Find out more
For more information
visit our product catalog at
http://ecc.emea.honeywell.com

Automation and Control Solutions
Honeywell GmbH
Böblinger Strasse 17
D-71101 Schönaich / Germany
Phone (49) 7031 637 01
Fax (49) 7031 637 493
www.honeywell.com

Honeywell

EN3B-0260GE51 R0111
January 2011

Field Devices

Honeywell

Product Catalog 2011

Field Devices

Honeywell

ALL YOU NEED IN HVAC CONTROL

Product Catalog 2011

QR codes	CD-ROM
INCLUDED	

QR (QuickResponse) Codes

link you to the latest product details in the Web Catalog with

- valves sizing tools and product selectors
- all Technical Documentation (in PDF).

How to use QR codes

You'll find QR codes at the left side of each product bar.

Users with a Smartphone, e-Reader or PC can scan* the QR Code
to open the product specific web page in the web browser.

* Some smartphone systems offer natively included QR scanners, for other devices QR reader applications are freely available.

Index of product series

Index of products

Index of products

Index of products

Index of products

Index of products

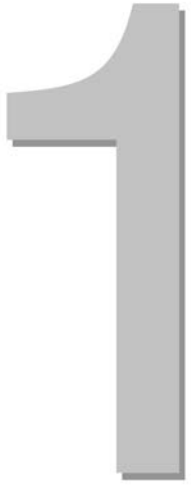
Index of products

Index of products

Index of products

Index of products

Actuators — Page



Honeywell

	SMALL LINEAR VALVES & ACTUATORS											
	Control Mode		**On/Off**		**Floating**				**Modulating**			
	PN16	**Order No.**	MT4	MT8 M5410	M7410A	M6410C/L M7410C	M6410C/L M7410C	ML6435B spring return	M7410E	M7410E	ML7430E	ML7435E spring return
	Nominal		90 N	90 N	90 N	180 N	300 N	400 N	180 N	300 N	400 N	400 N
2-way	PN16	VSxx-2	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5822A	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5832A	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5832B	–	–	–	–	•	•	–	•	•	•
	PN25	V5825B	–	–	–	–	•	•1)	–	•	•	•1)
3-way	PN16	VSxx-3	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5078B	–	–	–	•	–	–	•	–	–	–
	PN16	V5823A/C	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5833A/C DN15-20	•2)	•	•2)	•	–	–	•	–	–	–
	PN16	V5833A DN25-40	–	–	–	–	•	•	–	•	•	•

1) TÜV approval according to DIN EN 14597

2) Only for On/Off valves

Actuator thermoelectric for zone control 2,5/6,5 mm 90 N, Smart-T

Electrical actuator on/off control, and PWM control with XL10/12 controllers. For V58xxA/C (DN15/20), V90/V100 and VS valve series.
MT4 models also suitable for TRV's V300, V2000, the Therafix TRV's V2464, V2474; and for the balancing valves V5010, V5032 (in combination with adapter VA2500A001).

Protection class	IP44
Position indication	with red indicator
End switch function/ capacity	SPST, capacity 5(3) A; contact closes at power on
Stem force	90 N
Control input signal	2-pt
Additional description	Actuator supplied with mounting clip (MT-CLIP) and M30 x 1,5 adapter (MT-ADAPT-HW). • Other adapters on request. • Other cable length, or special connectors, on request. • 24 Vac models also suitable for 24 Vdc. • Effective stroke for Honeywell valves 2,5/6,5 mm; maximum stroke 4/8 mm.

2,5 mm; 90 N

Power supply Vac; VA	Power loss action	Stroke mm	End switches	Runtime min	Initial current A	Cable length m	Type
24; 3	stem retracts	2,5	–	4,0	0,7	1	**MT4-024-NO**
24; 3	stem retracts	2,5	–	4,0	0,7	2,5	**MT4-024-NO-2.5M**
24; 2	stem retracts	2,5	–	6,0	0,2	1	**MT4-024LC-NO**
24; 3	stem retracts	2,5	1	4,0	0,7	1	**MT4-024S-NO**
24; 3	stem extends	2,5	–	4,0	0,7	1	**MT4-024-NC**
24; 3	stem extends	2,5	–	4,0	0,7	2,5	**MT4-024-NC-2.5M**
24; 2	stem extends	2,5	–	6,0	0,2	1	**MT4-024LC-NC**
24; 3	stem extends	2,5	1	4,0	0,7	1	**MT4-024S-NC**
230; 3	stem retracts	2,5	–	2,5	0,6	1	**MT4-230-NO**
230; 3	stem retracts	2,5	–	2,5	0,6	2,5	**MT4-230-NO-2.5M**
230; 2	stem retracts	2,5	–	3,5	0,4	1	**MT4-230LC-NO**
230; 3	stem retracts	2,5	1	2,5	0,6	1	**MT4-230S-NO**
230; 3	stem extends	2,5	–	2,5	0,6	1	**MT4-230-NC**
230; 3	stem extends	2,5	–	2,5	0,6	2,5	**MT4-230-NC-2.5M**
230; 2	stem extends	2,5	–	3,5	0,4	1	**MT4-230LC-NC**
230; 3	stem extends	2,5	1	2,5	0,6	1	**MT4-230S-NC**

Small linear actuators, stroke 2,5/6,5mm

6,5 mm; 90 N

Power supply Vac; VA	Power loss action	Stroke mm	End switches	Runtime min	Initial current A	Cable length m	Type
24; 3	stem retracts	6,5	–	6,0	0,7	1	**MT8-024-NO**
24; 3	stem retracts	6,5	–	6,0	0,7	2,5	**MT8-024-NO-2.5M**
24; 2	stem retracts	6,5	–	7,5	0,2	1	**MT8-024LC-NO**
24; 3	stem retracts	6,5	1	6,0	0,7	1	**MT8-024S-NO**
24; 3	stem extends	6,5	–	6,0	0,7	1	**MT8-024-NC**
24; 3	stem extends	6,5	–	6,0	0,7	2,5	**MT8-024-NC-2.5M**
24; 2	stem extends	6,5	–	7,5	0,2	1	**MT8-024LC-NC**
24; 3	stem extends	6,5	1	6,0	0,7	1	**MT8-024S-NC**
230; 3	stem retracts	6,5	–	3,5	0,6	1	**MT8-230-NO**
230; 3	stem retracts	6,5	–	3,5	0,6	2,5	**MT8-230-NO-2.5M**
230; 2	stem retracts	6,5	–	5,5	0,4	1	**MT8-230LC-NO**
230; 3	stem retracts	6,5	1	3,5	0,6	1	**MT8-230S-NO**
230; 3	stem extends	6,5	–	3,5	0,6	1	**MT8-230-NC**
230; 3	stem extends	6,5	–	3,5	0,6	2,5	**MT8-230-NC-2.5M**
230; 2	stem extends	6,5	–	5,5	0,4	1	**MT8-230LC-NC**
230; 3	stem extends	6,5	1	3,5	0,6	1	**MT8-230S-NC**

Accessories

Extra mounting clips; 10 units	**MT-CLIP**

Plug-in cable (not for models with end switch)

Cable 1,5 meter; 10 units	**MT-CABLE-1.5M**
Cable 2,5 meter; 10 units	**MT-CABLE-2.5M**
Cable 5 meter; 10 units	**MT-CABLE-5M**
Cable 10 meter; 10 units	**MT-CABLE-10M**

Adapters

Extra mounting adapters M30 x 1,5; 10 units	**MT-ADAPT-HW**
Mounting adapter for Herz/Polytherm valves; 10 units	**MT-ADAPT-HP**
Danfoss-RA adapter; 10 units	**EVA10RA**
Mounting adapter for Velta -Compact Manifold	**HCA1VEL**
Mounting adapter for Giacomini; 5 units	**R453HY002**

Actuator thermoelectric 0..10V for terminal unit/radiator valves, 2,5 mm 90 N, MT010

Electrical actuator for valve series: V58xxA/C (DN15-20), V90, V100, V300, V2000, V2464, V2474, VSO.
For thermostatic radiator valves with connection size: M30 x 1,5.

Protection class	IP54
Stem force	90 N
Power supply	24 Vac; 2 VA
Control input signal	0..10V=
Stroke	2,5 mm
Power loss action	stem extends
Runtime	75 s
Initial current	0,25 A
Additional description	Effective stroke for Honeywell valves 2,5 mm; maximum stroke 3,5 mm.

Small linear actuators, stroke 2,5/6,5mm

2,5 mm; 90 N

Cable length m	Type
1	**MT010-N**
3	**MT010-3MN**

Actuator 3-pt for terminal unit/radiator valves, 2,5 mm 90 N, M7410A

Electrical actuator floating control, for valve series: V135, V136, V58..A4, V58..C4, VSO.

Protection class	IP43
Position indication	with red indicator
Stem force	90 N
Power supply	24 Vac; 0,7 VA
Control input signal	3-pt
Stroke	2,5 mm
Runtime	57 s
Cable length	0,9 m
Additional description	Manual operation with valve cap.

2,5 mm; 90 N

	Type
	M7410A1001

Accessories

Adapter for Danfoss RA2000	**IRA-AD**

Fast motoric actuator for terminal unit/radiator valves, 6,5 mm 90 N, M5410

Electrical actuator on/off control, for valve series VS, V58.. DN15/20 and V100/V2000 TRV-series.

Protection class	IP54
Stem force	90 N
Control input signal	2-pt
Stroke	6,5 mm
Power loss action	stem retracts
Runtime	3,6/16 s
Cable length	1,5 m
Additional description	Manual operation with valve cap.

6,5 mm; 90 N

Power supply Vac; VA	Type
24; 8	**M5410C1001**
230; 15	**M5410L1001**

Actuator 3-pt for zone control, 6,5 mm 180/300 N, M6410/M7410

Electrical actuator floating control, for valve series: V5822, V5823, V5832, V5833, VSM. And also for V5077B/V5078B valve series (with adapter).

Protection class	IP43/IP42
Position indication	with red indicator
End switch function/ capacity	SPDT; capacity 1 A inductive, 5 A resistive
Control input signal	3-pt
Stroke	6,5 mm
Runtime	150 s
Cable length	1,5 m
Additional description	For M7410-models, the valve cap can be used for manual adjustment. For models with 2 end switches, the 2nd switch is adjustable.

6,5 mm; 180 N

Stem force N	Power supply Vac; VA	Manual operation	End switches	Type
180	24; 0,7	–	–	**M7410C1007**
180	24; 0,7	•	–	**M6410C2023**
180	24; 0,7	•	2	**M6410C4029**
180	230; 7	•	–	**M6410L2023**
180	230; 7	•	2	**M6410L4029**

6,5 mm; 300 N

Stem force N	Power supply Vac; VA	Manual operation	End switches	Type
300	24; 0,7	–	–	**M7410C1015**
300	24; 0,7	•	–	**M6410C2031**
300	24; 0,7	•	2	**M6410C4037**
300	230; 7	•	–	**M6410L2031**
300	230; 7	•	2	**M6410L4037**

Accessories

Adapter for valve series V5077B/V5078B	**0903403**

Actuator 0/2..10V for zone control, 6,5 mm 180/300 N, M7410E

Electrical actuator modulating control, for valve series: V5822, V5823, V5832, V5833, VSM.

Protection class	IP42
Position indication	with red indicator
End switch function/ capacity	SPDT, capacity 1A inductive, 5A resistive
Power supply	24 Vac; 1,4 VA
Control input signal	0/2..10V=
Stroke	6,5 mm
Runtime	150 s
Cable length	1,5 m
Additional description	The control action is reversable. For M7410E1..-models, the valve cap can be used for manual adjustment. For models with 2 end switches, the 2nd switch is adjustable.

Small linear actuators, stroke 2,5/6,5mm

6,5 mm; 180 N

Stem force N	Manual operation	End switches	Type
180	–	–	**M7410E1002**
180	•	–	**M7410E2026**
180	•	2	**M7410E4022**

6,5 mm; 300 N

Stem force N	Manual operation	End switches	Type
300	–	–	**M7410E1028**
300	•	–	**M7410E2034**
300	•	2	**M7410E4030**

Actuator 0/2..10V for district heating, DHWS, 6,5 mm 400 N, ML7430/ML7435

Electrical actuator modulating control, for valve series: V5825B. Also suitable for V5832B/V5833A-series (DN25..40).

Protection class	IP54
Stem force	400 N
Control input signal	0/2..10V=
Stroke	6,5 mm
Additional description	For ML7435E1004: approved according DIN EN 14597 in combination with V5825B.

6,5 mm; 400 N

Power supply Vac; VA	Power loss action	Manual operation	Runtime s	Spring return	Type
24; 5	–	•	15	–	**ML7430E1005**
24; 10	stem retracts	–	60	•	**ML7435E1004**

Actuator 3-pt for district heating, DHWS, spring return, 6,5 mm 400 N, ML6435

Electrical actuator floating control, for valve series: V5825B. Also suitable for V5832B/V5833A-series (DN25..40)

Protection class	IP54
Stem force	400 N
Control input signal	3-pt
Stroke	6,5 mm
Power loss action	stem retracts
Runtime	60 s
Spring return	yes
Additional description	Approved according DIN EN 14597 in combination with V5825B.

6,5 mm; 400 N

Power supply Vac; VA	Type
24; 10	**ML6435B1008**
230; 10	**ML6435B1016**

		LARGE LINEAR VALVES & ACTUATORS									
			Control Mode	Floating				Modulating			
					Spring Return Actuators				Spring Return Actuators		
		Nominal	Order No.	ML6420A	ML6425A/B	ML6421A	ML6421B	ML7420A	ML7425A/B	ML7421A	ML7421B
				600 N	600 N	1800 N	1800 N	600 N	600 N	1800 N	1800 N
Threaded valves	**2-way**	PN16	V5011R,S	•	•	•	–	•	•	•	–
	3-way	PN16	V5013R,E	•	•	•	–	•	•	•	–
Flanged Valves	**2-way**	PN16	V5328A	•	•(1	•	–	•	•(1	•	–
		PN16	V5328A 38mm	–	–	–	•	–	–	–	•
		PN16	V5016A	DN15-80	DN15-80(1	–	DN100-150	DN15-80	DN15-80(1	–	DN100-150
		PN25	V5025A	DN15-80	DN15-80(1	–	DN100-150	DN15-80	DN15-80(1	–	DN100-150
		PN25/40	V5049A	DN15-65	DN15-65(1	DN15-65	DN80-100	DN15-65	DN15-65(1	DN15-65	DN80-100
	3-way	PN6	V5329C	•	•	•	–	•	•	•	–
		PN6	V5015A	–	–	–	•	–	–	–	•
		PN16	V5329A	•	•	•	–	•	•	•	–
		PN16	V5050A,B	–	–	–	•	–	–	–	•
		PN25/40	V5050A,B	DN15-80	DN15-80	DN15-80	DN100	DN15-80	DN15-80	DN15-80	DN100

(1 TÜV approval according to DIN EN 14597

Actuator 3-pt, 20 mm 600 N, ML6420/ML6425

Electrical actuator floating control, for valve series: V5011, V5013, V5016A, V5025, V5049, V5050, V5328, V5329.

Protection class	IP54
Position indication	scale plate
Position feedback	optional
End switches	optional
Stem force	600 N
Control input signal	3-pt
Stroke	20 mm
Additional description	For ML6425-models: approved according DIN EN 14597 in combination with V5016A/V5025A/V5328A/V5049A.

20 mm; 600 N

Power supply Vac; VA	Power loss action	Manual operation	Runtime min	Spring return	Type
24; 4	–	•	1,0	–	**ML6420A3007**
24; 4	–	–	1,0	–	**ML6420A3072**
24; 6	–	•	0,5	–	**ML6420A3023**
230; 6,5	–	•	1,0	–	**ML6420A3015**
230; 6,5	–	•	0,5	–	**ML6420A3031**

20 mm; 600 N, Spring return

Power supply Vac; VA	Power loss action	Manual operation	Runtime min	Spring return	Type
24; 11	stem extends	•	1,8	•	**ML6425A3006**
24; 11	stem retracts	•	1,8	•	**ML6425B3005**
230; 12	stem extends	•	1,8	•	**ML6425A3014**
230; 12	stem retracts	•	1,8	•	**ML6425B3021**

Accessories

Dual end switches SPDT, adjustable (250 V~, 10 A)	**43191680-005**
Feedback potentiometer 10 kohm, operating range	**43191679-011**
Feedback potentiometer 220 ohm operating range	**43191679-012**

High temperature kits for:

V5011R/S, V5013R/E; V5328A/V5329A DN15..32	**43196000-001**
V5016A/V5025A/V5050A DN15..80; V5049A DN15..65; V5095A DN20..80; V5328A/V5329A DN40..80	**43196000-002**

Actuator 0/2..10V, 20 mm 600 N, ML7420/ML7425

Electrical actuator modulating control, for valve series: V5011, V5013, V5016A, V5025, V5049, V5050, V5328, V5329.

Protection class	IP54
Position indication	scale plate
Stem position at control signal loss	adjustable
End switches	optional
Stem force	600 N
Stroke	20 mm
Additional description	The control action is reversable. For ML7425-models: approved according DIN EN 14597 in combination with V5016A/V5025A/ V5328A/V5049A.

20 mm; 600 N

Power supply Vac; VA	Control input signal	Power loss action	Manual operation	Runtime min	Spring return	Position feedback	Type
24; 5	0/2..10V=	–	•	1,0	–	2..10V=	**ML7420A6009**
24; 5	2..10V=	–	–	1,0	–	–	**ML7420A6025**
24; 7	0/2..10V=	–	•	0,5	–	2..10V=	**ML7420A6017**

20 mm; 600 N, Spring return

Power supply Vac; VA	Control input signal	Power loss action	Manual operation	Runtime min	Spring return	Position feedback	Type
24; 12	0/2..10V=	stem extends	•	1,8	•	2..10V=	**ML7425A6008**
24; 12	0/2..10V=	stem retracts	•	1,8	•	2..10V=	**ML7425B6007**

Accessories

Auxiliary switch (250 V~, 10 A)	**43191680-205**

High temperature kits for:

V5011R/S, V5013R/E; V5328A/V5329A DN15..32	**43196000-001**
V5016A/V5025A/V5050A DN15..80; V5049A DN15..65; V5095A DN20..80; V5328A/V5329A DN40..80	**43196000-002**

Actuator 3-pt, 20/38 mm 1800 N, ML6421

Electrical actuator floating control, for valve series: V5011, V5013, V5015, V5016, V5025, V5049, V5050, V5328, V5329.

Protection class	IP54
Position indication	scale plate on the yoke
End switches	optional
Stem force	1800 N
Control input signal	3-pt
Manual operation	yes

20 mm; 1800 N

Power supply Vac; VA	Stroke mm	Runtime min	Position feedback	Type
24; 13	20	1,9	optional	**ML6421A3005**
230; 11	20	1,9	–	**ML6421A3013**

38 mm; 1800 N

Power supply Vac; VA	Stroke mm	Runtime min	Position feedback	Type
24; 13	38	3,5	optional	**ML6421B3004**
230; 11	38	3,5	–	**ML6421B3012**

Accessories

Dual end switches SPDT, adjustable (250 V~, 10 A)	**43191680-002**
Single feedback potentiometer 220/135 ohm operating range, for 20 mm models	**43191679-001**
Single feedback potentiometer 10 kohm operating range, for 20 mm models	**43191679-007**
Single feedback potentiometer 220/135 ohm operating range, for 38 mm models	**43191679-002**
Single feedback potentiometer 10 kohm operating range, for 38 mm models	**43191679-008**

High temperature kits for:

V5011R/S, V5013R/E; V5328A/V5329A DN15..32	**43196000-001**
V5016A/V5025A/V5050A DN15..80; V5049A DN15..65; V5095A DN20..80; V5328A/V5329A DN40..80	**43196000-002**
V5015A/V5016A/V5025A/V5049A/V5050A/B/V5328A 38 mm	**43196000-038**

Actuator 0/2..10V, 20/38 mm 1800 N, ML7421

Electrical actuator modulating control, for valve series: V5011, V5013, V5015, V5016, V5025, V5049, V5050, V5328, V5329.

Protection class	IP54
Position indication	scale plate
Stem position at control signal loss	selectable: closed, half open, open
Position feedback	2..10V=
End switches	optional
Stem force	1800 N
Power supply	24 Vac; 12 VA
Control input signal	0/2..10V=; 0/4..20mA
Manual operation	yes

20 mm; 1800 N

Stroke mm	Runtime min	Type
20	1,9	**ML7421A3004**

38 mm; 1800 N

Stroke mm	Runtime min	Type
38	3,5	**ML7421B3003**

Accessories

Dual end switches SPDT, adjustable (250 V~, 10 A)	**43191680-002**

High temperature kits for:

V5011R/S, V5013R/E; V5328A/V5329A DN15..32	**43196000-001**
V5016A/V5025A/V5050A DN15..80; V5049A DN15..65; V5095A DN20..80; V5328A/V5329A DN40..80	**43196000-002**
V5015A/V5016A/V5025A/V5049A/V5050A/B/V5328A 38 mm	**43196000-038**

Actuator + PI-controller LON for radiator valves/zone control, 2,5/6,5 mm 90/180/300 N, M7410G

Electrical actuator with LON input signal for the following valve types:

- 2,5 mm stroke: V100 (thermostatic valves), V58..A4, V58..C4, VSO -series
- 6,5 mm stroke: V5822, V5823, V5832, V5833, V5825, VSM -series

Protection class	IP42
Position indication	with red indicator
LonMark(R) profile	input SNVT percent 0-100%
Transceiver type	FTT 10A
Power supply	24 Vac; 1,4 VA
Control input signal	LON
Cable length	1,5 m
PI control object	no
Additional description	Contact input available for override function fully open or closed. Manual operation with valve cap. Configurable parameters for direct/reverse acting. LED-indication for servicing.

2,5 mm; 90 N

Stem force N	Stroke mm	Runtime s	Type
90	2,5	53	**M7410G1008**

6,5 mm; 180 N

Stem force N	Stroke mm	Runtime s	Type
180	6,5	150	**M7410G1016**

6,5 mm; 300 N

Stem force N	Stroke mm	Runtime s	Type
300	6,5	150	**M7410G1024**

Overview: Rotary valve actuators

Rotary Valves						Actuators			
Class	Connec-tion Type	Static Pressure	DN (mm)	Kvs	Valve series	Floating		Modulating	
						24 V	230 V	24 V	230 V
2-way	wafer	PN10	25..200	52..3093	V5421B	•	•	<DN80	–
		PN16	250..400	4800..11000	V5422L motorized	–	•	–	–
					V5422E motorized	–	–	–	•
3-way	internal threads	PN6	15..40	2,5..25	DR..GMLA	•	•	•	–
			20..50	2,5..40	V5433A compact	•	•	–	–
					V5433G	•	•	–	–
	external threads	PN10	25..30 25	2,5..25 2,5..16	DRU bypass DRR bypass	•	•	•	–
	flanges DIN2531	PN6	20..150	6,3..1600	DR..GFLA	•	•	<DN100	–
4-way	internal threads	PN6	15..40	4..25	ZR..MA	•	•	•	–
			20..32	4..16	V5442A compact	•	•	–	–
					V5442G	•	•	–	–
	flanges DIN2531	PN6	25..200	10..630	ZR..FA	•	•	<DN100	–

Compact Line Rotary Valve Actuator

Electrical actuator for valve series V5433A/G, V5442A/G.

Protection class	IP44
End switch function/ capacity	SPST; capacity 1A inductive, 3 A resistive
Torque	7 Nm
Control input signal	3-pt
Angle of rotation	90 °
Manual operation	yes
Runtime	100 s
Cable length	1,5 m
Additional description	Manual operation by declutch of gear.

Power supply Vac; VA	End switches	Type
24; 3	–	**M6063A1003**
24; 3	2	**M6063A4007**
230; 3	–	**M6063L1009**
230; 3	2	**M6063L4003**

Linkage of M6063L as replacement for M676A,C	**075041061**

Standard Line Rotary Valve Actuator

Electrical actuator for valve series V5421, DRG, ZR.

Protection class	IP54
Position indication	reversable scale plate
Angle of rotation	90 °
Manual operation	yes
Additional description	Manual operation by declutch of gear.

Floating control

Torque Nm	Power supply Vac; VA	Control input signal	Runtime min	Position feedback	End switches	Type
10	24; 3,5	3-pt	1,5	–	optional	**M6061A1013**
20	24; 3,5	3-pt	1,6	–	optional	**M6061A1021**
30	24; 3,5	3-pt	2,3	–	optional	**M6061A1039**
40	24; 3,5	3-pt	3,5	–	optional	**M6061A1047**
10	230; 3,5	3-pt	1,5	–	optional	**M6061L1019**
20	230; 3,5	3-pt	1,6	–	optional	**M6061L1027**
30	230; 3,5	3-pt	2,3	optional	optional	**M6061L1035**
40	230; 3,5	3-pt	3,5	–	optional	**M6061L1043**

Modulating control

Torque Nm	Power supply Vac; VA	Control input signal	Runtime min	Position feedback	End switches	Type
10	24; 2,4	0/2..10V=	1,5	optional	–	**M7061E1012**
20	24; 2,4	0/2..10V=	3,0	optional	–	**M7061E1020**

Accessories for floating control motors

Feedback potentiometer 10 kohm, only for M6061L1035	**VMP10-90**
Auxiliary switch package	**VMS2**

Accessories for modulating control motors

Feedbacksignal of position 0..10 V	**VMU1**

Fast runner Rotary Valve Actuator

Electrical actuator for valve series ZR, DR, DR-G, DRU. Mounting kits available for connection with non-Honeywell valves and air dampers. For heating systems.

Protection class	IP54
Position indication	reversable scale plate
Torque	40 Nm
Control input signal	3-pt
Angle of rotation	90 ^{o}
Manual operation	yes
End switches	optional
Position feedback	optional, use VMP10-90
Runtime	1,2 min
Additional description	Manual operation by declutch of gear.

Floating control

Power supply (Vac; VA)	Type
24; 3,5	**VMM40-24F**
230; 3,5	**VMM40F**

Accessories for floating control motors

Auxiliary switch package (max. 2 per motor)	**VMS2**

Actuator for butterfly valve V5421B1090

Protection class	IP54
Power supply	230 Vac; 7 VA
Control input signal	3-pt
Built in rotation limiter	no
Manual operation	yes
End switches	optional
Runtime	150 s
Torque	40 Nm

	Type
	M6422L1003

Optional accessories

End switch	**AS2**

Damper actuator 5/10 Nm, SmartAct

Direct coupled actuators for air dampers, ventilation flaps, louvers and VAV-units.

Protection class	IP54
End switch function/ capacity	SPDT switch 230 V, 5(3) A for models with end switch
Shaft mounting	for round shafts 8..16 mm; square shafts 6..13 mm
Built in rotation limiter	yes
Manual operation	yes
Position feedback	optional
Additional description	• removable wiring box for direct wiring to and from controller • rotation direction selectable by switch • adjustable mechanical end limits included • 24 Vac models also suitable for 24 Vdc

For damper area of 1 square meter

Power supply Vac; VA	Control input signal	End switches	Runtime s;50Hz	Torque Nm	Damper area m^2	Type
24; 6	2/3-pt	optional	110	5	1	**N0524**
24; 6	2/3-pt	2	110	5	1	**N0524-SW2**
230; 6	2-pt	optional	max. 110	5	1	**N05230-2POS**
24; 6	0/2..10V=;2/3-pt	optional	90/110	5	1	**N05010**
24; 6	0/2..10V=;2/3-pt	2	90/110	5	1	**N05010-SW2**

For damper area of 2 square meters

Power supply Vac; VA	Control input signal	End switches	Runtime s;50Hz	Torque Nm	Damper area m^2	Type
24; 6	2/3-pt	optional	110	10	2	**N1024**
24; 6	2/3-pt	2	110	10	2	**N1024-SW2**
230; 6	2-pt	optional	max. 140	10	2	**N10230-2POS**
24; 6	0/2..10V=;2/3-pt	optional	90/110	10	2	**N10010**
24; 6	0/2..10V=;2/3-pt	2	90/110	10	2	**N10010-SW2**

Optional accessories

Auxilliary switch kit, with 2 SPDT freely adjustable switches, IP54, cable 1 m	**SSW2-1M**
Potentiometer kit 10 kohm, IP54, cable 1 m	**SP10K-1M**

Damper actuator 20/34 Nm, SmartAct

Direct-coupled actuator with self-centering shaft adapter.
For air dampers, air handlers, ventilation flaps, louvers and VAV-units.

Protection class	IP54
Position indication	rotational angle scales 0..90°, 90..0°
End switch function/ capacity	SPDT switch 230V, 5 (3) A for models with end switch
Shaft mounting	for round shafts 10..27 mm; square shafts 10..18 mm
Manual operation	yes
Additional description	• Rotation direction selectable by switch. • When power is removed, the actuator remains in position. • Removable wiring box. • Actuator supplied with complete package mounting parts. • For modulating control models: Control input signal can be voltage or current. • For modulating control models: Autoadapt dipswitch. With this function the full span of the control input signal will be used for the applicable angle or rotation.

For damper area of 4 square meters

Power supply Vac; VA	Control input signal	Built in rotation limiter	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24; 6	2/3-pt	•	optional	–	110	20	4	**N2024**
24; 6	2/3-pt	•	2	–	110	20	4	**N2024-SW2**
230; 6	2/3-pt	•	optional	–	110	20	4	**N20230**
230; 6	2/3-pt	•	2	–	110	20	4	**N20230-SW2**
24; 6	0/2..10V=	•	optional	0/2..10V=	95	20	4	**N20010**
24; 6	0/2..10V=	•	2	0/2..10V=	95	20	4	**N20010-SW2**

For damper area of 6 square meters

Power supply Vac; VA	Control input signal	Built in rotation limiter	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24; 7	2/3-pt	–	optional	–	110	34	6	**N3424**
230; 7	2/3-pt	–	optional	–	110	34	6	**N34230**
24; 8	0/2..10V=	–	optional	0/2..10V=	95	34	6	**N34010**

Optional accessories

End switch kit, with 2 SPDT freely adjustable end-switches	**SW2**

Damper actuator 3/5 Nm, SmartAct springreturn

Direct-coupled actuator with self-centering shaft adapter.
For the operation of quarter-turn air dampers in safety related applications requiring springreturn fail-safe operation (e.g. frost protection).

Protection class	IP54
Position indication	rotational angle scales 0..90°, 90..0°
End switch function/ capacity	models with 1 SPDT switch 250 V, 8 (5) A; adjustable setting between 0° and 95°
Shaft mounting	for round shafts 9..16 mm; square shafts 6..13 mm
Spring return	yes
Manual operation	no
Spring return timing	25 s
Additional description	• Rotation direction selectable by flipping the actuator 180° around its vertical axis. • Actuator supplied with complete package mounting parts. • Actuators come with detachable wiring box. • Durable plastic housing with built-in mechanical end-limits.

Power supply Vac; VA	Control input signal	End switches	Position feedback	Runtime s;50Hz	Torque Nm	Damper area m^2	**Type**
24; 7	2-pt	–	–	45	3	0,6	**S0324-2POS**
24; 7	2-pt	1	–	45	3	0,6	**S0324-2POS-SW1**
230; 13	2-pt	–	–	45	3	0,6	**S03230-2POS**
230; 13	2-pt	1	–	45	3	0,6	**S03230-2POS-SW1**
24; 7	0/2..10V=;3-pt	–	0..10V=	90	3	0,6	**S03010**
24; 7	0/2..10V=;3-pt	1	0..10V=	90	3	0,6	**S03010-SW1**

Power supply Vac; VA	Control input signal	End switches	Position feedback	Runtime s;50Hz	Torque Nm	Damper area m^2	**Type**
24; 8	2-pt	–	–	45	5	1	**S0524-2POS**
24; 8	2-pt	1	–	45	5	1	**S0524-2POS-SW1**
230; 14	2-pt	–	–	45	5	1	**S05230-2POS**
230; 14	2-pt	1	–	45	5	1	**S05230-2POS-SW1**
24; 8	0/2..10V=;3-pt	–	0..10V=	90	5	1	**S05010**
24; 8	0/2..10V=;3-pt	1	0..10V=	90	5	1	**S05010-SW1**

Damper actuator 10/20 Nm, SmartAct springreturn

Direct-coupled actuator with self-centering shaft adapter.
For the operation of quarter-turn air dampers in safety related applications requiring springreturn fail-safe operation (e.g. frost protection).

Protection class	IP54
Position indication	rotational angle scales 0..90°, 90..0°
End switch function/ capacity	models with 2 SPDT switches 250 V, 3 (1,5) A; fixed setting at 7° and 85°
Shaft mounting	for round shafts 10..27 mm; square shafts 13..19 mm
Spring return	yes
Manual operation	yes
Spring return timing	20 s
Additional description	• Rotation direction selectable by flipping the actuator 180° around its vertical axis. • Actuator supplied with complete package mounting parts. • Autoadapt dipswitch. With this function the full span of the control input signal will be used for the applicable angle or rotation. • Actuators come with detachable wiring box. • Actuator can be locked and manually wound.

Power supply Vac; VA	Control input signal	End switches	Position feedback	Runtime s;50Hz	Torque Nm	Damper area m^2	Type
24; 8/30	2-pt	optional	–	45	10	1,5	**S1024-2POS**
24; 8/30	2-pt	2	–	45	10	1,5	**S1024-2POS-SW2**
230; 13/45	2-pt	optional	–	45	10	1,5	**S10230-2POS**
230; 13/45	2-pt	2	–	45	10	1,5	**S10230-2POS-SW2**
24; 5/14	0/2..10V=;3-pt	optional	0..10V=	90	10	1,5	**S10010**
24; 5/14	0/2..10V=;3-pt	2	0..10V=	90	10	1,5	**S10010-SW2**

Power supply Vac; VA	Control input signal	End switches	Position feedback	Runtime s;50Hz	Torque Nm	Damper area m^2	Type
24; 8/40	2-pt	optional	–	45	20	4,6	**S2024-2POS**
24; 8/40	2-pt	2	–	45	20	4,6	**S2024-2POS-SW2**
230; 13/60	2-pt	optional	–	45	20	4,6	**S20230-2POS**
230; 13/60	2-pt	2	–	45	20	4,6	**S20230-2POS-SW2**
24; 5/16	0/2..10V=;3-pt	optional	0..10V=	90	20	4,6	**S20010**
24; 5/16	0/2..10V=;3-pt	2	0..10V=	90	20	4,6	**S20010-SW2**

Optional accessories

End switch kit, with 2 SPDT freely adjustable end-switches	**SW2**

Valves linear

Page

Honeywell

Best choice

Valve Type		Application							
		Steam	Heating	Cooling	FCU	AHU	DH	High Dp	DHW
Small Linear Valves									
PN16	VS	-	+	+	+	o	-	-	-
PN16	V582x/V583x	-	+	+	+	o	-	-	-
PN25	V5825B	+	+	o	-	o	+	+	o
Large Linear Valves									
PN16	V5011R	-	+	+	-	+	-	-1)	o
PN16	V5011S	+	+	+	-	+	+	-1)	o
PN16	V5013R	-	+	+	-	+	-	-1)	o
PN16	V5013E	-	+	+	-	+	-	-1)	o
PN16	V5328	o	+	+	-	+	+	-1)	-
PN6/16	V5329/V5015/V5050	-	+	+	-	+	-	-1)	-
PN16	V5016	+	+	+	-	-	+	+	-
PN25	V5025	+	+	+	-	-	+	+	-
PN25/40	V5049	+	+	+	-	-	+	-1)	-
PN25/40	V5050	-	+	+	-	+	-	-1)	-

Legend:

+ “Best choice”

o “Possible”

- “Not recommended”

-1) “High Dp for small nominal sizes”

Please note:

This table is only a recommendation. A valve marked with a "+" is a preferred choice in specific applications.
Also a valve marked with a "-" may be suitable for an application but overspecified.

Valve parts materials

Valve	Body	Stem	Plug	Seat	Stem Seal
VS 2-way	Yellow brass	stainless steel	Brass	PPS 40% GF	EPDM
VS 3-way	Yellow brass	stainless steel	Brass	A-AB: PPS 40% GF B-AB: Yellow brass	EPDM
V5822A/32A	Yellow brass	stainless steel	Brass/EPDM	Yellow brass	EPDM
V5823A,C/ V5833A,C	Yellow brass	stainless steel	Brass/EPDM	Yellow brass	EPDM
V5833A/V5832B, DN25-40	Yellow brass	stainless steel	Brass	Yellow brass	EPDM
V5825B	Rg5	stainless steel	stainless steel	stainless steel	EPDM
V5011R	Yellow brass	stainless steel	Brass	stainless steel	PTFE
V5011S	Yellow brass	stainless steel	stainless steel	stainless steel	PTFE
V5013R	Yellow brass	stainless steel	Brass	stainless steel	PTFE
V5013E	Yellow brass	stainless steel	Brass	stainless steel	PTFE
V5328A	GG-25	stainless steel	stainless steel	stainless steel	PTFE
V5016A	GGG 40.3	stainless steel	stainless steel	stainless steel	PTFE
V5025A	GGG 40.3	stainless steel	stainless steel	stainless steel	PTFE
V5049A PN25/40	GS-C25	stainless steel	stainless steel	stainless steel	PTFE
V5329A	GG-25	stainless steel	stainless steel	body integrated	PTFE
V5050A PN16 <DN100-150	GG-25	stainless steel	stainless steel	stainless steel	PTFE
V5329C	GG-25	stainless steel	stainless steel	body integrated	PTFE
V5015A	GG-25	stainless steel	Rg5	body integrated	PTFE
V5050A PN25/40	GS-C25	stainless steel	stainless steel	stainless steel	PTFE

2-way linear valves, stroke 2,5/6,5mm

Valve Small, Conical sealing, 2-way, PN16, DN15/20/25, VSxC-2

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	2-way
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	1	600	–	2,5	on/off	–	**VSOC-215-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOC-215-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOC-215-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOC-215-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOC-215-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOC-215-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOC-220-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOC-220-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOC-220-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOC-220-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOC-225-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOC-225-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	0,16	600	600	6,5	mod.equal%	–	**VSMC-215-0.16**
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMC-215-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMC-215-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMC-215-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMC-215-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMC-215-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMC-215-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMC-220-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMC-220-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMC-220-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMC-220-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMC-225-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMC-225-8.0P**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size R3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size R1/2"	**ACN-20T**
External threaded fitting for DN25 valve, pipe size R1"	**ACN-25T**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	valve open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	valve open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	valve open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	valve open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	valve open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	valve open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	valve closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	valve closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	valve closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	valve closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	valve open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	valve open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	valve open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	valve open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	valve closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	valve closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	valve closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	valve closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	valve open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	valve open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	valve open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	valve open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	valve closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	valve closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	valve closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	valve closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	valve closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	valve open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	valve open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	valve open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	valve open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	valve closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	valve closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	valve closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	valve closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	valve closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

2-way linear valves, stroke 2,5/6,5mm

Valve Small, Flat sealing, 2-way, PN16, DN15/20/25, VSxF-2

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	2-way
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	1	600	–	2,5	on/off	–	**VSOF-215-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOF-215-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOF-215-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOF-215-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOF-215-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOF-215-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOF-220-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOF-220-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOF-220-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOF-220-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOF-225-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOF-225-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	0,16	600	600	6,5	mod.equal%	–	**VSMF-215-0.16**
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMF-215-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMF-215-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMF-215-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMF-215-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMF-215-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMF-215-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMF-220-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMF-220-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMF-220-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMF-220-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMF-225-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMF-225-8.0P**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size R3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size R1/2"	**AC-20FT**
External threaded fitting for DN25 valve, pipe size R1"	**ACS-25T**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	valve open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	valve open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	valve open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	valve open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	valve open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	valve open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	valve closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	valve closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	valve closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	valve closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	valve open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	valve open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	valve open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	valve open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	valve closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	valve closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	valve closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	valve closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	valve open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	valve open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	valve open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	valve open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	valve closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	valve closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	valve closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	valve closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	valve closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	valve open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	valve open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	valve open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	valve open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	valve closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	valve closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	valve closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	valve closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	valve closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

2-way linear valves, stroke 2,5/6,5mm

Two-way control valve PN16, conical sealing DN15/20, V5822A

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5822A
Valve type	2-way
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem up
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types).

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	180	–	2,5	on/off	**V5822A4000**
20	1 1/8" x 14	2,5	50	–	2,5	on/off	**V5822A4018**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0,16	600	1600	6,5	mod.equal%	**V5822A1006**
15	G1/2	0,25	600	1600	6,5	mod.equal%	**V5822A1014**
15	G1/2	0,4	600	1600	6,5	mod.equal%	**V5822A1022**
15	G1/2	0,63	600	1600	6,5	mod.equal%	**V5822A1030**
15	G1/2	1	180	1200	6,5	mod.equal%	**V5822A1048**
15	G1/2	1,6	180	1200	6,5	mod.equal%	**V5822A1055**
20	1 1/8" x 14	2,5	50	400	6,5	mod.equal%	**V5822A1063**
20	1 1/8" x 14	4	50	400	6,5	mod.equal%	**V5822A1071**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	valve closed	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	valve closed	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	valve open	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	valve open	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	valve open	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	valve open	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	24; 3	valve closed	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	valve closed	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	valve closed	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	valve closed	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	230; 3	valve open	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	valve open	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	valve open	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	valve open	–	1	2,5 min	1	**MT4-230S-NO**
	2-pt	230; 3	valve closed	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	valve closed	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	valve closed	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	valve closed	–	1	2,5 min	1	**MT4-230S-NC**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 8	valve open	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	valve open	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	valve open	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	valve open	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	valve open	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	24; 3	valve closed	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	valve closed	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	valve closed	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	valve closed	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	230; 15	valve open	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	valve open	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	valve open	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	valve open	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	valve open	–	1	3,5 min	1	**MT8-230S-NO**
	2-pt	230; 3	valve closed	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	valve closed	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	valve closed	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	valve closed	–	1	3,5 min	1	**MT8-230S-NC**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

2-way linear valves, stroke 2,5/6,5mm

Two-way control valve PN16, flat sealing DN15/20, V5832A

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5832A
Valve type	2-way
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem up
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types).

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	**Type**
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	180	–	2,5	on/off	**V5832A4008**
20	G3/4	2,5	50	–	2,5	on/off	**V5832A4016**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	**Type**
mm	inch		kPa	kPa	mm		
15	G1/2	0,16	600	1600	6,5	mod.equal%	**V5832A1004**
15	G1/2	0,25	600	1600	6,5	mod.equal%	**V5832A1012**
15	G1/2	0,4	600	1600	6,5	mod.equal%	**V5832A1020**
15	G1/2	0,63	600	1600	6,5	mod.equal%	**V5832A1038**
15	G1/2	1	180	1200	6,5	mod.equal%	**V5832A1046**
15	G1/2	1,6	180	1200	6,5	mod.equal%	**V5832A1053**
20	G3/4	2,5	50	400	6,5	mod.equal%	**V5832A1061**
20	G3/4	4	50	400	6,5	mod.equal%	**V5832A1079**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size 3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size 1/2"	**AC-20FT**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	valve closed	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	valve closed	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	valve open	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	valve open	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	valve open	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	valve open	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	24; 3	valve closed	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	valve closed	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	valve closed	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	valve closed	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	230; 3	valve open	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	valve open	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	valve open	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	valve open	–	1	2,5 min	1	**MT4-230S-NO**
	2-pt	230; 3	valve closed	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	valve closed	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	valve closed	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	valve closed	–	1	2,5 min	1	**MT4-230S-NC**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 8	valve open	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	valve open	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	valve open	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	valve open	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	valve open	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	24; 3	valve closed	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	valve closed	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	valve closed	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	valve closed	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	230; 15	valve open	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	valve open	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	valve open	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	valve open	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	valve open	–	1	3,5 min	1	**MT8-230S-NO**
	2-pt	230; 3	valve closed	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	valve closed	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	valve closed	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	valve closed	–	1	3,5 min	1	**MT8-230S-NC**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

Two-way control valve PN16, flat sealing DN25-40, V5832B

Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5832B2
Valve type	2-way press. bal.
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Stroke	6,5 mm
Media temp.	2 ... 130 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Flow char.	linear
Additional description	Valves are supplied with adjustment cap.

6,5 mm

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 300N motor kPa	Close off pressure with 400N motor kPa	Type
25	G1 1/2	4	1600	1600	**V5832B2075**
25	G1 1/2	6,3	1600	1600	**V5832B2083**
25	G1 1/2	10	1600	1600	**V5832B2091**
32	G2	16	1200	1200	**V5832B2109**
40	G2 1/4	25	1000	1000	**V5832B2117**

Accessories

External threaded fitting for DN25 valve, pipe size R1"	**AC-25T**
External threaded fitting for DN32 valve, pipe size R11/4"	**AC-32T**
External threaded fitting for DN40 valve, pipe size R11/2"	**AC-40T**
Internal threaded fitting for DN25 valve, pipe size Rp1"	**AC-25TF**
Internal threaded fitting for DN32 valve, pipe size Rp11/4"	**AC-32TF**
Internal threaded fitting for DN40 valve, pipe size Rp11/2"	**AC-40TF**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	Type
6,5 mm; 300 N	0/2..10V=	24; 1,4	–	–	–	150	1,5	–	**M7410E1028**
	0/2..10V=	24; 1,4	–	•	–	150	1,5	–	**M7410E2034**
	0/2..10V=	24; 1,4	–	•	2	150	1,5	–	**M7410E4030**
	3-pt	24; 0,7	–	–	–	150	1,5	–	**M7410C1015**
	3-pt	24; 0,7	–	•	–	150	1,5	–	**M6410C2031**
	3-pt	24; 0,7	–	•	2	150	1,5	–	**M6410C4037**
	3-pt	230; 7	–	•	–	150	1,5	–	**M6410L2031**
	3-pt	230; 7	–	•	2	150	1,5	–	**M6410L4037**
	LON	24; 1,4	–	–	–	150	1,5	–	**M7410G1024**
6,5 mm; 400 N	0/2..10V=	24; 5	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24; 10	valve closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24; 10	valve closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230; 10	valve closed	–	–	60	–	•	**ML6435B1016**

Compact 2-way control valve PN25, pressure balanced, DN15/32,V5825B

Compact district heating valve, with wide application range.
For domestic hot water and district heating; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5825B
Valve type	2-way press. bal.
Medium type	water/steam
Materials	body red bronze (DIN1705), trim stainless steel
Action to open	stem down
Close off pressure with 300N motor	1600 kPa
Close off pressure with 400N motor	2500 kPa
Stroke	6,5 mm
Media temp.	2 ... 130 °C
Static pressure	PN25
Port connection type	ext. thread flat sealing
Flow char.	mod.equal%
Additional description	Approved according DIN EN 14597 in combination with ML7435E/ML6435B.

6,5 mm

DN size mm	Connection diameter inch	Kvs value	Type
15	G3/4	0,25	**V5825B1001**
15	G3/4	0,4	**V5825B1019**
15	G3/4	0,63	**V5825B1027**
15	G3/4	1	**V5825B1035**
15	G3/4	1,6	**V5825B1043**
20	G1	2,5	**V5825B1050**
20	G1	4	**V5825B1068**
25	G1 1/4	6,3	**V5825B1076**
32	G1 1/2	10	**V5825B1084**

Accessories

External threaded fitting for DN15 valve, pipe size R1/2"	**ACS-15T**
External threaded fitting for DN20 valve, pipe size R3/4"	**ACS-20T**
External threaded fitting for DN25 valve, pipe size R1"	**ACS-25T**
External threaded fitting for DN32 valve, pipe size R1 1/4"	**ACS-32T**
Welding fitting for DN15 valve, pipe size 1/2"	**ACS-15W**
Welding fitting for DN20 valve, pipe size 3/4"	**ACS-20W**
Welding fitting for DN25 valve, pipe size 1"	**ACS-25W**
Welding fitting for DN32 valve, pipe size 1 1/4"	**ACS-32W**

Adapter kits for in case V5872B models must be replaced with V5825B models

For all DN15 V5872B to DN15 V5825B	**AK15-15**
For V5872B1052 to V5825B1050	**AK20-15**
For V5872B1060 to V5825B1068	**AK20-25**
For V5872B1078 to V5825B1076	**AK25-25**

2-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	**Type**
6,5 mm; 300 N	0/2..10V=	24; 1,4	–	–	–	150	1,5	–	**M7410E1028**
	0/2..10V=	24; 1,4	–	•	–	150	1,5	–	**M7410E2034**
	0/2..10V=	24; 1,4	–	•	2	150	1,5	–	**M7410E4030**
	3-pt	24; 0,7	–	–	–	150	1,5	–	**M7410C1015**
	3-pt	24; 0,7	–	•	–	150	1,5	–	**M6410C2031**
	3-pt	24; 0,7	–	•	2	150	1,5	–	**M6410C4037**
	3-pt	230; 7	–	•	–	150	1,5	–	**M6410L2031**
	3-pt	230; 7	–	•	2	150	1,5	–	**M6410L4037**
	LON	24; 1,4	–	–	–	150	1,5	–	**M7410G1024**
6,5 mm; 400 N	0/2..10V=	24; 5	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24; 10	valve closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24; 10	valve closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230; 10	valve closed	–	–	60	–	•	**ML6435B1016**

Two-way control valve PN16, threaded connections DN15-50, V5011R,S

For heating, ventilating and air conditioning; hot/cold water quality VDI2035.

Valve series	V5011R/S
Valve type	2-way
Materials	body brass, stem stainless steel; plug brass or stainless steel
Action to open	stem up
Stroke	20 mm
Media temp.	2 ... 170 °C
Static pressure	PN16
Port connection type	internal threads ISO228
Flow char.	mod.equal%

20 mm, plug brass

Medium type	DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
water	15	0,63	1600	–	**V5011R1000**
water	15	1	1600	–	**V5011R1018**
water	15	1,6	1600	–	**V5011R1026**
water	15	2,5	1600	–	**V5011R1034**
water	15	4	1600	–	**V5011R1042**
water	20	6,3	1600	–	**V5011R1059**
water	25	10	1000	1600	**V5011R1067**
water	32	16	700	1600	**V5011R1075**
water	40	25	460	1500	**V5011R1083**
water	50	40	260	850	**V5011R1091**

20 mm, plug stainless steel

Medium type	DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
water/steam	15	0,63	1600	–	**V5011S1005**
water/steam	15	1	1600	–	**V5011S1013**
water/steam	15	1,6	1600	–	**V5011S1021**
water/steam	15	2,5	1600	–	**V5011S1039**
water/steam	15	4	1600	–	**V5011S1047**
water/steam	20	6,3	1600	–	**V5011S1054**
water/steam	25	10	1000	1600	**V5011S1062**
water/steam	32	16	700	1600	**V5011S1070**
water/steam	40	25	460	1500	**V5011S1088**
water/steam	50	40	260	850	**V5011S1096**

2-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	valve open	•	optional	1,8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24; 12	valve closed	•	optional	1,8	•	2..10V=	**ML7425A6008**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	valve open	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	24; 11	valve closed	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	valve open	•	optional	1,8	•	optional	**ML6425B3021**
	3-pt	230; 12	valve closed	•	optional	1,8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**

Two-way control valve PN16, flanged connections DN15-150, V5328A

For heating and air conditioning in closed circuit systems; hot/cold water quality VDI2035.

Valve series	V5328A
Valve type	2-way
Medium type	water/steam
Materials	body cast iron GG25, trim stainless steel
Action to open	stem up
Static pressure	PN16
Port connection type	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..50 approved according DIN EN 14597, with motors ML6425A, ML7425A.

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Media temp. °C	Type
15	0,25	1600	–	20	2 ... 170	**V5328A1138**
15	0,4	1600	–	20	2 ... 170	**V5328A1146**
15	0,63	1600	–	20	2 ... 170	**V5328A1153**
15	1	1600	–	20	2 ... 170	**V5328A1005**
15	1,6	1600	–	20	2 ... 170	**V5328A1013**
15	2,5	1000	1600	20	2 ... 170	**V5328A1021**
15	4	1000	1600	20	2 ... 170	**V5328A1039**
20	4	1000	1600	20	2 ... 170	**V5328A1047**
20	6,3	1000	1600	20	2 ... 170	**V5328A1054**
25	10	1000	1600	20	2 ... 170	**V5328A1062**
32	16	600	1600	20	2 ... 170	**V5328A1070**
40	25	350	1300	20	2 ... 170	**V5328A1088**
50	40	200	750	20	2 ... 170	**V5328A1096**
65	63	120	470	20	2 ... 170	**V5328A1104**
80	100	50	230	20	2 ... 170	**V5328A1112**

38 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Media temp. °C	Type
100	160	–	230	38	2 ... 200	**V5328A1195**
125	250	–	90	38	2 ... 200	**V5328A1203**
150	360	–	90	38	2 ... 200	**V5328A1211**

2-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	valve open	•	optional	1,8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24; 12	valve closed	•	optional	1,8	•	2..10V=	**ML7425A6008**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	valve open	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	24; 11	valve closed	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	valve open	•	optional	1,8	•	optional	**ML6425B3021**
	3-pt	230; 12	valve closed	•	optional	1,8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

Two-way control valve PN16, high differential pressure DN15-150, V5016A

Pressure balanced control valve for closed circuit systems.
For district heating; hot or cold water (max. 50% glycol), water quality VDI2035; or steam.

Valve series	V5016A
Valve type	2-way press. bal.
Medium type	water/steam
Materials	body nodular iron GGG40.3, trim stainless steel
Action to open	stem up
Media temp.	2 ... 180 °C
Static pressure	PN16
Port connection type	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..80 approved according DIN EN 14597, with motors ML6425A, ML7425A.

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
15	0,4	1600	–	20	**V5016A1010**
15	0,63	1600	–	20	**V5016A1028**
15	1	1600	–	20	**V5016A1036**
15	1,6	1600	–	20	**V5016A1044**
15	2,5	1600	–	20	**V5016A1051**
15	4	1600	–	20	**V5016A1069**
20	6,3	1600	–	20	**V5016A1077**
25	10	1600	–	20	**V5016A1085**
32	16	1600	–	20	**V5016A1093**
40	25	1600	–	20	**V5016A1101**
50	40	1600	–	20	**V5016A1119**
65	63	1600	–	20	**V5016A1127**
80	100	1600	–	20	**V5016A1135**

38 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
100	160	–	1600	38	**V5016A1143**
125	250	–	1600	38	**V5016A1150**
150	360	–	1600	38	**V5016A1168**

2-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	**Type**
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	valve open	•	optional	1,8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24; 12	valve closed	•	optional	1,8	•	2..10V=	**ML7425A6008**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	valve open	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	24; 11	valve closed	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	valve open	•	optional	1,8	•	optional	**ML6425B3021**
	3-pt	230; 12	valve closed	•	optional	1,8	•	optional	**ML6425A3014**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

Two-way control valve PN25, high differential pressure DN15-150, V5025A

Pressure balanced control valve for closed circuit systems.
For district heating; hot or cold water (max. 50% glycol), water quality VDI2035; or steam.

Valve series	V5025A
Valve type	2-way press. bal.
Medium type	water/steam
Materials	body nodular iron GGG40.3, trim stainless steel
Action to open	stem up
Media temp.	2 ... 200 °C
Static pressure	PN25
Port connection type	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..80 approved according DIN EN 14597, with motors ML6425A, ML7425A.

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
15	0,4	2500	–	20	**V5025A1019**
15	0,63	2500	–	20	**V5025A1027**
15	1	2500	–	20	**V5025A1035**
15	1,6	2500	–	20	**V5025A1043**
15	2,5	2500	–	20	**V5025A1050**
15	4	2500	–	20	**V5025A1068**
20	6,3	2500	–	20	**V5025A1076**
25	10	2500	–	20	**V5025A1084**
32	16	2500	–	20	**V5025A1092**
40	25	2500	–	20	**V5025A1100**
50	40	2500	–	20	**V5025A1118**
65	63	2500	–	20	**V5025A1126**
80	100	2500	–	20	**V5025A1134**

38 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
100	160	–	2500	38	**V5025A1142**
125	250	–	2500	38	**V5025A1159**
150	360	–	2500	38	**V5025A1167**

2-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	valve open	•	optional	1,8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24; 12	valve closed	•	optional	1,8	•	2..10V=	**ML7425A6008**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	valve open	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	24; 11	valve closed	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	valve open	•	optional	1,8	•	optional	**ML6425B3021**
	3-pt	230; 12	valve closed	•	optional	1,8	•	optional	**ML6425A3014**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

Two-way control valve PN40, flanged connections DN15-100, V5049A

For heating and air conditioning in closed circuit systems; hot/cold water quality VDI2035.

Valve series	V5049
Valve type	2-way
Medium type	water/steam
Materials	body cast steel GS-C25, trim stainless steel
Action to open	stem up
Media temp.	2 ... 220 °C
Static pressure	PN40
Port connection type	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..65 approved according DIN EN 14597, with motors ML6425A, ML7425A.

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
15	0,25	1600	–	20	**V5049A2027**
15	0,4	1600	–	20	**V5049A2035**
15	0,63	1600	–	20	**V5049A2043**
15	1	1600	–	20	**V5049A1425**
15	1,6	1600	–	20	**V5049A1433**
15	2,5	1000	2500	20	**V5049A1441**
15	4	1000	2500	20	**V5049A1458**
20	6,3	1000	2500	20	**V5049A1508**
25	10	1000	2500	20	**V5049A1565**
32	16	600	2000	20	**V5049A1573**
40	25	350	1300	20	**V5049A1581**
50	40	200	750	20	**V5049A1599**
65	63	120	500	20	**V5049A1607**

38 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
80	100	–	230	38	**V5049A1615**
100	160	–	230	38	**V5049A1623**

2-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	valve open	•	optional	1,8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24; 12	valve closed	•	optional	1,8	•	2..10V=	**ML7425A6008**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	valve open	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	24; 11	valve closed	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	valve open	•	optional	1,8	•	optional	**ML6425B3021**
	3-pt	230; 12	valve closed	•	optional	1,8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

3-way linear valves, stroke 2,5/6,5mm

Valve Small, Conical sealing, 3-way, PN16, DN15/20/25, VSxC-3

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	1	600	–	2,5	on/off	–	**VSOC-315-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOC-315-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOC-315-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOC-315-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOC-315-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOC-315-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOC-320-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOC-320-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOC-320-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOC-320-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOC-325-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOC-325-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMC-315-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMC-315-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMC-315-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMC-315-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMC-315-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMC-315-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMC-320-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMC-320-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMC-320-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMC-320-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMC-325-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMC-325-8.0P**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size R3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size R1/2"	**ACN-20T**
External threaded fitting for DN25 valve, pipe size R1"	**ACN-25T**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Valve Small, Flat sealing, 3-way, PN16, DN15/20/25, VSxF-3

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	1	600	–	2,5	on/off	–	**VSOF-315-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOF-315-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOF-315-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOF-315-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOF-315-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOF-315-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOF-320-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOF-320-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOF-320-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOF-320-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOF-325-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOF-325-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMF-315-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMF-315-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMF-315-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMF-315-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMF-315-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMF-315-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMF-320-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMF-320-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMF-320-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMF-320-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMF-325-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMF-325-8.0P**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size R3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size R1/2"	**AC-20FT**
External threaded fitting for DN25 valve, pipe size R1"	**ACS-25T**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Valve Small, Conical sealing, 3-way/bypass, PN16, DN15/20/25, VSxC-4

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	3-way mixing, bypass
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	1	600	–	2,5	on/off	–	**VSOC-415-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOC-415-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOC-415-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOC-415-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOC-415-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOC-415-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOC-420-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOC-420-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOC-420-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOC-420-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOC-425-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOC-425-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Snap-on MT	Type
mm	inch		kPa	kPa	mm			
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMC-415-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMC-415-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMC-415-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMC-415-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMC-415-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMC-415-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMC-420-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMC-420-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMC-420-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMC-420-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMC-425-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMC-425-8.0P**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size R3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size R1/2"	**ACN-20T**
External threaded fitting for DN25 valve, pipe size R1"	**ACN-25T**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Valve Small, Flat sealing, 3-way/bypass, PN16, DN15/20/25, VSxF-4

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve type	3-way mixing, bypass
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap.

2,5 mm On/off; adjustment cap for full stroke travel

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	1	600	–	2,5	on/off	–	**VSOF-415-1.0**
15	G1/2	1	600	–	2,5	on/off	•	**VSOF-415-1.0S**
15	G1/2	1,6	300	–	2,5	on/off	–	**VSOF-415-1.6**
15	G1/2	1,6	300	–	2,5	on/off	•	**VSOF-415-1.6S**
15	G1/2	2,5	150	–	2,5	on/off	–	**VSOF-415-2.5**
15	G1/2	2,5	150	–	2,5	on/off	•	**VSOF-415-2.5S**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	–	**VSOF-420-2.5**
20	1 1/8 x 14	2,5	200	–	2,5	on/off	•	**VSOF-420-2.5S**
20	1 1/8 x 14	4	100	–	2,5	on/off	–	**VSOF-420-4.0**
20	1 1/8 x 14	4	100	–	2,5	on/off	•	**VSOF-420-4.0S**
25	G1 1/4	4	200	–	2,5	on/off	–	**VSOF-425-4.0P**
25	G1 1/4	5,5	200	–	2,5	on/off	–	**VSOF-425-5.5P**

6,5 mm Modulating; adjustment cap opens A-B half stroke until fully open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Snap-on MT	Type
15	G1/2	0,25	600	600	6,5	mod.equal%	–	**VSMF-415-0.25**
15	G1/2	0,4	600	600	6,5	mod.equal%	–	**VSMF-415-0.4**
15	G1/2	0,63	600	600	6,5	mod.equal%	–	**VSMF-415-0.63**
15	G1/2	1	600	600	6,5	mod.equal%	–	**VSMF-415-1.0**
15	G1/2	1,6	300	300	6,5	mod.equal%	–	**VSMF-415-1.6**
15	G1/2	2,5	100	100	6,5	mod.equal%	–	**VSMF-415-2.5**
20	1 1/8 x 14	2,5	150	150	6,5	mod.equal%	–	**VSMF-420-2.5**
20	1 1/8 x 14	2,5	–	250	6,5	mod.equal%	–	**VSMF-420-2.5E**
20	1 1/8 x 14	4	50	50	6,5	mod.equal%	–	**VSMF-420-4.0**
20	1 1/8 x 14	4	–	250	6,5	mod.equal%	–	**VSMF-420-4.0E**
25	G1 1/4	6,3	250	250	6,5	mod.equal%	–	**VSMF-425-6.3P**
25	G1 1/4	8	250	250	6,5	mod.equal%	–	**VSMF-425-8.0P**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size R3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size R1/2"	**AC-20FT**
External threaded fitting for DN25 valve, pipe size R1"	**ACS-25T**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way control valve PN16, threaded connections DN15-50, V5078B

For under floor heating, heating and air conditioning; cold/hot water.

Valve series	V5078B
Valve type	3-way mixing
Medium type	water
Materials	body red brass RG5, trim stainless steel
Action to open	stem down
Close off pressure with 180N motor	1000 kPa
Stroke	6,5 mm
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	internal threads ISO228
Flow char.	mod.equal%
Additional description	Adaper ring 0903403 must be used for mechanical interface; and must be ordered seperately.

6,5 mm

DN size mm	Connection diameter inch	Kvs value	Type
15	1/2	2,5	**V5078B1005**
20	3/4	3,3	**V5078B1013**
25	1	5	**V5078B1021**
32	1 1/4	5	**V5078B1039**
40	1 1/2	11	**V5078B1047**
50	2	13	**V5078B1054**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Manual operation	End switches	Runtime s	Cable length m	**Type**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	150	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	•	–	150	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	•	2	150	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	150	1,5	**M7410C1007**
	3-pt	24; 0,7	•	–	150	1,5	**M6410C2023**
	3-pt	24; 0,7	•	2	150	1,5	**M6410C4029**
	3-pt	230; 7	•	–	150	1,5	**M6410L2023**
	3-pt	230; 7	•	2	150	1,5	**M6410L4029**
	LON	24; 1,4	–	–	150	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way control valve PN16, conical sealing DN15/20, V5823A

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5823A
Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types). If the main-port (A-AB) is equal percentage, the B-AB port is linear. The valve capacity of B-AB is one stage smaller.

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	150	–	2,5	on/off	**V5823A4009**
20	1 1/8" x 14	2,5	50	–	2,5	on/off	**V5823A4017**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0,25	500	800	6,5	mod.equal%	**V5823A2003**
15	G1/2	0,4	500	800	6,5	mod.equal%	**V5823A2011**
15	G1/2	0,63	500	800	6,5	mod.equal%	**V5823A2029**
15	G1/2	1	150	250	6,5	mod.equal%	**V5823A2037**
15	G1/2	1,6	150	250	6,5	mod.equal%	**V5823A2045**
20	1 1/8" x 14	2,5	–	240	6,5	mod.equal%	**V5823A2151**
20	1 1/8" x 14	2,5	50	100	6,5	mod.equal%	**V5823A2052**
20	1 1/8" x 14	4	–	240	6,5	mod.equal%	**V5823A2169**
20	1 1/8" x 14	4	50	100	6,5	mod.equal%	**V5823A2060**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way/bypass control valve PN16, conical sealing DN15/20, V5823C

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5823C
Valve type	3-way mixing, bypass
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types). If the main-port (A-AB) is equal percentage, the B-AB port is linear. The valve capacity of B-AB is one stage smaller.

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	150	–	2,5	on/off	**V5823C4005**
20	1 1/8" x 14	2,5	50	–	2,5	on/off	**V5823C4013**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0,25	500	800	6,5	mod.equal%	**V5823C2009**
15	G1/2	0,4	500	800	6,5	mod.equal%	**V5823C2017**
15	G1/2	0,63	500	800	6,5	mod.equal%	**V5823C2025**
15	G1/2	1	150	250	6,5	mod.equal%	**V5823C2033**
15	G1/2	1,6	150	250	6,5	mod.equal%	**V5823C2041**
20	1 1/8" x 14	2,5	–	240	6,5	mod.equal%	**V5823C2157**
20	1 1/8" x 14	2,5	50	100	6,5	mod.equal%	**V5823C2058**
20	1 1/8" x 14	4	–	240	6,5	mod.equal%	**V5823C2165**
20	1 1/8" x 14	4	50	100	6,5	mod.equal%	**V5823C2066**

Accessories

Compression fitting for DN15 valve, pipe size 15 mm	**ACN-15C**
Compression fitting for DN20 valve, pipe size 22 mm	**ACN-20C**
Soldering fitting for DN15 valve, pipe size 12 mm	**ACN-15S**
Soldering fitting for DN20 valve, pipe size 15 mm	**ACN-20S**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way control valve PN16, flat sealing DN15/20, V5833A

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5833A
Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types). If the main-port (A-AB) is equal percentage, the B-AB port is linear. The valve capacity of B-AB is one stage smaller.

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	150	–	2,5	on/off	**V5833A4007**
20	G3/4	2,5	50	–	2,5	on/off	**V5833A4015**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0,25	500	800	6,5	mod.equal%	**V5833A1003**
15	G1/2	0,4	500	800	6,5	mod.equal%	**V5833A1011**
15	G1/2	0,63	500	800	6,5	mod.equal%	**V5833A1029**
15	G1/2	1	150	250	6,5	mod.equal%	**V5833A1037**
15	G1/2	1,6	150	250	6,5	mod.equal%	**V5833A1045**
20	G3/4	2,5	–	240	6,5	mod.equal%	**V5833A3009**
20	G3/4	2,5	50	100	6,5	mod.equal%	**V5833A1052**
20	G3/4	4	–	240	6,5	mod.equal%	**V5833A3017**
20	G3/4	4	50	100	6,5	mod.equal%	**V5833A1060**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size 3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size 1/2"	**AC-20FT**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way/bypass control valve PN16, flat sealing DN15/20, V5833C

For individual room control, fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5833C
Valve type	3-way mixing, bypass
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Media temp.	2 ... 120 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types). The valve capacity for linear ports is one stage smaller than for equal percentage ports.

2,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1,6	150	–	2,5	on/off	**V5833C4003**
20	G3/4	2,5	50	–	2,5	on/off	**V5833C4011**

6,5 mm

DN size	Connection diameter	Kvs value	Close off pressure with 90N motor	Close off pressure with 180N motor	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0,25	500	800	6,5	mod.equal%	**V5833C1066**
15	G1/2	0,4	500	800	6,5	mod.equal%	**V5833C1009**
15	G1/2	0,63	500	800	6,5	mod.equal%	**V5833C1017**
15	G1/2	1	150	250	6,5	mod.equal%	**V5833C1025**
15	G1/2	1,6	150	250	6,5	mod.equal%	**V5833C1033**
20	G3/4	2,5	–	240	6,5	mod.equal%	**V5833C1140**
20	G3/4	2,5	50	100	6,5	mod.equal%	**V5833C1041**
20	G3/4	4	–	240	6,5	mod.equal%	**V5833C1152**
20	G3/4	4	50	100	6,5	mod.equal%	**V5833C1058**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size 3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size 1/2"	**AC-20FT**
Service tool to clean/replace inserts	**WV108**
Brush for WV108	**WV108B**

3-way linear valves, stroke 2,5/6,5mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2,5 mm; 90 N	0..10V=	24; 2	A-AB open	–	–	75 s	1	**MT010-N**
	0..10V=	24; 2	A-AB open	–	–	75 s	3	**MT010-3MN**
	2-pt	24; 3	A-AB open	–	–	4,0 min	1	**MT4-024-NC**
	2-pt	24; 3	A-AB open	–	–	4,0 min	2,5	**MT4-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	6,0 min	1	**MT4-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	4,0 min	1	**MT4-024S-NC**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	1	**MT4-024-NO**
	2-pt	24; 3	A-AB closed	–	–	4,0 min	2,5	**MT4-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	6,0 min	1	**MT4-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	4,0 min	1	**MT4-024S-NO**
	2-pt	230; 3	A-AB open	–	–	2,5 min	1	**MT4-230-NC**
	2-pt	230; 3	A-AB open	–	–	2,5 min	2,5	**MT4-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	3,5 min	1	**MT4-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	2,5 min	1	**MT4-230S-NC**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	1	**MT4-230-NO**
	2-pt	230; 3	A-AB closed	–	–	2,5 min	2,5	**MT4-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	3,5 min	1	**MT4-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	2,5 min	1	**MT4-230S-NO**
	3-pt	24; 0,7	–	–	–	57 s	0,9	**M7410A1001**
	LON	24; 1,4	–	–	–	53 s	1,5	**M7410G1008**
6,5 mm; 90 N	2-pt	24; 3	A-AB open	–	–	6,0 min	1	**MT8-024-NC**
	2-pt	24; 3	A-AB open	–	–	6,0 min	2,5	**MT8-024-NC-2.5M**
	2-pt	24; 2	A-AB open	–	–	7,5 min	1	**MT8-024LC-NC**
	2-pt	24; 3	A-AB open	–	1	6,0 min	1	**MT8-024S-NC**
	2-pt	24; 8	A-AB closed	–	–	3,6/16 s	1,5	**M5410C1001**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	1	**MT8-024-NO**
	2-pt	24; 3	A-AB closed	–	–	6,0 min	2,5	**MT8-024-NO-2.5M**
	2-pt	24; 2	A-AB closed	–	–	7,5 min	1	**MT8-024LC-NO**
	2-pt	24; 3	A-AB closed	–	1	6,0 min	1	**MT8-024S-NO**
	2-pt	230; 3	A-AB open	–	–	3,5 min	1	**MT8-230-NC**
	2-pt	230; 3	A-AB open	–	–	3,5 min	2,5	**MT8-230-NC-2.5M**
	2-pt	230; 2	A-AB open	–	–	5,5 min	1	**MT8-230LC-NC**
	2-pt	230; 3	A-AB open	–	1	3,5 min	1	**MT8-230S-NC**
	2-pt	230; 15	A-AB closed	–	–	3,6/16 s	1,5	**M5410L1001**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	1	**MT8-230-NO**
	2-pt	230; 3	A-AB closed	–	–	3,5 min	2,5	**MT8-230-NO-2.5M**
	2-pt	230; 2	A-AB closed	–	–	5,5 min	1	**MT8-230LC-NO**
	2-pt	230; 3	A-AB closed	–	1	3,5 min	1	**MT8-230S-NO**
6,5 mm; 180 N	0/2..10V=	24; 1,4	–	–	–	150 s	1,5	**M7410E1002**
	0/2..10V=	24; 1,4	–	•	–	150 s	1,5	**M7410E2026**
	0/2..10V=	24; 1,4	–	•	2	150 s	1,5	**M7410E4022**
	3-pt	24; 0,7	–	–	–	150 s	1,5	**M7410C1007**
	3-pt	24; 0,7	–	•	–	150 s	1,5	**M6410C2023**
	3-pt	24; 0,7	–	•	2	150 s	1,5	**M6410C4029**
	3-pt	230; 7	–	•	–	150 s	1,5	**M6410L2023**
	3-pt	230; 7	–	•	2	150 s	1,5	**M6410L4029**
	LON	24; 1,4	–	–	–	150 s	1,5	**M7410G1016**

3-way linear valves, stroke 2,5/6,5mm

Three-way control valve PN16, flat sealing DN25-40, V5833A

Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

Valve series	V5833A2
Valve type	3-way mixing, press. bal.
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Stroke	6,5 mm
Media temp.	2 ... 130 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Flow char.	linear
Additional description	Valves are supplied with adjustment cap.

6,5 mm

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 300N motor kPa	Close off pressure with 400N motor kPa	Type
25	G1 1/2	4	1600	1600	**V5833A2076**
25	G1 1/2	6,3	1600	1600	**V5833A2084**
25	G1 1/2	10	1600	1600	**V5833A2092**
32	G2	16	1200	1200	**V5833A2100**
40	G2 1/4	25	1200	1200	**V5833A2118**

Accessories

External threaded fitting for DN25 valve, pipe size R1"	**AC-25T**
External threaded fitting for DN32 valve, pipe size R11/4"	**AC-32T**
External threaded fitting for DN40 valve, pipe size R11/2"	**AC-40T**
Internal threaded fitting for DN25 valve, pipe size Rp1"	**AC-25TF**
Internal threaded fitting for DN32 valve, pipe size Rp11/4"	**AC-32TF**
Internal threaded fitting for DN40 valve, pipe size Rp11/2"	**AC-40TF**

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	Type
6,5 mm; 300 N	0/2..10V=	24; 1,4	–	–	–	150	1,5	–	**M7410E1028**
	0/2..10V=	24; 1,4	–	•	–	150	1,5	–	**M7410E2034**
	0/2..10V=	24; 1,4	–	•	2	150	1,5	–	**M7410E4030**
	3-pt	24; 0,7	–	–	–	150	1,5	–	**M7410C1015**
	3-pt	24; 0,7	–	•	–	150	1,5	–	**M6410C2031**
	3-pt	24; 0,7	–	•	2	150	1,5	–	**M6410C4037**
	3-pt	230; 7	–	•	–	150	1,5	–	**M6410L2031**
	3-pt	230; 7	–	•	2	150	1,5	–	**M6410L4037**
	LON	24; 1,4	–	–	–	150	1,5	–	**M7410G1024**
6,5 mm; 400 N	0/2..10V=	24; 5	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24; 10	A-AB closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24; 10	A-AB closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230; 10	A-AB closed	–	–	60	–	•	**ML6435B1016**

3-way linear valves, stroke 20/38mm

Three-way control valve PN16, flat sealing DN15-50, V5013E

For heating, ventilating and air conditioning, open circuits; hot/cold water quality VDI2035.

Valve series	V5013E
Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Stroke	20 mm
Media temp.	2 ... 170 °C
Static pressure	PN16
Port connection type	ext. thread flat sealing
Flow char.	mod.equal%

20 mm

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
15	G1 1/8	2,5	1600	–	**V5013E1063**
15	G1 1/8	4	1600	–	**V5013E1071**
20	G1 1/4	6,3	1600	–	**V5013E1089**
25	G1 1/2	10	1000	1600	**V5013E1097**
32	G2	16	700	1600	**V5013E1105**
40	G2 1/4	25	460	1500	**V5013E1113**
50	G2 3/4	40	260	850	**V5013E1121**

Accessories

Internal threaded fitting for DN15 valve, pipe size Rp1/2"	**AC-15TF**
Internal threaded fitting for DN20 valve, pipe size Rp3/4"	**AC-20TF**
Internal threaded fitting for DN25 valve, pipe size Rp1"	**AC-25TF**
Internal threaded fitting for DN32 valve, pipe size Rp1 1/4"	**AC-32TF**
Internal threaded fitting for DN40 valve, pipe size Rp1 1/2"	**AC-40TF**
Internal threaded fitting for DN50 valve, pipe size Rp2"	**AC-50TF**

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	A-AB open	•	optional	1,8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24; 12	A-AB closed	•	optional	1,8	•	2..10V=	**ML7425B6007**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	A-AB open	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	24; 11	A-AB closed	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	A-AB open	•	optional	1,8	•	optional	**ML6425A3014**
	3-pt	230; 12	A-AB closed	•	optional	1,8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**

3-way linear valves, stroke 20/38mm

Three-way control valve PN16, threaded connections DN15-50, V5013R

For heating, ventilating and air conditioning, open circuits; hot/cold water quality VDI2035.

Valve series	V5013R
Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Stroke	20 mm
Media temp.	2 ... 170 °C
Static pressure	PN16
Port connection type	internal threads ISO228
Flow char.	mod.equal%

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	**Type**
15	2,5	1600	–	**V5013R1032**
15	4	1600	–	**V5013R1040**
20	6,3	1600	–	**V5013R1057**
25	10	1000	1600	**V5013R1065**
32	16	700	1600	**V5013R1073**
40	25	460	1500	**V5013R1081**
50	40	260	850	**V5013R1099**

3-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	A-AB open	•	optional	1,8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24; 12	A-AB closed	•	optional	1,8	•	2..10V=	**ML7425B6007**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	A-AB open	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	24; 11	A-AB closed	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	A-AB open	•	optional	1,8	•	optional	**ML6425A3014**
	3-pt	230; 12	A-AB closed	•	optional	1,8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**

3-way linear valves, stroke 20/38mm

Three-way control valve PN6, flanged connections DN15-150, V5329C/V5015A

For heating and air conditioning in closed circuit systems; hot/cold water quality VDI2035, greenhouses.

Valve series	V5329C/V5015
Valve type	3-way mixing
Medium type	water
Materials	body cast iron GG25, trim stainless steel
Action to open	stem down
Static pressure	PN6
Port connection type	flanges ISO7005
Flow char.	mod.equal%

20 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Media temp. °C	Type
15	2,5	600	–	20	2 ... 170	**V5329C1000**
15	4	600	–	20	2 ... 170	**V5329C1018**
20	6,3	600	–	20	2 ... 170	**V5329C1026**
25	10	600	–	20	2 ... 170	**V5329C1034**
32	16	600	–	20	2 ... 170	**V5329C1042**
40	25	480	600	20	2 ... 170	**V5329C1059**
50	40	260	600	20	2 ... 170	**V5329C1067**
65	63	160	600	20	2 ... 170	**V5329C1075**
80	100	100	400	20	2 ... 170	**V5329C1083**

38 mm

DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Media temp. °C	Type
100	140	–	150	38	2 ... 120	**V5015A1151**
125	220	–	120	38	2 ... 120	**V5015A1169**
150	310	–	80	38	2 ... 120	**V5015A1177**

3-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	A-AB open	•	optional	1,8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24; 12	A-AB closed	•	optional	1,8	•	2..10V=	**ML7425B6007**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	A-AB open	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	24; 11	A-AB closed	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	A-AB open	•	optional	1,8	•	optional	**ML6425A3014**
	3-pt	230; 12	A-AB closed	•	optional	1,8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

3-way linear valves, stroke 20/38mm

Three-way control valve PN16, flanged connections DN 15-150, V5329A/V5050A,B

For heating and air conditioning in closed circuit systems; hot/cold water quality VDI2035, greenhouses.

Valve series	V5329A/V5050
Medium type	water
Materials	body cast iron GG25, trim stainless steel
Action to open	stem down
Static pressure	PN16
Port connection type	flanges ISO7005

20 mm

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	Flow char.	Type
	mm		kPa	kPa	mm	°C		
3-way mixing	15	2,5	1000	–	20	2 ... 170	mod.equal%	**V5329A1004**
3-way mixing	15	4	1000	–	20	2 ... 170	mod.equal%	**V5329A1012**
3-way mixing	20	6,3	1000	–	20	2 ... 170	mod.equal%	**V5329A1020**
3-way mixing	25	10	1000	–	20	2 ... 170	mod.equal%	**V5329A1038**
3-way mixing	32	16	790	1000	20	2 ... 170	mod.equal%	**V5329A1046**
3-way mixing	40	25	480	1000	20	2 ... 170	mod.equal%	**V5329A1053**
3-way mixing	50	40	260	1000	20	2 ... 170	mod.equal%	**V5329A1061**
3-way mixing	65	63	160	650	20	2 ... 170	mod.equal%	**V5329A1079**
3-way mixing	80	100	100	400	20	2 ... 170	mod.equal%	**V5329A1087**

38 mm, mixing

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	Flow char.	Type
	mm		kPa	kPa	mm	°C		
3-way mixing	100	160	–	230	38	2 ... 220	linear	**V5050A1090**
3-way mixing	125	250	–	90	38	2 ... 220	linear	**V5050A1108**
3-way mixing	150	360	–	90	38	2 ... 220	linear	**V5050A1116**

38 mm, diverting, action to open AB-A: stem up

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	Flow char.	Type
	mm		kPa	kPa	mm	°C		
3-way diverting	100	160	–	230	38	2 ... 220	linear	**V5050B1064**
3-way diverting	125	250	–	90	38	2 ... 220	linear	**V5050B1072**
3-way diverting	150	360	–	90	38	2 ... 220	linear	**V5050B1080**

3-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	A-AB open	•	optional	1,8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24; 12	A-AB closed	•	optional	1,8	•	2..10V=	**ML7425B6007**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	A-AB open	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	24; 11	A-AB closed	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	A-AB open	•	optional	1,8	•	optional	**ML6425A3014**
	3-pt	230; 12	A-AB closed	•	optional	1,8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

3-way linear valves, stroke 20/38mm

Three-way control valve PN25/40, flanged connections DN15-100, V5050A,B

For closed circuit heating systems, hot water quality VDI2035.

Valve series	V5050
Medium type	water
Materials	body cast steel GS-C25, trim stainless steel
Action to open	stem down
Media temp.	2 ... 220 °C
Static pressure	PN25/40
Port connection type	flanges ISO7005
Flow char.	linear

20 mm

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Type
	mm		kPa	kPa	mm	
3-way mixing	15	2,5	1000	2500	20	**V5050A1124**
3-way mixing	15	4	1000	2500	20	**V5050A1132**
3-way mixing	20	6,3	1000	2500	20	**V5050A1140**
3-way mixing	25	10	1000	2500	20	**V5050A1157**
3-way mixing	32	16	600	2000	20	**V5050A1165**
3-way mixing	40	25	350	1300	20	**V5050A1173**
3-way mixing	50	40	200	750	20	**V5050A1181**
3-way mixing	65	63	120	500	20	**V5050A1199**
3-way mixing	80	100	50	230	20	**V5050A1207**

38 mm, mixing

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Type
	mm		kPa	kPa	mm	
3-way mixing	100	160	–	230	38	**V5050A1215**

38 mm, diverting, action to open AB-A: stem up

Valve type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Type
	mm		kPa	kPa	mm	
3-way diverting	100	160	–	230	38	**V5050B1155**

3-way linear valves, stroke 20/38mm

Actuators	Control input signal	Power supply Vac; VA	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24; 7	–	•	optional	0,5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24; 5	–	•	optional	1,0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24; 12	A-AB open	•	optional	1,8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24; 12	A-AB closed	•	optional	1,8	•	2..10V=	**ML7425B6007**
	2..10V=	24; 5	–	–	optional	1,0	–	–	**ML7420A6025**
	3-pt	24; 4	–	–	optional	1,0	–	optional	**ML6420A3072**
	3-pt	24; 6	–	•	optional	0,5	–	optional	**ML6420A3023**
	3-pt	24; 4	–	•	optional	1,0	–	optional	**ML6420A3007**
	3-pt	24; 11	A-AB open	•	optional	1,8	•	optional	**ML6425A3006**
	3-pt	24; 11	A-AB closed	•	optional	1,8	•	optional	**ML6425B3005**
	3-pt	230; 6,5	–	•	optional	0,5	–	optional	**ML6420A3031**
	3-pt	230; 6,5	–	•	optional	1,0	–	optional	**ML6420A3015**
	3-pt	230; 12	A-AB open	•	optional	1,8	•	optional	**ML6425A3014**
	3-pt	230; 12	A-AB closed	•	optional	1,8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	1,9	–	2..10V=	**ML7421A3004**
	3-pt	24; 13	–	•	optional	1,9	–	optional	**ML6421A3005**
	3-pt	230; 11	–	•	optional	1,9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24; 12	–	•	optional	3,5	–	2..10V=	**ML7421B3003**
	3-pt	24; 13	–	•	optional	3,5	–	optional	**ML6421B3004**
	3-pt	230; 11	–	•	optional	3,5	–	–	**ML6421B3012**

Valves rotary — Page

Honeywell

Best choice

Valve Type		Application							
		Steam	Heating	Cooling	FCU	AHU	DH	High Dp	DHW
Rotary Valves									
PN6	DRG/ZR	-	+	+	-	-	-	-	-
PN6	V5433/42	-	+	+	-	-	-	-	-
Butterfly Valves									
PN10	V5422E/L	-	+	+	-	-	-	+	o
PN16	V5421B	-	+	+	-	-	-	+	o

Legend:

+ “Best choice”

o “Possible”

- “Not recommended”

-1) “High Dp for small nominal sizes”

Please note:

This table is only a recommendation. A valve marked with a "+" is a preferred choice in specific applications.
Also a valve marked with a "-" may be suitable for an application but overspecified.

Butterfly valve DN25..200, without actuator

For heating applications, or boiler management systems.
For heating water containing up to 50% glycol. Other additives possible, but contact Honeywell for confirmation.

Valve series	V5421B
Valve type	butterfly for motor
Medium type	water
Materials	rotary disc DN25-80 stainless steel 1.4581, DN100-200 ductile iron GGG40; coating DeltaMagni
Packing	EPDM
Angle of rotation	90 °
Static pressure	PN16
Port connection type	wafer
Additional description	Without flanges. Actuators (M60.., M70.., M6422L1003) to be ordered seperatley.

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Media temp. °C	Type
25	26	1600	8	-10 ... 120	**V5421B1009**
32	26	1600	8	-10 ... 120	**V5421B1017**
40	50	1600	12	-10 ... 120	**V5421B1025**
50	116	1000	12	-10 ... 120	**V5421B1033**
65	259	1000	15	-10 ... 120	**V5421B1041**
80	377	1000	25	-10 ... 120	**V5421B1058**
100	763	800	40	-10 ... 120	**V5421B1066**
125	1030	600	40	0 ... 90	**V5421B1074**
150	1790	400	40	0 ... 90	**V5421B1082**
200	3460	300	60	0 ... 90	**V5421B1090**

Spare parts

Coupling set	**VCU-SET**
Universal console	**VCO2**

M6061A1021	M6061A1039	M6061A1047	M6061L1027	M6061L1035	M6061L1043	M6422L1003	M7061E1020	
3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	0/2..10V=	Control input signal
24; 3,5	24; 3,5	24; 3,5	230; 3,5	230; 3,5	230; 3,5	230; 7	24; 2,4	Power supply [Vac; VA]
20	30	40	20	30	40	40	20	Torque [Nm]
•	–	–	•	–	–	–	•	**V5421B1009**
•	–	–	•	–	–	–	•	**V5421B1017**
•	–	–	•	–	–	–	•	**V5421B1025**
•	–	–	•	–	–	–	•	**V5421B1033**
•	–	–	•	–	–	–	•	**V5421B1041**
–	•	–	–	•	–	–	–	**V5421B1058**
–	–	•	–	–	•	–	–	**V5421B1066**
–	–	•	–	–	•	–	–	**V5421B1074**
–	–	•	–	–	•	–	–	**V5421B1082**
–	–	–	–	–	–	•	–	**V5421B1090**

Use actuator M6422L1003 for valve V5421B1090.

Motorized Butterfly valve DN250..400

Butterfly valve with factory mounted electrical actuator.
For heating water containing up to 50% glycol. Other additives possible, but contact Honeywell for confirmation.

Valve series	V5422L/E
Valve type	butterfly motorized
Medium type	water
Materials	body and disc ductile iron GGG40, disc coating DeltaMagni, shaft stainless steel 1.4021
Packing	EPDM
Protection class	IP67
Position indication	mechanical pointer
Max. delta P	1000 kPa
Angle of rotation	max. 90 ^{o}
Static pressure	PN10
Port connection type	wafer
Manual operation	with wheel
Media temp.	-10 ... 120 ^{o}C
Additional description	Without flanges.

3-pt control, with 2x SPST 230 Vac end switches for open/close feedback

DN size mm	Kvs value	Torque Nm	Power supply Vac; VA	Runtime s	Control input signal	Type
250	5070	250	230; 276	30	3-pt	**V5422L1006**
300	7430	600	230; 276	30	3-pt	**V5422L1014**
350	10320	600	230; 460	30	3-pt	**V5422L1022**
400	13290	1000	230; 276	60	3-pt	**V5422L1030**

Modulating control and electrical position indication, Microswitch settings for signals values 0/2..10V, 0/4..20mA

DN size mm	Kvs value	Torque Nm	Power supply Vac; VA	Runtime s	Control input signal	Type
250	5070	250	230; 276	30	0/2..10V=; 0/4..20mA	**V5422E1001**
300	7430	600	230; 276	30	0/2..10V=; 0/4..20mA	**V5422E1019**
350	10320	600	230; 460	30	0/2..10V=; 0/4..20mA	**V5422E1027**
400	13290	1000	230; 276	60	0/2..10V=; 0/4..20mA	**V5422E1035**

Three-way rotary valve PN6

For supply water, heating and air conditioning; hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	DRG
Valve type	3-way rotary mixing
Medium type	water
Materials	body cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 ^{o}
Media temp.	2 ... 130 ^{o}C
Static pressure	PN6
Reduced delta P	40 kPa

Internal threads

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Torque for reduced delta P Nm	Port connection type	**Type**
15	2,5	100	10	10	internal threads	**DR15-2GMLA**
15	4	100	10	10	internal threads	**DR15GMLA**
20	6,3	100	10	10	internal threads	**DR20GMLA**
25	10	100	10	10	internal threads	**DR25GMLA**
32	16	100	10	10	internal threads	**DR32GMLA**
40	25	100	20	10	internal threads	**DR40GMLA**

Flanges

DN size	Kvs value	Max. delta P	Torque for max. delta P	Torque for reduced delta P	Port connection type	Type
mm		kPa	Nm	Nm		
20	6,3	100	10	10	flanges DIN2531	**DR20GFLA**
25	10	100	10	10	flanges DIN2531	**DR25GFLA**
32	16	100	10	10	flanges DIN2531	**DR32GFLA**
40	25	100	20	10	flanges DIN2531	**DR40GFLA**
50	40	100	20	20	flanges DIN2531	**DR50GFLA**
65	63	100	20	20	flanges DIN2531	**DR65GFLA**
80	100	100	30	20	flanges DIN2531	**DR80GFLA**
100	160	100	40	30	flanges DIN2531	**DR100GFLA**
125	250	70	40	30	flanges DIN2531	**DR125GFLA**
150	630	50	40	40	flanges DIN2531	**DR150GFLA**
200	1000	50	40	40	flanges DIN2531	**DR200GFLA1**
200	1600	50	40	40	flanges DIN2531	**DR200GFLA**

M6061A1013	M6061A1021	M6061A1039	M6061A1047	M6061L1019	M6061L1027	M6061L1035	M6061L1043	M7061E1012	M7061E1020	VMM40-24F	VMM40F	
3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	0/2..10V=	0/2..10V=	3-pt	3-pt	Control input signal
24; 3,5	24; 3,5	24; 3,5	24; 3,5	230; 3,5	230; 3,5	230; 3,5	230; 3,5	24; 2,4	24; 2,4	24; 3,5	230; 3,5	Power supply [Vac; VA]
10	20	30	40	10	20	30	40	10	20	40	40	Torque [Nm]
•	–	–	–	•	–	–	–	•	–	–	–	**DR15-2GMLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR15GMLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR20GMLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR25GMLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR32GMLA**
•	•	–	–	•	•	–	–	•	•	–	–	**DR40GMLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR20GFLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR25GFLA**
•	–	–	–	•	–	–	–	•	–	–	–	**DR32GFLA**
•	•	–	–	•	•	–	–	•	•	–	–	**DR40GFLA**
–	•	–	–	–	•	–	–	–	•	–	–	**DR50GFLA**
–	•	–	–	–	•	–	–	–	•	–	–	**DR65GFLA**
–	•	•	–	–	•	•	–	–	–	–	–	**DR80GFLA**
–	–	•	•	–	–	•	•	–	–	•	•	**DR100GFLA**
–	–	•	•	–	–	•	•	–	–	•	•	**DR125GFLA**
–	–	–	•	–	–	–	•	–	–	•	•	**DR150GFLA**
–	–	–	•	–	–	–	•	–	–	•	•	**DR200GFLA1**
–	–	–	•	–	–	–	•	–	–	•	•	**DR200GFLA**

Three-way rotary valve PN6, compact

For heating and air conditioning; hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	V5433A
Valve type	3-way rotary mixing, compact
Medium type	water
Materials	body cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 110 °C
Static pressure	PN6
Port connection type	internal threads
Max. delta P	100 kPa
Torque for max. delta P	7 Nm

DN size mm	Kvs value	Type
20	2,5	**V5433A1015**
20	4	**V5433A1023**
20	6,3	**V5433A1031**
25	10	**V5433A1049**
32	16	**V5433A1056**
40	25	**V5433A1064**
50	40	**V5433A1072**

M6063A1003	M6063A4007	M6063L1009	M6063L4003	
3-pt	3-pt	3-pt	3-pt	Control input signal
24; 3	24; 3	230; 3	230; 3	Power supply [Vac; VA]
7	7	7	7	Torque [Nm]
•	•	•	•	**V5433A1015**
•	•	•	•	**V5433A1023**
•	•	•	•	**V5433A1031**
•	•	•	•	**V5433A1049**
•	•	•	•	**V5433A1056**
•	•	•	•	**V5433A1064**
•	•	•	•	**V5433A1072**

Three-way rotary valve PN6, compact, chrome plated

For hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	V5433G
Valve type	3-way rotary mixing, compact
Medium type	water
Materials	body chrome plated cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 110 °C
Static pressure	PN6
Port connection type	internal threads
Max. delta P	100 kPa
Torque for max. delta P	7 Nm

DN size mm	Kvs value	Type
20	2,5	**V5433G1004**
20	4	**V5433G1012**
20	6,3	**V5433G1020**
25	10	**V5433G1038**
32	16	**V5433G1046**
40	25	**V5433G1053**
50	40	**V5433G1061**

M6063A1003	M6063A4007	M6063L1009	M6063L4003	
3-pt	3-pt	3-pt	3-pt	Control input signal
24; 3	24; 3	230; 3	230; 3	Power supply [Vac; VA]
7	7	7	7	Torque [Nm]
•	•	•	•	**V5433G1004**
•	•	•	•	**V5433G1012**
•	•	•	•	**V5433G1020**
•	•	•	•	**V5433G1038**
•	•	•	•	**V5433G1046**
•	•	•	•	**V5433G1053**
•	•	•	•	**V5433G1061**

Four-way rotary valve PN6

For supply water, heating and air conditioning; hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	ZR
Valve type	4-way rotary mixing
Medium type	water
Materials	body cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Static pressure	PN6

Internal threads

DN size	Kvs value	Max. delta P	Torque for max. delta P	Reduced delta P	Torque for reduced delta P	Media temp.	Port connection type	Type
mm		kPa	Nm	kPa	Nm	°C		
15	4	100	20	80	10	2 ... 130	internal threads	**ZR15MA**
20	6,3	100	20	80	10	2 ... 130	internal threads	**ZR20MA**
25	10	100	20	80	10	2 ... 130	internal threads	**ZR25MA**
32	16	100	20	80	10	2 ... 130	internal threads	**ZR32MA**
40	25	100	20	70	10	2 ... 130	internal threads	**ZR40MA**

Flanges

DN size	Kvs value	Max. delta P	Torque for max. delta P	Reduced delta P	Torque for reduced delta P	Media temp.	Port connection type	Type
mm		kPa	Nm	kPa	Nm	°C		
25	10	100	20	80	10	2 ... 130	flanges DIN2531	**ZR25FA**
32	16	100	20	80	10	2 ... 130	flanges DIN2531	**ZR32FA**
40	25	100	20	70	10	2 ... 130	flanges DIN2531	**ZR40FA**
50	40	100	20	100	20	2 ... 130	flanges DIN2531	**ZR50FA**
65	63	100	20	100	20	2 ... 130	flanges DIN2531	**ZR65FA**
80	100	100	30	100	30	2 ... 130	flanges DIN2531	**ZR80FA**
100	160	80	30	80	30	2 ... 130	flanges DIN2531	**ZR100FA**
125	250	50	30	50	30	2 ... 130	flanges DIN2531	**ZR125FA**
150	400	40	30	40	30	2 ... 130	flanges DIN2531	**ZR150FA**
200	630	30	30	30	30	2 ... 110	flanges DIN2531	**ZR200FA**

M6061A1013	M6061A1021	M6061A1039	M6061L1019	M6061L1027	M6061L1035	M7061E1012	M7061E1020	
3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	0/2..10V=	0/2..10V=	Control input signal
24; 3,5	24; 3,5	24; 3,5	230; 3,5	230; 3,5	230; 3,5	24; 2,4	24; 2,4	Power supply [Vac; VA]
10	20	30	10	20	30	10	20	Torque [Nm]
•	•	–	•	•	–	•	•	**ZR15MA**
•	•	–	•	•	–	•	•	**ZR20MA**
•	•	–	•	•	–	•	•	**ZR25MA**
•	•	–	•	•	–	•	•	**ZR32MA**
•	•	–	•	•	–	•	•	**ZR40MA**
•	•	–	•	•	–	•	•	**ZR25FA**
•	•	–	•	•	–	•	•	**ZR32FA**
•	•	–	•	•	–	•	•	**ZR40FA**
–	•	–	–	•	–	–	•	**ZR50FA**
–	•	–	–	•	–	–	•	**ZR65FA**
–	–	•	–	–	•	–	–	**ZR80FA**
–	–	•	–	–	•	–	–	**ZR100FA**
–	–	•	–	–	•	–	–	**ZR125FA**
–	–	•	–	–	•	–	–	**ZR150FA**
–	–	•	–	–	•	–	–	**ZR200FA**

Four-way rotary valve PN6, compact

For heating systems; hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	V5442A
Valve type	4-way rotary mixing, compact
Medium type	water
Materials	body cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 110 °C
Static pressure	PN6
Port connection type	internal threads
Max. delta P	100 kPa
Torque for max. delta P	7 Nm

DN size mm	Kvs value	Type
20	4	**V5442A1022**
20	6,3	**V5442A1030**
25	10	**V5442A1048**
32	16	**V5442A1055**

M6063A1003	M6063A4007	M6063L1009	M6063L4003	
3-pt	3-pt	3-pt	3-pt	Control input signal
24; 3	24; 3	230; 3	230; 3	Power supply [Vac; VA]
•	•	•	•	**V5442A1022**
•	•	•	•	**V5442A1030**
•	•	•	•	**V5442A1048**
•	•	•	•	**V5442A1055**

Four-way rotary valve PN6, compact, chrome plated

For hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	V5442G
Valve type	4-way rotary mixing, compact
Medium type	water
Materials	body chrome plated cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 110 °C
Static pressure	PN6
Port connection type	internal threads
Max. delta P	100 kPa
Torque for max. delta P	7 Nm

DN size mm	Kvs value	Type
20	4	**V5442G1003**
20	6,3	**V5442G1011**
25	10	**V5442G1029**
32	16	**V5442G1037**

M6063A1003	M6063A4007	M6063L1009	M6063L4003	
3-pt	3-pt	3-pt	3-pt	Control input signal
24; 3	24; 3	230; 3	230; 3	Power supply [Vac; VA]
•	•	•	•	**V5442G1003**
•	•	•	•	**V5442G1011**
•	•	•	•	**V5442G1029**
•	•	•	•	**V5442G1037**

Three-way rotary valve PN10

For supply water, heating and air conditioning; hot/cold water quality VDI2035; glycol water mixture 50%.

Valve series	DRU
Valve type	3-way rotary mixing, bypass
Medium type	water
Materials	body cast iron, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 130 °C
Static pressure	PN10
Port connection type	external threads
Max. delta P	100 kPa

Universal Rotary Valve

DN size (mm)	Kvs value	Torque for max. delta P (Nm)	Type
25	2,5	10	**DRU25-2.5**
25	4	10	**DRU25-4.0**
25	6,3	10	**DRU25-6.3**
25	10	10	**DRU25-10**
25	16	10	**DRU25-16**
32	10	20	**DRU32-10**
32	16	20	**DRU32-16**
32	25	20	**DRU32-25**

H-extensions

H-extension DN25	**HE25**
H-extension DN32	**HE32**

Accessories

Welding socket with gaskets and cap nut, DN25, pipe size 25 mm	**WTU25**
Welding socket with gaskets and cap nut, DN32, pipe size 32 mm	**WTU32**
Soldering socket witch gasket and cap nut, DN25, pipe size 18 mm	**LSU25-18**
Soldering socket witch gasket and cap nut, DN25, pipe size 22 mm	**LSU25-22**
Soldering socket witch gasket and cap nut, DN25, pipe size 28 mm	**LSU25-28**
Soldering socket witch gasket and cap nut, DN32, pipe size 22 mm	**LSU32-22**
Soldering socket witch gasket and cap nut, DN32, pipe size 28 mm	**LSU32-28**
Soldering socket witch gasket and cap nut, DN32, pipe size 35 mm	**LSU32-35**
Internal threaded socket with gaskets and cap nut, DN25, pipe size 25 mm	**STU25**
Internal threaded socket with gaskets and cap nut, DN32, pipe size 32 mm	**STU32**

M6061A1013	M6061A1021	M6061L1019	M6061L1027	M7061E1012	M7061E1020	
3-pt	3-pt	3-pt	3-pt	0/2..10V=	0/2..10V=	Control input signal
24; 3,5	24; 3,5	230; 3,5	230; 3,5	24; 2,4	24; 2,4	Power supply [Vac; VA]
10	20	10	20	10	20	Torque [Nm]
•	–	•	–	•	–	**DRU25-2.5**
•	–	•	–	•	–	**DRU25-4.0**
•	–	•	–	•	–	**DRU25-6.3**
•	–	•	–	•	–	**DRU25-10**
•	–	•	–	•	–	**DRU25-16**
–	•	–	•	–	•	**DRU32-10**
–	•	–	•	–	•	**DRU32-16**
–	•	–	•	–	•	**DRU32-25**

Three-way rotary valve PN10, for systems with oxygen diffusion

For supply water, heating and air conditioning; hot/cold water quality VDI2035; glycol water mixture 50%.
For applications with sludge deposition and for panel heating (e.g. underfloor and ceiling heating systems) with oxygen diffusion.

Valve type	3-way rotary mixing, bypass
Medium type	water
Materials	body red brass, inner parts chrome plated cast iron
Packing	double O-ring sealing
Angle of rotation	90 ^{o}
Media temp.	2 ... 130 ^{o}C
Static pressure	PN10
Port connection type	external threads
DN size	25 mm
Max. delta P	100 kPa
Torque for max. delta P	10 Nm
Additional description	Thermal insulation package included.

Kvs value	Type
2,5	**DRR25-2.5**
4	**DRR25-4.0**
6,3	**DRR25-6.3**
10	**DRR25-10**
16	**DRR25-16**

H-extensions

H-extension DN25	**HE25**

Accessories

Welding socket with gaskets and cap nut, DN25, pipe size 25 mm	**WTU25**
Soldering socket witch gasket and cap nut, DN25, pipe size 18 mm	**LSU25-18**
Soldering socket witch gasket and cap nut, DN25, pipe size 22 mm	**LSU25-22**
Soldering socket witch gasket and cap nut, DN25, pipe size 28 mm	**LSU25-28**
Internal threaded socket with gaskets and cap nut, DN25, pipe size 25 mm	**STU25**

M6061A1013	M6061L1019	M7061E1012	
3-pt	3-pt	0/2..10V=	Control input signal
24; 3,5	230; 3,5	24; 2,4	Power supply [Vac; VA]
10	10	10	Torque [Nm]
•	•	•	**DRR25-2.5**
•	•	•	**DRR25-4.0**
•	•	•	**DRR25-6.3**
•	•	•	**DRR25-10**
•	•	•	**DRR25-16**

Frequency inverters Page

Honeywell

Inverters 0,37..5,5kW, IP20, SmartDrive Compact

Variable frequency drives for induction motors, with built-in RFI filters. EMC and LVD compliant. SmartDrive Compact is a compact size micro inverter with easy operation and commissioning. The product offers good possibilities to be used with various applications with high functionality software and 1 rating which can be used in both variable torque (HVAC applications) and constant torque (machines in industrial or process installations).

Features

- Start up wizard
- Integrated RFI-filters
- Flexible side by side mounting with screws or DIN-rail as standard
- Compact size
- Single rating suitable for both pump and fan or machine applications
- Maximum ambient temperature 50 °C; (40 °C for COMP230-2P2-20 and COMP400-5P5-20)
- Easy to use single software package with high functionality
- Parameter upload/download even without powering the inverter with COMP-LOADER accessory
- Configurable Inputs and Outputs
- Inputs/Outputs: 2 analog inputs (1 voltage + 1 current), 6 digital inputs, 3 digital outputs (2 relays + 1 open collector), 1 analog output (mA) and Modbus RTU

Series	SmartDrive Compact
RFI-filter	integrated
Output frequency	0 ... 320 Hz
Frequency resolution	0,01 Hz
Serial communication	Modbus RTU
Immunity	fulfills all EMC immunity requirements
Emissions	EN61800-3 (category C2), C-Tick
Safety	EN61800-5, CE, UL, cUL
Protection class	IP20
More Information	http://inverter.ecc.emea.honeywell.com

208..240V, 1 phase

Voltage	Low overload (for Fan/Pump)	Low overload Icont	High overload (for Machines)	High overload Icont	Brake chopper	1 phase input	3 phases input	Type
	kW	A	kW	A				
230V	0,37	2,4	0,37	2,4	–	•	–	**COMP230-P37-20**
230V	0,75	3,7	0,75	3,7	–	•	–	**COMP230-P75-20**
230V	1,1	4,8	1,1	4,8	–	•	–	**COMP230-1P1-20**
230V	1,5	7	1,5	7	–	•	–	**COMP230-1P5-20**
230V	2,2	9,6	2,2	9,6	–	•	–	**COMP230-2P2-20**

380..480V, 3 phases

Voltage	Low overload (for Fan/Pump)	Low overload Icont	High overload (for Machines)	High overload Icont	Brake chopper	1 phase input	3 phases input	Type
	kW	A	kW	A				
400V	0,55	1,9	0,55	1,9	–	–	•	**COMP400-P55-20**
400V	0,75	2,4	0,75	2,4	–	–	•	**COMP400-P75-20**
400V	1,1	3,3	1,1	3,3	–	–	•	**COMP400-1P1-20**
400V	1,5	4,3	1,5	4,3	integrated	–	•	**COMP400-1P5-20**
400V	2,2	5,6	2,2	5,6	integrated	–	•	**COMP400-2P2-20**
400V	3	7,6	3	7,6	integrated	–	•	**COMP400-3P0-20**
400V	4	9	4	9	integrated	–	•	**COMP400-4P0-20**
400V	5,5	12	5,5	12	integrated	–	•	**COMP400-5P5-20**

Inverters 1,1..55kW, IP21/IP54, SmartDrive HVAC

Variable speed drives for induction motors, with built-in RFI filters. EMC and LVD compliant.
The SmartDrive HVAC inverters are especially designed with many advanced features for Heating, ventilation and air-conditioning applications.

Features

- Detachable multilanguage HMI with text display as standard
- Compact size
- Integrated stress removal and 360° grounding for power cable shield inside the device no need for cable glands
- Varnished circuit boards as standard
- Real Time Clock for timed functions and fault time stamps
- Inputs/Outputs: 2 analog inputs (mA/V), 6 digital inputs, 2 relays (NO/NC), 1 thermistor input (PTC), 1 analog output (mA/V), Ethernet (IP), RS485 (MS/TP)
- Flexible I/O configuration: 2 free slots for expansion boards
- Start Up wizard for extremely fast start of basic pump and fan applications
- Mini wizards for more advanced applications: PID, Cascade Control and Resonance sweep wizards
- Intelligent automatic functionality: Ramp Time Optimizer, Overtemperature ride-through, Power ride-through etc.
- PID controller with advanced features: Sleep mode, Pump Soft fill, pressure loss compensation, Cascade contoller etc.

Series	SmartDrive HVAC
RFI-filter	integrated
Brake chopper	no
Voltage	400V
Output frequency	0 ... 320 Hz
Frequency resolution	0,01 Hz
Serial communication	Standard: BACnet IP, Modbus TCP/IP, BACnet MS/TP, Modbus RTU, N2. Optional: LonWorks
Immunity	fulfills all EMC immunity requirements
Emissions	EN61800-3 (category C2), EN61000-3-12
Safety	EN61800-5, CE, UL, cUL
1 phase input	no
3 phases input	yes
More Information	http://inverter.ecc.emea.honeywell.com

IP21

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	Type
IP21	1,1	3,4	**HVAC400-1P1-21**
IP21	1,5	4,8	**HVAC400-1P5-21**
IP21	2,2	5,6	**HVAC400-2P2-21**
IP21	3	8	**HVAC400-3P0-21**
IP21	4	9,6	**HVAC400-4P0-21**
IP21	5,5	12	**HVAC400-5P5-21**
IP21	7,5	16	**HVAC400-7P5-21**
IP21	11	23	**HVAC400-11P-21**
IP21	15	31	**HVAC400-15P-21**
IP21	18,5	38	**HVAC400-18P-21**
IP21	22	46	**HVAC400-22P-21**
IP21	30	61	**HVAC400-30P-21**
IP21	37	72	**HVAC400-37P-21**
IP21	45	87	**HVAC400-45P-21**
IP21	55	105	**HVAC400-55P-21**

IP54

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	Type
IP54	1,1	3,4	**HVAC400-1P1-54**
IP54	1,5	4,8	**HVAC400-1P5-54**
IP54	2,2	5,6	**HVAC400-2P2-54**
IP54	3	8	**HVAC400-3P0-54**
IP54	4	9,6	**HVAC400-4P0-54**
IP54	5,5	12	**HVAC400-5P5-54**
IP54	7,5	16	**HVAC400-7P5-54**
IP54	11	23	**HVAC400-11P-54**
IP54	15	31	**HVAC400-15P-54**
IP54	18,5	38	**HVAC400-18P-54**
IP54	22	46	**HVAC400-22P-54**
IP54	30	61	**HVAC400-30P-54**
IP54	37	72	**HVAC400-37P-54**
IP54	45	87	**HVAC400-45P-54**
IP54	55	105	**HVAC400-55P-54**

Inverters 1,1..30kW, IP21/IP54, NXL HVAC

Variable speed drives for induction motors, with built-in RFI filters. EMC and LVD compliant. The inverters are suitable for High/Low Overload (constant/variable torque) applications. To control pumps and fans for heating , ventilation and air conditioning systems, normally Low Overload ratings are used. Industrial or process installations normally require High Overload ratings.

Features	• the software is tailored to meet the typical HVAC application • start-up wizard • optimized I/O configuration including thermistor input • flexible I/O configuration: 2 slots • inputs/outputs: 2 analog inputs, 6 digital inputs, 2 relays, 1 thermistor input, 1 analog output
Series	NXL HVAC
RFI-filter	integrated
Brake chopper	integrated
Voltage	400V
Output frequency	0 ... 320 Hz
Frequency resolution	0,01 Hz
Serial communication	Modbus RTU as standard; optional: LonWorks, Profibus DP, BACnet, Ethernet (Mobus/TCP), N2, DeviceNet, CANopen
Immunity	fulfills all EMC immunity requirements
Emissions	EN61800-3 (IP21: category C2, IP54: category C1)
Safety	EN61800-5, CE, UL, cUL
1 phase input	no
3 phases input	yes
More Information	http://inverter.ecc.emea.honeywell.com

IP21

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	**Type**
IP21	1,1	3,3	0,75	2,2	**HVAC03C2**
IP21	1,5	4,3	1,1	3,3	**HVAC04C2**
IP21	2,2	5,6	1,5	4,3	**HVAC05C2**
IP21	3	7,6	2,2	5,6	**HVAC07C2**
IP21	4	9	3	7,6	**HVAC09C2**
IP21	5,5	12	4	9	**HVAC12C2**
IP21	7,5	16	5,5	12	**HVAC16C2**
IP21	11	23	7,5	16	**HVAC23C2**
IP21	15	31	11	23	**HVAC31C2**
IP21	18,5	38	15	31	**HVAC38C2**
IP21	22	46	18,5	38	**HVAC46C2**
IP21	30	61	22	46	**HVAC61C2**

IP54

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	**Type**
IP54	1,1	3,3	0,75	2,2	**HVAC03C5**
IP54	1,5	4,3	1,1	3,3	**HVAC04C5**
IP54	2,2	5,6	1,5	4,3	**HVAC05C5**
IP54	3	7,6	2,2	5,6	**HVAC07C5**
IP54	4	9	3	7,6	**HVAC09C5**
IP54	5,5	12	4	9	**HVAC12C5**
IP54	7,5	16	5,5	12	**HVAC16C5**
IP54	11	23	7,5	16	**HVAC23C5**
IP54	15	31	11	23	**HVAC31C5**
IP54	18,5	38	15	31	**HVAC38C5**
IP54	22	46	18,5	38	**HVAC46C5**
IP54	30	61	22	46	**HVAC61C5**

Inverters 1,1..160kW, IP21/IP54, NXS

Speed controller for induction motors, with built-in RFI filters. EMC and LVD compliant.
The Honeywell inverters are suitable for High/Low Overload (constant/variable torque) applications. To control pumps and fans for heating , ventilation and air conditioning systems, normally Low Overload inverters are used. Industrial or process installations normally require High Overload inverters.

Features	• high featured software package with predefined applications • start-up wizard • detachable multilingual HMI-panel with memory and backup functions • flexible I/O configuration; 5 slots • inputs/outputs: 2 analog inputs, 6 digital inputs, 2 relays, 1 digital output, 1 thermistor input, 1 analog output
Series	NXS
Voltage	400V
Output frequency	0 ... 320 Hz
Frequency resolution	0,01 Hz
Serial communication	optional: LonWorks, Modbus RTU, Profibus DP, BACnet, Ethernet (Mobus/TCP), N2, DeviceNet, CANopen
Immunity	fulfills all EMC immunity requirements
Emissions	EN61800-3 (category C2), C-Tick
Safety	EN61800-5, CE, UL, cUL
RFI-filter	integrated
1 phase input	no
3 phases input	yes
More Information	http://inverter.ecc.emea.honeywell.com

IP21

Protection class	Low overload (for Fan/Pump)	Low overload Icont	High overload (for Machines)	High overload Icont	Brake chopper	Type
	kW	A	kW	A		
IP21	1,1	3,1	0,75	2,2	integrated	**NXS0003V35A2H1**
IP21	1,5	4	1,1	3,1	integrated	**NXS0004V35A2H1**
IP21	2,2	5,4	1,5	4	integrated	**NXS0005V35A2H1**
IP21	3	7	2,2	5,4	integrated	**NXS0007V35A2H1**
IP21	4	9	3	7	integrated	**NXS0009V35A2H1**
IP21	5,5	12	4	9	integrated	**NXS0012V35A2H1**
IP21	7,5	16	5,5	12	integrated	**NXS0016V35A2H1**
IP21	11	22	7,5	16	integrated	**NXS0022V35A2H1**
IP21	15	31	11	22	integrated	**NXS0031V35A2H1**
IP21	18,5	38	15	31	integrated	**NXS0038V35A2H1**
IP21	22	45	18,5	38	integrated	**NXS0045V35A2H1**
IP21	30	61	22	45	integrated	**NXS0061V35A2H1**
IP21	37	72	30	61	optional	**NXS0072V35A2H0**
IP21	45	87	37	72	optional	**NXS0087V35A2H0**
IP21	55	105	45	87	optional	**NXS0105V35A2H0**
IP21	75	140	55	105	optional	**NXS0140V35A2H0**
IP21	90	170	75	140	optional	**NXS0168V35A2H0**
IP21	110	205	90	170	optional	**NXS0205V35A2H0**
IP21	132	261	110	205	optional	**NXS0260V35A2H0**
IP21	160	300	132	245	optional	**NXS0310V35A2H0**

IP54

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	Brake chopper	**Type**
IP54	1,1	3,1	0,75	2,2	integrated	**NXS0003V35A5H1**
IP54	1,5	4	1,1	3,1	integrated	**NXS0004V35A5H1**
IP54	2,2	5,4	1,5	4	integrated	**NXS0005V35A5H1**
IP54	3	7	2,2	5,4	integrated	**NXS0007V35A5H1**
IP54	4	9	3	7	integrated	**NXS0009V35A5H1**
IP54	5,5	12	4	9	integrated	**NXS0012V35A5H1**
IP54	7,5	16	5,5	12	integrated	**NXS0016V35A5H1**
IP54	11	22	7,5	16	integrated	**NXS0022V35A5H1**
IP54	15	31	11	22	integrated	**NXS0031V35A5H1**
IP54	18,5	38	15	31	integrated	**NXS0038V35A5H1**
IP54	22	45	18,5	38	integrated	**NXS0045V35A5H1**
IP54	30	61	22	45	integrated	**NXS0061V35A5H1**
IP54	37	72	30	61	optional	**NXS0072V35A5H0**
IP54	45	87	37	72	optional	**NXS0087V35A5H0**
IP54	55	105	45	87	optional	**NXS0105V35A5H0**
IP54	75	140	55	105	optional	**NXS0140V35A5H0**
IP54	90	170	75	140	optional	**NXS0168V35A5H0**
IP54	110	205	90	170	optional	**NXS0205V35A5H0**
IP54	132	261	110	205	optional	**NXS0260V35A5H0**
IP54	160	300	132	245	optional	**NXS0310V35A5H0**

Parts and accessories for inverters

Honeywell inverter inputs/outputs can be easily configured by adding or changing option cards. These option boards are designed to easy installation even on the site and are automatically identified by the inverter software.

NXL/NXS fieldbus cards

Product description	Type
RS485 (Modbus/N2)	**NXOPTC2**
Profibus DP	**NXOPTC3**
LonWorks	**NXOPTC4**
Profibus DP (D9 type connector)	**NXOPTC5**
CANopen (slave)	**NXOPTC6**
DeviceNet	**NXOPTC7**
RS485 (D9 type connector, Modbus/N2)	**NXOPTC8**
Ethernet (Modbus/TCP)	**NXOPTCI**
BACnet (RS485)	**NXOPTCJ**

NXL/NXS input/output cards

Product description	Type
2 relays, 1 thermistor	**NXOPTB2**
1 analog input (mA), 2 analog output (mA)	**NXOPTB4**
3 relays	**NXOPTB5**

NXL only input/output cards

Product description	Type
3 digital inputs, 1 relay, 1 digital output	**NXLOPTAA**
3 digital inputs, 1 relay, 1 thermistor; (included as a standard in NXL HVAC models)	**NXLOPTAI**

NXS only input/output cards

Product description	Type
Standard NXS Slot A board: 6 DI, 1 DO (Open collector), 2 AI, 1 AO	**NXOPTA1**
Standard NXS Slot B board: 2 Relay, 1 Thermistor	**NXOPTA3**
6 digital inputs/outputs (programmable)	**NXOPTB1**
3 Pt100 input	**NXOPTB8**
1 relay, 5 Vac inputs (42..240 Vac)	**NXOPTB9**
extra RS232 connection (e.g. for 2nd keypad)	**NXOPTD3**

SmartDrive PC connection tools and cables

Product description	Type
SmartDrive Compact Parameter download/upload and PC interface tool with cable for USB connection to PC	**COMP-LOADER**
SmartDrive Compact Parameter download/upload and PC interface tool without cable	**COMP-LOADER-NC**
SmartDrive 3.0m USB PC connection cable	**SMARTDRIVE-USBC**

Accessories

NXL/NXS PC connection tools and cables

Product description	Type
NXL RS232 adapter (for PC connection)	**NXLPANRS**
2 m RS232 cable	**RS232C2M**
4 m RS232 cable	**RS232C-4M**
15 m RS232 cable	**RS232C15.0M**

SmartDrive HVAC display panels

Product description	Type
SmartDrive HVAC standard text display/keypad	**HVAC-HMI-S**
SmartDrive HVAC advanced commissioning display/keypad with parameter copy function	**HVAC-HMI-A**

NXL Display panels

Product description	Type
NXL standard 7-segment display	**NXLPANC**

NXS Display panels

Product description	Type
NXS standard alpha-numeric display	**NXPANA**
NXS special display for Cyrillic or Chinese letters	**NXPANG**

Display panel door mounting kits

Product description	Type
NXL door installation set for display panel, 2m cable	**DRA-02L**
NXL door installation set for display panel, 4m cable	**DRA-04L**
NXS door installation set for display panel, 2m cable	**DRA02B**
NXS door installation set for display panel, 4m cable	**DRA-04B**
NXS door installation set for display panel, 15m cable	**DRA15B**
SmartDrive HVAC door installation set for display panel, 2m cable	**HVAC-DOOR-KIT**

Accessories

SmartDrive COMPACT IP20 to IP21 upgrade kits

Product description	Type
IP21 enclosure upgrade kit for SmartDrive Compact size MI1	**COMP-IP21-KIT1**
IP21 enclosure upgrade kit for SmartDrive Compact size MI2	**COMP-IP21-KIT2**
IP21 enclosure upgrade kit for SmartDrive Compact size MI3	**COMP-IP21-KIT3**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive Compact size MI1	**COMP-NEMA1-KIT1**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive Compact size MI2	**COMP-NEMA1-KIT2**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive Compact size MI3	**COMP-NEMA1-KIT3**

NXL HVAC/NXS IP21 to IP54 upgrade kits

Product description	Type
IP54 enclosure upgrade kit for NXL HVAC/NXS size 4 (HVAC03-HVAC12, NXS0003-NXS0012)	**NXIP54FR4**
IP54 enclosure upgrade kit for NXL HVAC/NXS size 5 (HVAC16-HVAC31, NXS0016-NXS0031)	**NXIP54FR5**
IP54 enclosure upgrade kit for NXL HVAC/NXS size 6 (HVAC38-HVAC61, NXS0038-NXS0061)	**NXIP54FR6**

NXL/NXS Sine-wave output filters 380-500V, IP00 Selection to be done so that the nominal current of the inverter cannot exceed the nominal current of the filter

Product description	Type
Filter for Nominal current of 10 A (40°C), 8,8 A (50°C)	**SIN-0010-5-0-P**
Filter for Nominal current of 18 A (40°C), 16 A (50°C)	**SIN-0018-5-0-P**
Filter for Nominal current of 32 A (40°C), 28 A (50°C)	**SIN-0032-5-0-P**
Filter for Nominal current of 48 A (40°C), 42 A (50°C)	**SIN-0048-5-0-P**
Filter for Nominal current of 75 A (40°C), 66 A (50°C)	**SIN-0075-5-0-P**
Filter for Nominal current of 110 A (40°C), 97 A (50°C)	**SIN-0110-5-0-P**
Filter for Nominal current of 180 A (40°C), 155 A (50°C)	**SIN-0180-5-0-P**

Main cooling fan spare parts for inverters

Product description	Type
NXL Compact sparepart fan for size 3 (NXL0003-NXL0006)	**NX-FAN-3**
NXL HVAC / NXS spare part fan size 4 (HVAC03-HVAC12, NXS0003-NXS0012)	**NX-FAN-4**
NXL HVAC / NXS spare part fan size 5 (HVAC16-HVAC31, NXS0016-NXS0031)	**NX-FAN-5**
NXL HVAC / NXS spare part fan size 6 (HVAC38-HVAC61, NXS0038-NXS0061)	**NX-FAN-6**
NXS spare part fan size 7 (NXS0072-NXS0105)	**NX-FAN-7**

Replacement table

Old products	New products
NXL0002V32C1N0	COMP230-P37-20
NXL0003V32C1N1	COMP230-P75-20
NXL0004V32C1N1	COMP230-1P1-20
NXL0006V32C1N1	COMP230-1P5-20
NXL0001V35C1N0	COMP400-P55-20
NXL0002V35C1N0	COMP400-P75-20
NXL0003V35C1N0	COMP400-1P1-20
NXL0004V35C1N1	COMP400-1P5-20
NXL0005V35C1N1	COMP400-2P2-20
NXL0003V35C2H1	HVAC03C2
NXL0004V35C2H1	HVAC04C2
NXL0005V35C2H1	HVAC05C2
NXL0007V35C2H1	HVAC07C2
NXL0009V35C2H1	HVAC09C2
NXL0012V35C2H1	HVAC12C2
NXL0016V35C2H1	HVAC16C2
NXL0023V35C2H1	HVAC23C2
NXL0031V35C2H1	HVAC31C2
NXL0038V35C2H1	HVAC38C2
NXL0046V35C2H1	HVAC46C2
NXL0061V35C2H1	HVAC61C2
NXL0003V35C5H1	HVAC03C5
NXL0004V35C5H1	HVAC04C5
NXL0005V35C5H1	HVAC05C5
NXL0007V35C5H1	HVAC07C5
NXL0009V35C5H1	HVAC09C5
NXL0012V35C5H1	HVAC12C5
NXL0016V35C5H1	HVAC16C5
NXL0023V35C5H1	HVAC23C5
NXL0031V35C5H1	HVAC31C5
NXL0038V35C5H1	HVAC38C5
NXL0046V35C5H1	HVAC46C5
NXL0061V35C5H1	HVAC61C5
DRA02NXL	DRA-02L
NXOPTAI	NXLOPTAI

Sensors Page

Honeywell

Sensor Applications

Sensor Applications						
	Room	**Outdoor**	**Air Duct**	**Pipe (Strap-On)**	**Pipe (Immersion)**	**Miscella-neous**
Temperature	RF20 DRF20-S T7412 T7460 T7470 T7560	AF20 DAF20 T7416A SAF25 T7414C	LF20 T7411 C7068A LF20-C C7085 LF24	VF20A WPF20A T7414A	VF20T VF20L WPF20T WPF20L VF20NT VF20LN T7413A T7425	EF20 GF20 DGF20 T7415A KTF20 DKF20 AGF1
Humidity & Temperature	T7560C H7012A H7012B	H7508A	H7015A H7015B			
Air Quality	C7110A					
CO2 & Temperature	C7110C1001 C7110D1009 AQS51 AQS61		AQS71-KAM AQS61-KAM AQS51-KAM			
Averaging			C7085A			
Differential Pressure Switch			DPS DDCM			
Differential Pressure Transmitter			DPTM			

Nominal values

Sensing Element				
	Pt1000	**Pt100**	**Balco500**	**NTC20k Thermistor**
Resistance	1000 Ω @ 0°C	100 Ω @ 0°C	500 Ω @ 23.3°C	20 kΩ @ 25°C
Accuracy	0,3 K + 0,5% · |t| (t in °C) DIN IEC 751, Class B	0,3 K + 0,5% · |t| (t in °C) DIN IEC 751, Class B	±1 Ω @ 23.3°C	0,3 K + 1% · |t-25| (t in °C)
Sensitivity	≈ 3.85 Ω/K	≈ 0.4 Ω/K	≈ 2 Ω/K	–

Temperature sensors NTC

Wall modules for heating applications

Room temperature sensor for Excel 10 and Excel 50..800 controllers. With setpoint adjustment, occupancy extension.

LED functions	LED on or blinking in case of bypass, LED functions programmable with Excel 20..800 controllers
Temperature element	NTC20k
Temperature range	-15 ... 40 °C
Setpoint knob	-7 ... 7 °C
Occupancy switch	auto/off/on
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Additional description	Models with setpoint potentiometer delivered with 4 setpoint wheels; white and blue, relative and absolute scale.

Product description	Type
Sensor with setpoint wheel	**T7460H**
Sensor with pushbuttons for setpoint adjustment and display	**T7560H**

5

Room temperature sensor NTC, economy

Protection class	IP30
Temperature element	NTC20k
Temperature range	6 ... 40 °C
Mounting place	internal wall
Housing (HxWxD)	56 mm; 46 mm; 19,3 mm
Wiring terminals	2
Type of terminals	spring
Additional description	T7470A1009 will be delivered as one set of 5 sensors.

	Type
	T7470A1009

Room temperature sensor, NTC

Protection class	IP30
Temperature range	10 ... 40 °C
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm

Temperature element	Wiring terminals	Type
NTC20k	2	**RF20**
2 x NTC20k	3	**DRF20-S**

Room temperature sensor, setpoint unit, IRC style

Room temperature sensor. Models with remote control point adjustment unit.

Protection class	IP30
Mounting place	internal wall
Temperature element	NTC20k
Temperature range	0 ... 50 °C
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
2	–	–	–	**T7412A1000**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
3	- ... +	–	–	**T7412B1008**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
4	- ... +	on/off	–	**T7412C1006**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
4	- ... +	–	auto/off/1/2/3	**T7412D1004**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
5	–	–	–	**T7412E1027**

Water temperature sensor, NTC

Water temperature sensor with well or strap-on.
Immersion with well

Temperature element	Temperature range °C	Mounting place	Immersion well material	Immersion well thread	Immersion depth mm	Wiring terminals	Protection class	Type
NTC10k	-25 ... 130	in pipe	brass	R1/2"	135	2	IP54	**VF10T**
NTC20k	-25 ... 130	in pipe	brass	R1/2"	135	2	IP30	**VF20T**
NTC20k	-25 ... 150	in pipe	stainless steel	R1/2"	135	2	IP30	**VF20NT**
NTC20k	-25 ... 130	in pipe	brass	R1/2"	300	2	IP30	**VF20L**
NTC20k	-25 ... 150	in pipe	stainless steel	R1/2"	300	2	IP30	**VF20LN**
2 x NTC20k	-25 ... 130	in pipe	brass	R1/2"	135	3	IP30	**WPF20T**
2 x NTC20k	-25 ... 130	in pipe	brass	R1/2"	300	3	IP30	**WPF20L**

Strap-on

Temperature element	Temperature range °C	Mounting place	Immersion well material	Immersion well thread	Immersion depth mm	Wiring terminals	Protection class	Type
NTC10k	0 ... 110	strap on pipe	–	–	–	2	IP54	**VF10A**
NTC20k	0 ... 110	strap on pipe	–	–	–	2	IP30	**VF20A**
2 x NTC20k	0 ... 110	strap on pipe	–	–	–	4	IP30	**WPF20A**

Water temperature sensor NTC, fast reaction time

Sensor for direct mounting in pipe, G1/2" connection.
For water temperature measurement in district heating or hot water supply.

Protection class	IP65
Temperature element	NTC20k fast
Temperature range	-20 ... 140 °C
Mounting place	in pipe
Cable length	2,5 m
Additional description	Reaction time max. 2 sec. Sensing material steel 1.4571. Immersion depth adjustable.

Immersion depth mm	Sensing element (dia x L) mm; mm	Type
max. 75	4; 25	**T7425A1005**
max. 220	4; 170	**T7425A1013**
max. 300	4; 250	**T7425A1021**

Temperature sensors NTC

Water temperature sensor NTC, cable type

Watertight temperature sensor with sensor cartridge.

Protection class	IP64
Temperature range	-20 ... 110 °C
Mounting place	universal
Immersion depth	min. 50 mm
Applicable well length	135 mm
Sensing element (dia x L)	6,5 mm; 50 mm
Cable length	2 m
Additional description	KTF20-B (bulk of 50 sensors of Type KTF20)

Temperature element	Wiring terminals	Type
NTC20k	2	**KTF20**
NTC20k	2	**KTF20-B**
2 x NTC20k	3	**DKF20**

Wells

Brass well 135 mm R1/2"	**VFHT**
Steel well 135 mm R1/2"	**VFNT**

Outdoor, strap-on temperature sensor

Mounting place	outdoor/strap-on
Protection class	IP65
Temperature range	-30 ... 70 °C
Temperature element	NTC20k

Cable length m	Type
1	**T7414C1012**
10	**T7414C1012-10M**

Temperature sensors NTC

Outdoor temperature sensor NTC

Mounting place wall outside

Temperature element	Temperature range °C	Housing (HxWxD) mm; mm; mm	Wiring terminals	Approvals	Protection class	Type
NTC20k	-30 ... 60	95; 65; 70	2	–	IP30	**AF20**
2 x NTC20k	-30 ... 60	95; 65; 70	4	–	IP30	**DAF20**

Temperature element	Temperature range °C	Housing (HxWxD) mm; mm; mm	Wiring terminals	Approvals	Protection class	Type
NTC10k	-40 ... 70	72; 49; 37	2	IEC751 class B	IP54	**T7416A1030**
NTC20k	-40 ... 70	72; 49; 37	2	IEC751 class B	IP54	**T7416A1022**

Air duct temperature sensor, NTC

Temperature range -40 ... 80 °C
Mounting place air duct
Wiring terminals 2
Additional description Humidity 5..95 %rh, non condensing.

Temperature element	Immersion depth mm	Cable length m	Protection class	Type
NTC10k	300	–	IP54	**LF10**
NTC20k	300	–	IP30	**LF20**

Temperature element	Immersion depth mm	Cable length m	Protection class	Type
NTC20k	300	5	IP65	**LF20-C**

Temperature sensors NTC

Flexible probe

Temperature element	Immersion depth mm	Cable length m	Protection class	Type
NTC20k	max. 400	–	IP54	**T7411B1009**

5

Air duct temperature sensor, average measurement

Averaging temperature sensor, with wall socket, flexible rod, a 0,5 m long connector cable and four rod clips with screws.
For application in ducts where large temperature gradients can occur.

Temperature element	4 x NTC20k
Temperature range	-30 ... 70 °C
Mounting place	air duct
Wiring terminals	2
Additional description	The 3 meters flexible rod has four sensors positioned along the length of the rod.

Type
C7085A1014

Unit temperature sensor

Temperature sensor for air handling units, fancoil units or air outlets.

Protection class	IP54
Mounting place	air duct
Temperature range	0 ... 70 °C
Wiring terminals	2
Additional description	Sensor supplied with mounting bracket. Sensing element size: diameter 10 mm, length 50 mm.

Temperature element	Cable length m	Type
NTC10k	1,5	**C7068A1030**
NTC20k	1,5	**C7068A1007**
NTC20k	5	**C7068A1007-5M**

Temperature sensors NTC

Earth temperature sensor, NTC

For use in greenhouses and similar applications

Protection class	IP62
Temperature element	NTC20k
Temperature range	-20 ... 34 °C
Mounting place	greenhouse, earth
Wiring terminals	2
Cable length	5 m

Type
EF20

Damp-proof temperature sensor, NTC

for use in greenhouses and similar applications

Approvals	IEC144
Protection class	IP30
Temperature range	-20 ... 30 °C
Mounting place	greenhouse, air
Cable length	5 m

Temperature element	Wiring terminals	Type
NTC20k	2	**GF20**
2 x NTC20k	3	**DGF20**

Temperature sensors Pt100/Pt1000

Room temperature sensor Pt100/Pt1000, setpoint unit

Room temperature sensor. Models with remote control point adjustment unit.

Mounting place	internal wall
Approvals	IEC751 Class B
Protection class	IP30
Temperature range	0 ... 50 °C
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Temperature element	Setpoint knob °C	Wiring terminals	Type
Pt100	–	2	**T7412A1059**
Pt1000	–	2	**T7412A1018**
Pt1000	- ... +	4	**T7412B1016**
Pt1000	-15 ... 30	5	**T7412B1040**

5

Water temperature sensor

Water immersion temperature sensor with or without well.

Approvals	IEC751 class B
Protection class	IP54
Temperature element	Pt1000
Wiring terminals	2

Temperature range °C	Mounting place	Immersion well material	Immersion well thread	Immersion depth mm	Type
-25 ... 130	in pipe	brass	R1/2"	135	**T7413A1009**
-25 ... 150	in well	–	–	max. 135	**T7413A1041**
-25 ... 150	in well	–	–	max. 300	**T7413A1058**

Wells

Brass well 135 mm R1/2"	**VFHT**
Steel well 135 mm R1/2"	**VFNT**
Brass well 300 mm R1/2"	**VFL**
Steel well 300 mm R1/2"	**VFLN**

Water temperature sensor, strap-on

Approvals	IEC751 class B
Protection class	IP54
Temperature element	Pt1000
Temperature range	0 ... 110 °C
Mounting place	strap on pipe
Wiring terminals	2

	Type
	T7414A1008

Water temperature sensor Pt1000, fast reaction time

Sensor for direct mounting in pipe, G1/2" connection.
For water temperature measurement in hot water supply, solar panels etc.

Protection class	IP65
Temperature element	Pt1000 fast
Temperature range	-20 ... 300 °C
Mounting place	in pipe
Cable length	2,5 m
Additional description	Reaction time max. 2 sec. Sensing material steel 1.4571. Immersion depth adjustable.

Immersion depth mm	Sensing element (dia x L) mm; mm	Type
max. 75	4; 75	**T7425B1011**
max. 220	4; 220	**T7425B1029**

5

Water temperature sensor, cable type

Approvals	IEC751 class B
Protection class	IP54
Temperature element	Pt1000
Mounting place	universal
Immersion depth	min. 50 mm
Applicable well length	135 mm
Sensing element (dia x L)	6 mm; 50 mm
Wiring terminals	2
Cable length	2,5 m

Temperature range °C	Type
-20 ... 100	**T7415A1007**
-20 ... 300	**T7415A1015**

Brass well 135 mm R1/2"	**VFHT**
Steel well 135 mm R1/2"	**VFNT**

Outdoor, strap-on temperature sensor

Approvals	IEC751 class B
Protection class	IP65
Temperature element	Pt1000
Temperature range	-30 ... 70 °C
Mounting place	outdoor/strap-on
Wiring terminals	2
Cable length	1 m

	Type
	T7414C1004

Temperature sensors Pt100/Pt1000

Outdoor temperature sensor

Approvals	IEC751 class B
Protection class	IP54
Temperature element	Pt1000
Temperature range	-40 ... 70 °C
Mounting place	wall outside
Housing (HxWxD)	72 mm; 49 mm; 37 mm
Wiring terminals	2

Type
T7416A1014

5

Air duct temperature sensor Pt100/Pt1000

Approvals	IEC751 class B
Protection class	IP54
Temperature range	-40 ... 80 °C
Mounting place	air duct
Wiring terminals	2

Temperature element	Immersion depth mm	Type
Pt100	135	**T7411A1043**
Pt1000	135	**T7411A1001**
Pt1000	300	**T7411A1019**

Flexible probe

Temperature element	Immersion depth mm	Type
Pt1000	max. 400	**T7411B1017**

Air duct temperature sensor, average measurement

Averaging temperature sensor, with wall socket, flexible rod, a 0,5 m long connector cable and four rod clips with screws.
For application in ducts where large temperature gradients can occur.

Temperature element	4 x Pt1000
Temperature range	-30 ... 70 °C
Mounting place	air duct
Wiring terminals	2
Additional description	The 3 meters flexible rod has four sensors positioned along the length of the rod.

Type
C7085A1006

Flue gas temperature sensor

Steel plug in temperature sensor with mounting flange.
For flue gas temperature measurement.

Temperature element	Pt1000
Temperature range	0 ... 320 °C
Media temp. limit	temperatures up to 400 °C are allowable for short periods
Mounting place	flue gas vent
Immersion depth	120 mm
Cable length	1 m
Additional description	Supplied with electrical cable with steel casing.

Type
AGF1

Wall module with temperature and R.H. sensor

Temperature element	NTC20k
Temperature range	10 ... 40 °C
R.H. range	5 ... 90 %rh
R.H. sensing element	capacitive
R.H. output signal	0..10V=
Power supply	24 Vacdc; 0,15 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	5

Type
T7560C1006

Room R.H.- and temperature sensor

Combined Room Humidity and Temperature Sensor with various sensor elements

Approvals	IEC751 class B for Pt1000 sensor
Protection class	IP30
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
R.H. output signal	0..1/10V=
Power supply	24 Vac; 0,48 VA
Mounting place	internal wall
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Temperature element	Temperature range °C	Wiring terminals	Type
–	–	4	**H7012A1009**
Pt1000	0 ... 50	6	**H7012B1007**
NTC20k	0 ... 50	6	**H7012B1023**

R.H. (+ temperature) sensors

Outdoor R.H.- and temperature sensor

Protection class	IP33
Temperature range	-30 ... 50 °C
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
R.H. output signal	0..1/10V=
Power supply	24 Vac; 0,48 VA
Mounting place	wall outside
Housing (HxWxD)	172 mm; 132 mm; 60 mm
Wiring terminals	6

Temperature element	Type
Balco500	**H7508A1034**
Pt1000	**H7508A1026**
NTC10k	**H7508A1030**
NTC20k	**H7508A1042**

Air duct R.H.- and temperature sensor

Protection class	IP54
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
R.H. output signal	0..1/10V=
Power supply	24 Vac; 0,48 VA
Mounting place	air duct
Immersion depth	235 mm

Temperature element	Temperature range °C	Wiring terminals	Type
–	–	5	**H7015A1006**
Balco500	-30 ... 70	7	**H7015B1012**
Pt1000	-30 ... 70	7	**H7015B1004**
NTC10k	-30 ... 70	7	**H7015B1030**
NTC20k	-30 ... 70	7	**H7015B1020**

Room temperature sensor, setpoint unit, IRC style

Room temperature sensor. Models with remote control point adjustment unit.

Protection class	IP30
Mounting place	internal wall
Temperature element	NTC20k
Temperature range	0 ... 50 °C
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
2	–	–	–	**T7412A1000**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
3	- ... +	–	–	**T7412B1008**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
4	- ... +	on/off	–	**T7412C1006**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
4	- ... +	–	auto/off/1/2/3	**T7412D1004**

Wiring terminals	Setpoint knob °C	Occupancy switch	Fan switch	Type
5	–	–	–	**T7412E1027**

Remote setpoint adjustment unit for IRC or XL10

Remote setpoint adjustment unit.

Mounting	fancoil unit
Protection class	IP30
Setpoint knob	- ... + °C
Cable length	2 m
Housing (HxWxD)	75 mm; 70 mm; 22 mm

Wiring terminals	Fan switch	Model	Type
2	–	for XL IRC	**S7014A1004**

Wiring terminals	Fan switch	Model	Type
3	auto/off/1/2/3	for XL IRC	**S7014B1000**
3	auto/off/1/2/3	for XL10	**S7014C1009**

5

Wall modules for EXCEL 5000 controllers

Room temperature sensor for Excel 10 and Excel 50..800 controllers. Models available with set-point adjustment, occupancy extension and fan switch.

LED functions	LED on or blinking in case of bypass, LED functions programmable with Excel 20..800 controllers
Temperature element	NTC20k
Temperature range	10 ... 35 °C
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Additional description	Models with setpoint potentiometer delivered with 4 setpoint wheels; white and blue, relative and absolute scale.

Setpoint knob °C	Extra setp. knob °C	Occupancy switch	Fan switch	Type
–	–	–	–	**T7460A1001**
-5 ... 5	12 ... 30	–	–	**T7460B1009**
-5 ... 5	12 ... 30	auto/bypass	–	**T7460C1007**
-5 ... 5	12 ... 30	–	auto/off/1/2/3	**T7460D1005**
-5 ... 5	12 ... 30	auto/bypass	auto/off/on	**T7460E1002**
-5 ... 5	12 ... 30	auto/bypass	auto/off/1/2/3	**T7460F1000**

LON connection board	**T7460LONJACK**
Setpoint range limiter	**T7460LIMITER**

Wall modules for EXCEL 5000 controllers, with display

Room temperature sensor with digital display, for Excel 10 and Excel 50..800 controllers.
With setpoint adjustment, occupancy extension, fan speed button and on/off button. Model with R.H.-sensor.

Display functions	room temperature, setpoint temperature, occupancy status, fan speed status
Temperature element	NTC20k
Temperature range	10 ... 40 °C
Setpoint knob	-5 ... 5 °C
Extra setp. knob	12 ... 30 °C
Occupancy switch	on/off
Fan switch	configurable
Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Additional description	Tool-free configuration: • number of fan speeds • relative / absolute setpoint • enable/disable space temperature display • centigrade/fahrenheit

R.H. range %rh	R.H. sensing element	R.H. output signal	Wiring terminals	Model	Type
–	–	–	7	blue knobs/wheel	**T7560A1000**
–	–	–	7	white knobs/wheel	**T7560A1026**
–	–	–	7	white knobs/wheel/ fahrenheit	**T7560A1018**
5 ... 90	capacitive	0..10V=	8	blue knobs/wheel	**T7560B1008**
5 ... 90	capacitive	0..10V=	8	white knobs/wheel	**T7560B1024**
5 ... 90	capacitive	0..10V=	8	white knobs/wheel/ fahrenheit	**T7560B1016**

LON connection board	**T7460LONJACK**
Blind cover for T7560 knobs (50 pieces)	**T7560BLINDS**

Pressure switch for liquid, gas (DCM)

For overpressure monitoring of non-aggressive liquids and gaseous media.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Media temp.	-25 ... 70 °C
Media temp. limit	temperatures up to 85 °C are allowable for short periods. Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap, see Accessories for Pressure Switches / Transmitters)
Ambient temperature	-25 ... 70 °C
Ambient temp. limit	at temperatures below 0 °C, ensure that no water condensation can arise in the sensor and in the switching device
Switch function/capacity	SPDT Microswitch 250 Vac; capacity 5 A inductive, 8 A resistive
Optional functions	add the type numbers below to the listed type numbers for extra functionality as described • **-301**: terminal connection housing, IP65 • **-307**: two microswitches, switching in parallel or in succession, fixed switching interval, terminal connection case, IP65 • **-217**: two microswitches, 1 plug, switching in succession, adjustable switching interval • **-213**: gold-plated contacts, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA. And others not available with adjustable switching difference. • **-351**: protection class IP65 and switching housing with surface protection (chemical version) • **-513**: gold-plated contacts, switching differential permanent, IP65, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA; suitable isolating switching amplifier, degree of protection EEx-i

Fixed pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Sensing element material	Type
0,04 ... 0,25	–	0,03	6	Copper + Brass	**DCM025**
0,1 ... 0,6	–	0,04	6	Copper + Brass	**DCM06**
0,2 ... 1,6	–	0,04	6	Copper + Brass	**DCM1**
0,2 ... 2,5	–	0,1	16	1.4104 + 1.4571	**DCM3**
0,5 ... 6	–	0,15	16	1.4104 + 1.4571	**DCM6**
0,5 ... 6	–	0,25	25	1.4104 + 1.4571	**DCM625**
1 ... 10	–	0,3	25	1.4104 + 1.4571	**DCM10**
3 ... 16	–	0,5	25	1.4104 + 1.4571	**DCM16**
4 ... 25	–	1	60	1.4104 + 1.4571	**DCM25**
8 ... 40	–	1,3	60	1.4104 + 1.4571	**DCM40**
16 ... 63	–	2	130	1.4104 + 1.4571	**DCM63**
0,04 ... 0,25	–	0,03	6	1.4104 + 1.4571	**DNM025**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Sensing element material	Type
0,04 ... 0,25	0,03 ... 0,4	–	6	Copper + Brass	**DCMV025**
0,1 ... 0,6	0,04 ... 0,5	–	6	Copper + Brass	**DCMV06**
0,2 ... 1,6	0,07 ... 0,55	–	6	Copper + Brass	**DCMV1**
0,2 ... 2,5	0,15 ... 1,5	–	16	1.4104 + 1.4571	**DCMV3**
0,5 ... 6	0,25 ... 2	–	16	1.4104 + 1.4571	**DCMV6**
1 ... 10	0,5 ... 2,8	–	25	1.4104 + 1.4571	**DCMV10**
3 ... 16	0,7 ... 3,5	–	25	1.4104 + 1.4571	**DCMV16**
4 ... 25	1,3 ... 6	–	60	1.4104 + 1.4571	**DCMV25**
8 ... 40	2,6 ... 6,6	–	60	1.4104 + 1.4571	**DCMV40**
16 ... 63	3 ... 10	–	130	1.4104 + 1.4571	**DCMV63**

Syphon for high temperature, steel, U-shape (for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Differential pressure switch for liquid, gas (DDCM)

For flow monitoring and differential pressure control of steam, gas, hot/cold water and automatic checking of filter plant.

Kind of pressure	differential pressure, relative
Pressure connection	internal thread G1/4
Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Media temp.	-25 ... 70 °C
Media temp. limit	temperatures up to 85 °C are allowable for short periods. Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap, see Accessories for Pressure Switches / Transmitters)
Ambient temperature	-25 ... 70 °C
Ambient temp. limit	at temperatures below 0 °C, ensure that no water condensation can arise in the sensor and in the switching device
Switch function/capacity	SPDT Microswitch; capacity 5 A inductive, 8 A resistive
Optional functions	add the type numbers below to the listed type numbers for extra functionality as described • **-301**: terminal connection housing, IP65 • **-205**: maximum limiter with reclosing lock-out, interlocking with increasing pressure • **-206**: Minimum limiter with reclosing lock-out, interlocking with falling pressure • **-307**: two microswitches, switching in parallel or in succession, fixed switching interval, terminal connection case, IP65 (with the exception of DDCM252, 662, 1602, 6002) • **-217**: two microswitches, 1 plug, switching in succession, adjustable switching interval (with the exception of DDCM252, 662, 1602, 6002) • **-213**: gold-plated contacts, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA. And others not available with adjustable switching difference. • **-351**: protection class IP65 and switching housing with surface protection (chemical version) • **-513**: gold-plated contacts, switching differential permanent, IP65, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA; suitable isolating switching amplifier, degree of protection EEx-i

Pressure adjustment range bar	Switching differential bar	Max. pressure bar	Sensing element material	Type
0,004 ... 0,025	0,002	0,5	Perbunan + Aluminium	**DDCM252**
0,01 ... 0,06	0,015	1,5	Perbunan + Aluminium	**DDCM662**
0,02 ... 0,16	0,02	3	Perbunan + Aluminium	**DDCM1602**
0,1 ... 0,6	0,035	3	Perbunan + Aluminium	**DDCM6002**
-0,1 ... 0,4	0,15	15	1.4305 + 1.4571	**DDCM014**
0,2 ... 1,6	0,13	15	1.4305 + 1.4571	**DDCM1**
1 ... 4	0,2	25	1.4305 + 1.4571	**DDCM4**
0,5 ... 6	0,2	15	1.4305 + 1.4571	**DDCM6**
3 ... 16	0,6	25	1.4305 + 1.4571	**DDCM16**

Syphon for high temperature, steel, U-shape (for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Differential pressure switch for air (DPS)

Filter monitor or flow switch for air, non-combustible, non aggressive gases in air conditioning and ventilating installations.

Kind of pressure	overpressure, relative
Pressure connection	plastic connection piece for 5 mm (internal) hose
Electrical connection	AMP connector 6,3x0,8 (DIN 46244) or screw terminals
Protection class	IP54
Sensing element material	ABS + Silicon
Media temp.	-20 ... 85 °C
Ambient temperature	-20 ... 85 °C
Switch function/capacity	SPDT switch 240 Vac; 1,5 A (0.4)A
Certificates	CE0085AR0013 according DIN EN 1854
Max. pressure	50 mbar
Additional description	Accessories supplied with pressure switch: 2 m silicon hose, 2 connection pieces with mounting screws, 2 self tapping screws for mounting on housing, 3 screw terminals for electrical connection.

Pressure adjustment range Pa	Switching differential mbar	Type
20 ... 200	0,1	**DPS200**
40 ... 400	0,2	**DPS400**
50 ... 500	0,2	**DPS500**
200 ... 1000	1	**DPS1000**
500 ... 2500	1,5	**DPS2500**

Accessories

L-shaped bracket for installation turned by 90°, e.g. in the ceiling area	**DPSL**

Pressure monitor for hot water, steam, gas, fuel (DWR)

For overpressure monitoring of steam, hot water, burnable gases, liquid fuels.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	1.4104 + 1.4571
Media temp.	-25 ... 70 °C
Media temp. limit	temperatures up to 85 °C are allowable for short periods. Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap, see Accessories for Pressure Switches / Transmitters)
Ambient temperature	-25 ... 70 °C
Ambient temp. limit	at temperatures below 0 °C, ensure that no water condensation can arise in the sensor and in the switching device
Switch function/capacity	SPDT Microswitch 250 Vac; capacity 5 A inductive, 8 A resistive
Mechanical lock/reset	with special function possible

Optional functions

add the type numbers below to the listed type numbers for extra functionality as described

- **-213**: gold-plated contacts, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA. And others not available with adjustable switching difference.
- **-301**: terminal connection housing, IP65
- **-513**: Gold-plated contacts, single-pole switch-over. Switching differential permanent. IP65. Switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA, suitable isolating switching amplifier, degree of protection EEx-i
- **-574**: Normally closed contact with resistance combination for minimum pressure monitoring. Gold-plated contacts. Housing with surface protection (chemical version), IP65
- **-575**: Normally closed contact with reclosing lock-out resistance combination for minimum pressure monitoring. Housing with surface protection (chemical version), IP65
- **-576**: Normally closed contact with resistance combination for maximum pressure monitoring. Gold-plated contacts. Housing with surface protection (chemical version), IP65
- **-577**: Normally closed contact with reclosing lock-out and resistance combination for maximum pressure monitoring. Housing with surface protection (chemical version), IP65

Certificates

- ID 0000007042 according VdTUEV Memorandum Pressure 100/1, Issue 4.83
- NG-4347AQ1411 according to DIN 3398, Part 3, Issue 11.92
- 3C028/5 according to DIN 3398, Part 4, Issue 10.86
- CE0035BN004 according Directive 97/23/EC (Module B + D)
- SIL2 according IEC 61508

Fixed pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Allowable max. gas-pressure (DIN3398P3) bar	Type
0,1 ... 0,6	–	0,04	6	6	**DWR06**
0,2 ... 1,6	–	0,06	6	6	**DWR1**
0,2 ... 2,5	–	0,1	16	10	**DWR3**
0,5 ... 6	–	0,2	16	10	**DWR6**
0,5 ... 6	–	0,25	25	20	**DWR625**
3 ... 16	–	0,5	25	20	**DWR16**
4 ... 25	–	1	63	50	**DWR25**
8 ... 40	–	1,3	63	50	**DWR40**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Allowable max. gas-pressure (DIN3398P3) bar	Type
0,1 ... 0,6	0,08 ... 0,5	–	6	6	**DWR06-203**
0,2 ... 1,6	0,15 ... 0,6	–	6	6	**DWR1-203**
0,2 ... 2,5	0,17 ... 1,2	–	16	10	**DWR3-203**
0,5 ... 6	0,3 ... 1,4	–	16	10	**DWR6-203**
0,5 ... 6	0,4 ... 2,5	–	25	20	**DWR625-203**
3 ... 16	0,75 ... 3,15	–	25	20	**DWR16-203**
4 ... 25	1,3 ... 6	–	63	50	**DWR25-203**
8 ... 40	2,3 ... 6,6	–	63	50	**DWR40-203**

Syphon for high temperature, steel, U-shape (for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Minimum pressure limiter for hot water, steam, fuel, gas (DWR-B)

For minimum-pressure detection of steam, hot water, burnable gases, liquid fuels.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	1.4104 + 1.4571
Media temp.	-25 ... 70 °C
Media temp. limit	temperatures up to 85 °C are allowable for short periods. Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap, see Accessories for Pressure Switches / Transmitters)
Ambient temperature	-25 ... 70 °C
Ambient temp. limit	at temperatures below 0 °C, ensure that no water condensation can arise in the sensor and in the switching device
Switch function/capacity	SPDT Microswitch 250 Vac; capacity 5 A inductive, 8 A resistive
Certificates	• ID 0000007042 according VdTUEV Memorandum Pressure 100/1, Issue 4.83 • ID 0000020757 according VdTUEV Memorandum Pressure 100/1, Issue 4.83 • NG-4347AQ1411 according DIN 3398, part 3, issue 11.92 • 3C028/5 according to DIN 3398, Part 4, Issue 10.86 • CE0035BN0004 according Directive 97/23EC (Module B + D) • SIL2 according IEC 61508
Pressure interlock/Reset	minimum press./button

Pressure adjustment range bar	Max. pressure bar	Allowable max. gas-pressure (DIN3398P3) bar	Type
0,1 ... 0,6	6	6	**DWR06-206**
0,2 ... 1,6	6	6	**DWR1-206**
0,2 ... 2,5	16	10	**DWR3-206**
0,5 ... 6	16	10	**DWR6-206**
0,5 ... 6	25	20	**DWR625-206**
3 ... 16	25	20	**DWR16-206**
4 ... 25	63	50	**DWR25-206**
8 ... 40	63	50	**DWR40-206**

Syphon for high temperature, steel, U-shape, for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Maximum pressure limiter of 'special construction' (SDB)

Maximum pressure limiter with selfmonitoring sensor and internal relock
For steam and hot water.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Sensing element material	1.4104 + 1.4571
Media temp.	-20 ... 70 °C
Media temp. limit	temperatures up to 85 °C are allowable for short periods. Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap, see Accessories for Pressure Switches / Transmitters)
Ambient temperature	-20 ... 70 °C
Ambient temp. limit	at temperatures below 0 °C, ensure that no water condensation can arise in the sensor and in the switching device
Switch function/capacity	SPDT Microswitch 250 Vac; capacity 5 A inductive, 8 A resistive
Certificates	• TUEV-SDB-04-134 according VdTUEV Memorandum Pressure 100/1 • CE0035BN0007 according Directive 97/23/EC (Module B + D) • SIL3 according IEC 61508
Pressure interlock/Reset	maximum press./button

Pressure adjustment range bar	Switching differential bar	Max. pressure bar	Type
0,2 ... 1,6	0,12	5	**SDBAM1**
0,4 ... 2,5	0,15	5	**SDBAM2,5**
1,2 ... 6	0,4	10	**SDBAM6**
1,2 ... 6	0,6	20	**SDBAM625**
3 ... 16	0,8	20	**SDBAM16**
6 ... 32	3	45	**SDBAM32**

Syphon for high temperature, steel, U-shape (for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Electronic Pressure switch for liquid, high viscosity/roiled liquid (SmartPress)

Electronic Pressure switch, with LCD display for the field of plant construction, fluidics, process technology, and pneumatics, as well as in the monitoring and control of pumps and compressors. Models available with the following output types:

- all models: switch output open collector; 14..36 Vdc, 250 mA
- PST -series: transmitter output; 0..10 Vdc or 4..20 mA
- PST..R -series: relay output with gold plated SPDT contact

Protection class	IP65
Housing material	Polybutylene terephtalate (PBT)
Sensing element material	1.4571 + 1.4435
Media temp.	-20 ... 100 °C
Media temp. limit	Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap)
Ambient temperature	-20 ... 60 °C
Switch function/capacity	PST-models: Open collector switch max. 250 mA dc at 14 ... 36 Vdc. PST..R-models with relay contact output, 1 x SPDT, material silver gold plated. Capacity resistive: 24 Vdc, 60 mA / 230 Vac, 6,5 mA. With bigger loads, the gold layer will disappear, the capacity with the silver contacts is: 230 Vac 3(1) A.
Additional description	• **Applicable parameter settings:** • switching Set / Reset points • filters • analog output range • electrical drag indicator • **Applicable configurations:** • Max-Min, Window monitor • Analog output signal • Pressure unit • Simulation mode

Switch + Transmitter, PST ...-models

Pressure range bar	Max. pressure bar	Kind of pressure	Type
-1 ... 1	6	vacuum, relative	**PSTV01RG34F**
0 ... 0,25	1	overpressure, relative	**PSTM250RG34F**
0 ... 0,4	2	overpressure, relative	**PSTM400RG34F**
0 ... 0,6	2	overpressure, relative	**PSTM600RG34F**
0 ... 1	6	overpressure, relative	**PST001RG34F**
0 ... 1,6	6	overpressure, relative	**PST002RG34F**
0 ... 4	12	overpressure, relative	**PST004RG34F**
0 ... 10	30	overpressure, relative	**PST010RG34F**
0 ... 25	75	overpressure, relative	**PST025RG34F**
0 ... 2	6	absolute	**PST002AG34F**
0 ... 10	30	absolute	**PST010AG34F**

Switch + Transmitter + Relay output, PST..R -models

Pressure range bar	Max. pressure bar	Kind of pressure	**Type**
-1 ... 1	6	vacuum, relative	**PSTV01RG34F-R**
0 ... 0,25	1	overpressure, relative	**PSTM250RG34F-R**
0 ... 0,4	2	overpressure, relative	**PSTM400RG34F-R**
0 ... 0,6	2	overpressure, relative	**PSTM600RG34F-R**
0 ... 1	6	overpressure, relative	**PST001RG34F-R**
0 ... 1,6	6	overpressure, relative	**PST002RG34F-R**
0 ... 4	12	overpressure, relative	**PST004RG34F-R**
0 ... 10	30	overpressure, relative	**PST010RG34F-R**
0 ... 25	75	overpressure, relative	**PST025RG34F-R**
0 ... 2	6	absolute	**PST002AG34F-R**
0 ... 10	30	absolute	**PST010AG34F-R**

Accessories / Connectors for plug 1 + 2 (OC and analog outputs) / Plug 3 (relay outputs ST4) / Syphons

5-prong M12 plug connector, straight version	**ST12-5-G**
5-prong M12 plug connector, angled version	**ST12-5-A**
4-prong M12 plug connector, straight version	**ST12-4-G**
4-prong M12 plug connector, angled version	**ST12-4-A**
4-prong M12 plug connector, straight version with 2 m cable	**ST12-4-GK**
4-prong M12 plug connector, angled version with 2 m cable	**ST12-4-AK**
Plug protection cap, IP65	**STA12**
Syphons for high temperature, steel, U-shape. For more accessories, see Accessories for Pressure Switches / Transmitters)	**UB430B**

Electronic Pressure switch for gas, low viscosity liquid (SmartPress)

Electronic Pressure switch, with LED display for the field of plant construction, fluidics, process technology, and pneumatics, as well as in the monitoring and control of pumps and compressors. Models available with the following output types:

- all models: switch output open collector; 14..36 Vdc, 250 mA
- PST -series: transmitter output; 0..10 Vdc or 4..20 mA
- PST..R -series: relay output with gold plated SPDT contact

Protection class	IP65
Housing material	Polybutylene terephtalate (PBT)
Media temp.	-20 ... 100 °C
Media temp. limit	Higher temperatures are possible, provided that the limit is safeguarded by suitable measures (e.g. water tube trap)
Ambient temperature	-20 ... 60 °C
Switch function/capacity	PST..R-models with relay contact output, 1 x SPDT, material silver gold plated. Capacity resistive: 24 Vdc, 60 mA / 230 Vac, 6,5 mA. With bigger loads, the gold layer will disappear, the capacity with the silver contacts is: 230 Vac 3(1) A.
Sensing element material	1.4571 + 1.4542
Additional description	**Applicable parameter settings:** • switching Set / Reset points • filters • analog output range • electrical drag indicator • **Applicable configurations:** • Max-Min, Window monitor • Analog output-signal • Pressure unit • Simulation mode

Switch + Transmitter output, PST-models

Pressure range bar	Max. pressure bar	Output signal	Kind of pressure	Type
-1 ... 1	6	0..10Vdc / 4..20 mA + switch	vacuum, relative	**PSTV01RG12S**
0 ... 0,25	1	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM250RG12S**
0 ... 0,4	2	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM400RG12S**
0 ... 0,6	2	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM600RG12S**
0 ... 1,6	6	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST002RG12S**
0 ... 4	12	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST004RG12S**
0 ... 10	30	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST010RG12S**
0 ... 25	75	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST025RG12S**
0 ... 60	180	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST060RG12S**
0 ... 100	300	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST100RG12S**
0 ... 250	500	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST250RG12S**
0 ... 600	1000	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST600RG12S**
0 ... 2	6	0..10Vdc / 4..20 mA + switch	absolute	**PST002AG12S**
0 ... 10	30	0..10Vdc / 4..20 mA + switch	absolute	**PST010AG12S**

Switch + Transmitter + Relay output, PST..R -models

Pressure range bar	Max. pressure bar	Output signal	Kind of pressure	Type
-1 ... 1	6	0..10Vdc / 4..20 mA + switch + relay	vacuum, relative	**PSTV01RG12S-R**
0 ... 0,25	1	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM250RG12S-R**
0 ... 0,4	2	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM400RG12S-R**
0 ... 0,6	2	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PSTM600RG12S-R**
0 ... 1,6	6	0..10Vdc / 4..20 mA + switch	overpressure, relative	**PST002RG12S-R**
0 ... 4	12	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST004RG12S-R**
0 ... 10	30	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST010RG12S-R**
0 ... 25	75	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST025RG12S-R**
0 ... 60	180	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST060RG12S-R**
0 ... 100	300	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST100RG12S-R**
0 ... 250	500	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST250RG12S-R**
0 ... 600	1000	0..10Vdc / 4..20 mA + switch + relay	overpressure, relative	**PST600RG12S-R**
0 ... 2	6	0..10Vdc / 4..20 mA + switch + relay	absolute	**PST002AG12S-R**
0 ... 10	30	0..10Vdc / 4..20 mA + switch + relay	absolute	**PST010AG12S-R**

Accessories / Connectors for plug 1 + 2 (OC and analog outputs) / Plug 3 (relay outputs ST4) / Syphons

5-prong M12 plug connector, straight version	**ST12-5-G**
5-prong M12 plug connector, angled version	**ST12-5-A**
4-prong M12 plug connector, straight version	**ST12-4-G**
4-prong M12 plug connector, angled version	**ST12-4-A**
4-prong M12 plug connector, straight version with 2 m cable	**ST12-4-A-GK**
4-prong M12 plug connector, angled version with 2 m cable	**ST12-4-A-AK**
Plug protection cap, IP65	**STA12**
Syphons for high temperature, steel, U-shape. for more accessories, see Accessories for Pressure Switches / Transmitters	**UB430B**

Electronic Pressure switch for gas and liquid (Smart DCM)

Electronic Pressure Switches are microprocessor-controlled pressure measurement devices for relative pressures of -1 to +1 bar and 0 to 40 bar. They are suitable for an extremely wide range of applications, including the precision recording, monitoring, and control of system pressure.
Features:

- Open-collector
- Configurable as min./max/window monitor
- Adjustable drop-in/drop-out delay
- Hysteresis defined by set-point and reset-point
- Baclit LCD graphical display (Human-Machine-Interface models, only) can be swiveled for better readability; display can be rotated in 90° steps by software

Media temp.	-20 ... 80 °C
Sensing element material	1.4571

Pressure Switch without HMI

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP67	-20 ... 80	**PSSRV1011-S**
0 ... 1	3	IP67	-20 ... 80	**PSSRB0011-S**
0 ... 4	12	IP67	-20 ... 80	**PSSRB0041-S**
0 ... 10	30	IP67	-20 ... 80	**PSSRB0101-S**
0 ... 16	48	IP67	-20 ... 80	**PSSRB0161-S**
0 ... 25	50	IP67	-20 ... 80	**PSSRB0251-S**
0 ... 40	80	IP67	-20 ... 80	**PSSRB0401-S**

Pressure Switch HMI

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP65	-20 ... 70	**PSHRV1011**
0 ... 1	3	IP65	-20 ... 70	**PSHRB0011**
0 ... 4	12	IP65	-20 ... 70	**PSHRB0041**
0 ... 10	30	IP65	-20 ... 70	**PSHRB0101**
0 ... 16	48	IP65	-20 ... 70	**PSHRB0161**
0 ... 25	50	IP65	-20 ... 70	**PSHRB0251**
0 ... 40	80	IP65	-20 ... 70	**PSHRB0401**

Accessory

Field configuration tool	**CFT1**

Electronic Pressure transmitter for gas and liquid (Smart SN)

Electronic Pressure Transmitters are microprocessor-controlled pressure measurement devices for relative pressures of -1 to +1 bar and 0 to 40 bar. They are suitable for an extremely wide range of applications, including the precision recordin and monitoring of system pressure.
Features:

- Configurable as 0/2...10V or 0/4...20 mA (3-wire)
- Adjustable attenuation filter
- LCD graphical display (Human-Machine-Interface models, only) can be swiveled for better readability; display can be rotated in 90° steps by software

Media temp.	-20 ... 80 °C
Sensing element material	1.4571
Certificates	All 2-wire versions are SIL2 approved according IEC 61508

Pressure Transmitter without HMI (2-wire, 4-20 mA)

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP67	-20 ... 80	**PTSRV1011A2**
0 ... 1	3	IP67	-20 ... 80	**PTSRB0011A2**
0 ... 4	12	IP67	-20 ... 80	**PTSRB0041A2**
0 ... 10	30	IP67	-20 ... 80	**PTSRB0101A2**
0 ... 16	48	IP67	-20 ... 80	**PTSRB0161A2**
0 ... 25	50	IP67	-20 ... 80	**PTSRB0251A2**
0 ... 40	80	IP67	-20 ... 80	**PTSRB0401A2**

Pressure Transmitter without HMI (3-wire, 0-10V)

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP67	-20 ... 80	**PTSRV1011V3**
0 ... 1	3	IP67	-20 ... 80	**PTSRB0011V3**
0 ... 4	12	IP67	-20 ... 80	**PTSRB0041V3**
0 ... 10	30	IP67	-20 ... 80	**PTSRB0101V3**
0 ... 16	48	IP67	-20 ... 80	**PTSRB0161V3**
0 ... 25	50	IP67	-20 ... 80	**PTSRB0251V3**
0 ... 40	80	IP67	-20 ... 80	**PTSRB0401V3**

Pressure Transmitter without HMI (3-wire, 4...20mA)

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP67	-20 ... 80	**PTSRV1011A3**
0 ... 1	3	IP67	-20 ... 80	**PTSRB0011A3**
0 ... 4	12	IP67	-20 ... 80	**PTSRB0041A3**
0 ... 10	30	IP67	-20 ... 80	**PTSRB0101A3**
0 ... 16	48	IP67	-20 ... 80	**PTSRB0161A3**
0 ... 25	50	IP67	-20 ... 80	**PTSRB0251A3**
0 ... 40	80	IP67	-20 ... 80	**PTSRB0401A3**

Pressure Transmitter with HMI (2-wire, 4-20 mA)

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP65	-20 ... 70	**PTHRV1011A2**
0 ... 1	3	IP65	-20 ... 70	**PTHRB0011A2**
0 ... 4	12	IP65	-20 ... 70	**PTHRB0041A2**
0 ... 10	30	IP65	-20 ... 70	**PTHRB0101A2**
0 ... 16	48	IP65	-20 ... 70	**PTHRB0161A2**
0 ... 25	50	IP65	-20 ... 70	**PTHRB0251A2**
0 ... 40	80	IP65	-20 ... 70	**PTHRB0401A2**

Pressure Transmitter with HMI (3-wire, 0-10 V)

Pressure range (bar)	Max. pressure (bar)	Protection class	Ambient temperature (°C)	Type
-1 ... 1	6	IP65	-20 ... 70	**PTHRV1011V3**
0 ... 1	3	IP65	-20 ... 70	**PTHRB0011V3**
0 ... 4	12	IP65	-20 ... 70	**PTHRB0041V3**
0 ... 10	30	IP65	-20 ... 70	**PTHRB0101V3**
0 ... 16	48	IP65	-20 ... 70	**PTHRB0161V3**
0 ... 25	50	IP65	-20 ... 70	**PTHRB0251V3**
0 ... 40	80	IP65	-20 ... 70	**PTHRB0401V3**

Accessory

Field configuration tool	**CFT1**

Differential pressure transmitter for air (DPTM)

Double range differential pressure transmitter for air-conditioning/ventilation.
For filter-, fluid-, level monitoring, fan-, blower-, valve-, flap-, air flow control, and environmental protection.

Kind of pressure	differential pressure, relative
Pressure connection	6mm hose pipe
Electrical connection	M20x1,5
Protection class	IP54
Housing material	ABS and POM
Sensing method	piezoresistive
Sensing element material	ABS + POM
Media temp.	0 ... 50 °C
Medium	gaseous
Ambient temperature	0 ... 50 °C
Additional description	Duct Kit DPSK included in delivery of single package. • Adjustable by jumper to the next higher pressure range. • Factory settings: see column "pressure range". Full scale pressure range see data sheet

3-wire models, selectable 0 - 10 V/4 - 20 mA, analog output, supply voltage 18...30 Vac/dc, 50/60 Hz

Pressure range Pa	Max. pressure kPa	Type
-50 ... 50	20	**DPTM50**
-100 ... 100	20	**DPTM110**
-500 ... 500	20	**DPTM550**
-1000 ... 1000	20	**DPTM1100**
0 ... 100/250	20	**DPTM100**
0 ... 250/500	20	**DPTM250**
0 ... 500/1000	20	**DPTM500**
0 ... 1000/2500	40	**DPTM1000**
0 ... 5000/10000	60	**DPTM5000**

3-wire models, selectable 0 - 10 V / 4 - 20 mA analog output, supply voltage 18...30 Vac/dc, 50/60 Hz; WITH LED

Pressure range Pa	Max. pressure kPa	Type
-50 ... 50	20	**DPTM50D**
-100 ... 100	20	**DPTM110D**
-500 ... 500	20	**DPTM550D**
-1000 ... 1000	20	**DPTM1100D**
0 ... 100/250	20	**DPTM100D**
0 ... 250/500	20	**DPTM250D**
0 ... 500/1000	20	**DPTM500D**
0 ... 1000/2500	40	**DPTM1000D**
0 ... 5000/10000	60	**DPTM5000D**

2-wire models, analog output 4 - 20 mA, supply voltage 16 ... 32 Vdc

Pressure range Pa	Max. pressure kPa	Type
-50 ... 50	20	**DPTM52**
-100 ... 100	20	**DPTM112**
-500 ... 500	20	**DPTM552**
-1000 ... 1000	20	**DPTM1102**
0 ... 100/250	20	**DPTM102**
0 ... 250/500	20	**DPTM252**
0 ... 500/1000	20	**DPTM502**
0 ... 1000/2500	40	**DPTM1002**
0 ... 5000/10000	60	**DPTM5002**

Accessories

Duct Kit, including 2m silicone-hose and 2 joining pipes DPSJ with screws	**DPSK**
Mounting brackets L-shaped	**DPSL**

Air quality sensor

For detection of unpleasant odours, tobacco smoke, and vapours emitted by such materials as furniture, carpets, paint, glue, etc.

Protection class	III as per EN60730-1I IP30 as per EN60529
Output signal	0..10Vdc
Power supply	24 Vacdc; 1 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Additional description	Adjustable output offset and LED display

	Type
	C7110A1010

5

Room CO2 sensor

For sensing or controlling of CO_2 concentration in buildings.

LED functions	operation as CO_2 indicator
Output signal	the following CO_2 output signals are applicable, analog or digital • 0..10V for 0..2000 ppm (factory setting) • 0..10 V or 2..10 V for 0..2000 ppm or 0..3000 ppm (configurable) • digital output with adjustable CO_2 setpoint and hysteresis for ventilation on/off
Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	3

	Type
	C7110C1001
PC interface cable (PC software on request from Honeywell)	HDI10

Room temperature/ CO2 sensor

For sensing or controlling of CO_2 concentration; and temperature measurement in buildings.

LED functions	operation as occupancy indicator
Output signal	the following CO_2 output signals are applicable, analog or digital • 0..10V for 0..2000 ppm (factory setting) • 0..10 V or 2..10 V for 0..2000 ppm or 0..3000 ppm (configurable) • digital output with adjustable CO_2 setpoint and hysteresis for ventilation on/off
Temperature element	NTC20k
Temperature range	10 ... 35 °C
Setpoint knob	-5 ... 5 °C
Extra setp. knob	12 ... 30 °C
Occupancy switch	auto/bypass

Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	7
Additional description	Temperature setpoint potentiometer delivered with 4 setpoint wheels; white and blue, relative and absolute scale.

	Type
	C7110D1009
PC interface cable (PC software on request from Honeywell)	**HDI10**

CO2 and temperature transmitters

For sensing or controlling of CO_2 concentration; and temperature measurement in buildings.

Output signal	the following output signals are applicable: • 0(2)..10 Vdc or 0(4)..20 mA for 0..2000/3000 ppm CO_2 • 0(2)..10 Vdc or 0(4)..20mA for 0..50 ^oC • relay output with adjustable CO_2 setpoint and hysteresis for ventilation on/off
Power supply	24 Vac; 2 VA
Additional description	• Models with LCD available for CO_2 concentration or temperature reading. • Contact input for occupancy detection. • RS232-port for connection with PC for parameter settings. • Service interval 5 years, according 89/336EEC.

Mounting place	Model	Protection class	Type
internal wall	without LCD	IP30	**AQS51**
internal wall	with 7-segment LCD	IP30	**AQS61**

Mounting place	Model	Protection class	Type
air duct	without LCD	IP65	**AQS51-KAM**
air duct	with 7-segment LCD	IP65	**AQS61-KAM**

CO_2 test set with gas generator for 0 ppm calibration	**AQS-F0005**
Interface cable to PC	**AQS3/4CABLE**
Service software for parameter settings	**AQSPC**

Air duct CO2 sensor

For sensing or controlling of CO_2 concentration in buildings.

Protection class	IP65 when probe mounted downwards, otherwise IP20
Output signal	0..10 V for 0..2000 ppm
Power supply	24 Vac; max. 3 VA
Mounting place	air duct
Wiring terminals	4

	Type
	AQS71-KAM

Solar sensor

Sensor to register solar radiation. Including two sensing elements.

Protection class	IP30
Mounting place	wall outside
Housing (HxWxD)	120 mm; 60 mm; 50 mm
Wiring terminals	3
Additional description	To be connected to a 10Vdc output from a controller as power supply. The solar output signal (0..5Vdc = 0..500 W/m^2) must be connected to an analogue input of the controller.

	Type
	SAF25

Electronical air flow switch for air (ASL)

Air flow monitor consisting of two parts: the sensor type SLF.. and the belonging evaluation unit type ASL...
For air flow monitoring in air-conditioning systems, ventilation and cooling systems and wherever flow processes in air or neutral gases have to be detected.

Protection class	sensor: IP32
Output signal	evaluation unit: relay SPST 8A, 250Vac, switch point adjustable from 0,1..20 m/s air speed
Additional description	Media temperature at sensor: -20..120 °C.

Sensor

Mounting place	Immersion depth mm	Power supply Vac; VA	Type
air duct	35	–; –	**SLF3**

Evaluation Unit

Mounting place	Immersion depth mm	Power supply Vac; VA	Type
universal	–	24; 3	**ASL453/24**
universal	–	230; 3	**ASL453**

Electronical flow switch for liquid (ASW)

Fluid flow monitor consisting of two parts: the sensor type SWF.. and the belonging evaluation unit type ASW...

Protection class	sensor: IP65; evaluation unit: IP32
Output signal	evaluation unit: relay SPST 8A, 250Vac, switch point adjustable, lowest 0,03 m/s fluid speed
Additional description	For sensor: • media temperature 0..80 °C • sensing element steel

Sensor

Power supply Vac; VA	Mounting place	Immersion depth mm	Type
–; –	in pipe	25	**SWF62**
–; –	in pipe	45	**SWF62L**

Evaluation unit

Power supply Vac; VA	Mounting place	Immersion depth mm	Type
230; 3	universal	–	**ASW454**
24; 3	universal	–	**ASW454/24**

Paddle flow switches for air (S6040)

The flow switches are designed for monitoring flow rates in pipes and ducts employed in HVAC applications.
For monitoring flow of non-aggressive gases in air ducts of air conditioning systems and air treatment systems.

Protection class	IP65
Switch function/capacity	SPDT, capacity 250Vac, (8)15 A
Setpoint device	screw
Max. media temperature	85 °C
Setpoint range	2,5..9,2m/s
Max. pressure	0,25 bar

	Type
	S6040A1003
Paddle set	**PA1**

Paddle flow switches for liquid (S6065)

The flow switches are designed for monitoring flow rates in pipes and ducts employed in HVAC applications.
For monitoring flow in water, oil, cooling circuits, and lubrication systems.

Protection class	IP65
Switch function/capacity	SPDT, capacity 250Vac, (8)15 A
Setpoint device	screw
Approvals	TUEV-approval
Max. media temperature	120 °C
Setpoint range	0,6..165 m^3/h pipe size dependent

Liquid

Media	Max. pressure bar	Type
liquid non-aggressive	11	**S6065A1003**
liquid aggressive	30	**S6065A2001**

TÜV

Electronic flow switches for liquid, compact version (KSW)

The high reliable compact electronic flow switch is designed for detecting water flow in pipes. As soon as medium flow speed exceeds or falls under a customer adjusted value, the device will switch a electric circuit.

Protection class	IP65
Switch function/capacity	SPDT, capacity 250 Vac, 10(2) A
Immersion depth	20 mm
Media	liquid and air
Setpoint range	0,05..3 m/s
Max. media temperature	80 °C
Max. pressure	30 bar
Additional description	LED's available for indication of power supply and switch status.

Process connection G1/2"

Power supply Vac; VA	Type
24; 4	**KSW24**
230; 4	**KSW230**

Dew-point switch

This early-warning dew-point switch is designed for use in monitoring cooling water pipes or chilled surfaces in order to determine if temperatures are approaching the dewpoint. It is suitable for mounting on flat and round surfaces. The switch measures the relative humidity prevailing directly at the chilled surface and can thus be used to:

- regulating cooling performance
- switching cooling systems ON and OFF
- signalling if the temperature is approaching the dew-point

Status indication with LED, showing condensation danger
Switching point at 90 %rh, hysteresis 5 %rh

Ambient temperature	0 ... 50 °C
Protection class	IP40
Mounting	wall, duct or pipe (max. 50 mm)
Power supply	24 Vac; 0,3 VA
Switch function/capacity	potential free changeover contact; max. 24 Vac/dc, 1 A
Wiring connection	5-pole push-in terminals, max. 1,5mm^2

Type
HSS-DPS

Thermostats

Page

6

Honeywell

Frost protection thermostat with capillary (T69)

Line voltage frost protection thermostat for reheaters in air conditioning systems, and heat exchangers in cooling systems.

Housing material	ABS and corrosion protected steel (IP65 Makrolon)
Ambient temperature	-15 ... 55 °C
Switch function/capacity	SPDT 24..250 Vac, 15(8)A
Thermostat application	frost protection thermostat
Temp. setpoint range	-10 ... 12 °C
Differential fixed	1 K
Additional description	For thermostats with capillary lengths 3m and 6m the DBZ-05 package is included.

Temperature element	Capillary tube length m	Mechanical lock/reset	Protection class	Type
capillary with bulb	1,8	manual	IP54	**T6950A1000**
capillary	3	manual	IP54	**T6950A1018**
capillary	6	manual	IP54	**T6950A1026**
capillary with bulb	1,8	auto	IP54	**T6951A1009**
capillary	3	auto	IP54	**T6951A1017**
capillary	6	auto	IP54	**T6951A1025**
capillary with bulb	1,8	manual	IP65	**T6960A1008**
capillary	3	manual	IP65	**T6960A1016**
capillary	6	manual	IP65	**T6960A1024**
capillary with bulb	1,8	auto	IP65	**T6961A1007**
capillary	3	auto	IP65	**T6961A1015**
capillary	6	auto	IP65	**T6961A1023**

Accessories

Fastening clamps 5 pieces	**DBZ-05**

Safety limiting thermostat, with hand reset (STB1)

Sealing pipe thermostat with well.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPST 230 Vac, 10 A
Mechanical lock/reset	mechanical lock, with hand reset on outside of thermostat
Immersion depth	150 mm
Certificates	TUEV-approval STB 89 501
Thermostat application	immersion tube thermostat
Thermostat functions	temp. setting inside, reset outside
Temp. setpoint range	60 ... 130 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	150 °C

	Type
	STB1

Accessories

Steel well R1/2" x 150 mm	T4NST

Safety limiting thermostat, hand reset, large range (STW1)

Sealing pipe thermostat with well.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPDT 230 Vac, 10 A
Mechanical lock/reset	no mechanical lock
Certificates	TUEV-approval STW (STB)89 401 S
Thermostat application	immersion tube thermostat
Thermostat functions	temp. setting inside, reset inside
Temp. setpoint range	20 ... 150 °C
Mounting place	in pipe
Immersion depth	150 mm
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	175 °C
Additional description	Fixed switching differential approx. 4% of setpoint value.

	Type
	STW1

Accessories

Steel well R1/2" x 150 mm	T4NST

Safety limiting thermostat with setpoint knob, shut-off (STBTR)

Sealing pipe thermostat with well.
For safety temperature control, and in addition high temperature shut-off functionality.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	safety control switch SPDT 230 Vac, 10 A; shut-off temperature switch SPST 230 Vac, 10 A
Mechanical lock/reset	shut-off mechanical lock, with hand reset on outside of thermostat
Immersion depth	150 mm
Certificates	TUEV-approval TR / STB 90 001
Thermostat application	immersion tube therm. + controller
Thermostat functions	temp. setting inside + outside, reset outside
Temp. setpoint range	30 ... 110 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	130 °C
Additional description	Safety control switching differential approx. 4% of setpoint value. Shut-off temperature: 30..110 °C adjustable.

	Type
	STB+TR
Accessories	
Steel well R1/2" x 150 mm	T5NST

Safety limiting thermostat with setpoint knob, shut-off, automatic reset (STWTR)

Sealing pipe thermostat with well.
For safety temperature control, and in addition high temperature shut-off functionality.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	safety control switch SPDT 230 Vac, 10 A; shut-off temperature switch SPST 230 Vac, 10 A
Mechanical lock/reset	shut-off mechanical lock, automatic reset
Immersion depth	150 mm
Certificates	TUEV-approval TR / STW (STB)89 901 S
Thermostat application	immersion tube therm. + controller
Thermostat functions	temp. setting inside + outside, reset inside
Temp. setpoint range	20 ... 150 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	175 °C
Additional description	Safety control switching differential approx. 4% of setpoint value. Shut-off temperature: 20..150 °C adjustable.

	Type
	STW+TR
Accessories	
Steel well R1/2" x 150 mm	T5NST

Safety limiting thermostat, with shut-off (STBTW)

Sealing pipe thermostat with well.
For safety temperature control, and in addition high temperature shut-off functionality.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	safety control switch SPDT 230 Vac, 10 A; shut-off temperature switch SPST 230 Vac, 10 A
Mechanical lock/reset	shut-off mechanical lock, with hand reset on outside of thermostat
Immersion depth	150 mm
Certificates	TUEV-approval TW / STB 90 401
Thermostat application	immersion tube therm. + monitor
Thermostat functions	temp. setting inside, reset outside
Temp. setpoint range	30 ... 110 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	130 °C
Additional description	Safety control switching differential approx. 3..4% of setpoint value. Shut-off temperature: 30..110 °C adjustable.

	Type
	STB+TW

Accessories

Steel well R1/2" x 150 mm	T5NST

Safety limiting thermostat, automatic reset (TWP1)

Sealing pipe thermostat with well.
The temperature monitor can be used for heating systems according to DIN 4751 for steam and hot water systems and for district heating systems.

Protection class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPDT 230 Vac, 10 A
Mechanical lock/reset	no mechanical lock
Immersion depth	100 mm
Certificates	TUEV-approval TW 89 201
Thermostat application	immersion tube thermostat
Thermostat functions	temp. setting inside, automatic reset
Temp. setpoint range	20 ... 150 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	175 °C

	Type
	TWP1

Accessories

Steel well R1/2" x 150 mm	T4NST

Flue gas thermostat

Flue gas thermostat for safety control of solid fuel boilers (in combination with oil boilers).

Switch function/capacity	SPDT 10A/250Vac
Setpoint device	inside
Mounting place	flue gas vent
Temp. setpoint range	20 ... 400 °C
Differential setting range	10 ... 18 °C

	Type
	RGT240

Room thermostats

Room thermostat, industrial, 1/2 stages (T6120)

Line voltage thermostat for control of heating-, cooling-, and ventilation systems in industrial areas.

Housing material	glass fibre reinforced ABS
Setpoint device	knob
Thermostat application	room thermostat
Differential fixed	1 K
Additional description	T6120B is dual stage, with 2..10 K difference between the stages.

Temp. setpoint range °C	Switch function/capacity	Protection class	**Type**
0 ... 60	SPDT 250Vac 10A (1,5A)	IP54	**T6120A1005**
-30 ... 30	SPDT 250Vac 15A (8A)	IP65	**T6120B1003**

Room thermostat, corrosion resistive

Line voltage thermostat for control of heating-, cooling-, and ventilation systems in farm buildings, storage areas, swimming pools etc.

Switch function/capacity	SPST enclosed Micro switch 230Vac , 5 A resistive, 3,7 A inductive
Differential fixed	1,7 °C
Temperature element	capillary
Heating /Cooling application	H or C

Temp. setpoint range °C	**Type**
-10 ... 30	**T631C1178**
20 ... 60	**T631C1160**

6

Room thermostat for industrial permises (TRM)

Room thermostats are suitable for industrial plant, for greenhouses, cowsheds and warehouses, also for monitoring the maximum temperature in switchgear cabinets and relay stations.
Line voltage thermostat for control of heating-, cooling-, and ventilation systems in industrial areas.

Electrical connection	Plug DIN 43650
Protection class	IP54
Housing material	die cast metal GD Al Si 12 to DIN 1725
Ambient temperature	-15 ... 70 °C
Switch function/capacity	SPDT 250 Vac, 8(5) A
Optional functions	add the type numbers below to the listed type numbers for extra functionality as described • **-213**: gold plated contacts, switching capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA. And others not available with adjustable switching difference. • **-301**: terminal connection housing, IP65 • **-351**: protection class IP65 and switching housing with surface protection (chemical version) • **-513**: gold-plated contacts, IP65, capacity: max. 24 Vdc, 100 mA, min. 5 Vdc, 2 mA
Thermostat application	room thermostat, industrial
Additional description	Including mounting bracket typenumber H1.

Fixed switching difference

Temp. setpoint range °C	Differential fixed K	Differential setting range K	Max. perm. temp. at sensor °C	Type
-20 ... 20	1	–	70	**TRM022**
0 ... 40	1	–	70	**TRM40**
10 ... 50	1	–	70	**TRM150**

Adjustable switching difference

Temp. setpoint range °C	Differential fixed K	Differential setting range K	Max. perm. temp. at sensor °C	Type
0 ... 40	–	3 ... 10	70	**TRMV40**
10 ... 50	–	3 ... 10	70	**TRMV150**

Accessories

Cover for outdoor application	**S1**
Sealing	**P2**
Heat conducting compound	**WLP1**

Pneumatic Products Page

Honeywell

Pneumatic Sensor Controller System

This comprises a series of dedicated sensors measuring temperature and humidity and transmitting an industry-standard 0.2 to 1 bar (3-15 psi) signal to controllers. The controllers are available with proportional and proportional plus integral control outputs with or without reset and remote control point adjustment (CPA). These outputs are used to control air conditioning and heating plants. Direct indication of the controlled variable can be provided by a gauge calibrated to match the output of the sensor installed in the tubing of any convenient point.
The RP920 Pneumatic Controllers provide proportional or proportional+integral control of temperature, humidity/or pressure in heating and air conditioning systems depending upon the controller/sensor combination. The construction is of modular design using modern plastic technology providing a high degree of accuracy and reliability, whilst the compact size and rail mounting saves panel space. Compensation and a remote set point facility are available, with either proportional or proportional plus integral output. Gauges can be fitted to indicate the sensor readings and the output pressure. The control output can be selected as either direct or reverse acting to suit the application. The set point scale is 0 to 100% on set point knob. Separate scales for available sensors supplied with controller. Authority is 20 to 300% of main sensor span. Compensation start point is 0 to 100% of compensation sensor span. Integral reset time is 0.5 to 20 min. Proportional Band is 2.5 to 45% of main sensor span.

Max. safe air pressure	2 bar
Ambient temperature	5 ... 55 ^{o}C
Air connection	Dual barbs to fit either 6 x 1mm (1/4" OD) or 4 x 0.75mm(5/32" OD) PE tubing. Gauge connection 1/8" NPT.
Supply air pressure	1,25 bar

Model	Type
Proportional controller with CPA	**RP920A1009**
Proportional controller without CPA	**RP920A1017**
Proportional controller with reset and CPA	**RP920B1007**
P + I controller with CPA	**RP920C1005**
P + I controller with reset and CPA	**RP920D1003**

Pneumatic damper actuator, MP904

Pneumatic actuator for a damper that controls the volume of air in heating, cooling or ventilation systems.

Max. operating pressure	140 kPa
Air connection	barb fitting for 6 mm 1/4" polyethylene tubing
Max. safe air pressure	210 kPa
Stroke	90 mm
Additional description	Pressure operating range for MP904A,C models field adjustable for 3 spans.

Pressure range kPa	Positioner	Effective diaphragm area cm^2	Net force at 0 kPa pressure N	Net force at 140 kPa pressure N	Ambient temperature °C	Type
21, 35, 70	•	146	550	600	-30 ... 70	**MP904A5047**
21...91	–	146	270	600	-30 ... 90	**MP904B5037**
49...91	–	146	550	600	-30 ... 90	**MP904B5052**
21, 35, 70	•	65	280	250	-30 ... 70	**MP904C1026**
14..49	–	65	70	500	-30 ... 90	**MP904D1032**
49...91	–	65	280	250	-30 ... 90	**MP904D1040**
21...91	–	65	110	250	-30 ... 90	**MP904D1057**

Pneumatic damper actuator with shaft connection, MP913

Pneumatic actuator for a damper that controls the volume of air in induction units, mixing boxes, and variable volume systems.

Max. operating pressure	140 kPa
Operating range	21 ... 91 kPa
Air connection	metal barb type slip-on connector for 6 x 1 mm or 1/4" O.D. polyethylene tube
Max. safe air pressure	200 kPa
Ambient temperature	-30 ... 70 °C
Additional description	• Shaft connection thread M10 • Rolling diaphragm

Stroke mm	Effective diaphragm area cm^2	Net force at 0 kPa pressure N	Net force at 125 kPa pressure N	Type
90	25	45	80	**MP913B1068**
65	25	45	80	**MP913B1076**
100	45	80	145	**MP913C1066**
70	45	80	145	**MP913C1074**

Pneumatic valve actuator, MP953

Pneumatic actuator for valves in heating and air conditioning systems.
Actuators are suitable for valve series: V5011, V5013, V5015, V5049, V5050, V5016, V5025, V5328, V5329.

Protection class	IP54
Action	direct or reverse acting
Max. operating pressure	140 kPa
Max. safe air pressure	172 kPa
Additional description	Rolling diaphragm

Pressure range kPa	Adjustable start point kPa	Positioner	Stroke mm	Action actuator stem	Max. ambient temperature °C	Diaphragm inch	Type
34,5 or 69	20,7 ... 69	•	20	extends	70	5	**MP953A5005**
34,5 or 69	20,7 ... 69	•	20	extends	70	8	**MP953A5039**
34,5 or 69	20,7 ... 69	•	38	extends	70	13	**MP953A5054**
34,5 or 69	20,7 ... 69	•	20	retracts	70	7	**MP953B5003**
13,8...48,3	–	–	20	extends	120	5	**MP953C5001**
55,2...82,8	–	–	20	extends	120	5	**MP953C5019**
27,6...75,9	–	–	20	extends	120	5	**MP953C5027**
13,8...48,3	–	–	20	extends	120	8	**MP953C5068**
55,2...82,8	–	–	20	extends	120	8	**MP953C5076**
27,6...75,9	–	–	20	extends	120	8	**MP953C5084**
13,8...48,3	–	–	38	extends	120	13	**MP953C5142**
27,6...75,9	–	–	38	extends	120	13	**MP953C5159**
55,2...82,8	–	–	20	retracts	120	7	**MP953D5009**
27,6...75,9	–	–	20	retracts	120	7	**MP953D5025**

High Temperature Applications, the following bonnet extentions must be used with MP953 actuators when the flowing medium temperature is 150 to 220 degrees C, to give extra air circulation and less conduction of heat from the valve body to the actuator.

Used with V5049A up to 65mm, V5050A up to 80mm, V5328A 40mm to 80mm, V5329A 40mm to 80mm	**43161276-001**
Used with V5011R,S, V5013R,E, V5328A 15mm to 32mm, V5329A 15mm to 32mm	**43297431-001**

Electric-pneumatic relay

Relay to switch with an electric voltage the supply air pressure to one or the other output port

Input signal	230 Vac, 9/7 VA ; supply air pressure on port 1
Output signal	air pressure on port 2 or 3
Pressure connection	for 6 x 1 mm or 1/4" PE hose
Mounting	DIN rail or wall
Max. pressure	800 kPa
Media temp.	-10 ... 40 °C
Additional description	Air capacity 55 Nl/h.

Type
RP416A2008

Pneumatic selector relay, RP470

Three-port relay to transmit the higher of two input signals.

Branch Line Pressure range	0 ... 125 kPa
Max. safe air pressure	205 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing
Mounting	In-line; panel; Wall
Includes	14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel, 1/4" (6 mm) and 5/32" (4 mm) plastic tubing, connectors, compression adapters

Type
RP470A1003

Pneumatic snap action relay, RP471

The four port, snap acting relay converts a proportional air pressure change from a controller to a positive (two-position) pressure change. It can also divert a supply line to one of two branches.

Branch Line Pressure range	0 ... 125 kPa
Max. safe air pressure	205 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing
Mounting	panel; wall
Model	Pneumatic, four-port, snap acting relay; setpoint 4..17 psi, diff. 2 psi
Includes	14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel, 1/4" (6 mm) and 5/32" (4 mm) plastic tubing, connectors, compression adapters

Type
RP471A1002

Pneumatic switching relay, RP670

Pneumatic switching relays block, divert, or bleed pneumatic air lines when pilot pressure is changed from one specific value to another. Commonly applied in Day-Night, Summer-Winter, Start- Stop, On-Off-Auto and other multiple condition systems where control sequence is changed as conditions change.

Branch Line Pressure range	0 ... 152 kPa
Max. safe air pressure	205 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing
Includes	14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel, 1/4" (6 mm) and 5/32" (4 mm) plastic tubing, connectors, compression adapters

Model	Type
Switching pilot relay SPDT, range 3..7 psi	**RP670A1001**
Switching pilot relay SPDT, range 13..18 psi	**RP670A 1019**

Pneumatic Capacity Relay

The RP970A is a direct acting, proportional relay suitable for use in HVAC systems to increase the capacity of a branchline signal to a pneumatic valve or damper operator. The RP970A provides a 1:1 pressure ratio. It can also transmit the lower of 2 pressures.

Branch Line Pressure range	0 ... 124 kPa
Max. safe air pressure	205 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing

	Type
	RP970A1008/U
Mounting Clip	**14003030-001**

Pneumatic Ratio Relay

The RP971A produces a modulating pressure output proportional to pilot pressure changes. This four-port non-bleed direct-acting relay is used to control valves or dampers in sequence from a single pressure input.
Ratio relay. Startpoint adjustable. For RP971A1007 input span 21 kPa and RP9712A1015 input span 34 kPa

Branch Line Pressure range	0 ... 124 kPa
Max. safe air pressure	205 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing
Model	Operating Range 0 to 124 kPa

	Type
	RP971A1007/U
	RP971A1015

Pneumatic Reversing Relay

The RP972A reverses and increases the capacity of the branch line pressure to the final control device in all types of HVAC systems. May be set to decrease from 13, 16, or 18 psi (90,110 or 124 kPa).

Branch Line Pressure range	0 ... 124 kPa
Max. safe air pressure	207 kPa
Air connection	barb for 5/32" or 4 mm O.D. plastic tubing
Model	Operating Range 0 to 124 kPa

	Type
	RP972A1006
Mounting Clip	14003030-001

Pneumatic electrical relay

Pressure switch with adjustable switching hysteresis.
For air and non burnable gases.

Pressure connection	internal threads R1/4"
Switch function/capacity	SPDT Microswitch 230Vac, 25 A
Pressure adjustment range	10 ... 100 kPa
Adjustable switching differential	15 ... 40 kPa
Max. pressure	180 kPa
Media temp.	-30 ... 50 °C

Type
L404F1219

Electric-pneumatic signal conversion module

Input signal	electrical input 2..10 Vdc
Output signal	pressure output 20..100 kPa, proportional to input signal
Pressure connection	for 4 or 6 mm PE hose
Wiring connection	with 1 metre cable
Mounting	DIN rail
Max. pressure	200 kPa
Media temp.	5 ... 55 °C
Additional description	Air capacity 720 Nl/h.

Power supply Vacdc; VA	Model	Type
from controller; 10	for Micronik 100	**RP7517A1009**
24; 1,7	for Excel 5000	**RP7517B1008**

Pneumatic temperature sensor, LP914

Pneumatic sensor for control of hot water or warm air, in heating and air-conditioning systems.

Max. safe air pressure	175 kPa
Max. media temperature	130 °C
Supply air pressure	125 kPa
Pressure output	21 ... 103 kPa
Air connection	push-on barb connector for 6 mm or 1/4" O.D. tube
Action	direct acting

Temperature range °C	Immersion depth mm	Mounting	Type
-40 ... 70	380	duct or well	**LP914A1151/U**
5 ... 115	380	duct or well	**LP914A1177/U**
-40 ... 70	175	duct or well	**LP914A1193/U**
5 ... 115	175	well	**LP914A1201/U**
-5 ... 50	380	duct or well	**LP914A1235/U**

Accessories

Stainless steel well, 380 mm 1/2" NPT	**43163162-001**

Pneumatic temperature sensor, LP915

One-pipe, direct-acting temperature sensor used with RP908 or RP920 Controllers to provide proportional control of pneumatic valve or damper actuators. Averaging, liquid-filled element for duct mounting.

Max. safe air pressure	172 kPa
Max. media temperature	118 °C
Supply air pressure	124 kPa
Pressure output	21 ... 103 kPa
Air connection	push-on barb connector for 4 mm or 5/32" and 6 mm or 1/4" O.D. tube
Capillary tube length	5,6 m
Temperature range	-18 ... 93 °C
Mounting	duct
Action	direct acting

	Type
	LP915A1044/U

Pneumatic room temperature controller, TP937/938

Room-mounted pneumatic temperature controller; models with a facility for resetting the setpoint with a signal from a master pneumatic controller.
For proportional control of pneumatic valve- and damper actuators in heating and air-conditioning systems.

Branch Line Pressure range	21 ... 105 kPa
Throttling range	adjustable 1,1...5,5 °C
Max. safe air pressure	175 kPa
Max. media temperature	65 °C
Air connection	110 mm tubing with barb type fitting for polyethylene tubing, diameter 6 mm
Mounting	wall
Temp. setpoint range	15 ... 30 °C
Additional description	• filter included in air connection and in external H-restriction • submaster set-up range 5 °C when reset signal increases from 21...91 kPa

Action	Submaster set-up	Type
direct acting	–	**TP937A1006**
reverse acting	–	**TP937B1004**
direct acting	•	**TP938A1013**
reverse acting	•	**TP938B1003**

7

Pneumatic unit-temperature controller, TP939/940

Unit-mounted pneumatic temperature controller with a 1,2 meter capillary; models with a facility for resetting the setpoint with a signal from a master pneumatic controller.
For proportional control of pneumatic valve- and damper actuators in heating and air-conditioning systems.

Branch Line Pressure range	21 ... 105 kPa
Throttling range	3 °C
Max. safe air pressure	175 kPa
Max. media temperature	65 °C
Air connection	110 mm tubing with barb type fitting for polyethylene tubing, diameter 6 mm
Mounting	unit
Temp. setpoint range	15 ... 27 °C
Additional description	• filter included in air connection and in external H-restriction • submaster set-up range 5 °C when reset signal increases from 21...91 kPa

Action	Submaster set-up	Type
direct acting	–	**TP939A1004**
reverse acting	–	**TP939B1002**
direct acting	•	**TP940A1001**

Pneumatic room temperature controller, TP970

For proportional control of pneumatic valves and damper actuators in heating and air-conditioning systems. The TP970 incorporates a relay amplifier giving sensitive control and facilitating averaging control, which requires extra relays when bleed-type thermostats are used. The range comprises factory calibrated bimetal element proportional instruments with a setpoint indicator. The cover is ordered separately, and restrictors are not required.

Branch Line Pressure range	21 ... 105 kPa
Throttling range	adjustable 1...5 °C
Max. safe air pressure	175 kPa
Mounting	wall
Temp. setpoint range	15 ... 30 °C
Action	direct acting

	Type
	TP970A2020/U
Satin chrome cover	14004406-120/U

Pneumatic room temperature sensor, TP974

One- or two-pipe direct-acting temperature sensor used with RP908/RP920 controllers to provide proportional control of pneumatic valve and damper actuators.

Max. safe air pressure	170 kPa
Max. media temperature	66 °C
Supply air pressure	124 kPa
Pressure output	21 ... 103 kPa
Air connection	plug-in
Temperature range	10 ... 38 °C
Mounting	wall
Action	direct acting

	Type
	TP974A2000
Cover without scale	14004406-300
Backplate for wall mounting	14001614-001
Spacer ring for wall mounting	14004458-001/U

Pneumatic room humidity controller, HP970

Two-pipe, single setpoint, pneumatic humidistat used to provide proportional control of pneumatic valves on humidification or dehumidification systems.

Branch Line Pressure range	21 ... 105 kPa
Throttling range	adjustable 3..15 %rh
Max. safe air pressure	170 kPa
Mounting	wall

R.H. setpoint range %rh	Action	Type
15 ... 75	direct acting	**HP970A1009/U**
15 ... 75	reverse acting	**HP970B1007/U**
65 ... 95	reverse acting	**HP970B1015**

Cover with R.H. scale	**14004406-124/U**
Cover without scale	**14004406-300**

Pneumatic room humidity sensor, HP971

One- or two-pipe direct-acting humidity sensor used with RP908/RP920 controllers to provide proportional control of pneumatic valve and damper actuators in systems requiring humidification or dehumidification control.

Max. safe air pressure	172 kPa
Max. media temperature	52 °C
Supply air pressure	124 kPa
Pressure output	21 ... 103 kPa
Air connection	1/4 " tubing
Mounting	wall
Action	direct acting

R.H. range %rh	Type
15 ... 75	**HP971A1008/U**
15 ... 85	**HP971A1024**

Cover	**14004406-124/U**

Pressure reducing valve with Filter Regulator Station, PP907

Provides reducing of inlet pressure to a constant operating pressure and filtering e.g. of condensates, dust, oil and rust particles.

- Air consumption 30 Nl/h (500 sccm) at 500 kPa inlet pressure, max. 60 Nl/h (1000 sccm)
- Upper limit of air capacity 10 Nm^3/h
- Outlet pressure gauge indication 0...2 bar (0...30 psi) full range
- Sub-micron filter for dust separation and separation of condensates
- Pressure relief valve, fixed at 175 kPa

Supply air pressure	max. 1000 kPa
Pressure output	10 ... 175 kPa

Type
PP907A1008

Pneumatic switches, SP470/970

For manual correction of process control-/manual proportional action switching or minimum positioning in pneumatic control systems.

Max. safe air pressure	200 kPa
Air connection	• SP470: sharp barb type slip-on connections for 4 mm (5/32") plastic tubing • SP970: connectors for 4 mm or 5/32" O.D. plastic tubing

Model	Operating range kPa	Ambient temperature °C	Type
2-position switch	0 ... 150	-18 ... 60	**SP470A1042**
3-position switch	0 ... 150	-18 ... 60	**SP470A1059**
3 port pneumatic switch, span 70 kPa	0 ... 125	0 ... 50	**SP970A1021**

Miscellaneous Page

Honeywell

Room and air duct humidistats (H)

Line voltage humidistats for (de)humidification 2-point control in air conditioning systems.
Also applicable for swimming pools (dehumidification).

R.H. setpoint range	35 ... 100 %rh
(De) Humidification application	D + H
Additional description	Maximum air flow speed for ducts: 8 m/s.

Room humidistat H6120

R.H. hysteresis switching point %rh	Ambient temperature °C	Mounting place	Immersion depth mm	Switch function/capacity	Protection class	Type
4	0 ... 60	internal wall	–	SPDT 230Vac /5A (0,2A)	IP30	**H6120A1000**

Duct humidistat H6045

R.H. hysteresis switching point %rh	Ambient temperature °C	Mounting place	Immersion depth mm	Switch function/capacity	Protection class	Type
5	-10 ... 65	air duct	222	SPDT 250Vac/15A (8A)	IP65	**H6045A1002**

Room humidistat, low voltage

Low voltage humidistat for humidity control of rooms.

Switch function/capacity	SPDT 48 Vac, 6 A
R.H. hysteresis switching point	5 %rh
Ambient temperature	10 ... 50 °C
R.H. sensing element	nylon
(De) Humidification application	D + H
Mounting place	internal wall
Additional description	With internal setpoint adjustment limiter. Including mounting base/ring.

R.H. setpoint range %rh	Type
30 ... 80	**H615A2015**
50 ... 90	**H615A2077**

Air duct humidistat

Line voltage immersion humidistat for air ducts or industrial areas.

Switch function/capacity	SPDT 230 Vac, 15 A
R.H. setpoint range	35 ... 100 %rh
R.H. hysteresis switching point	4 %rh
Ambient temperature	-30 ... 60 °C
R.H. sensing element	plastic tissue
(De) Humidification application	D + H
Mounting place	air duct

Type
HGK3

Switching module, Q6371

Wall mounted switching module.
For manual control of the valve, or the valve and the fan in fan-coil applications.

Approvals	CE
Protection class	IP30
Switch function/capacity	manual switch outputs, 230Vac, 6 A resistive, 4 A inductive ratings
Terminal max. wire size	1,5 mm^2
Manual operation functions	on/off switch
Product literature language	Multilingual
Earthing	double insulated
Housing (HxWxD)	83 mm; 84 mm; 27 mm

Heating /Cooling application	Fan switch	Heat/Cool manual mode	Type
H or C	1/2/3	–	**Q6371A1006**
H + C	yes	H/C	**Q6371C1002**
H + C	1/2/3	H/C	**Q6371C1010**

Transformers

Transformer

Protection class	IP00
Input voltage	220/230 V selectable, 50Hz
Output voltage	24Vac
Additional description	With mains fuse. VDE0551 mark.

Model	Type
48 VA	**CRT2**
144 VA	**CRT6**
288 VA	**CRT12**

Transformer, 2 secondary windings

Protection class	IP00
Input voltage	230 V, 50Hz
Output voltage	2 x 24Vac, separated
Additional description	With mains fuse. VDE0551 mark.

Model	Type
144/144 VA	**CRT6-6**
150/250 VA	**CRT6-12**

Transformer wall mounting

Transformer to be mounted outside of cabinets, built in closed housing.

Protection class	IP54
Input voltage	220 V, 50/60Hz
Output voltage	24Vac
Model	45 VA
Additional description	• With mains cable 1,5 m and mains plug. • With low voltage cable 3 m, without plug.

	Type
	ETR2

Enclosed Transformer

Input voltage	240V 50Hz
Output voltage	24V 50Hz
Max. ambient temperature	40 °C
Additional description	• primary fuse 5 x 20 mm glass cartridge slow blow • conduit entries two 21 mm dia. • open circuit voltage 25V 50Hz at 240V input

Model	Type
40 VA, 315 mA fuse rating	**TRE40**
60 VA, 315 mA fuse rating	**TRE60**
100 VA, 500 mA fuse rating	**TRE100**
250 VA, 1250 mA fuse rating	**TRE250**

Relay module for on/off and 3-pt control

Two channel signal converter module.
For a signal change from 0..10Vdc (from external controller) into on/off and 3-pt control relay contact output.

Input signal	2 x 0..10 Vdc
Output signal	• relay K1 and K2 SPST contact 240V 0,2 A supplying 3-pt control of first analogue input • relay K3 SPDT contact 240V 3 A, supplying on/off control of second analogue input
Mounting	DIN rail
Power supply	24 Vacdc; 5 VA

Type
MCD3

Voltage level switch

For conversion of an analogue output signal from a controller into an on/off output signal.

Input signal	0..10 Vdc
Output signal	relay contact SPDT 250 V, 4 A; relay on with input voltage > 3 V, relay off with input voltage < 2,5 V
Manual operation functions	override switch with auto-off-on position
LED functions	yellow LED showing relay status
Mounting	DIN rail
Power supply	24 Vacdc; 1 VA

Type
MCE1

Conversion module 24Vdc/relay

For conversion of an 24 Vdc signal from a digital output of a controller into an on/off output signal.

Input signal	0 or 24 Vdc
Output signal	relay contact SPDT 250 V, 4 A; relay on with 24 V, off with 0 V input signal
Manual operation functions	override switch with auto-off-on position
LED functions	yellow LED showing relay status
Mounting	DIN rail
Power supply	24 Vacdc; 0,5 VA

Type
MCE2

Signal modules

Conversion module 0..10Vdc/relay, 3 channel

Three channel signal converter module.
For a signal change from 0..10Vdc (from external controller) into an on/off relay contact output.

Input signal	3 x 0..10 Vdc
Output signal	• relay K1/K2 SPDT contact 240 V, 2 A • relay K3 SPST contact 240 V, 2 A
Mounting	DIN rail
Power supply	24 Vacdc; 1 VA

	Type
	MCE3

Status display module, 4 channel

Status indication module for external contacts.

Input signal	4 x external potential free contacts
Output signal	4 x 24Vacdc (from power supply)
LED functions	4 x red or green LED showing the status of the input
Manual operation functions	4 x switch for LED status intervention
Mounting	DIN rail
Power supply	24 Vacdc; 1 VA

	Type
	MCM1

Manual positioning module

Manual positioning module for analogue output signals to manually adjust damper and valve actuators or to provide a fixed position.

Input signal	0..10 Vdc
Output signal	0..10 Vdc from input or from potentiometer (max. 1 mA)
Manual operation functions	potentiometer to adjust output signal 0..10Vdc; switch with auto/ manual position
LED functions	red LED, intensity shows output level
Mounting	DIN rail
Power supply	24 Vacdc; 0,4 VA
Additional description	Potential free contact for feedback of manual override.

	Type
	MCP1

Signal separator, 4 channel

Four channel signal separator for galvanic separation of analogue transmitter signals and evaluation devices.
For suppression of interference signals and influences from earth loops.

Input signal	0..10 Vdc (Ri >220 kohm); or 0..20 mA using a 500 ohm resistor at the input
Output signal	0..10 Vdc (max. 1 mA)
Mounting	DIN rail
Power supply	24 Vacdc; 1,7 VA
Additional description	The four input channels (and also the power supply) are not galvanically isolated from each other. The four output channels (and also the power supply) are not galvanically isolated from each other.

	Type
	GT4

Isolating relay

Relay with inbuilt transformer, and waterproof housing.

Switch function/capacity	SPDT contact, maximum load 4A/250Vac
Model	Power supply 230V; 50Hz; control connection 24 V
Protection class	IP40

	Type
	KA10

Goldcontact relays

Relay with contact material hard silver and gold plating.
For switching of low voltages.

Mounting	including socket for screw connection or DIN rail
Switch function/capacity	3 x SPDT contacts, minimum load 10VA/24Vdc; maximum load 6A/250Vac

Model	Type
230V; 50Hz	**REL2**
24V; 50Hz	**REL3**
24V dc	**REL4**

Old Products Page

Honeywell

Phase over lists

OLD TYPES Phase over list, Sensors

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
AFF-L	Outdoor temperature sensor LON (new Type needs converter)	**T7416A1014**
AQS31	CO2 Sensor /temperature sensor (new Type can also be C7110D1009)	**C7110C1001**
AQS31-KAM	CO2 Sensor for air duct	**AQS71-KAM**
AQS41	CO2 Sensor /temperature sensor/display	**C7110D1009**
AQS41-KAM	CO2 Sensor /temperature sensor airduct/display	**AQS61-KAM**
C7068A1007B	Unit temperature sensor	**C7068A1007**
C7068A1007-3M	Unit temperature sensor	**C7068A1007-5M**
C7068A1007-8M	Unit temperature sensor	**C7068A1007-5M**
C7110A1005	Air quality sensor	**C7110A1010**
FT015-306	Frost protection thermostat for duct mounting (new Type -206)	**FT015**
FTB015-306	Frost protection thermostat for duct mounting (new Type -206)	**FTB015**
H600A1022	Room humidistat	**H6120A1000**
H7011A1000	Air duct humidity sensor	**H7015A1006**
H7011B1008	Air duct R.H.- and temperature sensor Pt1000	**H7015B1004**
H7011B1016	Air duct R.H.- and temperature sensor Balco	**H7015B1012**
H7011B1024	Air duct R.H.- and temperature sensor NTC	**H7015B1020**
H7018A1003	Dew point sensor	**HSS-DPS**
H7021B1006	Air duct R.H.- and temperature sensor Pt1000	**H7015B1004**
H7022B1005	Room R.H.- and temperature sensor Pt1000	**H7012B1007**
HGK1	Duct Hygrostat	**H6045A1002**
HKF1	Air duct humidity sensor	**H7015A1006**
HRF1	Room humidity sensor	**H7012A1009**
KTF20AC	Water temperature sensor NTC, cable type	**KTF20**
LMS31	Air duct, average temperature sensor, PTC	**C7085A1006**
LQR1	Air quality sensor	**C7110A1010**
PAF31	Outdoor sensor PT1000A	**RF31**
PAL31	Pipe contact sensor PT1000A	**ALF31**
PL21	Air duct sensor PT100A	**KF21**
PS31	Immersion sensor PT1000A	**TF31**
RF20A	Room temperature sensor, NTC	**RF20**
SWM1/FS1-F	Dew point sensor	**HSS-DPS**
T6046A1006	Frost protection thermostat	**T6950A1000**
T6046A1014	Frost protection thermostat	**T6950A1018**
T7411A1027	Air duct temperature sensor, Pt1000	**T7414A1019**
T7413A1066	Water temperature sensor, Pt1000	**T7413A1041**
T7413A1074	Water temperature sensor, Pt1000	**T7413A1058**
T7416A1006	Outdoor temperature sensor, Pt1000	**T7416A1014**
T7416C1002	Outdoor, strap-on temperature sensor, Pt1000	**T7414C1004**
T7416C1010	Outdoor, strap-on temperature sensor, NTC	**T7414C1012**
T7422A1008	Room temperature sensor IRC, Pt1000	**T7412A1018**
T7425A1005-L	Fast Immersion Sensor, 75 mm LON (new Type needs converter)	**T7425B1011**
TF22H	Room temperature sensor, setpoint adjustment, occupancy extension	**T7460H**
TFU22H	Room temperature sensor, setpoint adjustment, occupancy extension, display	**T7560H**
TF26H	Room temperature sensor, setpoint adjustment, occupancy extension, display	**T7560H**
VF20L-L	Immersion Sensor, LON 300 mm (new Type needs converter + VFL)	**T7413A1058**
VF20T-L	Immersion Sensor, LON 135 mm (new Type needs converter)	**T7413A1009**

Phase over lists

OLD TYPES Phase over list, Pressure Sensors

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
DPT100	Differential pressure sensor for air	**DPTM100**
DPT1000	Differential pressure sensor for air	**DPTM1000**
DPT1000D	Differential pressure sensor for air	**DPTM1000D**
DPT1002	Differential pressure sensor for air	**DPTM1002**
DPT100D	Differential pressure sensor for air	**DPTM100D**
DPT102	Differential pressure sensor for air	**DPTM102**
DPT110	Differential pressure sensor for air	**DPTM110**
DPT1100	Differential pressure sensor for air	**DPTM1100**
DPT1100D	Differential pressure sensor for air	**DPTM1100D**
DPT1102	Differential pressure sensor for air	**DPTM1102**
DPT110D	Differential pressure sensor for air	**DPTM110D**
DPT112	Differential pressure sensor for air	**DPTM112**
DPT250	Differential pressure sensor for air	**DPTM250**
DPT250D	Differential pressure sensor for air	**DPTM250D**
DPT252	Differential pressure sensor for air	**DPTM252**
DPT50	Differential pressure sensor for air	**DPTM50**
DPT500	Differential pressure sensor for air	**DPTM500**
DPT5000	Differential pressure sensor for air	**DPTM5000**
DPT5000D	Differential pressure sensor for air	**DPTM5000D**
DPT5002	Differential pressure sensor for air	**DPTM5002**
DPT500D	Differential pressure sensor for air	**DPTM500D**
DPT502	Differential pressure sensor for air	**DPTM502**
DPT50D	Differential pressure sensor for air	**DPTM50D**
DPT52	Differential pressure sensor for air	**DPTM52**
DPT550	Differential pressure sensor for air	**DPTM550**
DPT550D	Differential pressure sensor for air	**DPTM550D**
DPT552	Differential pressure sensor for air	**DPTM552**
SK10	Differential pressure sensor 0-1000Pa	**DPTM1000**
SK10-AK	Differential pressure sensor 0-1000Pa / Display	**DPTM1000D**
SK20	Differential pressure sensor 0-2000Pa	**DPTM1000**
SK20-AK	Differential pressure sensor 0-2000Pa / Display	**DPTM1000D**
SK5	Differential pressure sensor 0-500Pa	**DPTM500**
SK5-AK	Differential pressure sensor 0-500Pa / Display	**DPTM500D**
SKV10	Differential pressure sensor +/- 1000Pa	**DPTM1100**
SKV10-AK	Differential pressure sensor +/- 1000Pa / Display	**DPTM1100D**
SKV5	Differential pressure sensor +/- 500Pa	**DPTM500**
SKV5-AK	Differential pressure sensor +/- 500Pa / Display	**DPTM500D**
SL10-2	Differential pressure sensor 0-1000Pa, 2-wire	**DPTM502**
SL10-3	Differential pressure sensor 0-1000Pa, 3-wire	**DPTM500**
SL20-3	Differential pressure sensor 0-2000Pa, 3-wire	**DPTM1002**
SL5-2	Differential pressure sensor 0-500Pa, 2-wire	**DPTM252**
SL5-3	Differential pressure sensor 0-500Pa, 3-wire	**DPTM250**

Phase over lists

OLD TYPES Phase over list, Small Actuators

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
H200-AO	Thermal actuator, 24V, 4mm, NO	MT4-024-NO
H200-AG	Thermal actuator, 24V, 4mm, NC	MT4-024-NC
M100-AG	Thermal actuator, 24V, 4mm, NC	MT4-024-NC
M100-AGE	Thermal actuator, 24V, 4mm, NC, switch	MT4-024S-NC
M100-AG-L	Thermal actuator, 24V, 4mm, NC, 2,5m cable	MT4-024-NC-2.5M
M100-AGX	Thermal actuator, 24V, 4mm, NC, low current	MT4-024LC-NC
M100-AO	Thermal actuator, 24V, 4mm, NO	MT4-024-NO
M100-AO-L	Thermal actuator, 24V, 4mm, NO, 2,5m cable	MT4-024-NO-2.5M
M100-AOX	Thermal actuator, 24V, 4mm, NO, low current	MT4-024LC-NO
M100-BG	Thermal actuator, 230V, 4mm, NC	MT4-230-NC
M100-BGE	Thermal actuator, 230V,4mm, NC, switch	MT4-230S-NC
M100-BG-L	Thermal actuator, 230V, 4mm, NC, 2,5m cable	MT4-230-NC-2.5M
M100-BGX	Thermal actuator, 230V, 4mm, NC, low current	MT4-230LC-NC
M100-BO	Thermal actuator, 230V, 4mm, NO	MT4-230-NO
M100-BO-L	Thermal actuator, 230V, 4mm, NO, 2,5m cable	MT4-230-NO-2.5M
M100-BOX	Thermal actuator, 230V, 4mm, NO, low current	MT4-230LC-NO
M4450A1009	Thermal actuator, 230V, 8mm, NO, 2,5m cable	MT8-230-NO-2.5M
M452A1006	Thermal actuator, 230V, 8mm, switch	MT8-230S-NO
M452B1005	Thermal actuator, 24V, 8mm, switch	MT8-024S-NO
M5410C4005	Fast motoric actuator 24V, 2,5mm, 90N, 1,5m cable	M5410C1001
M5410L1506	Fast motoric actuator 230V, 6,5mm, 90N, 1,5m cable	M5410L1001
M5410L4005	Fast motoric actuator 230V, 2,5mm, 90N, 1,5m cable	M5410L1001
M5410L4500	Fast motoric actuator 230V, 2,5mm, 90N, 1,5m cable	M5410L1001
M656A1002	Floating actuator 230Vac 2 switches (new Type needs 0903403)	M6410L4029
M656B1001	Floating actuator 24Vac 2 switches (new Type needs 0903403)	M6410C4029
M8001V230	Thermal actuator, 230V, 4mm	MT4-230-NC
M8001V24	Thermal actuator, 24V, 4mm	MT4-024-NC
M8450A1000	Thermal actuator, 24V, 8mm, NO, 2,5m cable	MT8-024-NO-2.5M
ML6425B2015	Floating actuator 24Vac	ML6435B1008
ML6425B2023	Floating actuator 230Vac	ML6435B1016
ML7420A2016	Modulating actuator 24Vac	ML7430E1005
MT010	Thermal actuator, 24V, 3,5mm, 0..10V, 1m	MT010-N
MT010-3M	Thermal actuator, 24V, 3,5mm, 0..10V, 3m	MT010-3MN
Z100-AG	Thermal actuator, 24V, 4mm, NC	MT4-024-NC
Z100-AGE	Thermal actuator, 24V, 4mm, NC, switch	MT4-024S-NC
Z100-AO	Thermal actuator, 24V,4mm, NO	MT4-024-NO
Z100-BG	Thermal actuator, 230V, 4mm, NC	MT4-230-NC
Z100-BGE	Thermal actuator, 230V, 4mm, NC, switch	MT4-230S-NC
Z100-BO	Thermal actuator, 230V, 4mm, NO	MT4-230-NO
Z108-AA	Thermal actuator, 24V, 4mm, NC, switch	MT4-024S-NC
Z108-BA	Thermal actuator, 230V, 4mm, NC, switch	MT4-230S-NC

OLD TYPES Phase over list, Small Linear Valves

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
V5802D1020	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1046
V5802D1038	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1053
V5802D1046	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1061
V5802D1053	2-way control valve PN16 external threaded (new Type + couplings)	V5832B2075
V5802D1079	2-way control valve PN16 external threaded (new Type + couplings)	V5832B2083
V5802D1087	2-way control valve PN16 external threaded (new Type + couplings)	V5832B2091
V5802D1095	2-way control valve PN16 external threaded (new Type + couplings)	V5832B2109
V5802D1103	2-way control valve PN16 external threaded (new Type + couplings)	V5832B2117
V5803D1029	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1029
V5803D1037	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1037
V5803D1045	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1045
V5803D1052	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1052
V5803D1060	3-way control valve PN16 external threaded (new Type + couplings)	V5833A2076
V5803D1078	3-way control valve PN16 external threaded (new Type + couplings)	V5833A2084
V5803D1086	3-way control valve PN16 external threaded (new Type + couplings)	V5833A2092
V5803D1094	3-way control valve PN16 external threaded (new Type + couplings)	V5833A2100
V5803D1102	3-way control valve PN16 external threaded (new Type + couplings)	V5833A2118
V5812A1008	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1004
V5812A1016	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1012
V5812A1024	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1020
V5812A1032	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1038
V5812A1040	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1046
V5812A1057	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1053
V5812A1065	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1061
V5812A1073	2-way control valve PN16 external threaded (new Type + couplings)	V5832A1079
V5813A1007	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1003
V5813A1015	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1011
V5813A1023	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1029
V5813A1031	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1037
V5813A1049	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1045
V5813A1056	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1052
V5813A1064	3-way control valve PN16 external threaded (new Type + couplings)	V5833A1060
V5813C1003	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1066
V5813C1011	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1009
V5813C1029	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1017
V5813C1037	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1025
V5813C1045	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1033
V5813C1052	3-way/bypass control valve PN16 external threaded (new Type + couplings)	V5833C1041
V5832B1085	2- way control valve PN16 flat sealing	V5832B2083
V5832B1093	2- way control valve PN16 flat sealing	V5832B2091
V5832B1101	2- way control valve PN16 flat sealing	V5832B2109
V5832B1119	2- way control valve PN16 flat sealing	V5832B2117
V5833A1078	3- way control valve PN16 flat sealing	V5833A2084
V5833A1086	3- way control valve PN16 flat sealing	V5833A2092
V5833A1094	3- way control valve PN16 flat sealing	V5833A2100
V5833A1102	3- way control valve PN16 flat sealing	V5833A2118

OLD TYPES A..Z	Product description	Type
V5842B2008	2-way PN16 internal threaded valve (new Type + couplings)	**V5832B2075**
V5842B2016	2-way PN16 internal threaded valve (new Type + couplings)	**V5832B2083**
V5842B2024	2-way PN16 internal threaded valve (new Type + couplings)	**V5832B2091**
V5842B2032	2-way PN16 internal threaded valve (new Type + couplings)	**V5832B2109**
V5842B2040	2-way PN16 internal threaded valve (new Type + couplings)	**V5832B2117**
V5843A2009	3-way PN16 internal threaded valve (new Type + couplings)	**V5833A2076**
V5843A2017	3-way PN16 internal threaded valve (new Type + couplings)	**V5833A2084**
V5843A2025	3-way PN16 internal threaded valve (new Type + couplings)	**V5833A2092**
V5843A2033	3-way PN16 internal threaded valve (new Type + couplings)	**V5833A2100**
V5843A2041	3-way PN16 internal threaded valve (new Type + couplings)	**V5833A2118**
V5872B1003	2- way control valve PN16 external threaded high diff pressure	**V5825B1001**
V5872B1011	2- way control valve PN16 external threaded high diff pressure	**V5825B1019**
V5872B1029	2- way control valve PN16 external threaded high diff pressure	**V5825B1027**
V5872B1037	2- way control valve PN16 external threaded high diff pressure	**V5825B1035**
V5872B1045	2- way control valve PN16 external threaded high diff pressure	**V5825B1043**
V5872B1052	2- way control valve PN16 external threaded high diff pressure	**V5825B1050**
V5872B1060	2- way control valve PN16 external threaded high diff pressure	**V5825B1068**
V5872B1078	2- way control valve PN16 external threaded high diff pressure	**V5825B1076**
V5872B1086	2- way control valve PN16 external threaded high diff pressure	**V5825B1084**

OLD TYPES Phase over list, Large Actuators

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
M234A1016	Actuator 3-pt, rotary	**ML6420A3015**
M634A1009	Actuator 3-pt, rotary	**ML6420A3007**
M634B1032	Actuator 3-pt, rotary	**ML6420A3015**
M644A1065	Actuator 3-pt, rotary	**ML6420A3072**
M644A1073	Actuator 3-pt, rotary	**ML6420A3072**
M644G1010	Actuator 3-pt, rotary	**ML6420A3007**
M644G1028	Actuator 3-pt, rotary	**ML6420A3007**
M644G1036	Actuator 3-pt, rotary	**ML6420A3023**
M644G1044	Actuator 3-pt, rotary	**ML6420A3023**
M645B1004	Actuator 3-pt, rotary Spring return	**ML6425A3006**
M645C1003	Actuator 3-pt, rotary Spring return	**ML6425A3006**
M6420A1001-7	Actuator 3-pt, 20 mm	**ML6420A3007**
M6420A1027-7	Actuator 3-pt, 20 mm	**ML6420A3007**
M6420A1035-7	Actuator 3-pt, 20 mm	**ML6420A3023**
M6420A1043-7	Actuator 3-pt, 20 mm (new Type needs 43191680-005)	**ML6420A3007**
M6420A1050-7	Actuator 3-pt, 20 mm	**ML6420A3015**
M6421A1000-7	Actuator 114s, 24 V, 20mm, float	**ML6421A3005**
M6421A1026-7	Actuator 114s, 230 V, 20mm, float	**ML6421A3013**
M6421B1008-7	Actuator 210s, 24 V, 38mm, float	**ML6421B3004**
M6421B1024-7	Actuator 210s, 230 V, 38mm, float	**ML6421B3012**
M6425A1006-7	Actuator 3-pt, 20 mm Spring return	**ML6425A3006**
M6425A1030-7	Actuator 3-pt, 230 V 20 mm Spring return	**ML6425A3014**
M6425B1004-7	Actuator 3-pt, 20 mm Spring return	**ML6425B3005**
M6421A1000	Actuator 114s, 24 V, 20mm, float	**ML6421A3005**
M6421A1026	Actuator 114s, 230 V, 20mm, float	**ML6421A3013**
M6421B1008	Actuator 210s, 24 V, 38mm, float	**ML6421B3004**
M6421B1024	Actuator 210s, 230 V, 38mm, float	**ML6421B3012**
M744E1002	Actuator 60s, 24 V, rotary, 0/2...10 V for air damper	**N20010**
M744E1002	Actuator 60s, 24 V, rotary, 0/2...10 V for valve	**ML7420A6009**
M7420A1009-7	Actuator 60s, 24 V, 20mm, 0/2...10 V	**ML7420A6009**
M7420A1025-7	Actuator 60s, 24 V, 20mm, 0/2...10 V (new Type needs 43191680-205)	**ML7420A6009**
M7420A1017-7	Actuator 30s, 24 V, 20mm, 0/2...10V	**ML7420A6017**
M7421A1008-7	Actuator 114s, 24 V, 20mm, 0/2...10 V	**ML7421A3004**
M7421A1016	Actuator 114s, 24 V, 20mm, 0/2...10 V rev	**ML7421A3004**
M7421B1006-7	Actuator 210s, 24 V, 38mm, 0/2...10 V	**ML7421B3003**
M7421B1014	Actuator 210s, 24 V, 38mm, 0/2...10 V rev	**ML7421B3003**
M7425A1004-7	Actuator 108s; SR-ext., 24 V, 20mm, 0/2...10V	**ML7425A6008**
M7425B1002-7	Actuator 108s; SR-ret. 24 V, 20mm, 0/2...10V	**ML7425B6007**
ML7420A3006	Actuator 60s, 24 V, 20mm, 0/2...10 V	**ML7420A6009**
ML7420A3014	Actuator 30s, 24 V, 20mm, 0/2...10V	**ML7420A6017**
ML7420A3048	Actuator 30s, 24 V, 20mm, 0/2...10V	**ML7420A6017**
ML7420A3071	Actuator 60s, 24 V, 20mm, 0/2...10V	**ML7420A6025**
ML7425A3005	Actuator 108s; SR-ext., 24 V, 20mm, 0/2...10V	**ML7425A6008**
ML7425B3004	Actuator 108s; SR-ret. 24 V, 20mm, 0/2...10V	**ML7425B6007**

OLD TYPES Phase over list, Large Linear Valves

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
V176A5051	2-way control valve PN16 flanged	V5016A1010
V176A5053	2-way control valve PN16 flanged	V5016A1036
V176A5055	2-way control valve PN16 flanged	V5016A1051
V176B5102	2-way control valve PN16 flanged	V5016A1069
V176B5104	2-way control valve PN16 flanged	V5016A1077
V176B5156	2-way control valve PN16 flanged	V5016A1077
V176B5158	2-way control valve PN16 flanged	V5016A1085
V176B5257	2-way control valve PN16 flanged	V5016A1093
V176B5259	2-way control valve PN16 flanged	V5016A1093
V176B5300	2-way control valve PN16 flanged	V5016A1101
V176B5302	2-way control valve PN16 flanged	V5016A1119
V176B5353	2-way control valve PN16 flanged	V5016A1127
V176B5405	2-way control valve PN16 flanged	V5016A1135
V176B5457	2-way control valve PN16 flanged	V5016A1143
V5011A8002	2-way control valve PN16 threaded	V5011R1018
V5011A8010	2-way control valve PN16 threaded	V5011R1026
V5011A8028	2-way control valve PN16 threaded	V5011R1034
V5011A8036	2-way control valve PN16 threaded	V5011R1042
V5011A8044	2-way control valve PN16 threaded	V5011R1059
V5011A8051	2-way control valve PN16 threaded	V5011R1067
V5011A8069	2-way control valve PN16 threaded	V5011R1075
V5011A8077	2-way control valve PN16 threaded	V5011R1083
V5011A8093	2-way control valve PN16 threaded	V5011R1091
V5011A8143	2-way control valve PN16 threaded	V5011R1000
V5011A8150	2-way control valve PN16 threaded	V5011R1018
V5011A8168	2-way control valve PN16 threaded	V5011R1026
V5011A8176	2-way control valve PN16 threaded	V5011R1034
V5011A8184	2-way control valve PN16 threaded	V5011R1042
V5011A8192	2-way control valve PN16 threaded	V5011R1059
V5011A8200	2-way control valve PN16 threaded	V5011R1067
V5011A8218	2-way control valve PN16 threaded	V5011R1075
V5011A8226	2-way control valve PN16 threaded	V5011R1083
V5011A8234	2-way control valve PN16 threaded	V5011R1091
V5013A1245	3-way control valve PN16 threaded	V5013R1032
V5013A1252	3-way control valve PN16 threaded	V5013R1040
V5013A1260	3-way control valve PN16 threaded	V5013R1057
V5013A1278	3-way control valve PN16 threaded	V5013R1065
V5013A1286	3-way control valve PN16 threaded	V5013R1073
V5013A1294	3-way control valve PN16 threaded	V5013R1081
V5013A1302	3-way control valve PN16 threaded	V5013R1099
V5013A1310	3-way control valve PN16 threaded	V5013R1040
V5013A1328	3-way control valve PN16 threaded	V5013R1057
V5013A1336	3-way control valve PN16 threaded	V5013R1065
V5013A1344	3-way control valve PN16 threaded	V5013R1073
V5013A1351	3-way control valve PN16 threaded	V5013R1081
V5013A1369	3-way control valve PN16 threaded	V5013R1099
V5013A2003	3-way control valve PN16 threaded	V5013R1032

Phase over lists

OLD TYPES A..Z	Product description	Type
V5013A2011	3-way control valve PN16 threaded	**V5013R1040**
V5013A2029	3-way control valve PN16 threaded	**V5013R1057**
V5013A2037	3-way control valve PN16 threaded	**V5013R1065**
V5013A2045	3-way control valve PN16 threaded	**V5013R1073**
V5013A2052	3-way control valve PN16 threaded	**V5013R1081**
V5013A2060	3-way control valve PN16 threaded	**V5013R1099**
V5013A8000	3-way control valve PN16 threaded	**V5013R1032**
V5013A8018	3-way control valve PN16 threaded	**V5013R1040**
V5013A8026	3-way control valve PN16 threaded	**V5013R1057**
V5013A8034	3-way control valve PN16 threaded	**V5013R1065**
V5013A8042	3-way control valve PN16 threaded	**V5013R1073**
V5013A8059	3-way control valve PN16 threaded	**V5013R1081**
V5013A8067	3-way control valve PN16 threaded	**V5013R1099**
V5015A1094	3-way control valve PN6 flanged	**V5329C1034**
V5015A1102	3-way control valve PN6 flanged	**V5329C1042**
V5015A1110	3-way control valve PN6 flanged	**V5329C1059**
V5015A1128	3-way control valve PN6 flanged	**V5329C1067**
V5015A1136	3-way control valve PN6 flanged	**V5329C1075**
V5015A1144	3-way control valve PN6 flanged	**V5329C1083**
V5015A1185	3-way control valve PN6 flanged	**V5329C1034**
V5015A1193	3-way control valve PN6 flanged	**V5329C1042**
V5015A1201	3-way control valve PN6 flanged	**V5329C1059**
V5015A1219	3-way control valve PN6 flanged	**V5329C1067**
V5015A1227	3-way control valve PN6 flanged	**V5329C1075**
V5015A1235	3-way control valve PN6 flanged	**V5329C1083**
V5015A1243	3-way control valve PN6 flanged	**V5015A1151**
V5015A1250	3-way control valve PN6 flanged	**V5015A1169**
V5015A1268	3-way control valve PN6 flanged	**V5015A1177**
V5025B1017	2-way control valve PN25 flanged	**V5025A1019**
V5025B1025	2-way control valve PN25 flanged	**V5025A1027**
V5025B1033	2-way control valve PN25 flanged	**V5025A1035**
V5025B1041	2-way control valve PN25 flanged	**V5025A1043**
V5025B1058	2-way control valve PN25 flanged	**V5025A1050**
V5025B1066	2-way control valve PN25 flanged	**V5025A1068**
V5025B1074	2-way control valve PN25 flanged	**V5025A1076**
V5025B1082	2-way control valve PN25 flanged	**V5025A1084**
V5025B1090	2-way control valve PN25 flanged	**V5025A1092**
V5025B1108	2-way control valve PN25 flanged	**V5025A1100**
V5025B1116	2-way control valve PN25 flanged	**V5025A1118**
V5025B1124	2-way control valve PN25 flanged	**V5025A1126**
V5025B1132	2-way control valve PN25 flanged	**V5025A1134**
V5025B1140	2-way control valve PN25 flanged	**V5025A1142**
V5025B1157	2-way control valve PN25 flanged	**V5025A1159**
V5025B1165	2-way control valve PN25 flanged	**V5025A1167**
V5049A1201	2-way control valve PN16 flanged	**V5328A1195**
V5049A1219	2-way control valve PN16 flanged	**V5328A1203**
V5049A1227	2-way control valve PN16 flanged	**V5328A1211**
V5050A1009	3-way control valve PN16 flanged	**V5329A1004**
V5050A1017	3-way control valve PN16 flanged	**V5329A1012**
V5050A1025	3-way control valve PN16 flanged	**V5329A1020**
V5050A1033	3-way control valve PN16 flanged	**V5329A1038**
V5050A1041	3-way control valve PN16 flanged	**V5329A1046**
V5050A1058	3-way control valve PN16 flanged	**V5329A1053**
V5050A1066	3-way control valve PN16 flanged	**V5329A1061**

Phase over lists

OLD TYPES A..Z	Product description	Type
V5050A1074	3-way control valve PN16 flanged	**V5329A1079**
V5050A1082	3-way control valve PN16 flanged	**V5329A1087**
V5050A1363	3-way control valve PN25/40 flanged	**V5050A1124**
V5050A1371	3-way control valve PN25/40 flanged	**V5050A1132**
V5050A1389	3-way control valve PN25/40 flanged	**V5050A1140**
V5050A1397	3-way control valve PN25/40 flanged	**V5050A1157**
V5050A1405	3-way control valve PN25/40 flanged	**V5050A1165**
V5050A1413	3-way control valve PN25/40 flanged	**V5050A1173**
V5050A1421	3-way control valve PN25/40 flanged	**V5050A1181**
V5050A1439	3-way control valve PN25/40 flanged	**V5050A1199**
V5050A1447	3-way control valve PN25/40 flanged	**V5050A1207**
V5050A1454	3-way control valve PN25/40 flanged	**V5050A1215**
V5095A1016	2-way control valve PN16 high diff pressure	**V5016A1010**
V5095A1024	2-way control valve PN16 high diff pressure	**V5016A1028**
V5095A1032	2-way control valve PN16 high diff pressure	**V5016A1036**
V5095A1040	2-way control valve PN16 high diff pressure	**V5016A1044**
V5095A1057	2-way control valve PN16 high diff pressure	**V5016A1051**
V5095A1065	2-way control valve PN16 high diff pressure	**V5016A1069**
V5095A1073	2-way control valve PN16 high diff pressure	**V5016A1077**
V5095A1081	2-way control valve PN16 high diff pressure	**V5016A1085**
V5095A1099	2-way control valve PN16 high diff pressure	**V5016A1093**
V5095A1107	2-way control valve PN16 high diff pressure	**V5016A1101**
V5095A1115	2-way control valve PN16 high diff pressure	**V5016A1119**
V5095A1123	2-way control valve PN16 high diff pressure	**V5016A1119**
V5095A1131	2-way control valve PN16 high diff pressure	**V5016A1127**

OLD TYPES Phase over list, Rotary Valves

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
DRK15	3-way universal rotary valve	DRU25-4.0
DRK20	3-way universal rotary valve	DRU25-6.3
DRK25	3-way universal rotary valve	DRU25-10
DRK32	3-way universal rotary valve	DRU32-16
DRK40	3-way universal rotary valve	DRU32-25
V5431A1025	3-way rotary valve DN15 internal thread	DR15GMLA
V5431A1033	3-way rotary valve DN20 internal thread	DR20GMLA
V5431A1041	3-way rotary valve DN25 internal thread	DR25GMLA
V5431A1058	3-way rotary valve DN32 internal thread	DR32GMLA
V5431A1066	3-way rotary valve DN40 internal thread	DR40GMLA
V5431F1032	3-way rotary valve DN20 flange	DR20GFLA
V5431F1040	3-way rotary valve DN25 flange	DR25GFLA
V5431F1057	3-way rotary valve DN32 flange	DR32GFLA
V5431F1065	3-way rotary valve DN40 flange	DR40GFLA
V5431F1073	3-way rotary valve DN50 flange	DR50GFLA
V5431F1081	3-way rotary valve DN65 flange	DR65GFLA
V5431F1099	3-way rotary valve DN80 flange	DR80GFLA
V5431F1107	3-way rotary valve DN100 flange	DR100GFLA
V5431F1115	3-way rotary valve DN125 flange	DR125GFLA
V5431F1123	3-way rotary valve DN150 flange	DR150GFLA
V5434T1010	3-way universal rotary valve	DRU25-2.5
V5434T1028	3-way universal rotary valve	DRU25-4.0
V5434T1036	3-way universal rotary valve	DRU25-6.3
V5434T1044	3-way universal rotary valve	DRU25-10
V5434T1051	3-way universal rotary valve	DRU25-16
V5434T1069	3-way universal rotary valve	DRU32-10
V5434T1077	3-way universal rotary valve	DRU32-16
V5434T1085	3-way universal rotary valve	DRU32-25
V5441A1023	4-way rotary valve DN15 internal thread	ZR15MA
V5441A1031	4-way rotary valve DN20 internal thread	ZR20MA
V5441A1049	4-way rotary valve DN25 internal thread	ZR25MA
V5441A1056	4-way rotary valve DN32 internal thread	ZR32MA
V5441A1064	4-way rotary valve DN40 internal thread	ZR40MA
V5441F1048	4-way rotary valve DN25 flange	ZR25FA
V5441F1055	4-way rotary valve DN32 flange	ZR32FA
V5441F1063	4-way rotary valve DN40 flange	ZR40FA
V5441F1071	4-way rotary valve DN50 flange	ZR50FA
V5441F1089	4-way rotary valve DN65 flange	ZR65FA
V5441F1097	4-way rotary valve DN80 flange	ZR80FA
V5441F1105	4-way rotary valve DN100 flange	ZR100FA
V5441F1113	4-way rotary valve DN125 flange	ZR125FA
V5441F1121	4-way rotary valve DN150 flange	ZR150FA
V5441F1139	4-way rotary valve DN200 flange	ZR200FA

OLD TYPES Phase over list, Damper Actuators

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
BEL-AM230	Damper Actuator 230Vac, 18Nm, 2-pos	N20230
BEL-AM230-2H	Damper Actuator 230Vac, 18Nm, 2-pos	N20230
BEL-AM230-S	Damper Actuator 230Vac, 18Nm, 2-pos, switches	N20230-SW2
BEL-AM230-2-SH	Damper Actuator 230Vac, 18Nm, 2-pos, switches	N20230-SW2
BEL-AM24	Damper Actuator 24Vac, 18Nm, 2-pos	N2024
BEL-AM24H	Damper Actuator 24Vac, 18Nm, 2-pos	N2024
BEL-AM24-S	Damper Actuator 24Vac, 18Nm, 2-pos, switches	N2024-SW2
BEL-AM24-SH	Damper Actuator 24Vac, 18Nm, 2-pos, switches	N2024-SW2
BEL-GM220H	Damper Actuator 230Vac, 30Nm, 2-pos	N34230
BEL-GM24H	Damper Actuator 24Vac, 30Nm, 2-pos	N3424
BEL-LM230-SH	Damper Actuator 230Vac, 4Nm, 2-pos, switches (new Type needs SSW2)	N05230-2POS
BEL-LM230H	Damper Actuator 230Vac, 4Nm, 2-pos	N05230-2POS
BEL-LM24-SH	Damper Actuator 24Vac, 4Nm, 2-pos, switches	N0524-SW2
BEL-LM24H	Damper Actuator 24Vac, 4Nm, 2-pos	N0524
BEL-NM230H	Damper Actuator 230Vac, 8Nm, 2-pos	N10230-2POS
BEL-NM24H	Damper Actuator 24Vac, 8Nm, 2-pos	N1024
M6530A1008	Damper Actuator 24Vac, 7,5Nm, 3-pos	N1024
M6531A1007	Damper Actuator 24Vac, 15Nm, 3-pos	N2024
M6531B1005	Damper Actuator 230Vac, 15Nm, 3-pos	N20230
M6535A1003	Spring Return Damper Actuator 24Vac, 12Nm, 2-pos	S1024-2POS
M6535B1001	Spring Return Damper Actuator 230Vac, 12Nm, 2-pos	S10230-2POS
M7531A1005	Damper Actuator 24Vac, 15Nm, 0...10V	N20010
M7535A1001-7	Spring Return Damper Actuator 24Vac, 12Nm, 3-pos	S10010
ML4195E1002	Spring Return Damper Actuator 230Vac, 16Nm, 2-pos	S20230-2POS
ML4195E1010	Spring Return Damper Actuator 230Vac, 16Nm, 2-pos, switches	S20230-2POS-SW2
ML6161E2005	Damper Actuator 24Vac, 4Nm, 3-pos	N0524
ML6161E3011	Damper Actuator 24Vac, 5Nm, 3-pos	N0524
ML6161E3029	Damper Actuator 24Vac, 5Nm, 3-pos, switches	N0524-SW2
ML6174E2008	Damper Actuator 24Vac, 8Nm, 3-pos	N1024
ML6174E3014	Damper Actuator 24Vac, 10Nm, 3-pos	N1024
ML6174E3022	Damper Actuator 24Vac, 10Nm, 3-pos, switches	N1024-SW2
ML6184E1009	Damper Actuator 24Vac, 17Nm, 3-pos	N2024
ML6184E1017	Damper Actuator 24Vac, 17Nm, 3-pos, switches	N2024-SW2
ML6185E1006	Spring Return Damper Actuator 24Vac, 6Nm, 3-pos	S10010
ML6185E1014	Spring Return Damper Actuator 24Vac, 6Nm, 3-pos, switches	S10010-SW2
ML6194E1008	Damper Actuator 24Vac, 34Nm, 3-pos	N3424
ML6661E3010	Damper Actuator 230Vac, 5Nm, 3-pos	N05230-2POS
ML6661E3028	Damper Actuator 230Vac, 5Nm, 3-pos, switches (new Type needs SSW2)	N05230-2POS
ML6674E3013	Damper Actuator 230Vac, 10Nm, 3-pos	N10230-2POS
ML6674E3021	Damper Actuator 230Vac, 10Nm, 3-pos, switches (new Type needs SSW2)	N10230-2POS
ML6684E1008	Damper Actuator 230Vac, 17Nm, 3-pos	N20230
ML6684E1016	Damper Actuator 230Vac, 17Nm, 3-pos, switches	N20230-SW2
ML6694E1007	Damper Actuator 230Vac, 34Nm, 3-pos, switches (new Type needs SSW2)	N34230
ML7161E2004	Damper Actuator 24Vac, 4Nm, 0...10V	N05010
ML7161E3010	Damper Actuator 24Vac, 5Nm, 0...10V	N05010
ML7161E3028	Damper Actuator 24Vac, 5Nm, 0...10V, switches	N05010-SW2
ML7174E2004	Damper Actuator 24Vac, 4Nm, 0...10V	N05010

Phase over lists

OLD TYPES A..Z	Product description	Type
ML7174E2007	Damper Actuator 24Vac, 8Nm, 0...10V	**N10010**
ML7174E3013	Damper Actuator 24Vac, 10Nm, 0...10V	**N10010**
ML7174E3021	Damper Actuator 24Vac, 10Nm, 0...10V, switches	**N10010-SW2**
ML7284E1006	Damper Actuator 24Vac, 17Nm, 0...10V	**N20010**
ML7285E1003	Spring Return Damper Actuator 24Vac, 6Nm, 0...10V	**S10010**
ML7294E1005	Damper Actuator 24Vac, 34Nm, 0...10V	**N34010**
ML7295E1007	Spring Return Damper Actuator 24Vac, 16Nm, 0...10V	**S20010**
ML7295E1015	Spring Return Damper Actuator 24Vac, 16Nm, 0...10V, switches	**S20010-SW2**
ML8195E1003	Spring Return Damper Actuator 24Vac, 16Nm, 2-pos	**S2024-2POS**
ML8195E1011	Spring Return Damper Actuator 24Vac, 16Nm, 2-pos, switches	**S2024-2POS-SW2**
N20230-2POS	Damper Actuator 230Vac, 20Nm, 2-pos	**N20230**
N2024-2POS	Damper Actuator 24Vac, 20Nm, 2-pos	**N2024**

OLD TYPES Phase over list, Pneumatics

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
LP914A1037	Pneumatic temperature sensor	LP914A1151/U
LP914A1045	Pneumatic temperature sensor	LP914A1193/U
LP914A1052	Pneumatic temperature sensor	LP914A1201/U
LP914A1060	Pneumatic temperature sensor	LP914A1193/U
PP902	Pressure reducing valve	PP907A1008
RP403D2023	Electric-pneumatic relay	RP416A2008
RP416A1000	Electric-pneumatic relay	RP416A2008
RP7507A1000	Electric-pneumatic signal conversion module	RP7517A1009
RP908A1070	Pneumatic Sensor Controller System	RP920A1017
RP908A1088	Pneumatic Sensor Controller System	RP920A1009
RP908B1045	Pneumatic Sensor Controller System	RP920B1007
RP908B1052	Pneumatic Sensor Controller System	RP920B1007
RP908B1128	Pneumatic Sensor Controller System	RP920C1005
RP908B1136	Pneumatic Sensor Controller System	RP920C1005
RP914A1007	Pneumatic Sensor Controller System	RP920A1017
RP914A1023	Pneumatic Sensor Controller System	RP920A1017
RP914A1049	Pneumatic Sensor Controller System	RP920A1009
RP914B1047	Pneumatic Sensor Controller System	RP920B1007
RP914B1062	Pneumatic Sensor Controller System	RP920B1007
RP914B1088	Pneumatic Sensor Controller System	RP920B1007
RP914B1096	Pneumatic Sensor Controller System	RP920B1007
RP914C1003	Pneumatic Sensor Controller System	RP920C1005
RP914C1029	Pneumatic Sensor Controller System	RP920C1005
RP914C1045	Pneumatic Sensor Controller System	RP920C1005
RP914C1052	Pneumatic Sensor Controller System	RP920C1005
TP910A1429	Pneumatic room temperature controller	TP970A2020/U
TP910B1260	Pneumatic room temperature controller	TP970B2010
TP912A1054	Pneumatic room temperature controller (new Type needs 43176366-003)	TP938A1005
TP912B1052	Pneumatic room temperature controller (new Type needs 43176366-003)	TP938B1003
TP913B1036	Pneumatic room temperature controller	TP970A2020/U
TP918A1017	Pneumatic room temperature controller	TP970B2010
TP925A1000	Pneumatic room temperature sensor (new Type needs 14002362-001)	TP974A2000
TP931A1002	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937A1006
TP931A1010	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937A1006
TP931B1000	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937A1006
TP931B1034	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937A1006
TP931C1008	Pneumatic room temperature controller	TP937A1006
TP931C1016	Pneumatic room temperature controller	TP937A1006
TP931D1006	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937B1004
TP931D1014	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937B1004
TP931E1003	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937B1004
TP931E1011	Pneumatic room temperature controller (new Type needs 43176366-003)	TP937B1004
TP931F1001	Pneumatic room temperature controller	TP937B1004
TP931F1019	Pneumatic room temperature controller	TP937B1004
TP934A1009	Pneumatic unit temperature controller (new Type needs 43176366-003)	TP939A1004
TP934A1017	Pneumatic unit temperature controller (new Type needs 43176366-003)	TP939A1004
TP934A1025	Pneumatic unit temperature controller (new Type needs 43176366-003)	TP939A1004

Phase over lists

OLD TYPES A..Z	Product description	Type
TP934A1033	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939A1004**
TP934B1007	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939B1002**
TP934B1023	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939B1002**
TP934C1005	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939A1004**
TP934C1013	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939A1004**
TP934D1003	Pneumatic unit temperature controller (new Type needs 43176366-003)	**TP939B1002**
TP935A1008	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938A1005**
TP935A1016	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938A1005**
TP935B1022	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938A1005**
TP935B1030	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938A1005**
TP935D1002	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938B1003**
TP935B1010	Pneumatic room temperature controller (new Type needs 43176366-003)	**TP938B1003**
TP974A1000	Pneumatic room temperature sensor	**TP974A2000**

OLD TYPES Phase over list, Pneumatic Valves/Actuators

The OLD TYPE products are not deliverable anymore. They can be replaced with the products shown in the last column. Take care about small differences! It is the responsibility of the user to ensure that the right product is chosen.

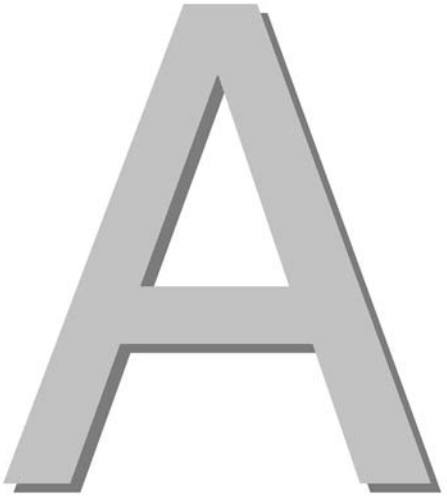
Old catalogs data: http://products.ecc.emea.honeywell.com/europe/historic_products

OLD TYPES A..Z	Product description	Type
MP903A1039	Pneumatic Damper Actuator	MP904C1026
MP904A5005	Pneumatic Damper Actuator	MP904A5047
MP904A5013	Pneumatic Damper Actuator	MP904A5047
MP904A5039	Pneumatic Damper Actuator	MP904A5047
MP904B5003	Pneumatic Damper Actuator	MP904D1057
MP909A1371	Pneumatic Damper Actuator Shaft connection	MP913B1068
MP909A1389	Pneumatic Damper Actuator Shaft connection	MP913B1068
MP909B1353	Pneumatic Damper Actuator Shaft connection	MP913C1066
MP953A1004	Pneumatic Valve Actuator	MP953A5005
MP953A1012	Pneumatic Valve Actuator	MP953A5005
MP953A1020	Pneumatic Valve Actuator	MP953A5039
MP953A1038	Pneumatic Valve Actuator	MP953A5039
MP953A1046	Pneumatic Valve Actuator	MP953A5005
MP953A1053	Pneumatic Valve Actuator	MP953A5039
MP953A1061	Pneumatic Valve Actuator	MP953A5054
MP953A1079	Pneumatic Valve Actuator	MP953A5005
MP953A1087	Pneumatic Valve Actuator	MP953A5005
MP953A1095	Pneumatic Valve Actuator	MP953A5005
MP953A1103	Pneumatic Valve Actuator	MP953A5005
MP953A1145	Pneumatic Valve Actuator	MP953A5039
MP953A1178	Pneumatic Valve Actuator	MP953A5039
MP953A1202	Pneumatic Valve Actuator	MP953A5054
MP953A5013	Pneumatic Valve Actuator	MP953A5005
MP953A5021	Pneumatic Valve Actuator	MP953A5005
MP953A5047	Pneumatic Valve Actuator	MP953A5039
MP953B1002	Pneumatic Valve Actuator	MP953B5003
MP953B1028	Pneumatic Valve Actuator	MP953B5003
MP953B1036	Pneumatic Valve Actuator	MP953B5003
MP953B1051	Pneumatic Valve Actuator	MP953B5003
MP953B5011	Pneumatic Valve Actuator	MP953B5003
MP953C1000	Pneumatic Valve Actuator	MP953C5001
MP953C1018	Pneumatic Valve Actuator	MP953C5019
MP953C1026	Pneumatic Valve Actuator	MP953C5027
MP953C1034	Pneumatic Valve Actuator	MP953C5001
MP953C1042	Pneumatic Valve Actuator	MP953C5019
MP953C1059	Pneumatic Valve Actuator	MP953C5027
MP953C1067	Pneumatic Valve Actuator	MP953C5068
MP953C1075	Pneumatic Valve Actuator	MP953C5076
MP953C1083	Pneumatic Valve Actuator	MP953C5084
MP953C1125	Pneumatic Valve Actuator	MP953C5142
MP953C1133	Pneumatic Valve Actuator	MP953C5159
MP953C1174	Pneumatic Valve Actuator	MP953C5001
MP953C1182	Pneumatic Valve Actuator	MP953C5019
MP953C1190	Pneumatic Valve Actuator	MP953C5027
MP953C1208	Pneumatic Valve Actuator	MP953C5001
MP953C1216	Pneumatic Valve Actuator	MP953C5019
MP953C1224	Pneumatic Valve Actuator	MP953C5027

Phase over lists

OLD TYPES A..Z	Product description	Type
MP953C1232	Pneumatic Valve Actuator	**MP953C5068**
MP953C1240	Pneumatic Valve Actuator	**MP953C5076**
MP953C1257	Pneumatic Valve Actuator	**MP953C5084**
MP953C1414	Pneumatic Valve Actuator	**MP953C5084**
MP953C1422	Pneumatic Valve Actuator	**MP953C5076**
MP953C1471	Pneumatic Valve Actuator	**MP953C5142**
MP953C1489	Pneumatic Valve Actuator	**MP953C5159**
MP953C5035	Pneumatic Valve Actuator	**MP953C5001**
MP953C5043	Pneumatic Valve Actuator	**MP953C5019**
MP953C5050	Pneumatic Valve Actuator	**MP953C5027**
MP953C5092	Pneumatic Valve Actuator	**MP953C5027**
MP953C5100	Pneumatic Valve Actuator	**MP953C5027**
MP953C5118	Pneumatic Valve Actuator	**MP953C5068**
MP953C5126	Pneumatic Valve Actuator	**MP953C5084**
MP953D1008	Pneumatic Valve Actuator	**MP953D5009**
MP953D1024	Pneumatic Valve Actuator	**MP953D5009**
MP953D1032	Pneumatic Valve Actuator	**MP953D5009**
MP953D1073	Pneumatic Valve Actuator	**MP953D5025**
MP953D1099	Pneumatic Valve Actuator	**MP953D5025**
MP953D1107	Pneumatic Valve Actuator	**MP953D5009**
MP953D1123	Pneumatic Valve Actuator	**MP953D5009**
MP953D1131	Pneumatic Valve Actuator	**MP953D5025**
MP953D1156	Pneumatic Valve Actuator	**MP953D5025**
MP953D1164	Pneumatic Valve Actuator	**MP953D5009**
MP953D5017	Pneumatic Valve Actuator	**MP953D5009**
MP953D5033	Pneumatic Valve Actuator	**MP953D5025**
VP532A5004	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1029**
VP532A5012	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1037**
VP532A5020	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1045**
VP532A5038	Pneumatic 3-way control valve PN16 (new Type+ AC-20FT+MP958A1017)	**V5833A1052**
VP532A5046	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1003**
VP532A5053	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1029**
VP532A5061	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1037**
VP532A5079	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1017)	**V5833A1045**
VP532A5087	Pneumatic 3-way control valve PN16 (new Type+ AC-20FT+MP958A1017)	**V5833A1052**
VP532A5095	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1025)	**V5833A1029**
VP532A5103	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1025)	**V5833A1037**
VP532A5111	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1025)	**V5833A1045**
VP532A5129	Pneumatic 3-way control valve PN16 (new Type+ AC-20FT+MP958A1025)	**V5833A1052**
VP532A5137	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1009)	**V5833A1003**
VP532A5145	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1009)	**V5833A1029**
VP532A5152	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1009)	**V5833A1037**
VP532A5160	Pneumatic 3-way control valve PN16 (new Type+ AC-15FT+MP958A1009)	**V5833A1045**
VP532A5178	Pneumatic 3-way control valve PN16 (new Type+ AC-20FT+MP958A1009)	**V5833A1052**

Applications and Dimensioning Page



Honeywell

1. GENERAL

Control valves are these devices in an control loop which are, operated by a controller signal, steering the size of energy (using media water or steam).
You find this control devices in most heating, ventilating and air-conditioning systems. The right selection is very important for the controllability of the specified control loop and customer satisfaction.
The control device (valve and actuator) should be selected accordingly to the design requirements of the application and should result in a linear coherence between the output signal and the control variable.

2. DIMENSIONING AND APPLICATION POINT OF VIEW

If the system is to be prepared for connection to a district heating network, space reheaters (radiators, convectors and heating coils) should be connected with 2-way valves, according to system 1 or 2, and dimensioned for water temperatures of 80°C/40°C, at the prevailing outdoor temperature.
In case air reheaters are dimensioned for a return temperature of 50°C, the air heater group must always be connected to the boiler in a bypass configuration,with an automatically controlled 3-way valve. This will ensure a sufficiently high return temperature. If air heaters are to be connected to a district heating network, their temperature and pressure specifications must be suitable for such operation.
If there is no likelihood of later connection to a district heating network, the system should be dimensioned for 80°C/60°C operation, at the prevailing outdoor temperature.
The heaters should be connected with a 2-way valve, in a bypass configuration (system 2), which ensures calculation through the boiler, or with a 3-way valve (system 4). Select the configuration that gives the lowest system cost.
Air reheaters for outdoor air or a mixture of outdoor air and return air should always be fitted with circulation pumps, to prevent freezing. If such air heaters are installed, a freeze protection thermostat should be installed in the lowest water pipe, which, in case of freezing risk, automatically stops the supply air fan and closes outdoor air dampers.

2.1 Characteristic Parameters

K_V - Value

The K_V - value is showing the capacity of media flow of a valve. It characterises the volumeflow in [m^3/h] of water by measuring a differential pressure of 1bar.

C_V - Value

In the USA, the C_V - Value is normally used and is releated to the volumeflow in [gal/min] by having a differential pressure over the valve of 1 [lb/sq in].

$$K_V = 0{,}86 \cdot C_V \quad / \quad C_V = 1{,}17 \cdot K_V$$

K_{VS} - Value

By using the K_{VS} - Value, the K_V - Value is related to a Stroke of H = 100%.

K_{vr} - Value

The K_{VR} - Value describes the smallest K_V - Value, where the inclination tolerances of the valve characteristics are just fit.

Rangeability S_v

The rangeability S_v is charaterizing the relation between K_{vs} - Value and K_{vr} - Value.

$$S_v = K_{vs} / K_{vr}$$

Calculation with K_V - Value (Medium Water)

$$K_V = V/(\sqrt{(\Delta p_v)})$$

$$\Delta p_v = (V/k_v)^2$$

$$V = k_v \times \sqrt{(\Delta p_v)}$$

V = Volumeflow in [m^3/h]

Δp_v = Differential pressure in [bar]

A

Conversion for other media

$$k_V = V \times \sqrt{\frac{\rho}{\Delta p_v}}$$ ρ = Density in [kg/dm^3]

In applications where water/glycol mixtures are needed, this is mainly used for heating recovery systems in air/water applications a conversion is needed for the differences in density of the glycol/water mixture. This mixtures are used to reduce the temperature for freezing of the heat exchanger by the outside air.
Attached you find some values for the density of water/glycol mixtures:

a) Density of Propylenglycol/Watermixture

(Sample: Hoechst Antifrogen L)
Values given in ρ [kg/dm^3]

TEMP.	VOL. % OF ANTIFROGEN L				
	16%	25%	38%	47%	100%
-20°C	-	-	1.0500	1.0618	1.0766
-10°C	-	1.0323	1.0472	1.0582	1.0710
0°C	1.0184	1.0302	1.0438	1.0538	1.0647
10°C	1.0168	1.0275	1.0400	1.0487	1.0576
20°C	1.0149	1.0241	1.0357	1.0431	1.0500
30°C	1.0111	1.0200	1.0305	1.0369	1.0421

b) Ethylenglycol/Watermixture

(Sample: Hoechst Antifrogen N)
Values given in ρ [kg/dm^3]

TEMP.	VOL. % OF ANTIFROGEN N				
	20%	27%	39%	52%	100%
-20°C	-	-	1.0820	1.1045	1.1695
-10°C	1.0400	1.0570	1.0790	1.1010	1.1630
0°C	1.0385	1.0545	1.0755	1.0970	1.1560
10°C	1.0360	1.0510	1.0715	1.0920	1.1495
20°C	1.0330	1.0475	1.0670	1.0870	1.1425
30°C	1.0290	1.0430	1.0620	1.0815	1.1360

2.2 Mixing or diverting valves

As pointed out earlier, 3-way valves are used in order to minimize upsets in pressure and flow balances in the system. In every control circuit there is a mixing and a diverting point. In new constructions, the valve is installed in the mixing point. When renovating old installations, the diverting valve should be retained, if the circuit was so designed originally.

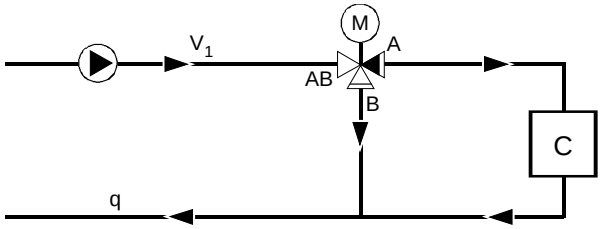


Fig. 1: 3-way valve as a diverting valve

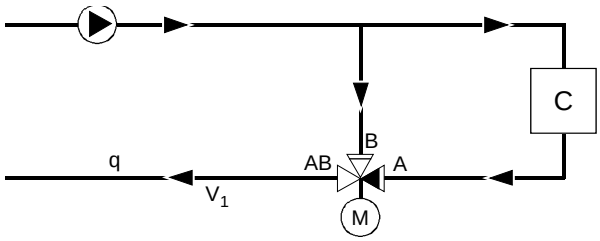


Fig. 2: 3-way valve as a mixing valve

2.2.1 Pressure drop across 3-way valves

The pump pressure and the pressure drop across the 3-way valve are often confused. 3-way valves always have som water path open, which means that the total pressure from the pump does not affect the mixing valve.

Which pressure drop affects the valve plug?

Ignore pressure drops in pipes and pipe bends. Close path B of valve VI. The flow from the diversion point C, through the balancing valve V3 is zero. There can be no pressure drop in this line. This means that the same pressure prevails in diversion point C and at plug B. The flow from point C passes through the load, L and valve port A.

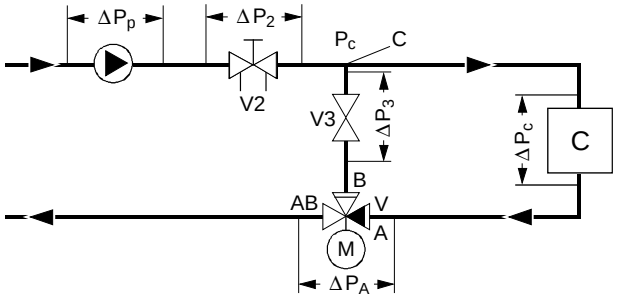


Fig. 3: Pressure drops in typical mixing valve circuit

The valve has been selected, so that its pressure drop will be Δp_A, for a given flow. For the same flow, the pressure drop across the load will be Δp_L.

Pressure at plug A: $p_A = p_c - \Delta p_c - \Delta p_A$

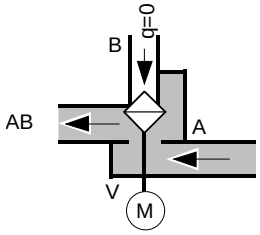


Fig. 4: 3-way valve with water path A open

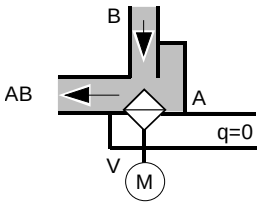


Fig. 5: 3-way valve with water path B open

2.2.2 Pressure drop across the valve plug

$$\Delta P_{plug} = p_B - p_A \rightarrow p_c - (p_c - \Delta p_c - \Delta p_A)$$
$$\Delta P_{plug} = \Delta p_c + \Delta p_A$$

The same reasoning applies, when plug A is closed. The above shows that the 3-way valve is only affected by the pressure drops in the circuit, where the flow is varied by the mixture valve.
The pressure drops that load a 3-way valve is equal to the total pressure drop in the open flow path, calculated from the point at which the flow is divided (C) to the common valve port (AB).

2.3 Valve authority

The valve authority should only be calculated for that part of the circuit, in which the flow is effected by the valve. Thus, the balancing valve V2 in Fig.3 does not effect the valve authority.
The 3-way valve effects the flow in the following parts of the pipe network (marked with thick lines in the figures):

a. Diverting three way valve

Port A: Pipes AC + pressure drop across G.
Port B: CB.

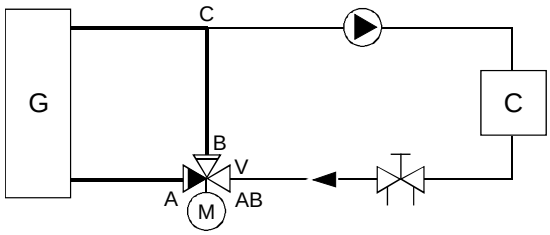


Fig. 6: Diverting three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pG + \Delta pAC}$$

b. Mixing three way valve

Port A: Pipes CA + pressure drop across G.
Port B: CB.

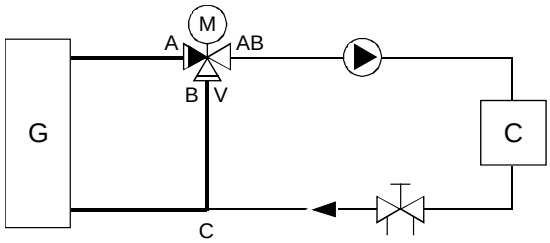


Fig. 7: Mixing three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pG + \Delta pAC}$$

c. Diverting three way valve

Port A: Pipes AD + CE
Port B: BC
.

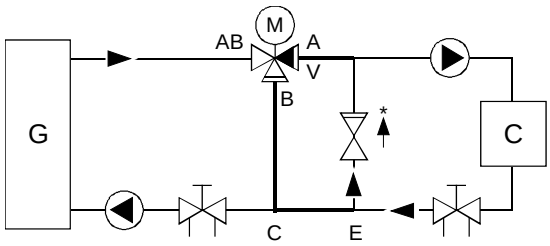


Fig. 8: Diverting three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pAD + \Delta pCE}$$

d. Mixing three way valve

Port A: Pipes AE + CD.
Port B: CB.

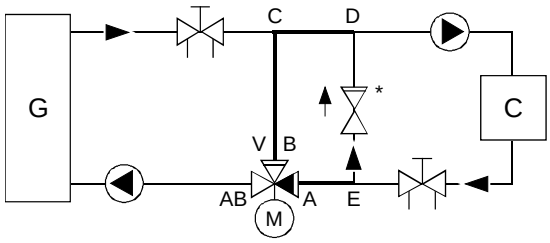


Fig. 9: Mixing three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pAE + \Delta pCD}$$

For the marked parts the pressure drops in Fig. 8 and Fig 9 are relatively small. The autority of 3-way valves is therefore often close to 1. But to maintain correct characteristic in control valve V, don‘t select it for a Δp below 3kPa.

3. DIMENSIONING

System 1

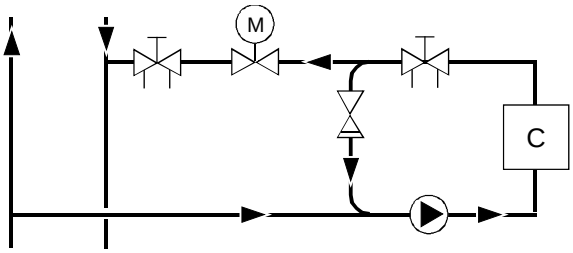


Fig. 10: Preheating coil which can be subject to freezing

System 2

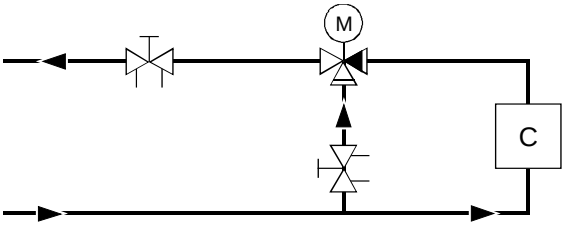


Fig. 11: Reheating system in cases not subject to freezing

System 3

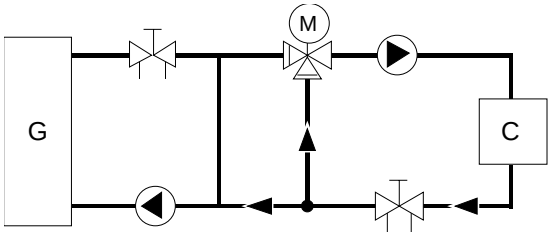


Fig. 12: Radiator circuit connected to boiler heating plant

System 4

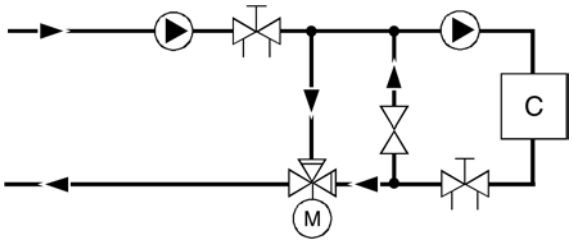


Fig. 13: System with constant primary and secondary flows

System 5

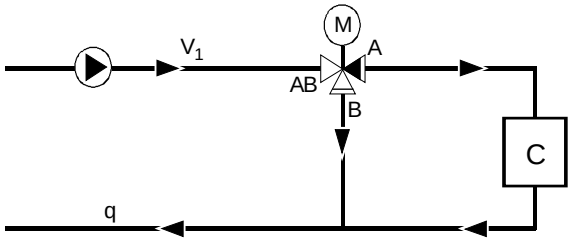


Fig. 14: System with constant primary and secondary flows

System 6

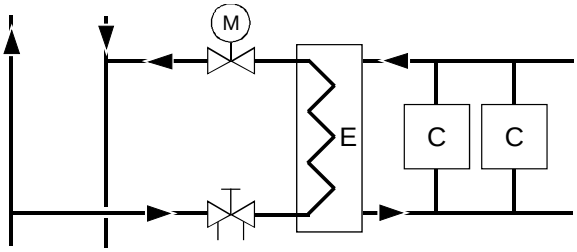


Fig. 15: Fig.15 Heating system connected to district heating network

System 7

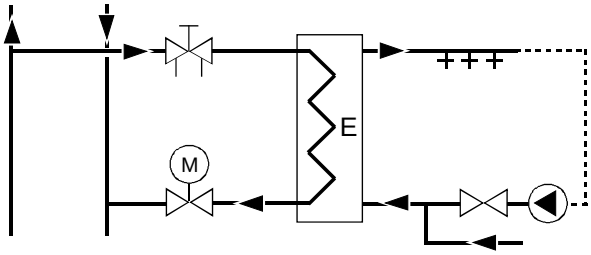


Fig. 16: Domestic hot water system connected to district heating network

A

3.1 System 1, 2-way valve with primary pump

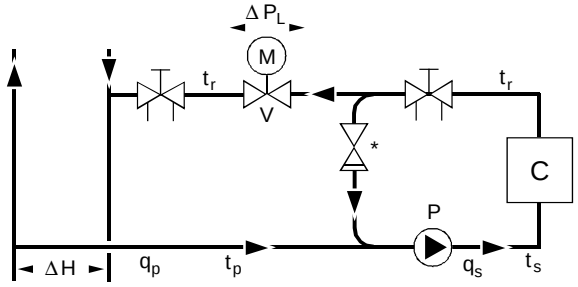


Fig. 17: 2-way valve with primary pump

3.1.1 Functions and characteristics

- Primary circuit: flow control, constant temperature
- Secondary circuit: temperature control, constant flow
- Connected to district heating network, with a requirement on low return temperature
- Heating installation, with long pipe runs
- Large air heaters, not subjected to freezing

3.1.2 Valve sizing

Thermal equilibrium

$$q_p \cdot (t_p - t_r) = q_s \cdot (t_s - t_r)$$

Dimension the pump for the flow in the secondary circuit, and the total pressure drop in the circuit.

$$\Delta p_v \approx \Delta H$$

The pressure drop in the pipes of the primary side is negligible.

$$K_v = \frac{36 \cdot q_p}{\sqrt{\Delta H}} (\text{kPa}, 1/s)$$

3.1.3 Flow Characteristic

ΔH = 3-5kPa Eq% (Logarithmic)

ΔH = 5-10kPa Modified linear (MOD.LIN)

3.2 System 2, 3-way mixing valve with primary pump

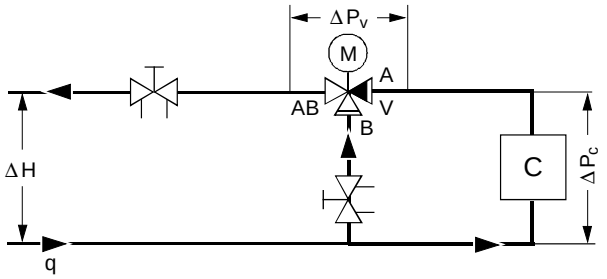


Fig. 18: 3-way mixing valve with primary pump

3.2.1 Functions and characteristics

- Primary circuit: constant flow
- Secondary circuit: variable flow, constant temperature
- The coil must not be subjected to freezing.
- With variable flow, this configuration does not provide an even temperature in the air coil.
- With small coils also risk for hunting at constant supply air temperature control.

3.2.2 Valve sizing

$\beta \geq 0.5$ i.e. $\Delta p_v \geq \Delta p_c$

$$\Delta p_v = \Delta H - \Delta p_c$$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

3.2.3 Flow Characteristic

A - AB = EQ% (Logarithmic)
B - AB = linear (LIN)

3.3 System 3, Boiler, 3-way mixing valve

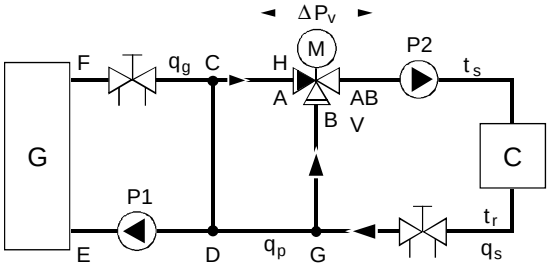


Fig. 19: Constant flow in boiler

3.3.1 Functions and characteristics

- Primary circuit: variable flow, constant temperature
- Secondary circuit: constant flow, variable temperature
- System with local boiler

3.3.2 Valve sizing

$\beta = 1$

$$\Delta p_v > \Delta_{GD} + \Delta_{CH}$$

not less than 3 kPa

$$K_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (\text{kPa}, 1/s)$$

3.3.3 Flow Characteristic

Linear
The resistance of pipe CD is considered to be negligible.

3.4 System 4, System with constant flows in primary and secondary circuits

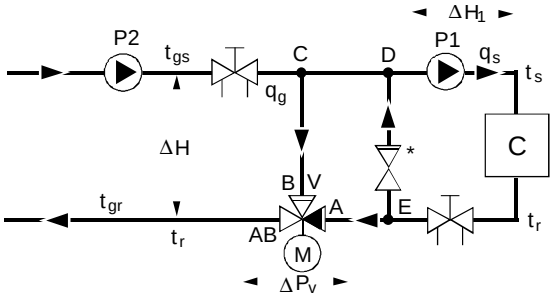


Fig. 20: Coil in air handling unit

3.4.1 Functions and characteristics

- Primary circuit: constant flow, temperature control
- Secondary circuit: constant flow
- This configuration is used for large air cooling and heating coils
- It is suitable for connection to large boilers, where each object is individually controlled.

$$q_g \cdot \left(t_{gs} - t_{gr}\right) = q_s \left(t_s - t_r\right)$$

$$q_{gs} < q_s \qquad t_{gs} > t_s$$

3.4.2 Valve sizing

Pipe sections C-D and E-A are the part of the pipe network, in which the flow is affected by the valve.
Valve authority, β = 1.0.

3.4.3 Flow characteristic for V:

$$\Delta p_v > 3kPa \qquad \text{(Linear)}$$

$$\mathrm{K}_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

3.4.4 Balancing

- Close port A-AB of V and start pumps, P1 and P2.
- Adjust valve, so that the flow through the coil is correct.
- Open port A-AB of V fully.
- Adjust valve, so that the designed primary flow is obtained.

3.5 System 5, System with constant primary and secondary flows

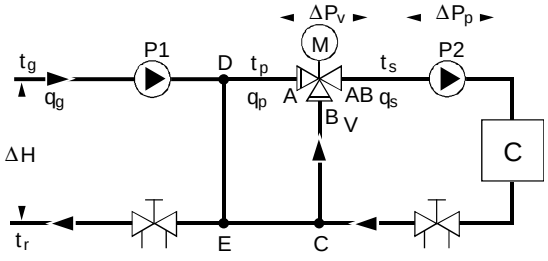


Fig. 21: Constant flow in primary/secondary circuit

3.5.1 Functions and characteristics

- Primary circuit: constant flow, constant temperature
- Secondary circuit: constant flow, variable temperature
- Pressure changes in the primary circuit do not affect the secondary circuit, which also means that the secondary circuit cannot affect the primary circuit.
- This configuration is used for large systems, with multiple mixing valve - bypass groups.

3.5.2 Valve sizing

Pipe section D-E is the part of the pipe network, in which the flow is affected by the valve. The pressure drop in D-E is negligible, which means that the authority of the valve, β = 1, but the valve must be designed for a pressure drop of at least 3kPa.

3.5.3 Flow characteristic for V:

$$\Delta p_v \geq 3kPa \qquad \text{(Linear)}$$

$$\mathrm{K}_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

A

3.6 System 6, 2-way valve with primary pump water/water

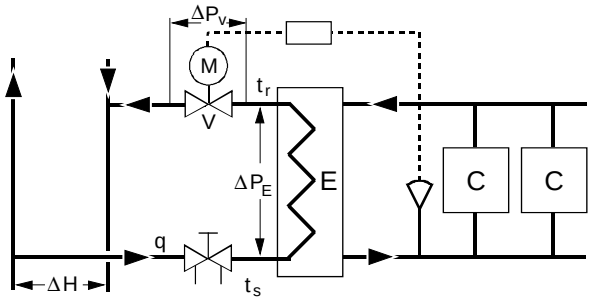


Fig. 22: Heat exchanger, heating system

3.6.1 Functions and characteristics

- Flow control.
- Heating system (radiator groups and air heaters) connected to district heating network, with a requirement on low return temperature.
- Heat exchanger between primary and secondary circuits, is required if static pressure and temperature on primary side are incompatible with equipment in secondary circuit.
- Small air heaters, not subjected to freezing.

3.6.2 Valve sizing

$$\Delta p_v = \Delta H - \Delta p_E$$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

$$\beta = \frac{\Delta p_v}{\Delta H} \geq 0.5$$

Flow characteristic: EQ% (Logarithmic)

3.7 System 7, 2-way valve with primary pump water/(domestic) water

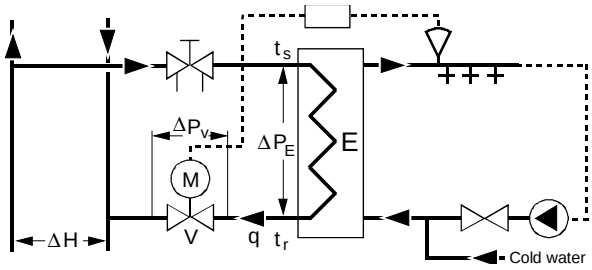


Fig. 23: Heat exchanger, hot water

3.7.1 Functions and characteristics

- Flow control.
- Throttling away of excess pressure
- Domestic hot water system connected to district heating network
- System with requirements on low primary return temperature.

3.7.2 Valve sizing

$$\Delta p_v = \Delta H - \Delta p_E$$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

$$\beta = \frac{\Delta p_v}{\Delta H} \geq 0.5$$

Valve characteristic: EQ% (Logarithmic)

4. CALCULATION EXAMPLES

4.1 Formulas

Heating:

Water $P = 4.18 \cdot q_w \cdot \Delta T$

$P = 1.16 \cdot q \cdot \Delta T$

Air $P = 1.3 \cdot q_A \cdot \Delta T$

Steam $G = 1.59 \cdot P$

Units and designations:

P = kW
q = m^3/h
q_w = 1/s
q_A = m^3/h
G = kg/h

Temperatures (standard values):

Heat exchanger, primary, district heating	$\Delta T = 40K$
Heat exchanger, other	$\Delta T = 20K$
Heat exchanger, radiators, low flow system (80-30K)	$\Delta T = 50K$
Heat exchanger, cooling coils	$\Delta T = 5-10K$

Heating demands of dwellings:

New buildings	40 W/m^2 living area
Well insulated buildings	50 W m^2 living area
Not very well insulated buildings	60 W/m^2 living area
Poorly insulated buildings	100 W/m^2 living area
Cellars	15 W/m^2 living area

Calculation of valve leakage using the temperature method:

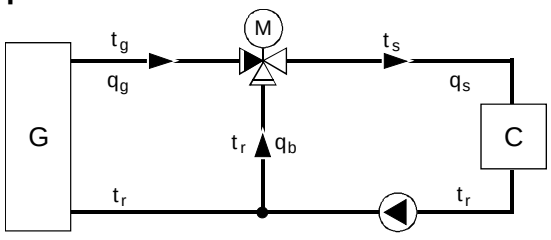


Fig. 24: Calculation of leakage using the temperature method

$$\frac{q_g}{q_s} = \frac{t_s - t_r}{t_g - t_r} \qquad \frac{q_b}{q_s} = \frac{t_s - t_g}{t_r - t_g}$$

Valve flow coefficient

LIQUID	$K_v = \frac{q \cdot \sqrt{p}}{\sqrt{Dp_v}}$	$C_v = 1.17 \cdot K_v$
STEAM	CRITICAL PRESSURE DROP $\Delta p \geq 0.5 \cdot p_1$	SUB-CRITICAL PRESSURE DROP $\Delta p < 0.5 \cdot p_1$
SATU-RATED STEAM	$K_v = \frac{G}{11.35 \cdot p_1}$	$K_v = \frac{G}{22.7 \cdot \sqrt{\Delta p \cdot p_2}}$
SUPER-HEATED STEAM	$K_v = \frac{G \cdot k}{11.35 \cdot p_1}$ $k = 1 + 0.0012 \cdot t_s$	$K_v = \frac{G \cdot k}{22.7 \cdot \sqrt{\Delta p \cdot p_2}}$

Kv = Flow coefficient, m^3/h, at Δp = 1 bar
Cv = Flow coefficient, US gallons/min, at Δp = 1psi
$p1$ = Pressure before valve, bar absolute
$p2$ = Pressure after valve, bar absolute
pv = Pressure drop across valve, p_1 - p_2, bar
p = Density, kg/dm^3 (note units)
q = Liquid flow rate, m^3/h
G = Steam flow rate, kg/h
ts = Steam superheating temperature, °C
k = Correction factor for superheated steam

Valves connected in parallel

$$K_v = K_{v1} + K_{v2} + K_v$$

Valves connected in series

$$\frac{1}{(K_v)^2} = \frac{1}{(K_{v1})^2} + \frac{1}{(K_{v2})^2}$$

4.2 General

When designing HVAC-systems, often uncertainty exists regarding the magnitude of the pressure drop across various components. The following information will suffice for rough estimates, although the manufacturers specifications always should be consulted when making accurate calculations.

A

4.3 Guide for quick estimates

The following are commenly encountered pressure drops:

$\Delta p_P =$ pressure drop on primary side of heat exchangers.

$\Delta p_S =$ pressure drop on secondary side of heat exchangers.

Water heater (tap water)	$\begin{cases}\Delta p_P = 2-7kPa, 20kPa, max.\\ \Delta p_s = 10-30kPa, 50kPa, max.\end{cases}$
Heat exchanger (radiator network, air conditioning, snow melting)	$\begin{cases}\Delta p_P = 20kPa.max.\\ \Delta p_s = 15kPa.max.\end{cases}$
Radiators without radiator valves	$\Delta p = 0.5\ kPa$
Low flow systems with radiator	$Dp = 10\ kPa$
Convectors	$Dp = 5-20\ kPa$
Fan coils	$Dp = 5-20\ kPa$
Heating/cooling coils	$\Delta p = 5-20kPa$
Boilers single family houses	$\Delta p = 1-5\ kPa$
Boilers apartment houses	$\Delta p = 0.5-10\ kPa$
Water meter district heating	$\Delta p_P = 15\ kPa$
Filters	$\Delta p = 15\ kPa$
Pipe resistance copper pipe	$\Delta p = 0.2\ kPa/m$
Pipe resistance steel pipe	$\Delta p = 0.4\ kPa/m$
Pipe resistance total in a substation (district heating)	$\Delta p = 10\ kPa$

4.4 Calculations

4.4.1 Example 1

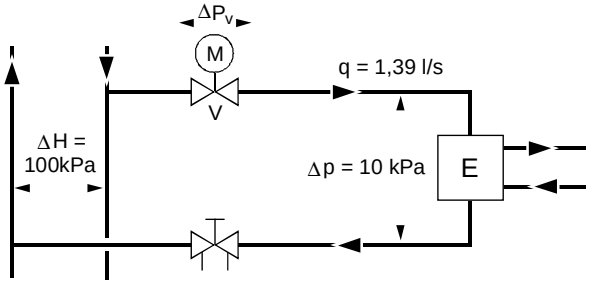


Fig. 25: Example 1

To obtain a flow in the primary circuit of 1.39 l/s a pressure drop of 10kPa is required. A pressure drop of 100kPa is available. Calculate the flow coefficient K_v and the authority β of the valve.

Solution

p_v = 100 - 10 = 90kPa

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p}} = \frac{36 \cdot 1.39}{\sqrt{90}} = 5.27\ (kPa.\ 1/s)$$

+40% = 7.38

K_v = 5.27

-20% = 4.2

Select K_v = 6.3

Valve authority, β

K_v = 6.3 q = 1.39 l/s

$$Dp_v = 90 \cdot \left(\frac{5.27}{6.3}\right)^2 = 63\ kPa$$

$$\beta = \frac{63}{100} = 0.63$$ (a good value as β should be >0.5)

Pressure drop to create in the balancing valve

$$DH = Dp_v - Dp_E = 100 - 63 - 10 = 27kPa$$

4.4.2 Example 2

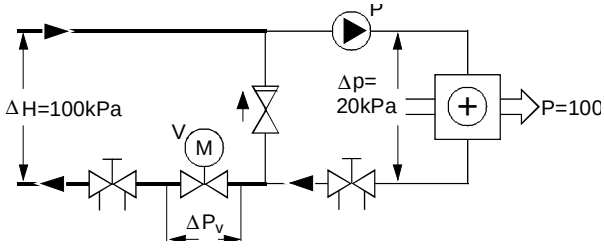


Fig. 26: Example 2

An air preheater must deliver 100kW.

- Sizing of V.
- Sizing of circulating pump, *P*.
- Calculate the authority of the valve.

Solution

$P = q \cdot \Delta T \cdot 1.16\ kW$

100 = q x (100-35) x 1.16

q = 1,3 m^3/h = 0,371 l/s

The pump *P* should be dimensioned for the flow, q = 1.3 m^3/h, and Δp = 20kPa, plus the remaining pressure drops in the circuit. Select the nearest larger pump and compensate with valve.

4.4.3 Example 3, Control valve V

The pump *P* provides a constant flow in the secondary circuit and overcomes drops in the secondary circuit.
V should be dimensioned for the entire pressure drop, Δp = 100 kPa.

$$K_v = \frac{36 \cdot q}{\sqrt{DH}} = \frac{36 \cdot 0.37}{\sqrt{100}} = 1.33 \quad (kPa, l/s)$$

Valve authority, β = 1.0
Choose right K_V

4.4.4 Example 4, Heating, radiator circuit

Heat demand

50 apartments, each with an average area of 65 m^2.
A heating demand of 60W/m^2 gives

$P = 50 \cdot 65 \cdot 60 = 195\ kW$

Similarly, a cellar area of 600m^2, with a heating demand of 15 W/m^2, gives 9kW.

$P_{tot} = 195 + 9 = 204kW$

4.4.5 Example 5, Radiator valve V1

$P = q \cdot \Delta T \cdot 1.16$

$204 = q \cdot (100 - 50) \cdot 1.16$

$q = 3.5m^3/h = 0.97l/s$

Pressure drop in the circuit

Heat exchanger $\Delta p_P = 35kPa$

Water meter and piping $\Delta p = 25kPa$

$\Delta p_v = 150 - 35 - 25 = 90kPa$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} = \frac{36 \cdot 0.27}{\sqrt{90}} = 3.68 \quad (kPa, l/s)$$

+40% = 5.2

Basic K_V - value = 3.68

-20% = 2.9

Select: K_V = 4.0
EQ% (Logarithmic) characteristic.

Valve authority, β

$$\beta = \frac{90}{150} = 0.6$$

Valve close-off pressure

Can the primary valve close off the maximum differential pressure?

Is Δp_c (maximum permissible Δp across a closed valve) lower than the maximum value permitted by the combination of actuator, valve type and valve size? If not, the valve leakage will be excessive (>0.05% of Kv).

4.5 Explanation Examples

4.5.1 Medium Water

Drawing Line in Fig. 27

Given: -Volume flow V_{100} = 6.0m³/h
-Pressure drop Δp_v = 0.9bar (= 90kPa)

Searched for: -k_{vs} - value

The point of intersection of the two drawing lines shows the k_v - value 6.3.

Result: Select a valve with k_{vs} = 6.3m³/h

4.5.2 Medium Steam

Example A: Drawing Line 1 in Fig. 28

Given: -Max. mass flow of saturated steam G_S = 370kg/h
-Primary valve pressure p_1 = 2.8bar (absolute)
-Pressure drop Δp_v = 0.6bar

Searched for: k_{vs} - value

From the point of intersection of p_1 = 2.8bar with Δp_v = 0.6bar move horizontal into the k_v - value area.
Then from the mass flow of saturated steam G_S = 370kg/h move vertically downwards.
The point of intersection with the horizontal and vertical drawing line is between k_v - value 13.7 and 16.

Result: Select a valve with k_{vs} = 16.0m³/h

Example B: Drawing Line 1 in Fig. 28

Given: -Max. mass flow of superheated steam G_S = 1300kg/h
-Primary valve pressure p_1 = 1.2bar (absolute)
-Pressure drop Δp_v = 0.35bar
-Superheat Δt = 100°C

Searched for: k_{vs} - value

From the point of intersection of p_1 = 1.2bar with Δp_v = 0.35bar move horizontal into the k_v - value area.
Then from the mass flow of superheated steam G_S = 1300kg/h follow parallel to the lines and move vertically upwards to the point of intersection with the horizontal line for the superheat Δt = 100°C.
From this point move vertically upwards.
The point of intersection with the horizontal drawing line shows the k_v - value 100.

Result: Select a valve with k_{vs} = 100m³/h

A

DIAGRAM 1: k_{VS} - Dimensioning, Medium Water

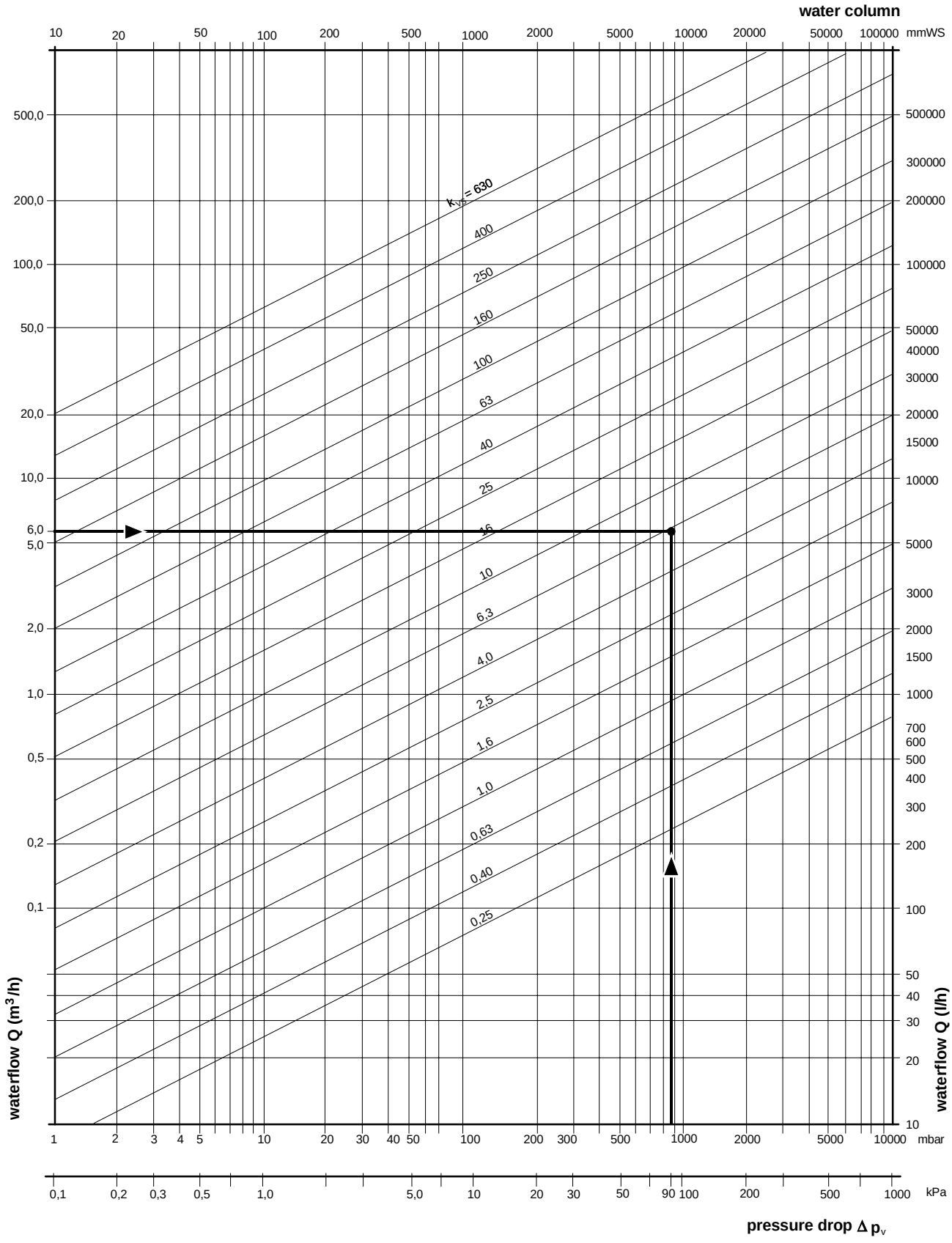


Fig. 27: Example for k_{VS}-dimensioning, medium water

DIAGRAM 2 k_{VS} - Dimensioning, Medium Steam

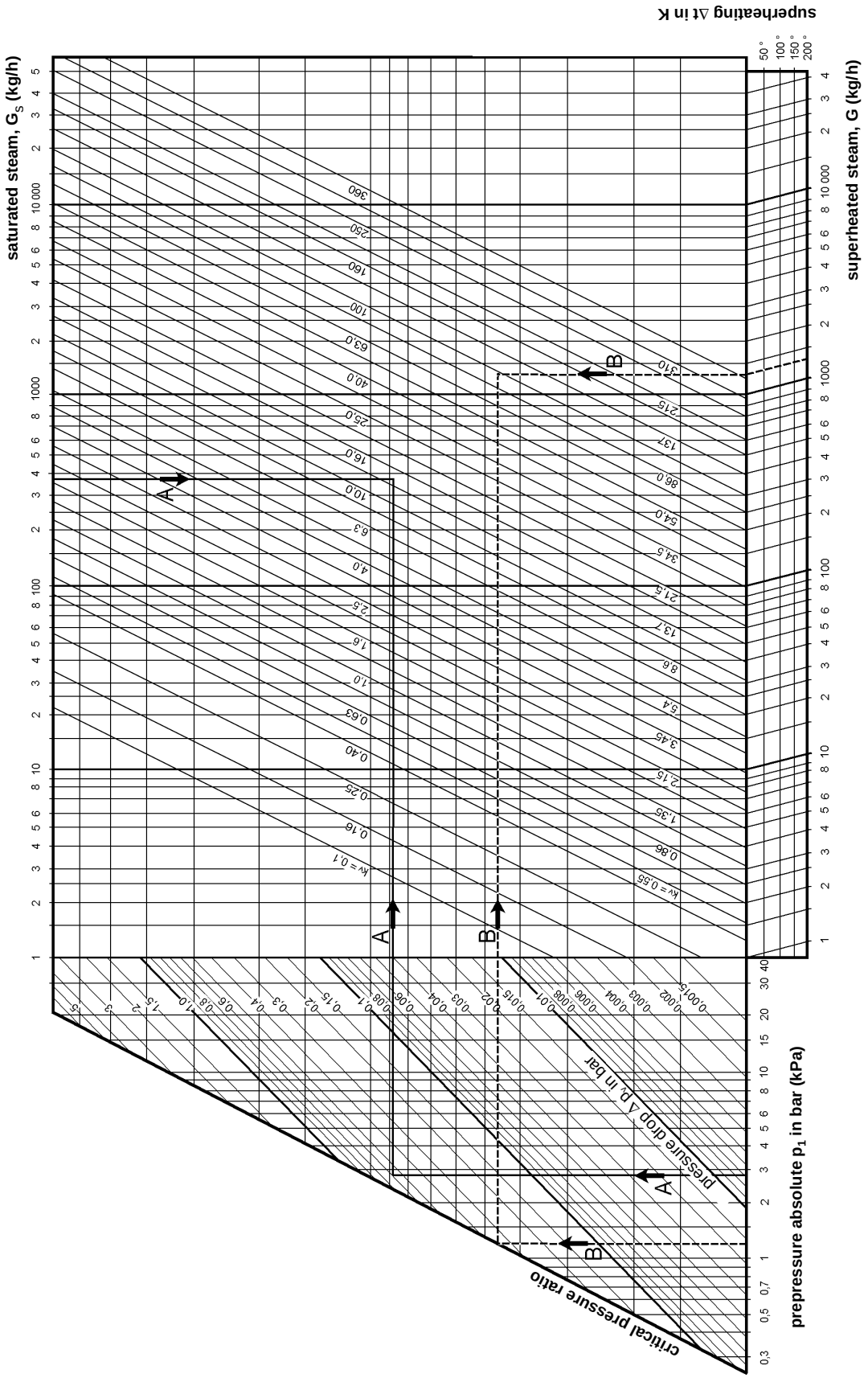


Fig. 28: Example for k_{VS}-dimensioning, medium steam

Applicable Literature:

- Technikum Luzern: ”Arbeitsunterlagen Heizungstechnik (Abt. HLK)”
- Recknagel/Sprenger ”Taschenbuch für Heizungs- und Klimatechnik”
- - Honeywell ”Engineering Manual of Automatic Control”