPZ:SQL33.00	**SQL33.00**
AC 24 V	12.5	ASK32	N4506	BPZ:SQL83.00	**SQL83.00**

Butterfly valves PN6/10/16 for flanged connections

VKF41..

- With metallic tight-closing for mounting between 2 flanges PN6, PN10 or PN16 to ISO 7005
- For chilled and low-temperature hot water in closed circuits



Data sheet	N4131
Angular rotation	90 °
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Material, valve body	Cast iron EN-GJL-250
Material, inside set	Stainless steel
PN class	PN 16

VKF41.., DN150/200: SQL35.00 or SQL85.00 require mounting set ASK35

Range overview butterfly valves VKF41..

SQL33../83. . Δp_s [kPa]	SQL35../85. . Δp_s [kPa]	SQK.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Leakage rate	Required mounting set	Stock No.	Product No.
500		200	40	50	0.22% of k_{vs}	ASK33	BPZ:VKF41.40	**VKF41.40**
500			50	80	0.14% of k_{vs}	ASK33	BPZ:VKF41.50	**VKF41.50**
500			65	200	0.09% of k_{vs}	ASK33	BPZ:VKF41.65	**VKF41.65**
500			80	400	0.06% of k_{vs}	ASK33	BPZ:VKF41.80	**VKF41.80**
500			100	760	0.04% of k_{vs}	ASK33	BPZ:VKF41.100	**VKF41.100**
300			125	1000	0.04% of k_{vs}	ASK33	BPZ:VKF41.125	**VKF41.125**
250	500		150	2100	0.02% of k_{vs}	ASK33	BPZ:VKF41.150	**VKF41.150**
150	300		200	4000	0.01% of k_{vs}	ASK33	BPZ:VKF41.200	**VKF41.200**

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Combinable actuator to VKF41..

Operating voltage	Torque	Positioning signal	Required mounting set	Data sheet	Stock No.	Product No.
AC 230 V	5 Nm	3-position	ASK33	N4506	BPZ:SQK33.00	**SQK33.00**
AC 230 V	12.5 Nm	3-position	ASK33	N4506	BPZ:SQL33.00	**SQL33.00**
AC 230 V	10 Nm	3-position	ASK33	N4506	BPZ:SQL33.03	**SQL33.03**
AC 24 V	12.5 Nm	3-position	ASK33	N4506	BPZ:SQL83.00	**SQL83.00**
AC 230 V	20 Nm	3-position	ASK35	N4505	BPZ:SQL35.00	**SQL35.00**
AC 24 V	20 Nm	3-position	ASK35	N4505	BPZ:SQL85.00	**SQL85.00**

Further information to the actuators please see "Actuators for slipper and butterfly valves"

Acvatix™ Butterfly valves
PN6, PN10, PN16: VKF41.. / VKF46..

VKF46..



Butterfly valves PN6/10/16 for flanged connections, with tight shutoff

- With EPDM seal for mounting between 2 flanges PN6, PN10 or NP16 to ISO 7005
- For chilled water, low-temperature hot water, DHW, cold water and fresh water in closed or open circuits

VKF46.450...600 PN16 only
SQL36..: Direct mounting

Data sheet	N4136
Angular rotation	90 °
Medium temperature	-10...120 °C
Permissible operating pressure	1600 kPa
Leakage rate	Tight shutoff, EN 12266-1, leakage rate A
Material, valve body	To DN300: Cast iron EN-GJL-250
Material, inside set	To DN350: Stainless steel

VKF46.450...600 PN16 only
SQL36..: Direct mounting

Range overview butterfly valves VKF46..

SQL35../85.. Δp_s [kPa]	SQL36E50F04 Δp_s [kPa]	SQL36E50F05 Δp_s [kPa]	Required mounting set	DN	k_{vs} [m³/h]	Stock No.	Product No.
1600	1600		ASK35.1	40	50	BPZ:VKF46.40	**VKF46.40**
1600	1600		ASK35.1	50	85	BPZ:VKF46.50	**VKF46.50**
1600	1600		ASK35.1	65	215	BPZ:VKF46.65	**VKF46.65**
1600		1600	ASK35.2	80	420	BPZ:VKF46.80	**VKF46.80**
1600		1600	ASK35.2	100	800	BPZ:VKF46.100	**VKF46.100**
1000		1000	ASK35.2	125	1010	BPZ:VKF46.125	**VKF46.125**

SQL36E65 Δp_s [kPa]	SQL36E110 Δp_s [kPa]	SQL36E160 Δp_s [kPa]	Required mounting set	DN	k_{vs} [m³/h]	Stock No.	Product No.
1600			Direct	150	2100	BPZ:VKF46.150	**VKF46.150**
1000			Direct	200	4000	BPZ:VKF46.200	**VKF46.200**
	1000		Direct	250	6400	BPZ:VKF46.250	**VKF46.250**
	1000		Direct	300	8500	BPZ:VKF46.300	**VKF46.300**
	600		Direct	350	11500	BPZ:VKF46.350	**VKF46.350**
	300		Direct	400	14500	BPZ:VKF46.400	**VKF46.400**
		300	Direct	450	20500	BPZ:VKF46.450	**VKF46.450**
		300	Direct	500	21000	BPZ:VKF46.500	**VKF46.500**
		300	Direct	600	29300	BPZ:VKF46.600	**VKF46.600**

SQL36E160 Δp_s [kPa]	Required mounting set	DN	k_{vs} [m³/h]	Stock No.	Product No.
1000	Direct	350	11500	BPZ:VKF46.350TS	**VKF46.350TS**
1000	Direct	400	14500	BPZ:VKF46.400TS	**VKF46.400TS**
1000	Direct	450	20500	BPZ:VKF46.450TS	**VKF46.450TS**
1000	Direct	500	21000	BPZ:VKF46.500TS	**VKF46.500TS**
1000	Direct	600	29300	BPZ:VKF46.600TS	**VKF46.600TS**

Field of application for VKF46..

Medium	Temperature	Valve packing	Liner
Low-temperature hot water	up to 120 °C	EPDM O-ring	EPDM
Chilled water	down to -10 °C	EPDM O-ring	EPDM
Cooling water	down to -10 °C	EPDM O-ring	EPDM
Fresh water	down to -10 °C	EPDM O-ring	EPDM
Brine	down to -10 °C	EPDM O-ring	EPDM
Air		EPDM O-ring	EPDM

Water with anti-freeze

Manual adjuster for VKF46..

Product Title	Data sheet	Stock No.	Product No.
Manual adjuster for VKF46.., DN40 to DN65	N4136	BPZ:ASK46.1	**ASK46.1**
Manual adjuster for VKF46.., DN80 to DN125	N4136	BPZ:ASK46.2	**ASK46.2**
Manual adjuster for VKF46.., DN150 to DN200	N4136	BPZ:ASK46.3	**ASK46.3**
Manual adjuster for VKF46.., DN250 to DN400	N4136	BPZ:ASK46.4	**ASK46.4**

Notes

Valves and actuators for room- and zone applications

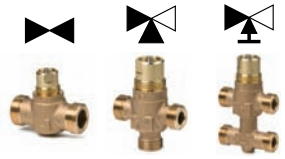
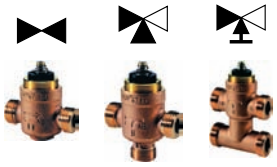
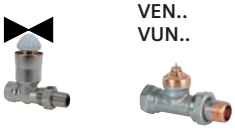
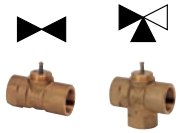


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Combinations

Product family selection: Combinations

N.O. de-energized actuator, valve open
RX These valve & actuator combinations are supported by the released DESIGO™ RXC and RXB application libraries.Other combinations, in particular N.O. (de-energized actuator, valve open), available on request.

	Actuators							
	Electro-motoric	Thermal			Electromotoric		Electromotoric on/off w. spring return	
	SSA..	**STA..**	**STP..**	**STS..**	**SSP..**	**SSB..**	**SFA..**	**SFP..**
								
Power consumption	See data sheet							
Manual adjustment	yes	-	-	-	yes	yes	yes	yes
Position indication	yes	yes	yes	yes	yes	yes	yes	yes
Pluggable cable	yes	STA72E	STP72E	-	yes	yes	-	-
Auxiliary switch	yes	-	-	-	-	yes	Option	Option
Control signal	**Positioning time [s]**							
2P AC 24 V spring return	-	-	-	-	-	-	10	10
2P AC/DC 24 V spring return	-	180	180	-	-	-	-	-
2P AC 230 V spring return	-	180	180	-	-	-	10	10
3P AC 24 V	150	-	-	-	150 / 43	150	-	-
3P AC 230 V	150	-	-	-	150	150	-	-
0..10 V AC/DC 24 V	34	-	-	-	34	75	-	-
0..10 V AC 24 V spring return	-	-	-	75	-	-	-	-
Valves								
Top hydraulic requirements and control accuracy								
V..P45.. / V..P45..S  **Fan coil, chilled ceilings, zones** PN16 k_{vs} 0.25...6.3 m^3/h (3-way with bypass to k_{vs} 4) Temperature 1...110 °C Δp_s 300...725 kPa Flat-sealing (ISO 228-1) or compression-fitting (Conex®)						■ **RX**		
Combi valves **VPI45.. with actuator SSD.., see page 13-5**						■ **RX**		
Universal applications								
V..P47 / V..P47..S  **Fan coil, chilled ceilings, zones** PN16 k_{vs} 0.25...4 m^3/h (3-way with bypass to k_{vs} 2.5) Temperature 1...110 °C Δp_s 100...1000 kPa Flat-sealing (ISO 228-1) or compression-fitting (Conex®)		N.O.	■ **RX**	N.O.	■ **RX**		N.O.	■
Radiator applications								
VPD.. / VPE.. **VDN.. VEN.. VUN..**  **Radiator** PN10 Temperature 1...90 °C (120 °C) Δp_{max} 60 / 200 kPa EN 215-1	■ **RX**	■ **RX**	N.O.	■				
VD1..CLC  **Chilled ceilings** PN10 k_{vs} 0.25...2.6 m^3/h Temperature 1...110 °C Δp_{max} 150 kPa EN 215-1	■ **RX**	■ **RX**	N.O.	■				
Zone applications								
V..I46..  **Rooms, shutoff, changeover** PN16 k_{vs} 2...5 m^3/h Temperature 1...110 °C Δp_s 300 kPa Internally threaded to ISO 7-1	■ **RX**	■ **RX**	N.O.	■			■	N.O.
Floor heating (distributors) Various makes with connection M30x1.5 mm and closure 11.3 ± 0.3 mm Adapter on request.	■ Note size	■	N.O.	■				

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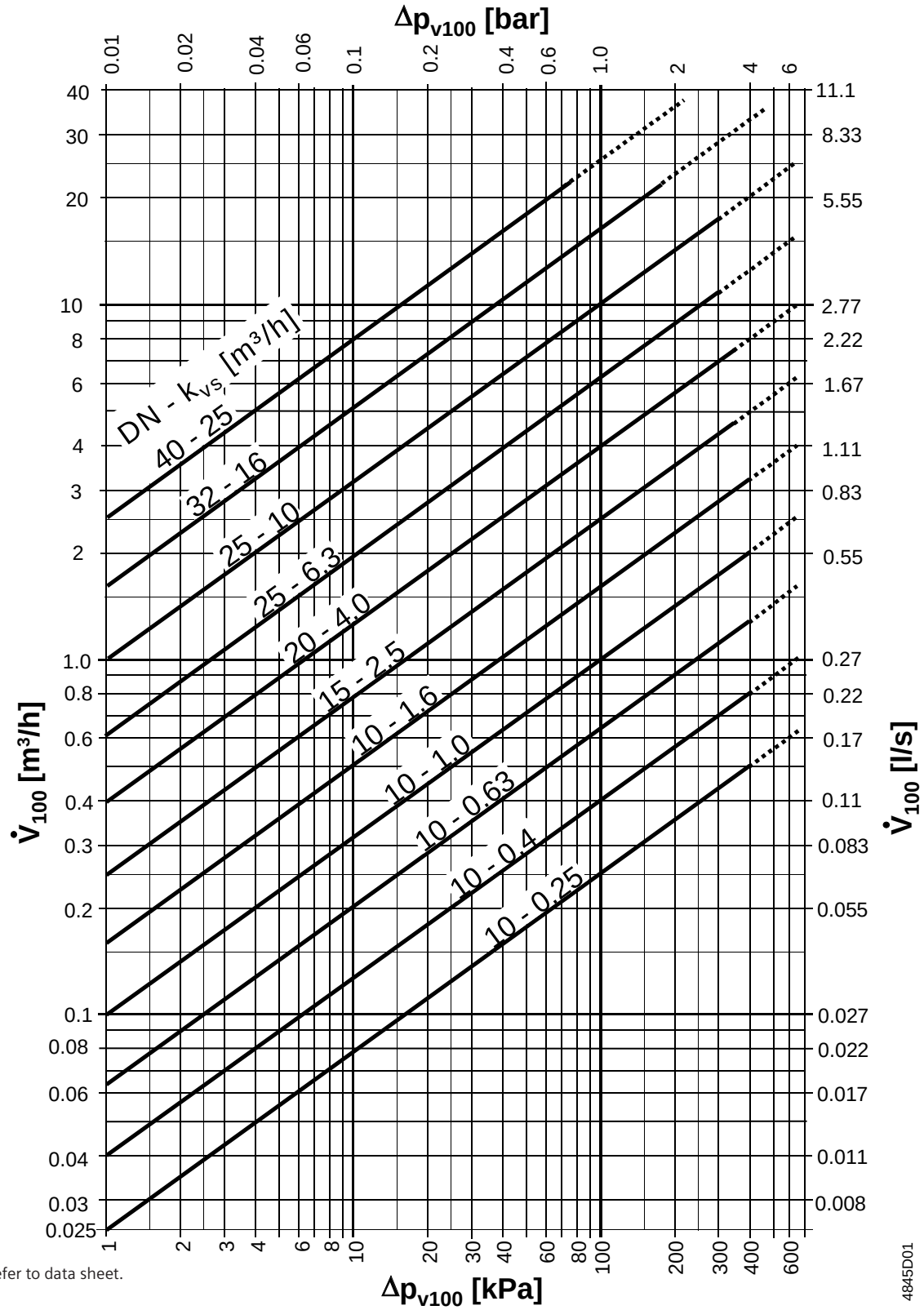
								Recommended media											Distribution		Consumption/Use					
		2-port valve	3-port valve	PN class	Type of connection	Silicon-free grease	Closed circuits	Chilled water	Low temperature hot water	Water with anti-freeze [1]	0	1	...	90	100	110	120	130	Heating groups	Air handling units	Underfloor heating	Radiators	Zone control	Fan coil unit	Chilled ceilings	VAV
Room and zone applications	VD1..CLC	■		10	ET		■	■	■	■											■		■	■	■	■
	VDN../VEN../VUN..	■		10	ET/IT		■	■	■	■												■				
	VMP45.. [2]		■	16	ET	■	■	■	■	■													■	■		■
	VMP47.. [2]		■	16	ET		■	■	■	■													■	■		■
	VPD../VPE..	■		10	ET/IT		■	■	■	■											■	■	■	■	■	■
	VPI45..	■		25	IT		■	■	■	■									■	■	■		■	■	■	■
	VVI46..	■		16	IT		■	■	■	■											■		■	■	■	■
	VVP45..	■		16	ET	■	■	■	■	■									■	■	■		■	■	■	■
	VVP47..	■		16	ET		■	■	■	■											■		■	■	■	■
	VXI46..		■	16	IT		■	■	■	■											■		■	■		■
	VXP45..		■	16	ET	■	■	■	■	■									■	■	■		■	■		■
	VXP47..		■	16	ET		■	■	■	■											■		■	■		■

Recommendation: Water treatment according to VDI 2035

[1] e.g. ethylene and propylene glycols
[2] 3-port valve with bypass
IT = internally threaded connection
ET = externally threaded connection

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Sizing chart for V..P45.. and V..P47..



Please refer to data sheet.

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Elite-Line

Typical applications	Actuators	Data sheet				5,5 mm	
– Terminal units – Induction units – Chilled ceilings	**SSB..**	N4891				200 N 	200 N 
	Operating voltage	**Positioning signal**	**Positioning time [s]**	**Auxiliary switch**			
	AC 230 V	3-position	150	–	✓	**SSB31**	**SSB31.1**
	AC 24 V	3-position	150	–	✓	**SSB81**	**SSB81.1**
	AC/DC 24 V	0...10 V	75	–	–	**SSB61**	**–**

PN 16	1...110 °C	**DN**	**G** [Inch]	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]
Data sheet	N4845					
	**VVP45.10-..**	10	G ½B	0.25 / 0.4 / 0.63	725	400
	VVP45.10-..	10	G ½B	1 / 1.6	725	400
	VVP45.15-..	15	G ¾B	2.5	350	350
	VVP45.20-..	20	G 1B	4	350	350
	VVP45.25-..	25	G 1¼B	6.3	300	300
	**VXP45.10-..**	10	G ½B	0.25 / 0.4 / 0.63	–	400
	VXP45.10-..	10	G ½B	1 / 1.6	–	400
	VXP45.15-..	15	G ¾B	2.5	–	350
	VXP45.20-..	20	G 1B	4	–	350
	VXP45.25-..	25	G 1¼B	6.3	–	300
	**VMP45.10-..**	10	G ½B	0.25 / 0.4	–	400
	VMP45.10-..	10	G ½B	0.63 / 1	–	400
	VMP45.10-..	10	G ½B	1.6	–	400
	VMP45.15-..	15	G ¾B	2.5	–	350
	VMP45.20-..	20	G 1B	4	–	350

VVP45..S, VMP45..S with Conex® compression fittings, k_{VS} = 0.63 / 1 / 1.6 / 2.5 m³/h

Combi valves

Typical applications	Actuators	Data sheet		5,5 mm
– Terminal units – Chilled ceilings	**SSD..**	N4861		250 N 
	Operating voltage	**Positioning signal**	**Positioning time [s]**	
	AC 230 V	3-position	150	**SSD31**
	AC 24 V	3-position	150	**SSD81**
	AC/DC 24 V	0...10 V	75	**SSD61**
		0...10 V	75	**SSD61EP** [1]
		2...10 V	75	**SSD61.2**

PN 25	1...120 °C	**DN**	**Rp** [Inch]	$\dot{V}_{min}$ [l/h]	$\dot{V}$ [l/h]	Δp_{min} [kPa]	Δp_{max} [kPa]
Data sheet	N4853						
	**VPI45.15F0.5**	15	Rp ½	90	620	16	400
	VPI45.15F0.5Q [2]	15	Rp ½	90	620	16	400
	VPI45.15F1.5	15	Rp ½	290	1730	18	400
	VPI45.15F1.5Q [2]	15	Rp ½	290	1730	18	400
	VPI45.20F0.9	20	Rp ¾	160	1050	16	400
	VPI45.20F0.9Q [2]	20	Rp ¾	160	1050	16	400
	VPI45.20F2	20	Rp ¾	350	2040	22	400
	VPI45.20F2Q [2]	20	Rp ¾	350	2040	22	400
	VPI45.25F1.5	25	Rp 1	280	1720	16	400
	VPI45.25F1.5Q [2]	25	Rp 1	280	1720	16	400
	VPI45.25F2	25	Rp 1	350	2040	22	400
	VPI45.25F2Q [2]	25	Rp 1	350	2040	22	400
	VPI45.32F3	32	Rp 1¼	560	3050	18	400
	VPI45.32F3Q [2]	32	Rp 1¼	560	3050	18	400

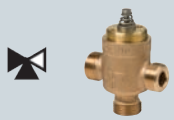
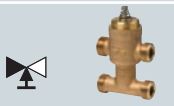
[1] For equal percentage valve characteristic

[2] The VPI45..Q types are fitted with pressure testing points

Overview of Elite Line / Standard Line

Standard line

Typical applications	Actuators	Data sheet		2,5 mm			
– Terminal units – Induction units – Chilled ceilings	**STP21../71..** **STP72E..** **SFP..** **SSP..** **STS61..**	N4878 N4876 N4865 N4864 N4880		105 N	105 N	135 N	160 N
	Operating voltage	**Positioning signal**	**Positioning time [s]**				
	AC 230 V	2-position	180	**STP21**	–	–	–
		2-position	10	–	–	**SFP21/18**	–
		3-position	150	–	–	–	**SSP31**
	AC 24 V	2-position	10	–	–	**SFP71/18**	–
		3-position	43	–	–	–	**SSP81.04**
		3-position	150	–	–	–	**SSP81**
		0...10 V	< 150	–	**STS61**	–	–
	AC/DC 24 V	2-position/PDM	180	**STP71**	–	–	–
		2-position/PDM	180	**STP72E**	–	–	–
		0...10 V	34	–	–	–	**SSP61**

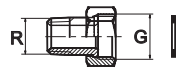
PN 16	1...110 °C	**DN**	**G** [Inch]	**k_{VS}** [m³/h]	**Δp_s** [kPa]	**Δp_{max}** [kP a]	**Δp_s** [kPa]	**Δp_{max}** [kPa]
Data sheet	N4847							
	**VVP47.10-..**	10	G ½B	0.25 / 0.4	700	400	1000	400
	VVP47.10-..	10	G ½B	0.63 / 1	250	250	500	400
	VVP47.10-..	10	G ½B	1.6	150	150	300	300
	VVP47.15-..	15	G ¾B	2.5	150	150	300	300
	VVP47.20-..	20	G 1B	4	100	100	175	175
	**VXP47.10-..**	10	G ½B	0.25 / 0.4	–	400	–	400
	VXP47.10-..	10	G ½B	0.63 / 1	–	250	–	400
	VXP47.10-..	10	G ½B	1.6	–	150	–	300
	VXP47.15-..	15	G ¾B	2.5	–	150	–	300
	VXP47.20-..	20	G 1B	4	–	100	–	175
	**VMP47.10-..**	10	G ½B	0.25 / 0.4	–	400	–	400
	VMP47.10-..	10	G ½B	0.63 / 1	–	250	–	400
	VMP47.10-..	10	G ½B	1.6	–	150	–	300
	VMP47.15-..	15	G ¾B	2.5	–	150	–	300

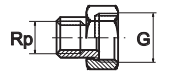
.. = k_{VS}-Value

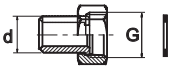
VVP47..S, VXP47..S, VMP47..S Conex® compression fittings, k_{VS} = 0.63, 1, 1.6, 2.5 m3/h, data sheet N4850

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Union nuts for threaded valves





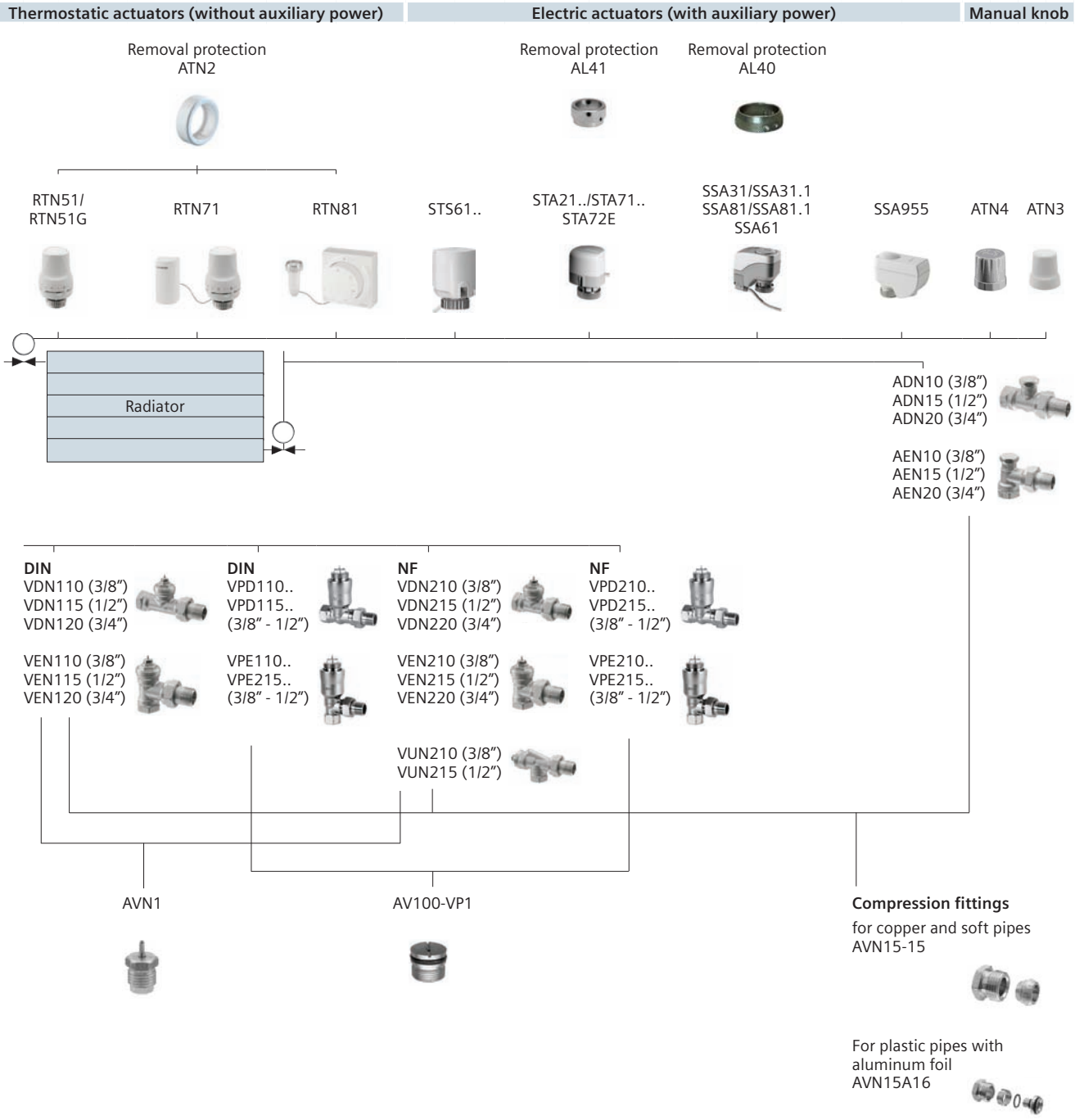


Typ		**G** [Inch]	**R, Rp** [Inch]	**Material**
Set of 2	**Set of 3**			
ALG132	**ALG133**	G ½B	R ⅜ (externally threaded)	Brass
ALG142	**ALG143**	G ¾B	R ½ (externally threaded)	Brass
ALG122	**ALG123**	G ¾B	Rp ⅜	Malleable cast iron
ALG152	**ALG153**	G 1B	Rp ½	Malleable cast iron
ALG152B	**ALG153B**	G 1B	Rp ½	Brass
ALG202	**ALG203**	G 1¼B	Rp ¾	Malleable cast iron
ALG202B	**ALG203B**	G 1¼B	Rp ¾	Brass

Typ	**G** [Inch]	**Ø d** [mm]	**Material**
2er Set			
ALS152	G ¾B	21.3	Steel, weldable
ALS202	G 1B	26.8	Steel, weldable
ALS252	G 1¼B	33.7	Steel, weldable

Valve side: cylindrical thread G according to ISO 228-1, pipe side: ALG.. with cylindrical Rp- or tapered R-thread according to ISO 7-1
Pipe side: ALS.. with welded connection

Possible combinations of TRV (Radiator) Line



Small valves with higher k_v values		Actuators for small valves VD1..CLC	
VD115CLC (1/2") VD120CLC (3/4") VD125CLC (1")	For ■ Terminal units ■ Induction units ■ Chilled ceilings	STA21../STA71.. STA72E../STS561..	SSA31/SSA31.1 SSA81/SSA81.1 SSA61

Overview of TRV (Radiator) Line

TRV line

Typical applications	Actuators	Data sheet				
– Radiators	**RTN..**	N2111				
	Thermal			**RTN51** **RTN51G**	**RTN71**	**RTN81**

Typical applications	Actuators	Data sheet		2,5 mm			
– Radiators	**STA21../71..**	N4877		105 N	100 N	105 N	105 N
	STA72E..	N4875					
	SSA..	N4893					
	STS61..	N4880					
	STP21../71..	N4878					
	STP72E..	N4876					
	Operating voltage	**Positioning signal**	**Positioning time [s]**				
	AC 230 V	2-position	180	**STA21**	–	–	**STP21**
		3-position	150	–	**SSA31**	–	–
	AC 24 V	3-position	150	–	**SSA81**	–	–
		0...10 V	< 150	–	–	**STS61**	–
	AC/DC 24 V	2-position/PDM	180	**STA71**	–	–	**STP71**
		2-position/PDM	180	**STA72E**	–	–	**STP72E**
		0...10 V	34	–	**SSA61**	–	–
	Normally open/normally closed (for radiator valves)			**NC**	–	**NC/NO**	**NO**

PN 10 1...120 °C	**DIN**	**NF**	**DN**	**Rp/R** [Inch]	k_{VS} [m³/h]	Δp_{max} [kPa]
Data sheet	N2105	N2106				
	**VDN110**	**VDN210**	10	Rp/R ⅜	0.09...0.63	60
	VDN115	**VDN215**	15	Rp/R ½	0.10...0.89	60
	VDN120	**VDN220**	20	Rp/R ¾	0.31...1.41	60
	**VEN110**	**VEN210**	10	Rp/R ⅜	0.09...0.63	60
	VEN115	**VEN215**	15	Rp/R ½	0.10...0.89	60
	VEN120	**VEN220**	20	Rp/R ¾	0.31...1.41	60
		**VUN210**	10	Rp/R ⅜	0.14...0.60	60
		VUN215	15	Rp/R ½	0.13...0.77	60

PN 10 1...90 °C	**DIN**	**NF**	**DN**	**Rp/R** [Inch]	$\dot{V}$ [l/h]	Δp_w [kPa]	Δp_{max} [kPa]
Data sheet	N2185						
	**VPD110A-..**	**VPD210A-..**	10	Rp/R ⅜	25...318	5	200
	VPD115A-..	**VPD215A-..**	15	Rp/R ½	25...318	5	200
	VPD110B-200	**VPD210B-200**	10	Rp/R ⅜	95...483	10	200
	VPD115B-200	**VPD215B-200**	15	Rp/R ½	95...483	10	200
	**VPE110A-..**	**VPE210A-..**	10	Rp/R ⅜	25...318	5	200
	VPE115A-..	**VPE215A-..**	15	Rp/R ½	25...318	5	200
	VPE110B-200	**VPE210B-200**	10	Rp/R ⅜	95...483	10	200
	VPE115B-200	**VPE210B-200**	15	Rp/R ½	95...483	10	200

.. = $\dot{V}_{nominal}$ = 45 / 90 / 145 l/h

PN 10 1...110 °C		**DN**	**Rp/R** [Inch]	k_V [l/h]	Δp_{max} [kPa]
Data sheet	N2103				
	**VD115CLC**	15	Rp/R ½	0.25...1.9	150
	VD120CLC	20	Rp/R ¾	0.25...2.6	150
	VD125CLC	25	Rp/R 1	0.25...2.6	150

Adapters for valves of other manufacturers

AV.. adapters for Siemens actuators for TRV valves of other manufacturers	**AV51**	**AV52**	**AV53**	**AV54**	**AV55**	**AV56**	**AV57**	**AV58**	**AV59**	**AV60**	**AV61**
											
	Beulco [1]	Comap	Danfoss RA 2000	Danfoss RAVL	Danfoss RAV	Giacomini	Herz	Oventrop < 2002	Vaillant	TA < 2002	MMA Markaryd
Adaptergewinde	M30x1	M28x1.5	–	–	–	–	M28x1.5	M30x1	–	M28x1.5	M28x1.5

[1] Not to be used with RTN.. (distributor for underfloor heating systems)

Connection (M30x1.5) to valves of other manufacturers, without adapter:
Heimeier, Cazzaniga, Junkers, Oventrop M30x1.5 (since 2001), Honeywell Braukmann, MNG, Beulco new

TRV line

Typical applications
– Radiator lockshield valves

PN 10 1...120 °C Data sheet	N2107	**DN**	**Rp/R** [Zoll]	**k_{VS}** [m³/h]
	**ADN10**	10	Rp/R ⅜	0...1.8
	ADN15	15	Rp/R ½	0...2.5
	ADN20	20	Rp/R ¾	0...3.0
	**AEN10**	10	Rp/R ⅜	0...1.8
	AEN15	15	Rp/R ½	0...2.5
	AEN20	20	Rp/R ¾	0...3.0

Accessories for radiator valves

Compressing fittings for VDN1.., VEN1.., VDN2.., VEN2.., VUN2.., ADN.., AEN..				**Sealing gland for VDN1.., VEN1.., VDN2.., VEN2.., VUN2..**	
for copper and soft pipes		for aluminum PEX pipes			
AVN15-15		**AVN15A16**		**AVN1**	

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Presettings for radiator valves

VEN.., VDN.., VUN..
k_v values [m³/h] at the different preadjusted positions

Control range with electromotoric and thermal actuators SSA.., STA.., STS61, SSA955	■	■	■	■	■	■	–	
Control range with thermostatic head RTN..	■	■	■	■	■	–	■	
Reference numbers for preadjustment	1	2	3	4	5	N	N [1]	
VDN110/VDN210/VEN110/VEN210	0.09	0.18	0.26	0.33	0.48	0.63	0.43	m³/h
VDN115/VDN215/VEN115/VEN215	0.1	0.2	0.31	0.45	0.69	0.89	0.52	m³/h
VDN120/VDN220/VEN120/VEN220	0.31	0.41	0.54	0.83	0.91	1.41	0.71	m³/h
VUN210	0.14	0.28	0.38	0.49	0.53	0.6	0.43	m³/h
VUN215	0.13	0.23	0.34	0.52	0.66	0.77	0.5	m³/h

[1] k_v value at a P-band of 2 K

Notes
- k_v = nominal flow rate of cold water (5...30 °C) through the valve at the respective stroke and a differential pressure of 100 kPa (1 bar)
- The selected k_v values of the radiator valves can be easily and precisely set on the valve head in 5 steps + N (fully open)

VPE.., VPD.. (MCV)
Volumetric flow [l/h] at the different preadjusted positions

Suited for thermostatic actuators	■	■	■	■	■	■	■												
Suited for use with thermal or electro-motoric actuators	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Possible application area							Recommended application area											
Electromotoric actuator SSA61.. [1]													■ [1]	■	■	■	■	■	
Stroke [mm]	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	
Reference number [2]	1	2	3	4	5	6	7	X	Y	Z									
Ref. numb. + 360° [3]											1	2	3	4	5	6	7	X	
VPD/VPE...A-45	25	36	45	53	60	67	72	77	81	85	88	91	93	96	98	100	102	104	
VPD/VPE...A-90	57	75	90	103	114	123	132	139	145	151	156	160	165	169	173	177	181	185	
VPD/VPE...A-145	86	117	145	169	189	207	223	236	248	258	267	276	284	291	298	305	311	318	
VPD/VPE...B-200	95	151	200	243	280	311	339	362	383	400	415	428	439	450	459	467	475	483	

Factory setting: V_{Nenn} = value at 0.5 mm stroke or reference number 3

[1] Note:
If Siemens radiator valves type VPD.. or VPE.. are combined with SSA61.. actuators. the flow rate must be preset to a minimum valve stroke of 1.5 mm. With valve strokes of < 1.5 mm, self-calibration is not possible and the actuator-valve combination remains blocked.

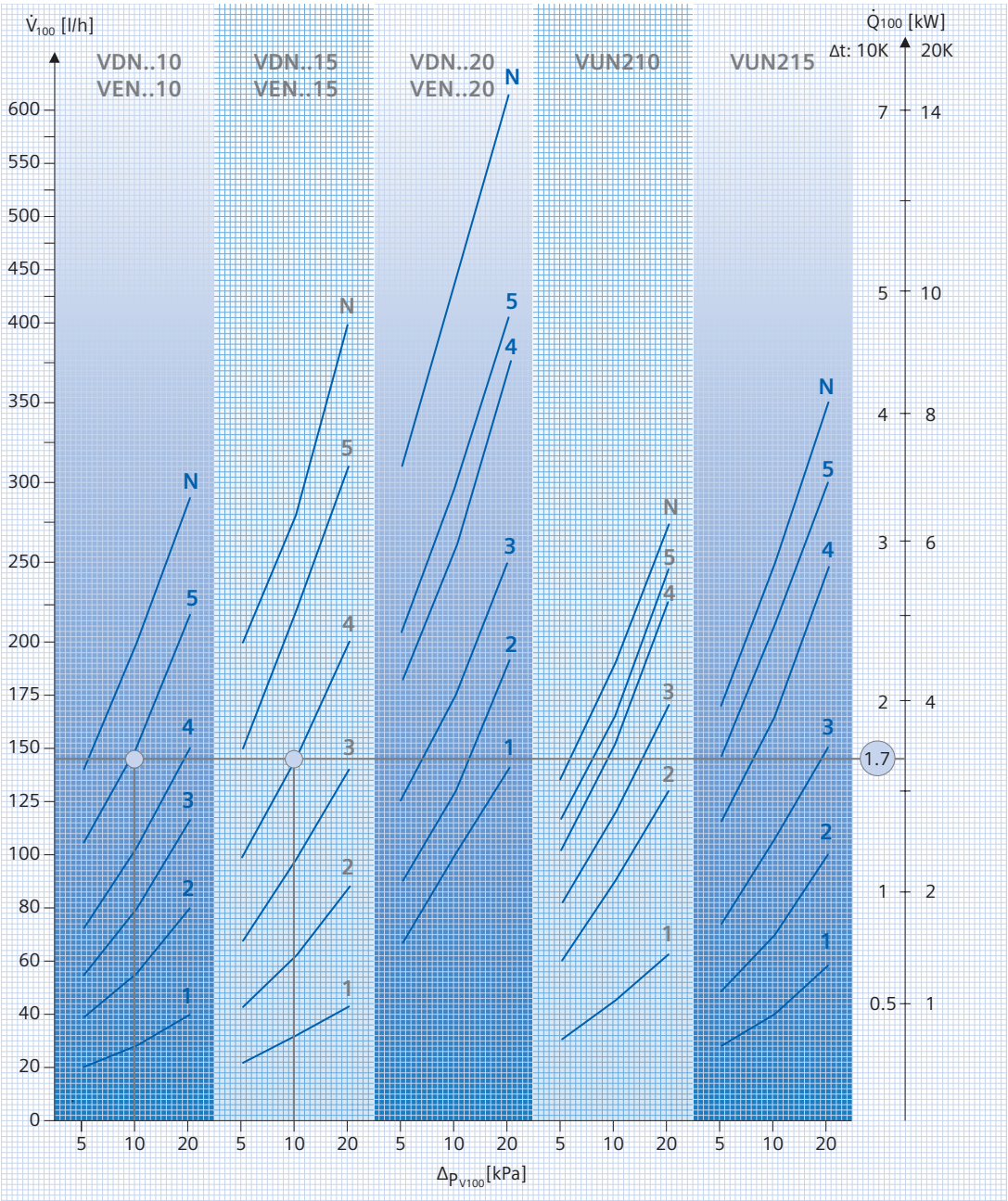
[2] Example: Setting 2



[3] +360° corresponds to a full revolution



Sizing chart / Presetting for radiator valves VDN../VEN../VUN..



Example

Given:
Q = 1.7 kW
Δt = 10 K
Δp_{V100} = 10 kPa

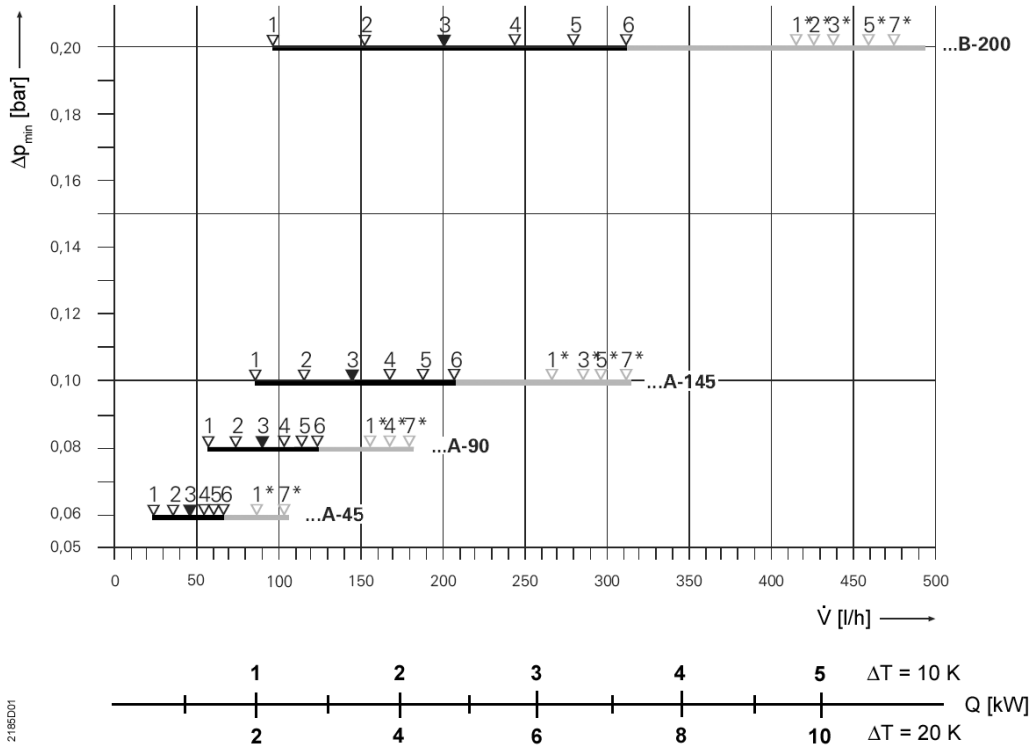
Solution:
VDN..10, presetting 5
or VDN..15, presetting 4
etc.

We know from experience that the majority of plant operate with a Δp_{V100} of 5...20 kPa (0.05...0.2 bar).
For this reason, the chart has been developed for this standard range.

For detailed charts, refer to the relevant data sheets.

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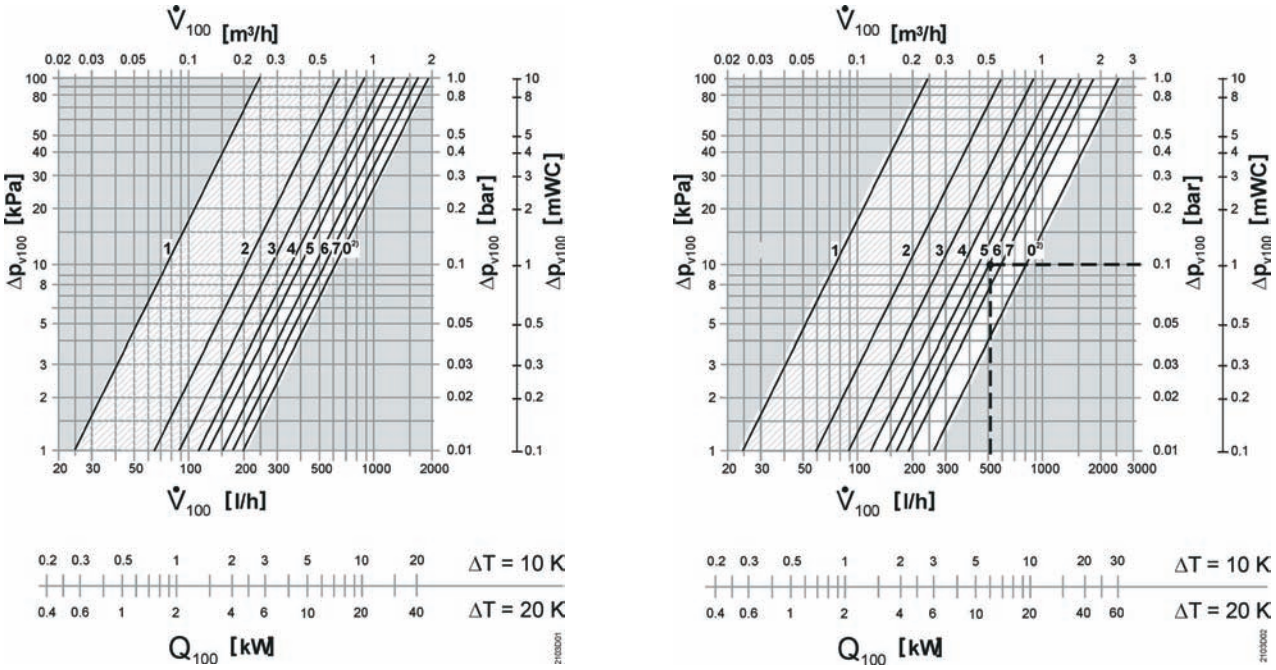
Sizing chart / Presetting for MCV..



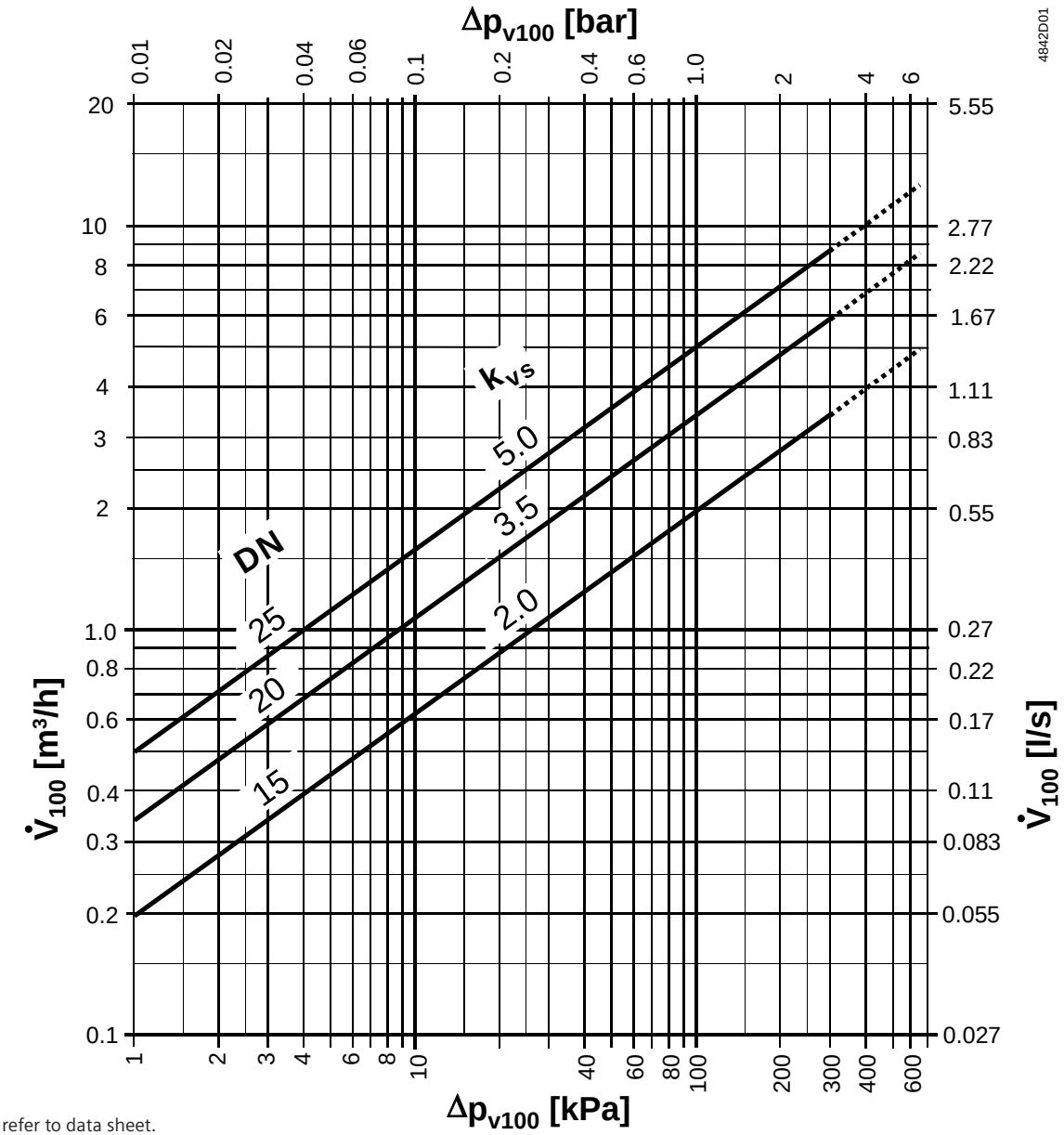
*	These values are valid for the second revolution
Δp_{min}	Minimum differential pressure required across the valve (bar)
$\dot{V}$	Calculated volumetric flow (design point) (l/h)
Typ A	Effective pressure 5 kPa (0.05 bar)
Typ B	Effective pressure 10 kPa (0.1 bar)
▼	Factory setting

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Sizing chart for VD1..CLC small valves



Sizing chart for V..I46..



Please refer to data sheet.

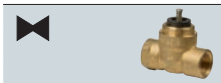
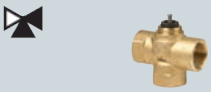
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Overview of On/Off Line

On/Off line

Typical applications	Actuators	Data sheet		2,5 mm			
– Terminal units – Domestic hot water storage tank charging – Zone control	**SFA..** **STA21../71..** **STA72E..** **STS61..** **SSA31.04** [1]	N4863 N4877 N4875 N4880 N4860		200 N	105 N	105 N	160 N
	Operating voltage	**Positioning signal**	**Positioning time [s]**				
	AC 230 V	2-position	10	**SFA21/18**	–	–	–
		2-position	180	–	**STA21**	–	–
		3-position/SPDT [2]	43	–	–	–	**SSA31.04**
	AC 24 V	2-position	10	**SFA71/18**	–	–	–
		0...10 V	< 150	–	–	**STS61**	–
	AC/DC 24 V	2-position/PDM	180	–	**STA71**	–	–
		2-position/PDM	180	–	**STA72E**	–	–

[1] Not suited for radiator valves [2] SPDT= single-pole double throw (changeover switch)

PN 10	1...110 °C	**DN**	**Rp**	k_{vs}	Δp_s	Δp_{max}	Δp_s	Δp_{max}
Data sheet	N4842		[Inch]	[m³/h]	[kPa]	[kPa]	[kPa]	[kPa]
	**VVI46.15**	15	Rp ½	2	300	300	200	200
	VVI46.20	20	Rp ¾	3.5	300	300	200	200
	VVI46.25	25	Rp 1	5	300	300	200	200
	**VXI46.15** [4]	15	Rp ½	2	–	300	–	200
	VXI46.20 [4]	20	Rp ¾	3.5	–	300	–	200
	VXI46.25 [4]	25	Rp 1	5	–	300	–	200
	VXI46.25T [5]	25	Rp 1	5	–	200	–	200

[4] 70% k_{vs} in bypass, leakage rate in bypass 2...5% of k_{vs} value

[5] 100% k_{vs} in bypass, leakage rate in bypass 0.05% of k_{vs} value

For low noise operation, the value of 100 kPa should not be exceeded.

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Electromotoric actuator, 160 N, 2.5 mm, 1.5 m, AC 230 V, 3P, SPDT — SSA31.04



For V..I46.. zone valves

Electromotoric actuators for 3-position or SPDT control of zone valves V..I46.. with internally threaded connections. For 3-position or SPDT (open/close) control of heating systems, domestic hot water storage tank charging as well as terminal units and zones. The actuators have automatic stroke adaption, force-dependent switching off in the end position, position indication, manual control and 1.5 m connecting cable.
Not suitable for radiator valves (soft seal).

Data sheet	N4860
Positioning force	160 N
Positioning signal	3-position SPDT
Positioning time	43 s
Stroke	2.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined

For fitting to the valve: Cap nut M30 x 1.5

	Stock No.	Product No.
	BPZ:SSA31.04	SSA31.04

Accessories for SSA31.04

Product Title	Data sheet	Stock No.	Product No.
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**

Electromotoric actuators 200 N for small valves V..I46.. — SFA21.. / SFA71..



For V..I46.. and V..S46.. zone valves, AC 24 V and AC 230 V versions.

Electromotoric actuators for on/off control of zone valves, internally threaded or soldered connections. For on/off control of terminal units and heating and cooling zones. The actuators have a manual lever, power fail reset function NO valve closed) and 1.8 m connecting cable. 1 auxiliary switch is available as an accessory item.

Data sheet	N4863
Positioning force	200 N
Positioning signal	2-position
Positioning time	10 s
Stroke	2.5 mm
Degree of protection	IP30
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 85° inclined
Auxiliary switch	1

For fitting to the valve: Cap nut M30 x 1.5

NEW PRODUCT

Acvatix™ Actuators for zones valves with 2.5 mm stroke
Positioning force 160 N / 200 N: SSA31.04 / SFA21.. / SFA71..

Range overview actuators SFA..

Operating voltage [V]	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock No.	Product No.
AC 230	12	Optional	1.8	BPZ:SFA21/18	**SFA21/18**
AC 24	12	Optional	1.8	BPZ:SFA71/18	**SFA71/18**

Auxilary switch: Changeover contact AC 250 V, 3 A res., 2 A ind., adjustable switching point 50 %

Accessories auxiliary switch for actuators

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SFA21.../ SFA71.../ SFP21.../ SFP71...	N4863	BPZ:ASC2.1/18	**ASC2.1/18**

2-port and 3-port zone valves, PN16 with on/off characteristic

V..I46..

2-port and 3-port valves, internally threaded connections, for the control of zones or terminal units. Suitable media: water (to VDE 2035), water with anti-freeze.



Data sheet	N4842
Stroke	2.5 mm
Leakage rate	0.05% of k_{vs} value
Leakage rate bypass	2...5% of k_{vs} value
Medium temperature	1...110 °C
Permissible operating pressure	1600 kPa
Material, valve body	Pressed brass
Material, inside set	CrNi steel, brass
Ambient temperature, operation	1...50 °C
Mounting position	Upright to horizontal
PN class	PN 16
Valve characteristic	Non-linear (on/off)

Range overview 2-port internally threaded valves VVI46..

Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
Rp ½ "	15	2	BPZ:VVI46.15	**VVI46.15**
Rp ¾ "	20	3.5	BPZ:VVI46.20	**VVI46.20**
Rp 1 "	25	5	BPZ:VVI46.25	**VVI46.25**

SFA.. Δp_{max} [kPa]	SFA.. Δp_s [kPa]	SSA31.04 Δp_{max} [kPa]	SSA31.04 Δp_s [kPa]	STA../STS61.. Δp_{max} [kPa]	STA../STS61.. Δp_s [kPa]	Stock No.	Product No.
300	300	200	200	200	200	BPZ:VVI46.15	**VVI46.15**
300	300	200	200	200	200	BPZ:VVI46.20	**VVI46.20**
300	300	200	200	200	200	BPZ:VVI46.25	**VVI46.25**

To ensure noiseless operation, Δp_{max} should not exceed 100 kPa.

Range overview 3-port internally threaded valves VXI46.. (diverting valves)

Connecting thread	DN	k_{vs} [m³/h]	SFA.. Δp_{max} [kPa]	SSA31.04 Δp_{max} [kPa]	STA../STS61.. Δp_{max} [kPa]	Stock No.	Product No.
Rp ½ "	15	2	300	200	200	BPZ:VXI46.15	**VXI46.15**
Rp ¾ "	20	3.5	300	200	200	BPZ:VXI46.20	**VXI46.20**
Rp 1 "	25	5	300	200	200	BPZ:VXI46.25	**VXI46.25**
Rp 1 "	25	5	200	200	200	BPZ:VXI46.25T	**VXI46.25T**

To ensure noiseless operation, Δp_{max} should not exceed 100 kPa.
VXI46..: 70 % k_{vs} in bypass, leakage rate in bypass 2...5 % of k_{vs} value
VXI46.25T: 100 % k_{vs} in bypass, leakage rate in bypass 0.05 % of k_{vs} value, valve body bronze Rg5

Acvatix™ Zone valves with 2.5 mm stroke
2-port and 3-port, PN16: V..I46..

Combinable actuator to V..I46..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
AC 230 V	2-position	10	N4863	BPZ:SFA21/18	**SFA21/18**
AC 24 V	2-position	10	N4863	BPZ:SFA71/18	**SFA71/18**
AC 230 V	3-position SPDT	43	N4860	BPZ:SSA31.04	SSA31.04
AC 230 V	2-position	180	N4877	BPZ:STA21	**STA21**
AC 230 V	2-position	180	N4877	BPZ:STA21/50	**STA21/50**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71	**STA71**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71/50	**STA71/50**
DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E	**STA72E**
AC 24 V DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E/00	**STA72E/00**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61S	**STS61S**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/50	**STS61/50**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/100	**STS61/100**

Further information to the actuators please see "Actuators for zones valves with 2.5 mm stroke" or "Actuators for small valves with 2.5 mm stroke"

Electrothermal actuators 105 N for small valves V..P47.. and radiator valves

STP21../STP71..



Electrothermal actuators for on/off control of small valves. For 2-position or quasi-proportional control of terminal units and heating and cooling zones. The actuators feature a manual lever and position indication to facilitate commissioning. Types with 1.2 m and 5 m connecting cable available.

Standard application (actuator de-energized, valve closed):
- For small valves VVP47.., VXP47.., VMP47..
- For retrofitting to small valves 2W.., 3W.., 4W.. with adapter AL100

Special application (actuator de-energized, valve fully open):
- For Siemens radiator valves, MiniCombiValves, zone valves and valves of other manufacture
- for Siemens small valves V..P47.., see actuator type STA..

Data sheet	N4878
Positioning force	105 N
Positioning signal	2-position (PDM)
Positioning time	180 s
Spring return function	NO - valve open (refers to radiator valves, VD1..CLC)
Stroke	2.5 mm
Degree of protection	± 45°: IP43, 45°..90°: IP41
Mounting position	Upright to horizontal
Ambient temperature, operation	5...50 °C

Ambient temperature operation for quasi-proportional control: 5...40 °C
For fitting to valve: Cap nut M30 x 1.5

Range overview actuators STP..

Operating voltage	Power consumption [W]	Positioning signal	Cable length [m]	Stock No.	Product No.
AC 230 V	2.5	2-position	1.2	BPZ:STP21	**STP21**
DC 24 V	2.5	2-position (PDM)	1.2	BPZ:STP71	**STP71**
AC 230 V	2.5	2-position	5	BPZ:STP21/50	**STP21/50**
DC 24 V	2.5	2-position (PDM)	5	BPZ:STP71/50	**STP71/50**

Power consumption on switching on: 6 VA (AC 24 V) or 58 VA (AC 230 V)

Accessories for STP21../STP71..

Product Title	Data sheet	Stock No.	Product No.
Adapter for tamper-proof fitting for STA.., STP.. actuators	N4878	BPZ:AL41	**AL41**
Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	BPZ:AL100	**AL100**

Acvatix™ Actuators for small valves with 2.5 mm stroke
Positioning force 105 N: STP21.. / STP71.. / STP72..

STP72..



Electrothermal actuators 105 N for small valves V..P47.., zone and radiator valves

Electrothermal actuators with optimized parallel operation for on/off control of small valves. For 2-position or quasi-proportional control of terminal units and heating and cooling zones. The actuators feature a manual lever and position indication to facilitate commissioning. Pluggable connecting cable available, optional cable with LED operation indication as well as non-halogen cable available.

Standard application (actuator de-energized, valve closed):
- For small valves VVP47.., VXP47.., VMP47..
- For retrofitting to small valves 2W.., 3W.., 4W.. with adapter AL100

Special application (actuator de-energized, valve fully open):
- For Siemens radiator valves, MiniCombiValves, zone valves and valves of other manufacture
- for Siemens small valves V..P47.., see actuator type STA..

Data sheet	N4876
Positioning force	105 N
Positioning signal	2-position (PDM)
Positioning time	180 s
Spring return function	NC - valve closed (V..P47..(S), 2W.. / 3W.. / 4W..) NO - valve open (VD1..CLC)
Stroke	2.5 mm
Degree of protection	± 45°: IP43, 45°..90°: IP41
Mounting position	Upright to horizontal
Ambient temperature, operation	5...50 °C

Ambient temperature operation for quasi-proportional control: 5...40 °C
For fitting to valve: Cap nut M30 x 1.5

Range overview actuators STP..

Operating voltage	Power consumption [W]	Positioning signal	Cable length [m]	Stock No.	Product No.
AC 24 V DC 24 V	2.5	2-position (PDM)	1.5	BPZ:STP72E	**STP72E**
AC 24 V DC 24 V	2.5	2-position (PDM)		BPZ:STP72E/00	**STP72E/00**

Power consumption on power-up: 6 VA (AC 24 V)
STP72E/00: Cable selection see accessories STP72..

Accessories for STP72..

Product Title	Data sheet	Stock No.	Product No.
Adapter for tamper-proof fitting for STA.., STP.. actuators	N4878	BPZ:AL41	**AL41**
Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	BPZ:AL100	**AL100**

Connection cable for STP72..

Product Title	Stock No.	Product No.
Connecting cable 1.5 m	BPZ:ASY2L15	**ASY2L15**
Connecting cable 2.5 m	BPZ:ASY2L25	**ASY2L25**
Connecting cable 4.5 m	BPZ:ASY2L45	**ASY2L45**
Connecting cable 1.5 m, with LED operation indication	BPZ:ASY2L15L	**ASY2L15L**
Connecting cable 2.5 m, with LED operation indication	BPZ:ASY2L25L	**ASY2L25L**
Connecting cable 4.5 m, with LED operation indication	BPZ:ASY2L45L	**ASY2L45L**
Connecting cable 1.5 m, non halogen, VDE 0207-24	BPZ:ASY2L15HF	**ASY2L15HF**
Connecting cable 2.5 m, non halogen, VDE 0207-24	BPZ:ASY2L25HF	**ASY2L25HF**
Connecting cable 4.5 m, non halogen, VDE 0207-24	BPZ:ASY2L45HF	**ASY2L45HF**

Acvatix™ Actuators for small valves with 2.5 mm stroke
Positioning force 135 N: SFP21.. / SFP71..

SFP21../SFP71..



Electromotoric actuators 135 N for small valves V..P47..

For small valves VVP47.., VXP47.. and VMP47..

Together with VVP47.., VXP47.. and VMP47.., they offer high-quality on/off control. Versions for AC 24 V and AC 230 V available. For on/off control of terminal units and heating and cooling zones. The actuators offer a low noise level, have a manual lever, power fail reset function (NC valve closed) and 1.8 m connecting cable. 1 auxiliary switch is available as an accessory item. The combination with a 3-port valve is suited for applications requiring tight shutoff in both valve end positions.

Data sheet	N4865
Positioning force	135 N
Positioning signal	2-position
Positioning time	10 s
Stroke	2.5 mm
Degree of protection	IP30
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 85° inclined

For fitting to the valve: Cap nut M30 x 1.5

Range overview actuators SFP..

Operating voltage	Power consumption [VA]	Auxiliary switch	Cable length [m]	Stock No.	Product No.
AC 230 V	9.8	Optional	1.8	BPZ:SFP21/18	**SFP21/18**
AC 24 V	9.8	Optional	1.8	BPZ:SFP71/18	**SFP71/18**

Auxilary switch: Changeover contact AC 250 V, 3 A res., 2 A ind., adjustable switching point 50 %

Accessories for SFP21../SFP71..

Product Title	Data sheet	Stock No.	Product No.
Auxiliary switch for SFA21.../ SFA71.../ SFP21.../ SFP71...	N4863	BPZ:ASC2.1/18	**ASC2.1/18**

Electromotoric actuators 160 N for valves with 2.5 mm stroke

SSP..

- For small valves VVP47.., VXP47.. and VMP47..
- For retrofitting the small valves 2W.., 3W.. and 4W.. with adapter AL100.



Electromotoric actuators for modulating or 3-position control of small valves for terminal units and heating and cooling zones. With position indication, manual control, automatic stroke adaption, force-dependent switching off in the end positions and plug-in type connecting cable.

Data sheet	N4864
Positioning force	160 N
Stroke	2.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined

For fitting to the valve: Cap nut M30 x 1.5.
SSP81.., SSP61.. are CE, C-tick, UL and cUL listed.

Range overview SSP.. actuators

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Cable length [m]	Stock No.	Product No.
AC 230 V	6	3-position	150	1.5	BPZ:SSP31	**SSP31**
DC 24 V	2.5	DC 0...10 V	34	1.5	BPZ:SSP61	**SSP61**
DC 24 V	2	DC 0...10 V	34	1.5	BPZ:SSP61P	**SSP61P**
AC 24 V	0.8	3-position	150	1.5	BPZ:SSP81	**SSP81**
AC 24 V	0.8	3-position	43	1.5	BPZ:SSP81.04	**SSP81.04**
AC 230 V	6	3-position	150		BPZ:SSP31/00	**SSP31/00**
DC 24 V	2.5	DC 0...10 V	34		BPZ:SSP61/00	**SSP61/00**
AC 24 V	0.8	3-position	150		BPZ:SSP81/00	**SSP81/00**
AC 24 V	0.8	3-position	43		BPZ:SSP81.04/00	**SSP81.04/00**

Positioning time for 2.5 mm stroke
SSP../00: Cable selection see accessories for SSP..

Acvatix™ Actuators for small valves with 2.5 mm stroke
Positioning force 160 N: SSP..

Accessories for SSP..

Product Title	Data sheet	Stock No.	Product No.
Connecting cable 1.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L15	**ASY3L15**
Connecting cable 2.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L25	**ASY3L25**
Connecting cable 4.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L45	**ASY3L45**
Connecting cable 1.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L15	**ASY6L15**
Connecting cable 2.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L25	**ASY6L25**
Connecting cable 4.5 m, DC 0..10 V, AC/DC 24 V	N4891	BPZ:ASY6L45	**ASY6L45**
Connecting cable 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY6L45HF	**ASY6L45HF**
Connecting cable 1.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L15	**ASY8L15**
Connecting cable 2.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L25	**ASY8L25**
Connecting cable 4.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L45	**ASY8L45**
Connecting cable 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY8L45HF	**ASY8L45HF**
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..		BPZ:ASY99	**ASY99**
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	N4864	BPZ:ASY100	**ASY100**
Retrofit adapter for installed 2W..., 3W..., 4W... valves	N4878	BPZ:AL100	**AL100**

Accessories for SSP.. (N4864), SSA.. (N4893), SSB.. (N4891) and SSD.. (N4861)

2-port, 3-port and 3-port seat valves with bypass, PN16

V..P47..

2-port, 3-port and 3-port valves with bypass and threaded connections for the control of terminal units, chilled ceilings or heating zones.
Suitable media: Water (to VDI 2035), water with anti-freeze.







Data sheet	N4847
Stroke	2.5 mm
Leakage rate	0...0.05 % of k_{vs} value
Leakage rate bypass	0...0.05 % of k_{vs} value
Medium temperature	1...110 °C
Valve characteristic	Throughport: linear Bypass: linear
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel, brass
PN class	PN 16
Permissible operating pressure	1600 kPa

VXP47.. and VMP47.. 3-port valves are only used as mixing valves.
They are also suitable for SERTO® compression fittings.
The valves are also available with connections for Conex® compression fittings (DN 10 and DN 15); type V..P47..S, Data Sheet N4850.

Range overview 2-port valves VVP47..

Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
G ½ B "	10	0.25	BPZ:VVP47.10-0.25	**VVP47.10-0.25**
G ½ B "	10	0.4	BPZ:VVP47.10-0.4	**VVP47.10-0.4**
G ½ B "	10	0.63	BPZ:VVP47.10-0.63	**VVP47.10-0.63**
G ½ B "	10	1	BPZ:VVP47.10-1	**VVP47.10-1**
G ½ B "	10	1.6	BPZ:VVP47.10-1.6	**VVP47.10-1.6**
G ¾ B "	15	2.5	BPZ:VVP47.15-2.5	**VVP47.15-2.5**
G 1 B "	20	4	BPZ:VVP47.20-4	**VVP47.20-4**

Overview differential pressures

SFP../SSP.. Δp_s [kPa]	SFP../SSP.. Δp_{max} [kPa]	STS61.. Δp_s [kPa]	STS61.. Δp_{max} [kPa]	STP.. Δp_s [kPa]	STP.. Δp_{max} [kPa]	Product No.
1000	400	700	400	700	400	**VVP47.10-0.25**
1000	400	700	400	700	400	**VVP47.10-0.4**
500	400	250	250	250	250	**VVP47.10-0.63**
500	400	250	250	250	250	**VVP47.10-1**
300	300	150	150	150	150	**VVP47.10-1.6**
300	300	150	150	150	150	**VVP47.15-2.5**
175	175	100	100	100	100	**VVP47.20-4**

Acvatix™ Small valves with 2.5 mm stroke
2-port, 3-port, 3-port with bypass, PN16: V..P47..

Range overview 3-port valves VXP47..

Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
G ½ B "	10	0.25	BPZ:VXP47.10-0.25	**VXP47.10-0.25**
G ½ B "	10	0.4	BPZ:VXP47.10-0.4	**VXP47.10-0.4**
G ½ B "	10	0.63	BPZ:VXP47.10-0.63	**VXP47.10-0.63**
G ½ B "	10	1	BPZ:VXP47.10-1	**VXP47.10-1**
G ½ B "	10	1.6	BPZ:VXP47.10-1.6	**VXP47.10-1.6**
G ¾ B "	15	2.5	BPZ:VXP47.15-2.5	**VXP47.15-2.5**
G 1 B "	20	4	BPZ:VXP47.20-4	**VXP47.20-4**

70 % k_{vs} in bypass for all types

Overview differential pressures

SFP../SSP.. Δp_{max} [kPa]	STP.. Δp_{max} [kPa]	STS61.. Δp_{max} [kPa]	Product No.
400	400	400	**VXP47.10-0.25**
400	250	250	**VXP47.10-0.4**
400	250	250	**VXP47.10-0.63**
400	250	250	**VXP47.10-1**
300	150	150	**VXP47.10-1.6**
300	150	150	**VXP47.15-2.5**
175	100	100	**VXP47.20-4**

Range overview 3-port with bypass VMP47..

Connecting thread	DN	k_{vs} [m³/h]	Stock No.	Product No.
G ½ B "	10	0.25	BPZ:VMP47.10-0.25	**VMP47.10-0.25**
G ½ B "	10	0.4	BPZ:VMP47.10-0.4	**VMP47.10-0.4**
G ½ B "	10	0.63	BPZ:VMP47.10-0.63	**VMP47.10-0.63**
G ½ B "	10	1	BPZ:VMP47.10-1	**VMP47.10-1**
G ½ B "	10	1.6	BPZ:VMP47.10-1.6	**VMP47.10-1.6**
G ¾ B "	15	2.5	BPZ:VMP47.15-2.5	**VMP47.15-2.5**

70 % k_{vs} in bypass for all types

Overview differential pressures

SFP../SSP.. Δp_{max} [kPa]	STS61.. Δp_{max} [kPa]	STP.. Δp_{max} [kPa]	Product No.
400	400	400	**VMP47.10-0.25**
400	400	400	**VMP47.10-0.4**
400	250	250	**VMP47.10-0.63**
400	250	250	**VMP47.10-1**
300	150	150	**VMP47.10-1.6**
300	150	150	**VMP47.15-2.5**

Combinable actuator to V..P47..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	N4864	BPZ:SSP31	**SSP31**
AC 230 V	2-position	180	N4878	BPZ:STP21	**STP21**
AC 230 V	2-position	10	N4865	BPZ:SFP21/18	**SFP21/18**
DC 24 V	DC 0...10 V	34	N4864	BPZ:SSP61	**SSP61**
AC 24 V	3-position	150	N4864	BPZ:SSP81	**SSP81**
AC 24 V	3-position	43	N4864	BPZ:SSP81.04	**SSP81.04**
DC 24 V	2-position (PDM)	180	N4878	BPZ:STP71	**STP71**
AC 24 V	2-position	10	N4865	BPZ:SFP71/18	**SFP71/18**
AC 24 V DC 24 V	2-position (PDM)	180	N4876	BPZ:STP72E	**STP72E**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**

Further information to the actuators please see "Actuators for small valves with 2.5 mm stroke"

Acvatix™ Small valves with 2.5 mm stroke
Threaded fittings for valves with 2.5 mm stoke

Fittings with threaded connections: Set of 2

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..2 consists of 2 cap nuts, 2 insert nuts and 2 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG132	**ALG132**
G ¾ "	R ½ "	Brass	BPZ:ALG142	**ALG142**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG122	**ALG122**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG152	**ALG152**
G 1 "	Rp ½ "	Brass	S55846-Z100	**ALG152B**

ALG132 and ALG142: pipe connecting thread externally threaded
For the VMP45.. and VMP47.. valves, 2 sets of 2 fittings must be ordered

Fittings with threaded connections: Set of 3

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..3 consists of 3 cap nuts, 3 insert nuts and 3 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG133	**ALG133**
G ¾ "	R ½ "	Brass	BPZ:ALG143	**ALG143**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG123	**ALG123**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG153	**ALG153**
G 1 "	Rp ½ "	Brass	S55846-Z101	**ALG153B**

ALG133 and ALG143: pipe connecting thread externally threaded

Electromotoric actuators 200 N for valves with 5.5 mm stroke

SSB..

For small valves V..P45..



Electromotoric actuators for modulating or 3-position control of small valves for terminal units and chilled ceilings. With position indication, manual control and plug-in type connecting cable 1.5 m. Automatic stroke adaption and force-dependent switching off in the end position.

Data sheet	N4891
Positioning force	200 N
Stroke	5.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined
Medium temperature	1...110 °C

For fitting to the valve: Cap nut G¾"
SSB61.., SSB81.. are CE, C-tick, UL and cUL listed.

Range overview SSB..

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Auxiliary switch	Cable length [m]	Stock No.	Product No.
AC 230 V	6	3-position	150	0	1.5	BPZ:SSB31	**SSB31**
AC 24 V	0.8	3-position	150	0	1.5	BPZ:SSB81	**SSB81**
DC 24 V	2.5	DC 0...10 V	75	0	1.5	BPZ:SSB61	**SSB61**
AC 230 V	6	3-position	150	1	1.5	BPZ:SSB31.1	**SSB31.1**
AC 24 V	0.8	3-position	150	1	1.5	BPZ:SSB81.1	**SSB81.1**
AC 230 V	6	3-position	150	0		BPZ:SSB31/00	**SSB31/00**
AC 24 V	0.8	3-position	150	0		BPZ:SSB81/00	**SSB81/00**
DC 24 V	2.5	DC 0...10 V	75	0		BPZ:SSB61/00	**SSB61/00**

Auxilary switch: Changeover contact AC 250 V, 1 A res., 0.5 A ind., adjustable switching point 0...100 %
SSB../00: Cable selection see accessories for SSB..

Acvatix™ Actuators for small valves with 5.5 mm stroke Positioning force 200 N: SSB..

Accessories for SSB..

Product Title	Data sheet	Stock No.	Product No.
Connecting cable 1.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L15	**ASY3L15**
Connecting cable 2.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L25	**ASY3L25**
Connecting cable 4.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L45	**ASY3L45**
Connecting cable 1.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L15	**ASY6L15**
Connecting cable 2.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L25	**ASY6L25**
Connecting cable 4.5 m, DC 0..10 V, AC/DC 24 V	N4891	BPZ:ASY6L45	**ASY6L45**
Connecting cable 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY6L45HF	**ASY6L45HF**
Connecting cable 1.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L15	**ASY8L15**
Connecting cable 2.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L25	**ASY8L25**
Connecting cable 2.5 m, 3-position, AC 24 V, with Batigyr connector		BPZ:ASY8L25B	**ASY8L25B**
Connecting cable 4.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L45	**ASY8L45**
Connecting cable 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY8L45HF	**ASY8L45HF**
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..		BPZ:ASY99	**ASY99**
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	N4864	BPZ:ASY100	**ASY100**

Accessories for SSP.. (N4864), SSA.. (N4893), SSB.. (N4891) and SSD.. (N4861)

2-port, 3-port and 3-port seat valves with bypass, PN16

V..P45..

2-port, 3-port and 3-port seat valves with bypass, with threaded connections for the control of terminal units, chilled ceilings or heating zones.
Suitable media: Water (to VDI 2035), water with anti-freeze.







Data sheet	N4845
Stroke	5.5 mm
Leakage rate	0...0.02 % of k_{vs} value
Leakage rate bypass	0...0.02 % of k_{vs} value
Medium temperature	1...110 °C
Valve characteristic	Throughport: equal-percentage
Material, valve body	Red brass CC491K (Rg5)
Material, inside set	CrNi steel, brass
PN class	PN 16
Permissible operating pressure	1600 kPa

V..P45.. valves are only used as mixing or 2-port valves, not as diverting valves.
They are also suitable for SERTO® compression fittings.
The V..P45.. are also available for Conex® compression fittings, type suffix S:
VVP45..S and VMP45..S for k_{vs} values 0.63, 1, 1.6, 2.5 m³/h, datasheet N4845

Range overview 2-port valves VVP45..

Connecting thread	SSB.. Δp_{max} [kPa]	SSB.. Δp_s [kPa]	DN	k_{vs} [m³/h]	Δp_s [kPa]	Stock No.	Product No.
G ½ B "	400	725	10	0.25	725	BPZ:VVP45.10-0.25	**VVP45.10-0.25**
G ½ B "	400	725	10	0.4	725	BPZ:VVP45.10-0.4	**VVP45.10-0.4**
G ½ B "	400	725	10	0.63	725	BPZ:VVP45.10-0.63	**VVP45.10-0.63**
G ½ B "	400	725	10	1	725	BPZ:VVP45.10-1	**VVP45.10-1**
G ½ B "	400	725	10	1.6	725	BPZ:VVP45.10-1.6	**VVP45.10-1.6**
G ¾ B "	350	350	15	2.5	350	BPZ:VVP45.15-2.5	**VVP45.15-2.5**
G 1 B "	350	350	20	4	350	BPZ:VVP45.20-4	**VVP45.20-4**
G 1¼ B "	300	300	25	6.3	300	BPZ:VVP45.25-6.3	**VVP45.25-6.3**

Range overview 3-port valves VXP45..

Connecting thread	SSB.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
G ½ B "	400	10	0.25	BPZ:VXP45.10-0.25	**VXP45.10-0.25**
G ½ B "	400	10	0.4	BPZ:VXP45.10-0.4	**VXP45.10-0.4**
G ½ B "	400	10	0.63	BPZ:VXP45.10-0.63	**VXP45.10-0.63**
G ½ B "	400	10	1	BPZ:VXP45.10-1	**VXP45.10-1**
G ½ B "	400	10	1.6	BPZ:VXP45.10-1.6	**VXP45.10-1.6**
G ¾ B "	350	15	2.5	BPZ:VXP45.15-2.5	**VXP45.15-2.5**
G 1 B "	350	20	4	BPZ:VXP45.20-4	**VXP45.20-4**
G 1¼ B "	300	25	6.3	BPZ:VXP45.25-6.3	**VXP45.25-6.3**

70 % k_{vs} in bypass for all types

Acvatix™ Small valves with 5.5 mm stroke
2-port, 3-port, 3-port with bypass, PN16: V..P45..

Range overview 3-port valves with bypass VMP45..

Connecting thread	SSB.. Δp_{max} [kPa]	DN	k_{vs} [m³/h]	Stock No.	Product No.
G ½ B "	400	10	0.25	BPZ:VMP45.10-0.25	**VMP45.10-0.25**
G ½ B "	400	10	0.4	BPZ:VMP45.10-0.4	**VMP45.10-0.4**
G ½ B "	400	10	0.63	BPZ:VMP45.10-0.63	**VMP45.10-0.63**
G ½ B "	400	10	1	BPZ:VMP45.10-1	**VMP45.10-1**
G ½ B "	400	10	1.6	BPZ:VMP45.10-1.6	**VMP45.10-1.6**
G ¾ B "	350	15	2.5	BPZ:VMP45.15-2.5	**VMP45.15-2.5**
G 1 B "	350	20	4	BPZ:VMP45.20-4	**VMP45.20-4**

70 % k_{vs} in bypass for all types

Combinable actuator for VVP45.. / VXP45.. / VMP45..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	N4891	BPZ:SSB31	**SSB31**
AC 230 V	3-position	150	N4891	BPZ:SSB31.1	**SSB31.1**
DC 24 V	DC 0...10 V	75	N4891	BPZ:SSB61	**SSB61**
DC 24 V	DC 0...10 V	75	N4891	BPZ:SSB61/00	**SSB61/00**
AC 24 V	3-position	150	N4891	BPZ:SSB81	**SSB81**
AC 24 V	3-position	150	N4891	BPZ:SSB81/00	**SSB81/00**
AC 24 V	3-position	150	N4891	BPZ:SSB81.1	**SSB81.1**

Further information to the actuators please see "Actuators for threaded valves with 5.5 mm stroke"

Fittings with threaded connections: Set of 2

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..2 consists of 2 cap nuts, 2 insert nuts and 2 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG132	**ALG132**
G ¾ "	R ½ "	Brass	BPZ:ALG142	**ALG142**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG122	**ALG122**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG152	**ALG152**
G 1 "	Rp ½ "	Brass	S55846-Z100	**ALG152B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG202	**ALG202**
G 1¼ "	Rp ¾ "	Brass	S55846-Z102	**ALG202B**

ALG132 and ALG142: pipe connecting thread externally threaded
For the VMP45.. and VMP47.. valves, 2 sets of 2 fittings must be ordered

Fittings with threaded connections: Set of 3

Cylindric thread to ISO 228-1 on the valve side. Tapered R-externally or cylindrical Rp-internally threaded to ISO 7-1 on the pipe side.
Each fitting set ALG..3 consists of 3 cap nuts, 3 insert nuts and 3 flat seals.

Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
G ½ "	R ⅜ "	Brass	BPZ:ALG133	**ALG133**
G ¾ "	R ½ "	Brass	BPZ:ALG143	**ALG143**
G ¾ "	Rp ⅜ "	Malleable cast iron, phosphated	BPZ:ALG123	**ALG123**
G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG153	**ALG153**
G 1 "	Rp ½ "	Brass	S55846-Z101	**ALG153B**
G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG203	**ALG203**
G 1¼ "	Rp ¾ "	Brass	S55846-Z103	**ALG203B**

ALG133 and ALG143: pipe connecting thread externally threaded

Acvatix™ Actuators for combi valves with 5 mm stroke
Positioning force 250 N: SSD..

SSD..



Electromotoric actuators 250 N for combi valves VPI45..

Electromotoric actuators for modulating or 3-position control of combi valves VPI45.. for water-side control of hot and cooling water in heating, ventilation and air conditioning systems. With position indication, manual control and plug-in type connecting cables.
Available are actuators types for modulating control DC 0/2...10 V and DC 0...10 V (SSD61EP) for equal-percentage valve characteristic.

Data sheet	N4861
Positioning force	250 N
Stroke	5.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined

For fitting to the valve: Cap nut M30 x 1.5.
SSD81.., SSD61.. are CE, C-tick, UL and cUL listed.

Range overview actuators SSD..

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Cable length [m]	Stock No.	Product No.
AC 230 V	6	3-position	150	1.5	BPZ:SSD31	**SSD31**
AC 24 V DC 24 V	2.5	DC 0...10 V	75	1.5	BPZ:SSD61	**SSD61**
AC 24 V DC 24 V	2.5	DC 2...10 V	75	1.5	BPZ:SSD61.2	SSD61.2
AC 24 V DC 24 V	2.5	DC 0...10 V	75	1.5	BPZ:SSD61EP	SSD61EP
AC 24 V	0.8	3-position	150	1.5	BPZ:SSD81	**SSD81**
AC 230 V	6	3-position	150		BPZ:SSD31/00	**SSD31/00**
AC 24 V DC 24 V	2.5	DC 0...10 V	75		BPZ:SSD61/00	**SSD61/00**
AC 24 V DC 24 V	2.5	DC 2...10 V	75		BPZ:SSD61.2/00	SSD61.2/00
AC 24 V DC 24 V	2.5	DC 0...10 V	75		BPZ:SSD61EP/00	SSD61EP/00
AC 24 V	0.8	3-Punkt	150		BPZ:SSD81/00	**SSD81/00**

SSD../00: Cable selection see accessories for SSD..
SSD61EP.. for equal-percentage valve characteristics

Accessories for SSD..

Product Title	Data sheet	Stock No.	Product No.
Connecting cable 1.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L15	**ASY3L15**
Connecting cable 2.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L25	**ASY3L25**
Connecting cable 4.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L45	**ASY3L45**
Connecting cable 1.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L15	**ASY6L15**
Connecting cable 2.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L25	**ASY6L25**
Connecting cable 4.5 m, DC 0..10 V, AC/DC 24 V	N4891	BPZ:ASY6L45	**ASY6L45**
Connecting cable 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY6L45HF	**ASY6L45HF**
Connecting cable 1.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L15	**ASY8L15**
Connecting cable 2.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L25	**ASY8L25**
Connecting cable 4.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L45	**ASY8L45**
Connecting cable 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY8L45HF	**ASY8L45HF**
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..		BPZ:ASY99	**ASY99**
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	N4864	BPZ:ASY100	**ASY100**

Accessories for SSP.. (N4864), SSA.. (N4893), SSB.. (N4891) and SSD.. (N4861)

Acvatix™ Combi valves with 5 mm stroke
Combi valves for rooms and zones, PN 25: VPI45..

VPI45..



Combi valves PN25

Pre-adjustable 2-port combi valves, internally threaded connections to ISO 7-1, for rooms, zones, air handling units as well as small to medium heating, ventilation and airconditioning systems. For cold and warm water in closed circuits. Volumetric flow 90...8500 l/h. With or without plugs for differential pressure measurements. Suitable media: water (to VDE 2035), water with anti-freeze.

Data sheet	N4853
Stroke	To DN 32: 5 mm From DN 40: 6.5 mm
Medium temperature	1...120 °C
Valve characteristic	
Material, valve body	Dezincification resistant brass, DR, CW602N
Material, inside set	Dezincification resistant brass, DR, CW602N, CrNi steel
PN class	PN 25
Permissible operating pressure	2500 kPa

Range overview 2-port combi valves VPI45..

DN	Connecting thread	Volumetric flow Vmin [l/h]	Volumetric flow V [l/h]	SSD.. Δp_{min} [kPa]	SSD.. Δp_{max} [kPa]	Stock No.	Product No.
15	Rp ½ "	90	620	16	400	BPZ:VPI45.15F0.5	**VPI45.15F0.5**
15	Rp ½ "	90	620	16	400	BPZ:VPI45.15F0.5Q	**VPI45.15F0.5Q**
15	Rp ½ "	290	1730	18	400	BPZ:VPI45.15F1.5	**VPI45.15F1.5**
15	Rp ½ "	290	1730	18	400	BPZ:VPI45.15F1.5Q	**VPI45.15F1.5Q**
20	Rp ¾ "	160	1050	16	400	BPZ:VPI45.20F0.9	**VPI45.20F0.9**
20	Rp ¾ "	160	1050	16	400	BPZ:VPI45.20F0.9Q	**VPI45.20F0.9Q**
20	Rp ¾ "	350	2040	22	400	BPZ:VPI45.20F2	**VPI45.20F2**
20	Rp ¾ "	350	2040	22	400	BPZ:VPI45.20F2Q	**VPI45.20F2Q**
25	Rp 1 "	280	1720	16	400	BPZ:VPI45.25F1.5	**VPI45.25F1.5**
25	Rp 1 "	280	1720	16	400	BPZ:VPI45.25F1.5Q	**VPI45.25F1.5Q**
25	Rp 1 "	350	2040	22	400	BPZ:VPI45.25F2	**VPI45.25F2**
25	Rp 1 "	350	2040	22	400	BPZ:VPI45.25F2Q	**VPI45.25F2Q**
32	Rp 1¼ "	560	3050	18	400	BPZ:VPI45.32F3	**VPI45.32F3**
32	Rp 1¼ "	560	3050	18	400	BPZ:VPI45.32F3Q	**VPI45.32F3Q**

The VPI45...Q types are equipped with P/T Plugs

For volumetric flows > 3000 l/h, DN 40/50, refer to chapter "Valves and actuators for central HVAC plants"

Combinable actuator to VPI45..

Operating voltage	Positioning signal	Positioning time [s]	Cable length	Data sheet	Stock No.	Product No.
AC 230 V	3-position	150	1.5	N4861	BPZ:SSD31	**SSD31**
AC 24 V DC 24 V	DC 0...10 V	75	1.5	N4861	BPZ:SSD61	**SSD61**
AC 24 V DC 24 V	DC 2...10 V	75	1.5	N4861	BPZ:SSD61.2	**SSD61.2**
AC 24 V DC 24 V	DC 0...10 V	75	1.5	N4861	BPZ:SSD61EP	**SSD61EP**
AC 24 V	3-position	150	1.5	N4861	BPZ:SSD81	**SSD81**
AC 230 V	3-position	150		N4861	BPZ:SSD31/00	**SSD31/00**
AC 24 V DC 24 V	DC 0...10 V	75		N4861	BPZ:SSD61/00	**SSD61/00**
AC 24 V DC 24 V	DC 2...10 V	75		N4861	BPZ:SSD61.2/00	**SSD61.2/00**
AC 24 V DC 24 V	DC 0...10 V	75		N4861	BPZ:SSD61EP/00	**SSD61EP/00**
AC 24 V	3-Punkt	150		N4861	BPZ:SSD81/00	**SSD81/00**

Further information to the actuators please see "Actuators for combi valves"

NEW PRODUCT

Acvatix™ Actuators for radiator valves
Positioning force 100 N: SSA..

SSA..



Electromotoric actuators 100 N for valves with 2.5 mm stroke

For radiator valves and small valves

Electromotoric actuators for modulating or 3-position control of heating systems, chilled ceilings and terminal units. With automatic stroke adaption, force-dependent switching off in the end position, position indication, manual control and plug-in type connecting cable. Suited for use with Siemens radiator valves VDN../VEN../VUN../VPD../VPE.., Siemens small valves VD1..CLC and on radiator valves with M30 x 1.5 connection (Heimeier, Cazzaniga, Oventrop M30x1,5, Honeywell-Braukmann, MNG, Junkers, Beulco new).
Further valves of other manufacture on request.

Data sheet	N4893
Positioning force	100 N
Stroke	2.5 mm
Degree of protection	IP40
Ambient temperature, operation	1...50 °C
Mounting position	Upright to 90° inclined

For fitting to the valve: Cap nut M30 x 1.5
SSA61..: 1.5 mm minimal stroke required for self calibration

Range overview actuators SSA..

Operating voltage	Power consumption [VA]	Positioning signal	Positioning time [s]	Auxiliary switch	Cable length [m]	Stock No.	Product No.
AC 230 V	6	3-position	150	0	1.5	BPZ:SSA31	**SSA31**
AC 24 V	0.8	3-position	150	0	1.5	BPZ:SSA81	**SSA81**
DC 24 V	2.5	DC 0...10 V	34	0	1.5	BPZ:SSA61	**SSA61**
AC 230 V	6	3-position	150	1	1.5	BPZ:SSA31.1	**SSA31.1**
AC 24 V	0.8	3-position	150	1	1.5	BPZ:SSA81.1	**SSA81.1**
AC 230 V	6	3-position	150	0		BPZ:SSA31/00	**SSA31/00**
AC 24 V	0.8	3-position	150	0		BPZ:SSA81/00	**SSA81/00**
DC 24 V	2	DC 0...10 V	34	0		BPZ:SSA61/00	**SSA61/00**

Positioning time for 2.5 mm stroke
Auxilary switch: Changeover contact AC 250 V, 1 A res., 0.5 A ind., adjustable switching point 0...100 %

SSA../00: Cable selection see accessories for SSA..

Accessories for SSA..

Product Title	Data sheet	Stock No.	Product No.
Adapter for tamper-proof fitting for SSA.. actuators	N4893	BPZ:AL40	**AL40**
Adapter for valves of other manufacture	N2179	BPZ:AV..	**AV..**
Connecting cable 1.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L15	**ASY3L15**
Connecting cable 2.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L25	**ASY3L25**
Connecting cable 4.5 m, 3-position, AC 230 V	N4864	BPZ:ASY3L45	**ASY3L45**
Connecting cable 1.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L15	**ASY6L15**
Connecting cable 2.5 m, DC 0...10 V, AC/DC 24 V	N4891	BPZ:ASY6L25	**ASY6L25**
Connecting cable 4.5 m, DC 0..10 V, AC/DC 24 V	N4891	BPZ:ASY6L45	**ASY6L45**
Connecting cable 4.5 m, DC 0...10 V, AC/DC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY6L45HF	**ASY6L45HF**
Connecting cable 1.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L15	**ASY8L15**
Connecting cable 2.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L25	**ASY8L25**
Connecting cable 2.5 m, 3-position, AC 24 V, with Batigyr connector		BPZ:ASY8L25B	**ASY8L25B**
Connecting cable 4.5 m, 3-position, AC 24 V	N4891	BPZ:ASY8L45	**ASY8L45**
Connecting cable 4.5 m, 3-position, AC 24 V, halogen-free, VDE 0207-24	N4891	BPZ:ASY8L45HF	**ASY8L45HF**
Retaining screw for cable connector	N4864	BPZ:ASY98	**ASY98**
Terminal block connector 3 position, AC 24 V for SSA81../SSB81../SSD81../SSP81..		BPZ:ASY99	**ASY99**
Terminal block connector DC0...10 V, AC 24 V for SSA61../SSB61../SSP61../SSD61..	N4864	BPZ:ASY100	**ASY100**

Accessories for SSP.. (N4864), SSA.. (N4893), SSB.. (N4891) and SSD.. (N4861)

Acvatix™ Actuators for radiator valves
Positioning force 100 N: SSA..

Range overview adapters AV..

Adapter for	Data sheet	Stock No.	Product No.
Beulco M30 x 1	N2100	BPZ:AV51	**AV51**
Comap	N2100	BPZ:AV52	**AV52**
Danfoss RA2000	N2100	BPZ:AV53	**AV53**
Danfoss RAVL	N2100	BPZ:AV54	**AV54**
Danfoss RAV	N2100	BPZ:AV55	**AV55**
Giacomini	N2100	BPZ:AV56	**AV56**
Herz	N2100	BPZ:AV57	**AV57**
Oventrop old (M 30x1.0)	N2100	BPZ:AV58	**AV58**
Vaillant	N2100	BPZ:AV59	**AV59**
TA	N2100	BPZ:AV60	**AV60**
Markaryd (MMA)	N2100	BPZ:AV61	**AV61**

Note:
Beulco: Not to be used with RTN.., for old make of Beulco distributors only
Oventrop: Introduced M30 x 1.5 in 2001 and requires no adapter
TA (Heimeier): Introduced M30 x 1.5 in 2003 and requires no adapter

Fitting the actuators to valves of other manufacture (M30 x 1.5) without adapter:
- Heimeier
- Junkers
- Honeywell Braukmann
- MNG
- Cazzaniga
- Oventrop M30 x 1.5 (from 2001)
- Beulco new

Electrothermal actuators 105 N for radiator and zone valves

STA..



For radiator valves and small valves

Electrothermal actuators for 2-position and quasi-proportional control of heating systems, chilled ceilings and terminal units. With position indication and connecting cable. Types with 1.2 m and 5 m cable available. Suited for use with Siemens radiator valves VDN../VEN../VUN../VPD../VPE.., Siemens small valves VD1..CLC, V..I46.., V..S46.. and radiator valves with M30 x 1.5 connection and 2.5 mm stroke (Heimeier, Cazzaniga, Oventrop M30x1,5, Honeywell-Braukmann, MNG, Junkers, Beulco new).

Special applications (actuator de-energized, valve open):
- For small valves VVP47.., VXP47.., VMP47..
- For Siemens radiator valves and valves of other manufacture, see actuator type STP..

Data sheet	N4877
Positioning force	105 N
Positioning signal	2-position (PDM)
Positioning time	180 s
Stroke	2.5 mm
Spring return function	Closed
Degree of protection	± 45°: IP43, 45°..90°: IP41
Ambient temperature, operation	5...50 °C
Mounting position	Upright to horizontal

Ambient temperature operation for quasi-proportional control: 5...40 °C
For fitting to valve: Cap nut M30 x 1.5

Range overview actuators STA..

Operating voltage	Power consumption [W]	Cable length [m]	Positioning signal	Stock No.	Product No.
AC 230 V	2.5	1.2	2-position	BPZ:STA21	**STA21**
DC 24 V	2.5	1.2	2-position (PDM)	BPZ:STA71	**STA71**
AC 230 V	2.5	5	2-position	BPZ:STA21/50	**STA21/50**
DC 24 V	2.5	5	2-position (PDM)	BPZ:STA71/50	**STA71/50**

Power consumption on switching on: 6 VA (AC 24 V) or 58 VA (AC 230 V)

Accessories for STA..

Product Title	s. page	Data sheet	Stock No.	Product No.
Adapter for valves of other manufacture	13-40	N2179	BPZ:AV..	**AV..**

Acvatix™ Actuators for radiator valves
Positioning force 105 N: STA.. / STS..

STA72..



Electrothermal actuators 105 N for radiator and small valves

For radiator valves and small valves

Electrothermal actuators with optimized parallel operation for control of heating systems, chilled ceilings and terminal units. With position indication and pluggable connecting cable. An optional cable with LED operation indication is available. Suited for use with Siemens radiator valves VDN../VEN../VUN../VPD../VPE.., Siemens small valves VD1..CLC and radiator valves with M30 x 1.5 connection and 2.5 mm stroke (Heimeier, Cazzaniga, Oventrop M30x1,5, Honeywell-Braukmann, MNG, Junkers).

Special applications (actuator de-energized, valve open):
- For small valves VVP47.., VXP47.., VMP47..
- For Siemens radiator valves and valves of other manufacture, see actuator type STP72..

Data sheet	N4875
Positioning force	105 N
Positioning signal	2-position (PDM)
Positioning time	180 s
Stroke	2.5 mm
Spring return function	Closed
Degree of protection	± 45°: IP43, 45°..90°: IP41
Ambient temperature, operation	5...50 °C
Mounting position	Vertical to horizontal

Ambient temperature operation for quasi-proportional control: 5...40 °C
For fitting to valve: Cap nut M30 x 1.5

Range overview actuators STA72..

Operating voltage	Power consumption [W]	Cable length [m]	Stock No.	Product No.
DC 24 V	2.5	1.5	BPZ:STA72E	**STA72E**
AC 24 V DC 24 V	2.5		BPZ:STA72E/00	**STA72E/00**

Power consumption on switching on: 6 VA (AC 24 V)

Accessories for STA72..

Product Title	Stock No.	Product No.
Adapter for tamper-proof fitting for STA.., STP.. actuators	BPZ:AL41	**AL41**
Adapter for valves of other manufacture	BPZ:AV..	**AV..**
Connecting cable 1.5 m	BPZ:ASY2L15	**ASY2L15**
Connecting cable 2.5 m	BPZ:ASY2L25	**ASY2L25**
Connecting cable 4.5 m	BPZ:ASY2L45	**ASY2L45**
Connecting cable 1.5 m, with LED operation indication	BPZ:ASY2L15L	**ASY2L15L**
Connecting cable 2.5 m, with LED operation indication	BPZ:ASY2L25L	**ASY2L25L**
Connecting cable 4.5 m, with LED operation indication	BPZ:ASY2L45L	**ASY2L45L**
Connecting cable 1.5 m, non halogen, VDE 0207-24	BPZ:ASY2L15HF	**ASY2L15HF**
Connecting cable 2.5 m, non halogen, VDE 0207-24	BPZ:ASY2L25HF	**ASY2L25HF**
Connecting cable 4.5 m, non halogen, VDE 0207-24	BPZ:ASY2L45HF	**ASY2L45HF**

Electrothermal actuators 105 N für small, zone and radiator valves STS61..

For radiator valves, small valves and zone valves



Electrothermal actuators for modulating control of heating systems, chilled ceilings and terminal units. With position indication and connecting cable. Suited for use with Siemens radiator valves VDN../VEN../VUN../VPD../VPE.., Siemens small valves VD1..CLC, radiator valves with M30 x 1.5 connection and 2.5 mm stroke (Heimeier, Cazzaniga, Oventrop M30x1,5, Honeywell-Braukmann, MNG, Junkers, Beulco new) and zone valves V..46...

Depending on the connection of the positioning signal the actuator offers two directions of action.
Applications actuator de-energized, valve open:
- For Siemens small valves VVP47.., VXP47.., VMP47..

Data sheet	N4880
Positioning force	105 N
Positioning signal	DC 0...10 V
Positioning time	<155 s
Stroke	2.5 (3.8) mm
Spring return function	NC valves open (V...P47...) NO valves closed (VD1...CLC)
Degree of protection	IP42
Ambient temperature, operation	-5...50 °C
Mounting position	Upright to horizontal
Operating voltage	AC 24 V
Power consumption	2.5 VA

For fitting to valve: Cap nut M30 x 1.5
Positioning time without dead time 80 s
STS61S: non halogen cable

Tamper-proof fitting not available

Range overview actuators STS61..

Operating voltage	Power consumption [VA]	Cable length [m]	Stock No.	Product No.
AC 24 V	2.5	2	BPZ:STS61	**STS61**
AC 24 V	2.5	2	BPZ:STS61S	**STS61S**
AC 24 V	2.5	5	BPZ:STS61/50	**STS61/50**
AC 24 V	2.5	10	BPZ:STS61/100	**STS61/100**

STS61S: non halogen cable

Accessories for STS61..

Product Title	s. page	Data sheet	Stock No.	Product No.
Adapter for valves of other manufacture	13-40	N2179	BPZ:AV..	**AV..**

Acvatix™ Thermostatic actuators for radiator valves
Thermostatic head RTN..

RTN..



Thermostatic actuators

Thermostatic actuators for controlling the room temperature. Setpoint adjustment with knob. Versions with shutoff and frost protection position.
Limit stops for minimum and maximum values or setpoint locking.
Mounts directly on Siemens radiator valves VDN../VEN../VUN../VPD../VPE..

Data sheet N2111

Thermostatic actuators RTN51

Design	Surface treatment	Setpoint setting range	Stock No.	Product No.
Frost protection position Closing position	RAL 9016, matt	12...28 °C	BPZ:RTN51	**RTN51**
Frost protection position Closing position	RAL 9016, glossy	12...28 °C	BPZ:RTN51G	**RTN51G**

Thermostatic actuators with remote sensor RTN71

Design	Surface treatment	Setpoint setting range	Capillary length	Stock No.	Product No.
Remote sensor Frost protection position Closing position	RAL 9016, matt	12...28 °C	2 m	BPZ:RTN71	**RTN71**

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Thermostatic actuators with remote adjuster RTN81

Design	Surface treatment	Setpoint setting range	Capillary length	Stock No.	Product No.
Remote sensor Frost protection position	RAL 9016, matt	8...28 °C	2 m	BPZ:RTN81	**RTN81**

Accessories for thermostatic actuators RTN..

Product Title	s. page	Data sheet	Stock No.	Product No.
Adapter for valves of other manufacture	13-40	N2179	BPZ:AV..	**AV..**

2-port and angle valves PN10, to DIN

VDN1../VEN1..

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.
Permissible media: water (to VDI 2035), water with anti-freeze





EN 215-1

Data sheet	N2105
Medium temperature	1...120 °C
PN class	PN 10
Δp_{v100}	5...20 kPa
Material, valve body	Brass Ms58, mat nickel-plated
Permissible operating pressure	1000 kPa
Δp_{max}	60 kPa

The valves can be combined with Siemens actuators RTN../SSA../STA../STS61..

Range overview straight valves VDN1..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	0.09...0.63	60	BPZ:VDN110	**VDN110**
15	Rp/R ½ "	0.10...0.89	60	BPZ:VDN115	**VDN115**
20	Rp/R ¾ "	0.31...1.41	60	BPZ:VDN120	**VDN120**

Range overview angle valves VEN1..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	0.09...0.63	60	BPZ:VEN110	**VEN110**
15	Rp/R ½ "	0.10...0.89	60	BPZ:VEN115	**VEN115**
20	Rp/R ¾ "	0.31...1.41	60	BPZ:VEN120	**VEN120**

Acvatix™ Radiator valves
Straight and angle valves, PN10, DIN: VDN1.. / VEN1..

Combinable actuator for VDN1.. / VEN1..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
			N2111	BPZ:RTN51	**RTN51**
			N4211	BPZ:RTN51G	**RTN51G**
			N2111	BPZ:RTN71	**RTN71**
			N2111	BPZ:RTN81	**RTN81**
AC 230 V	2-position	180	N4877	BPZ:STA21	**STA21**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71	**STA71**
DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E	**STA72E**
AC 230 V	3-position	150	N4893	BPZ:SSA31	**SSA31**
AC 230 V	3-position	150	N4893	BPZ:SSA31.1	**SSA31.1**
AC 230 V	3-position	150	N4893	BPZ:SSA31/00	**SSA31/00**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61	**SSA61**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61/00	**SSA61/00**
AC 24 V	3-position	150	N4893	BPZ:SSA81	**SSA81**
AC 24 V	3-position	150	N4893	BPZ:SSA81.1	**SSA81.1**
AC 24 V	3-position	150	N4893	BPZ:SSA81/00	**SSA81/00**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/50	**STS61/50**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/100	**STS61/100**

Further information to the actuators please see "Actuators for radiator valves, Thermostatic actuator for radiator valves"

2-port seat and angle valves PN10, to NF

VDN2../VEN2../VUN2..

Radiator valves for 2-pipe heating systems for room temperature control. Adjustable flow.
Permissible media: water (to VDI 2035), water with anti-freeze







EN 215-1

Data sheet	N2106
Medium temperature	1...120 °C
PN class	PN 10
Δp_{v100}	5...20 kPa
Material, valve body	Brass Ms58, mat nickel-plated
Permissible operating pressure	1000 kPa

The valves can be combined with Siemens actuators RTN../SSA.../STA../STS61..

Range overview straight valves VDN2..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	0.09...0.63	60	BPZ:VDN210	**VDN210**
15	Rp/R ½ "	0.10...0.89	60	BPZ:VDN215	**VDN215**
20	Rp/R ¾ "	0.31...1.41	60	BPZ:VDN220	**VDN220**

Range overview angle valves VEN2..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	0.09...0.63	60	BPZ:VEN210	**VEN210**
15	Rp/R ½ "	0.10...0.89	60	BPZ:VEN215	**VEN215**
20	Rp/R ¾ "	0.31...1.41	60	BPZ:VEN220	**VEN220**

Range overview reverse angle valves VUN2..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	0.14...0.60	60	BPZ:VUN210	**VUN210**
15	Rp/R ½ "	0.13...0.77	60	BPZ:VUN215	**VUN215**

Acvatix™ Radiator valves
Straight and angle valves, PN10, NF: VDN2.. / VEN2.. / VUN2..

Combinable actuator to VDN2.. / VEN2.. / VUN2..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
			N2111	BPZ:RTN51	**RTN51**
			N4211	BPZ:RTN51G	**RTN51G**
			N2111	BPZ:RTN71	**RTN71**
			N2111	BPZ:RTN81	**RTN81**
AC 230 V	2-position	180	N4877	BPZ:STA21	**STA21**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71	**STA71**
DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E	**STA72E**
AC 230 V	3-position	150	N4893	BPZ:SSA31	**SSA31**
AC 230 V	3-position	150	N4893	BPZ:SSA31.1	**SSA31.1**
AC 230 V	3-position	150	N4893	BPZ:SSA31/00	**SSA31/00**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61	**SSA61**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61/00	**SSA61/00**
AC 24 V	3-position	150	N4893	BPZ:SSA81	**SSA81**
AC 24 V	3-position	150	N4893	BPZ:SSA81.1	**SSA81.1**
AC 24 V	3-position	150	N4893	BPZ:SSA81/00	**SSA81/00**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/50	**STS61/50**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/100	**STS61/100**

Further information to the actuators please see "Actuators for radiator valves, Thermostatic actuator for radiator valves"

Valve insert for VDN../VEN.. und VUN..

AVN1

Valve insert is suited for use with all types of valves of the VDN../VEN../VUN.. ranges.

Data sheet N2100



	Stock No.	Product No.
	BPZ:AVN1	**AVN1**

Manual knob, white, for VDN../VEN../VUN../VPD../VPE..

ATN4

For manual adjustment of valve.
The manual knobs are suited for use with all types of valves of the VDN.../VEN.../VUN../VPD... and VPE.. ranges.

Data sheet N2100



	Stock No.	Product No.
	BPZ:ATN4	**ATN4**

Manual knob, white, RAL9016, for VDN../VEN../VUN../VPD../VPE..

ATN3

For manual adjustment of valve.
The manual knobs are suited for use with all types of valves of the VDN.../VEN.../VUN../VPD... and VPE.. ranges.

Data sheet N2100



	Stock No.	Product No.
	BPZ:ATN3	**ATN3**

Acvatix™ Radiator valves
Straight and angle lockshield valves: ADN.. / AEN..

ADN../AEN..



Two-port seat and angle lockshield valves

Lockshield valves with throttling function for hydraulic balancing and shut-off function when removing / replacing radiator.
Adjustable flow capacity

Data sheet	N2107
Medium	Water with anti-freeze
Medium temperature	1...120 °C
PN class	PN 10
Material, valve body	Brass Ms58, mat nickel-plated

Range overview straight lockshield valves ADN..

DN	Connecting thread	k_v [m³/h]	Stock No.	Product No.
10	Rp/R ⅜ "	0...1.8	BPZ:ADN10	**ADN10**
15	Rp/R ½ "	0...2.5	BPZ:ADN15	**ADN15**
20	Rp/R ¾ "	0...3.0	BPZ:ADN20	**ADN20**

Range overview angle lockshield valves AEN..

DN	Connecting thread	k_v [m³/h]	Stock No.	Product No.
10	Rp/R ⅜ "	0...1.8	BPZ:AEN10	**AEN10**
15	Rp/R ½ "	0...2.5	BPZ:AEN15	**AEN15**
20	Rp/R ¾ "	0...3.0	BPZ:AEN20	**AEN20**

Compression fittings for copper and soft steel pipes

AVN1..-1..

For connecting copper or soft steel pipes to valves of the VDN../VEN../VUN.. ranges and lockshield valves of the ADN.../AEN... ranges



Data sheet N2100

Range overview compression fittings AVN1..-1..

DN	Connecting thread	Pipe diameter [mm]	Stock No.	Product No.
15	R ½ "	15	BPZ:AVN15-15	**AVN15-15**

Compression fittings plastic pipes with aluminum foil

AVN15A..

For connecting plastic pipes to valves of the VDN../VEN../VUN.. ranges and lockshield valves of the ADN.../AEN... ranges



Data sheet N2100

Range overview compression fittings AVN15A..

DN	Connecting thread	Pipe diameter [mm]	Stock No.	Product No.
15	R ½ "	16	BPZ:AVN15A16	**AVN15A16**

Acvatix™ Pressure-compensated radiator valves
Mini Combi Valves (MCV), DIN and NF: VPD.. / VPE..

VPD../VPE..



MiniCombiValves (MCV)

The MiniCombiValve (MCV) is the first and only radiator valve with an integrated differential pressure controller. The MCV combines the following three functions:

- a control valve for controlling the temperature (via room controller or thermostatic actuator)
- an adjusting mechanism for a presettable maximal volumetric flow
- a differential pressure controller for balancing pressure fluctuations in the hydraulic system or across the MCV

As a result, the problem of hydraulic cross-coupling is solved and greater room comfort is achieved. The planning, commissioning and hydraulic balancing of HVAC systems are made considerably easier. The energy efficiency of the hydraulic system is increased in that, on the one hand, excess supply is eliminated by setting the maximum volumetric flow, and on the other hand, situations of supply shortage and manual adjustment of the setpoint values never occur with this concept.
The MCV is suitable for both new buildings and modernization projects. Missing differential pressure loss calculations do not impede planning with the MCV.

MCVs are ideal for radiators as well as for chilled ceiling applications in which the maximum available volumetric flow of the MCV is adequate.

Added value:

- Perfectly limited water quantity ensures comfort and saves energy
- Low noise operation
- Straightforward design of plant with no need for safety margins
- No additional line balancing valves required
- Hydraulic balancing is considerably simplified
- Service costs are avoided

Data sheet	N2185
Medium temperature	1...90 °C
Permissible operating pressure	1000 kPa
Material, valve body	Brass, nickel-plated
Material, inside set	EPDM
PN class	PN 10

Suitable media: Water (to VDI 2035), water with anti-freeze.

The valves can be operated with Siemens actuators type SSA.. / STA.. / STS61.. and thermostatic actuators RTN..

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Range overview straight valves VPD.. to DIN

DN	Connecting thread	Volumetric flow V [l/h]	Δp_w [kPa]	Δp_{min} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	45	5	6	BPZ:VPD110A-45	**VPD110A-45**
10	Rp/R ⅜ "	90	5	8	BPZ:VPD110A-90	**VPD110A-90**
10	Rp/R ⅜ "	145	5	10	BPZ:VPD110A-145	**VPD110A-145**
15	Rp/R ½ "	45	5	6	BPZ:VPD115A-45	**VPD115A-45**
15	Rp/R ½ "	90	5	8	BPZ:VPD115A-90	**VPD115A-90**
15	Rp/R ½ "	145	5	10	BPZ:VPD115A-145	**VPD115A-145**
10	Rp/R ⅜ "	60	10	14	BPZ:VPD110B-60	**VPD110B-60**
10	Rp/R ⅜ "	200	10	20	BPZ:VPD110B-200	**VPD110B-200**
15	Rp/R ½ "	200	10	20	BPZ:VPD115B-200	**VPD115B-200**

Δp_w = effective pressure (controlled differential pressure)
Δp_{min} = required minimum differential pressure across valve
$\dot{v}$= volumetric flow at a stroke of 0.5 mm

Range overview angle valves VPE.. to DIN

DN	Connecting thread	Volumetric flow V [l/h]	Δp_w [kPa]	Δp_{min} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	45	5	6	BPZ:VPE110A-45	**VPE110A-45**
10	Rp/R ⅜ "	90	5	8	BPZ:VPE110A-90	**VPE110A-90**
10	Rp/R ⅜ "	145	5	10	BPZ:VPE110A-145	**VPE110A-145**
15	Rp/R ½ "	45	5	6	BPZ:VPE115A-45	**VPE115A-45**
15	Rp/R ½ "	90	5	8	BPZ:VPE115A-90	**VPE115A-90**
15	Rp/R ½ "	145	5	10	BPZ:VPE115A-145	**VPE115A-145**
10	Rp/R ⅜ "	200	10	20	BPZ:VPE110B-200	**VPE110B-200**
15	Rp/R ½ "	200	10	20	BPZ:VPE115B-200	**VPE115B-200**

Δp_w = effective pressure (controlled differential pressure)
Δp_{min} = required minimum differential pressure across valve
$\dot{v}$= volumetric flow at a stroke of 0.5 mm

Range overview straight valves VPD.. to NF

DN	Connecting thread	Volumetric flow V [l/h]	Δp_w [kPa]	Δp_{min} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	45	5	6	BPZ:VPD210A-45	**VPD210A-45**
10	Rp/R ⅜ "	90	5	8	BPZ:VPD210A-90	**VPD210A-90**
10	Rp/R ⅜ "	145	5	10	BPZ:VPD210A-145	**VPD210A-145**
15	Rp/R ½ "	45	5	6	BPZ:VPD215A-45	**VPD215A-45**
15	Rp/R ½ "	90	5	8	BPZ:VPD215A-90	**VPD215A-90**
15	Rp/R ½ "	145	5	10	BPZ:VPD215A-145	**VPD215A-145**
10	Rp/R ⅜ "	200	10	20	BPZ:VPD210B-200	**VPD210B-200**
15	Rp/R ½ "	200	10	20	BPZ:VPD215B-200	**VPD215B-200**

Δp_w = effective pressure (controlled differential pressure)
Δp_{min} = required minimum differential pressure across valve
$\dot{v}$= volumetric flow at a stroke of 0.5 mm

Acvatix™ Pressure-compensated radiator valves
Mini Combi Valves (MCV), DIN and NF: VPD.. / VPE..

Range overview angle valves VPE.. to NF

DN	Connecting thread	Volumetric flow V [l/h]	Δp_w [kPa]	Δp_{min} [kPa]	Stock No.	Product No.
10	Rp/R ⅜ "	45	5	6	BPZ:VPE210A-45	**VPE210A-45**
10	Rp/R ⅜ "	90	5	8	BPZ:VPE210A-90	**VPE210A-90**
10	Rp/R ⅜ "	145	5	10	BPZ:VPE210A-145	**VPE210A-145**
15	Rp/R ½ "	45	5	6	BPZ:VPE215A-45	**VPE215A-45**
15	Rp/R ½ "	90	5	8	BPZ:VPE215A-90	**VPE215A-90**
15	Rp/R ½ "	145	5	10	BPZ:VPE215A-145	**VPE215A-145**
10	Rp/R ⅜ "	200	10	20	BPZ:VPE210B-200	**VPE210B-200**
15	Rp/R ½ "	200	10	20	BPZ:VPE215B-200	**VPE215B-200**

Δp_w = effective pressure (controlled differential pressure)
Δp_{min} = required minimum differential pressure across valve
$\dot{v}$= volumetric flow at a stroke of 0.5 mm

Combinable actuator to VPD.. / VPE..

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
			N2111	BPZ:RTN51	**RTN51**
			N4211	BPZ:RTN51G	**RTN51G**
			N2111	BPZ:RTN71	**RTN71**
			N2111	BPZ:RTN81	**RTN81**
AC 230 V	2-position	180	N4877	BPZ:STA21	**STA21**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71	**STA71**
DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E	**STA72E**
AC 230 V	3-position	150	N4893	BPZ:SSA31	**SSA31**
AC 230 V	3-position	150	N4893	BPZ:SSA31.1	**SSA31.1**
AC 230 V	3-position	150	N4893	BPZ:SSA31/00	**SSA31/00**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61	**SSA61**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61/00	**SSA61/00**
AC 24 V	3-position	150	N4893	BPZ:SSA81	**SSA81**
AC 24 V	3-position	150	N4893	BPZ:SSA81.1	**SSA81.1**
AC 24 V	3-position	150	N4893	BPZ:SSA81/00	**SSA81/00**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/50	**STS61/50**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/100	**STS61/100**

Further information to the actuators please see "Actuators for radiator valves, Thermostatic actuator for radiator valves"

Accessories for VPD../VPE..

Seal insertion for VPD.. and VPE.. MiniCombiValves (MCV) — AV100-VP1

Valve insert for use with all types of valves of the VPD.. and VPE.. ranges.

Data sheet N2100



Stock No.	Product No.
BPZ:AV100-VP1	**AV100-VP1**

Acvatix™ Small valves with 2.5 mm stroke
Straight valves, PN10, DIN: VD1...CLC..

VD1..CLC..



2-port small valves PN10, DIN, 2.5 mm stroke

Small valves with higher k_v-values, for use in ventilation and air conditioning systems for water-side control of chilled ceilings and terminal units in closed circuits. Adjustable flow capacity.
Permissible media: water (to VDI 2035), water with anti-freeze.

Data sheet	N2103
Medium temperature	1...110 °C
PN class	PN 10
Δp_{v100}	5...20 kPa
Material, valve body	Brass, mat, nickel plated
Stroke	2.5 mm

The valves can be combined with Siemens actuators SSA.../STA../STS61.

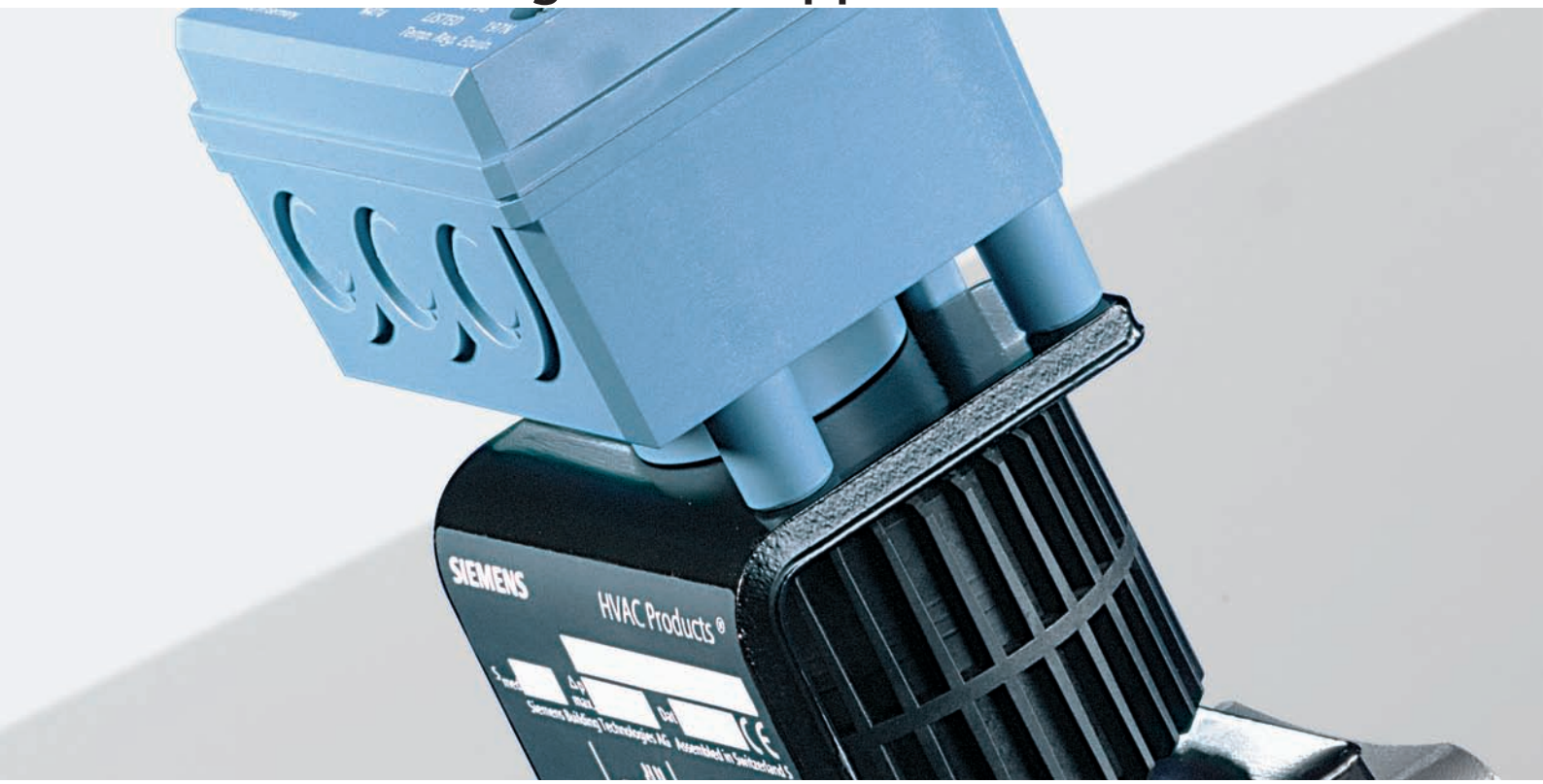
Range overview straight valves VD1..CLC..

DN	Connecting thread	k_v [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
15	Rp/R ½ "	0.25...1.9	150	BPZ:VD115CLC	**VD115CLC**
20	Rp/R ¾ "	0.25...2.6	150	BPZ:VD120CLC	**VD120CLC**
25	Rp/R 1 "	0.25...2.6	150	BPZ:VD125CLC	**VD125CLC**

Combinable actuator to VD1..CLC

Operating voltage	Positioning signal	Positioning time [s]	Data sheet	Stock No.	Product No.
			N2111	BPZ:RTN51	**RTN51**
			N4211	BPZ:RTN51G	**RTN51G**
			N2111	BPZ:RTN71	**RTN71**
			N2111	BPZ:RTN81	**RTN81**
AC 230 V	2-position	180	N4877	BPZ:STA21	**STA21**
DC 24 V	2-position (PDM)	180	N4877	BPZ:STA71	**STA71**
DC 24 V	2-position (PDM)	180	N4875	BPZ:STA72E	**STA72E**
AC 230 V	3-position	150	N4893	BPZ:SSA31	**SSA31**
AC 230 V	3-position	150	N4893	BPZ:SSA31.1	**SSA31.1**
AC 230 V	3-position	150	N4893	BPZ:SSA31/00	**SSA31/00**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61	**SSA61**
DC 24 V	DC 0...10 V	34	N4893	BPZ:SSA61/00	**SSA61/00**
AC 24 V	3-position	150	N4893	BPZ:SSA81	**SSA81**
AC 24 V	3-position	150	N4893	BPZ:SSA81.1	**SSA81.1**
AC 24 V	3-position	150	N4893	BPZ:SSA81/00	**SSA81/00**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61	**STS61**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/50	**STS61/50**
AC 24 V	DC 0...10 V	<155	N4880	BPZ:STS61/100	**STS61/100**

Magnetic valves for HVAC and refrigeration applications



Overview and selection tools	Overview of the product range	14-2
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	Valves with integrated magnetic actuator for HVAC and industrial applications	14-7
Acvatix™ Threaded valves with magnetic actuators for HVAC applications	2-port and 3-port, PN16: MXG461..	14-9
Acvatix™ Flanged valves with magnetic actuators for HVAC applications	2-port and 3-port, PN16: MXF461.. / M3P..FY	14-11
Acvatix™ Threaded valves with magnetic actuators for HVAC / industrial applications	2-port and 3-port, PN16: MXG461B.. / MXG461S.. / MXG462S..	14-15
Acvatix™ Flanged valves with magnetic actuators for HVAC / industrial applications	2-port, PN16: MVF461H..	14-18
Acvatix™ Refrigerant valves with magnetic actuator	for expansion, hotgas and suction throttle applications: MVL661.. / MVS661..N	14-19
	2-port modulating pilot valve: M2FP..	14-21
	Refrigerant valves for refrigeration units and heat recovery: M3FB..LX..	14-22
	Refrigerant valves for condensate control: M3FK.. LX..	14-23

Refrigerant valves

Typical applications	Valve	Operating voltage	Positioning signal	Auxiliary functions
– Expansion, direct/indirect hot-gasand hot-gas distribution applications – Suction gas applications – Condensate mixing – Brine plants	**M2FP03GX**	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs	–
	MVL661..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	Minimum stroke setting
	MVS661..N	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	Minimum stroke setting
	M3FB..LX..	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs	–
	M3FK..LX..	AC 24 V	0...10 V, 4...20 mA, 0...20 Phs	–

PN 32	-40...100 °C				k_{vs} [m³/h]	Δp_{max} [kPa]
Data sheet	N4731					
	**M2FP03GX**	Pilot valve			0.3	1800

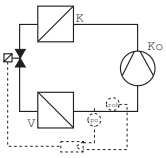
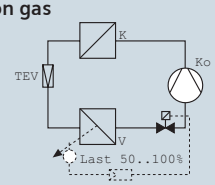
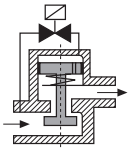
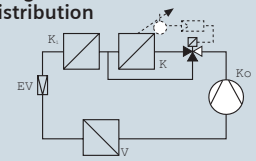
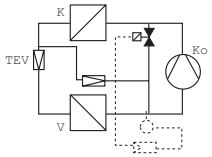
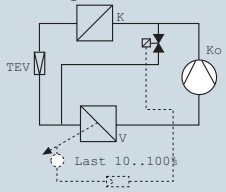
PN 40	-40...120 °C	**DN**	**Connection**	**Inner Ø** [Inch]		k_{vs} [m³/h]	k_{vs} **reduced** [m³/h]	Δp_{max} [kPa]
Data sheet	N4714							
	**MVL661.15-0.4**	15	Sleeve	5/8		0.4	0.25	2500
	MVL661.15-1.0	15	Sleeve	5/8		1	0.63	2500
	MVL661.20-2.5	20	Sleeve	7/8		2.5	1.6	2500
	MVL661.25-6.3	25	Sleeve	1 1/8		6.3	4	2500
	MVL661.32-12	32	Sleeve	1 1/8		12	7.6	200

PN 40	-40...120 °C	**DN**	**Connection**	**Inner Ø** [mm]	**Outer Ø** [mm]	k_{vs} [m³/h]	k_{vs} **redcued** [m³/h]	Δp_{max} [kPa]
Data sheet	N4717							
	**MVS661.25-016N**	25	Weldable	22.4	33.7	0.16	0.1	2500
	MVS661.25-0.4N	25	Weldable	22.4	33.7	0.4	0.25	2500
	MVS661.25-1.0N	25	Weldable	22.4	33.7	1	0.63	2500
	MVS661.25-2.5N	25	Weldable	22.4	33.7	2.5	1.6	2500
	MVS661.25-6.3N	25	Weldable	22.4	33.7	6.3	4	2500

PN 32	-40...120 °C	**DN**	**Connection**	**Inner Ø** [Inch]		k_{vs} [m³/h]		**Liquid** Δp_{max} [kPa]	**Gas** Δp_{max} [kPa]
Data sheet	N4722								
	**M3FK15LX06**	15	Sleeve	5/8		0.6		200	800
	M3FK15LX15	15	Sleeve	5/8		1.5		200	800
	M3FK15LX	15	Sleeve	5/8		3		200	800
	M3FK20LX	20	Sleeve	5/8		5		200	800
	M3FK25LX	25	Sleeve	1 1/8		8		200	800
	M3FK32LX	32	Sleeve	1 3/8		12		200	800
	M3FK40LX	40	Sleeve	1 5/8		20		200	800
	M3FK50LX	50	Sleeve	2 1/8		30		200	800

PN 40	-40...120 °C	**DN**	**Connection**	**Inner Ø** [Inch]		k_{vs} [m³/h]		Δp_{max} [kPa]
Data sheet	N4721							
	**M3FB15LX06/A**	15	Sleeve	5/8		0.6		2200
	M3FB15LX15/A	15	Sleeve	5/8		1.5		2200
	M3FB15LX/A	15	Sleeve	5/8		3		2200
	M3FB20LX/A	20	Sleeve	7/8		5		1800
	M3FB25LX/A	25	Sleeve	1 1/8		8		1200
	M3FB32LX	32	Sleeve	1 1/8		12		800

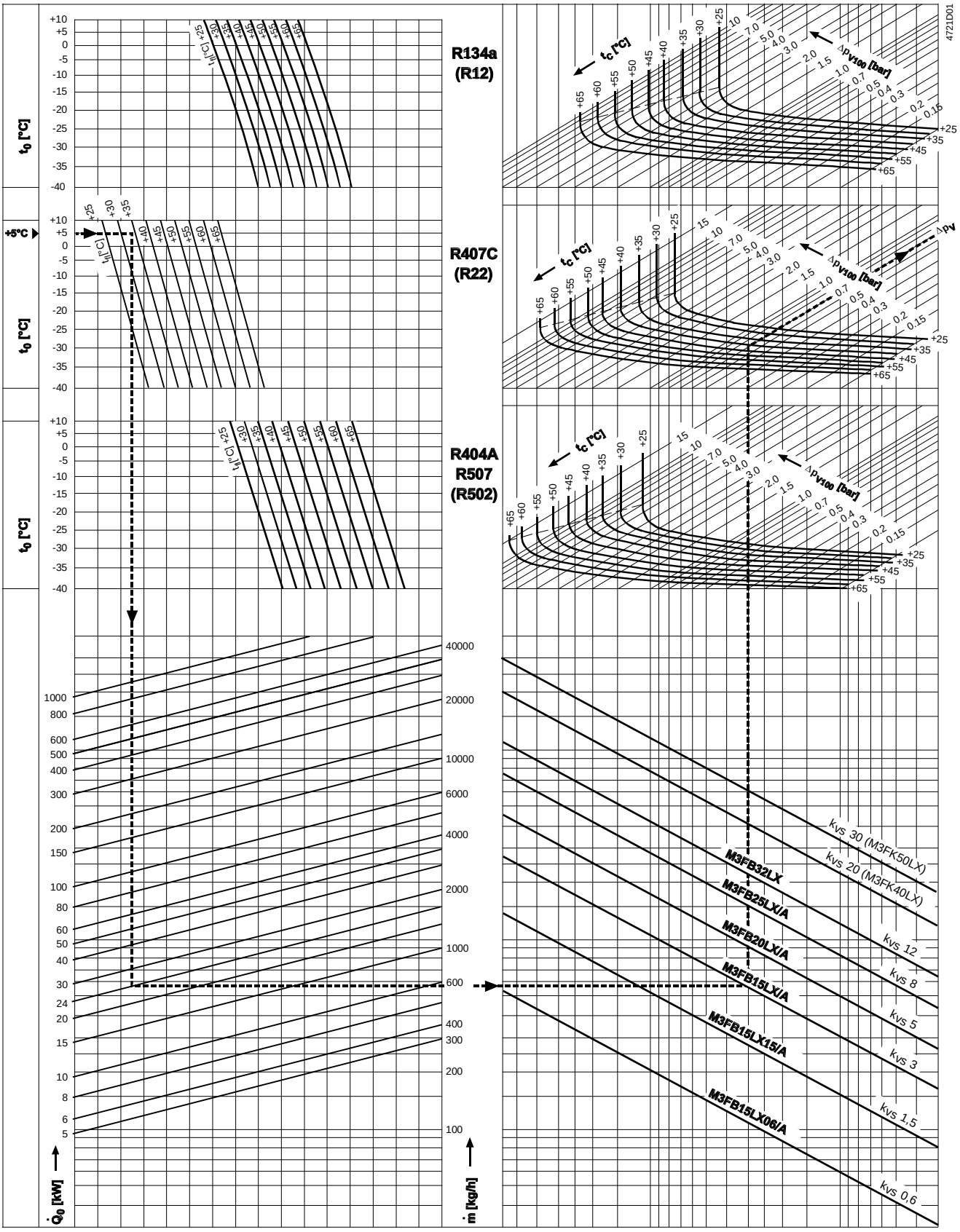
Acvatix™ refrigerant valves complete with magnetic actuator

Application	Valve type	DN	Cooling capacity [1]	Benefits
Expansion 	MVL661.. MVS661..N	15...25 25	47...737 95...3850	• Straightforward valve selection • 3 valves in one (control, injection and shutoff valve) • Payback within 12 months • Optimized for plate heat exchangers (lower filling volume) • Increased COP • «Plug and play», with PolyCool control pack
Suction gas 	MVL661.. M3FK..LX.. MVS661..N	15...32 40/50 25	1...50 83...125 2...74	• Capacity control from 50...100 % or 10...100 % with additional capacity controller • Easy to install • With DX evaporator as cooling coil, no recooling required • Compressor energy savings up to 40 %
Pilot 	M2FP03GX			• Main valve from 2" to 5" • Capacity control from 50...100 % or 10...100 % with additional capacity controller in suction gas applications
Hot gas distribution 	M3FB..LX..	15...32	5...80	• Straightforward heat recovery • Capacity control from 0...100 %
Direct hot gas 	MVL661.. M3FB..LX.. MVS661..N	15...25 32 25	6...150 290 10...402	• Easily adapted to oversized compressor capacity • Control from 10...100 % • Large distance from evaporator to compr. • Straightforward suction throttle control
Indirect hot gas 	MVL661.. M3FB..LX.. MVS661..N	15...25 32 25	6...150 290 10...402	• Heating and cooling with one heat exchanger (evaporator) e. g. A/C chambers • Capacity control from 0...100 % • Wide variation in evaporation temperature (setpoints) • Constant evaporation temperature irrespective of load • Excellent control quality
Condensate back pressure	M3FK..LX..	15...50 40/50	25...1000 83...125	• Heat recovery with condensate back pressure • Expansion into suction gas control

V = evaporator, K = condenser, K1 = external condenser, Ko = compressor, TEV = thermostatic expansion valve

[1] Cooling capacity Q_0 in kW with R407C (with R717 for MVF661N) at t_o = 0 °C, t_c = 40 °C and Δp = 0.5 bar

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The example refers to the 3-way hot gas bypass control application.

t_0 = Evaporation temperature [°C]
t_c = Condensation temperature [°C]
t_{fl} = t_c – degree of sub-cooling [°C]
Q_0 = Refrigeration capacity [kW]
m = Mass flow of refrigerant [kg/h]
Δp_{v100} = Admissible differential pressure [bar], installation-specific
k_{vs} = Nominal flow rate [m^3/h] of cold water through the fully open valve (H_{100}) by a differential pressure of 100 kPa (1 bar)

Please refer to data sheet.

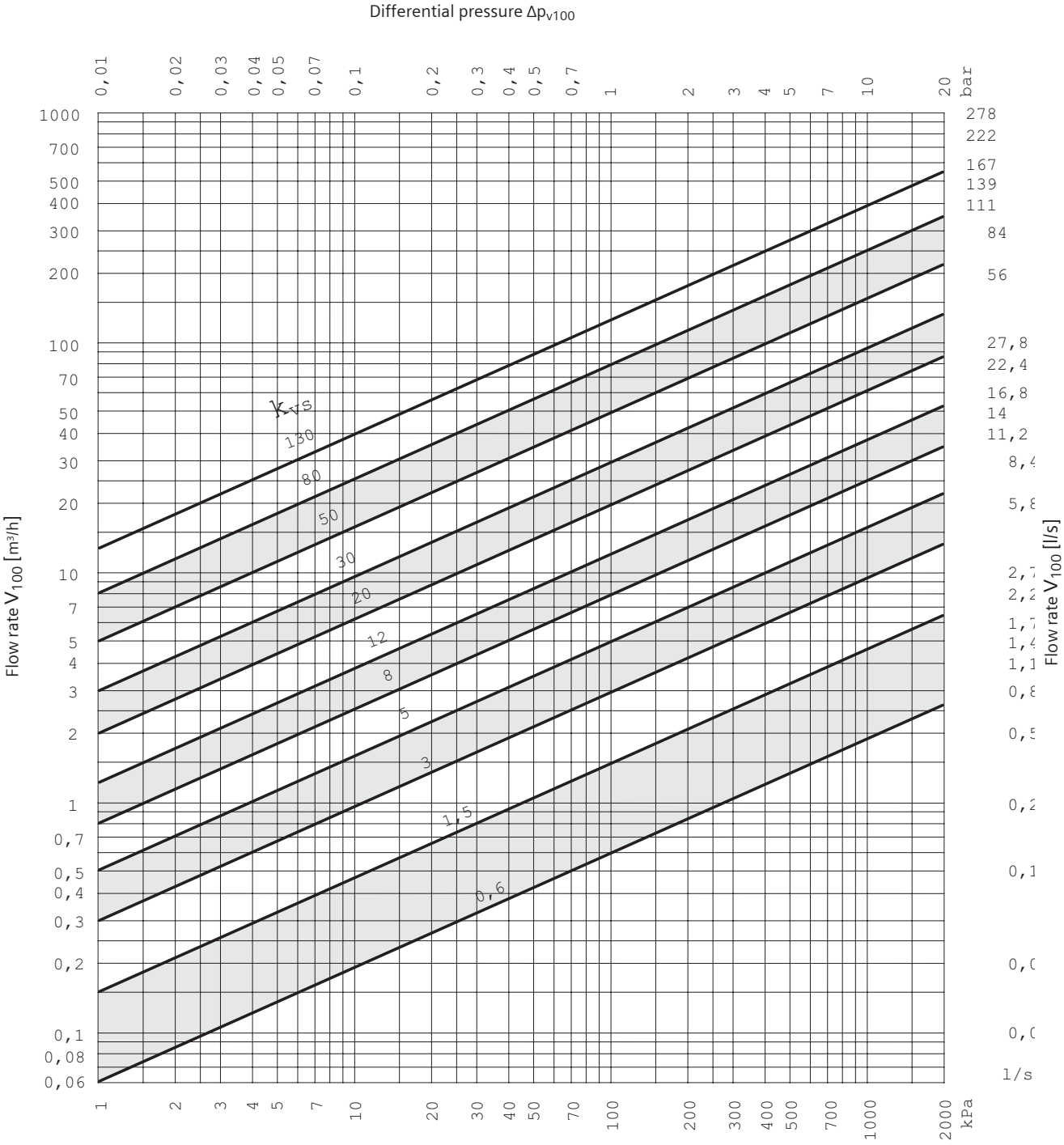
Overview medium compatibility

									Recommended media																
		2-port valve	3-port valve	PN class	Type of connection	Silicon-free grease	Closed circuits	Open circuits	Chilled water	Cooling water [2]	Drinking water	Low temperature hot water	High temperature hot water	Wasser mit Water with anti-freeze [1]	Saturated steam	Superheated steam	Heat transfer oil	Media containing mineral oils	Mineral oil SAE05 ... SAE50	Diesel fuels based on mineral oil	Safety refrigerants	R744 (CO_2)	R717 (ammonia)
Central HVAC plants	M3P..FY	■	■	16	F		■		■			■		■									
	M3P..FYP	■	■	16	F		■										■	■	■	■			
	MXF461..	■	■	16	F		■		■			■		■									
	MXF461..M	■	■	16	F	■	■		■			■		■									
	MXF461..P	■	■	16	F		■										■	■	■	■			
	MXG461..	■	■	16	ET		■		■			■		■									
	MXG461B..	■	■	16	ET		■	■	■	■	■	■		■									
	MXG461..M	■	■	16	ET	■	■		■			■		■									
	MXG461..P	■	■	16	ET		■										■	■	■	■			
	MXG461S..	■	■	16	ET		■	■	■	■		■		■									
	MXG462S..	■	■	16	ET		■	■	■	■		■		■									
	MVF461H..	■		16	F		■		■			■	■	■	■	■							
Refrigeration systems	M2FP03GX			32	–		■														■		■
	M3FB..LX..		■	40	S		■														■		
	M3FK..LX..		■	32	S		■														■		
	MVL661..	■		40	S		■														■	■	
	MVS661..N	■		40	W		■														■	■	■

						Permissible medium temperature [°C]														Generation				Distribution		
		2-port valve	3-port valve	PN class	Type of connection	-40	-25	-20	-10	0	1	...	90	100	110	120	130	150	180	Boiler plant	District heating	Chiller plants	Cooling towers [3]	Domestic hot water (DHW)	Heating groups	Air handling units
Central HVAC plants	M3P..FY	■	■	16	F						■	■	■	■	■	■					■	■		■	■	■
	M3P..FYP	■	■	16	F						■	■	■	■	■										■	
	MXF461..	■	■	16	F						■	■	■	■	■	■					■	■		■	■	■
	MXF461..M	■	■	16	F						■	■	■	■	■	■					■	■		■	■	■
	MXF461..P	■	■	16	F						■	■	■	■	■	■									■	
	MXG461..	■	■	16	ET						■	■	■	■	■	■					■	■		■	■	■
	MXG461B..	■	■	16	ET				■	■	■	■	■	■	■	■						■		■	■	
	MXG461..M	■	■	16	ET						■	■	■	■	■	■					■	■		■	■	■
	MXG461..P	■	■	16	ET						■	■	■	■	■	■									■	
	MXG461S..	■	■	16	ET						■	■	■	■	■	■						■	■		■	■
	MXG462S..	■	■	16	ET				■	■	■	■	■	■	■	■						■	■		■	■
	MVF461H..	■		16	F						■	■	■	■	■	■	■	■		■	■	■		■	■	■
Refrigeration systems	M2FP03GX			32	–		■	■	■	■	■	■	■									■				
	M3FB..LX..		■	40	S		■	■	■	■	■	■	■	■	■	■						■				
	M3FK..LX..		■	32	S		■	■	■	■	■	■	■	■	■	■						■				
	MVL661..	■		40	S		■	■	■	■	■	■	■	■	■	■						■				
	MVS661..N	■		40	W		■	■	■	■	■	■	■	■	■	■						■				

Recommendation: Water treatment according to VDI 2035, [1] e.g. ethylene and propylene glycols, [2] open circuits
ET = externally threaded connection, F = flanged connection, S = soldered connection, W = welded connection

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Please refer to data sheet.

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Threaded 2-port and 3-port valves fitted with magnetic actuator

Typical applications	Valve type	Operating voltage	Positioning signal	Type suffix
– Supply air control with/without cascade	**MXG461..**	AC 24 V	0...10 V, 2...10 V, 4...20 mA	P, M
– Fast-acting heat exchanger control	**MXG461B..**	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	–
– Domestic hot water mixing control	**MXG461S..**	AC 24 V	0...10 V, 2...10 V, 4...20 mA	–
– High-precision process control	**MXG462S..**	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	–

P = media containing mineral oil, M = silicon-free version

PN 16 / Data sheet	1...130 °C / N4455	DN	G [Inch]	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Note
	**MXG461.15-..**	15	G 1B	0.6 / 1.5 / 3.0	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.
	MXG461.20-5.0	20	G 1¼B	5	300	300	
	MXG461.25-8.0	25	G 1½B	8	300	300	
	MXG461.32-12	32	G 2B	12	300	300	
	MXG461.40-20	40	G 2¼B	20	300	300	
	MXG461.50-30	50	G 2¾B	30	300	300	
PN 16 / Data sheet	-20...130 °C / N4461	DN	G [Inch]	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Note
	**MXG461B15-..**	15	G 1B	0.6 / 1.5 / 3	1000	1000	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.
	MXG461B20-5	20	G 1¼B	5	800	800	
	MXG461B25-8	25	G 1½B	8	700	700	
	MXG461B32-12	32	G 2B	12	600	600	
	MXG461B40-20	40	G 2¼B	20	600	600	DVGW-certified
	MXG461B50-30	50	G 2¾B	30	600	600	

PN 16 / Data sheet	1...130 °C / N4465	-20...130 °C / N4466	DN	G [Inch]	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Note
	**MXG461S15-1.5**	–	15	G 1B	1.5	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear. Parts that are in contact with medium in stainless steel.
	MXG461S20-5.0	–	20	G 1¼B	5	300	300	
	MXG461S25-8.0	–	25	G 1½B	8	300	300	
	MXG461S32-12	–	32	G 2B	12	300	300	
	–	**MXG462S50-30**	50	G 2¾B	30	600	600	

Flanged 2-port and 3-port valves fitted with magnetic actuator

Typical applications	Valve type	Operating voltage	Positioning signal	Type suffix
– Supply air control with/without cascade	MXF461..	AC 24 V	0...10 V, 2...10 V, 4...20 mA	P, M
– Fast-acting heat exchanger control	M3P..FY..	AC 24 V	0...10 V, 4...20 mA	P
– High-precision process control	MVF461H..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	–

P = media containing mineral oil, M = silicon-free version

PN 16 / Data sheet	1...130 °C / N4455	DN	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	Note
	**MXF461.15-..**	15	0.6 / 1.5 / 3.0	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.
	MXF461.20-5.0	20	5	300	300	
	MXF461.25-8.0	25	8	300	300	
	MXF461.32-12	32	12	300	300	
	MXF461.40-20	40	20	300	300	
	MXF461.50-30	50	30	300	300	
	MXF461.65-50	65	50	300	300	
	1...120 °C / N4454					
	M3P80FY	80	80	300	300	
	M3P100FY	100	130	200	200	
PN 16 / Data sheet	1...180 °C / N4361	DN	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	
	**MVF461H15-..**	15	0.6 / 1.5 / 3.0	1000	1000	
	MVF461H20-5	20	5	1000	1000	
	MVF461H25-8	25	8	1000	1000	
	MVF461H32-12	32	12	1000	1000	
	MVF461H40-20	40	20	1000	1000	
	MVF461H50-30	50	30	1000	1000	

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2-port and 3-port valves for HVAC plants and special applications

Typical applications	Valve type	Operating voltage	Positioning signal
– Fast-acting heat exchanger control – High-precision process control	**MXF461..P**	AC 24 V	0...10 V, 2...10 V, 4...20 mA
	M3P..FYP	AC 24 V	0...10 V, 4...20 mA

P = media containing mineral oil

PN 16	1...130 °C	**DN**	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	**Note**
Data sheet	N4455					
	**MXF461.15-..P**	15	0.6 / 1.5 / 3.0	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.
	MXF461.20-5.0P	20	5	300	300	
	MXF461.25-8.0P	25	8	300	300	
	MXF461.32-12P	32	12	300	300	
	MXF461.40-20P	40	20	300	300	
	MXF461.50-30P	50	30	300	300	
	MXF461.65-50P	65	50	300	300	
	1...120 °C					
	N4454					
	M3P80FYP	80	80	300	300	
	M3P100FYP	100	130	200	200	

Threaded 2-port and 3-port valves for HVAC plants and special applications

Typical applications	Valve type	Operating voltage	Positioning signal	Type suffix
– High-precision process control	**MXG461..P**	AC 24 V	0...10 V, 2...10 V, 4...20 mA	P, M
	MXG461S..	AC 24 V	0...10 V, 2...10 V, 4...20 mA	–
	MXG462S..	AC/DC 24 V	0...10 V, 2...10 V, 0...20 mA, 4...20 mA	–

P = media containing mineral oil, M = silicon-free version

PN 16	1...130 °C			**DN**	**G** [Inch]	k_{VS} [m³/h]	Δp_s [kPa]	Δp_{max} [kPa]	**Note**
Data sheet	N4455								
	**MXG461.15-..P**			15	G 1B	0.6 / 1.5 / 3.0	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear.
	MXG461.20-5.0P			20	G 1¼B	5	300	300	
	MXG461.25-8.0P			25	G 1½B	8	300	300	
	MXG461.32-12P			32	G 2B	12	300	300	
	MXG461.40-20P			40	G 2¼B	20	300	300	
	MXG461.50-30P			50	G 2¾B	30	300	300	
PN 16	1...130 °C		-20...130 °C	**DN**	**G** [Inch]	k_{VS} [m³/h]	**Δps** [kPa]	Δp_{max} [kPa]	**Note**
Data sheet	N4465		N4466						
	**MXG461S15-1.5**		–	15	G 1B	1.5	300	300	To be used as 2-port or mixing valves, not as diverting valves. Selectable valve characteristic: equal-percentage or linear. Parts that are in contact with medium in stainless steel.
	MXG461S20-5.0		–	20	G 1¼B	5	300	300	
	MXG461S25-8.0		–	25	G 1½B	8	300	300	
	MXG461S32-12		–	32	G 2B	12	300	300	
	–		**MXG462S50-30**	50	G 2¾B	30	600	600	

.. = k_{VS}-value

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Acvatix™ Threaded valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXG461..

Modulating control valves with magnetic actuator, PN16, external thread

MXG461..



Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of chilled or low-temperature hot water systems in closed circuits. With positioning control, position feedback signal, spring return function and manual control.

Data sheet	N4455
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4..20 mA
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1000 kPa
PN class	PN 16
Leakage rate	< 0.02 % of k_{vs} value
Leakage rate bypass	< 0.2 % of k_{vs} value
Medium temperature	1...130 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel/brass

When used as a 2-port valve, port B must be closed off with the accessories (nut, cover, gasket) provided with the valve.
MXG461..P valves for media containing mineral oils (data sheet N4455)
MXG461..M silicon-free valve version (data sheet N4455)
MXG461.. valves are UL listed

CAUTION!
Valve may only be used as a mixing or 2-port valve, not as a diverting valve.

Range overview threaded valves MXG461..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Connecting thread	Stock No.	Product No.
15	0.6	300	300	29	G 1 B "	BPZ:MXG461.15-0.6	**MXG461.15-0.6**
15	1.5	300	300	29	G 1 B "	BPZ:MXG461.15-1.5	**MXG461.15-1.5**
15	3	300	300	29	G 1 B "	BPZ:MXG461.15-3.0	**MXG461.15-3.0**
20	5	300	300	29	G 1¼ B "	BPZ:MXG461.20-5.0	**MXG461.20-5.0**
25	8	300	300	29	G 1½ B "	BPZ:MXG461.25-8.0	**MXG461.25-8.0**
32	12	300	300	29	G 2 B "	BPZ:MXG461.32-12	**MXG461.32-12**
40	20	300	300	44	G 2¼ B "	BPZ:MXG461.40-20	**MXG461.40-20**
50	30	300	300	44	G 2¾ B "	BPZ:MXG461.50-30	**MXG461.50-30**

Fittings ALG..3 must be ordered as separate items and are also supplied as such.
Δp_s for use as 2-port valve

Acvatix™ Threaded valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXG461..

Field of application

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 130 °C	EPDM-O-Ring	-
Mineral oil SAE05-50, minerl-oil-based diesel fuels, heat transfer oils	up to 120 °C	Viton-O-Ring	P
Low-temperature hot water in plants where silicon-free products are required	up to 130 °C	EPDM-O-Ring	M

Accessories for MXG461..

Product Title	s. page	Data sheet	Stock No.	Product No.
Signal converter DC 0...20 V Phs to DC 0...10 V	16-15	N5143	BPZ:SEZ91.6	**SEZ91.6**

Fittings: Set of 3

Cylindric thread to ISO 228/1 on the valve side
Cylindric thread to ISO 7/1 on the pipe side
Each ALG..3 fitting consists of 3 cap nuts, 3 insert nuts and 3 flat seals

DN	Connecting thread, valve side	Connecting thread, pipe side	Material	Stock No.	Product No.
15	G 1 "	Rp ½ "	Phosphated malleable cast iron	BPZ:ALG153	**ALG153**
20	G 1¼ "	Rp ¾ "	Phosphated malleable cast iron	BPZ:ALG203	**ALG203**
25	G 1½ "	Rp 1 "	Phosphated malleable cast iron	BPZ:ALG253	**ALG253**
32	G 2 "	Rp 1¼ "	Phosphated malleable cast iron	BPZ:ALG323	**ALG323**
40	G 2¼ "	Rp 1½ "	Phosphated malleable cast iron	BPZ:ALG403	**ALG403**
50	G 2¾ "	Rp 2 "	Phosphated malleable cast iron	BPZ:ALG503	**ALG503**

Acvatix™ Flanged valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXF461.. / M3P..FY

Modulating control valves with magnetic actuator, PN16, flanged — MXF461..

Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of chilled or low-temperature hot water systems in closed circuits. With positioning control, position feedback signal, spring return function and manual control.



Data sheet	N4455
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4...20 mA
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1000 kPa
PN class	PN 16
Leakage rate	< 0.02 % of k_{vs} value
Leakage rate bypass	< 0.2 % of k_{vs} value
Medium temperature	1...130 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Cast iron EN-GJL-250
Material, inside set	CrNi steel/brass

When used as a 2-port valve, port B must be closed off with the accessories (nut, cover, gasket) provided with the valve.
MXF461..P valves for media containing mineral oils (data sheet N4455)
MXF461..M silicon-free valve version, DN15...DN50 (data sheet N4455)
MXF461.. valves are UL listed

CAUTION!
Use valve only as a mixing or 2-port valve, not as a diverting valve.

Range overview flanged valves MXF461..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Stock No.	Product No.
15	0.6	300	300	29	BPZ:MXF461.15-0.6	**MXF461.15-0.6**
15	1.5	300	300	29	BPZ:MXF461.15-1.5	**MXF461.15-1.5**
15	3	300	300	29	BPZ:MXF461.15-3.0	**MXF461.15-3.0**
20	5	300	300	29	BPZ:MXF461.20-5.0	**MXF461.20-5.0**
25	8	300	300	29	BPZ:MXF461.25-8.0	**MXF461.25-8.0**
32	12	300	300	29	BPZ:MXF461.32-12	**MXF461.32-12**
40	20	300	300	44	BPZ:MXF461.40-20	**MXF461.40-20**
50	30	300	300	44	BPZ:MXF461.50-30	**MXF461.50-30**
65	50	300	300	46	BPZ:MXF461.65-50	**MXF461.65-50**

Δp_s for use as 2-port valve

Acvatix™ Flanged valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXF461.. / M3P..FY

Field of application

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 130 °C	EPDM-O-Ring	-
Mineral oil SAE05-50, minerl-oil-based diesel fuels, heat transfer oils	up to 120 °C	Viton-O-Ring	P
Low-temperature hot water in plants where silicon-free products are required	up to 130 °C	EPDM-O-Ring	M

Accessories for MXF461..

Product Title	s. page	Data sheet	Stock No.	Product No.
Signal converter DC 0...20 V Phs to DC 0...10 V	16-15	N5143	BPZ:SEZ91.6	**SEZ91.6**

Blanking flanges

Scope of delivery: 1 blanking flange, 1 seal, screws, spring washers and nuts.

DN	Stock No.	Product No.
15	BPZ:Z155/15F	**Z155/15F**
20	BPZ:Z155/20F	**Z155/20F**
25	BPZ:Z155/25F	**Z155/25F**
32	BPZ:Z155/32F	**Z155/32F**
40	BPZ:Z155/40	**Z155/40**
50	BPZ:Z155/50	**Z155/50**
65	BPZ:Z155/65	**Z155/65**

Acvatix™ Flanged valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXF461.. / M3P..FY

Modulating control valves with magnetic actuator, PN16, flanged

M3P..FY..



Mixing and 2-port valves with magnetic actuator for modulating control of chilled or low-pressure hot water systems with closed circuits. Flanged connections, with positioning control, position feedback signal, spring return function, manual control.

Data sheet	N4454
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 4...20 mA
Positioning time	Close: <2 s
Spring return function	1->3 closed
Position feedback	DC 0...10 V
Degree of protection	IP31
Ambient temperature, operation	2...50 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1000 kPa
PN class	PN 16
Leakage rate	< 0.05 % of k_{vs} value
Leakage rate bypass	ca. 2 % of k_{vs} value
Medium temperature	2...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	EN-GJL-HB215
Material, inside set	CrNi steel/brass

When used as a 2 port valve, inlet B (2) must be closed off with the Z155/.. blanking flange.
M3P..FYP for media containing mineral oils (data sheet N4454)

CAUTION!
Valve may only be used as a mixing or 2-port valve, not as a diverting valve.

Range overview flanged valves M3P..FY

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Stock No.	Product No.
80	80	300	300	80	BPZ:M3P80FY	**M3P80FY**
100	130	200	200	120	BPZ:M3P100FY	**M3P100FY**

Δp_s for use as 2-port valve

Field of application

Medium	Temperature	Valve packing	Type suffix
Low-temperature hot water	up to 130 °C	EPDM-O-Ring	-
Mineral oil SAE05-50, minerl-oil-based diesel fuels, heat transfer oils	up to 120 °C	Viton-O-Ring	P

Accessories for M3P..FY

Product Title	s. page	Data sheet	Stock No.	Product No.
Signal converter DC 0...20 V Phs to DC 0...10 V	16-15	N5143	BPZ:SEZ91.6	**SEZ91.6**

Acvatix™ Flanged valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXF461.. / M3P..FY

Blanking flanges

Scope of delivery: 1 blanking flange, 1 seal, screws, spring washers and nuts.

DN	Stock No.	Product No.
80	BPZ:Z155/80	**Z155/80**
100	BPZ:Z155/100	**Z155/100**

Modulating control valves with magnetic actuator, PN16, external thread, DVGW

MXG461B..



Mixing and 2-port valves PN 16 with magnetic actuator for modulating control of DHW (mains water, water in open circuits), chilled water or low-temperature hot water.
With positioning control, position feedback signal, spring return function and manual control.

Data sheet	N4461
Operating voltage	AC 24 V DC 20...30 V
PN class	PN 16
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1600 kPa
Leakage rate	< 0.05 % of k_{vs} value
Leakage rate bypass	< 0.2 % of k_{vs} value
Medium temperature	-20...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Red brass CC491K, low-lead amount
Material, inside set	CrNi steel
Product conformity	DVGW approved

CAUTION!
Valve may only be used as a mixing or 2-port valve, not as a diverting valve.

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Range overview threaded valves MXG461B..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Connecting thread	Stock No.	Product No.
15	0.6	1000	1000	33	G 1 B "	BPZ:MXG461B15-0.6	**MXG461B15-0.6**
15	1.5	1000	1000	33	G 1 B "	BPZ:MXG461B15-1.5	**MXG461B15-1.5**
15	3	1000	1000	33	G 1 B "	BPZ:MXG461B15-3	**MXG461B15-3**
20	5	800	800	33	G 1¼ B "	BPZ:MXG461B20-5	**MXG461B20-5**
25	8	700	700	33	G 1½ B "	BPZ:MXG461B25-8	**MXG461B25-8**
32	12	600	600	43	G 2 B "	BPZ:MXG461B32-12	**MXG461B32-12**
40	20	600	600	43	G 2¼ B "	BPZ:MXG461B40-20	**MXG461B40-20**
50	30	600	600	65	G 2¾ B "	BPZ:MXG461B50-30	**MXG461B50-30**

The fittings are made of bronze / brass and supplied with the valve.
Δp_s for use as 2-port valve
MXG461B.. valves with magnetic actuators are UL-listed.

Acvatix™ Threaded valves with magnetic actuators for HVAC applications 2-port and 3-port, PN16: MXG461B.. / MXG461S.. / MXG462S..

MXG461S..



Modulating control valves with magnetic actuator, PN16, external thread, stainless steel

Mixing and 2-port valves with magnetic actuator for modulating control of general and industrial HVAC plants. For open and closed circuits. With positioning control, position feedback signal, spring return function and manual control.

Data sheet	N4465
Operating voltage	AC 24 V
Positioning signal	DC 0...10 V DC 2...10 V DC 4...20 mA
Positioning time	< 1 s
Spring return function	A -> AB closed
Position feedback	DC 0...10 V
Degree of protection	IP54
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
PN class	PN 16
Permissible operating pressure	1000 kPa
Leakage rate	< 0.02 % of k_{vs} value
Leakage rate bypass	< 0.2 % of k_{vs} value
Medium temperature	1...130 °C
Valve characteristic	Equal-percentage Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	CrNi cast stainless steel
Material, inside set	CrNi steel

CAUTION!
Valve may only be used as a mixing or 2-port valve, not as a diverting valve.

Range overview threaded valves MXG461S..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Connecting thread	Stock No.	Product No.
15	1.5	300	300	29	G 1 B "	BPZ:MXG461S15-1.5	**MXG461S15-1.5**
20	5.0	300	300	29	G 1¼ B "	BPZ:MXG461S20-5.0	**MXG461S20-5.0**
25	8.0	300	300	29	G 1½ B "	BPZ:MXG461S25-8.0	**MXG461S25-8.0**
32	12	300	300	29	G 2 B "	BPZ:MXG461S32-12	**MXG461S32-12**

Union fittings made of stainless steel must delivered by thirds.
Δp_s for use as 2-port valve
MXG461S.. valves with magnetic actuators are UL-listed.

Accessories for MXG461S..

Product Title	s. page	Data sheet	Stock No.	Product No.
Signal converter DC 0...20 V Phs to DC 0...10 V	16-15	N5143	BPZ:SEZ91.6	**SEZ91.6**

Modulating control valves with magnetic actuator, PN16, external thread, stainless steel

MXG462S..



Mixing and 2-port valves with magnetic actuator for modulating control of general and industrial HVAC plants. For open and closed circuits. With positioning control, position feedback signal, spring return function and manual control.

Data sheet	N4466
Operating voltage	AC 24 V DC 20...30 V
PN class	PN 16
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	<2 s
Spring return function	A->AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
Permissible operating pressure	1600 kPa
Leakage rate	< 0.05 % of k_{vs} value
Leakage rate bypass	< 0.2 % of k_{vs} value
Medium temperature	-20...130 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	CrNi stainless steel
Material, inside set	CrNi steel

CAUTION!
Valve may only be used as a mixing or 2-port valve, not as a diverting valve. When used as a 2-port valve, port B must be closed off with the cover supplied with the valve and a cap nut of the fitting.

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Range overview threaded valves MXG462S..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Connecting thread	Stock No.	Product No.
50	30	600	600	65	G 2¾ B "	BPZ:MXG462S50-30	**MXG462S50-30**

Union fittings made of stainless steel must be delivered by thirds.
Δp_s for use as 2-port valve
MXG462S.. valves with magnetic actuators are UL-listed.

Acvatix™ Flanged valves with magnetic actuators for district heating and steam
2-port, PN16: MVF461H..

MVF461H..



Modulating control valves with magnetic actuator, PN16, flanged

2-port valves PN 16 with magnetic actuator for modulating control of high-temperature hot water or steam.
With positioning control, position feedback signal, spring return function and manual control.

Data sheet	N4361
Operating voltage	AC 24 V DC 20...30 V
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA DC 0...20 V Phs
Positioning time	< 2 s
Spring return function	A-> AB closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP31
Ambient temperature, operation	-5...45 °C
Mounting position	Upright to horizontal
PN class	PN 16
Permissible operating pressure	Water < 120 °C: 1600 kPa Water > 120 °C: 1300 kPa Saturated steam: 900 kPa
Leakage rate	< 0.05% of k_{vs} value
Medium temperature	1...180 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Nodular cast iron EN-GJS-400-18-LT
Material, inside set	CrNi steel

Range overview flanged valves MVF461H..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Δp_s [kPa]	Power consumption [VA]	Stock No.	Product No.
15	0.6	1000	1000	33	BPZ:MVF461H15-0.6	**MVF461H15-0.6**
15	1.5	1000	1000	33	BPZ:MVF461H15-1.5	**MVF461H15-1.5**
15	3	1000	1000	33	BPZ:MVF461H15-3	**MVF461H15-3**
20	5	1000	1000	33	BPZ:MVF461H20-5	**MVF461H20-5**
25	8	1000	1000	33	BPZ:MVF461H25-8	**MVF461H25-8**
32	12	1000	1000	43	BPZ:MVF461H32-12	**MVF461H32-12**
40	20	1000	1000	65	BPZ:MVF461H40-20	**MVF461H40-20**
50	30	1000	1000	65	BPZ:MVF461H50-30	**MVF461H50-30**

MVF.. valves with magnetic actuators are UL-listed.

Modulating refrigerant valves with magnetic actuator, PN40, hermetically sealed

MVL661..-..



Hermetically sealed 2-port valves for modulating control
of chillers and heat pumps.
- Expansion, hot-gas and suction throttle applications with one type of valve
- PN40, stainless steel with soldering connections
- Integrated power electronics with positioning control
- For safety refrigerants such as R22, R134a, R404A, R407C, R744 (CO_2) etc.

Data sheet	N4714
Operating voltage	AC 24 V DC 20...30 V
Power consumption	22 VA
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Positioning time	< 1 s
Spring return function	Closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP65
Ambient temperature, operation	-25...55 °C
Mounting position	Upright to horizontal
PN class	PN 40
Permissible operating pressure	4000 kPa
Leakage rate	< 0.002 % of k_{vs} value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Steel/ CrNi steel
Material, inside set	CrNi steel/brass

The MVL661..-.. refrigerant valve is used in conjunction with PolyCool for superheat control or SAPHIR for chiller control.
MVL661..-.. replaces M2FS..LX.., M2FE..L.. and MVL661.25.
MVL661..-.. are UL listed.
ASR61: Replacement electronics in the event of defective valve electronics.

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Range overview MVL661..

DN	k_{vs} [m³/h]	k_{vs} reduced [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
15	0.4	0.25	2500	BPZ:MVL661.15-0.4	**MVL661.15-0.4**
15	1	0.63	2500	BPZ:MVL661.15-1.0	**MVL661.15-1.0**
20	2.5	1.6	2500	BPZ:MVL661.20-2.5	**MVL661.20-2.5**
25	6.3	4	2500	BPZ:MVL661.25-6.3	**MVL661.25-6.3**
32	12	8	200	BPZ:MVL661.32-12	**MVL661.32-12**

k_{vs}-reduced selectable with DIP switch
MVL661.32-12 can only be used as a suction throttle valve

Acvatix™ Refrigerant valves with magnetic actuator for expansion, hotgas and suction throttle applications: MVL661.. / MVS661..N

MVS661..N



Modulating refrigerant valves with magnetic actuator, PN40, hermetically sealed

Hermetically sealed 2-port valves for modulating control of refrigerant circuits including chillers and heat pumps.

- Expansion, hot-gas and suction throttle applications with one type of valve
- PN40, stainless steel with soldering connections
- Integrated power electronics with positioning control
- For ammonia R717 and all standard refrigerants, noncorrosive gases/liquids and CO_2 (R744). It is not suited for use with inflammable refrigerants.

Data sheet	N4717
Operating voltage	AC 24 V DC 20...30 V
Power consumption	22 VA
Positioning signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Positioning time	<1 s
Spring return function	Closed
Position feedback	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Degree of protection	IP65
Ambient temperature, operation	-25...55 °C
Mounting position	Upright to horizontal
PN class	PN 40
Permissible operating pressure	4000 kPa
Leakage rate	0.002% of k_{vs}-value
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:1000
Material, valve body	Steel / CrNi steel
Material, inside set	CrNi steel

"An exchangeable ASR..N valve insert allows for different k_{vs}-values with the same type of DN25 valve. In the event of service, this insert can also be replaced on the plant.
MVS661..N are UL listed."

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Range overview MVS661..N

DN	k_{vs} [m³/h]	k_{vs} reduced [m³/h]	Δp_{max} [kPa]	Stock No.	Product No.
25	0.16	0.10	2500	BPZ:MVS661.25-016N	**MVS661.25-016N**
25	0.40	0.25	2500	BPZ:MVS661.25-0.4N	**MVS661.25-0.4N**
25	1	0.63	2500	BPZ:MVS661.25-1.0N	**MVS661.25-1.0N**
25	2.5	1.6	2500	BPZ:MVS661.25-2.5N	**MVS661.25-2.5N**
25	6.3	4.0	2500	BPZ:MVS661.25-6.3N	**MVS661.25-6.3N**

k_{vs}-reduced selectable with DIP switch

2-port modulating pilot valve with magnetic actuator, PN32, AC 24 V, DC 0...10 V / 4...20 mA / 0...20 Phs to control main valves

M2FP03GX



Hermetically sealed 2-port valve as a control valve for main valves from 2" to 5".
- PN32 with threaded connections
- For use with refrigerants such as R22, R134a, R404A, R407C, R507 and ammonia R717
- ZM electronics must be ordered separately (see below)

Data sheet	N4731
Operating voltage	AC 24 V
Positioning time	<1 s
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Power consumption	13 VA
Spring return function	Closed
Ambient temperature, operation	-40...50 °C
Mounting position	Any
k_{vs}	0.3 m³/h
Permissible operating pressure	3200 kPa
Δp_{max}	1800 kPa
Leakage rate	< 0.25 % of k_{vs} value
Medium temperature	-40...100 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel

Stock No.	Product No.
BPZ:M2FP03GX	**M2FP03GX**

Matching ZM.. electronics

Operating voltage	Positioning signal	Operating range	Degree of protection	Stock No.	Product No.
AC 24 V	DC 0...20 V Phs	DC 4...8 V	IP54	BPZ:ZM101/A	**ZM101/A**
AC 24 V	DC 0...20 V Phs	DC 8...16 mA	IP54	BPZ:ZM121/A	**ZM121/A**
	DC 0...20 V Phs	DC 10...15 V Phs	IP54	BPZ:ZM111	**ZM111**

With types ZM101/A and ZM121/A, the DC 0...20 V Phs positioning signal is also possible without operating voltage.

Acvatix™ Refrigerant valves with magnetic actuator
Refrigerant valves for refrigeration units and heat recovery: M3FB..LX..

M3FB..LX..



Modulating refrigerant valves with magnetic actuator, PN40, flanged, hermetically sealed

Hermetically sealed contol valves for modulating capacity control of refrigeration units and for heat recovery.

- PN40 with CrNi steel connections
- For organic safety refrigerants such as R22, R134a, R404A, R407C, R410A, R507, etc.
- ZM electronics must be ordered separately (see below)

Data sheet	N4721
Operating voltage	AC 24 V
Positioning time	< 1 s
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Spring return function	AB-> A closed
Ambient temperature, operation	-40...50 °C
Mounting position	Any
Permissible operating pressure	4000 kPa
Leakage rate	< 0.05% of k_{vs}-value
Leakage rate bypass	< 0.5% of k_{vs}-value
Medium temperature	-40...120 °C
Valve characteristic	Linear
PN class	PN 40
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel/brass
Degree of protection	IP54

Range overview M3FB..LX..

DN	k_{vs} [m³/h]	Δp_{max} [kPa]	Power consumption [VA]	Stock No.	Product No.
15	0.6	2200	26	BPZ:M3FB15LX06/A	**M3FB15LX06/A**
15	1.5	2200	26	BPZ:M3FB15LX15/A	**M3FB15LX15/A**
15	3	2200	26	BPZ:M3FB15LX/A	**M3FB15LX/A**
20	5	1800	26	BPZ:M3FB20LX/A	**M3FB20LX/A**
25	8	1200	40	BPZ:M3FB25LX/A	**M3FB25LX/A**
32	12	800	40	BPZ:M3FB32LX	**M3FB32LX**

Δp_{max} across control port AB -> A

Matching ZM.. electronics

Operating voltage	Positioning signal	Operating range	Degree of protection	Stock No.	Product No.
AC 24 V	DC 0...20 V Phs	DC 4...8 V	IP54	BPZ:ZM101/A	**ZM101/A**
AC 24 V	DC 0...20 V Phs	DC 8...16 mA	IP54	BPZ:ZM121/A	**ZM121/A**
	DC 0...20 V Phs	DC 10...15 V Phs	IP54	BPZ:ZM111	**ZM111**

With types ZM101/A and ZM121/A, the DC 0...20 V Phs positioning signal is also possible without operating voltage.

Modulating refrigerant valves with magnetic actuator, PN32, flanged, hermetically sealed

M3FK..LX..



Hermetically sealed mixing or straight-through valves for modulating capacity control of condensers.
- PN32 with copper soldering connection
- For safety refrigerants such as R22, R134a, R404A, R407C, R507, etc.
- ZM electronics must be ordered separately (see below)

Data sheet	N4722
Operating voltage	AC 24 V
Positioning time	< 1 s
Positioning signal	DC 0...10 V DC 4...20 mA DC 0...20 V Phs
Spring return function	1-> 3 closed
Ambient temperature, operation	-40...50 °C
Mounting position	Any
Permissible operating pressure	3200 kPa
Δp_{max} gas	800 kPa
Δp_{max} liquid	200 kPa
Leakage rate	< 0.05% of k_{vs}-value
Leakage rate bypass	< 0.5% of k_{vs}-value
PN class	PN 32
Medium temperature	-40...120 °C
Valve characteristic	Linear
Stroke resolution $\Delta H/H_{100}$	1:200
Material, valve body	Steel
Material, inside set	CrNi steel/brass

Range overview M3FK..LX..

DN	k_{vs} [m³/h]	Power consumption [VA]	Stock No.	Product No.
15	0.6	13	BPZ:M3FK15LX06	**M3FK15LX06**
15	1.5	13	BPZ:M3FK15LX15	**M3FK15LX15**
15	3	13	BPZ:M3FK15LX	**M3FK15LX**
20	5	16	BPZ:M3FK20LX	**M3FK20LX**
25	8	16	BPZ:M3FK25LX	**M3FK25LX**
32	12	20	BPZ:M3FK32LX	**M3FK32LX**
40	20	40	BPZ:M3FK40LX	**M3FK40LX**
50	30	40	BPZ:M3FK50LX	**M3FK50LX**

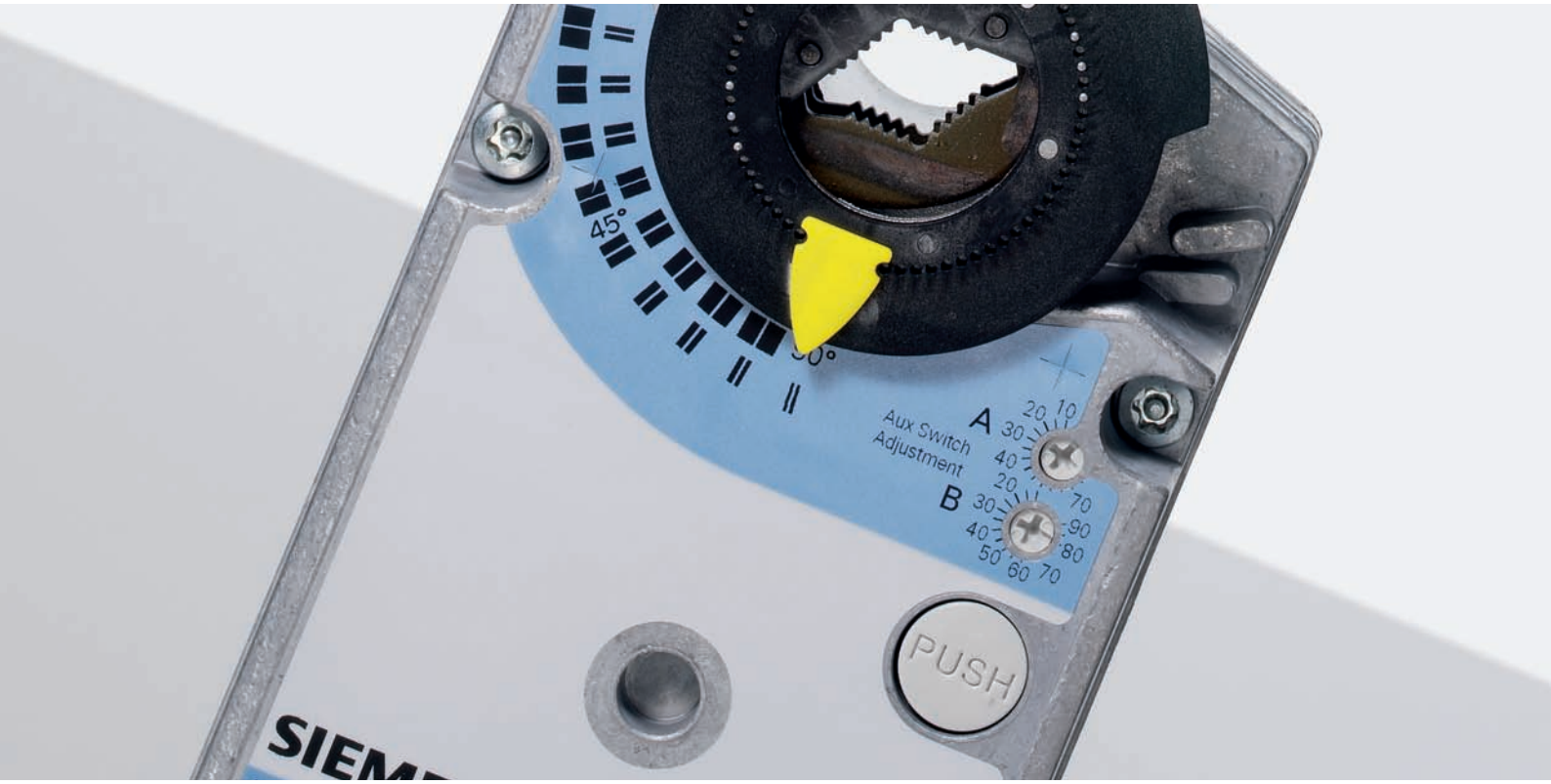
Matching ZM.. electronics

Operating voltage	Positioning signal	Operating range	Degree of protection	Stock No.	Product No.
AC 24 V	DC 0...20 V Phs	DC 4...8 V	IP54	BPZ:ZM101/A	**ZM101/A**
AC 24 V	DC 0...20 V Phs	DC 8...16 mA	IP54	BPZ:ZM121/A	**ZM121/A**
	DC 0...20 V Phs	DC 10...15 V Phs	IP54	BPZ:ZM111	**ZM111**

With types ZM101/A and ZM121/A, the DC 0...20 V Phs positioning signal is also possible without operating voltage.

Notes

Damper actuators



Overview and selection tools	Overview of product details	15-2
OpenAir™ Rotary air damper actuators with spring-return	Torque 2 Nm: GQD..1A	15-9
	Torque 7 Nm: GMA..1E	15-10
	Torque 18 Nm: GCA..1E	15-11
	Accessories for rotary air damper actuators	15-12
OpenAir™ Rotary air damper actuators with safety function	Torque 6 Nm: GNP..1E	15-13
OpenAir™ Rotary air damper actuators without spring-return	Torque 2 Nm: GSD..1A	15-14
	Torque 5 Nm: GDB..1E	15-15
	Torque 10 Nm: GLB..1E	15-16
	Torque 15 Nm: GEB..1E	15-17
	Torque 25 Nm: GBB..1E	15-18
	Torque 35 Nm: GIB..1E	15-19
	Accessories for rotary air damper actuators	15-20
OpenAir™ Rotary air damper actuators without safety function	Torque 6 Nm: GAP..1E	15-22
OpenAir™ Linear air damper actuators without spring-return	Force 125 N: GDB..2E	15-23
	Force 250 N: GLB..2E	15-24
	Force 400 N: GEB..2E	15-25
	Force 550 N: GBB..2E	15-26
	Force 150 N: GHD..	15-27
	Accessories for Linear air damper actuators	15-28
OpenAir™ VAV static compact air volume controller	VAV compact controller: GDB181.. / GLB181.. / ASV181..	15-29
OpenAir™ Fire damper actuators	Torque 7 Nm: GNA..1E	15-31
	Torque 18 Nm: GGA..1E	15-33

Technical data
Rotary actuators

			With spring-return	Non-spring return	AC 24 V	DC 24 V	AC 230 V	Standard	on / off (single wire)	Feedback potentiometer for position indication	Adjustable start point / operating range	2 auxiliary switches	Self-adaption of rotational movement direction	Powerpack (tandem mounted)	Type
	GQD 2 Nm	2 pt	■		■	■		■							GQD121.1A
			■		■	■		■				■			GQD126.1A
			■				■	■							GQD321.1A
			■				■	■				■			GQD326.1A
		3 pt	■		■	■		■							GQD131.1A
			■		■	■		■				■			GQD136.1A
		DC 0...10 V	■		■	■		■							GQD161.1A
			■		■	■		■				■			GQD166.1A
	GSD 2 Nm	2 pt		■	■	■		■	■						GSD121.1A
				■	■	■		■	■			■			GSD126.1A
				■			■	■	■						GSD321.1A
				■			■	■	■			■			GSD326.1A
	GDB 5 Nm	3 pt		■	■			■							GDB131.1E
				■	■					■					GDB132.1E
				■	■							■			GDB136.1E
				■			■	■							GDB331.1E
				■			■			■					GDB332.1E
				■			■					■			GDB336.1E
		DC 0...10 V		■	■			■					■		GDB161.1E
				■	■						■		■		GDB163.1E
				■	■						■	■	■		GDB164.1E
				■	■							■	■		GDB166.1E
	GLB 10 Nm	3 pt		■	■			■							GLB131.1E
				■	■					■					GLB132.1E
				■	■							■			GLB136.1E
				■			■	■							GLB331.1E
				■			■			■					GLB332.1E
				■			■					■			GLB336.1E
		DC 0...10 V		■	■			■					■		GLB161.1E
				■	■						■		■		GLB163.1E
				■	■						■	■	■		GLB164.1E
				■	■							■	■		GLB166.1E
	GMA 7 Nm	2 pt	■		■	■		■				■		■	GMA121.1E
			■		■	■								■	GMA126.1E
			■				■	■						■	GMA321.1E
			■				■					■		■	GMA326.1E
		3 pt	■		■	■		■						■	GMA131.1E
			■		■	■				■				■	GMA132.1E
			■		■	■						■		■	GMA136.1E
		DC 0...10 V	■		■	■		■							GMA161.1E
			■		■	■					■				GMA163.1E
			■		■	■					■	■			GMA164.1E
			■		■	■						■			GMA166.1E
	GEB 15 Nm	3 pt		■	■			■						■	GEB131.1E
				■	■					■				■	GEB132.1E
				■	■							■		■	GEB136.1E
				■			■	■						■	GEB331.1E
				■			■			■				■	GEB332.1E
				■			■					■		■	GEB336.1E
		DC 0...10 V		■	■			■					■		GEB161.1E
				■	■						■		■		GEB163.1E
				■	■						■	■	■		GEB164.1E
				■	■							■	■		GEB166.1E
	GCA 18 Nm	2 pt	■		■	■		■				■		■	GCA121.1E
			■		■	■								■	GCA126.1E
			■				■	■						■	GCA321.1E
			■				■					■		■	GCA326.1E
		3 pt	■		■	■		■							GCA131.1E
			■		■	■				■		■		■	GCA135.1E
		DC 0...10 V	■		■	■		■						■	GCA161.1E
			■		■	■					■			■	GCA163.1E
			■		■	■					■	■		■	GCA164.1E
			■		■	■						■		■	GCA166.1E
	GBB 25 Nm	3 pt		■	■			■						■	GBB131.1E
				■	■					■		■		■	GBB135.1E
				■	■							■		■	GBB136.1E
				■			■	■						■	GBB331.1E
				■			■			■		■		■	GBB335.1E
				■			■					■		■	GBB336.1E
		DC 0...10 V		■	■			■					■		GBB161.1E
				■	■						■		■		GBB163.1E
				■	■						■	■	■		GBB164.1E
				■	■							■	■		GBB166.1E
	GIB 35 Nm	3 pt		■	■			■						■	GIB131.1E
				■	■					■		■		■	GIB135.1E
				■	■							■		■	GIB136.1E
				■			■	■						■	GIB331.1E
				■			■			■		■		■	GIB335.1E
				■			■					■		■	GIB336.1E
		DC 0...10 V		■	■			■					■		GIB161.1E
				■	■						■		■		GIB163.1E
				■	■						■	■	■		GIB164.1E
				■	■							■	■		GIB166.1E

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Technical data
Linear actuators

			Non-spring return	AC 24 V	AC 230 V	Standard	Feedback potentiometer for position indication	Adjustable start point / operating range	2 auxiliary switches	Self-adaption of the linear span	Type
	GDB 125 N	3 pt	■	■		■					GDB131.2E
			■	■			■				GDB132.2E
			■	■					■		GDB136.2E
			■		■	■					GDB331.2E
			■		■		■				GDB332.2E
			■		■				■		GDB336.2E
		DC 0...10 V	■	■		■				■	GDB161.2E
			■	■				■		■	GDB163.2E
			■	■				■	■	■	GDB164.2E
			■	■					■	■	GDB166.2E
	GLB 250 N	3 pt	■	■		■					GLB131.2E
			■	■			■				GLB132.2E
			■	■					■		GLB136.2E
			■		■	■					GLB331.2E
			■		■		■				GLB332.2E
			■		■				■		GLB336.2E
		DC 0...10 V	■	■		■				■	GLB161.2E
			■	■				■		■	GLB163.2E
			■	■				■	■	■	GLB164.2E
			■	■					■	■	GLB166.2E
	GEB 400 N	3 pt	■	■		■					GEB131.2E
			■	■			■				GEB132.2E
			■	■					■		GEB136.2E
			■		■	■					GEB331.2E
			■		■		■				GEB332.2E
			■		■				■		GEB336.2E
		DC 0...10 V	■	■		■				■	GEB161.2E
			■	■				■		■	GEB163.2E
			■	■				■	■	■	GEB164.2E
			■	■					■	■	GEB166.2E
	GBB 550 N	3 pt	■	■		■					GBB131.2E
			■	■			■		■		GBB135.2E
			■	■					■		GBB136.2E
			■		■	■					GBB331.2E
			■		■		■		■		GBB335.2E
			■		■				■		GBB336.2E
		DC 0...10 V	■	■		■					GBB161.2E
			■	■				■			GBB163.2E
			■	■				■	■		GBB164.2E
			■	■					■		GBB166.2E

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Actuators for VAV control

Technical data Rotary actuators			Non-spring return	AC 24 V	Nominal pressure	Feedback signal DC 0...10 V	Run time 150 s	Type
	GDB 5 Nm	3 pt	■	■	300 pa	■	■	GDB181.1E/3
		DC 0...10 V	■	■	300 pa	■	■	GDB181.1E/3
	GLB 10 Nm	3 pt	■	■	300 pa	■	■	GLB181.1E/3
		DC 0...10 V	■	■	300 pa	■	■	GLB181.1E/3
	ASV	3 pt		■	300 pa	■		ASV181.1E/3
		DC 0...10 V		■	300 pa	■		ASV181.1E/3

Actuators for Fire and Smoke applications

Technical data Rotary actuators			t	AC 24 V	DC 24 V	AC 230 V	2 fixed auxiliary switches	Run time open/close 90 s	Closing time with spring 15 s	Temperature monitoring unit	Form fitted shaft adapter 8 x 8 mm	Form fitted shaft adapter 10 x 10 mm	Form fitted shaft adapter 12 x 12 mm	Form fitted shaft adapter 15 x 15 mm	Type
	GNA 7 Nm	2 pt	■	■	■		■	■	■	■	■				GNA126.1E/T08
			■	■	■		■	■	■	■		■			GNA126.1E/T10
			■	■	■		■	■	■	■			■		GNA126.1E/T12
			■	■	■		■	■	■	■				■	GNA126.1E/T15
			■			■	■	■	■	■	■				GNA326.1E/T08
			■			■	■	■	■	■		■			GNA326.1E/T10
			■			■	■	■	■	■			■		GNA326.1E/T12
			■			■	■	■	■	■				■	GNA326.1E/T15
			■	■	■		■	■	■		■				GNA126.1E/08
			■	■	■		■	■	■			■			GNA126.1E/10
			■	■	■		■	■	■				■		GNA126.1E/12
			■	■	■		■	■	■					■	GNA126.1E/15
			■			■	■	■	■		■				GNA326.1E/08
			■			■	■	■	■			■			GNA326.1E/10
			■			■	■	■	■				■		GNA326.1E/12
			■			■	■	■	■					■	GNA326.1E/15
	GGA 18 Nm	2 pt	■	■	■		■	■	■	■	■				GGA126.1E/T08
			■	■	■		■	■	■	■		■			GGA126.1E/T10
			■	■	■		■	■	■	■			■		GGA126.1E/T12
			■	■	■		■	■	■	■				■	GGA126.1E/T15
			■			■	■	■	■	■	■				GGA326.1E/T08
			■			■	■	■	■	■		■			GGA326.1E/T10
			■			■	■	■	■	■			■		GGA326.1E/T12
			■			■	■	■	■	■				■	GGA326.1E/T15
			■	■	■		■	■	■		■				GGA126.1E/08
			■	■	■		■	■	■			■			GGA126.1E/10
			■	■	■		■	■	■				■	■	GGA126.1E/12
			■	■	■		■	■	■						GGA126.1E/15
			■			■	■	■	■		■				GGA326.1E/08
			■			■	■	■	■			■			GGA326.1E/10
			■			■	■	■	■				■		GGA326.1E/12
			■			■	■	■	■					■	GGA326.1E/15

For acccessories and spare parts for air damper actuators, please order data sheet:

N4697 (GMA/GEB)
N4698 (GDB/GLB)
N4699 (GCA/GBB/GIB)

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OpenAir™ - Fast running actuator (2 sec)

Technical data Rotary actuators			with electronic fail-safe function	non electronic fail-safe function	AC 24 V	DC 24 V	Standard	2 auxiliary switches	Typ
	GNP 6 Nm	2 pt 3 pt	■		■	■	■		GNP191.1E
		DC 0(2)...10 V 0(4)...20 mA			■	■		■	GNP196.1E
	GAP 6 Nm	2 pt 3 pt		■	■	■	■		GAP191.1E
		DC 0(2)...10 V 0(4)...20 mA			■	■		■	GAP196.1E

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OpenAir accessories

	Description	GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
	**Rotary to linear set with lever** Allows a direct-coupled actuator to provide a linear drive; can be used to simultaneously drive a set of opposing or adjacent dampers with a single actuator.	■			ASK71.5
	**Rotary to linear set with lever** Allows a direct-coupled actuator to provide an auxiliary linear drive; can be used to simultaneously drive a set of opposing or adjacent dampers with a single actuator.		■	■	ASK71.13 ASK71.3
	**Rotary to linear set with lever and angle bracket** For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.	■			ASK71.6
	**Rotary to linear set with lever and mounting plate** For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.		■	■	ASK71.14 ASK71.4
	**Universal lever** For use with all OpenAir rotary to linear kits for linear applications requiring connection to damper louver shaft when joint connection is not possible. For 8 to 25.6 mm round.	■	■	■	**ASK71.9**
	**Tandem mounting bracket** **Tandem mounting bracket for 2-position and 3-position GCA/GIB models** **Tandem mounting bracket for modulating GCA/GIB models**		■	 ■ ■	**ASK73.3** **ASK73.1** **ASK73.2**
	**Rotary to linear set for duct mounting** For airstream applications and where a foot-mounted actuator can be used. Includes crank arm, Teflon support-bearing ring, and mounting fasteners. **Rotary to linear set for duct and frame mounting**	■	 ■	■	ASK71.6 ASK71.1 ASK71.11

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Description		GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
	**Rotary to linear set for frame mounting** For direct mounting to damper frame. Includes a crank arm to generate a linear stroke, a Teflon support-bearing ring to minimize side-loading on the actuator's output bearing, and other mounting fasteners. **Rotary to linear set for duct and frame mounting**		 ■	■	ASK71.2 ASK71.11
	**Special shaft adapter** • Up to 27 mm shaft diameter Note: When used with a GIB, accepts shaft diameters from 19 to 27 mm			■	ASK74.1
	**Actuator shaft insert** for small shaft diameters • Up to 10 mm diameter	■			ASK78.3
	**Weathershield** Includes cover, gasket and screws. • IP65 • UV-resistant	 ■	■ ■	 ■ ■ ■	ASK75.3 ASK75.1 ASK75.4 ASK75.6 ASK75.5 ASK75.2
	**Shaft extension**		■	■	ASK74.7
	**Setting unit**	■			AST10
	**Interface converter** PPS2 to RS232 interface converter for use with GDB/GLB/ASV181.1E/3 **Service case**	■ ■			AST11 AST21

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OpenAir accessories

Description		GDB/ GLB	GEB/ GMA	GCA/GIB GBB	Type reference
	**External auxiliary switches** External auxiliary switch kit, attachable to GCA, GMA, GEB, GBB und GIB rotary actuators				
	- 1 external auxiliary switch		■	■	ASC77.1E
	- 2 external auxiliary switches		■	■	ASC77.2E
	**Shaft inserts for GDB/GLB...1**				
	- D-profile	■			ASK78.4
	- Round 1/2"	■			ASK78.5
	- Square 8 x 8 mm	■			ASK78.6
	- Square 8 x 8 mm fix	■			ASK78.14
	- Square 10 x 10 mm	■			ASK78.7
	- Round 8 mm	■			ASK78.8
	- Round 10 mm	■			ASK78.9
	- Round 12 mm	■			ASK78.10
	- Round 3/8"	■			ASK78.11
	- D-profile fix	■			ASK78.12

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Rotary air damper actuators 2 Nm with spring return

GQD..1A

- For shaft dia 8...15 mm, square 6...11 mm, min. shaft length 20 mm
- With housing made of plastic and 0.9 m connecting cable



Data sheet	N4604
Torque	2 Nm
Air damper area	0.3 m²
Angular rotation	90 °
Positioning time	Open with motor: 30 s Closing with spring: 15 s
Degree of protection	IP40
Dimensions (W x H x D)	73 x 122 x 63 mm

Range overview GQD..1A

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24 DC 24	2-position	6.5 VA 4.5 W	0	BPZ:GQD121.1A	**GQD121.1A**
AC 24 DC 24	2-position	6.5 VA 4.5 W	2	BPZ:GQD126.1A	GQD126.1A
AC 230	2-position	10 VA 4.5 W	0	BPZ:GQD321.1A	**GQD321.1A**
AC 230	2-position	10 VA 4.5 W	2	BPZ:GQD326.1A	GQD326.1A
AC 24 DC 24	3-position	4 VA 2.5 W	0	BPZ:GQD131.1A	**GQD131.1A**
AC 24 DC 24	3-position	4 VA 2.5 W	2	BPZ:GQD136.1A	GQD136.1A
AC 24 DC 24	DC 0...10 V	4.5 VA 3 W	0	BPZ:GQD161.1A	**GQD161.1A**
AC 24 DC 24	DC 0...10 V	4.5 VA 3 W	2	BPZ:GQD166.1A	GQD166.1A

NEW PRODUCT

OpenAir™ Rotary air damper actuators with spring-return
Torque 7 Nm: GMA..1E

GMA..1E



Rotary air damper actuators 7 Nm, with spring return

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4614
Torque	7 Nm
Air damper area	1.5 m²
Angular rotation	90 °
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm

Range overview GMA...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24 DC 24	2-position	5 VA 3.5 W	0	BPZ:GMA121.1E	**GMA121.1E**
AC 24 DC 24	2-position	5 VA 3.5 W	2	BPZ:GMA126.1E	**GMA126.1E**
AC 230	2-position	7.5 VA	0	BPZ:GMA321.1E	**GMA321.1E**
AC 230	2-position	7,5 VA	2	BPZ:GMA326.1E	**GMA326.1E**
AC 24 DC 24	3-position	5 VA 3.5 W	0	BPZ:GMA131.1E	**GMA131.1E**
AC 24 DC 24	3-position	5 VA 3.5 W	0	BPZ:GMA132.1E	**GMA132.1E**
AC 24 DC 24	3-position	5 VA 3.5 W	2	BPZ:GMA136.1E	**GMA136.1E**
AC 24 DC 24	DC 0...10 V	5 VA 3.5 W	0	BPZ:GMA161.1E	**GMA161.1E**
AC 24 DC 24	Adjustable	5 VA 3.5 W	0	BPZ:GMA163.1E	**GMA163.1E**
AC 24 DC 24	Adjustable	5 VA 3.5 W	2	BPZ:GMA164.1E	**GMA164.1E**
AC 24 DC 24	DC 0...10 V	5 VA 3.5 W	2	BPZ:GMA166.1E	**GMA166.1E**

Type GMA132.1E also has a feedback potentiometer.

Basic Documentation No.: Z4614

OpenAir™ Rotary air damper actuators with spring-return
Torque 18 Nm: GCA..1E

Rotary air damper actuators 18 Nm, with spring return

GCA..1E

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4613
Torque	18 Nm
Air damper area	3 m²
Angular rotation	90 °
Positioning time	Opening with motor: 90 s Closing with spring: 15 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm

Range overview GCA...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
DC 24	2-position	7 VA / 5 W	0	BPZ:GCA121.1E	**GCA121.1E**
DC 24	2-position	7 VA / 5 W	2	BPZ:GCA126.1E	**GCA126.1E**
AC 230	2-position	8 VA / 6 W	0	BPZ:GCA321.1E	**GCA321.1E**
AC 230	2-position	8 VA / 6 W	2	BPZ:GCA326.1E	**GCA326.1E**
DC 24	3-position	7 VA / 5 W	0	BPZ:GCA131.1E	**GCA131.1E**
DC 24	3-position	7 VA / 5 W	2	BPZ:GCA135.1E	**GCA135.1E**
DC 24	DC 0...10 V	7 VA / 5 W	0	BPZ:GCA161.1E	**GCA161.1E**
DC 24	Adjustable	7 VA / 5 W	0	BPZ:GCA163.1E	**GCA163.1E**
DC 24	Adjustable	7 VA / 5 W	2	BPZ:GCA164.1E	**GCA164.1E**
DC 24	DC 0...10 V	7 VA / 5 W	2	BPZ:GCA166.1E	**GCA166.1E**

Type GCA135.1E also has a feedback potentiometer.

Basic Documentation No.: Z4613

OpenAir™ Rotary air damper actuators with spring-return
Accessories for rotary air damper actuators

Accessories for rotary air damper actuators GMA..1E

Product Title	Data sheet	Stock No.	Product No.
Universal lever	N4697	BPZ:ASK71.9	**ASK71.9**
Rotary/linear mounting kit for duct or frame mounting	N4697	BPZ:ASK71.11	**ASK71.11**
Rotary/linear mounting kit with lever and bracket	N4697	BPZ:ASK71.13	**ASK71.13**
Rotary/linear mounting kit with lever	N4697	BPZ:ASK71.14	**ASK71.14**
Bracket for power pack	N4697	BPZ:ASK73.3	**ASK73.3**
Shaft extension	N4699	BPZ:ASK74.7	**ASK74.7**
Weather shield	N4697	BPZ:ASK75.3	**ASK75.3**
Weather shield for rotary-/linear-type actuator GMA/GEB...E	N4697	BPZ:ASK75.6	**ASK75.6**
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	**ASC77.1E**
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	**ASC77.2E**

Accessories for rotary air damper actuators GCA...1E

Product Title	Data sheet	Stock No.	Product No.
Rotary/linear mounting kit for duct mounting	N4699	BPZ:ASK71.1	**ASK71.1**
Rotary/linear mounting kit for frame mounting	N4699	BPZ:ASK71.2	**ASK71.2**
Rotary/linear mounting kit with lever	N4699	BPZ:ASK71.3	**ASK71.3**
Rotary/linear mounting kit with lever and bracket	N4699	BPZ:ASK71.4	**ASK71.4**
Universal lever	N4697	BPZ:ASK71.9	**ASK71.9**
Bracket for power pack	N4699	BPZ:ASK73.1	**ASK73.1**
Flexible bracket for power pack	N4699	BPZ:ASK73.2	**ASK73.2**
Special shaft adapter	N4699	BPZ:ASK74.1	**ASK74.1**
Shaft extension	N4699	BPZ:ASK74.7	**ASK74.7**
Weather shield for rotary actuator	N4699	BPZ:ASK75.1	**ASK75.1**
Weather shield for rotarytype actuator GBB/GCA/GIB...1E	N4699	BPZ:ASK75.4	**ASK75.4**
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	**ASC77.1E**
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	**ASC77.2E**

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Caution!
- ASK73.1 is only valid for GCA12...1E, GCA13...1E, GCA32...1E, GIB13...1E, GIB33...1E
- ASK73.2 is only valid for GCA16...1E and GIB16...1E

Rotary air damper actuators 6 Nm, with electronic fail-save function

GNP..1E

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4609
Torque	6 Nm
Air damper area	1 m²
Angular rotation	90 °
Positioning time	Opening with motor: 2 s Closing with Super Cap: 2 s
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm

Range overview GNP...1E

Operating voltage [V]	Positioning signal [V]	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24 DC 24	DC 0(2)...10 V 0(4)...20 mA	25 VA 18 W	0	BPZ:GNP191.1E	GNP191.1E
AC 24 DC 24	DC 0(2)...10 V 0(4)...20 mA	25 VA 18 W	2	BPZ:GNP196.1E	GNP196.1E

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NEW PRODUCT

OpenAir™ Rotary air damper actuators without spring-return
Torque 2 Nm: GSD..1A

GSD..1A



Rotary air damper actuators 2 Nm without spring return

- Operate direct driven zone dampers used to control air flow in ducts specifically to address two position domestic and light commercial barrel damper applications.
- For shaft dia 8...15 mm, square 6...11 mm, min. shaft length 20 mm
- With housing made of plastic and 0.9 m connecting cable

Data sheet	N4603
Torque	2 Nm
Air damper area	0.3 m²
Angular rotation	90 °
Positioning time	30 s
Degree of protection	IP40
Dimensions (W x H x D)	73 x 122 x 63 mm

Range overview GSD..1A

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24 DC 24	SPST	2 VA 1.5 W	0	BPZ:GSD121.1A	**GSD121.1A**
AC 24 DC 24	SPST	2 VA 1.5 W	2	BPZ:GSD126.1A	GSD126.1A
AC 230	SPST	12 VA 2 W	0	BPZ:GSD321.1A	**GSD321.1A**
AC 230	SPST	12 VA 2 W	2	BPZ:GSD326.1A	GSD326.1A

NEW PRODUCT

OpenAir™ Rotary air damper actuators without spring-return
Torque 5 Nm: GDB..1E

Rotary air damper actuators 5 Nm, without spring return

GDB..1E

- For shaft dia. 8..16 mm, square 6...12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable



Data sheet	N4634
Torque	5 Nm
Air damper area	0.8 m²
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm

Range overview GDB...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	2 VA	0	BPZ:GDB131.1E	**GDB131.1E**
AC 24	3-position	2 VA	0	BPZ:GDB132.1E	**GDB132.1E**
AC 24	3-position	2 VA	2	BPZ:GDB136.1E	**GDB136.1E**
AC 230	3-position	2 VA	0	BPZ:GDB331.1E	**GDB331.1E**
AC 230	3-position	2 VA	0	BPZ:GDB332.1E	**GDB332.1E**
AC 230	3-position	2 VA	2	BPZ:GDB336.1E	**GDB336.1E**
AC 24	DC 0...10 V	3 VA	0	BPZ:GDB161.1E	**GDB161.1E**
AC 24	Adjustable	3 VA	0	BPZ:GDB163.1E	**GDB163.1E**
AC 24	Adjustable	3 VA	2	BPZ:GDB164.1E	**GDB164.1E**
AC 24	DC 0...10 V	3 VA	2	BPZ:GDB166.1E	**GDB166.1E**

Types GDB132.1E and 332.1E have a feedback potentiometer.

Basic Documentation No.: Z4634

OpenAir™ Rotary air damper actuators without spring-return
Torque 10 Nm: GLB..1E

GLB..1E



Rotary air damper actuators 10 Nm, without spring return

- For shaft dia. 8..16 mm, square 6...12 mm, min. shaft length 30 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable

Data sheet	N4634
Torque	10 Nm
Air damper area	1.5 m²
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm

Range overview GLB...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	2 VA	0	BPZ:GLB131.1E	**GLB131.1E**
AC 24	3-position	2 VA	0	BPZ:GLB132.1E	**GLB132.1E**
AC 24	3-position	2 VA	2	BPZ:GLB136.1E	**GLB136.1E**
AC 230	3-position	2 VA	0	BPZ:GLB331.1E	**GLB331.1E**
AC 230	3-position	2 VA	0	BPZ:GLB332.1E	**GLB332.1E**
AC 230	3-position	2 VA	2	BPZ:GLB336.1E	**GLB336.1E**
AC 24	DC 0...10 V	3 VA	0	BPZ:GLB161.1E	**GLB161.1E**
AC 24	Adjustable	3 VA	0	BPZ:GLB163.1E	**GLB163.1E**
AC 24	Adjustable	3 VA	2	BPZ:GLB164.1E	**GLB164.1E**
AC 24	DC 0...10 V	3 VA	2	BPZ:GLB166.1E	**GLB166.1E**

Types GLB132.1E and 332.1E have a feedback potentiometer.

Basic Documentation No.: Z4634

Rotary air damper actuators 15 Nm, without spring return

GEB..1E

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4621
Torque	15 Nm
Air damper area	3 m²
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 60 mm

Range overview GEB...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	4 VA / 3.5 W	0	BPZ:GEB131.1E	**GEB131.1E**
AC 24	3-position	4 VA / 3.5 W	0	BPZ:GEB132.1E	**GEB132.1E**
AC 24	3-position	4 VA / 3.5 W	2	BPZ:GEB136.1E	**GEB136.1E**
AC 230	3-position	3 VA / 3 W	0	BPZ:GEB331.1E	**GEB331.1E**
AC 230	3-position	3 VA / 3 W	0	BPZ:GEB332.1E	**GEB332.1E**
AC 230	3-position	3 VA / 3 W	2	BPZ:GEB336.1E	**GEB336.1E**
AC 24	DC 0...10 V DC 2...10 V	6 VA / 5.5 W	0	BPZ:GEB161.1E	**GEB161.1E**
AC 24	DC 0...35 V Adjustable	6 VA / 5.5 W	0	BPZ:GEB163.1E	**GEB163.1E**
AC 24	DC 0...35 V Adjustable	6 VA / 5.5 W	2	BPZ:GEB164.1E	**GEB164.1E**
AC 24	DC 0...10 V DC 2...10 V	6 VA / 5.5 W	2	BPZ:GEB166.1E	**GEB166.1E**

Types GEB132.1E and 332.1E have a feedback potentiometer.

Basic Documentation No.: Z4621

OpenAir™ Rotary air damper actuators without spring-return
Torque 25 Nm: GBB..1E

GBB..1E



Rotary air damper actuators 25 Nm, without spring return

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4626
Torque	25 Nm
Air damper area	4 m²
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm

Range overview GBB...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	7 VA / 7 W	0	BPZ:GBB131.1E	**GBB131.1E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GBB135.1E	**GBB135.1E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GBB136.1E	**GBB136.1E**
AC 230	3-position	5 VA / 5 W	0	BPZ:GBB331.1E	**GBB331.1E**
AC 230	3-position	5 VA / 5 W	2	BPZ:GBB335.1E	**GBB335.1E**
AC 230	3-position	5 VA / 5 W	2	BPZ:GBB336.1E	**GBB336.1E**
AC 24	DC 0...10 V	8 VA / 8 W	0	BPZ:GBB161.1E	**GBB161.1E**
AC 24	DC 0...35 V Adjustable	8 VA / 8 W	0	BPZ:GBB163.1E	**GBB163.1E**
AC 24	DC 0...35 V Adjustable	8 VA / 8 W	2	BPZ:GBB164.1E	**GBB164.1E**
AC 24	DC 0...10 V	8 VA / 8 W	2	BPZ:GBB166.1E	**GBB166.1E**

Types GBB135.1E and GBB335.1E also have a feedback potentiometer.

Basic Documentation No.: Z4626

Rotary air damper actuators 35 Nm, without spring return

GIB..1E

- With self-centering shaft adapter for shaft dia. 8..25.6 mm, square 6...18 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4626
Torque	35 Nm
Air damper area	6 m²
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 300 x 75 mm

Range overview GIB...1E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	7 VA / 7 W	0	BPZ:GIB131.1E	**GIB131.1E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GIB135.1E	**GIB135.1E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GIB136.1E	**GIB136.1E**
AC 230	3-position	5 VA / 5 W	0	BPZ:GIB331.1E	**GIB331.1E**
AC 230	3-position	5 VA / 5 W	2	BPZ:GIB335.1E	**GIB335.1E**
AC 230	3-position	5 VA / 5 W	2	BPZ:GIB336.1E	**GIB336.1E**
AC 24	DC 0...10 V	8 VA / 8 W	0	BPZ:GIB161.1E	**GIB161.1E**
AC 24	Adjustable	8 VA / 8 W	0	BPZ:GIB163.1E	**GIB163.1E**
AC 24	Adjustable	8 VA / 8 W	2	BPZ:GIB164.1E	**GIB164.1E**
AC 24	DC 0...10 V	8 VA / 8 W	2	BPZ:GIB166.1E	**GIB166.1E**

Types GIB135.1E and 335.1E also have a potentiometer.

Basic Documentation No.: Z4626

OpenAir™ Rotary air damper actuators without spring-return
Accessories for rotary air damper actuators

Accessories for rotary air damper actuators GDB...1E and GLB..1E

Product Title	Data sheet	Stock No.	Product No.
Rotary/linear mounting kit	N4698	BPZ:ASK71.5	**ASK71.5**
Rotary/linear mounting kit with bracket	N4698	BPZ:ASK71.6	**ASK71.6**
Universal lever	N4697	BPZ:ASK71.9	**ASK71.9**
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	**ASK75.5**
T-lever valve BG	N4698	BPZ:ASK78.2	**ASK78.2**
Insert for small shaft dia.	N4698	BPZ:ASK78.3	**ASK78.3**
Centering insert D-profile 12.9 mm dia.	N4698	BPZ:ASK78.4	**ASK78.4**
Centering insert 12.7 mm dia. (½")	N4698	BPZ:ASK78.5	**ASK78.5**
Centering insert 8 mm square	N4698	BPZ:ASK78.6	**ASK78.6**
Centering insert 10 mm square	N4698	BPZ:ASK78.7	**ASK78.7**
Centering insert 8 mm dia.	N4698	BPZ:ASK78.8	**ASK78.8**
Centering insert 10 mm dia.	N4698	BPZ:ASK78.9	**ASK78.9**
Centering insert 12 mm dia.	N4698	BPZ:ASK78.10	**ASK78.10**
Centering insert 3/8" dia.	N4698	BPZ:ASK78.11	**ASK78.11**
Centering insert D-profile fixed 12 mm dia. × 9 mm	N4698	BPZ:ASK78.12	**ASK78.12**
Centering insert 8 mm square	N4698	BPZ:ASK78.14	**ASK78.14**

Accessories for rotary air damper actuators GMA..1E and GEB...1E

Product Title	Data sheet	Stock No.	Product No.
Universal lever	N4697	BPZ:ASK71.9	**ASK71.9**
Rotary/linear mounting kit for duct or frame mounting	N4697	BPZ:ASK71.11	**ASK71.11**
Rotary/linear mounting kit with lever and bracket	N4697	BPZ:ASK71.13	**ASK71.13**
Rotary/linear mounting kit with lever	N4697	BPZ:ASK71.14	**ASK71.14**
Bracket for power pack	N4697	BPZ:ASK73.3	**ASK73.3**
Shaft extension	N4699	BPZ:ASK74.7	**ASK74.7**
Weather shield	N4697	BPZ:ASK75.3	**ASK75.3**
Weather shield for rotary-/linear-type actuator GMA/GEB...E	N4697	BPZ:ASK75.6	**ASK75.6**
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	**ASC77.1E**
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	**ASC77.2E**

Accessories for rotary air damper actuators GCA...1E, GBB...1E, GIB...1E

Product Title	Data sheet	Stock No.	Product No.
Rotary/linear mounting kit for duct mounting	N4699	BPZ:ASK71.1	**ASK71.1**
Rotary/linear mounting kit for frame mounting	N4699	BPZ:ASK71.2	**ASK71.2**
Rotary/linear mounting kit with lever	N4699	BPZ:ASK71.3	**ASK71.3**
Rotary/linear mounting kit with lever and bracket	N4699	BPZ:ASK71.4	**ASK71.4**
Universal lever	N4697	BPZ:ASK71.9	**ASK71.9**
Bracket for power pack	N4699	BPZ:ASK73.1	**ASK73.1**
Flexible bracket for power pack	N4699	BPZ:ASK73.2	**ASK73.2**
Special shaft adapter	N4699	BPZ:ASK74.1	**ASK74.1**
Shaft extension	N4699	BPZ:ASK74.7	**ASK74.7**
Weather shield for rotary actuator	N4699	BPZ:ASK75.1	**ASK75.1**
Weather shield for rotarytype actuator GBB/GCA/GIB...1E	N4699	BPZ:ASK75.4	**ASK75.4**
External auxiliary switch assembly 1 switch	N4615	BPZ:ASC77.1E	**ASC77.1E**
External auxiliary switch assembly 2 switches	N4615	BPZ:ASC77.2E	**ASC77.2E**

Caution!
- ASK73.1 is only valid for GCA12...1E, GCA13...1E, GCA32...1E, GIB13...1E, GIB33...1E
- ASK73.2 is only valid for GCA16...1E and GIB16...1E

OpenAir™ Rotary air damper actuators without safety function
Torque 6 Nm: GAP..1E

GAP..1E



Rotary air damper actuators 6 Nm, without electronic fail-save function

- With self-centering shaft adapter for shaft dia. 6.4...20.5 mm, square 6.4...13 mm, min. shaft length 20 mm
- With position indication and adjustable mechanical limit stop
- Button for disengaging the gear train to enable manual control
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4608
Torque	6 Nm
Air damper area	1 m²
Angular rotation	90 °
Positioning time	2 s
Degree of protection	IP54
Dimensions (W x H x D)	81 x 192 x 63 mm

Range overview GAP..1E

Operating voltage [V]	Positioning signal [V]	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24 DC 24	DC 0(2)...10 V 0(4)...20 mA	18 VA 18 W	0	BPZ:GAP191.1E	GAP191.1E
AC 24 DC 24	DC 0(2)...10 V 0(4)...20 mA	18 VA 18 W	2	BPZ:GAP196.1E	GAP196.1E

Linear air damper actuators 125 N, without spring return

GDB..2E

- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable



Data sheet	N4664
Force	125 N
Air damper area	0.8 m²
Nominal stroke	60 mm
Positioning time	150 s
Degree of protection	IP40
Dimensions (W x H x D)	68 x 152 x 59 mm

Range overview GDB...2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	2 VA / 1 W	0	BPZ:GDB131.2E	**GDB131.2E**
AC 24	3-position	2 VA / 1 W	0	BPZ:GDB132.2E	**GDB132.2E**
AC 24	3-position	2 VA / 1 W	2	BPZ:GDB136.2E	**GDB136.2E**
AC 230	3-position	2 VA / 1 W	0	BPZ:GDB331.2E	**GDB331.2E**
AC 230	3-position	2 VA / 1 W	0	BPZ:GDB332.2E	**GDB332.2E**
AC 230	3-position	2 VA / 1 W	2	BPZ:GDB336.2E	**GDB336.2E**
AC 24	DC 0...10 V	3 VA / 2 W	0	BPZ:GDB161.2E	**GDB161.2E**
AC 24	DC 0...35 V Adjustable	3 VA / 2 W	0	BPZ:GDB163.2E	**GDB163.2E**
AC 24	DC 0...35 V Adjustable	3 VA / 2 W	2	BPZ:GDB164.2E	**GDB164.2E**
AC 24	DC 0...10 V	3 VA / 2 W	2	BPZ:GDB166.2E	**GDB166.2E**

Types GDB132.2E and 332.2E have a feedback potentiometer.

Basic Documentation No.: Z4664

OpenAir™ Linear air damper actuators without spring-return
Force 250 N: GLB..2E

GLB..2E



Linear air damper actuators 250 N, without spring return

- Button for disengaging the gear train to enable manual override
- With base made of steel, plastic housing and 0.9 m connecting cable

Data sheet	N4664
Force	250 N
Air damper area	1.5 m²
Nominal stroke	60 mm
Positioning time	150 s
Degree of protection	IP40
Dimensions (W x H x D)	68 x 152 x 59 mm

Range overview GLB...2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	2 VA / 1 W	0	BPZ:GLB131.2E	**GLB131.2E**
AC 24	3-position	2 VA / 1 W	0	BPZ:GLB132.2E	**GLB132.2E**
AC 24	3-position	2 VA / 1 W	2	BPZ:GLB136.2E	**GLB136.2E**
AC 230	3-position	2 VA / 1 W	0	BPZ:GLB331.2E	**GLB331.2E**
AC 230	3-position	2 VA / 1 W	0	BPZ:GLB332.2E	**GLB332.2E**
AC 230	3-position	2 VA / 1 W	2	BPZ:GLB336.2E	**GLB336.2E**
AC 24	DC 0...10 V	3 VA / 2 W	0	BPZ:GLB161.2E	**GLB161.2E**
AC 24	DC 0...35 V Adjustable	3 VA / 2 W	0	BPZ:GLB163.2E	**GLB163.2E**
AC 24	DC 0...35 V Adjustable	3 VA / 2 W	2	BPZ:GLB164.2E	**GLB164.2E**
AC 24	DC 0...10 V	3 VA / 2 W	2	BPZ:GLB166.2E	**GLB166.2E**

Types GLB132.2E and 332.2E have a feedback potentiometer.

Basis Documentation No.: Z4664

Linear air damper actuators 400 N, without spring return

GEB..2E

- Button for disengaging the gear train to enable manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable



Data sheet	N4653
Force	400 N
Air damper area	3 m²
Nominal stroke	60 mm
Positioning time	150 s
Degree of protection	IP40
Dimensions (W x H x D)	81 x 212 x 60 mm

Range overview GEB...2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	4 VA / 3.5 W	0	BPZ:GEB131.2E	**GEB131.2E**
AC 24	3-position	4 VA / 3.5 W	0	BPZ:GEB132.2E	**GEB132.2E**
AC 24	3-position	4 VA / 3.5 W	2	BPZ:GEB136.2E	**GEB136.2E**
AC 230	3-position	3 VA / 3 W	0	BPZ:GEB331.2E	**GEB331.2E**
AC 230	3-position	3 VA / 3 W	0	BPZ:GEB332.2E	**GEB332.2E**
AC 230	3-position	3 VA / 3 W	2	BPZ:GEB336.2E	**GEB336.2E**
AC 24	DC 0...10 V DC 2...10 V	6 VA / 5.5 W	0	BPZ:GEB161.2E	**GEB161.2E**
AC 24	DC 0...35 V Adjustable	6 VA / 5.5 W	0	BPZ:GEB163.2E	**GEB163.2E**
AC 24	DC 0...35 V Adjustable	6 VA / 5.5 W	2	BPZ:GEB164.2E	**GEB164.2E**
AC 24	DC 0...10 V DC 2...10 V	6 VA / 5.5 W	2	BPZ:GEB166.2E	**GEB166.2E**

Types GEB132.2E and 332.2E have a feedback potentiometer.

Basic Documentation No.: Z4653

OpenAir™ Linear air damper actuators without spring-return
Force 550 N: GBB..2E

GBB..2E



Linear air damper actuators 550 N, without spring return

- Button for disengaging the gear train to enable manual override
- With housing made of die-cast aluminium and 0.9 m connecting cable

Data sheet	N4656
Force	550 N
Air damper area	4 m²
Nominal stroke	70 mm
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	100 x 298 x 67.5 mm

Range overview GBB...2E

Operating voltage [V]	Positioning signal	Power consumption	Auxiliary switch	Stock No.	Product No.
AC 24	3-position	7 VA / 7 W	0	BPZ:GBB131.2E	**GBB131.2E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GBB135.2E	**GBB135.2E**
AC 24	3-position	7 VA / 7 W	2	BPZ:GBB136.2E	**GBB136.2E**
AC 230	3-position	8 VA / 5 W	0	BPZ:GBB331.2E	**GBB331.2E**
AC 230	3-position	8 VA / 5 W	2	BPZ:GBB335.2E	**GBB335.2E**
AC 230	3-position	8 VA / 5 W	2	BPZ:GBB336.2E	**GBB336.2E**
AC 24	DC 0...10 V	8 VA / 8 W	0	BPZ:GBB161.2E	**GBB161.2E**
AC 24	DC 0...35 V Adjustable	8 VA / 8 W	0	BPZ:GBB163.2E	**GBB163.2E**
AC 24	DC 0...35 V Adjustable	8 VA / 8 W	2	BPZ:GBB164.2E	**GBB164.2E**
AC 24	DC 0...10 V	8 VA / 8 W	2	BPZ:GBB166.2E	**GBB166.2E**

Types GBB135.2E and 335.2E also have a feedback potentiometer.

Basic Documentation No.: Z4656

Linear air damper actuator 150 N

GHD131.2E..

- Linear drive actuator to adjust air volume controllers, ceiling outlets and dampers in VAV systems as well as to adjust dampers in induction units and mixing boxes.
- Force 150 N

Data sheet N4689



Range overview GHD131.2E..

Operating voltage [V]	Positioning signal	Power consumption [VA]	Spindle length	Stock No.	Product No.
AC 24	3-position	1.5		BPZ:GHD131.2E	**GHD131.2E**
AC 24	3-position	1.5	130	BPZ:GHD131.2E/130	**GHD131.2E/130**
AC 24	3-position	1.5	180	BPZ:GHD131.2E/180	**GHD131.2E/180**
AC 24	3-position	1.5	230	BPZ:GHD131.2E/230	**GHD131.2E/230**
AC 24	3-position	1.5	300	BPZ:GHD131.2E/300	**GHD131.2E/300**

OpenAir™ Linear air damper actuators without spring-return
Accessories for Linear air damper actuators

Accessories for linear air damper actuators GDB..2E and GLB..2E

Product Title	Data sheet	Stock No.	Product No.
Clamp for linkage (5...8 mm dia.)	N4698	BPZ:ASK55.2	**ASK55.2**
Weather shield for rotary-/linear-type actuator GDB/GLB/GSF...E	N4698	BPZ:ASK75.5	**ASK75.5**
Fixing screw	N4698	BPZ:ASK72.5	**ASK72.5**

Accessories for linear air damper actuators GEB..2E

Product Title	Data sheet	Stock No.	Product No.
Linear/rotary mounting kit with bracket	N4697	BPZ:ASK72.3	**ASK72.3**
Fixing screw	N4697	BPZ:ASK72.4	**ASK72.4**
Weather shield for rotary-/linear-type actuator GMA/GEB...E	N4697	BPZ:ASK75.6	**ASK75.6**

Accessories for linear air damper actuators GBB...2E

Product Title	Data sheet	Stock No.	Product No.
Linear/rotary mounting kit with cardan joint	N4699	BPZ:ASK72.1	**ASK72.1**
Linear/rotary mounting kit with bracket	N4699	BPZ:ASK72.2	**ASK72.2**
Fixing screw	N4697	BPZ:ASK72.4	**ASK72.4**
Weather shield for linear actuator	N4699	BPZ:ASK75.2	**ASK75.2**

VAV static

G..B181.1E/3

- Integrated static, position-independent pressure sensor for 300 Pa
- Supply air / extract air control with master-slave configuration
- Recommended for indoors
- For mounting on VAV ducts
- Recommended for damper shaft dia. 8...16 mm, square 6...12 mm
- With position indicator and mechanically adjustable end stop
- Gear train disengagement button for manual adjustment
- With baseplate made of steel, plastic housing and 0.9 m connecting cable



Data sheet	N3544
Angular rotation	90 °
Positioning time	150 s
Degree of protection	IP54
Dimensions (W x H x D)	68 x 137 x 59.5 mm

Range overview G..B181.1E/3

Torque [Nm]	Operating voltage [V]	Air damper area [m²]	Positioning signal	Power consumption [VA]	Stock No.	Product No.
5	AC 24	0.8	3-position DC 0...10	6	BPZ:GDB181.1E/3	**GDB181.1E/3**
10	AC 24	1.5	3-position DC 0...10	6	BPZ:GLB181.1E/3	**GLB181.1E/3**

Basic Documentation No.: P3544

VAV modular

ASV181.1E/3

- Integrated static, position independent pressure sensor for 300Pa
- Supply air / extract air control with master-slave configuration
- For indoor use
- Mounted on VAV ducts
- With plastic housing and connecting cable 0.9 m and 0.4 m
- For connection to an Open Air ™ familiy 3-position air damper actuator with high torque and safety function.



Data sheet	N3545
Degree of protection	IP54
Operating voltage	AC 24 V
Power consumption	6 VA
Positioning signal	3-position DC 0...10 V
Dimensions (W x H x D)	68 x 135 x 45 mm

Stock No.	Product No.
BPZ:ASV181.1E/3	**ASV181.1E/3**

OpenAir™ VAV static compact air volume controller
VAV compact controller: GDB181.. / GLB181.. / ASV181..

Accessories for G..B181.1E/3 and ASV181.1E/3

Product Title	Data sheet	Stock No.	Product No.
Manual operator unit	N5851	BPZ:AST10	**AST10**
Interface converter	N5852	BPZ:AST11	**AST11**
Service tool		BPZ:AST21	**AST21**
Calibration software for service	N5854	BPZ:ACS941	**ACS941**

More accessories, see type GLB...1E / GDB...1E

Actuators for fire protection dampers

GNA126.1E..



- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (Tf1: outside the duct 72 °C or Tf2: inside the duct 72 °C)
- Fixed auxiliary switches for switching points 5 ° and 80 °
- Rigid connection between actuator and damper square shafts (8x8, 10x10, 12x12, 15x15)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP30 / Actuator IP54

Data sheet	N4620
Torque	7 Nm
Air damper area	1 m²
Angular rotation	90 °
Positioning time	Open with motor: 90 s Close with spring return: 15 s
Power consumption	5 VA / 3.5 W
Dimensions (W x H x D)	81 x 178 x 63 mm

Range overview GNA126.1E.. without temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 24 DC 24	8 x 8	BPZ:GNA126.1E/08	**GNA126.1E/08**
AC 24 DC 24	10 x 10	BPZ:GNA126.1E/10	**GNA126.1E/10**
AC 24 DC 24	12 x 12	BPZ:GNA126.1E/12	**GNA126.1E/12**
AC 24 DC 24	15 x 15	BPZ:GNA126.1E/15	**GNA126.1E/15**

Range overview GNA126.1E/T.. with temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 24 DC 24	8 x 8	BPZ:GNA126.1E/T08	**GNA126.1E/T08**
AC 24 DC 24	10 x 10	BPZ:GNA126.1E/T10	**GNA126.1E/T10**
AC 24 DC 24	12 x 12	BPZ:GNA126.1E/T12	**GNA126.1E/T12**
AC 24 DC 24	15 x 15	BPZ:GNA126.1E/T15	**GNA126.1E/T15**

OpenAir™ Fire damper actuators
Torque 7 Nm: GNA..1E

GNA326.1E..



Actuators for fire protection damper

- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (Tf1: outside the duct 72 °C or Tf2: inside the duct 72 °C)
- Fixed auxiliary switches for switching points 5 ° and 80 °
- Rigid connection between actuator and damper square shafts (8x8, 10x10, 12x12, 15x15)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP30 / Actuator IP54

Data sheet	N4620
Torque	7 Nm
Air damper area	1 m²
Angular rotation	90 °
Positioning time	Open with motor: 90 s Closing with spring return 15 s
Power consumption	7.5 VA
Dimensions (W x H x D)	81 x 178 x 63 mm

Range overview GNA326.1E.. without temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 230	8 x 8	BPZ:GNA326.1E/08	**GNA326.1E/08**
AC 230	10 x 10	BPZ:GNA326.1E/10	**GNA326.1E/10**
AC 230	12 x 12	BPZ:GNA326.1E/12	**GNA326.1E/12**
AC 230	15 x 15	BPZ:GNA326.1E/15	**GNA326.1E/15**

Range overview GNA326.1E/T.. with temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 230	8 x 8	BPZ:GNA326.1E/T08	**GNA326.1E/T08**
AC 230	10 x 10	BPZ:GNA326.1E/T10	**GNA326.1E/T10**
AC 230	12 x 12	BPZ:GNA326.1E/T12	**GNA326.1E/T12**
AC 230	15 x 15	BPZ:GNA326.1E/T15	**GNA326.1E/T15**

Accessories for GNA126.1E.. and GNA326.1E..

Product Title	Stock No.	Product No.
Interlocking plate for fire protection applications	BPZ:ASK79.3/08	**ASK79.3/08**
Interlocking plate for fire protection applications	BPZ:ASK79.3/10	**ASK79.3/10**
Interlocking plate for fire protection applications	BPZ:ASK79.3/12	**ASK79.3/12**
Interlocking plate for fire protection applications	BPZ:ASK79.3/15	**ASK79.3/15**

Actuators for fire protection dampers

GGA126.1E..



- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (Tf1: outside the duct 72 °C or Tf2: inside the duct 72 °C)
- Fixed auxiliary switches for switching points 5 ° and 80 °
- Rigid connection between actuator and damper square shafts (8x8, 10x10, 12x12, 15x15)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP30 / Actuator IP54

Data sheet	N4617
Torque	18 Nm
Air damper area	2.5 m²
Angular rotation	90 °
Positioning time	Open with motor: 90 s Close with spring return 15 s
Power consumption	7 VA / 4 W
Dimensions (W x H x D)	100 x 264 x 71 mm

Range overview GGA126.1E.. without temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 24 DC 24	8 x 8	BPZ:GGA126.1E/08	**GGA126.1E/08**
AC 24 DC 24	10 x 10	BPZ:GGA126.1E/10	**GGA126.1E/10**
AC 24 DC 24	12 x 12	BPZ:GGA126.1E/12	**GGA126.1E/12**
AC 24 DC 24	15 x 15	BPZ:GGA126.1E/15	**GGA126.1E/15**

Range overview GGA126.1E/T.. with temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC/DC 24	8 x 8	BPZ:GGA126.1E/T08	**GGA126.1E/T08**
AC/DC 24	10 x 10	BPZ:GGA126.1E/T10	**GGA126.1E/T10**
AC/DC 24	12 x 12	BPZ:GGA126.1E/T12	**GGA126.1E/T12**
AC/DC 24	15 x 15	BPZ:GGA126.1E/T15	**GGA126.1E/T15**

OpenAir™ Fire damper actuators
Torque 18 Nm: GGA..1E

GGA326.1E..



Actuators for fire protection dampers

- Rotary type
- 2-position
- Spring return to failsafe position
- Temperature monitoring unit (Tf1: outside the duct 72 °C or Tf2: inside the duct 72 °C)
- Fixed auxiliary switches for switching points 5 ° and 80 °
- Rigid connection between actuator and damper square shafts (8x8, 10x10, 12x12, 15x15)
- Manual setting
- Position indicator
- Robust, lightweight all metal housing made from die-cast aluminium and 0.9 m connecting cable
- Degree of protection: Temperature monitoring unit IP30 / Actuator IP54

Data sheet	N4617
Torque	18 Nm
Air damper area	2.5 m²
Angular rotation	90 °
Positioning time	Open with motor: 90 s Close with spring return 15 s
Power consumption	8 VA
Dimensions (W x H x D)	100 x 264 x 71 mm

Range overview GGA326.1E.. without temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 230	8 x 8	BPZ:GGA326.1E/08	**GGA326.1E/08**
AC 230	10 x 10	BPZ:GGA326.1E/10	**GGA326.1E/10**
AC 230	12 x 12	BPZ:GGA326.1E/12	**GGA326.1E/12**
AC 230	15 x 15	BPZ:GGA326.1E/15	**GGA326.1E/15**

Range overview GGA326.1E/T.. with temperature monitoring unit

Operating voltage [V]	Shaft linkage [mm]	Stock No.	Product No.
AC 230	8 x 8	BPZ:GGA326.1E/T08	**GGA326.1E/T08**
AC 230	10 x 10	BPZ:GGA326.1E/T10	**GGA326.1E/T10**
AC 230	12 x 12	BPZ:GGA326.1E/T12	**GGA326.1E/T12**
AC 230	15 x 15	BPZ:GGA326.1E/T15	**GGA326.1E/T15**

Accessories for GGA126.1E.. and GGA326.1E..

Product Title	Stock No.	Product No.
Interlocking plate for fire protection applications	BPZ:ASK79.3/08	**ASK79.3/08**
Interlocking plate for fire protection applications	BPZ:ASK79.3/10	**ASK79.3/10**
Interlocking plate for fire protection applications	BPZ:ASK79.3/12	**ASK79.3/12**
Interlocking plate for fire protection applications	BPZ:ASK79.3/15	**ASK79.3/15**

Variable speed drives / Various electrical units



Overview and selection tools	Product range overview	16-2
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Overview and selection tools
Product range overview

Frame size A	Frame size B	Frame size C	Frame size D	Frame size E	Frame size F
					

200 V - 240 V, ± 10&, 3 phases / IP20						
Output power (variable torque)		IP Code	Max output current	Frame size	Type	Type
kw	hp	IP	A		with B-filter	unfiltered
0.37	0.5	20	2.3	A	SED2-0.34/22B	SED2-0.37/22X
0.55	0.75	20	3	A	SED2-0.55/22B	SED2-0.55/22X
0.75	1	20	3.9	A	SED2-0.75/22B	SED2-0.75/22X
1.1	1.5	20	5.5	B	SED2-1.1/22B	SED2-1.1/22X
1.5	2	20	7.4	B	SED2-1.5/22B	SED2-1.5/22X
2.2	3	20	10.4	B	SED2-2.2/22B	SED2-2.2/22X
3	4	20	13.6	C	SED2-3/22B	SED2-3/22X
4	5	20	17.5	C	SED2-4/22B	SED2-4/22X
5.5	7.5	20	22	C	SED2-5.5/22B	SED2-5.5/22X
7.5	10	20	28	C	SED2-7.5/22B	SED2-7.5/22X
11	15	20	42	D	SED2-11/22B	SED2-11/22X
15	20	20	54	D	SED2-15/22B	SED2-15/22X
18.5	25	20	68	D	SED2-18.5/22B	SED2-18.5/22X
22	30	20	80	E	SED2-22/22B	SED2-22/22X
30	40	20	104	E	SED2-30/22B	SED2-30/22X
37	50	20	130	F	SED2-45/22B	SED2-45/22X
45	60	20	154	F	SED2-45/22B	SED2-45/22X

380 V - 480 V, ± 10%, 3 phases / IP20						
Output power (variable torque)		IP Code	Max output current	Frame size	Type	Type
kw	hp	IP	A		with B-filter	unfiltered
0.37	0.5	20	1.2	A	SED20.37/32B	SED2-0.37/32X
0.55	0.75	20	1.6	A	SED2-0.55/32B	SED2-0.55/32X
0.75	1	20	2.1	A	SED2-0.75/32B	SED2-0.75/32X
1.1	1.5	20	3	A	SED2-1.1/32B	SED2-1.1/32X
1.5	2	20	4	A	SED2-1.5/32B	SED2-1.5/32X
2.2	3	20	5.9	B	SED2-2.2/32B	SED2-2.2/32X
3	4	20	7.7	B	SED2-3/32B	SED2-3/32X
4	5	20	10.2	B	SED2-4/32B	SED2-4/32X
5.5	7.5	20	13.2	C	SED2-5.5/32B	SED2-5.5/32X
7.5	10	20	18.4	C	SED2-7.5/32B	SED2-7.5/32X
11	15	20	26	C	SED2-11/32B	SED2-11/32X
15	20	20	32	C	SED2-15/32B	SED2-15/32X
18.5	25	20	38	D	SED2-18.5/32B	SED2-18.5/32X
22	30	20	45	D	SED2-22/32B	SED2-22/32X
30	40	20	62	D	SED2-30/32B	SED2-30/32X
37	50	20	75	E	SED2-37/32B	SED2-37/32X
45	60	20	90	E	SED2-45/32B	SED2-45/32X
55	75	20	110	F	SED2-55/32B	SED2-55/32X
75	100	20	145	F	SED2-75/32B	SED2-75/32X
90	125	20	178	F	SED2-90/32B	SED2-90/32X

Frame size A	Frame size B	Frame size C	Frame size D	Frame size E	Frame size F
					

380 V - 480 V, ± 10%, 3 phases / IP54						
Output power (variable torque)		**IP Code**	**Max output current**	**Frame size**	**Type**	**Type**
kw	hp	IP	A		with B-filter	unfiltered
1.1	1.5	54	3	B	SED2-1.1/35B	SED2-1.1/35X
1.5	2	54	4	B	SED2-1.5/35	SED2-1.5/35X
2.2	3	54	5.9	B	SED2-2.2/35B	SED2-2.2/35X
3	4	54	7.7	B	SED2-3/35B	SED2-3/35X
4	5	54	10.2	B	SED2-4/35B	SED2-4/35X
5.5	7.5	54	13.2	C	SED2-5.5/35B	SED2-5.5/35X
7.5	10	54	18.4	C	SED2-7.5/35B	SED2-7.5/35X
11	15	54	26	C	SED2-11/35B	SED2-11/35X
15	20	54	32	C	SED2-15/35B	SED2-15/35X
18.5	25	54	38	D	SED2-18.5/35B	SED2-18.5/35X
22	30	54	45	D	SED2-22/35B	SED2-22/35X
30	40	54	62	D	SED2-30/35B	SED2-30/35X
37	50	54	75	E	SED2-37/35B	SED2-37/35X
45	60	54	90	E	SED2-45/35B	SED2-45/35X
55	75	54	110	F	SED2-55/35B	SED2-55/35X
75	100	54	145	F	SED2-75/35B	SED2-75/35X
90	125	54	178	F	SED2-90/35B	SED2-90/35X





	Setpoint adjusters							Indicators
	BSG..	BSG..	BSG..	BSG..	BSG..	BSG..	QAX..	BAU..
Controller	21.1	21.2	21.3	21.4	21.5	61	39.1	200
Synco™	■	■	■	■	■	■		■
DESIGO™ PX							■	
RXA							■	
Features								
Setpoint potentiometer	■	■	■	■	■	■		
Setpoint adjuster					■	■		
Active DC 0...10V						■		
Temperature 0...1000Ω	■							
Temperature Ni-1000		■	■	■	■			
Universal	■					■		■

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Notes

Variable speed drive

SED2..



HVAC variable speed drive for pump and fan applications.

The SED2 range is based on advanced Siemens A&D variable speed technology and has been especially developed for the "HVAC world". The range is suited for modulating control of the speed of pumps and fans driven by standard asynchronous 3-phase current motors.

Data sheet	N5192
Standard	EN 61800-3
Operating temperature	-10...40 °C
Overload capacity	Periodically 110 % for 60 s
Operating voltage	AC 200...240 / 380...480 V
Frequency	50/60 Hz
Input frequency	47...63 Hz
Output frequency	0...150 Hz
PWM frequency	4 kHz...16 kHz (2 kHz steps)
Protection functions	- Ground fault, short circuit - Stalling current and locked rotor
Digital inputs, number	6
Digital inputs	Programmable
Analog inputs, number	2
Analog inputs	Switchable, programmable scaling
Analog input, signal	DC 0...10 V DC 0...20 mA DC 2...10 V DC 4...20 mA LG-Ni1000
Analog outputs, number	2
Analog outputs	Programmable scaling Switchable
Analog output, signal	DC 0...10 V DC 2...10 V DC 0...20 mA DC 4...20 mA
Relay outputs, number	2
Relay outputs	Potential-free switchover contacts Programmable
Relay output, switching voltage	AC 250 V DC 30 V
Relay output, switching current	AC 2 A DC 5 A
Communication	RS485 (RS232 optional with converter); Protocol: P1, N2, USS
Product conformity	CE C-TIC UL, cUL

Variable speed drives
SED2..

Range overview SED2-.., IP20 with integrated class B-Filter; 200V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
0.37	73 x 200 x 193	2	230	IP20	B	BPZ:SED2-0.37/22B	**SED2-0.37/22B**
0.55	73 x 200 x 193	2	230	IP20	B	BPZ:SED2-0.55/22B	**SED2-0.55/22B**
0.75	73 x 200 x 193	2	230	IP20	B	BPZ:SED2-0.75/22B	**SED2-0.75/22B**
1.1	149 x 213 x 223	4.2	230	IP20	B	BPZ:SED2-1.1/22B	**SED2-1.1/22B**
1.5	149 x 213 x 223	4.2	230	IP20	B	BPZ:SED2-1.5/22B	**SED2-1.5/22B**
2.2	149 x 213 x 223	4.2	230	IP20	B	BPZ:SED2-2.2/22B	**SED2-2.2/22B**
3	185 x 261 x 250	6.7	230	IP20	B	BPZ:SED2-3/22B	**SED2-3/22B**
4	185 x 261 x 250	6.7	230	IP20	B	BPZ:SED2-4/22B	**SED2-4/22B**
5.5	185 x 261 x 250	6.7	230	IP20	B	BPZ:SED2-5.5/22B	**SED2-5.5/22B**
7.5	185 x 261 x 250	6.7	230	IP20	B	BPZ:SED2-7.5/22B	**SED2-7.5/22B**
11	275 x 520 x 245	17	230	IP20	B	BPZ:SED2-11/22B	**SED2-11/22B**
15	275 x 520 x 245	17	230	IP20	B	BPZ:SED2-15/22B	**SED2-15/22B**
18.5	275 x 520 x 245	17	230	IP20	B	BPZ:SED2-18.5/22B	**SED2-18.5/22B**
22	275 x 650 x 245	22	230	IP20	B	BPZ:SED2-22/22B	**SED2-22/22B**
30	275 x 650 x 245	22	230	IP20	B	BPZ:SED2-30/22B	**SED2-30/22B**
37	350 x 1150 x 320	75	230	IP20	B	BPZ:SED2-37/22B	**SED2-37/22B**
45	350 x 1150 x 320	75	230	IP20	B	BPZ:SED2-45/22B	**SED2-45/22B**

Range overview SED2-.., IP20 with integrated class B-Filter; 400 V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
0.37	73 x 200 x 193	2	400	IP20	B	BPZ:SED2-0.37/32B	**SED2-0.37/32B**
0.55	73 x 200 x 193	2	400	IP20	B	BPZ:SED2-0.55/32B	**SED2-0.55/32B**
0.75	73 x 200 x 193	2	400	IP20	B	BPZ:SED2-0.75/32B	**SED2-0.75/32B**
1.1	73 x 200 x 193	2	400	IP20	B	BPZ:SED2-1.1/32B	**SED2-1.1/32B**
1.5	73 x 200 x 193	2	400	IP20	B	BPZ:SED2-1.5/32B	**SED2-1.5/32B**
2.2	149 x 213 x 223	4.2	400	IP20	B	BPZ:SED2-2.2/32B	**SED2-2.2/32B**
3	149 x 213 x 223	4.2	400	IP20	B	BPZ:SED2-3/32B	**SED2-3/32B**
4	149 x 213 x 223	4.2	400	IP20	B	BPZ:SED2-4/32B	**SED2-4/32B**
5.5	185 x 261 x 250	6.7	400	IP20	B	BPZ:SED2-5.5/32B	**SED2-5.5/32B**
7.5	185 x 261 x 250	6.7	400	IP20	B	BPZ:SED2-7.5/32B	**SED2-7.5/32B**
11	185 x 261 x 250	6.7	400	IP20	B	BPZ:SED2-11/32B	**SED2-11/32B**
15	185 x 261 x 250	6.7	400	IP20	B	BPZ:SED2-15/32B	**SED2-15/32B**
18.5	275 x 520 x 245	17	400	IP20	B	BPZ:SED2-18.5/32B	**SED2-18.5/32B**
22	275 x 520 x 245	17	400	IP20	B	BPZ:SED2-22/32B	**SED2-22/32B**
30	275 x 520 x 245	17	400	IP20	B	BPZ:SED2-30/32B	**SED2-30/32B**
37	275 x 650 x 245	22	400	IP20	B	BPZ:SED2-37/32B	**SED2-37/32B**
45	275 x 650 x 245	22	400	IP20	B	BPZ:SED2-45/32B	**SED2-45/32B**
55	350 x 1150 x 320	75	400	IP20	B	BPZ:SED2-55/32B	**SED2-55/32B**
75	350 x 1150 x 320	75	400	IP20	B	BPZ:SED2-75/32B	**SED2-75/32B**
90	350 x 1150 x 320	75	400	IP20	B	BPZ:SED2-90/32B	**SED2-90/32B**

Variable speed drives
SED2..

Range overview SED2-.., IP20 without class B-Filter; 200 V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
0.37	73 x 173 x 149	1.3	230	IP20	Unfiltered	BPZ:SED2-0.37/22X	**SED2-0.37/22X**
0.55	73 x 173 x 149	1.3	230	IP20	Unfiltered	BPZ:SED2-0.55/22X	**SED2-0.55/22X**
0.75	73 x 173 x 149	1.3	230	IP20	Unfiltered	BPZ:SED2-0.75/22X	**SED2-0.75/22X**
1.1	149 x 202 x 172	3.4	230	IP20	Unfiltered	BPZ:SED2-1.1/22X	**SED2-1.1/22X**
1.5	149 x 202 x 172	3.4	230	IP20	Unfiltered	BPZ:SED2-1.5/22X	**SED2-1.5/22X**
2.2	149 x 202 x 172	3.4	230	IP20	Unfiltered	BPZ:SED2-2.2/22X	**SED2-2.2/22X**
3	185 x 245 x 195	5.5	230	IP20	Unfiltered	BPZ:SED2-3/22X	**SED2-3/22X**
4	185 x 245 x 195	5.5	230	IP20	Unfiltered	BPZ:SED2-4/22X	**SED2-4/22X**
5.5	185 x 245 x 195	5.5	230	IP20	Unfiltered	BPZ:SED2-5.5/22X	**SED2-5.5/22X**
7.5	185 x 245 x 195	5.5	230	IP20	Unfiltered	BPZ:SED2-7.5/22X	**SED2-7.5/22X**
11	275 x 520 x 245	16	230	IP20	Unfiltered	BPZ:SED2-11/22X	**SED2-11/22X**
15	275 x 520 x 245	16	230	IP20	Unfiltered	BPZ:SED2-15/22X	**SED2-15/22X**
18.5	275 x 520 x 245	16	230	IP20	Unfiltered	BPZ:SED2-18.5/22X	**SED2-18.5/22X**
22	275 x 650 x 245	20	230	IP20	Unfiltered	BPZ:SED2-22/22X	**SED2-22/22X**
30	275 x 650 x 245	20	230	IP20	Unfiltered	BPZ:SED2-30/22X	**SED2-30/22X**
37	350 x 850 x 320	56	230	IP20	Unfiltered	BPZ:SED2-37/22X	**SED2-37/22X**
45	350 x 850 x 320	56	230	IP20	Unfiltered	BPZ:SED2-45/22X	**SED2-45/22X**

Range overview SED2-.., IP20 without class B-Filter; 400 V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
0.37	73 x 173 x 149	1.3	400	IP20	Unfiltered	BPZ:SED2-0.37/32X	**SED2-0.37/32X**
0.55	73 x 173 x 149	1.3	400	IP20	Unfiltered	BPZ:SED2-0.55/32X	**SED2-0.55/32X**
0.75	73 x 173 x 149	1.3	400	IP20	Unfiltered	BPZ:SED2-0.75/32X	**SED2-0.75/32X**
1.1	73 x 173 x 149	1.3	400	IP20	Unfiltered	BPZ:SED2-1.1/32X	**SED2-1.1/32X**
1.5	73 x 173 x 149	1.3	400	IP20	Unfiltered	BPZ:SED2-1.5/32X	**SED2-1.5/32X**
2.2	149 x 202 x 172	3.4	400	IP20	Unfiltered	BPZ:SED2-2.2/32X	**SED2-2.2/32X**
3	149 x 202 x 172	3.4	400	IP20	Unfiltered	BPZ:SED2-3/32X	**SED2-3/32X**
4	149 x 202 x 172	3.4	400	IP20	Unfiltered	BPZ:SED2-4/32X	**SED2-4/32X**
5.5	185 x 245 x 195	5.5	400	IP20	Unfiltered	BPZ:SED2-5.5/32X	**SED2-5.5/32X**
7.5	185 x 245 x 195	5.5	400	IP20	Unfiltered	BPZ:SED2-7.5/32X	**SED2-7.5/32X**
11	185 x 245 x 195	5.5	400	IP20	Unfiltered	BPZ:SED2-11/32X	**SED2-11/32X**
15	185 x 245 x 195	5.5	400	IP20	Unfiltered	BPZ:SED2-15/32X	**SED2-15/32X**
18.5	275 x 520 x 245	16	400	IP20	Unfiltered	BPZ:SED2-18.5/32X	**SED2-18.5/32X**
22	275 x 520 x 245	16	400	IP20	Unfiltered	BPZ:SED2-22/32X	**SED2-22/32X**
30	275 x 520 x 245	16	400	IP20	Unfiltered	BPZ:SED2-30/32X	**SED2-30/32X**
37	275 x 650 x 245	20	400	IP20	Unfiltered	BPZ:SED2-37/32X	**SED2-37/32X**
45	275 x 650 x 245	20	400	IP20	Unfiltered	BPZ:SED2-45/32X	**SED2-45/32X**
55	350 x 850 x 320	56	400	IP20	Unfiltered	BPZ:SED2-55/32X	**SED2-55/32X**
75	350 x 850 x 320	56	400	IP20	Unfiltered	BPZ:SED2-75/32X	**SED2-75/32X**
90	350 x 850 x 320	56	400	IP20	Unfiltered	BPZ:SED2-90/32X	**SED2-90/32X**

Variable speed drives
SED2..

Range overview SED2-.., IP54 with integrated class B-Filter; 400 V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
1.1	270 x 385 x 268	11.5	400	IP54	B	BPZ:SED2-1.1/35B	**SED2-1.1/35B**
1.5	270 x 385 x 268	11.5	400	IP54	B	BPZ:SED2-1.5/35B	**SED2-1.5/35B**
2.2	270 x 385 x 268	11.5	400	IP54	B	BPZ:SED2-2.2/35B	**SED2-2.2/35B**
3	270 x 385 x 268	11.5	400	IP54	B	BPZ:SED2-3/35B	**SED2-3/35B**
4	270 x 385 x 268	11.5	400	IP54	B	BPZ:SED2-4/35B	**SED2-4/35B**
5.5	350 x 606 x 284	21	400	IP54	B	BPZ:SED2-5.5/35B	**SED2-5.5/35B**
7.5	350 x 606 x 284	21	400	IP54	B	BPZ:SED2-7.5/35B	**SED2-7.5/35B**
11	350 x 606 x 284	21	400	IP54	B	BPZ:SED2-11/35B	**SED2-11/35B**
15	350 x 606 x 284	21	400	IP54	B	BPZ:SED2-15/35B	**SED2-15/35B**
18.5	360 x 685 x 353	35	400	IP54	B	BPZ:SED2-18.5/35B	**SED2-18.5/35B**
22	360 x 685 x 353	35	400	IP54	B	BPZ:SED2-22/35B	**SED2-22/35B**
30	360 x 685 x 353	35	400	IP54	B	BPZ:SED2-30/35B	**SED2-30/35B**
37	360 x 885 x 453	48	400	IP54	B	BPZ:SED2-37/35B	**SED2-37/35B**
45	360 x 885 x 453	48	400	IP54	B	BPZ:SED2-45/35B	**SED2-45/35B**
55	450 x 1150 x 473	99	400	IP54	B	BPZ:SED2-55/35B	**SED2-55/35B**
75	450 x 1150 x 473	99	400	IP54	B	BPZ:SED2-75/35B	**SED2-75/35B**
90	450 x 1150 x 473	99	400	IP54	B	BPZ:SED2-90/35B	**SED2-90/35B**

Range overview SED2-.., IP54 without class B-Filter; 400 V

Power output [kW]	Dimensions (W x H x D) [mm]	Weight [kg]	Operating voltage [V]	Degree of protection	Filter type	Stock No.	Product No.
1.1	270 x 385 x 268	10.3	400	IP54	Unfiltered	BPZ:SED2-1.1/35X	**SED2-1.1/35X**
1.5	270 x 385 x 268	10.3	400	IP54	Unfiltered	BPZ:SED2-1.5/35X	**SED2-1.5/35X**
2.2	270 x 385 x 268	10.3	400	IP54	Unfiltered	BPZ:SED2-2.2/35X	**SED2-2.2/35X**
3	270 x 385 x 268	10.3	400	IP54	Unfiltered	BPZ:SED2-3/35X	**SED2-3/35X**
4	270 x 385 x 268	10.3	400	IP54	Unfiltered	BPZ:SED2-4/35X	**SED2-4/35X**
5.5	350 x 606 x 284	19.2	400	IP54	Unfiltered	BPZ:SED2-5.5/35X	**SED2-5.5/35X**
7.5	350 x 606 x 284	19.2	400	IP54	Unfiltered	BPZ:SED2-7.5/35X	**SED2-7.5/35X**
11	350 x 606 x 284	19.2	400	IP54	Unfiltered	BPZ:SED2-11/35X	**SED2-11/35X**
15	350 x 606 x 284	19.2	400	IP54	Unfiltered	BPZ:SED2-15/35X	**SED2-15/35X**
18.5	360 x 685 x 353	35	400	IP54	Unfiltered	BPZ:SED2-18.5/35X	**SED2-18.5/35X**
22	360 x 685 x 353	35	400	IP54	Unfiltered	BPZ:SED2-22/35X	**SED2-22/35X**
30	360 x 685 x 353	35	400	IP54	Unfiltered	BPZ:SED2-30/35X	**SED2-30/35X**
37	360 x 885 x 453	48	400	IP54	Unfiltered	BPZ:SED2-37/35X	**SED2-37/35X**
45	360 x 885 x 453	48	400	IP54	Unfiltered	BPZ:SED2-45/35X	**SED2-45/35X**
55	450 x 1150 x 473	81	400	IP54	Unfiltered	BPZ:SED2-55/35X	**SED2-55/35X**
75	450 x 1150 x 473	81	400	IP54	Unfiltered	BPZ:SED2-75/35X	**SED2-75/35X**
90	450 x 1150 x 473	81	400	IP54	Unfiltered	BPZ:SED2-90/35X	**SED2-90/35X**

Variable speed drives
Accessories for SED2..

Accessories

Product Title	Data sheet	Stock No.	Product No.
Advanced operator panel (AOP)		BPZ:SED2-AOP1	**SED2-AOP1**
Gland plate for frame size A, IP20		BPZ:SED2-GL-A	**SED2-GL-A**
Gland plate for frame size B, IP20		BPZ:SED2-GL-B	**SED2-GL-B**
Gland plate for frame size C, IP20		BPZ:SED2-GL-C	**SED2-GL-C**
Door mounting kit for SED2 operator panel (BOP/AOP) to control one VSD		BPZ:SED2-DOOR-KIT1	**SED2-DOOR-KIT1**
Door mounting kit for advanced operator panel (AOP) to control several VSDs		BPZ:SED2-DOOR-KIT2	**SED2-DOOR-KIT2**
PC-SED2 connection set		BPZ:SED2-PC-KIT	**SED2-PC-KIT**
SED2 LON module	N5193	BPZ:SED2-LONI/F	**SED2-LONI/F**
TX OPEN RS232/485 module for integrating third-party systems and devices to DESIGO	N8185	S55661-J100	**TXI1.OPEN**
Termination network		BPZ:SED2-RS485-NT	**SED2-RS485-NT**

Current valve

SEA45.1

For modulating output control of electric air heater batteries or triac control with zero-point switching. Galvanic separation. Control panel mounting, DIN rail mounting.



Data sheet	N4937
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	0.5 VA
Positioning signal	AC 24 V (pulse / pause)
Triac outputs	Potential-free
Triac output, switching voltage	AC 42...660 V
Triac output, switching current	Max. 25 A
Triac output, switching output	0.04...10 kW
Degree of protection	IP20
Dimensions (W x H x D)	45 x 103 x 103 mm

	Stock No.	Product No.
	BPZ:SEA45.1	**SEA45.1**

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Interfaces
Signal converter: UA9 / UKU / SEM.. / SEZ..

UA9

Signal converter DC 0...10 V to DC 0...20 V phase control



For phase-cut signals, max. 40 W.

Data sheet	N5133
Operating voltage	AC 24 V
Analog output, signal	DC 0...20 V
Analog output, output	Max. 40 W
Analog input, signal	DC 0...10 V DC 0...20 V
Dimensions (W x H x D)	54 x 123 x 52 mm

Stock No.	Product No.
BPZ:UA9	**UA9**

UKU

Universal signal converter



Operating voltage, input and output signals are galvanically separated.

Data sheet	N5141
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	6 VA
Analog output, signal	DC 0...10 V DC 0...20 mA DC 4...20 mA
Analog input, signal	DC 0...10 V DC 0...20 mA DC 0...20 V Phs
Dimensions (W x H x D)	108 x 118 x 52 mm

Stock No.	Product No.
BPZ:UKU	**UKU**

SEM61.4

Signal converter DC 0...10 V or DC 0 / 10 V in AC 0 / 24 V



For converting a DC 0...10 V or DC 0 / 10 V input signal to a pulse-width modulated output signal AC 24 V for the control of maximum 20 current valves

Data sheet	N5102
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	1 VA
Analog input, signal	DC 0...10 V
Digital input, contact query	DC 0/10 V
Triac output, switching voltage	AC 24 V
Dimensions (W x H x D)	36 × 90 × 60 mm

Stock No.	Product No.
BPZ:SEM61.4	**SEM61.4**

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Signal converter 3-position / modulating — SEZ81.9

Required for the conversion of a 3-point signal to a continuous DC 0...20 VPh or DC 0...10 V positioning signal.



Data sheet	N5152
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	45 VA
Analog output, signal	DC 0...10 V DC 0...20 V Phs
Analog input, signal	3-position AC 24 V
Dimensions (W x H x D)	108 x 118 x 52 mm

	Stock No.	Product No.
	BPZ:SEZ81.9	**SEZ81.9**

Signal converter DC 0...20 V Phs to DC 0...10 V — SEZ91.6

For the conversion of DC 0...20 VPh signals to DC 0...10 V signals



Data sheet	N5143
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	0.5 VA
Analog output, signal	DC 0...10 V
Analog input, signal	DC 0...20 V Phs
Dimensions (W x H x D)	57 x 22 x 18 mm

Note: Use type SEZ91.PU-K4 for signals from RDE2, RDN2, PU-K4!

	Stock No.	Product No.
	BPZ:SEZ91.6	**SEZ91.6**

Power amplifier for thermal actuators AC 24 V, PWM — UA1T

The UA1T power amplifier is used to allow the connection of additional valve actuators to controllers with an AC 24 V output signal.



Data sheet	N3591
Operating voltage	AC 24 V
Dimensions (W x H x D)	55 x 18 x 22 mm

	Stock No.	Product No.
	BPZ:UA1T	**UA1T**

Interfaces
Signal converter: UA9 / UKU / SEM.. / SEZ..

SEZ220

Signal converter with preprogrammed applications



- Maximum and minimum selection
- Calculation of average
- Calculation of enthalpy, enthalpy differential, absolute humidity, dewpoint
- Flexible adaptation, limitation, inversion and conversion of input signal
- Tested preselected applications
- Flexible configuration

Data sheet	N5146
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	5 VA
Universal inputs, number	5
Universal input, signal	0...1000 Ohm DC 0...10 V LG-Ni1000 Pt1000 T1 (PTC)
Analog outputs, number	2
Analog output, signal	DC 0...10 V
Analog output, current	Max. 1 mA
Dimensions (W x H x D)	123 x 90 x 86 mm

Stock No.	Product No.
BPZ:SEZ220	**SEZ220**

16

Passive setpoint adjusters, for flush panel mounting — BSG21..



Setpoint adjuster for flush panel mounting 48 x 48 mm, with 2 adjustable stops for setpoint limitation. With transparent plastic cover and scales according to the temperature ranges.

Data sheet	N1991
Degree of protection	IP42
Dimensions (W x H x D)	48 × 48 × 46 mm

Range overview BSG21..

Temperature range	Analog output, signal	Data sheet	Stock No.	Product No.
**Various	0...1000	N1991	BPZ:BSG21.1	**BSG21.1**
0...50 °C	LG-Ni1000	N1991	BPZ:BSG21.2	**BSG21.2**
10...30 °C	LG-Ni1000	N1991	BPZ:BSG21.3	**BSG21.3**
30...110 °C	LG-Ni1000	N1991	BPZ:BSG21.4	**BSG21.4**
-20...20 °C 20...60 °C -3...3 K	LG-Ni1000	N1991	BPZ:BSG21.5	**BSG21.5**

For BSG21.1: Scale 0...50 °C included as standard. Additional scales are available as BSG-Z accessories

Active setpoint adjuster 0...100 %, for flush panel mounting — BSG61



Setpoint adjuster for flush panel mounting 48 x 48 mm, with 2 adjustable stops, for setting or limiting a setpoint or positioning signal. With transparent front cover and exchangeable scales, depending on requirements. Supplied with 0...100 % scale (other scales availables as accessories under BSG-Z).

Data sheet	N1992
Operating voltage	DC 15...24 V
Power consumption	0.3 W
Analog output, signal	DC 0...10 V
Connection cable	Max. 2.5 mm^2 4-wire
Degree of protection	IP42
Dimensions (W x H x D)	48 × 48 × 46 mm

Stock No.	Product No.
BPZ:BSG61	**BSG61**

Accessories for setpoint adjusters BSG21.1 and BSG61

Product Title	Data sheet	Stock No.	Product No.
Complete range of scales for BSG..	N1991	BPZ:BSG-Z	**BSG-Z**

Display
Digital display BAU..

BAU200



Universal digital indicator

Universal single point digital indicator
- Suitable for front-mounting in control panel
- With LED display
- Input signal (type of signal and measuring range) can be set with buttons
- For all Siemens Building Technologies sensors (LG-Ni 1000, T1, PT100, PT 1000, 0 ... 10 V)

Data sheet	N5312
Operating voltage	AC 24 V
Frequency	50/60 Hz
Power consumption	<8 VA
Analog output, signal	DC 0...10 V
Analog input, signal	DC 0...10 V LG-Ni1000 Pt100 Pt1000 T1 (PTC)
Degree of protection	IP50
Dimensions (W x H x D)	96 x 48 x 83 mm

Stock No.	Product No.
BPZ:BAU200	**BAU200**

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Digital time switch, 1-channel, with 7-day program — SEH62.1

Programmable as 24-hour or 7-day time switch. Wall or DIN rail mounting.



Data sheet	N5243
Operating voltage	AC 230 V
Frequency	50/60 Hz
Power consumption	3 VA
Buffer time	72 h
Display	LCD
Degree of protection	IP20
Dimensions (W x H x D)	79 × 106 × 56 mm
Digital input, contact query	8 mA DC 24 V
Digital input, application	Countdown timer

Stock No.	Product No.
BPZ:SEH62.1	**SEH62.1**

Transformers
with / without housing SEM..

SEM62..



Transformers

Transformer with housing, providing a reduction in voltage from AC 230 V to AC 24 V (output power 30 VA)

- Self-resetting fuse integrated on the primary side
- Secondary On/Off switch and replaceable fuse (SEM62.2 only)
- Plug-in screw terminals
- Two secondary output plug-in terminals

Data sheet	N5536
Frequency	50/60 Hz
Primary voltage	AC 230 V
Secondary voltage	AC 24 V
Power output	30 VA
Degree of protection	IP20
Dimensions (W x H x D)	114 × 106 × 57 mm
Mounting	On DIN rail With screws

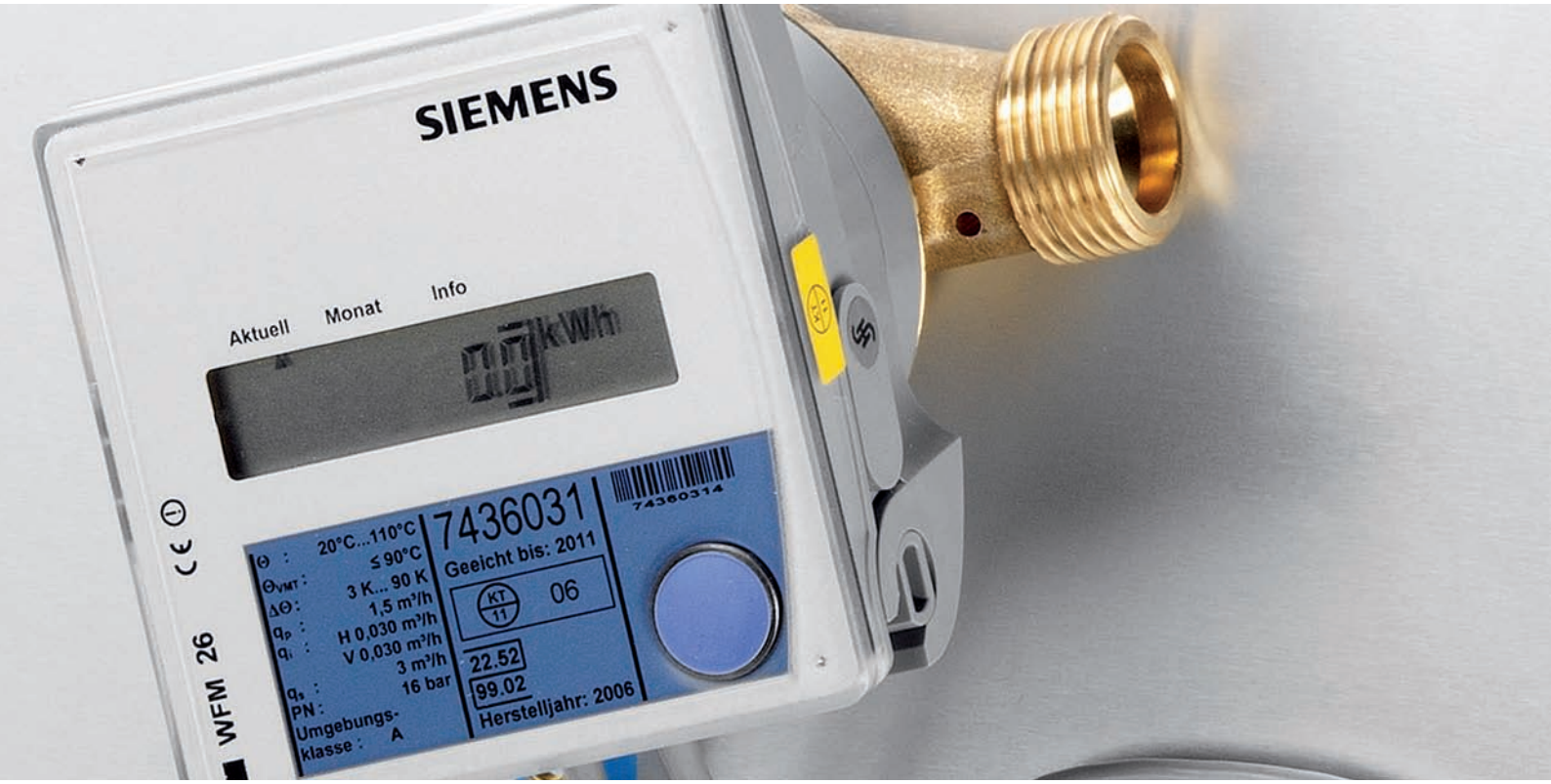
Range overview SEM62..

Product Title	Stock No.	Product No.
Standard version	BPZ:SEM62.1	**SEM62.1**
Standard version incl. switch and exchangeable fuse on the secondary side	BPZ:SEM62.2	**SEM62.2**

Accessories for SEM62..

Product Title	Data sheet	Stock No.	Product No.
Protective big enclosure for wall mounting		BPZ:ARG62.22	**ARG62.22**

Heat metering and heat cost allocation



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Overview and selection tools

Overview

Heat cost allocators		Single sensor	Double sensor	Compact device	Remote sensor device
	WHE3.	■		■	
	WHE3..FR				■
	WHE3.Z		■	■	
	WHE3.Z.FR		■		■
	WHE46*	■		■	
	WHE467.FR	■			■
	WHE46*Z		■	■	
	WHE467Z.FR		■		■
	WHE465	■		■	
	WHE465Z		■	■	
	WHE466.FR	■			■
	WHE466Z.FR		■		■

	Mechanical	Electronic	Radio,walk-by (by extra odule)	M-Bus	IrDA	Reed contact	Reed contact-NAMUR	Single-jet	Measuring cell	Cold	Hot
	WFK30..	■		■					■		■	
	WFW30..	■		■					■			■
	WFK23..	■						■	■		■	
	WFW23	■						■	■			■
	WFK24..	■					■		■		■	
	WFW24..	■					■		■			■
	WFK13..	■						■	■		■	
	WFW13..	■						■	■			■
	WFK14..	■					■		■		■	
	WFW14..	■					■		■			■
	WMK10..	■		■						■	■	
	WMU12..	■						■		■	■	
	WMU17..	■					■			■	■	
	WMW10..	■		■						■		■
	WMU22..	■						■		■		■
	WMU27..	■					■			■		■

	Mechanical	Electronic	Radio	M-Bus	IrDA	Reed contact	Reed contact-NAMUR	Single-jet	Measuring cell	Cold	Hot
	WFC21..	■		■				■		■	
	WFH21..	■		■				■			■
	WFC26..	■	■					■		■	
	WFH26..	■	■					■			■
	WMC21..	■		■					■	■	
	WMH21..	■		■					■		■
	WMC26..	■	■						■	■	
	WMH26..	■	■						■		■
	WFC36..	■	■		■			■		■	
	WFH36..	■	■					■			■
	WMC36..	■	■						■	■	
	WMH36..	■	■						■		■
	WFC37..	■			■			■		■	
	WFH37..	■			■			■			■
	WMC37..	■			■				■	■	
	WMH37..	■			■				■		■

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	Mounting position return	Mounting position inlet	Mounting length 80mm	Mounting length 110mm	Mounting length 130mm	Measuring cell
 WFQ407..	■		■			
WFM407..	■			■	■	
WFO407..		■	■			
WFP407..		■		■		
WMM407..	■					■
WMP407..		■				■

	Radio	M-Bus	Impuls	Mounting length 80mm	Mounting length 110mm	Mounting length 130mm	Measuring cell	Cold meter
 WFM21.. (Type A)		■			■	■		
WFN21.. (Type A)		■			■	■		■
WFQ21.. (Type A)		■		■				
WFR21.. (Type A)		■		■				■
 WMM31.. (Type B)		■					■	
WMN31.. (Type B)		■					■	■
 WFM24.. (Type A)			■		■	■		
WFN24.. (Type A)			■		■	■		■
WFQ24.. (Type A)			■	■				
WFR24.. (Type A)			■	■				■
 WMM34.. (Type B)			■				■	
WMN34.. (Type B)			■				■	■
 WFM26.. (Type A)	■				■	■		
WFN26.. (Type A)	■				■	■		■
WFQ26.. (Type A)	■			■				
WFR26.. (Type A)	■			■				■
 WMM36.. (Type B)	■						■	
WMN36.. (Type B)	■						■	■

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Overview and selection tools

Overview



Nominal flow rate	Mounting length	I/O		Max. flow	Nominal pressure	Weight	Heat-	Refrigeration-	Heat and refrigeration-
m^3/h	mm	Threaded	Flange	m^3/h		kg	Type	Type	Type
0.6	110	G 3/4		1.2	PN16	1	UH50-A05.....	UH50-G05.....	UH50-C05.....
0.6	110	G 3/4		1.2	PN25	1	UH50-A06.....	UH50-G06.....	UH50-C06.....
0.6	110	G 3/4		1.2	PN16	1	UH50-A07.....	UH50-G07.....	UH50-C07.....
0.6	190		DN20	1.2	PN25	3	UH50-A08.....	UH50-G08.....	UH50-C08.....
0.6	190	G1		1.2	PN25	1.5	UH50-A09.....	UH50-G09.....	UH50-C09.....
0.6	190	G1		1.2	PN16	1.5	UH50-A21.....	UH50-G21.....	UH50-C21.....
1.5	110	G 3/4		3	PN25	1	UH50-A22.....	UH50-G22.....	UH50-C22.....
1.5	110	G 3/4		3	PN16	1	UH50-A23.....	UH50-G23.....	UH50-C23.....
1.5	190		DN20	3	PN25	3	UH50-A24.....	UH50-G24.....	UH50-C24.....
1.5	190	G1		3	PN25	1.5	UH50-A25.....	UH50-G25.....	UH50-C25.....
2.5	130	G1		3	PN16	1.5	UH50-A36.....	UH50-G36.....	UH50-C36.....
2.5	130	G1		5	PN25	1.5	UH50-A37.....	UH50-G37.....	UH50-C37.....
2.5	190	G1		5	PN16	1.5	UH50-A38.....	UH50-G38.....	UH50-C38.....
2.5	190		DN20	5	PN25	3	UH50-A39.....	UH50-G39.....	UH50-C39.....
2.5	190	G1		5	PN25	1.5	UH50-A40.....	UH50-G40.....	UH50-C40.....
3.5	260		DN25	7	PN16	5	UH50-A45.....	UH50-G45.....	UH50-C45.....
3.5	260		DN25	7	PN25	5	UH50-A46.....	UH50-G46.....	UH50-C46.....
3.5	260	G1 1/4		7	PN25	3	UH50-A47.....	UH50-G47.....	UH50-C47.....
6	260	G1 1/4		12	PN16	3	UH50-A50.....	UH50-G50.....	UH50-C50.....
6	260		DN25	12	PN25	5	UH50-A52.....	UH50-G52.....	UH50-C52.....
10	300	G 2		20	PN16	4	UH50-A60.....	UH50-G60.....	UH50-C60.....
10	300		DN40	20	PN25	7	UH50-A61.....	UH50-G61.....	UH50-C61.....
15	270		DN50	30	PN25	8	UH50-A65.....	UH50-G65.....	UH50-C65.....
25	300		DN65	50	PN25	11	UH50-A70.....	UH50-G70.....	UH50-C70.....
40	300		DN80	80	PN25	13	UH50-A74.....	UH50-G74.....	UH50-C74.....
60	360		DN100	120	PN16	22	UH50-A82.....	UH50-G82.....	UH50-C82.....
60	360		DN100	120	PN25	22	UH50-A83.....	UH50-G83.....	UH50-C83.....

Siemeca™ electronic heat cost allocator

WHE3..



Unit for heat cost allocation through acquisition of the amount of heat emitted by the radiators.
Storage of cumulated consumption value on a selectable set day.
Suitable for bolt spacing 25 mm, 32 mm, 40 mm, 50 mm or 57 mm (others on request).

Suitable for:
- Sectional radiators
- Tube radiators
- Panel radiators
- Tube register radiators

The display shows:
- Actual value (3 s)
- Segment test (0.5 s)
- Set day / set month (1 s)
- Heat consumption in the previous year (3 s)
- Verification code (3 s)
- Indication of errors

Data sheet	N5356
Operating voltage	DC 3 V
Battery life	10 years
Use / operating conditions	1F, min. 55...105 °C 2Fb, min. 48...105 °C 2Fu, min. 35...105 °C

Range overview WHE30 single-sensor measuring principle

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ electronic heat cost allocator Single-sensor measuring principle Device is supplied complete with prefitted seal and heat conductor.	N5356	BPZ:WHE30	**WHE30**
Siemeca™ electronic heat cost allocator Single-sensor measuring principle Device is supplied complete with prefitted seal and bracket for wall mounting.	N5356	BPZ:WHE30.FR	**WHE30.FR**
Siemeca™ electronic heat cost allocator Single-sensor measuring principle Device is supplied complete with prefitted seal, without heat conductor.	N5356	BPZ:WHE30.A	**WHE30.A**

Siemeca™ Electronic heat cost allocators
Electronic heat cost allocators WHE30..

Range overview WHE30 double-sensor measuring principle

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ electronic heat cost allocator Double-sensor measuring principle Device is supplied complete with prefitted seal and heat conductor.	N5356	BPZ:WHE30Z	**WHE30Z**
Siemeca™ electronic heat cost allocator Double-sensor measuring principle Device is supplied complete with prefitted seal and bracket for wall mounting.	N5356	BPZ:WHE30Z.FR	**WHE30Z.FR**
Siemeca™ electronic heat cost allocator Double-sensor measuring principle Device is supplied complete with prefitted seal, without heat conductor.	N5356	BPZ:WHE30Z.A	**WHE30Z.A**

Siemeca™ electronic heat cost allocator with IrDA interface WHE37..



Unit for heat cost allocation through acquisition of the amount of heat emitted by radiators. Storage of cumulated consumption value on a selectable set day. Suitable for bolt spacing 25 mm, 32 mm, 40 mm, 50 mm and 57 mm (other spacings on request). Semi-automatic readout via IrDA interface and hand-held terminal.
Suitable for:
- Sectional radiators
- Tube radiators
- Panel radiators
- Tube register radiators

The display shows:
- Current value (3 s)
- Segment test (0.5 s)
- Set day / set month (1 s)
- Heat consumption of previous year (3 s)- Verification code (3 s)
- Indication of errors

Data sheet N5358

Range overview WHE37 single sensor with IrDA interface

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ electronic heat cost allocator Measuring principle: Single sensor With IrDA interface Device is supplied complete with prefitted seal and heat conductor.	N5358	BPZ:WHE37	**WHE37**
Siemeca™ electronic heat cost allocator Measuring principle: Single sensor Remote sensor device with IrDA interface Device is supplied complete with prefitted seal and bracket for wall mounting.	N5358	BPZ:WHE37.FR	**WHE37.FR**

Range overview WHE37 double sensor with IrDA interface

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ electronic heat cost allocator Measuring principle: Double sensor With IrDA interface Device is supplied complete with prefitted seal and heat conductor.	N5358	BPZ:WHE37Z	**WHE37Z**
Siemeca™ electronic heat cost allocator Measuring principle: Double sensor Remote sensor device with IrDA interface Device is supplied complete with prefitted seal and bracket for wall mounting.	N5358	BPZ:WHE37Z.FR	**WHE37Z.FR**

Siemeca™ Electronic heat cost allocators
Electronic heat cost allocators WHE46..

WHE46..



Siemeca™ AMR electronic heat cost allocator

The Siemeca™ heat cost allocators of the WHE46... family are used with the Siemeca™ AMR remote readout system. They acquire accurately the amount of heat emitted by radiators and transmit wirelessly day by day the measured values and the consumption on the set day to the associated data collectors. The WHE46... heat cost allocators are available with the single- or double-sensor measuring principle as compact or remote sensor versions. For setting the parameters in the field, the devices can be delivered with an optical interface (like WHE467...). For use with the standard scale, that is, with no parameter setting facility, types WHE460... are available. The tenant can see his individual consumption on an easy-to-read 5-digit display. The total heat consumption of the previous year is stored. The built-in battery powers the device for 10 years.

Function:
- Determination of the amount of heat emitted
- Cumulation of heat consumption since the last set day
- Wireless communication at 868 MHz

Suitable for:
- Sectional radiators
- Tube radiators
- Panel radiators with horizontal or vertical water channels
- Tube register radiators
- Convectors

The display changes cyclically and shows:
- Cumulated heat consumption since the last set day
- Segment test
- Set day / set month
- Consumption value on the set day

Note: All types of WHE46... are supplied without heat conductor. The heat conductor must be ordered as a separate item. The remote sensor devices are supplied only with IrDA interface complete with all accessories for wall mounting.

Data sheet N2877

Range overview WHE46.. single sensor

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ electronic heat cost allocator Measuring principle: Single sensor Compact device Remote wireless readout at 868 MHz, without optoelectronic interface.	N2877	BPZ:WHE460	**WHE460**
Siemeca™ AMR electronic heat cost allocator Measuring principle: Single sensor Compact device Remote wireless readout at 868 MHz, with optoelectronic interface.	N2877	BPZ:WHE467	**WHE467**
Siemeca™ AMR electronic heat cost allocator Measuring principle: Single sensor Remote sensor device Remote wireless readout at 868 MHz, with optoelectronic interface.	N2877	BPZ:WHE467.FR	**WHE467.FR**

Range overview WHE46.. double sensor

Product Title	Data sheet	Stock No.	Product No.
Siemeca™ AMR electronic heat cost allocator Measuring principle: Double sensor Compact device Remote wireless readout at 868 MHz, without optoelectronic interface.	N2877	BPZ:WHE460Z	**WHE460Z**
Siemeca™ AMR electronic heat cost allocator Measuring principle: Double sensor Compact device Remote wireless readout at 868 MHz, with optoelectronic interface.	N2877	BPZ:WHE467Z	**WHE467Z**
Siemeca™ AMR electronic heat cost allocator Measuring principle: Double sensor Remote sensor device Remote wireless readout at 868 MHz, with optoelectronic interface.	N2877	BPZ:WHE467Z.FR	**WHE467Z.FR**

Electronic heat cost allocator walk-by

WHE465..



The hallmark of walk-by heat cost allocators is their ability to communicate coupled with simple handling.
The compact devices are offered as one-sensor and two-sensor devices, enabling them to be used on practically all radiators. Extensive mounting accessories are also available. Heat cost allocators can be operated both at a uniform power level (uniform scale) and with programming for specific radiators (product scale). The WHE465 models operate together with programming adapter WHZ4.P0. In addition, Siemens devices are equipped with powerful lithium batteries that make reliable measurements possible over a period of 10 years.

Function:
- Determination of the amount of heat emitted
- Cumulation of heat consumption since the last set day
- Wireless communication at 868 MHz
- Readout by radio and transmission of the consumption values to a readout unit of the walk-by system
- Parameterization options
- Parameterization for use in AMR system (not reversible)

Suitable for:
- Sectional radiators
- Tube radiators
- Panel radiators with horizontal or vertical water channels
- Tube register radiators
- Convectors

The display changes cyclically and shows:
- Current consumption
- Segment test
- Due date / Date at the last month end
- Consumption value of due date / Consumption value at the last month end
- KQ-value (visible when the WHE46x was equipped with product scale)
- KC-value (visible when the WHE46x was equipped with product scale)
- Date of target due day (visible when the date of the target due day differs from the date of the due day)

Note: All types of WHE465.. are supplied without heat conductor. The heat conductor must be ordered as a separate item.

Data sheet N2884

Siemeca™ Electronic heat cost allocators
Electronic heat cost allocators WHE46..

Range overview WHE465.. single sensor

Product Title	Data sheet	Stock No.	Product No.
Electronic heat cost allocator walk-by radio, single sensor, compact device	N2884	JXF:WHE465	**WHE465**

Range overview WHE465.. double sensor

Product Title	Data sheet	Stock No.	Product No.
Electronic heat cost allocator walk-by radio, two sensors , compact device	N2884	JXF:WHE465Z	**WHE465Z**

WHE466..



Electronic heat cost allocator walk-by with IrDA-interface

The hallmark of walk-by heat cost allocators is their ability to communicate coupled with simple handling.
The remote sensor devices are offered as one-sensor and two-sensor devices, enabling them to be used on practically all radiators. Extensive mounting accessories are also available. Heat cost allocators can be operated both at a uniform power level (uniform scale) and with programming for specific radiators (product scale). The devices can be programmed via IrDA interface. In addition, Siemens devices are equipped with powerful lithium batteries that make reliable measurements possible over a period of 10 years.

Function:
- Determination of the amount of heat emitted
- Cumulation of heat consumption since the last set day
- Wireless communication at 868 MHz
- Readout by radio and transmission of the consumption values to a readout unit of the walk-by system
- Parameterization options
- Parameterization for use in AMR system (not reversible)

Suitable for:
- Sectional radiators
- Tube radiators
- Panel radiators with horizontal or vertical water channels
- Tube register radiators
- Convectors

The display changes cyclically and shows:
- Current consumption
- Segment test
- Due date / Date at the last month end
- Consumption value of due date / Consumption value at the last month end
- KQ-value (visible when the WHE46x was equipped with product scale)
- KC-value (visible when the WHE46x was equipped with product scale)
- Date of target due day (visible when the date of the target due day differs from the date of the due day)

Note: All types of WHE466.. devices are supplied only with IrDA interface complete with all accessories for wall mounting.

Data sheet N2884

Range overview WHE466.. single sensor

Product Title	Data sheet	Stock No.	Product No.
Electronic heat cost allocator walk-by radio, single sensor, remote sensor device, with IrDA-interface	N2884	JXF:WHE466.FR	**WHE466.FR**

Range overview WHE466.. double sensor

Product Title	Data sheet	Stock No.	Product No.
Electronic heat cost allocator walk-by radio, two sensors, remote sensor device, with IrDA-interface	N2884	JXF:WHE466Z.FR	**WHE466Z.FR**

Siemeca™ Electronic heat cost allocators
Accessories and mounting material for WHE..

Covering plates and seals

Product Title	Packaging unit	Stock No.	Product No.
Seal for WHE2..	Packaging quantity: 100 pcs	BPZ:U12102-2003	**U12102-2003**
Seal for WHE3../WHE4..	Packaging quantity: 100 pcs	BPZ:U12130-2004	**U12130-2004**
Covering plate (large) for WHE30	Packaging quantity: 50 pcs	BPZ:WHZ3.B1	**WHZ3.B1**

Tools for heat cost allocators

Product Title	Stock No.	Product No.
Mounting tool	BPZ:WHZ2.ML	**WHZ2.ML**

Function: For straightforward determination of the mounting location.
Packaging unit: 1 pce

Installation accessories for steel panel radiators

Parts	Alternatives	Packaging unit	Stock No.	Product No.
Welding bolt	M3 x 15 mm	500 pcs	BPZ:F12102-2041	**F12102-2041**
Shank nut (hexagon nut)	M3 x 3 mm	100 pcs	BPZ:FZ253-210	**FZ253-210**
Shank nut (hexagon nut)	M3 x 6 mm	1000 pcs	BPZ:FZ253-200	**FZ253-200**
Shank nut (hexagon nut)	M3 x 9.5 mm	100 pcs	BPZ:FZ253-220	**FZ253-220**
Sloted round nut	M 3	500 pcs	BPZ:F12102-2019	**F12102-2019**
Corrugated head nut	M3	1000 pcs	BPZ:FZ253-230	**FZ253-230**
Heat conductor	Heat conductor 4-2	50 pcs	JXF:F12130-2001/4-2	**F12130-2001/4-2**

Installation accessories for ribbed radiators

Parts	Alternatives [mm]	Packaging unit	Stock No.	Product No.
Phillips screw	M4 x 35 mm	1000 pcs	BPZ:F12105-2084	**F12105-2084**
Hexagon screw	M4 x 50 mm	500 pcs	BPZ:F12105-2085	**F12105-2085**
Phillips screw	M4 x 70 mm	500 pcs	BPZ:F12105-2086	**F12105-2086**
Slide nut trapezium	35 mm	50 pcs	BPZ:FZ253-300	**FZ253-300**
Slide nut trapezium	50 mm	50 pcs	BPZ:FZ253-310	**FZ253-310**
Slide nut trapezium	65 mm	50 pcs	BPZ:FZ253-320	**FZ253-320**
Heat conductor, large	2/55 mm	25 pcs	BPZ:F12105-2061	**F12105-2061**
Heat conductor	Heat conductor 4-2	50 pcs	JXF:F12130-2001/4-2	**F12130-2001/4-2**

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Installation accessories for weld-installation of the remote sensor

Parts	Alternatives	Packaging unit	Stock No.	Product No.
Sloted round nut	M 3	500 pcs	BPZ:F12102-2019	**F12102-2019**
Convector bracket holder with clamp, opposite support, 2 sloted nut and pull-off nut		1 pce	BPZ:F12105-1051	**F12105-1051**

The remote sensor is to be mounted on the convector barket using the pull-off nuts

Installation accessories for finned radiators and similar models

Parts	Packaging unit	Stock No.	Product No.
Heat conductor	50 pcs	JXF:F12130-2001/4-2	**F12130-2001/4-2**

Installation accessories for tubular radiators

Parts	Alternatives	Packaging unit	Stock No.	Product No.
Heat conductor, large	2/55 mm	25 pcs	BPZ:F12105-2061	**F12105-2061**
Heat conductor	Heat conductor 4-2	50 pcs	JXF:F12130-2001/4-2	**F12130-2001/4-2**
Phillips screw	M4 x 35 mm	1000 pcs	BPZ:F12105-2084	**F12105-2084**
Hexagon screw	M4 x 50 mm	500 pcs	BPZ:F12105-2085	**F12105-2085**
Phillips screw	M4 x 70 mm	500 pcs	BPZ:F12105-2086	**F12105-2086**

Installation accessories for aluminium radiators

Parts	Alternatives	Packaging unit	Stock No.	Product No.
Square pin		50 pcs	BPZ:FZ253-160	**FZ253-160**
Self-tapping screw	C 4.2 x 25 C (instead of square pin)	500 pcs	BPZ:F10102-2026	**F10102-2026**
Heat conductor	Heat conductor 4-2	50 pcs	JXF:F12130-2001/4-2	**F12130-2001/4-2**

Software and tools for WHE..

Product Title	Stock No.	Product No.
Programming unit for WHE3...	BPZ:WHZ3.P1	**WHZ3.P1**
Programming unit for WHE3...	BPZ:WHZ3.P2	**WHZ3.P2**
Programming unit for WHE3...	BPZ:WHZ3.P3	**WHZ3.P3**
Programming unit for WHE460..	BPZ:WHZ4.P0	**WHZ4.P0**

Programming adapter for WHE..

Product Title	Stock No.	Product No.
Parameterizing and diagnostics software	BPZ:ACT20	**ACT20**
USB tool set	BPZ:WHZ3.USB	**WHZ3.USB**
PC connecting cable	BPZ:WFZ.MBM	**WFZ.MBM**
RS-232 cable	BPZ:WTZ.K232	**WTZ.K232**
Special Port Converter RS232 to USB	JXF:WFZ.USB-1	**WFZ.USB-1**

Siemeca™ Mechanical and electronic water meters
Mechanical water meters single-jet: WFK.. / WFW..

WFK30.. / WFW30..

Mechanical water meter single-jet, wall mounted (module compatible)



Mechanical single-jet impeller meter for measuring the consumption of cold or hot water. Display of cumulated consumption. Versions without remote reading output. Body made of brass, dry-runner with magnetic transmission and pivotable totalizer. All water meters WFK30.. and WFW30.. can be retrofitted with electronic communication modules for AMR and walk-by readout. These meters are MID conform.
Metrological class, horizontal mounting of body = R80 (class B)
Metrological class, vertical mounting of body = R40 (class A)
A permanent flowrate Q_3 of 2.5 m³/h corresponds to a nominal flow Q_N of 1.5 m³/h. Siemens Building Technologies supplies mechanical single-jet water meters with permanent flowrates up to Q_3 4.0 m³/h which corresponds to a nominal flow rate of 2.5 m³/h. The product numbers for cold water meters start with WFK3.. and for hot water meters with WFW3... Find more information in the technical data sheet.

Data sheet	N5326
PN class	PN 16
Pressure drop	250 mbar

Range overview single-jet water meters without remote reading output

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Max. water temperature [°C]	Stock No.	Product No.
1.5	80	G ¾	30	BPZ:WFK30.D080	**WFK30.D080**
1.5	110	G ¾	30	BPZ:WFK30.D110	**WFK30.D110**
1.5	80	G ¾	90	BPZ:WFW30.D080	**WFW30.D080**
1.5	110	G ¾	90	BPZ:WFW30.D110	**WFW30.D110**
2.5	130	G 1	90	BPZ:WFW30.E130	**WFW30.E130**
2.5	130	G 1	30	BPZ:WFK30.E130	**WFK30.E130**

WFK../WFW..

Siemeca™ mechanical water meter single-jet, wall mounted



Mechanical single-jet impeller meter for measuring the consumption of cold or hot water. Display of cumulated consumption. Body made of nickel-plated brass, dry-runner with magnetic transmission and pivotable totalizer. All water meters WFK1../WFK2../WFW1../WFW2..have a remote reading output and a EC-First-Verification.
Horizontal mounting of body = class A
Vertical mounting of body = class B
Siemens Building Technologies supplies mechanical single-jet water meters with nominal flow rates up to 2.5 m³ / h. The product numbers for cold water meters start with WFK.. and for hot water meters with WFW... Find more information in the technical data sheet.

Data sheet	N5340
PN class	PN 10
Pressure drop	250 mbar
Pulse valency	10 l/pulse
Current limitation	100 mA
Cable length	1.5 m

Range overview single-jet water meters with remote reading output

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Max. water temperature [°C]	Communication	Stock No.	Product No.
1.5	80	G ¾	30	NAMUR	BPZ:WFK23.D080	**WFK23.D080**
1.5	110	G ¾	30	NAMUR	BPZ:WFK23.D110	**WFK23.D110**
2.5	130	G 1	30	NAMUR	BPZ:WFK13.E130	**WFK13.E130**
1.5	80	G ¾	30	Reed	BPZ:WFK24.D080	**WFK24.D080**
1.5	110	G ¾	30	Reed	BPZ:WFK24.D110	**WFK24.D110**
1.5	80	G ¾	90	NAMUR	BPZ:WFW23.D080	**WFW23.D080**
1.5	110	G ¾	90	NAMUR	BPZ:WFW23.D110	**WFW23.D110**
2.5	130	G 1	90	NAMUR	BPZ:WFW13.E130	**WFW13.E130**
1.5	80	G ¾	90	Reed	BPZ:WFW24.D080	**WFW24.D080**
1.5	110	G ¾	90	Reed	BPZ:WFW24.D110	**WFW24.D110**
2.5	130	G 1	90	Reed	BPZ:WFW14.E130	**WFW14.E130**
2.5	130	G 1	30	Reed	BPZ:WFK14.E130	**WFK14.E130**

Siemeca™ Mechanical and electronic water meters
Electronic water meters single-jet: WFC3.. / WFH3..

WF.3..



Siemeca™ electronic water meter, round, wall mounting

Electronic, round, mains-independent meter for acquiring the water consumption in autonomous water supply networks. Single-jet models with flow rates of 1.5 m³/h and 2.5 m³/h. The electronic Siemeca™ water meter is a component of the Siemeca™ AMR system and can be read and parameterized via IrDA interface.The water meter features a rolling display showing the following values and variables:
- Cumulated water consumption since the water meter was first installed
- Segment test

Using the Siemeca™ parameter seting tool, the following display steps can be individually switched:
- Cumulated water consumption since the last set day
- Date of set day
- Verification code
- Current flow rate
- Indication of errors

The units displayed are m³ and m³/h. Standard display is the cumulated water consumption since the water meter was first installed.

Max. water temperature:
30 °C cold water
90 °C hot water

Data sheet	N5328
PN class	PN 10
Metrological class	B
Battery life	12 years

Electronic water meter, round, wall mounting

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Max. water temperature	Communication	Stock No.	Product No.
1.5	80	G ¾	30	IrDA	BPZ:WFC37.D080	**WFC37.D080**
1.5	110	G ¾	30	IrDA	BPZ:WFC37.D110	**WFC37.D110**
2.5	130	G 1	30	Radio 868	BPZ:WFC37.E130	**WFC37.E130**
1.5	80	G ¾	90	IrDA	BPZ:WFH37.D080	**WFH37.D080**
1.5	110	G ¾	90	IrDA	BPZ:WFH37.D110	**WFH37.D110**

Electronic water meter, round, wall mounting, AMR 868 MHz

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Max. water temperature	Communication	Stock No.	Product No.
1.5	80	G ¾	30	Radio 868	BPZ:WFC36.D080	**WFC36.D080**
1.5	110	G ¾	30	Radio 868	BPZ:WFC36.D110	**WFC36.D110**
2.5	130	G 1	30	Radio 868	BPZ:WFC36.E130	**WFC36.E130**
1.5	80	G ¾	90	Radio 868	BPZ:WFH36.D080	**WFH36.D080**
1.5	110	G ¾	90	Radio 868	BPZ:WFH36.D110	**WFH36.D110**
2.5	130	G 1	90	Radio 868	BPZ:WFH36.E130	**WFH36.E130**

Siemeca™ electronic water meter, wall mounted

WFC2../WFH2..



The Siemeca™ water meters are electronic dry-runners and available as single-jet or measuring cell models. They are used in residential and commercial buildings for acquiring the hot or cold water consumption. Day by day they transmit the current measured values and consumption on the set day to the associated data collectors.The water meters are available in different versions and sizes with removable calculator (cable length 1,5 m), enabling them to be installed on all types of standard plant. The tenant can see his individual consumption on a large, easy-to-read display. The built-in lithium battery powers the device for a period of time exceeding the calibration period.The water meter is available as a cold water version WFC2... or hot water version WFH2... Data transmission via M-bus or the Siemeca™ AMR remote meter readout system.

The water meter has 3 display levels, which show the following values and variables:
- Cumulated water consumption since the last set day
- Segment test
- Current flow rate
- Meter's number of operating hours since it was first installed
- Set day and set month
- Stored water consumption of the previous year
- Stored water consumption of the last 13 months
- Verification code
- Cumulated water consumption since the meter was first installed
- Indication of errors

The units displayed are m^3, m^3/h and hours.
Standard display is the cumulated water consumption.

Data sheet	N5341
Metrological class	B
PN class	PN 10
Max. water temperature cold water	30 °C
Max. water temperature hot water	90 °C
Battery life	7 years

Electronic domestic water meters single-jet

Nominal flow rate [m^3/h]	Mounting length [mm]	Max. water temperature [°C]	Connecting thread ["]	Communication	Stock No.	Product No.
1.5	80	30	G ¾	M-bus	BPZ:WFC21.D080	**WFC21.D080**
1.5	110	30	G ¾	M-bus	BPZ:WFC21.D110	**WFC21.D110**
2.5	130	30	G 1	M-bus	BPZ:WFC21.E130	**WFC21.E130**
1.5	80	90	G ¾	M-bus	BPZ:WFH21.D080	**WFH21.D080**
1.5	110	90	G ¾	M-bus	BPZ:WFH21.D110	**WFH21.D110**
2.5	130	90	G 1	M-bus	BPZ:WFH21.E130	**WFH21.E130**

Siemeca™ Mechanical and electronic water meters
Electronic water meters single-jet: WFC2.. / WFH2..

Electronic domestic water meters single-jet, AMR 868 MHz

Nominal flow rate [m³/h]	Mounting length [mm]	Max. water temperature [°C]	Connecting thread ["]	Communication	Stock No.	Product No.
1.5	80	30	G ¾	Radio 868	BPZ:WFC26.D080	**WFC26.D080**
1.5	110	30	G ¾	Radio 868	BPZ:WFC26.D110	**WFC26.D110**
2.5	130	30	G 1	Radio 868	BPZ:WFC26.E130	**WFC26.E130**
1.5	80	90	G ¾	Radio 868	BPZ:WFH26.D080	**WFH26.D080**
1.5	110	90	G ¾	Radio 868	BPZ:WFH26.D110	**WFH26.D110**
2.5	130	90	G 1	Radio 868	BPZ:WFH26.E130	**WFH26.E130**

Mounting material domestic water meters single-jet

Product Title	Stock No.	Product No.
Protective magnetic cover	BPZ:WFZ.M	**WFZ.M**
Mounting kit for washstand water meter	BPZ:WFZ.W	**WFZ.W**
Mounting kit for tap water meter	BPZ:WFZ.Z	**WFZ.Z**
Extension 80 mm / thread ¾" B on 110 mm / G 1" B, incl. Seals	JXF:WZM-V110	**WZM-V110**

Spacer and fittings

Product Title	Stock No.	Product No.
Spacer 80 mm	BPZ:WFZ.R80	**WFZ.R80**
Spacer	BPZ:WFZ.R110	**WFZ.R110**
Spacer	BPZ:WFZ.R110-1	**WFZ.R110-1**
Spacer 1" x 130 mm	BPZ:WFZ.R130	**WFZ.R130**
Pair of fittings for ½" AG, union nut ¾"	BPZ:WFZ.R2	**WFZ.R2**
Pair of fittings for ¾" AG, union nut 1"	BPZ:WFZ.R2-1	**WFZ.R2-1**

Mechanical water meter mulit-jet (module compatible)

WMK10../WMW10..



Mechanical mulit-jet water meter for measureing the consumption of hot and cold water. Designed specifically for flush-mounting. The meter consists of an easy-to-replace measuring cell with a mechanical totalizer and a single-pipe connecting piece (EAT) which must be ordered separately and which is firmly connected to the water pipe. Suited for flush or wall mounting. Display of cumulated consumption. Dry-runner with magnetic transmission and pivotable totalizer. Body and single-pipe connecting piece are made of brass. The mechanical water meters WMK10.D and WMW10.D can be retrofitted with electronic modules for AMR or walk-by readout and a EG-First-Verification. Versions without remote reading output. For the use with radio modules there are extra rosettes and bezels available.
Metrological class, horizontal mounting of body = class B
Metrological class, vertical mounting of body =class A
The product numbers for cold water meters start with WMK10.. and for hot water meters with WMW10...Find more information in the technical data sheet.

Data sheet	N5327
PN class	PN 10
Pressure drop	250 mbar

Range overview measuring cell water meters without remote reading output

Nominal flow rate [m³/h]	Connecting thread	Max. water temperature [°C]	Stock No.	Product No.
1.5	G2	30	JXF:WMK10.D	**WMK10.D**
1.5	G2	90	JXF:WMW10.D	**WMW10.D**

Siemeca™ mechanical water meter multi-jet

WMU..



Mechanical multi-jet water meters for measuring the consumption of cold and hot water. Designed specifically for flush-mounting. The meter consists of an easy-to-replace measuring cell with a mechanical totalizer and a single-pipe connecting piece (EAT) which must be ordered separately and which is firmly connected to the water pipe. Suited for flush or wall mounting. Display of cumulated consumption. Dry-runner with magnetic transmission and pivotable totalizer. Body and single-pipe connecting piece made of brass.
All water meters WMU.. have a remote reading output and a EG-First-Verification.
Horizontal mounting of body = class A
Vertical mounting of body = class B
The product numbers for cold water meters start with WMU1.. and for hot water meters with WMU2...
Find more information in the technical data sheet.

Data sheet	N5342
PN class	PN 10
Pressure drop	250 mbar
Pulse valency	10 l/pulse
Current limitation	100 mA
Cable length	1.5 m

Siemeca™ Mechanical and electronic water meters
Mechanical water meters multi-jet: WMK10.. / WMW10.. / WMU..

Range overview measuring cell water meters with remote reading output

Nominal flow rate [m³/h]	Connecting thread ["]	Max. water temperature [°C]	Communication	Stock No.	Product No.
1.5	G 2	30	NAMUR	BPZ:WMU12.H	**WMU12.H**
1.5	G 2	90	NAMUR	BPZ:WMU22.H	**WMU22.H**
1.5	G 2	30	Reed	BPZ:WMU17.H	**WMU17.H**
1.5		90		BPZ:WMU27.H/CH	**WMU27.H/CH**

Siemeca™ electronic water meter, round, recessed mounting

WM.3..



Electronic, round, mains-independent meter for acquiring the water consumption in autonomous water supply networks. The electronic Siemeca™ water meter is a component of the Siemeca™ AMR system and can be read and parameterized via IrDA interface. The water meter features a rolling display showing the following values and variables:
- Cumulated water consumption since the water meter was first installed
- Segment test

Using the Siemeca™ parameter seting tool, the following display steps can be individually switched:
- Cumulated water consumption since the last set day
- Date of set day
- Verification code
- Current flow rate
- Indication of errors

The units displayed are m³ and m³/h. Standard display is the cumulated water consumption since the water meter was first installed.

Max. water temperature:
30 °C cold water
90 °C hot water

Data sheet	N5328
PN class	PN 10
Metrological class	B
Battery life	12 years

Electronic water meter, recessed mounting

Nominal flow rate [m³/h]	Connecting thread	Max. water temperature [°C]	Communication	Stock No.	Product No.
1.5	G 2	30	Radio 868	BPZ:WMC36.D	**WMC36.D**
1.5	G 2	30	IrDA	BPZ:WMC37.D	**WMC37.D**
1.5	G 2	90	Radio 868	BPZ:WMH36.D	**WMH36.D**
1.5	G 2	90	IrDA	BPZ:WMH37.D	**WMH37.D**

Siemeca™ Mechanical and electronic water meters
Electronic water meters multi-jet: WMC2.. / WMH2..

WMC2../WMH2..



Siemeca™ electronic water meter, recessed mounting

Electronic, mains-independent water meter with nonmagnetic sensing, available as a combined all-in-one or split version (calculator removable, cable length 1,5 m). Storage of the cumulated consumption values of the previous billing period on the set day. Data transmission via M-bus or wireless 433 MHz or Siemeca™ AMR remote meter readout system.
The meters are available as cold water meters WMC2... and hot water meters WMH...

The water meter has 3 display levels which show the following values and variables:
- Cumulated water consumption since the meter was first installed
- Cumulated water consumption since the last set day
- Segment test
- Current flow rate
- Water meter's number of operating hours since it was first installed
- Set day and set month
- Stored water consumption of the previous year
- Stored water consumption of the last 13 months
- Verification code
- Indication of errors

The units displayed are m³, m³/h and hours. Standard display is the cumulated water consumption.

Data sheet	N5343
Nominal flow rate	1.5 m³/h
Metrological class	B
PN class	PN 10
Max. water temperature cold water	30 °C
Max. water temperature hot water	90 °C
Battery life	7 years

Electronic domestic water meters multi-jet

Nominal flow rate [m³/h]	Max. water temperature [°C]	Communication	Connecting thread	Stock No.	Product No.
1.5	30	M-bus	G 2	BPZ:WMC21.D	**WMC21.D**
1.5	90	M-bus	G 2	BPZ:WMH21.D	**WMH21.D**

Single pip connecting piece and accessories

Product Title	Mounting length	Stock No.	Product No.
Single-pipe connecting piece (EAT)	110	BPZ:WME.L15/H	**WME.L15/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L15/OV/H	**WME.L15/OV/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L18/H	**WME.L18/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L18/OV/H	**WME.L18/OV/H**
Single-pipe connecting piece (EAT	130	BPZ:WME.L22/H	**WME.L22/H**
Single-pipe connecting piece (EAT)	130	BPZ:WME.L22/OV/H	**WME.L22/OV/H**
Single-pipe connecting pce	80	BPZ:WME.G20/H	**WME.G20/H**
Single-pipe connecting piece	80	BPZ:WME.G20/OV/H	**WME.G20/OV/H**
EAT cover		BPZ:WME.VRING	**WME.VRING**
Profiled seal		BPZ:WME.PRODICHT	**WME.PRODICHT**
Mounting aid		BPZ:WME.EINPUTZ1	**WME.EINPUTZ1**
Intemediate ring ZA		BPZ:WME.D/H	**WME.D/H**

Covering plate and protective cover

Product Title	Data sheet	Stock No.	Product No.
Covering plate I chromium-plated; angular for fitting depth 68...82 mm	N5342	BPZ:WFZ.B1	**WFZ.B1**
Covering plate III chromium-plated; angular only suited for angular meters	N5342	BPZ:WFZ.B3	**WFZ.B3**
Covering plate IV, chrome Square; chromium-plated		BPZ:WFZ.B4	**WFZ.B4**
Covering plate VI for recesses 45...85 mm round; chromium-plated, with tube and PVC ring	N5342	BPZ:WFZ.B6-1	**WFZ.B6-1**
Protective magnetic cover For mechanical meters with remote output		BPZ:WFZ.M	**WFZ.M**
Installation key for measuring cell		JXF:WMZ.K4	**WMZ.K4**

Programming tools and software for electronic water meters

Product Title	Stock No.	Product No.
Parameterizing and diagnostics software	BPZ:ACT20	**ACT20**
USB tool set	BPZ:WHZ3.USB	**WHZ3.USB**
PC connecting cable	BPZ:WFZ.MBM	**WFZ.MBM**
Special Port Converter RS232 to USB	JXF:WFZ.USB-1	**WFZ.USB-1**

Siemeca™ Electronic heat meters and heating/cooling energy meters
Single-jet: WFM2.. / WFQ2.. / WFN2../ WFR2.. / WFx4..

WFM2../WFQ2..



Siemeca™ electronic heat meter, wall mounted

The Siemeca™ heat meters are electronic dry-runners. They acquire the flow acquisition without generating a magnetic field and use highly accurate temperature sensors. They are used in residential and commercial buildings for acquiring heat or cooling energy consumption. Day by day they transmit the current measured values and consumption on the set day to the associated data collectors.The heat meters are available as single-jet or measuring cell models in different sizes, enabling them to be installed on all types of standard plant. The tenant can see his individual consumption on a large, easy-to-read display. The built-in lithium battery powers the device for a period of time exceeding the calibration period.Data transmission via M-bus, pulse, or the Siemeca™ AMR remote meter readout system.The heat meter has 3 display levels which show the following values and variables:

- Cumulated heat consumption since the heat meter was first installed
- Cumulated heat consumption since the last set day
- Segment test
- Current heat output- Current flow rate
- Current flow temperature
- Current return temperature
- Current temperature differential
- Heat meter's number of operating hours since it was first installed
- Set day and set month
- Stored heat consumption of previous year
- Stored heat consumption of the last 13 months
- Verification code
- Indication of errors
- Cumulated volume since the heat meter was first installed

The units displayed are ?C or K, kWh (or GJ on request), m^3/h, kW and hours.Standard display is the cumulated heat consumption.

Data sheet	N5333
Measurement accuracy	Class 3 as per EN 1434
PN class	PN 10
Measuring range, temperature	1...90 °C
Min. temperature differential	3 K
Sensing element, temperature	Pt 500
Battery life	10 years

Electronic heat meters, wall mounting, M-Bus, 5 mm sensor

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM21.B111	**WFM21.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	BPZ:WFM21.B112	**WFM21.B112**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM21.D111	**WFM21.D111**
1.5	110	G ¾	2.5	Direct immersion	yes	BPZ:WFM21.D112	**WFM21.D112**
1.5	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFM21.D115	**WFM21.D115**
1.5	110	G ¾	2.5	Indirect immersion	yes	BPZ:WFM21.D116	**WFM21.D116**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFM21.E131	**WFM21.E131**
2.5	130	G 1	2.5	Direct immersion	yes	BPZ:WFM21.E132	**WFM21.E132**
2.5	130	G 1	1.5	Indirect immersion	yes	BPZ:WFM21.E135	**WFM21.E135**
2.5	130	G 1	2.5	Indirect immersion	yes	BPZ:WFM21.E136	**WFM21.E136**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFQ21.D081	**WFQ21.D081**
1.5	80	G ¾	2.5	Direct immersion	no	BPZ:WFQ21.D082	**WFQ21.D082**

Siemeca™ Electronic heat meters and heating/cooling energy meters
Single-jet: WFM2.. / WFQ2.. / WFN2../ WFR2.. / WFx4..

Electronic heat meters, wall mounting, for Siemeca™ AMR 868 MHz; 5 mm sensor

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM26.B111	**WFM26.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	BPZ:WFM26.B112	**WFM26.B112**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM26.D111	**WFM26.D111**
1.5	110	G ¾	2.5	Direct immersion	yes	BPZ:WFM26.D112	**WFM26.D112**
1.5	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFM26.D115	**WFM26.D115**
1.5	110	G ¾	2.5	Indirect immersion	yes	BPZ:WFM26.D116	**WFM26.D116**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFM26.E131	**WFM26.E131**
2.5	130	G 1	2.5	Direct immersion	yes	BPZ:WFM26.E132	**WFM26.E132**
2.5	130	G 1	1.5	Indirect immersion	yes	BPZ:WFM26.E135	**WFM26.E135**
2.5	130	G 1	2.5	Indirect immersion	yes	BPZ:WFM26.E136	**WFM26.E136**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFQ26.D081	**WFQ26.D081**
1.5	80	G ¾	2.5	Direct immersion	no	BPZ:WFQ26.D082	**WFQ26.D082**

Electronic heat meters, wall mounting, with pulse output; 5 mm sensor

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Measuring range, temperature [°C]	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	1...90	BPZ:WFM24.B111	**WFM24.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	1...90	BPZ:WFM24.B112	**WFM24.B112**
1.5	80	G ¾	1.5	Direct immersion	no	1...90	BPZ:WFQ24.D081	**WFQ24.D081**
1.5	80	G ¾	2.5	Direct immersion	no	1...90	BPZ:WFQ24.D082	**WFQ24.D082**

Siemeca™ electronic heat and cooling energy meter, wall mounted

WFN2..WFR2..



The Siemeca™ heat / cooling energy meters are electronic dry-runners. They acquire the flow without generating a magnetic field and use highly accurate temperature sensors. They are used in residential and commercial buildings for acquiring heat or cooling energy consumption. Day by day they transmit the current measured values and consumption on the set day to the associated data collectors. The heat / cooling energy meters are available as single-jet or measuring cell models in different sizes, enabling them to be installed on all types of standard plant (calculator removable, cable length 1,5 m). The tenant can see his individual consumption on a large, easy-to-read display. The built-in lithium battery powers the device for a period of time exceeding the calibration period. Data transmission via M-bus, pulse, or the Siemeca™ AMR remote meter readout system.
The heat meter has 3 display levels which show the following values and variables:

- Cumulated heat consumption since the meter was first installed
- Cumulated heat consumption since the last set day
- Segment test
- Current heat output
- Current flow rate
- Current flow temperature
- Current return temperature
- Current temperature differential
- Heat meter's number of operating hours since it was first installed
- Set day and set month
- Stored heat consumption of previous year
- Stored heat consumption of the last 13 months
- Verification code
- Indication of errors
- Cumulated cooling energy comsumption since the meter was first installed

The units displayed are °C or K, kWh (or GJ on request), m³/h, kW, and hours.
The standard display shows the cumulated heat consumption.

Data sheet	N5338
Measurement accuracy	Class 3 as per EN 1434
PN class	PN 10
Measuring range, temperature	1...90 °C
Min. temperature differential	Cooling: 0.6 K Heat: 3 K
Sensing element, temperature	Pt 500
Battery life	10 years

Siemeca™ Electronic heat meters and heating/cooling energy meters
Single-jet: WFM2.. / WFQ2.. / WFN2../ WFR2.. / WFx4..

Range overview single-jet heat and cooling energy meters with M-Bus communication

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN21.B111	**WFN21.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN21.B112	**WFN21.B112**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN21.D111	**WFN21.D111**
1.5	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN21.D112	**WFN21.D112**
1.5	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFN21.D115	**WFN21.D115**
1.5	110	G ¾	2.5	Indirect immersion	yes	BPZ:WFN21.D116	**WFN21.D116**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFN21.E131	**WFN21.E131**
2.5	130	G 1	2.5	Direct immersion	yes	BPZ:WFN21.E132	**WFN21.E132**
2.5	130	G 1	1.5	Indirect immersion	yes	BPZ:WFN21.E135	**WFN21.E135**
2.5	130	G 1	2.5	Indirect immersion	yes	BPZ:WFN21.E136	**WFN21.E136**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFR21.D081	**WFR21.D081**
1.5	80	G ¾	2.5	Direct immersion	no	BPZ:WFR21.D082	**WFR21.D082**

Range overview single-jet heat and cooling energy meters Siemeca™ AMR 868 MHz

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN26.B111	**WFN26.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN26.B112	**WFN26.B112**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN26.D111	**WFN26.D111**
1.5	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN26.D112	**WFN26.D112**
1.5	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFN26.D115	**WFN26.D115**
1.5	110	G ¾	2.5	Indirect immersion	yes	BPZ:WFN26.D116	**WFN26.D116**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFN26.E131	**WFN26.E131**
2.5	130	G 1	2.5	Direct immersion	yes	BPZ:WFN26.E132	**WFN26.E132**
2.5	130	G 1	1.5	Indirect immersion	yes	BPZ:WFN26.E135	**WFN26.E135**
2.5	130	G 1	2.5	Indirect immersion	yes	BPZ:WFN26.E136	**WFN26.E136**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFR26.D081	**WFR26.D081**
1.5	80	G ¾	2.5	Direct immersion	no	BPZ:WFR26.D082	**WFR26.D082**

Range overview single-jet heat and cooling energy meters with pulse output

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN24.B111	**WFN24.B111**
0.6	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN24.B112	**WFN24.B112**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFN24.D111	**WFN24.D111**
1.5	110	G ¾	2.5	Direct immersion	yes	BPZ:WFN24.D112	**WFN24.D112**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFN24.E131	**WFN24.E131**
2.5	130	G 1	2.5	Direct immersion	yes	BPZ:WFN24.E132	**WFN24.E132**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFR24.D081	**WFR24.D081**
1.5	80	G ¾	2.5	Direct immersion	no	BPZ:WFR24.D082	**WFR24.D082**

Siemeca™ Electronic heat meters and heating/cooling energy meters
Single-jet: WFM2.. / WFQ2.. / WFN2../ WFR2.. / WFx4..

WFx4..



Siemeca™ electronic heat meter wall mounting

The Siemeca™ heat meters are electronic, battery-supplied meters for determining the heat consumption. They acquire the flow acquisition without generating a magnetic field and use highly accurate temperature sensors. They are used in residential and commercial buildings for acquiring heat energy consumption. The meter operates according to the single-jet measuring principle. The water flows against an impeller; its speed is scanned electronically and without a magnetic field. The temperatures in the flow and return are measured with immersion sensors Pt1000. The heat meter is equipped either for installing in the return or in the flow. The flow is continously measured in the calculator and at least once every minute the flow and return temperature.
The heat meter has a scrolling display with the following values and variables:

- Cumulative heat consumption since starting up the heat meter
- Segment test
- Due date
- Cumulative water consumption up to last due date
- Current return temperature
- With the aid of the Siemeca™ parameterization tools the following display options can be activated:
- Due date (only if due date and cut off date are different)
- Control number
- Current flow
- Temperature difference
- Error display

Data sheet	N5331
Measurement accuracy	class 3 per EN 1434
PN class	PN 10
Measuring range, temperature	15...90 °C
Sensing element, temperature	PT1000
Battery life	10 years
Min. temperature differential	3 K

Range overview heat meters single-jet - return installation

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Return sensor integrated	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM407.B113	**WFM407.B113**
1.5	110	G ¾	1.5	Direct immersion	yes	BPZ:WFM407.D113	**WFM407.D113**
2.5	130	G 1	1.5	Direct immersion	yes	BPZ:WFM407.E133	**WFM407.E133**
1.5	80	G ¾	1.5	Direct immersion	no	BPZ:WFQ407.D083	**WFQ407.D083**
0.6	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFM407.B119	**WFM407.B119**
1.5	110	G ¾	1.5	Indirect immersion	yes	BPZ:WFM407.D119	**WFM407.D119**
2.5	130	G 1	1.5	Indirect immersion	yes	BPZ:WFM407.E139	**WFM407.E139**

Range overview heat meters single-jet - inlet installation

Nominal flow rate [m³/h]	Mounting length [mm]	Connecting thread ["]	Cable length, sensor [m]	Sensor	Stock No.	Product No.
0.6	110	G ¾	1.5	Direct immersion	BPZ:WFP407.B113	**WFP407.B113**
1.5	110	G ¾	1.5	Direct immersion	BPZ:WFP407.D113	**WFP407.D113**
2.5	130	G 1	1.5	Direct immersion	BPZ:WFP407.E133	**WFP407.E133**
1.5	80	G ¾	1.5	Direct immersion	BPZ:WFO407.D083	**WFO407.D083**
0.6	110	G ¾	1.5	Indirect immersion	BPZ:WFP407.B119	**WFP407.B119**
1.5	110	G ¾	1.5	Indirect immersion	BPZ:WFP407.D119	**WFP407.D119**

Siemeca™ Electronic heat meters and heating/cooling energy meters
Accessories for single-jet

Mounting kit for heat meter

Product Title	Stock No.	Product No.
Siemeca™ mounting kit for 80 mm mounting length	BPZ:WFZ.E80	**WFZ.E80**
Siemeca™ mounting kit for 80 mm mounting length	BPZ:WFZ.E80G3	**WFZ.E80G3**
Siemeca™ mounting kit for 110 mm mounting length	BPZ:WFZ.E110-I	**WFZ.E110-I**
Siemeca™ mounting kit for 110 mm mounting length	BPZ:WFZ.E110G3-I	**WFZ.E110G3-I**
Siemeca™ mounting kit for 130 mm mounting length	BPZ:WFZ.E130-I	**WFZ.E130-I**
Siemeca™ mounting kit for 130 mm mounting length	BPZ:WFZ.E130G1-I	**WFZ.E130G1-I**

Mounting kit for heat meter with T-piece

Product Title	Stock No.	Product No.
Siemeca™ mounting kit for 110 mm mounting length	BPZ:WFZ.E110-IT	**WFZ.E110-IT**
Siemeca™ mounting kit for 110 mm mounting length	BPZ:WFZ.E110G3-IT	**WFZ.E110G3-IT**
Siemeca™ mounting kit for 130 mm mounting length	BPZ:WFZ.E130-IT	**WFZ.E130-IT**
Siemeca™ mounting kit for 130 mm mounting length	BPZ:WFZ.E130G1-IT	**WFZ.E130G1-IT**

Ball valves for heat meters

Product Title	Stock No.	Product No.
Ball valve, internal thread ½" with sensor accomodation	BPZ:WFZ.K15	**WFZ.K15**
Ball valve	BPZ:WFZ.K16	**WFZ.K16**
Ball valve	BPZ:WFZ.K17	**WFZ.K17**
Ball valve, internal thread ¾" with sensor accomodation	BPZ:WFZ.K18	**WFZ.K18**
Ball valve, internal thread 1" with sensor accomodation	BPZ:WFZ.K22	**WFZ.K22**

T-piece for sensor mounting

Product Title	Stock No.	Product No.
T-piece for flow sensor, IG ½" and adapter	BPZ:WFZ.T16	**WFZ.T16**
T-piece for flow sensor, IG ¾" and adapter	BPZ:WFZ.T19	**WFZ.T19**
T-piece for flow sensor, IG 1" and adapter	BPZ:WFZ.T22	**WFZ.T22**

Spacer and fittings

Product Title	Stock No.	Product No.
Spacer 80 mm	BPZ:WFZ.R80	**WFZ.R80**
Spacer	BPZ:WFZ.R110	**WFZ.R110**
Spacer	BPZ:WFZ.R110-1	**WFZ.R110-1**
Spacer 1" x 130 mm	BPZ:WFZ.R130	**WFZ.R130**
Pair of fittings for ½" AG, union nut ¾"	BPZ:WFZ.R2	**WFZ.R2**
Pair of fittings for ¾" AG, union nut 1"	BPZ:WFZ.R2-1	**WFZ.R2-1**

Siemeca™ electronic heat meter, recessed mounting

WMM3..



The Siemeca™ heat meters are electronic dry-runners. They excel in electronic sensing without generating a magnetic field and use highly accurate temperature sensors. They are used in residential or non-residential buildings for acquiring heat or cooling energy consumption. They transmit the updated measured values and consumption data on the set day to the associated data collectors.
The heat meters are available in different sizes as single-jet and measuring cell meters, enabling them to be used in all types of standard plant. The tenant can see his individual consumption on a large, easy-to-read display. The built-in lithium battery powers the device for a period of time exceeding the calibration period.

Data transmission via M-bus, pulse, or the Siemeca™ AMR remote meter readout system.

The heat meter has 3 display levels which show the following values and variables:

- Cumulated heat consumption since the meter was first installed
- Cumulated heat consumption since the last set day
- Segment test
- Current heat output
- Current flow rate
- Current flow temperature
- Current return temperature
- Current temperature differential
- Heat meter's number of operating hours since it was first installed
- Set day and set month
- Stored heat consumption of previous year
- Stored heat consumption of the last 13 months
- Verification code
- Indication of errors

The units displayed are °C or K, kWh (or GJ on request), m³/h, kW, and hours.
The standard display shows the cumulated heat consumption.

Flow sensor: indirect immersion
Return sensor: direct immersion

Data sheet	N5347
PN class	PN 10
Max. water temperature	90 °C
Min. temperature differential	3 K
Sensing element, temperature	Pt500
Battery life	7 years

Range overview measuring cell heat meters

Nominal flow rate [m³/h]	Connecting thread	Cable length, sensor [m]	Return sensor integrated	Communication	Stock No.	Product No.
1.5	G 2	1.5	yes	M-bus	BPZ:WMM31.D001	**WMM31.D001**
1.5	G 2	2.5	yes	M-bus	BPZ:WMM31.D002	**WMM31.D002**
1.5	G 2	1.5	yes	Radio 868	BPZ:WMM36.D001	**WMM36.D001**
1.5	G 2	2.5	yes	Radio 868	BPZ:WMM36.D002	**WMM36.D002**
1.5	G 2	1.5	yes	Pulse output	BPZ:WMM34.D001	**WMM34.D001**
1.5	G 2	2.5	yes	Pulse output	BPZ:WMM34.D002	**WMM34.D002**

Siemeca™ Electronic heat meters and heating/cooling energy meters Multi-jet: WMM3.. / WMN3.. / WMx4..

WMN3..



Siemeca™ electronic heat and cooling energy meter, recessed mounting

The Siemeca™ heat meters are electronic dry-runners. They excel in electronic sensing without generating a magnetic field and use highly accurate temperature sensors. They are used in residential or non-residential buildings for acquiring heat or cooling energy consumption. They transmit the updated measured values and consumption data on the set day to the associated data collectors.
The heat meters are available in different sizes as single-jet and measuring cell meters, enabling them to be used in all types of standard plant. The tenant can see his individual consumption on a large, easy-to-read display. The built-in lithium battery powers the device for a period of time exceeding the calibration period.

Data transmission via M-bus, pulse, or the Siemeca™ AMR remote meter readout system.

The heat meter has 3 display levels which show the following values and variables:

- Cumulated heat consumption since the meter was first installed
- Cumulated heat consumption since the last set day
- Segment test
- Current heat output
- Current flow rate
- Current flow temperature
- Current return temperature
- Current temperature differential
- Heat meter's number of operating hours since it was first installed
- Set day and set month
- Stored heat consumption of previous year
- Stored heat consumption of the last 13 months
- Verification code
- Indication of errors
- Cumulated cooling energy comsumption since the meter was first installed

The units displayed are °C or K, kWh (or GJ on request), m³/h, kW, and hours.
The standard display shows the cumulated heat consumption.

Flow sensor: indirect immersion
Return sensor: direct immersion

Data sheet	N5348
PN class	PN 10
Measuring range, temperature	1...90 °C
Min. temperature differential	Cooling energy: 0.6 K Heat: 3 K
Sensing element, temperature	Pt500
Battery life	10 years

Range overview measuring cell heat and cooling energy meters

Nominal flow rate [m³/h]	Connecting thread	Cable length, sensor [m]	Return sensor integrated	Communication	Stock No.	Product No.
1.5	G 2	1.5	yes	M-bus	BPZ:WMN31.D001	**WMN31.D001**

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Siemeca™ electronic heat meter recessed mounting

WMx4..



The Siemeca™ heat meters are electronic, battery-supplied meters for determining the heat consumption. They acquire the flow acquisition without generating a magnetic field and use highly accurate temperature sensors. They are used in residential and commercial buildings for acquiring heat energy consumption. The measuring capsule meter comprises a measuring capsule and a single-pipe connector (EAT) and it can be mounted and replaced as a complete unit. The measuring capsule that is enclosed in a brass housing contains the measuring chamber with the impeller. The flow against the impeller is multiple-jet. The single pipe brass connector has 2 connecting pieces for mounting as well as 2" internal screw thread into which the measuring capsule is screwed. It is installed in the grid type network by screwing or soldering the single-pipe connector. The speed of the impeller is scanned electronically and without a magnetic field. The temperatures in the flow and return are measured with immersion sensors Pt1000. The heat meter is equipped either for installing in the return or in the flow. The flow is continously measured in the calculator and at least once every minute the flow and return temperature.
The heat meter has a scrolling display with the following values and variables:

- Cumulative heat consumption since starting up the heat meter
- Segment test
- Due date
- Cumulative water consumption up to last due date

With the aid of the Siemeca™ parameterization tools the following display options can be activated:

- Due date (only if due date and cut off date are different)
- Control number
- Current flow
- Temperature difference
- Error display

Data sheet	N5330
PN class	PN 10
Measuring range, temperature	15...90 °C
Sensing element, temperature	Pt1000
Measurement accuracy	Class 3 as per EN1434
Battery life	10 years
Min. temperature differential	3 K

Range overview heat meters measuring cell - return installation

Nominal flow rate [m³/h]	Connecting thread [m³/h]	Cable length, sensor [m]	Return sensor integrated	Communication	Stock No.	Product No.
1.5	G 2	1.5	yes	IrDA	BPZ:WMM407.D003	**WMM407.D003**
2.5	G 2	1.5	yes	IrDA	BPZ:WMM407.E003	**WMM407.E003**

Range overview heat meters measuring cell - inlet installation

Nominal flow rate [m³/h]	Connecting thread [m³/h]	Cable length, sensor [m]	Communication	Stock No.	Product No.
1.5	G 2	1.5	IrDA	BPZ:WMP407.D003	**WMP407.D003**

Siemeca™ Electronic heat meters and heating/cooling energy meters
Accessories for multi-jet

Single pip connecting piece and accessories

Product Title	Mounting length	Stock No.	Product No.
Single-pipe connecting piece (EAT)	110	BPZ:WME.L15/H	**WME.L15/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L15/OV/H	**WME.L15/OV/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L18/H	**WME.L18/H**
Single-pipe connecting piece (EAT)	110	BPZ:WME.L18/OV/H	**WME.L18/OV/H**
Single-pipe connecting piece (EAT	130	BPZ:WME.L22/H	**WME.L22/H**
Single-pipe connecting piece (EAT)	130	BPZ:WME.L22/OV/H	**WME.L22/OV/H**
Single-pipe connecting pce	80	BPZ:WME.G20/H	**WME.G20/H**
Single-pipe connecting piece	80	BPZ:WME.G20/OV/H	**WME.G20/OV/H**
EAT cover		BPZ:WME.VRING	**WME.VRING**
Profiled seal		BPZ:WME.PRODICHT	**WME.PRODICHT**
Sealing ring 2		BPZ:WME.FLDICHT	**WME.FLDICHT**
Mounting aid		BPZ:WME.EINPUTZ1	**WME.EINPUTZ1**
Intemediate ring ZA		BPZ:WME.D/H	**WME.D/H**

T-piece for sensor mounting

Product Title	Stock No.	Product No.
T-piece for flow sensor, IG ½" and adapter	BPZ:WFZ.T16	**WFZ.T16**
T-piece for flow sensor, IG ¾" and adapter	BPZ:WFZ.T19	**WFZ.T19**
T-piece for flow sensor, IG 1" and adapter	BPZ:WFZ.T22	**WFZ.T22**

Mounting accessories

Product Title	Stock No.	Product No.
Installation key for measuring cell	JXF:WMZ.K4	**WMZ.K4**

Programming tools and software for heat meters based on PC

Product Title	Stock No.	Product No.
Parameterizing and diagnostics software	BPZ:ACT20	**ACT20**
USB tool set	BPZ:WHZ3.USB	**WHZ3.USB**
PC connecting cable	BPZ:WFZ.MBM	**WFZ.MBM**
Special Port Converter RS232 to USB	JXF:WFZ.USB-1	**WFZ.USB-1**

SONOHEAT® ultrasonic heat meters

UH50..



The heat meter SONOHEAT® UH50 is the successor of the SONOHEAT® 2WR5.
SONOHEAT® UH50 are heat meters used for acquiring the amount of thermal energy exchanged in a heat exchanger circuit using water.
SONOHEAT® UH50 heat meters acquire the volumetric flow statically using the ultrasonic measuring principle. They excel in high measuring accuracy, no wear and tear, and stable long-term characteristics
SONOHEAT® UH50 heat meters are conform with the European MID (directive 2004/22/EG, MI-004) and approved to EN 1434.

The processor performs all measuring and storage functions required for practical operation. These are the following functions:

- Acquisition of the amount of heat with high measuring stability and defined overload characteristics
- Calculation and storage of maximum values
- Storage of billing-related data on a yearly and monthly set day
- Acquisition of tariff-dependent consumption
- Storage of 60 monthly values including cumulated energy, cumulated volume and tariff register
- Identification of faults
- Display of values and parameters (with selectable scope of display) and faults
- Test and service functions
- Logbook
- Datalogger (optional) for archiving of data
- Two slots and several retrofit modules are available for the following extra functions:
  - Pulse module with two channels
  - Pulse module for fast pulses for controlling the controller
  - Current loop output for "front door reading" according to IEC 61107
  - M-Bus module with 2 pulse inputs
  - Analog module
  - Radio module
- Mains- or battery-powered (optional). SONOHEAT® UH50 heat meters excel in extremely low power consumption.
- Readout, testing and service can take place via the built-in optical interface which conforms to EN 61107.
- Operation of the processor is assigned to several levels with different access rights.

The volume measurement units are made out of metal with thread or flange connecting for nominal pressure PN 16 and PN 25.
Available are nominal flow rates from 0.6 to 60 m³/h and mounting lengths from 110 to 360 mm.

Data sheet	UH 106-000
Measurement accuracy	EN 1434 class 2 or 3
Temperature range electronic unit	2...180 °C
Temperature range volume measuring section	10...130 °C (150 °C, max. 2000 h)
Mounting location	return or flow
Mounting position	any

SONOHEAT® Electronic heat meters and heating/cooling energy meters Standard types with connecting thread UH50..

Range overview with connecting thread

Nominal flow rate [m³/h]	Connecting thread ["]	PN class	Mounting length [mm]	Sensor	Cable length, sensor [m]	Stock No.	Product No.
0.6	G ¾	PN 16	110	27.5 mm length	1.5	BPZ:UH50-A05C-EN06-F 0B-B000-M3A	**UH50-A05C-EN06-F 0B-B000-M3A**
1.5	G ¾	PN 16	110	27.5 mm length	1.5	BPZ:UH50-A21C-EN06-F 0B-B000-M3A	**UH50-A21C-EN06-F 0B-B000-M3A**
0.6	G 1	PN 16	190	27.5 mm length	1.5	BPZ:UH50-A07C-EN06-F 0B-B000-M3A	**UH50-A07C-EN06-F 0B-B000-M3A**
1.5	G 1	PN 16	190	27.5 mm length	1.5	BPZ:UH50-A23C-EN06-F 0B-B000-M3A	**UH50-A23C-EN06-F 0B-B000-M3A**
2.5	G 1	PN 16	130	27.5 mm length	1.5	BPZ:UH50-A36C-EN06-F 0B-B000-M3A	**UH50-A36C-EN06-F 0B-B000-M3A**
2.5	G 1	PN 16	190	27.5 mm length	1.5	BPZ:UH50-A38C-EN06-F 0B-B000-M3A	**UH50-A38C-EN06-F 0B-B000-M3A**
3.5	G 1¼	PN 16	260	27.5 mm length	1.5	BPZ:UH50-A45C-EN06-E 0B-B000-M3A	**UH50-A45C-EN06-E 0B-B000-M3A**
6	G 1¼	PN 16	260	27.5 mm length	1.5	BPZ:UH50-A50C-EN06-E 0B-B000-M2A	**UH50-A50C-EN06-E 0B-B000-M2A**
10	G 2	PN 16	300	100 mm length	2	BPZ:UH50-A60C-EN06-E 0M-B000-M2A	**UH50-A60C-EN06-E 0M-B000-M2A**

Description of standard version:

- Heat meter with two wire measurement for return installation
- Nominal flow rate from 0.6 to 60 m³/h
- Split version (electronic unit removable) with 1.5 m control line.
- Dial plate: English neutral
- Label: Siemens
- Sensor: Pt 500, replaceable pairwise , up to nominal flow rate 2.5 m³/h one sensor is integrated in the volume measurement unit.
- 6 year battery (D-cell).
- Without communication modules
- Without data logger
- Calibration/conformity: up to nominal flow rate 3.5 m³/h conform according MID class 3; from nominal flow rate 6 m³/h conform according MID class 2.
- Energy unit: LCD-display up to nominal flow rate 10 m³/h in „kWh"; from nominal flow rate 15 m³/h in „MWh".

Notice: Further versions can be arranged by your Siemens BT Regional Company.

SONOHEAT® Electronic heat meters and heating/cooling energy meters
Standard types with connecting flange UH50..

Range overview with connecting flange

Nominal flow rate [m³/h]	DN	PN class	Mounting length [mm]	Sensor [mm]	Cable length, sensor [m]	Stock No.	Product No.
0.6	20	PN 25	190	27.5 mm length	1.5	BPZ:UH50-A08C-EN06-E 0B-B000-M3A	**UH50-A08C-EN06-E 0B-B000-M3A**
1.5	20	PN 25	190	27.5 mm length	1.5	BPZ:UH50-A24C-EN06-E 0B-B000-M3A	**UH50-A24C-EN06-E 0B-B000-M3A**
2.5	20	PN 25	190	27.5 mm length	1.5	BPZ:UH50-A39C-EN06-E 0B-B000-M3A	**UH50-A39C-EN06-E 0B-B000-M3A**
3.5	25	PN 25	260	27.5 mm length	1.5	BPZ:UH50-A46C-EN06-E 0B-B000-M3A	**UH50-A46C-EN06-E 0B-B000-M3A**
6	25	PN 25	260	27.5 mm length	1.5	BPZ:UH50-A52C-EN06-E 0B-B000-M2A	**UH50-A52C-EN06-E 0B-B000-M2A**
10	40	PN 25	300	100 mm length	2	BPZ:UH50-A61C-EN06-E 0M-B000-M2A	**UH50-A61C-EN06-E 0M-B000-M2A**
15	50	PN 25	270	100 mm length	2	BPZ:UH50-A65C-EN06-E 0M-B000-M2B	**UH50-A65C-EN06-E 0M-B000-M2B**
25	65	PN 25	300	100 mm length	2	BPZ:UH50-A70C-EN06-E 0M-B000-M2B	**UH50-A70C-EN06-E 0M-B000-M2B**
40	80	PN 25	300	150 mm length	2	BPZ:UH50-A74C-EN06-E 0P-B000-M2B	**UH50-A74C-EN06-E 0P-B000-M2B**
60	100	PN 16	360	150 mm length	2	BPZ:UH50-A82C-EN06-E 0P-B000-M2B	**UH50-A82C-EN06-E 0P-B000-M2B**
60	100	PN 25	360	150 mm length	2	BPZ:UH50-A83C-EN06-E 0P-B000-M2B	**UH50-A83C-EN06-E 0P-B000-M2B**

Description of standard version:

- Heat meter with two wire measurement for return installation
- Nominal flow rate from 0.6 to 60 m³/h
- Split version (electronic unit removable) with 1.5 m control line.
- Dial plate: English neutral
- Label: Siemens
- Sensor: Pt 500, replaceable pairwise , up to nominal flow rate 2.5 m³/h one sensor is integrated in the volume measurement unit.
- 6 year battery (D-cell).
- Without communication modules
- Without data logger
- Calibration/conformity: up to nominal flow rate 3.5 m³/h conform according MID class 3; from nominal flow rate 6 m³/h conform according MID class 2.
- Energy unit: LCD-display up to nominal flow rate 10 m³/h in „kWh“; from nominal flow rate 15 m³/h in „MWh“.

Notice: Further versions can be arranged by your Siemens BT Regional Company.

SONOHEAT® Electronic heat meters and heating/cooling energy meters
Accessories for UH50..

2WR9300-0AA11-0A PappaWin software

Software for readout, checking, parameter settings and calibration. For use with 2WR4, 2WR5 and 2WR6 and UH50.. heat meters.
The software facilitating:
- Online monitoring
- Online device diagnostics
- Graphic display of relevant values
- Choice of service functions
- Periodic data readout and storage

Checking customer plant on site:
PappaWin provides a graphic presentation of the following parameters:
- Current values of flow rate, power, flow and return temperature
- Maximum flow rate and maximum power over the past 60 months
- The last 60 monthly mean values of flow rate, power and temperature differential.

	Stock No.	Product No.
	BPZ:2WR9300-0AA11-0A	**2WR9300-0AA11-0A**

Reading head for optical interface

Product Title	Stock No.	Product No.
Optical reading head for PC with 9-pin plug	BPZ:9956467001	**9956467001**
Optical reading head for PC with USB- access	BPZ:WZR-OP-USB	**WZR-OP-USB**

Mounting accessories for volume measuring section SONOHEAT® UH50

Valid for SONOHEAT® UH50

Product Title	Stock No.	Product No.
Mounting kit, pair of fittings G¾" × R½" with seals	BPZ:WZM-E34	**WZM-E34**
Mounting kit, pair of fittings G1" × R¾" with seals	BPZ:WZM-E1	**WZM-E1**
Mounting kit, pair of fittings G1¼" × R1" with seals	BPZ:WZM-E54	**WZM-E54**
Mounting kit, pair of fittings G2" × R1½" with seals	BPZ:WZM-E2	**WZM-E2**
Spacer for heat meter G1" – 190 mm, incl. flat seals	BPZ:WZM-V190	**WZM-V190**
Extension from 110 mm G¾" to 130 mm G1", pair with seals	BPZ:WZM-V130.1	**WZM-V130.1**
Extension from 110 mm G¾" to 130 mm G¾", pair with seals	BPZ:WZM-V130	**WZM-V130**
Spacer for heat meter G¾" – 110 mm, incl. flat seals	BPZ:WZM-G110	**WZM-G110**
Spacer for heat meter G1" – 190 mm, incl. flat seals	BPZ:WZM-G190	**WZM-G190**
Spacer for heat meter G1¼" – 260 mm, incl. flat seals	BPZ:WZM-G260	**WZM-G260**
Spacer for heat meter G2" – 300 mm, incl. flat seals	BPZ:WZM-G300	**WZM-G300**
Spacer for heat meter DN20 – 190 mm, incl. flat seals	BPZ:WZM-F190	**WZM-F190**
Spacer for heat meter DN25 – 260 mm, incl. flat seals	BPZ:WZM-F260	**WZM-F260**
Spacer for heat meter DN50 – 270 mm, incl. flat seals	BPZ:WZM-F270	**WZM-F270**
Spacer for heat meter DN65 – 300 mm, incl. flat seals	BPZ:WZM-F300.65	**WZM-F300.65**
Spacer for heat meter DN80 – 300 mm, incl. flat seals	BPZ:WZM-F300.80	**WZM-F300.80**
Spacer for heat meter DN100 – 360 mm, incl. flat seals	BPZ:WZM-F360.100	**WZM-F360.100**

Mounting accessories for temperature sensors SONOHEAT® UH50

Valid for SONOHEAT® UH50

Product Title	Stock No.	Product No.
Adapter for temperature sensor DS M10 × 1 × G½"B with seal	BPZ:WZT-A12	**WZT-A12**
Adapter for temperature sensor DS M10 × 1 × G¾"B with seal	BPZ:WZT-A34	**WZT-A34**
Protection pocket G½"B, brass, 5.2 × 35 mm	BPZ:WZT-M35	**WZT-M35**
Pocket G½"B, stainless steel, 5.2 × 37 mm, with seal	BPZ:WZT-S43V	**WZT-S43V**
Protection pocket G½"B, brass, 5.2 × 50 mm	BPZ:WZT-M50	**WZT-M50**
Protection pocket G½"B, immersion length 100 mm, stainless steel, with seal	BPZ:WZT-S100	**WZT-S100**
Protection pocket G½"B, immersion length 150 mm, stainless steel, with seal	BPZ:WZT-S150	**WZT-S150**
Welding sleeve G ½" × 45° to the pipe's axis	BPZ:WZT-G12	**WZT-G12**
Threaded welding sleeve G ½" × 90° to the pipe's axis	BPZ:WZT-GLG	**WZT-GLG**
Threaded welding sleeve M10 × 1 for DS temperature sensor	BPZ:WZT-G10	**WZT-G10**
Ball valve Rp½" for sensors DS M10 × 1, 28 mm long	BPZ:WZT-K12	**WZT-K12**
Ball valve Rp¾" for sensors DS M10 × 1, 28 mm long	BPZ:WZT-K34	**WZT-K34**
Ball valve Rp1" for sensors DS M10 × 1, 28 mm long	BPZ:WZT-K1	**WZT-K1**

Communication modules for SONOHEAT® UH50

For technical description see SONOHEAT UH50 versions, chapter communication modules.

Product Title	Stock No.	Product No.
CL module Digital passive interface (current loop) standard to EN 1434-3	BPZ:WZU-CL	**WZU-CL**
Pulse module Parameter settings with PappaWin	BPZ:WZU-P2	**WZU-P2**
Radio module with integrated antenna On request	BPZ:WZU-RM	**WZU-RM**
Radio module with external antenna On request	BPZ:WZU-RM-EXT	**WZU-RM-EXT**
Analog module On request	BPZ:WZU-AM	**WZU-AM**
M-Bus module To EN 1434-3, with guaranteed data frame	BPZ:WZU-MB-GR	**WZU-MB-GR**

SONOHEAT® Electronic heat meters and heating/cooling energy meters Accessories for UH50..

Pair of temperature sensors for SONOHEAT® UH50

Other lengths on request

Product Title	Stock No.	Product No.
Pair of temperature sensors Pt500, length 27.5 mm, DS M10 × 1, cable length 1.5 m	BPZ:WZU-2815	**WZU5-2815**
Pair of temperature sensors Pt500, length 27.5 mm, DS M10 × 1, cable length 2.5 m	BPZ:WZU-2825	**WZU5-2825**
Pair of temperature sensors Pt500, length 100 mm × Ø 6 mm, cable length 2 m	BPZ:WZU5-1020	**WZU5-1020**
Pair of temperature sensors Pt500, length 100 mm × Ø 6 mm, cable length 5 m	BPZ:WZU5-1050	**WZU5-1050**
Pair of temperature sensors Pt100, length 100 mm × Ø 6 mm, cable length 2 m	BPZ:WZU1-1020	**WZU1-1020**
Pair of temperature sensors Pt100, length 150 mm × Ø 6 mm, cable length 2 m	BPZ:WZU1-1520	**WZU1-1520**

Power supply SONOHEAT® 2WR5

Product Title	Stock No.	Product No.
Battery Suited for special M-bus readout or for fast temperature measurements. Battery life is 6 years	BPZ:WZU-BD	**WZU-BD**
Mains module AC 230 V, cable 1.5 m	BPZ:WZU-AC230-15	**WZU-AC230-15**
Mains module AC 110 V, cable 1.5 m	BPZ:WZU-AC110-15	**WZU-AC110-15**
Mains module AC/DC 24 V, cable 1.5 m, with connecting terminals	BPZ:WZU-ACDC24-00	**WZU-ACDC24-00**

Siemeca™ Systems for remote readout
Automatic Meter Reading System (AMR 868 MHz)

Siemeca™ AMR wireless system 868 MHz

Siemeca™ AMR



The Siemeca™ Automatic Meter Reading system (AMR) is an innovative system for wireless remote readout of consumption data. It consists of network nodes (data collectors) which form a network within the premises to collect all consumption data transmitted by the metering devices, to store them and to make them available for further handling. The network nodes can be read either locally or by making use of Internet technologies, also from the office. The types of consumption meters included in the Siemeca™ AMR system are heat meters, water meters and heat cost allocators. A pulse adapter is available, enabling third-party meters to be integrated into the system.The Siemeca™ AMR system excels in versatility, ease of installation and maintenance, and offers a large number of readout choices matched to customer needs. The system components are suited for installation in small premises (e.g. 3 apartments) and in large plant comprising several buildings. Installation of the wireless network is largely automatic, including self-configuration.
Functioning principle:The system automatically configures itself during installation, forming a network. The battery-powered network nodes receive and store the consumption data from the metering devices installed within their range. In the network, the measured values received from all metering devices are constantly updated. This means that every network node holds the consumption data of the entire plant so that readout can take place at any of the nodes. For local readout, a laptop can be connected to any of the network nodes via cable, or an optional wireless module can be used. This works within the range of each network node. Depending on the local situation, it may not even be necessary to enter the house for making the readout. If Siemeca™ AMR plant shall be read out from a remote location, one of the network nodes is to be used with a gateway. This gateway then offers a number of communication choices: Data can be transmitted directly to the billing systems via GSM network, broadband cable network or computer network. The user can choose the transmission medium he prefers.

Data sheet N2870

	Stock No.	Product No.
	BPZ:Siemeca AMR	**Siemeca™ AMR**

Siemeca™ AMR 868 MHz main components

Product Title	s. page	Data sheet	Stock No.	Product No.
Siemeca™ AMR electronic heat cost allocator	17-8	N2877	BPZ:WHE46..	**WHE46..**
Siemeca™ electronic water meter, wall mounted	17-17	N5341	BPZ:WFC2..	**WFC2../WFH2..**
Siemeca™ electronic water meter, recessed mounting	17-22	N5343	BPZ:WMC2..	**WMC2../WMH2..**
Siemeca™ electronic heat meter, wall mounted	17-24	N5333	BPZ:WFM2..	**WFM2../WFQ2..**
Siemeca™ electronic heat and cooling energy meter, wall mounted	17-27	N5338	BPZ:WFN2..	**WFN2..WFR2..**

Overview radio adapter AMR

Product Title	Data sheet	Stock No.	Product No.
Radio adapter AMR Modularis Radio adapter for mechanical Modularis water meters (WFx30, WMx10). Adapter acquires and process the metering pulses of the radio-ready mechanical water meters WFx30../WMx10.. and transmits the data to the AMR system.		JXF:WFZ16.MO	**WFZ16.MO**
Radio adapter AMR, Allmess Radio adapter for mechanical Allmess water meters prepared for radio (System measuring capsule MK +m, system watermeter V +m). Adapter acquires and process the metering pulses and transmits the data to the AMR system.		JXF:WFZ16.AL	**WFZ16.AL**

Siemeca™ Systems for remote readout
Automatic Meter Reading System (AMR 868 MHz)

AEW36.2



Siemeca™ AMR pulse adapter

The pulse adapter is used for acquiring and storing the pulses received from consumption meters with pulse output. It is possible to acquire pulses from heat, gas and water meters.

Other types of meters on request.

Data sheet N2873

	Stock No.	Product No.
	BPZ:AEW36.2	**AEW36.2**

WTT16..



Siemeca™ network nodes

The nodes receive and handle the data from the consumption meters of the Siemeca™ AMR system. During installation, all nodes automatically create a radio-based network within the building, where all information and consumption values are exchanged at regular intervals via a 868 MHz link. This ensures that all data required for consumption-related readout are available at any of the nodes in the network for local readout. Local readout can be wireless or wire-bound (RS-232 or via M-bus). If the network nodes shall be read from a remote location, the Siemeca™ AMR gateway can be used as an interface to different communication media. The gateway facilitates remote readout via a fixed telephone network, GSM or - using the optional Ethernet interface - via broad-band cable or computer networks.
For completely wireless installation of the node networks, the battery-powered types WTT16... are available. A mains-powered version WTX16... is available for special applications.

Data sheet N2874

	Stock No.	Product No.
	BPZ:WTT16..	**WTT16..**

Range overview: Network nodes with interface for local readout

Product Title	Data sheet	Stock No.	Product No.
Battery-powered network node Local, wireless readout (WTZ.RM) or via M-bus (WFZ.MBM or WHZ3.USB)	N2874	BPZ:WTT16	**WTT16**
Mains-powered network node Like WTT16	N2874	BPZ:WTX16	**WTX16**
Battery-powered network node With RS-232 moduleLocal readout via RS-232 (WTZ.K232) or M-bus (WFZ.MBM or WHZ3.USB	N2874	BPZ:WTT16.232	**WTT16.232**
Mains-powered network node Like WTT16.232	N2874	BPZ:WTX16.232	**WTX16.232**

Range overview: Network nodes with interface for remote readout

Product Title	Data sheet	Stock No.	Product No.
Network node and power supply with communication module gateway GSM for max. 500 metering devices, no connection to other networks possible	N2878	BPZ:WTX16.MOD-1	**WTX16.MOD-1**
Mains-powered network node with communication module gateway GSM for max. 2000 metering devices; max. 5 networks can be combined with a M-bus-master	N2878	BPZ:WTX16.GSM	**WTX16.GSM**
Mains-powered network node with communication module gateway Ethernet For max. 2.000 metering devices; a maximum of 5 networks can be interconnected with M-bus-master	N2878	BPZ:WTX16.IP	**WTX16.IP**

PC radio module **WTZ.RM**

with program CD, USB cable and measuring device

Data sheet N2876



Stock No.	Product No.
BPZ:WTZ.RM	**WTZ.RM**

Programming adapter and tools for WTT../ WTX..

Product Title	Stock No.	Product No.
USB tool set	BPZ:WHZ3.USB	**WHZ3.USB**
PC connecting cable	BPZ:WFZ.MBM	**WFZ.MBM**
RS-232 cable	BPZ:WTZ.K232	**WTZ.K232**
Special Port Converter RS232 to USB	JXF:WFZ.USB-1	**WFZ.USB-1**

Software for WTT../ WTX..

Product Title	Stock No.	Product No.
Parameterizing and diagnostics software	BPZ:ACT20	**ACT20**
Parameterization software	BPZ:ACT21	**ACT21**
Readout software	BPZ:ACS26	**ACS26**
Setup and service software	BPZ:ACT26	**ACT26**

Batteries

Product Title	Operating voltage [V]	Battery capacity [Ah]	Stock No.	Product No.
Battery for WTT16..	3.6	13	BPZ:WTZ.BAT	**WTZ.BAT**
Backup battery for WT..16..	3	1	BPZ:FBCRAA/KS	**FBCRAA/KS**

Siemeca™ Systems for remote readout
walk-by radio system

walk-by



walk-by radio system 868 MHz

Simple, fast and reliable. These three attributes are the most apt descriptions of the walk-by system. After all, it provides values for billing consumption easily, quickly and dependably. And the meter-reader does not even have to enter the tenant's flat - on the reading date, he only has to enter the commonly accessible area of the property.
For smaller properties, he can even collect data outside of the building. That not only benefits the meter-reader (who does not have to plan and mount data collectors any more), but also tenants. They no longer have to agree on a date for reading or even be there on the readout day. It couldn't be simpler. At the set reading time, the meters send current
consumption data at short intervals. The meter-reader only has to enter the building or even just walk around it with his mobile meter-reading system. This consists of a mobile data collector
and a laptop with application software. The data collector collects the radio telegrams and, after a plausibility check, sends them wirelessly to the laptop via the Bluetooth interface. The software on the laptop not only manages the data, it also shows the meter-reader the current progress of the process. After having received all data, the meter-reader can then leave the property. Back at his workplace, the meter-reader only has to export the data saved and read them for example into a billing program. If data is needed on a regular basis – meaning permanently mounted data collectors are to be retrofitted with an interface for remote data transmission – the measuring devices can be reprogrammed from the walk-by system to the stationary AMR system from Siemens at any time. This means that readout values can be called up on a daily basis without entering the property.

Within the walk-by system there are walk-by heat cost allocators and walk-by radio adpaters available. More devices on request.

Data sheet

	Stock No.	Product No.
	JXF:walk-by	**walk-by**

Overview heat cost allocators walk-by

Product Title	s. page	Data sheet	Stock No.	Product No.
Electronic heat cost allocator walk-by	17-9	N2884	JXF:WHE465..	**WHE465..**
Electronic heat cost allocator walk-by with IrDA-interface	17-10	N2884	JXF:WHE466..	**WHE466..**

Overview radio adapter walk-by

Product Title	Data sheet	Stock No.	Product No.
Radio adapter walk-by Modularis		JXF:WFZ166.MO	**WFZ166.MO**
Radio adapter for mechanical Modularis water meters (WFx30, WMx10). Adapter acquires and process the metering pulses of the radio-ready mechanical water meters WFx30../WMx10.. and transmits the data to the walk-by system.			
Radio adapter walk-by , Allmess		JXF:WFZ166.AL	**WFZ166.AL**
Radio adapter for mechanical Allmess water meters prepared for radio (System measuring capsule MK +m, system watermeter V +m). Adapter acquires and process the metering pulses and transmits the data to the walk-by system.			

Tools walk-by

Product Title	Stock No.	Product No.
Torque Screwdriver, Torx Plus™ recommended for radio adapter Modularis WFZ16x.MO	JXF:FZ201-009	**FZ201-009**
readout-set walk-by Bluetooth-Stick, Software ACT46, mobil data collector with bag	JXF:WTZ.WBSET-2/PC	**WTZ.WBSET-2/PC**

Siemeca™ Systems for remote readout
M-Bus Metering System

Range overview

Product Title	s. page	Data sheet	Stock No.	Product No.
Siemeca™ AMR electronic heat cost allocator	17-10	N2877	BPZ:WHE46..	**WHE46..**
Siemeca™ electronic water meter, wall mounted	17-17	N5341	BPZ:WFC2..	**WFC2../WFH2..**
Siemeca™ electronic heat meter, wall mounted	17-24	N5333	BPZ:WFM2..	**WFM2../WFQ2..**
Siemeca™ electronic heat and cooling energy meter, wall mounted	17-27	N5338	BPZ:WFN2..	**WFN2..WFR2..**

System components

Product Title	s. page	Data sheet	Stock No.	Product No.
M-bus pulse adapter	8-23	N5383	BPZ:AEW310.2	**AEW310.2**
M-bus central unit	8-21	N5362	BPZ:OZW10	**OZW10**
M-Bus signal converter	8-23		BPZ:WZC-P..	**WZC-P..**
M-Bus repeater	8-23	N5366	BPZ:WZC-R250	**WZC-R250**

Software and tools

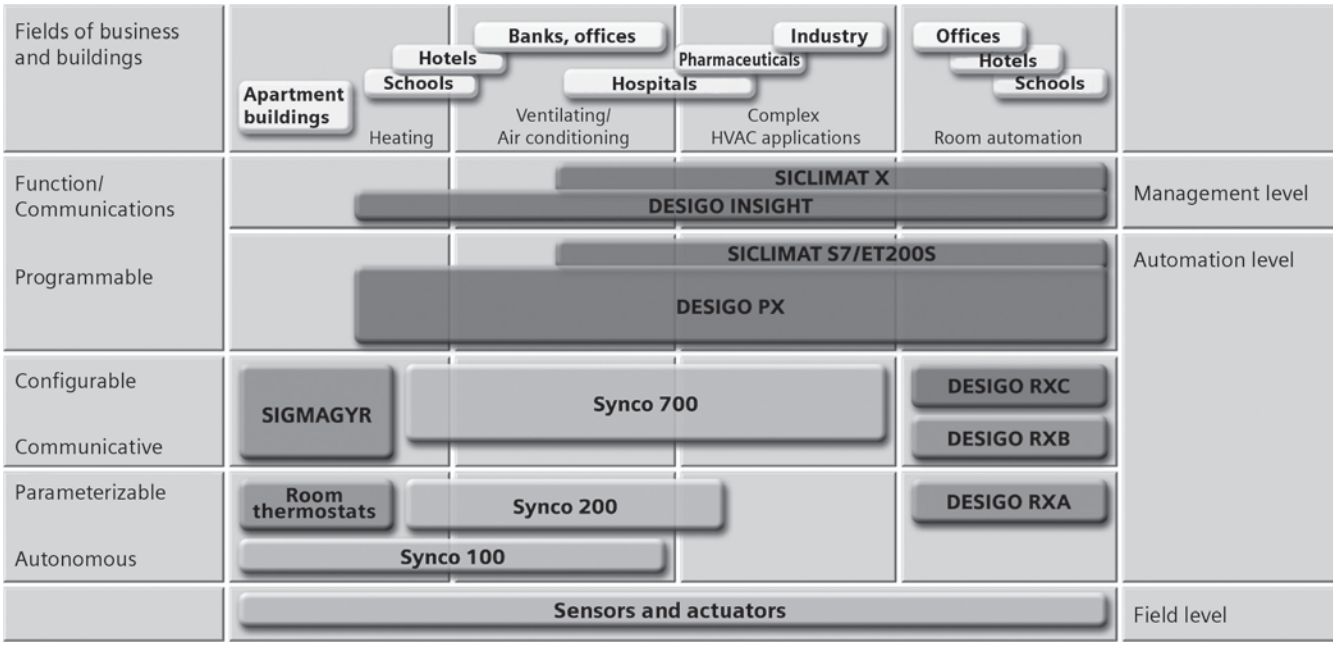
Product Title	s. page	Data sheet	Stock No.	Product No.
Operating, service and alarm software	8-9	N5641	BPZ:ACS700	**ACS700**
Parameterizing and diagnostics software	8-24		BPZ:ACT20	**ACT20**
PC connecting cable	8-24		BPZ:WFZ.MBM	**WFZ.MBM**
USB tool set	8-24		BPZ:WHZ3.USB	**WHZ3.USB**

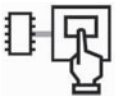
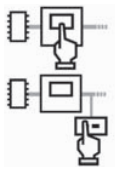
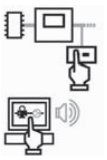
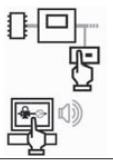
Practical tips



Overview	Control ranges	A-2
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Preferred solutions with our controller product range and systems



Plant size project size	Application	Operating	Heating	Ventilation	Air conditioning	Refrigeration	After treatment in individual room: Radiator, VAV + LQ chilled ceiling	After treatment in individual room: Fan coil	After treatment in individual room: Light and blinds
	**Individual plant** ■ Autonomous controller ■ Local operation ■ Preprogrammed solutions		SIGMAGYR RVP..					DESIGO™ RXA	
			Synco™ 100						
			Synco™ 200						
	**Individual plant** ■ Communicative controller ■ Local/remote operation ■ Preprogrammed solutions		SIGMAGYR RVL..				DESIGO™ RXB		
			Synco™ 700						
	**Distributed plants** ■ Communicative controller ■ Central/local operation ■ Preprogrammed solutions		Synco™ 700				DESIGO™ RXB		
	**Complex plants** ■ Communicative controller ■ Central/local operation ■ Customized solutions		DESIGO™ PX				DESIGO™ RXC		
	**Complex plants with building automation and control system** ■ Communicative controller ■ Central operation ■ Customized solutions ■ Cross-installation integration of third-party systems as well		DESIGO™ Insight DESIGO™ PX				DESIGO™ RXC		

A

Control of mixing and injection circuit for floor heating

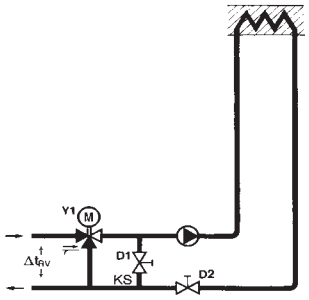
Application

Mix with set premix and injection circuit is suitable for controlling low-temperature heating (floor heating plants) with heat generators where the maximum flow temperature is higher than the maximum permissible temperature of the plant flow.

Use the temperature difference ΔtRv between boiler flow and plant return to determine the control valve's volume flow rate. The valve nominal value is then smaller than the plant flow.

Mixing circuit

Floor heating control using double mixing circuit

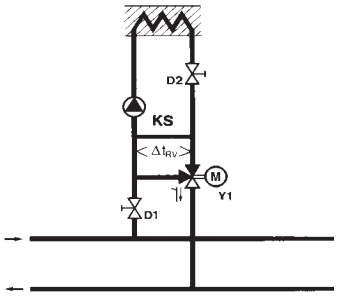


Mixing circuit with fixed premix for connection to heat generators or distributors without differential pressure

1. Temperature level
1.1 Bring the heat generator to maximum operating temperature for a closed control valve.
1.2 Fully open throttle D1 in the short circuit.
1.3 Switch on pump.
1.4 Manually, fully open actuating element Y1 (peak load operation).
1.5 Close throttle D1 until the floor heating flow achieves the maximum operating temperature, e.g. 50°C. (never higher than the maximum permissible).
2. Temperature difference
The plant is compensated using a compensation throttle D2 in flow or return to the nominal temperature difference between flow and return water (temperature difference) and thus the nominal volume flow. This setting takes place when items 1.1...1.6 are met and results in stable control even during low-load operation. The setting instructions by the floor heating supplier must be followed.
2.1 Bring the heat generator to maximum operating temperature for a closed control valve.
2.2 Fully open throttle D2.
2.3 Switch on pump.
2.4 Manually, fully open actuating element Y1 (peak load operation).
2.5 Close throttle D2 until the designed temperature difference of, for example, 10 k is achieved.
3.1 Changeover control valve to automatic.
3.2 Check after 72 hours of control, in particular, when multiple groups are connected to one distributor.
You do not need the supplemental short circuit CS for the mixing circuit when the maximum flow temperature for the heat generator cannot exceed the maximum permissible temperature for the plant flow.

Injection circuit

Floor heating control using injection circuit



Injection circuit
for connection to pressure distributors

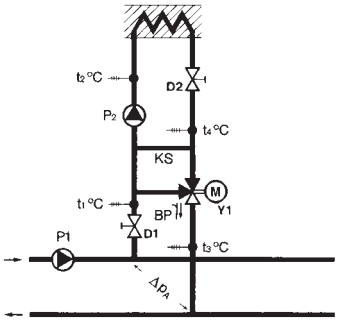
A relatively large portion of cooled off return water from the floor heating is constantly re-mixed with its flow via the short circuit. It has a lower maximum value versus the boiler water temperature.

1. Temperature level
1.1 Bring the heat generator to maximum operating temperature for a closed control valve.
1.2 Switch on main and group pump.
1.3 Manually, fully open actuating element Y1 (peak load operation).
1.4 Set throttle D1 in the primary flow and return so that the floor heating flow temperature cannot exceed the maximum permissible temperature.
2. Temperature difference
Set throttle D2 as described for mixing circuit using fixed premix.
3.1 Changeover control valve to automatic.
3.2 Check after 72 hours of control, in particular, when multiple groups are connected to one distributor.

A

Injection control for radiated heat

Injection circuit



Injection circuit

General

Injection circuits must be compensated on the primary and secondary side, because

- **Excess pressure builds on the connection points for the given heating group, which must be reduced to the required connecting pressure ΔpA and**
- **The complete plant generally operates at a pump pressure that is higher than was originally planned.**

Procedure

As a rule, compensation takes place with a fully opened control valve.

For a compensated injection circuit, primary pump P1 supplies as much water to the heating group, as its pump P2 is capable of assuming. Then

$$\Delta p_A = \Delta p_{p2}$$

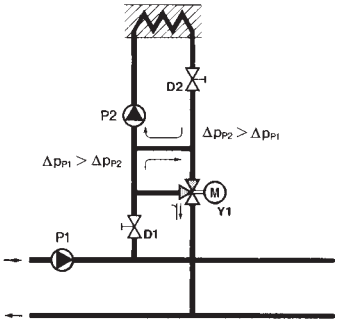
No heating water circulates in the bypass as well as in the short circuit and

$$t_1\ °C = t_2\ °C$$
$$t_3\ °C = t_4\ °C$$

The consumer limits the volume flow using throttle D1 and thus sets the temperature difference between flow and return.

Throttle D2 is used to compensate the injection, so that the desired consumer flow temperature is not exceeded when the valve is fully open.

Incorrect circulation



Incorrect circulation for non-compensated injection circuit

Procedure

- Fully open throttles D1 and D2
- Bring heat generator to the maximum operating temperature

1. Flow temperature:

1.1 Manually, fully open actuating element (peak load operation) and wait for a stable consumer return temperature.

1.2 Close throttle D2 a bit when the flow temperature exceeds the maximum desired value. Close throttle D1 accordingly when the flow temperature is too low.

2. Temperature difference:

2.1 The consumer flow temperature has the maximum permissible temperature (see flow temperature) when the valve is fully opened.

2.2 Wait for stable consumer return temperature.

2.3 Throttle D1 is closed, lowering the flow, until the desired temperature difference is set, when the temperature difference between the flow and return is less than the planned value.

2.4 Check consumer flow temperature and eventually change using throttle D2. Then check items 2, 3 and 4 and correct as required.

3.1 Changeover control valve to automatic.

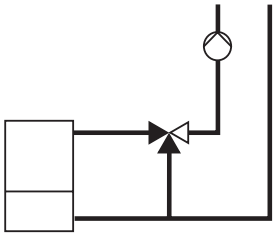
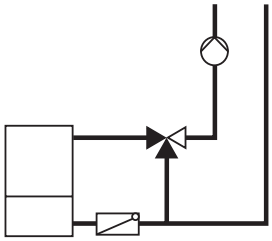
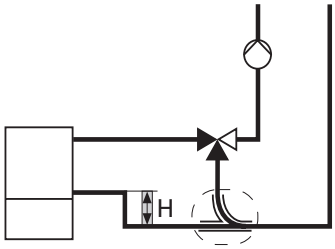
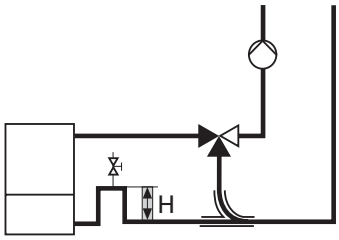
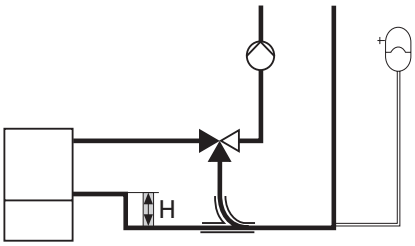
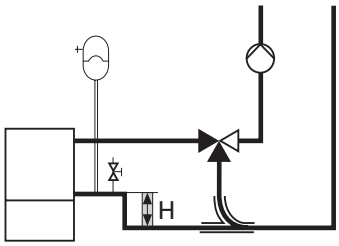
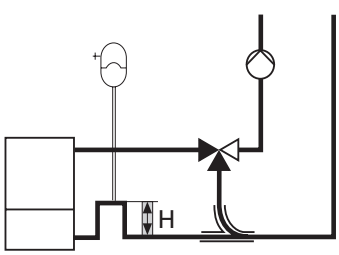
3.2 Check after 72 hours of control, in particular, when multiple groups are connected to one distributor.

A

On the boiler

Incorrect circulation may occur for heating plants with a closed three-port valve or three-port plug and ball valve, since warm water is specifically lighter than cold water. As a result, warm water pushes upward within a water column and cold water pushes downward, which results in gravitational circulation.

As a consequence, when the heating circuit pump is switched on, heated boiler water may flow into the heating circuit flow from the boiler return via the mixing line through the two opened mixing ports. When the heating circuit pump is switched off, it is more likely that hot boiler water will "sneak" into the radiators via the heating circuit return line.

False	Correct	Measures against incorrect circulations
Incorrect circulation in the boiler... ① 	...prevent a shutoff valve ② 	Incorrect circulations can be prevented, either by – Inserting a shutoff valve (Figure 2), or better:
	③ 	– Insert pipe-in-pipe insulation and "shoe" the mixing line to the return (Figure 3) (H = 8 to 10 times pipe Ø)
	④ 	– Insert a pipe-in-pipe insulation with bleed valve (Figure 4) (H = 8 to 10 times pipe Ø)
⑤ 	⑥ 	**Connect closed expansion vessels** Connect the supply line to the expansion vessel on the space provided on the boiler or on the highest point for the pipe-in-pipe insulation. (H = 8 to 10 times pipe Ø)
	⑦ 	Figure 7 is a sample connection for the expansion vessel to pipe-in-pipe insulation with a boiler connection at the bottom. (H = 8 to 10 times pipe Ø)

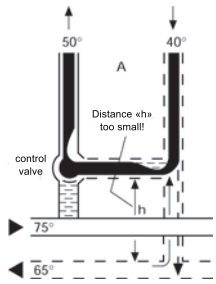
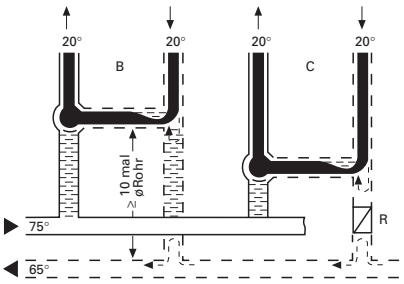
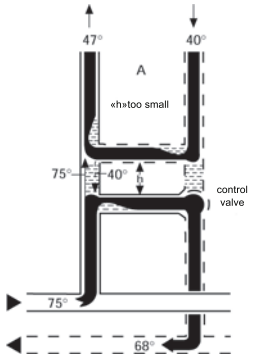
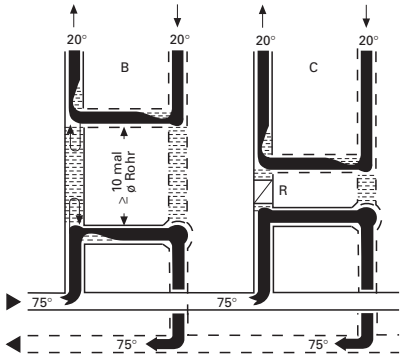
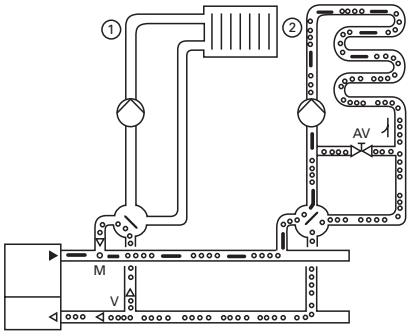
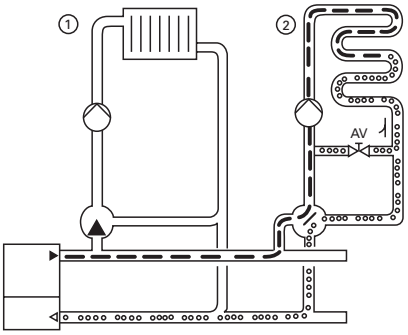
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Faulty circulation
On distributor

On distributor

Incorrect circulation may occur for heating plants with a closed three-port valve or three-port plug and ball valve, since warm water is specifically lighter than cold water. As a result, warm water pushes upward within a water column and cold water pushes downward, which results in gravitational circulation.

As a consequence, when the heating circuit pump is switched on, heated boiler water may flow into the heating circuit flow from the boiler return via the mixing line through the two opened mixing gates. When the heating circuit pump is switched off, it is more likely that hot boiler water will "sneak" into the radiators via the heating circuit return line.

False	Corrrect	Measures against incorrect circulations
		**Mixing circuit on differential pressure-free distributor** – Distance from bypass to collector h ≥ 10 times pipe Ø, min. 40 cm or – Insert gravitational brake R in the return for the heating group
		**Injection circuit on pressure distributor** – Distance from bypass to short circuit h ≥ 10 times pipe Ø, min. 40 cm or – Insert gravitational brake R in the flow between the bypass and short circuit
 Incorrect circulation from point V via the open path for the closed mixer after mixing point M. Impact of incorrect circulation in the floor heating. .		**Mixing circuit with four-port mixer on distributor without primary pump** – Control group ①using three-port mixer

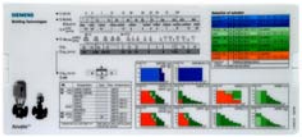
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Technical information on sizing and selection of valves and actuators

The behavior of a modulated controlled plant depends highly on the measurement of the control valves. Sizing is optimum when full plant output is first achieved after the control valve is fully opened.

Valve and actuator selection tool
We recommend using the valve calculator, flow diagrams and selection programs EasyVASP or Refrigeration VASP to simplify sizing and selection.

Valve calculator



Valves and actuators for central HVAC plants.

Applications
- Heat generation
- Heat distribution
- Heating zones
- Heating plant
- Ventilation and air conditioning plant
- Community and district heating plants
- Drinking water mixing plants
- High-precision process control



Valves and actuators for room and zone applications

Applications
- Air after treatment devices
- Induction devices
- Chilled ceilings
- Boiler charges
- Zone control
- Radiator applications

EasyVASP



Valves and actuators for
- Central HVAC plants
- Room and zone applications
- Steam applications

Applications
- For the aforementioned applications

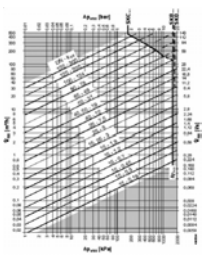
RefrigerationVASP



Valves and actuators for
- Expansion applications
- Hot gas applications
- Suction gas applications

Applications
- Refrigeration circuits
- Chillers
- Heat pumps

Flow diagrams



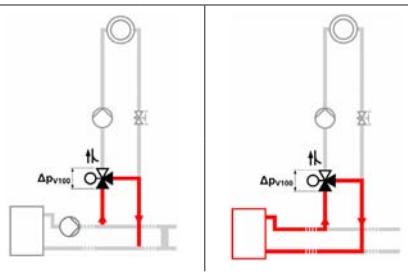
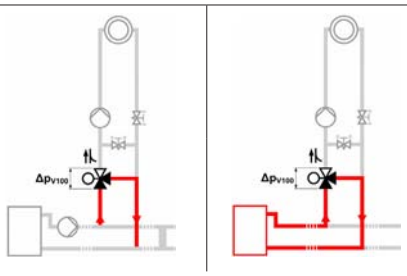
Valves and actuators for
- Central HVAC plants
- Room and zone applications

Applications
- For the aforementioned applications

A

Sizing and selection for water

Determine volume flow V_{100}			Notes
Volume flow $\dot{V}_{100} = \frac{Q_{100}}{1.163 \times \Delta T \times f_1}$	$\dot{V}_{100}$ (m³/h) Q_{100} (kW) ΔT (K)	**Volume flow at** Plant nominal output Plant nominal output Temperature difference	f_1 (corrective factor) = 1 for water For glycol percentage of > 20 % or application of other media, see page A-16

Determine flow k_v and differential pressure Δp_{V100} b/ Select nominal flow value k_{vs}			
$k_v = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100}}}$	Δp_{V100} (kPa)	Loss of pressure via the fully open valve	Can also be determined via flow diagrams, EasyVASP or valve calculator
Hydraulic basic circuits	The variable flow path depends on the hydraulic circuit. It is specially emphasized in the graphics for the basic circuits depicted below. Δp_{MV} Loss of pressure on variable flow paths Δp_{MV} is often unknown or very small. In this case, use the following values gained from the field:		**Mixing circuit on the differential pressure-free distributor:** Δp_{V100} = 2...5 kPa with primary pump Δp_{V100} = 5...15 kPa without primary pump **Boiler return rise:** Δp_{V100} = 3 kPa **Injection circuit with three-port valve:** Δp_{V100} = 2...5 kPa **Injection circuit with two-port valve:** Δp_{V100} = 50 % from Δp_{VR} **Throttle circuit:** Δp_{V100} = 50 % from Δp_{VR}
Determine hydraulic circuit —— Δp_{MV} differential pressure via the variable flow path	 Mixing circuit without bypass With primary pump | Without primary pump		 Mixing circuit with bypass With primary pump | Without primary pump

A

Check valve authority P_V (control stability)		Notes
$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} \geq 0.3...0.6$ Use the resulting differential pressure Δp_{V100}	The pressure loss via a fully opened valve Δp_{V100} must, at a minimum, be as large as the pressure loss Δp_{MV} via the variable flow part of the plant	Valve authority should be between 0.3 and 0.6, **select smaller valve as required.**

Select suitable valve series		
a) Determine type of valve	Select two-port or three-port appropriate to the hydraulic circuit	See overview of product range
b) Determine connection type	Thread (inside/outside) or flange	See overview of product range
c) Select valve pressure stage	PN class must at a minimum correspond to the plant pressure stage	See overview of product range

Check valve operating range		
a) Temperature	Use within permissible temperature limits	See overview of product range or product section
b) Medium	Check whether applied medium permitted	See overview of product range or product section

Select actuator		
a) Select operating voltage and positioning signal	Pursuant to voltage source and controller signal	
b) Determine desired actuator runtime	Match runtime to dynamic process	See application recommendations
c) Fail-safe function required	If required, select the appropriate control equipment	See overview of product range Type designations with 5 as well as all magnetic valves

Check control equipment operating range		
a) Differential pressure Δp_{max}	Greater than or equal to the maximum pressure drop via control equipment during control	See production section and selection aides
a) Δp_s (Close off)		

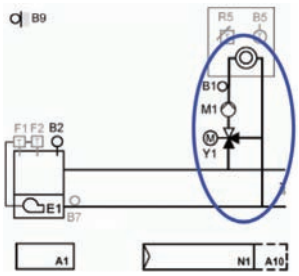
A

Example: Sizing a control valve

Required 3-port control valve, flanged

Plant data

Pressure class	PN 10
Plant's rated capacity Q_{100}	160 kW
Temperature difference ΔT	70/55 = 15 K
Medium	Water
Differential pressure across variable flow path Δp_{MV}	8 kPa
Positioning signal	3-position, AC 230 V



1 Determine volumetric flow V_{100}

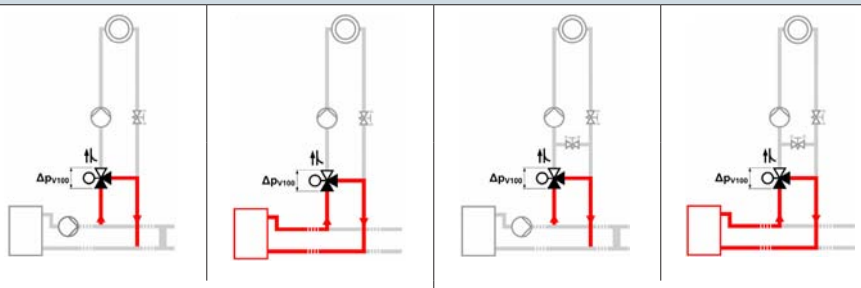
$$\dot{V}_{100} = \frac{Q_{100}}{1.163 \cdot \Delta T}$$

$$\dot{V}_{100} = \frac{160\ kW}{1.163 \cdot 15\ K} = 9.2\ m^3/h$$

2 Determine differential pressure Δp_{V100}

Determine the type of hydraulic circuit

—— differential pressure Δp_{MV} across variable flow path



		Mixing circuit without bypass		Mixing circuit with bypass	
		With primary pump	Without prim. pump	With primary pump	Without prim. pump
Δp_{MV}	Typical range	2...5 kPa	5...15 kPa	2...5 kPa	5...15 kPa
	Typical value	3 kPa	8 kPa	3 kPa	8 kPa
Δp_{V100}		$\Delta p_{V100} \geq \Delta p_{MV}$			
Δp_{max}		$\geq \Delta p_{V100}$			
Example of hydraulic circuit	Example	Mixing circuit without primary pump →		$\Delta p_{V100} \geq \Delta p_{MV}$	
Selected differential		Δp_{V100} = 8 kPa			

3 Determine the k_v-value

$$k_v = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100}}}$$

$$k_v = \frac{9.2\ m^3/h}{\sqrt{\frac{8\ kPa}{100}}} = 32.5\ m^3/h$$

4 Select nominal flow value k_{vs} and determine resulting differential pressure Δp_{V100}

$k_{vs} \geq 0.8 \cdot k_v$-value → $k_{vs} \geq 0.8 \cdot 32.5\ m^3/h = 26\ m^3/h$ → $k_{vs} = 31\ m^3/h$

Resulting Δp_{V100}

$$\Delta p_{V100} = 100 \cdot \left(\frac{\dot{V}_{100}}{k_{vs}}\right)^2$$

$$\Delta p_{V100} = 100 \cdot \left(\frac{9.2\ m^3/h}{31\ m^3/h}\right)^2 = 8.8\ kPa$$

A

5	Check valve authority P_V (control stability)		
	$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} \geq 0.3...0.6$	$\frac{\Delta p_{V100}}{p_{V100} + \Delta p_{MV}} = \frac{8.8\ kPa}{8.8 kPa + 8\ kPa} = 0.52$	
	Enter resulting differential pressure Δp_{V100}		

6	Select suitable valve range		
	a) Type of valve	3-port seat valve	
	b) Connections	Flanged	
	c) Pressure class	PN 10	
	d) Nominal size DN	50	
	e) Medium	Water	
	f) Medium temperature	70 °C	
	Available valve range(s)	k_{vs} = 31 m³/h	VXF31..
	Type of valve selected	VXF31.50	k_{vs} = 31 m³/h

7	Select the actuator			
	a) Supply voltage	AC 230 V		
	b) Control signal	3-position		
	c) Actuator positioning time	Available ranges	SQX..	35...150 s
			SKD.., SKB..	30...120 s
	d) Spring return facility	No		
	e) Auxiliary functions	Auxiliary switch, potentiometer, position checkback signal		
	Available types of actuators	SQX.., SKD.., SKB..		

8	Check the actuator's working range				
			SQX.. + VXF31.50	SKD.. + VXF31.50	SKB.. + VXF31.50
	a) Differential pressure	$\Delta p_{max} \geq \Delta p_{V100}$	$\Delta p_{max} \geq 8{,}8$ kPa		
		Δp_{max}	300 kPa	300 kPa	300 kPa
	b) Closing pressure	$\Delta p_s \geq H_0$	Not applicable to 3-port valves		
	Type of actuator selected		SQX32.00 (without spring return, running time 150 s, no auxiliary functions)		

Selection			
	Type of valve	VXF31.50	for details, refer to Data Sheet N4320
	Type of actuator	SQX32.00	for details, refer to Data Sheet N4554

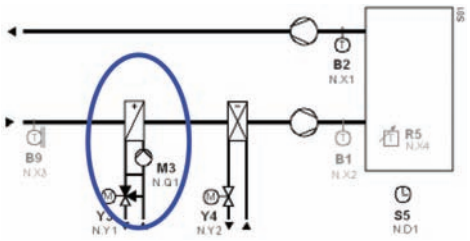
A

Example: Ventilation plant with supply air temperature control
Part 1 – hot water heating coil

Required 3-port control valve, externally threaded

Plant data

Pressure class	PN 16
Plant's rated capacity Q_{100}	55 kW
Temperature difference hot water heating coil ΔT	60/40 = 20 K
Medium	Water
Differential pressure across variable flow path Δp_{MV}	3 kPa
Positioning signal	0...10 V



1 Determine volumetric flow V_{100}

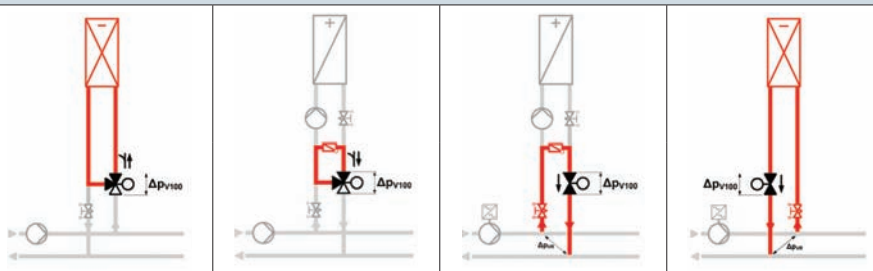
$$\dot{V}_{100} = \frac{Q_{100}}{1.163 \cdot \Delta T}$$

$$\dot{V}_{100} = \frac{55\ kW}{1{,}163 \cdot 20\ K} = 2{,}4\ m^3/h$$

2 Determine differential pressure Δp_{V100}

Determine the type of hydraulic circuit

—— differential pressure Δp_{MV} across variable flow path



		Diverting circuit	Injection circuit with 3-port valve	Injection circuit with 2-port valve	Throttling circuit
		Primary pump constant		Primary pump controlled	
Δp_{MV}	Typical range	5...50 kPa	2...5 kPa		
	Typical value	35 kPa	3 kPa		
Δp_{VR}	Typical range			20...200 kPa	20...200 kPa
	Typical value			Use effective Δp_{VR}-value	
Δp_{V100}		$\Delta p_{V100} \geq \Delta p_{MV}$		$\Delta p_{V100} \geq \frac{\Delta p_{VR}}{2}$	
Δp_{max}		$\Delta p_{max} \geq \Delta p_{V100}$		$\Delta p_{max} \geq \Delta p_{VR}$	
Example of hydraulic circuit	Example	Injection circuit with 3-port valve Primary pump constant	→	$\Delta p_{V100} \geq \Delta p_{MV}$	
Selected differential pressure		Δp_{V100} = 3 kPa			

3 Determine the k_v-value

$$k_v = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100}}}$$

$$k_v = \frac{2{,}4\ m^3/h}{\sqrt{\frac{3\ kPa}{100}}} = 13{,}9\ m^3/h$$

4 Select nominal flow value k_{vs} and determine resulting differential pressure Δp_{V100}

$k_{vs} \geq 0.8 \cdot k_v$-value	$k_{vs} \geq 0.8 \cdot 13.9\ m^3/h = 11.1\ m^3/h$	→	k_{vs} = 12 m³/h or k_{vs} = 16 m³/h
Resulting Δp_{V100}	k_{vs} = 12 m³/h		k_{vs} = 16 m³/h
$\Delta p_{V100} = 100 \cdot \left(\frac{\dot{V}_{100}}{k_{vs}}\right)^2$	$\Delta p_{V100} = 100 \cdot \left(\frac{2{,}4\ m^3/h}{12\ m^3/h}\right)^2 = 4\ kPa$		$\Delta p_{V100} = 100 \cdot \left(\frac{2{,}4\ m^3/h}{16\ m^3/h}\right)^2 = 2{,}3\ kPa$

A

5 Check valve authority P_V (control stability)

$$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} \geq 0.3...0.6$$

Enter resulting differential pressure Δp_{V100}

MXG461.32-12	VXG41.32
k_{VS} = 12 m³/h	k_{VS} = 16 m³/h
$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} = \frac{4\ kPa}{4kPa + 3kPa} = 0{,}57$	$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} = \frac{2{,}3\ kPa}{2{,}3kPa + 3kPa} = 0{,}43$

6 Select suitable valve range

a) Type of valve	3-port seat valve	
b) Connections	Externally threaded	
c) Pressure class	PN 16	
d) Nominal size DN	32	
e) Accessories	Union fittings	
Available valve range(s)	k_{VS} = 12 m³/h k_{VS} = 16 m³/h	MXG461.. VXG41.., VXG44.., VXP45..
Type of valve selected	MXG461.32-12 VXG41.32	k_{VS} = 12 m³/h k_{VS} = 16 m³/h

7 Check the valve's working range

a) Medium temperature	90 °C < MXG461.. for maximum permissible medium temperature of 130 °C 90 °C < VXG41.. for maximum permissible medium temperature of 130 °C
b) Medium	MXG461..: suited for water VXG41..: suited for water

8 Select the actuator

a) Supply voltage	AC 24 V		
b) Control signal	0...10 V		
c) Actuator positioning time	Available ranges	MXG461..	< 2 s
		SQX..	35...150 s
		SKD.., SKB..	30...120 s
d) Spring return facility	No		
e) Auxiliary functions	Auxiliary switch, potentiometer, position checkback signal		
Available types of actuators	MXG461..: actuator integrated VXG41..: SQX.., SKD.., SKB..		
Type of actuator(s) selected	MXG461.32-12 SQX62		

9 Check the actuator's working range

		MXG461.32-12	VXG41.32 + SQX62
a) Differential pressure	$\Delta p_{max} \geq \Delta p_{V100}$	$\Delta p_{max} \geq$ 4 kPa	$\Delta p_{max} \geq$ 2.3 kPa
	Δp_{max}	300 kPa	800 kPa
b) Closing pressure	$\Delta p_s \geq H_0$	Not applicable to 3-port valves	
Type of actuator(s) selected		MXG461.32-12 SQX62	actuator integrated without spring return, running time 35 s, no auxiliary functions, with position checkback signal

Selection

Type of valve Type of actuator	VXG41.32 SQX62	for details, refer to Data Sheet N4463 for details, refer to Data Sheet N4554	Suited for controlled systems with: ■ Usual degree of difficulty ■ Ease of service and repair
Valve and actuator	MXG461.32-12	for details, refer to Data Sheet N4455	Specially suited for controlled with: ■ High degree of difficulty ■ Demanding requirements for control accuracy ■ Fast load changes

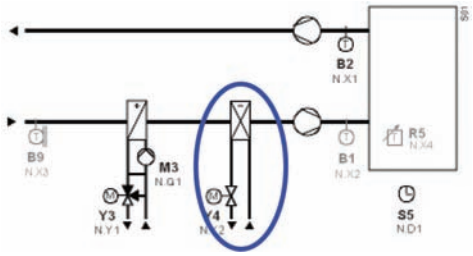
A

Example: Ventilation plant with supply air temperature control
Part 2 – chilled water cooling coil

Required 2-port control valve, externally threaded

Plant data

Pressure class	PN 16
Plant's rated capacity Q_{100}	65 kW
Temperature difference chilled water cooling coil ΔT	6/12 = 6 K
Medium	Water
Differential pressure Δp_{VR}	30 kPa
Zero pump head H_0	200 kPa
Positioning signal	0...10 V



1 Determine volumetric flow V_{100}

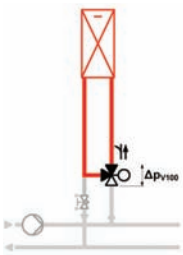
$$\dot{V}_{100} = \frac{Q_{100}}{1.163 \cdot \Delta T}$$

$$\dot{V}_{100} = \frac{65\ kW}{1.163 \cdot 6\ K} = 9.3\ m^3/h$$

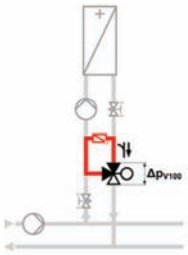
2 Determine differential pressure Δp_{V100}

Determine the type of hydraulic circuit

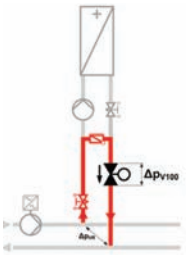
—— differential pressure Δp_{MV} across variable flow path



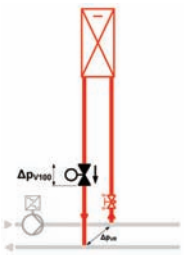
Diverting circuit



Injection circuit with 3-port valve



Injection circuit with 2-port valve



Throttling circuit

		Primary pump constant		Primary pump controlled	
Δp_{MV}	Typical range	5...50 kPa	2...5 kPa		
	Typical value	35 kPa	3 kPa		
Δp_{VR}	Typical range			20...200 kPa	20...200 kPa
	Typical value			Use effective Δp_{VR}-value	
Δp_{V100}		$\Delta p_{V100} \geq \Delta p_{MV}$		$\Delta p_{V100} \geq \frac{\Delta p_{VR}}{2}$	
Δp_{max}		$\Delta p_{max} \geq \Delta p_{V100}$		$\Delta p_{max} \geq \Delta p_{VR}$	
Example of hydraulic circuit	Example	Throttling circuit primary pump controlled		→ $\Delta p_{V100} \geq \frac{\Delta p_{VR}}{2}$	
Selected differential pressure		$\Delta p_{V100} = \frac{\Delta p_{VR}}{2} = \frac{30\ kPa}{2} = 15\ kPa$			

3 Determine the k_v-value

$$k_v = \frac{\dot{V}_{100}}{\sqrt{\frac{\Delta p_{V100}}{100}}}$$

$$k_v = \frac{9.3\ m^3/h}{\sqrt{\frac{15\ kPa}{100}}} = 24\ m^3/h$$

4 Select nominal flow value k_{vs} and determine resulting differential pressure Δp_{V100}

$k_{vs} \geq 0.8 \cdot k_v$-value: $k_{vs} \geq 0.8 \cdot 24\ m^3/h = 19.2\ m^3/h$ → $k_{vs} = 20\ m^3/h$ or $k_{vs} = 25\ m^3/h$

Resulting Δp_{V100}

$$\Delta p_{V100} = 100 \cdot \left(\frac{\dot{V}_{100}}{k_{vs}}\right)^2$$

$k_{vs} = 20\ m^3/h$	$k_{vs} = 25\ m^3/h$
$\Delta p_{V100} = 100 \cdot \left(\frac{9.3\ m^3/h}{20\ m^3/h}\right)^2 = 21.6\ kPa$	$\Delta p_{V100} = 100 \cdot \left(\frac{9.3\ m^3/h}{25\ m^3/h}\right)^2 = 13.8\ kPa$

A

5 Check valve authority P_V (control stability)

$$P_v = \frac{\Delta p_{V100}}{\Delta p_{V100} + \Delta p_{MV}} \geq 0.3...0.6$$

Enter resulting differential pressure Δp_{V100}

MXG461.40-20	VVG41.40
k_{VS} = 20 m³/h	k_{VS} = 25 m³/h
$P_v = \frac{\Delta p_{V100}}{\Delta p_{VR}} = \frac{21{,}6\ kPa}{30\ kPa} = 0{,}72$	$P_v = \frac{\Delta p_{V100}}{\Delta p_{VR}} = \frac{13{,}8\ kPa}{30\ kPa} = 0{,}46$

6 Select suitable valve range

a) Type of valve	3-port control valve	
b) Connections	Externally threaded	
c) Pressure class	PN 16	
d) Nominal size DN	40	
e) Accessories	Union fittings	
Available valve range(s)	k_{VS} = 20 m³/h k_{VS} = 25 m³/h	MXG461.. (2-Weg) VVG41.., VVG44.., VVP45..
Type of valve selected	MXG461.40-20 VVG41.40	k_{VS} = 20 m³/h k_{VS} = 25 m³/h

7 Check the valve's working range

a) Medium temperature	12 °C < MXG461.. for maximum medium temperature of 130 °C 12 °C < VVG41.. for maximum medium temperature of 130 °C 6 °C > VXG41.. for minimum medium temperature of 1 °C 6 °C > VVG41.. for minimum medium temperature of -25 °C
b) Medium	MXG461..: suited for water VVG41..: suited for water

8 Select the actuator

a) Supply voltage	AC 24 V		
b) Control signal	0...10 V		
c) Actuator positioning time	Available ranges	MXG461..	< 2 s
		SQX..	35...150 s
		SKD.., SKB..	30...120 s
d) Spring return facility	No		
e) Auxiliary functions	Auxiliary switch, potentiometer, position checkback signal		
Available types of actuators	MXG461..: actuator integrated VVG41..: SQX.., SKD.., SKB..		
Type of actuator(s) selected	MXG461.40-20 SQX62		

9 Check the actuator's working range

		MXG461.40-20	VVG41.40 + SQX62
a) Differential pressure	$\Delta p_{max} \geq \Delta p_{VR}$	$\Delta p_{max} \geq 30$ kPa	$\Delta p_{max} \geq 30$ kPa
	Δp_{max}	300 kPa	525 kPa
b) Closing pressure	$\Delta p_s \geq H_0$	300 kPa	525 kPa

Type of actuator(s) selected	MXG461.40-20 SQX62	actuator integrated without spring return, running time 35 s, no auxiliary functions, with position checkback signal

Selection

Type of valve Type of actuator	VXG41.40 SQX62	for details, refer to Data Sheet N4463 for details, refer to Data Sheet N4554	Suited for controlled systems with: ■ Usual degree of difficulty ■ Ease of service and repair
Valves and actuators	MXG461.40-20 When used as a through-port valve, inlet B must be closed off with the accessories supplied with the valve (nuts, cover and gasket)	for details, refer to Data Sheet N4455	Specially suited for controlled systems with: ■ High degree of difficulty ■ Demanding requirements for control accuracy ■ Fast load changes

A

Important notes

When measuring valve size using a media other than water, please note that the media properties
- Specific heat
- Density
- Kinematic viscosity

differ from water. All measured values depend on temperature.

Water without antifreeze

$$\dot{V}_{100} = \frac{Q_{100}}{1.163 \cdot \Delta T} \text{ [m³/h]}$$

Water with antifreeze
The design temperature is the lowest medium temperature occurring in the valve.

$$\dot{V}_{100} = \frac{Q_{100} \cdot 3600}{c \cdot \Delta T \cdot \rho} [m^3/h] \quad \text{or} \quad \dot{V}_{100} = \frac{Q_{100}}{1.163 \times \Delta T \times f_1}$$

$\dot{V}_{100}$	= volumetric flow	[m³/h]
Q_{100}	= rated capacity of plant	[kW]
ΔT	= temperature difference of flow and return	[K]
c	= specific heat capacity	[kJ/kgK]
ρ	= specific density	[kg/m^3]

For glycol portion > 20 %, use the corrective factor f1 per table in the formula for determining volume flow.

Corrective factor f1 for Antifrogen N

x	-40	-20	0	20	40	60	80	100	Temp. [°C]
100	0.60	0.62	0.63	0.65	0.67	0.68	0.69	0.71	
80	0.71	0.73	0.74	0.75	0.77	0.78	0.79	0.80	
60	0.79	0.80	0.81	0.82	0.84	0.85	0.86	0.86	
52	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.88	
44		0.87	0.88	0.88	0.89	0.90	0.90	0.90	
34		0.92	0.92	0.92	0.92	0.92	0.93	0.93	
20			0.97	0.97	0.96	0.96	0.96	0.95	

The data and application notes of the glycol manufacturer are binding.
x = percentage of Antifrogen N

Determine the corrective factor f_1

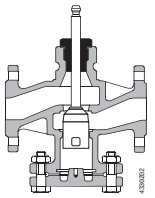
Entry: c; ρ

Output: Corrective factor f_1

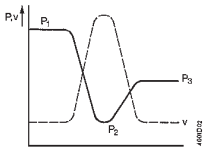
$$f_1 = \frac{c\left[\frac{kJ}{kgK}\right]}{4.18} \times \frac{\rho\left[\frac{kg}{m^3}\right]}{1000}$$

Kinematic viscosity
No corrections required for kinematic viscosity = of up to 10 mm²/s. Please contact your local representative on selecting control actuating devices equipment at other kinematic viscosity =.

Cavitation
High medium velocity in the narrowest section of the valve results in localized underpressure (p2). If the underpressure falls below the boiling pressure (vapor pressure) of the medium, cavitation (vapor bubbles) takes place and, in extreme circumstances, Valve body material is removed from the surfaces. Furthermore, the noise level increases dramatically as cavitation develops. Cavitation can be prevented by limiting the differential pressure across the valve as a function of the medium temperature and upstream pressure, provided the valves differential pressure as provided for in flow chart 1 for a valve is not exceeded and the static pressures listed in diagram 2 are maintained.



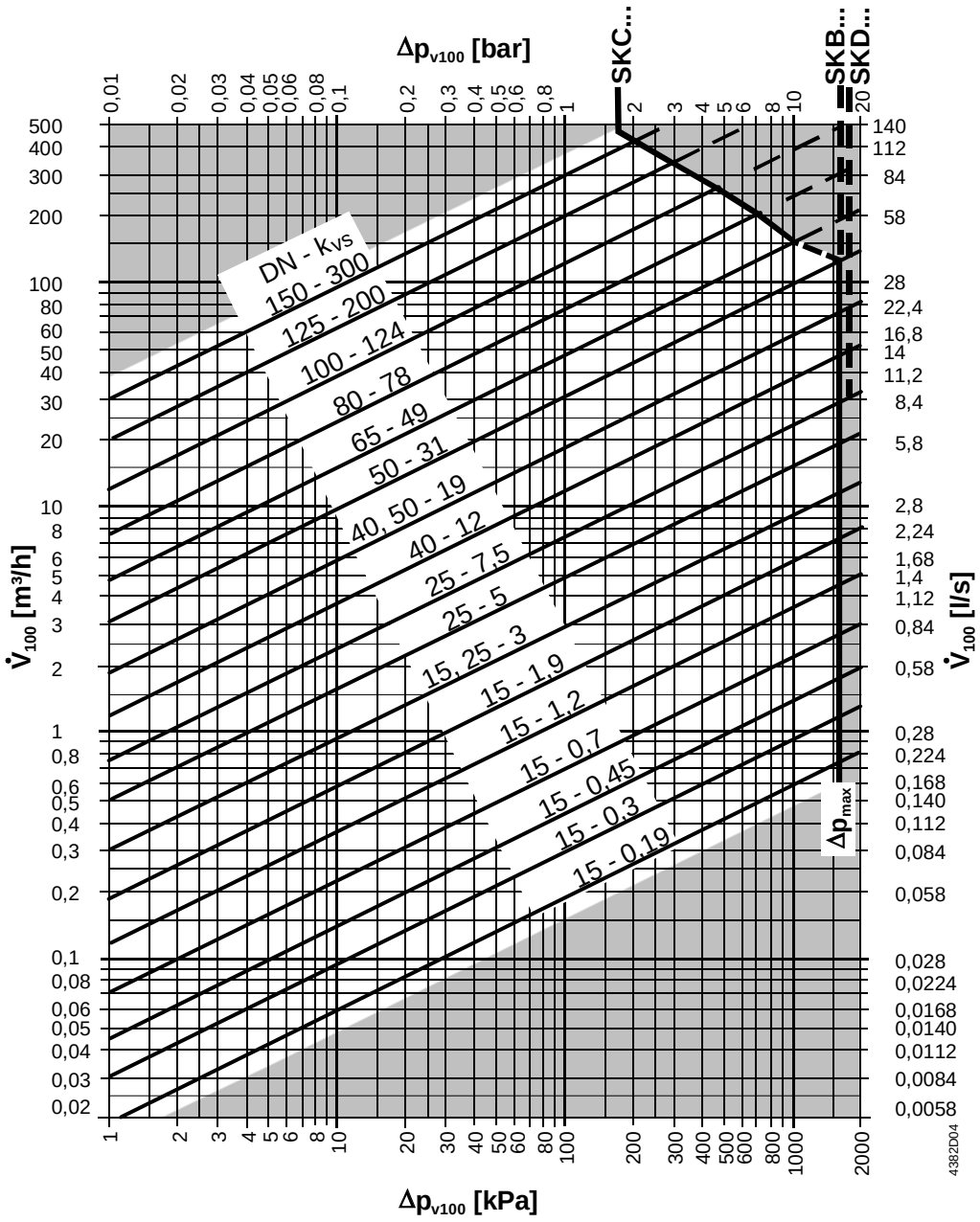
To prevent cavitation sufficient static counterpressure at the valve's outlet must also be ensured for domestic hot water and cold water circuits. A throttling valve, for example, downstream from the heat exchanger would ensure this. In this case, the maximum pressure drop across the control valve should be selected according to the 80 °C curve from the chart on page 19-18.



—— pressure profile
----- velocity profile

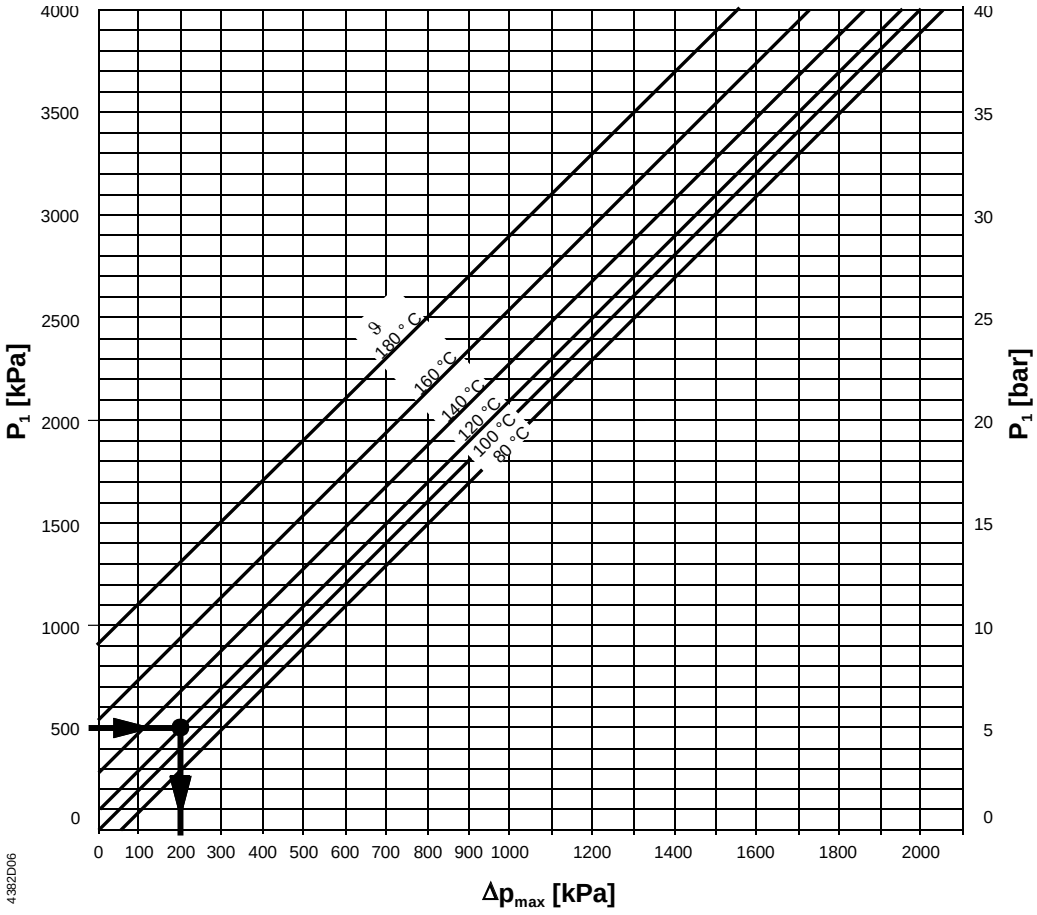
A

Example – Flow diagram for VVF61..



Cavitation

Ensure there is sufficient static counter pressure p_3 at the valve outlet to prevent cavitation. This can be accomplished, for example, with a throttling valve after the heat exchanger. Pressure loss across the control valve should be selected per the 80 °C curve from the following diagram.



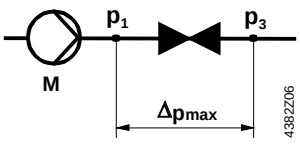
Pressure chart 2

Δp_{max} = differential pressure with valve almost fully closed, at which cavitation can nearly be completely avoided
p_1 = static pressure at inlet
p_3 = static pressure at outlet
M = pump
J = water temperature

Example: Hot water

Pressure p_1 upstream of the valve: 500 kPa (5 bar)
Water temperature: 120 °C

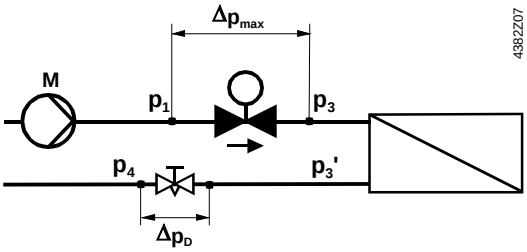
The above chart 2 shows that when the valve is nearly fully closed, a maximum differential pressure Δp_{max} of 200 kPa (2 bar) is permitted.



Example: Cold water

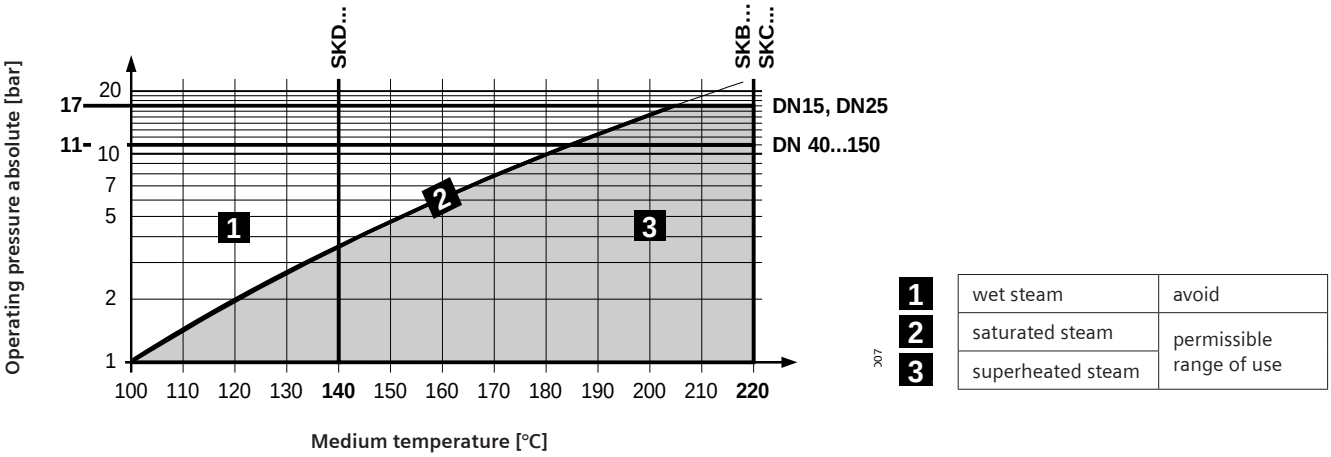
Prevention of cavitation using the example of well-water cooling:

Cold water = 12 °C
p_1 = 500 kPa (5 bar)
p_4 = 100 kPa (1 bar) (atmospheric pressure)
Δp_{max} = 300 kPa (3 bar)
$\Delta p_{3\text{-}3'}$ = 20 kPa (0,2 bar)
Δp_D (throttle) = 80 kPa (0,8 bar)
$p_{3'}$ = pressure downstream from consumer in kPa



Valve design for saturated and super-heated steam

Saturated and super-heated steam in sub-critical range



1	wet steam	avoid
2	saturated steam	permissible range of use
3	superheated steam	

Recommendation: The differential pressure Δp_{max} via the valve for saturated and super-heated steam should approximate the critical pressure ratio as much as possible.

$$\text{Pressure ratio} = \frac{p_1 - p_3}{p_1} \cdot 100\%$$

p_1 = absolute pressure before the valve in kPa
p_3 = absolute pressure after the valve in kPa

Calculate the k_{vs}-value for steam

Sub-critical range		Overcritical range	
$\frac{p_1 - p_3}{p_1} \cdot 100\% < 42\ \%$	Pressure ratio < 42% sub-critical	$\frac{p_1 - p_3}{p_1} \cdot 100\% \geq 42\ \%$	Pressure ratio ≥ 42% overcritical (not recommended)
$k_{vs} = 4.4 \cdot \frac{\dot{m}}{\sqrt{p_3 \cdot (p_1 - p_3)}} \cdot k$		$k_{vs} = 8.8 \cdot \frac{\dot{m}}{p_1} \cdot k$	

$\dot{m}$ = Steam amount in kg/h
k = Factor for superheating steam = 1 + 0,0012 • ΔT (for saturated steam, k = 1)
ΔT = Temperature difference in K between saturated and superheated steam

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Example with saturated steam and for sub-critical range

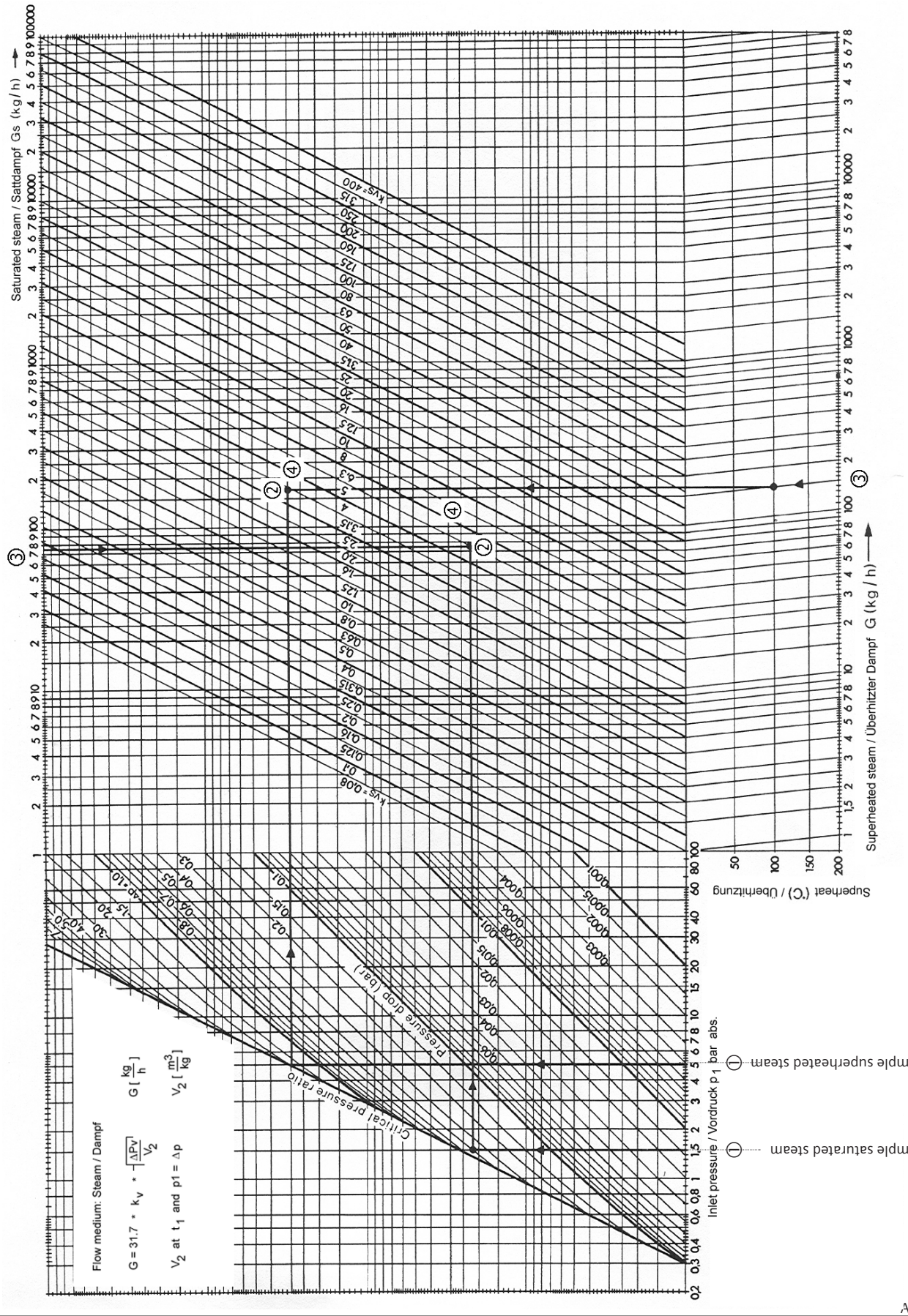
Using formula			Using diagram 3 (next page)	
given	Saturated steam	= 133,5 °C	Saturated steam	= 133.5 °C
	p_1	= 150 kPa (1.5 bar)	p_1	= 150 kPa (1.5 bar)
	$\dot{m}$	= 75 kg/h	$\dot{m}$	= 75 kg/h
	Pressure ratio	= 27 %	Pressure drop	= 40 kPa (0.4 bar)
sought	k_{vs}, valve type		k_{vs}, valve type	
solution	① $p_3 = p_1 - \frac{27\,\% \cdot p_1}{100\,\%}$		① vertical line upward for pressure drop p_1 = 1.5 bar (150 kPa) (absolute)	
	② $p_3 = 150\,\text{kPa} - \frac{27\,\% \cdot 150\,\text{kPa}}{100\,\%} = 110\,\text{kPa}\ (1.1\,\text{bar})$		② horizontal line to the right for intersection 1.5 bar (150 kPa) and pressure drop 0.4 bar (40 kPa)	
	③ $k_{vs} = 4.4 \cdot \frac{75\,\text{kg/h}}{\sqrt{110\,\text{kPa} \cdot (150\,\text{kPa} - 110\,\text{kPa})}} \cdot 1 = 4.97\,\text{m}^3/\text{h}$		③ vertical line downward at 75 kg/h	
			③ Intersection k_{vs} value Select existing k_{vs} value of the valve series VVF41.., VXF41.., VVF45.., VVF52.., VVF61.., VXF61..	
			⑤ Selected k_{vs} value: 5 m³/h	
selected	k_{vs} = 5 m³/h	→ VVF61.24	k_{vs} = 5 m³/h	→ VVF61.24

Example with superheated steam and for sub-critical range

Using formula			Using diagram 3 (next page)	
given	Superheated steam	= 251.8 °C	Superheated steam	= 251.8 °C
	Saturated steam	= 151.8 °C	Saturated steam	= 151.8 °C
	Superheating ΔT	= 100 °C	Superheating ΔT	= 100 °C
	p_1	= 500 kPa (5 bar)	p_1	= 500 kPa (5 bar)
	$\dot{m}$	= 150 kg/h	$\dot{m}$	= 150 kg/h
	Pressure ratio	= 40 %	Pressure ratio	= 200 kPa (2 bar)
sought	k_{vs}, valve type		k_{vs}, valve type	
solution	① $p_3 = p_1 - \frac{40\,\% \cdot p_1}{100\,\%}$		① vertical line upward for pressure drop p_1 = 5 bar (500 kPa) (absolute)	
	② $p_3 = 500\,\text{kPa} - \frac{40\,\% \cdot 500\,\text{kPa}}{100\,\%} = 300\,\text{kPa}\ (3\,\text{bar})$		② horizontal line to the right for intersection 5 bar (500 kPa) and pressure drop 2 bar (200 kPa)	
	③ $k_{vs} = 4.4 \cdot \frac{150\,\text{kg/h}}{\sqrt{300\,\text{kPa} \cdot (500\,\text{kPa} - 300\,\text{kPa})}} \cdot 1 = 3.02\,\text{m}^3/\text{h}$		③ vertical line superheated steam upward at 150 kg/h	
			③ Intersection k_{vs} value Select existing k_{vs} value of the valve series VVF41.., VXF41.., VVF45.., VVF52.., VVF61.., VXF61..	
			⑤ Selected k_{vs}-Wert: 3 m³/h	
selected	k_{vs} = 3 m³/h	→ VVF61.23	k_{vs} = 3 m³/h	→ VVF61.23

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Diagram 3 on determining the kvs value for steam



Water vapor table

pressure		tempera-ture	specific water volume	specific vapour volume	density of vapour	enthalpy of water	enthalpy of vapour	evaporation heat
p	p	t	v'	v''	ρ''	h'	h''	r
kPa	bar	°C	dm³/kg	m³/kg	kg/m³	kJ/kg	kJ/kg	kJ/kg
1	0.010	6.9808	1.0001	129.20	0.007739	29.34	2514.4	2485.0
2	0.020	17.513	1.0012	67.01	0.01492	73.46	2533.6	2460.2
3	0.030	24.100	1.0027	45.67	0.02190	101.00	2545.6	2444.6
4	0.040	28.983	1.0040	34.80	0.02873	121.41	2554.5	2433.1
5	0.050	32.898	1.0052	28.19	0.03547	137.77	2561.6	2423.8
6	0.060	36.183	1.0064	23.74	0.04212	151.50	2567.5	2416.0
7	0.070	39.025	1.0074	20.53	0.04871	163.38	2572.6	2409.2
8	0.080	41.534	1.0084	18.10	0.05523	173.86	2577.1	2403.2
9	0.090	43.787	1.0094	16.20	0.06171	183.28	2581.1	2397.9
10	0.10	45.833	1.0102	14.67	0.06814	191.83	2584.8	2392.9
20	0.20	60.086	1.0172	7.650	0.1307	251.45	2609.9	2358.4
30	0.30	69.124	1.0223	5.229	0.1912	289.30	2625.4	2336.1
40	0.40	75.886	1.0265	3.993	0.2504	317.65	2636.9	2319.2
50	0.50	81.345	1.0301	3.240	0.3086	340.56	2646.0	2305.4
60	0.60	85.954	1.0333	2.732	0.3661	359.93	2653.6	2293.6
70	0.70	89.959	1.0361	2.365	0.4229	376.77	2660.1	2283.3
80	0.80	93.512	1.0387	2.087	0.4792	391.72	2665.8	2274.0
90	0.90	96.713	1.0412	1.869	0.5350	405.21	2670.9	2265.6
100	1.0	99.632	1.0434	1.694	0.5904	417.51	2675.4	2257.9
150	1.5	111.37	1.0530	1.159	0.8628	467.13	2693.4	2226.2
200	2.0	120.23	1.0608	0.8854	1.129	504.70	2706.3	2201.6
250	2.5	127.43	1.0675	0.7184	1.392	535.34	2716.4	2181.0
300	3.0	133.54	1.0735	0.6056	1.651	561.43	2724.7	2163.2
350	3.5	138.87	1.0789	0.5240	1.908	584.27	2731.6	2147.4
400	4.0	143.62	1.0839	0.4622	2.163	604.67	2737.6	2133.0
450	4.5	147.92	1.0885	0.4138	2.417	623.16	2742.9	2119.7
500	5.0	151.84	1.0928	0.3747	2.669	640.12	2747.5	2107.4
600	6.0	158.84	1.1009	0.3155	3.170	670.42	2755.5	2085.0
700	7.0	164.96	1.1082	0.2727	3.667	697.06	2762.0	2064.9
800	8.0	170.41	1.1150	0.2403	4.162	720.94	2767.5	2046.5
900	9.0	175.36	1.1213	0.2148	4.655	742.64	2772.1	2029.5
1000	10.0	179.88	1.1274	0.1943	5.147	762.61	2776.2	2013.6
1100	11	184.07	1.1331	0.1774	5.637	781.13	2779.7	1998.5
1200	12	187.96	1.1386	0.1632	6.127	798.43	2782.7	1984.3
1300	13	191.61	1.1438	0.1511	6.617	814.70	2785.4	1970.7
1400	14	195.04	1.1489	0.1407	7.106	830.08	2787.8	1957.7
1500	15	198.29	1.1539	0.1317	7.596	844.67	2798.9	1945.2
1600	16	201.37	1.1586	0.1237	8.085	858.56	2791.7	1933.2
1700	17	204.31	1.1633	0.1166	8.575	871.84	2793.4	1921.5
1800	18	207.11	1.1678	0.1103	9.065	884.58	2794.8	1910.3
1900	19	209.80	1.1723	0.1047	9.555	896.81	2796.1	1899.3
2000	20	212.37	1.1766	0.09954	10.05	908.59	2797.2	1888.6
2500	25	223.94	1.1972	0.07991	12.51	961.96	2800.9	1839.0
3000	30	233.84	1.2163	0.06663	15.01	1008.4	2802.3	1793.9
4000	40	250.33	1.2521	0.04975	20.10	1087.4	2800.3	1712.9
5000	50	263.91	1.2858	0.03743	25.36	1154.5	2794.2	1639.7
6000	60	275.55	1.3187	0.03244	30.83	1213.7	2785.0	1571.3
7000	70	285.79	1.3513	0.02737	36.53	1267.4	2773.5	1506.0
8000	80	294.97	1.3842	0.02353	42.51	1317.1	2759.9	1442.8
9000	90	303.31	1.4179	0.02050	48.79	1363.7	2744.6	1380.9
10000	100	310.96	1.4526	0.01804	55.43	1408.0	2727.7	1319.7
11000	110	318.05	1.4887	0.01601	62.48	1450.6	2709.3	1258.7
12000	120	324.65	1.5268	0.01428	70.01	1491.8	2689.2	1197.4
13000	130	330.83	1.5672	0.01280	78.14	1532.0	2667.0	1135.0
14000	140	336.64	1.6106	0.01150	86.99	1571.6	2642.4	1070.7
15000	150	342.13	1.6579	0.01034	96.71	1611.0	2615.0	1004.0
20000	200	365.70	2.0370	0.005877	170.2	1826.5	2418.4	591.9
22000	220	373.69	2.6714	0.003728	268.3	2011.1	2195.6	184.5
22120	221.2	374.15	3.17	0.00317	315.5	2107.4	2107.4	0

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Explanation of the abbreviations and terms used

Abbreviation	Term	Unit	Definition
Δp	Differential pressure	kPa	Pressure differential between plant sections
Δp_{max}	Maximum differential pressure	kPa	Maximum permissible differential pressure across the valve's control path, valid for the entire actuating range of the motorised valve
Δp_{V100}	Differential pressure at nominal flow rate	kPa	Differential pressure across the fully open valve and the valve's control path by a volume flow V_{100}
Δp_s	Closing pressure	kPa	Maximum permissible differential pressure at which the motorised valve will close securely against the pressure (close off pressure)
Δp_{MV}	Differential pressure across variable flow path	kPa	Often, Δp_{MV} is not known, in which case typical practical values can be used
Δp_{VR}	Differential pressure of flow and return	kPa	
ΔT	Spread	K	Temperature differential between flow and return
DN	Nominal size		Characteristic for matching parts of the piping system
EPDM	Sealing material		Ethylene propylene Dien rubber for sealing elements
H	Stroke	mm	Valve stem travel
H_0	Zero pump head	m	Pump head, for no flow. The pump operates with a closed valve.
kPa	Unit of pressure		100 kPa = 1 bar = 10 mWS
k_v	Nominal flow value	m³/h	Amount of cold water (5...30 °C) passing through the valve at the respective stroke and at a differential pressure of 100 kPa (1 bar)
k_{vs}	Nominal flow rate	m³/h	Nominal flow rate of cold water (5 bis 30 °C) through the fully open (H_{100}) at a differential pressure of 100 kPa (1 bar)
	Leakage rate	% k_{vs}	Leakage rate when valve is fully closed (H_0) to DIN EN 1349
	Emergency positioning function		Shutoff in the event of a power failure
mWC	Meter water column	m	
PN	PN class		Characteristic relating to the combination of mechanical and dimensional properties of a component in the piping system
P_V	Valve authority		Ratio of differential pressure across fully open valve (H_{100}) and differential pressure across valve and variable flow path. To ensure correct control, a minimum valve authority of 0.3 is required
Teflon	Sealing material		Poly Tetra Fluor Ethylene (PTFE) for sealing elements
Viton	Sealing material		Fluoro-carbon for sealing elements
Q_{100}	Rated capacity	kW	Plant's design capacity
V100	Volumetric flow	m³/h	Volumetric flow with valve fully open (H_{100})
ụ	Kinematic viscosity	mm²/s	
c	Specific heat capacity	kJ/kgK	
r	Specific density	kg/m³	

Relationship between the terms Δp_{max} and Δp_s (close off)
Maximum differential pressure Δp_{max} indicates the differential pressure up to which the control valve can be subjected to the resultant dynamic requirements over the entire stroke range, i.e. from the fully closed to the fully open position. Therefore, Δp_{max} initially depends on design and selected materials, as well as on the available positioning force of the actuator. If the actuator is too weak, only a portion of the possible application range can be utilized.

Conclusion: Δp_{max} is the most important pressure term for the operation of control valves.

Closing pressure Δp_s applies only in the case of a simple shutoff function, but not as a continuos operating state. In this case (e.g. as a safety function in case of pipe rupture), it is important to be able to close against as high a dynamic pressure as possible. This characteristic quantity is comparable with the term «close-off pressure» which is common on the market.

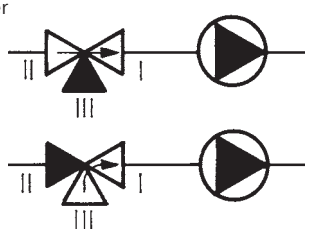
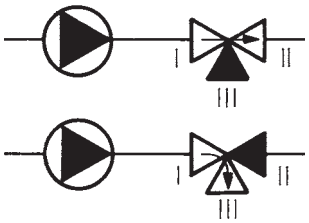
Conclusion: Δp_s or close-off pressure is often consciously or unconsciously equated to the dynamic range Δp_{max}. This erroneously suggests an application field to the customer that does not correspond to the permissible field of use of the control valve, which can cause premature failure.

The list terms can be found in the product descriptions and technical data in the product catalog.

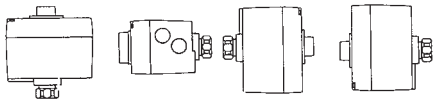
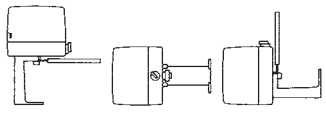
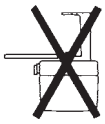
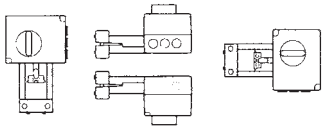
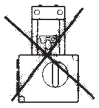
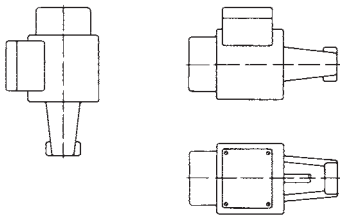
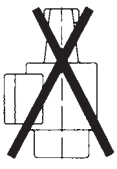
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Norms and standards
The valves comply with the requirements of Pressure Equipment Directive PED97/23/EC for presure-carrying equipment according to section 1, clause 2.1.4.
For products classified in categories I and II, Declaration of Conformity will be provided.

Installation and function of three-port valves

Three-port valves	Function	Actuators
	Mixing: From II and III to I Distribution: From I to II and III Gate II = Control port (sealing) Gate III = Bypass port (immersion seat) for all valves, only type VXG41 with sealing bypass port together with SQX actuators	
Install mixer 	Open control port Close control port	With all actuator types: ■ electric motor ■ electro-hydraulic ■ electro-magnetic
Install as distributor 	Open control port Close control port	Preferably using electro-hydraulic actuators

Actuator installation position

Allowed	Not allowed	Actuators
		Electric motor stroke actuator SQS35../65.. for valve with 5.5 mm stroke
		Electric motor rotary actuator SQK33.. / SQK34.. / SQL33.. / SQL35.. For plug and ball valve and butterfly valves
		Electric motor stroke actuator SQX.. For valve with 20 mm stroke
		Electro-hydraulic stroke actuator SKB.. / SKD.. For valves with 20 mm stroke SKC.. For valves with 40 mm stroke

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Room temperature sensor, room thermostats, remote control devices with built-in room temperature sensor

Application

Room temperature sensor is used in single family homes and duplexes for:

- Room temperature control
- Weather-dependent flow temperature control with connection to room temperature as disturbance variable

- Primarily in non-residential buildings for:
- Room max limits
- Monitoring room temperature for switched off heating (frost protection) and boost heating.
- Optimization

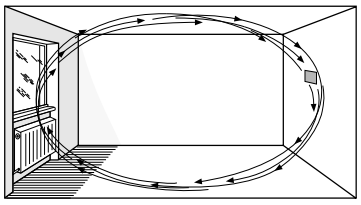
Select reference room

The reference room for placing the room temperature sensor

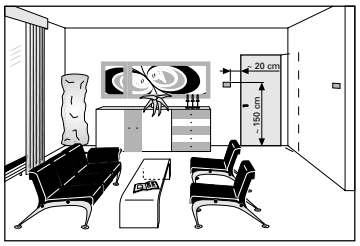
- For single-family homes and duplexes, in general in the main living room
- In non-residential buildings, the least favorable room from a thermal standpoint, e.g.:

Corner room on the north/northwest side or room with large portion of exterior surfaces and must serve as representative for main use of rooms influenced by the optimization system (e.g. no interior rooms, entries, hallways, storage rooms, gangways).

Correct



Best mounting location for room temperature sensor: The interior wall in the main living room opposite the radiator

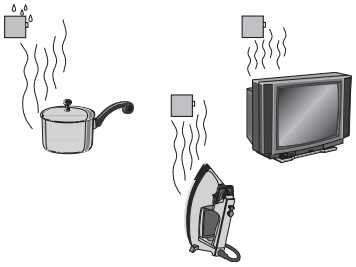


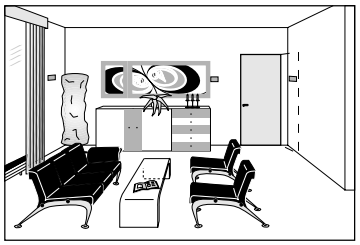
Proper placement of room temperature sensor

How to correctly place the room temperature sensor:

- This device should be placed on an interior wall in the main living room opposite the radiator.
- The room behind this wall must be heated to achieve a representative temperature for the entire living area in the main living room.
- Mounting height: ca. 1.5 m above the floor.
- 1.5 m minimum distance from heat source (e.g. television and strong lights).

False





Incorrect placement of room temperature sensor

However, do not place the room temperature sensor:

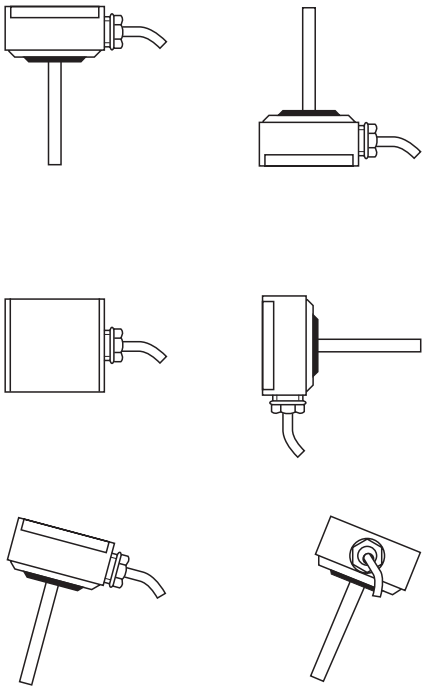
- In bookcases and coves, behind doors and curtains
- In direct sun or supply air
- Close to windows and doors
- In areas with strong contamination
- On a spot on the wall where the heating or domestic hot water piping runs or where a chimney is located
- On an exterior wall.

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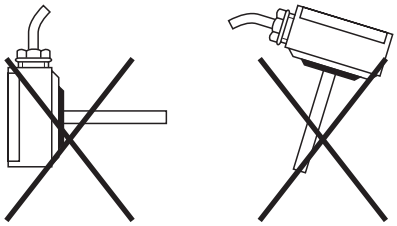
Flow and return temperature sensor immersion or strap-on temperature sensor

Installation position	Control sensor	Limitation sensor
To protect against humidity, install the sensor housing so that the lead for the electric wiring is not pointed up.	As a matter of principle, place the sensors so that the medium to be measured constantly circulates on the mounting location. Where not possible, mount the sensor as close as possible to the medium used to change temperature. (Example: See indirect district heating connection).	

Correct

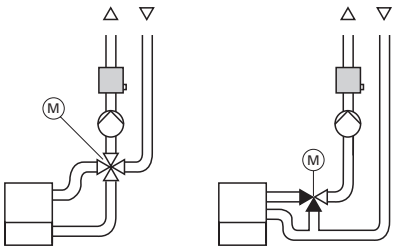


False



Mounting location for pump in flow

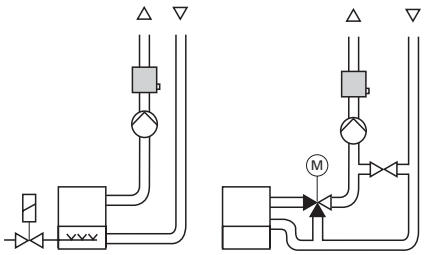
With four-port mixer



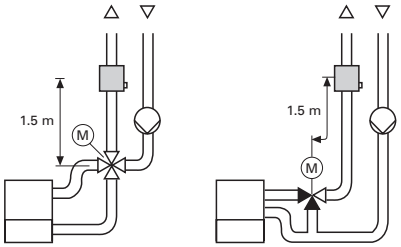
With three-port mixer

Without mixer

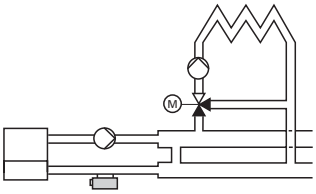
With three-port mixer (floor heating)



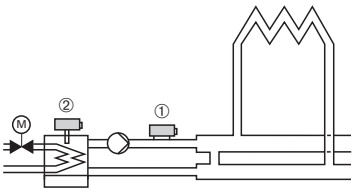
Mounting location for pump in return



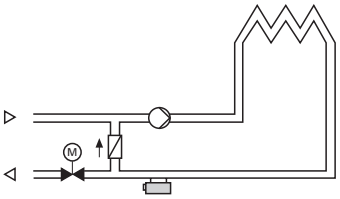
Minimum limitation of the boiler return temperature



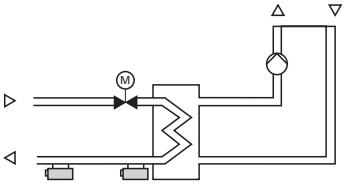
Min.- ① or maximum limitation ② of the heating flow temperature



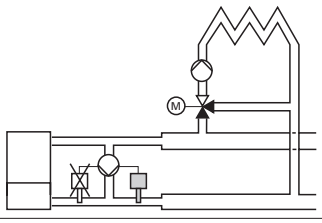
Maximum limitation of the district heating return (direct district heating connection)



Maximum limitation of the district heating return (indirect district heating connection)



Control of boiler mixing pump



A

Immersion temperature sensor QAE..; strap-on sensor QAD..;

Standard immersion and strap-on sensor can be used for a medium temperature of max. 130°C (special models up to 200°C/450°C). The mounted sensor cannot be exposed to a heat dam since the highest permissible ambient temperature for the housing is generally just 50°C. Immersion sensors must be immersed deeply enough; otherwise the measured result is too low.

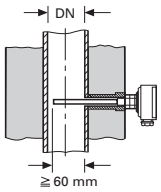
This sheet includes information on:
- Required minimum thickness of insulation for the heating pipes,
- Mounting possibilities for immersion sensors,
- Immersion sensor lengths per pipe nominal length and insulation thickness,
- And the required length of the sensor piece.

§6 the heating plant ordinance:
Heat insulation for heating distribution plants

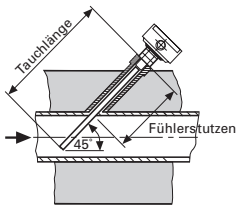
Pipe nominal length DN in mm	Minimum thickness of insulation layer in mm
to 20	20
22...35	30
40...100	same as DN
100...250	100

* at = 0.035 $Wm^{-1} K^{-1}$

Immersion temperature sensor

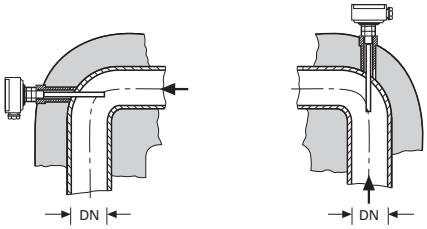


Pipe Ø DN [mm]	Insulation layer [mm]	**Sensor pieces in mm** for immersion sensor length 150	200	300 [mm]
80	80	80	-	-
100	100	-	110	-
125	100	-	100	120
150...250	100	-	100	120



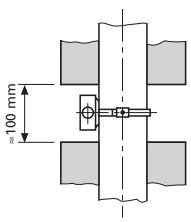
Pipe Ø DN [mm]	Insulation layer [mm]	**Sensor pieces in mm** for immersion sensor length 200	300 [mm]
80	80	130	130
100...250	100	-	160

Optimum order



Pipe Ø DN [mm]	**Sensor pieces** [mm]	Immersion sensor length 100	150	200	300 [mm]
40		x	x	x	x
50		-	x	x	x
65		-	x	x	x
80		-	x	x	x
100...250		-	-	x	x

Plant temperature sensor



Remove a section of insulation, approximately 100 mm (see figure) when using a strap-on temperature sensor.

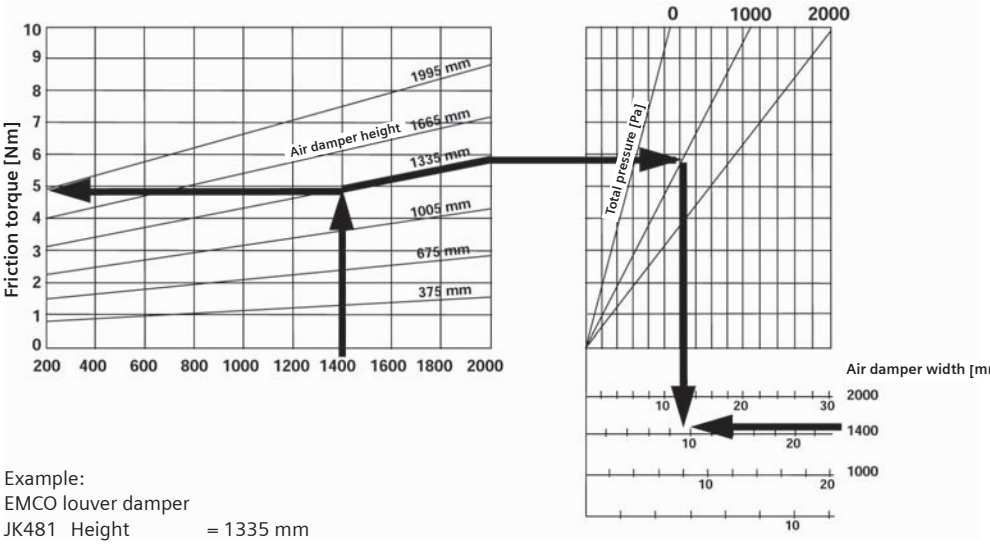
A

Select air damper actuator

Select air damper actuator

The data for the air damper required to select the employed air damper actuator. The manufacturer offers dimension diagram for the various air damper types in its documentation. This allows you to determine the required torque for the air damper based on air damper width, air damper height and overall plant pressure.

Example of manufacturer diagram



Example:
EMCO louver damper
JK481 Height = 1335 mm
Width = 1400 mm
Total pressure = 1000 Pa

Total torque = 9,7 Nm

To ensure that the actuator function achieves damper torque in operation and for contamination in the plant, the actuator should provide some 20% more torque as required for a new air damper.

Safety factor SF = 0.8

Overall torque = Torque characteristic [Nm/m^2] x damper area [m^2]

$$\text{Number of actuators} = \frac{\text{Total required damper torque}}{\text{SF1 x actuator torque (see specification)}}$$

Actuator series GBB
Nominal torque = 20 Nm

$$\text{Number of actuators} = \frac{9{,}7\ \text{Nm}}{0{,}8 \times 20\ \text{Nm}} \leq 1 \rightarrow \underline{1}$$

Control signal

Control with Synco™ RMU7..
DC 0..10 V

Actuator: GBB161.1E

A

Answers for infrastructure.



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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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