Honeywell | Field Devices

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Actuators — Page

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Honeywell

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

Electrical actuator on/off control, and PWM control.

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. • Effective stroke for valves 2,5/6,5 mm; maximum stroke 4/8 mm. • Fits to closing dimension 11,5 +/- 0,3 mm

2,5 mm; 90 N

Supply voltage	Power loss action	Stroke mm	End switches	Runtime min	Initial current A	Cable length m	Type
24 Vac/dc	stem retracts	2.5	–	4	0.2	1	**MT4-024-NO**
24 Vac/dc	stem retracts	2.5	–	4	0.2	2.5	**MT4-024-NO-2.5M**
24 Vac/dc	stem retracts	2.5	1	4	0.2	1	**MT4-024S-NO**
24 Vac/dc	stem extends	2.5	–	4	0.2	1	**MT4-024-NC**
24 Vac/dc	stem extends	2.5	–	4	0.2	2.5	**MT4-024-NC-2.5M**
24 Vac/dc	stem extends	2.5	1	4	0.2	1	**MT4-024S-NC**
230 Vac	stem retracts	2.5	–	4	0.4	1	**MT4-230-NO**
230 Vac	stem retracts	2.5	–	4	0.4	2.5	**MT4-230-NO-2.5M**
230 Vac	stem retracts	2.5	1	4	0.4	1	**MT4-230S-NO**
230 Vac	stem extends	2.5	–	4	0.4	1	**MT4-230-NC**
230 Vac	stem extends	2.5	–	4	0.4	2.5	**MT4-230-NC-2.5M**
230 Vac	stem extends	2.5	1	4	0.4	1	**MT4-230S-NC**

6,5 mm; 90 N

Supply voltage	Power loss action	Stroke mm	End switches	Runtime min	Initial current A	Cable length m	Type
24 Vac/dc	stem retracts	6.5	–	6	0.2	1	**MT8-024-NO**
24 Vac/dc	stem retracts	6.5	–	6	0.2	2.5	**MT8-024-NO-2.5M**
24 Vac/dc	stem retracts	6.5	1	6	0.2	1	**MT8-024S-NO**
24 Vac/dc	stem extends	6.5	–	6	0.2	1	**MT8-024-NC**
24 Vac/dc	stem extends	6.5	–	6	0.2	2.5	**MT8-024-NC-2.5M**
24 Vac/dc	stem extends	6.5	1	6	0.2	1	**MT8-024S-NC**
230 Vac	stem retracts	6.5	–	6.5	0.4	1	**MT8-230-NO**
230 Vac	stem retracts	6.5	–	6.5	0.4	2.5	**MT8-230-NO-2.5M**
230 Vac	stem retracts	6.5	1	6.5	0.4	1	**MT8-230S-NO**
230 Vac	stem extends	6.5	–	6.5	0.4	1	**MT8-230-NC**
230 Vac	stem extends	6.5	–	6.5	0.4	2.5	**MT8-230-NC-2.5M**
230 Vac	stem extends	6.5	1	6.5	0.4	1	**MT8-230S-NC**

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

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Accessories

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

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

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	**EVA1-DANFOSS**
Mounting adapter for Velta -Compact Manifold	**HCA1VEL**

Actuator thermoelectric for zone control 2,5 mm 100 N, M4410C/L

Electrical actuator on/off control.

Protection class	IP54
Position indication	with red indicator
End switch function/ capacity	SPST, capacity 5(3) A; contact closes at power on
Stem force	100 N
Control input signal	2-pt
Stroke	2.5 mm
Runtime	4 min
Cable length	1 m
Additional description	• Actuator supplied with M30 x 1,5 valve adapter (VA80); other adapters on request. • Effective stroke for Honeywell valves 2,5 mm; maximum stroke 5 mm. • Fits to closing dimension 11,5 +/- 0,3 mm.

2,5 mm; 100 N

Supply voltage	Power loss action	End switches	Initial current mA	Type
24 Vac/dc	stem retracts	–	0.3	**M4410C4000**
24 Vac/dc	stem extends	–	0.3	**M4410C4500**
24 Vac/dc	stem extends	1	0.3	**M4410C4540**
230 Vac	stem retracts	–	0.5	**M4410L4000**
230 Vac	stem extends	–	0.5	**M4410L4500**
230 Vac	stem extends	1	0.5	**M4410L4540**

Actuator thermoelectric 0..10V for radiator/terminal units, 2,5 mm 100 N, M4410

Electrical actuator for (radiator) valves with connection size M30 x 1,5. The actuator is supplied with the M44-VA10 adapter (closing dimension 11,5 mm). This suits the following valves:

- V58xxA4, V58xxC4, VSO
- V300, V2000
- V2464, V2474

A separate adapter can be ordered (M44-VA50). With this adapter the actuator fits to the valves with closing dimension 10,5 mm.

Protection class	IP54
Stem force	100 N
Control input signal	0..10V=
Stroke	2.5 mm
Power loss action	stem extends
Runtime	75 s
Cable length	optional: 1, 3 ,5 m
Required materials	check accessories
Additional description	Effective stroke for Honeywell valves 2,5 mm; maximum stroke 4 mm.

2,5 mm; 100 N

Supply voltage	Type
24 Vac	**M4410E1510**
24 Vdc	**M4410K1515**

Required Cable (old cable of MT010 actuators can also be used)

Cable with plug, 1 meter, 3 x 0,22 mm^2 (1 piece)	**M44-MOD-1M/U**
Cable with plug, 1 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-1M**
Cable with plug, 3 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-3M**
Cable with plug, 5 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-5M**
Non-halogen cable with plug, 1 meter, 3 x 0,22 mm^2 (1 piece)	**M44-MOD-1MH/U**
Non-halogen cable with plug, 1 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-1MH**
Non-halogen cable with plug, 3 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-3MH**
Non-halogen cable with plug, 5 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-5MH**

Valve Adapters M30 x 1,5

Valve adapter with closing dimension 11,5mm (10 pieces)	**M44-VA10**
Valve adapter with closing dimension 10,5mm (10 pieces)	**M44-VA50**

Actuator 3-pt for terminal unit/radiator, 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
Supply voltage	24 Vac
Stem force	90 N
Control input signal	3-pt
Stroke	2.5 mm
Runtime	57 s
Additional description	Manual operation with valve cap.

2,5 mm; 90 N

Cable length m	Type
0.9	**M7410A1001**
3	**M7410A1001-3M**

Accessories

Adapter for Danfoss RA2000	**IRA-AD**

Fast motoric actuator for terminal unit/radiator, 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

Supply voltage	Type
24 Vac/dc	**M5410C1001**
230 Vac	**M5410L1001**

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

Electrical actuator floating control.

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
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; for valve series: V5078B, V5822A, V5823A/C, V5832A, V5833A/C, VSM

Stem force N	Supply voltage	Manual operation	End switches	Cable length m	Type
180	24 Vac	–	–	1.5	**M7410C1007**
180	24 Vac	–	–	10	**M7410C1007-10M**
180	24 Vac	•	–	1.5	**M6410C2023**
180	24 Vac	•	2	1.5	**M6410C4029**
180	230 Vac	•	–	1.5	**M6410L2023**
180	230 Vac	•	2	1.5	**M6410L4029**

6,5 mm; 300 N; for valve series: V5825B, V5832B2, V5833A2

Stem force N	Supply voltage	Manual operation	End switches	Cable length m	Type
300	24 Vac	–	–	1.5	**M7410C1015**
300	24 Vac	•	–	1.5	**M6410C2031**
300	24 Vac	•	2	1.5	**M6410C4037**
300	230 Vac	•	–	1.5	**M6410L2031**
300	230 Vac	•	2	1.5	**M6410L4037**

Accessories

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

Actuator 0/2..10V for zone control, 90/180/300 N, M7410E

Electrical actuator modulating control.

Protection class	IP42
Position indication	with red indicator
End switch function/ capacity	SPDT, capacity 1A inductive, 5A resistive
Supply voltage	24 Vac
Control input signal	0/2..10V=
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.

2,7 mm; 90 N; for valve series V5004TY. 2,5 mm; 90 N; for valve series V5822A, V5823A/C, V5832A, V5833A/C, VSO and TRV V20/V30

Stem force N	Stroke mm	Manual operation	End switches	Runtime s	Type
90	2.5	–	–	70	**M7410E5001**

6,5 mm; 180 N; for valve series: V5078B, V5822A, V5823A/C, V5832A, V5833A/C, VSM

Stem force N	Stroke mm	Manual operation	End switches	Runtime s	Type
180	6.5	–	–	150	**M7410E1002**
180	6.5	•	–	150	**M7410E2026**
180	6.5	•	2	150	**M7410E4022**

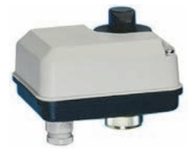
6,5 mm; 300 N; for valve series: V5825B, V5832B2, V5833A2

Stem force N	Stroke mm	Manual operation	End switches	Runtime s	Type
300	6.5	–	–	150	**M7410E1028**
300	6.5	•	–	150	**M7410E2034**
300	6.5	•	2	150	**M7410E4030**

Accessories

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

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



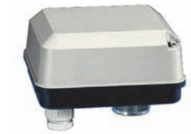
Electrical actuator modulating control, for valve series: V5825B. Also suitable for V5832B/V5833A-series (DN25..40).

Protection class	IP54
Supply voltage	24 Vac
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 loss action	Manual operation	Runtime s	Spring return	Type
–	•	15	–	**ML7430E1005**
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

Supply voltage	Type
24 Vac	**ML6435B1008**
230 Vac	**ML6435B1016**

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 (up to 130 °C) in combination with V5016A/V5025A/V5328A/V5049A.

20 mm; 600 N

Supply voltage	Power loss action	Manual operation	Runtime min	Spring return	Type
24 Vac	–	•	1.0	–	**ML6420A3007**
24 Vac	–	–	1.0	–	**ML6420A3072**
24 Vac	–	•	0.5	–	**ML6420A3023**
230 Vac	–	•	1.0	–	**ML6420A3015**
230 Vac	–	•	0.5	–	**ML6420A3031**

20 mm; 600 N, Spring return

Supply voltage	Power loss action	Manual operation	Runtime min	Spring return	Type
24 Vac	stem extends	–	1.8	•	**ML6425A3006**
24 Vac	stem retracts	–	1.8	•	**ML6425B3005**
230 Vac	stem extends	–	1.8	•	**ML6425A3014**
230 Vac	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**

Large linear actuators, stroke 20/38mm

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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
Supply voltage	24 Vac
Stem force	600 N
Stroke	20 mm
Additional description	The control action is reversable. For ML7425-models: approved according DIN EN 14597 (up to 130 °C) in combination with V5016A/V5025A/V5328A/V5049A.

20 mm; 600 N

Control input signal	Power loss action	Manual operation	Runtime min	Spring return	Position feedback	Type
0/2..10V=	–	•	1.0	–	2..10V=	**ML7420A6009**
2..10V=	–	–	1.0	–	–	**ML7420A6025**
0/2..10V=	–	•	0.5	–	2..10V=	**ML7420A6017**

20 mm; 600 N, Spring return

Control input signal	Power loss action	Manual operation	Runtime min	Spring return	Position feedback	Type
0/2..10V=	stem extends	–	1.8	•	2..10V=	**ML7425A6008**
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**

Large linear actuators, stroke 20/38mm

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

Supply voltage	Stroke mm	Runtime min	Position feedback	Type
24 Vac	20	1.9	optional	**ML6421A3005**
230 Vac	20	1.9	–	**ML6421A3013**

38 mm; 1800 N

Supply voltage	Stroke mm	Runtime min	Position feedback	Type
24 Vac	38	3.5	optional	**ML6421B3004**
230 Vac	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**

Large linear actuators, stroke 20/38mm

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
Supply voltage	24 Vac
Stem force	1800 N
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**

LON linear actuators

LON actuator for radiator/zone control, 2,5/6,5 mm 90/180/300 N, M7410G

Electrical actuator with LON input signal.

Protection class	IP42
Position indication	with red indicator
LonMark(R) profile	input SNVT percent 0-100%
Transceiver type	FTT 10A
Supply voltage	24 Vac
Control input signal	LON
Cable length	1.5 m
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; for valve series: V100 (thermostatic valves), V58..A4, V58..C4, VSO

Stem force N	Stroke mm	Runtime s	Type
90	2.5	53	**M7410G1008**

6,5 mm; 180 N; for valve series: V5078B, V5822A, V5823A/C, V5832A, V5833A/C, VSM

Stem force N	Stroke mm	Runtime s	Type
180	6.5	150	**M7410G1016**

6,5 mm; 300 N; for valve series: V5825B, V5832B2, V5833A2

Stem force N	Stroke mm	Runtime s	Type
300	6.5	150	**M7410G1024**

Rotary valve actuators

Rotary Actuator, MVN

Electrical actuator for VBG control ball valves, DN15-DN32.
Actuator can easily be clicked on valve - no tool required.

Protection class	IP40
Position indication	scale plate
Torque	3 Nm
Angle of rotation	90 °
Manual operation	yes
Cable length	1.5 m

Floating control

Supply voltage	Control input signal	Runtime s	Type
24 Vac	2/3-pt	108	**MVN613A1500**
24 Vac/dc	2/3-pt	30	**MVN643A1500**
230 Vac	2/3-pt	108	**MVN663A1500**

Modulating control. Control action reversable.

Supply voltage	Control input signal	Runtime s	Type
24 Vac/dc	0/2..10V=	90	**MVN713A1500**

Accessories

Replacement screw terminal block, pluggable	**MVNAT3/B**

Rotary Actuator, MR6

Electrical actuator for VBG6 6-way ball valve, DN15-20.
Actuator can easily mounted with a single screw.

Protection class	IP44
Position indication	scale plate
Torque	8 Nm
Angle of rotation	90 °
Manual operation	yes
Cable length	1 m
Supply voltage	24 Vac
Runtime	75 s

Control input signal	Position feedback	Type
2-pt	–	**MR6-24-2POS**
0/2..10V=; 0/4..20mA	0..10V=	**MR6-24-010**

Rotary valve actuators

Compact Line Rotary 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.

Supply voltage	End switches	Type
24 Vac	–	**M6063A1003**
24 Vac	2	**M6063A4007**
230 Vac	–	**M6063L1009**
230 Vac	2	**M6063L4003**

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

Standard Line Rotary Actuator

Electrical actuator for valve series VBG (DN40..DN50)

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	Supply voltage	Control input signal	Runtime min	Position feedback	End switches	Type
10	24 Vac	3-pt	1.5	–	optional	**M6061A1013**
20	24 Vac	3-pt	1.6	–	optional	**M6061A1021**
30	24 Vac	3-pt	2.3	–	optional	**M6061A1039**
40	24 Vac	3-pt	3.5	–	optional	**M6061A1047**
10	230 Vac	3-pt	1.5	–	optional	**M6061L1019**
20	230 Vac	3-pt	1.6	–	optional	**M6061L1027**
30	230 Vac	3-pt	2.3	optional	optional	**M6061L1035**
40	230 Vac	3-pt	3.5	–	optional	**M6061L1043**

Modulating control

Torque Nm	Supply voltage	Control input signal	Runtime min	Position feedback	End switches	Type
10	24 Vac/dc	0/2..10V=	1.5	optional	–	**M7061E1012**
20	24 Vac/dc	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**

Rotary 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
Angle of rotation	90 °
Manual operation	yes
End switches	optional
Control input signal	3-pt
Position feedback	optional
Runtime	1.2 min
Additional description	Manual operation by declutch of gear.

Floating control, Fast running

Supply voltage	Type
24 Vac	**VMM40-24F**
230 Vac	**VMM40F**

Accessories for floating control motors

Feedback potentiometer 10 kohm, only for models with this option	**VMP10-90**
Auxiliary switch package (max. 2 per motor)	**VMS2**

Mounting kit for non-Honeywell valves

Universal kit for almost all valves	**ATU2040A**

Rotary valve actuators

Actuator for V5421B1090

Protection class	IP54
Supply voltage	230 Vac
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 actuators

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
Additional description	• Removable wiring box, with cable gland M20x1,5 1/2" NPT. • Rotation direction selectable by switch. • Adjustable mechanical end limits included.

For damper area of 1 square meter

Supply voltage	Control input signal	End switches	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac/dc	2/3-pt	–	110	5	1	**N0524**
24 Vac/dc	2/3-pt	2	110	5	1	**N0524-SW2**
230 Vac	2-pt	–	max. 110	5	1	**N05230-2POS**
24 Vac/dc	0/2..10V=;2/3-pt	–	90/110	5	1	**N05010**
24 Vac/dc	0/2..10V=;2/3-pt	2	90/110	5	1	**N05010-SW2**

For damper area of 2 square meters

Supply voltage	Control input signal	End switches	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac/dc	2/3-pt	–	110	10	2	**N1024**
24 Vac/dc	2/3-pt	2	110	10	2	**N1024-SW2**
230 Vac	2-pt	–	max. 140	10	2	**N10230-2POS**
24 Vac/dc	0/2..10V=;2/3-pt	–	90/110	10	2	**N10010**
24 Vac/dc	0/2..10V=;2/3-pt	2	90/110	10	2	**N10010-SW2**

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, with cable gland M20x1,5 1/2" NPT • 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

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

For damper area of 6 square meters

Supply voltage	Control input signal	Built in rotation limiter	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac	2/3-pt	–	optional	–	110	34	6	**N3424**
230 Vac	2/3-pt	–	optional	–	110	34	6	**N34230**
24 Vac/dc	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. • Removable wiring box, without cable gland (M20x1,5). • Durable plastic housing with built-in mechanical end-limits.

Supply voltage	Control input signal	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac/dc	2-pt	–	–	45	3	0.6	**S0324-2POS**
24 Vac/dc	2-pt	1	–	45	3	0.6	**S0324-2POS-SW1**
230 Vac	2-pt	–	–	45	3	0.6	**S03230-2POS**
230 Vac	2-pt	1	–	45	3	0.6	**S03230-2POS-SW1**
24 Vac/dc	0/2..10V=;3-pt	–	0..10V=	90	3	0.6	**S03010**
24 Vac/dc	0/2..10V=;3-pt	1	0..10V=	90	3	0.6	**S03010-SW1**

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

Damper actuators

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. • Removable wiring box, without cable gland (M16x1,5). • Actuator can be locked and manually wound.

Supply voltage	Control input signal	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac/dc	2-pt	optional	–	45	10	1.5	**S1024-2POS**
24 Vac/dc	2-pt	2	–	45	10	1.5	**S1024-2POS-SW2**
230 Vac	2-pt	optional	–	45	10	1.5	**S10230-2POS**
230 Vac	2-pt	2	–	45	10	1.5	**S10230-2POS-SW2**
24 Vac/dc	0/2..10V=;3-pt	optional	0..10V=	90	10	1.5	**S10010**
24 Vac/dc	0/2..10V=;3-pt	2	0..10V=	90	10	1.5	**S10010-SW2**

Supply voltage	Control input signal	End switches	Position feedback	Runtime s	Torque Nm	Damper area m^2	Type
24 Vac/dc	2-pt	optional	–	45	20	4.6	**S2024-2POS**
24 Vac/dc	2-pt	2	–	45	20	4.6	**S2024-2POS-SW2**
230 Vac	2-pt	optional	–	45	20	4.6	**S20230-2POS**
230 Vac	2-pt	2	–	45	20	4.6	**S20230-2POS-SW2**
24 Vac/dc	0/2..10V=;3-pt	optional	0..10V=	90	20	4.6	**S20010**
24 Vac/dc	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

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Honeywell

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
Pressure rating	PN16
Port connection	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 in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
15	G1/2	1	600	–	2.5	on/off	**VSOC-215-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOC-215-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOC-215-2.5**
20	1 1/8 x 14	2.5	200	–	2.5	on/off	**VSOC-220-2.5**
20	1 1/8 x 14	4	100	–	2.5	on/off	**VSOC-220-4.0**
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 50% open

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
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	4	50	50	6.5	mod.equal%	**VSMC-220-4.0**
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	valve open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	valve open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	valve open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	valve open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	valve closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	valve open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	valve open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	valve open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	valve open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	valve open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	valve open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	valve closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	valve open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	valve open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	valve open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	valve closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	valve closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	valve closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	valve closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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 in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
15	G1/2	1	600	–	2.5	on/off	**VSOF-215-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOF-215-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOF-215-2.5**
20	G3/4	2.5	200	–	2.5	on/off	**VSOF-220-2.5**
20	G3/4	4	100	–	2.5	on/off	**VSOF-220-4.0**
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 50% open

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
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	G3/4	2.5	150	150	6.5	mod.equal%	**VSMF-220-2.5**
20	G3/4	4	50	50	6.5	mod.equal%	**VSMF-220-4.0**
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	valve open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	valve open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	valve open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	valve open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	valve closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	valve open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	valve open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	valve open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	valve open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	valve open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	valve open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	valve closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	valve open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	valve open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	valve open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	valve closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	valve closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	valve closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	valve closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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
Pressure rating	PN16
Port connection	ext. thread con. sealing
Additional description	Valves are supplied with adjustment cap (not for on/off types).

2,5 mm

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
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 mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
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**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	valve open	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**MT4-024S-NO**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**MT4-024S-NC**
	2-pt	230 Vac	valve open	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	valve open	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	valve open	–	1	4 min	1	**MT4-230S-NO**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	valve closed	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**MT4-230S-NC**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	valve closed	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	valve closed	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**M4410C4000**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**M4410C4540**
	2-pt	230 Vac	valve open	–	–	4 min	1	**M4410L4000**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**M4410L4540**
6.5 mm; 90 N	2-pt	24 Vac/dc	valve open	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	valve open	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	valve open	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	6 min	1	**MT8-024S-NO**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	6 min	1	**MT8-024S-NC**
	2-pt	230 Vac	valve open	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	valve open	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	valve open	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	valve open	–	1	6.5 min	1	**MT8-230S-NO**
	2-pt	230 Vac	valve closed	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	valve closed	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	valve closed	–	1	6.5 min	1	**MT8-230S-NC**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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
Pressure rating	PN16
Port connection	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	in.		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	in.		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**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

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

2

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	valve open	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	4 min	1	**MT4-024S-NO**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**MT4-024S-NC**
	2-pt	230 Vac	valve open	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	valve open	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	valve open	–	1	4 min	1	**MT4-230S-NO**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	valve closed	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**MT4-230S-NC**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	valve closed	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	valve closed	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	valve open	–	–	4 min	1	**M4410C4000**
	2-pt	24 Vac/dc	valve closed	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	valve closed	–	1	4 min	1	**M4410C4540**
	2-pt	230 Vac	valve open	–	–	4 min	1	**M4410L4000**
	2-pt	230 Vac	valve closed	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	valve closed	–	1	4 min	1	**M4410L4540**
6.5 mm; 90 N	2-pt	24 Vac/dc	valve open	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	valve open	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	valve open	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	valve open	–	1	6 min	1	**MT8-024S-NO**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	valve closed	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	valve closed	–	1	6 min	1	**MT8-024S-NC**
	2-pt	230 Vac	valve open	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	valve open	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	valve open	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	valve open	–	1	6.5 min	1	**MT8-230S-NO**
	2-pt	230 Vac	valve closed	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	valve closed	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	valve closed	–	1	6.5 min	1	**MT8-230S-NC**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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

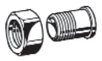
Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

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
Pressure rating	PN16
Port connection	ext. thread flat sealing
Flow char.	linear
Additional description	Valves are supplied with adjustment cap.

6,5 mm

DN size mm	Connection diameter in.	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**
Spare adjustment cap (pack of 10)	**5585100**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	Type
6.5 mm; 300 N	0/2..10V=	24 Vac	–	–	–	150	1.5	–	**M7410E1028**
	0/2..10V=	24 Vac	–	•	–	150	1.5	–	**M7410E2034**
	0/2..10V=	24 Vac	–	•	2	150	1.5	–	**M7410E4030**
	3-pt	24 Vac	–	–	–	150	1.5	–	**M7410C1015**
	3-pt	24 Vac	–	•	–	150	1.5	–	**M6410C2031**
	3-pt	24 Vac	–	•	2	150	1.5	–	**M6410C4037**
	3-pt	230 Vac	–	•	–	150	1.5	–	**M6410L2031**
	3-pt	230 Vac	–	•	2	150	1.5	–	**M6410L4037**
	LON	24 Vac	–	–	–	150	1.5	–	**M7410G1024**
6.5 mm; 400 N	0/2..10V=	24 Vac	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24 Vac	valve closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24 Vac	valve closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230 Vac	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	steam (water)
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
Pressure rating	PN25
Port connection	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 in.	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**

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

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	Type
6.5 mm; 300 N	0/2..10V=	24 Vac	–	–	–	150	1.5	–	**M7410E1028**
	0/2..10V=	24 Vac	–	•	–	150	1.5	–	**M7410E2034**
	0/2..10V=	24 Vac	–	•	2	150	1.5	–	**M7410E4030**
	3-pt	24 Vac	–	–	–	150	1.5	–	**M7410C1015**
	3-pt	24 Vac	–	•	–	150	1.5	–	**M6410C2031**
	3-pt	24 Vac	–	•	2	150	1.5	–	**M6410C4037**
	3-pt	230 Vac	–	•	–	150	1.5	–	**M6410L2031**
	3-pt	230 Vac	–	•	2	150	1.5	–	**M6410L4037**
	LON	24 Vac	–	–	–	150	1.5	–	**M7410G1024**
6.5 mm; 400 N	0/2..10V=	24 Vac	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24 Vac	valve closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24 Vac	valve closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230 Vac	valve closed	–	–	60	–	•	**ML6435B1016**

Two-way control valve PN16, external threaded connections DN15-50, V5011E

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

Valve type	2-way
Materials	body brass, stem stainless steel; plug brass
Action to open	stem up
Stroke	20 mm
Media temp.	2 ... 170 °C
Pressure rating	PN16
Port connection	ext. thread flat sealing
Flow char.	mod.equal%
Medium type	water

20 mm

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
15	G1 1/8	0.63	1600	–	**V5011E1165**
15	G1 1/8	1	1600	–	**V5011E1171**
15	G1 1/8	1.6	1600	–	**V5011E1189**
15	G1 1/8	2.5	1600	–	**V5011E1197**
15	G1 1/8	4	1600	–	**V5011E1205**
20	G1 1/4	6.3	1600	–	**V5011E1213**
25	G1 1/2	10	1000	1600	**V5011E1221**
32	G2	16	700	1600	**V5011E1229**
40	G2 1/4	25	460	1500	**V5011E1237**
50	G2 3/4	40	260	850	**V5011E1245**

Accessories

Internal threaded fitting for DN15 valve pipe size Rp 1/2"	**AC-15TF**
Internal threaded fitting for DN20 valve pipe size Rp 3/4"	**AC-20TF**
Internal threaded fitting for DN25 valve pipe size Rp 1"	**AC-25TF**
Internal threaded fitting for DN32 valve pipe size Rp 1 1/4"	**AC-32TF**
Internal threaded fitting for DN40 valve pipe size Rp 1 1/2"	**AC-40TF**
Internal threaded fitting for DN50 valve pipe size Rp 2"	**AC-50TF**

2-way linear valves, stroke 20/38mm

2

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**

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
Pressure rating	PN16
Port connection	internal threads ISO228
Flow char.	mod.equal%

20 mm, plug brass

Medium type	DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Type
	mm		kPa	kPa	
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	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Type
	mm		kPa	kPa	
steam (water)	15	0.63	1600	–	**V5011S1005**
steam (water)	15	1	1600	–	**V5011S1013**
steam (water)	15	1.6	1600	–	**V5011S1021**
steam (water)	15	2.5	1600	–	**V5011S1039**
steam (water)	15	4	1600	–	**V5011S1047**
steam (water)	20	6.3	1600	–	**V5011S1054**
steam (water)	25	10	1000	1600	**V5011S1062**
steam (water)	32	16	700	1600	**V5011S1070**
steam (water)	40	25	460	1500	**V5011S1088**
steam (water)	50	40	260	850	**V5011S1096**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**

2-way linear valves, stroke 20/38mm

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	steam (water)
Materials	body cast iron GG25, trim stainless steel
Action to open	stem up
Pressure rating	PN16
Port connection	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..50 approved according DIN EN 14597 (up to 130 °C), with motors ML6425A, ML7425A.

20 mm

DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	Type
mm		kPa	kPa	mm	°C	
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	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	Type
mm		kPa	kPa	mm	°C	
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	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.

Valve series	V5016A
Valve type	2-way press. bal.
Medium type	water
Materials	body nodular iron GGG40.3, trim stainless steel
Action to open	stem up
Media temp.	2 ... 180 °C
Pressure rating	PN16
Port connection	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..80 approved according DIN EN 14597 (up to 130 °C), 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**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	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.

Valve series	V5025A
Valve type	2-way press. bal.
Medium type	water
Materials	body nodular iron GGG40.3, trim stainless steel
Action to open	stem up
Media temp.	2 ... 200 °C
Pressure rating	PN25
Port connection	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..80 approved according DIN EN 14597 (up to 130 °C), 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**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	optional	3.5	–	–	**ML6421B3012**

2-way linear valves, stroke 20/38mm

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	steam (water)
Materials	body cast steel GS-C25, trim stainless steel
Action to open	stem up
Media temp.	2 ... 220 °C
Pressure rating	PN40
Port connection	flanges ISO7005
Flow char.	mod.equal%
Additional description	Models DN15..65 approved according DIN EN 14597 (up to 130 °C), 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	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	valve open	–	optional	1.8	•	2..10V=	**ML7425B6007**
	0/2..10V=	24 Vac	valve closed	–	optional	1.8	•	2..10V=	**ML7425A6008**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	24 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	valve open	–	optional	1.8	•	optional	**ML6425B3021**
	3-pt	230 Vac	valve closed	–	optional	1.8	•	optional	**ML6425A3014**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	optional	3.5	–	–	**ML6421B3012**

V5004T Kombi-QM Pressure Independent Balancing and Control Valve

The V5004T Kombi-QM is a Pressure Independent Control Valve (PICV). It combines a flow controller and a full stroke, full authority temperature controller in one valve. Equipped with an actuator Kombi-QM provides a full stroke modulating temperature control. It is suitable for use in variable and constant flow systems. They may be used as constant flow limiter in constant flow systems (without an actuator) or as a Pressure Independent Control Valve in variable flow systems. V5004T Kombi-QM is typically used for balancing and temperature control of fan coil units, air handling units, chilled ceilings and one-pipe heating systems.

- Automatic pressure independent balancing and control
- Precise pressure independent flow performance
- Highest energy saving potential due to efficient energy transfer and minimized pump speed
- Integrated measuring possibility to find the optimal setpoint for the pump
- Reduced movements of actuators as pressure fluctuations do not influence the required temperature
- No complex calculation needed for selection
- No balancing method needed for commissioning
- Wide range of application
- Sizes DN15 up to DN150
- Various versions to support standard flow rates as well as low flow and high flow needs
- Covers two functions in one valve which reduces mounting costs
- Easy commissioning
- Pre-setting with visual flow scale at the valve
- Pre-setting by hand without the need of tools
- Pre-setting possible even when the system is running and an actuator is already mounted
- Can balance a system even if only parts of a building are in operation
- Maintenance friendly
- Emergency shutoff function with plastic cap - not for permanent use
- Measuring possibility for problematic applications

Medium type	water or water-glycol mixture according to VDI 2035
Media temp.	-10 ... 120 °C
Max. delta P	400 kPa
Pre-setting	yes
Automatic balancing support	yes
Connection of accessories	side connections
Place in installation	return
Additional description	Leakage: According to Class IV IEC 60534-2-3
Valve Control function	Pressure Independent PICV
More Information	http://www.hydronic-balancing.info/home-en.html

Valve stroke 2.9 mm

EAN code	DN size mm	Port connection	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
4029289075741	15	internal threads	Rp 1/2	45	150	20 ... 400	**V5004TY10150150**
4029289075758	15	internal threads	Rp 1/2	60	600	25 ... 400	**V5004TY10150600**
4029289075765	15	internal threads	Rp 1/2	78	780	35 ... 400	**V5004TY10150780**
4029289075772	20	internal threads	Rp 3/4	100	1000	30 ... 400	**V5004TY10201000**
4029289075789	20	internal threads	Rp 3/4	450	1500	35 ... 400	**V5004TY10201500**
4029289075796	25	internal threads	Rp 1	450	1500	35 ... 400	**V5004TY10251500**

Valve stroke 6.0 mm

EAN code	DN size mm	Port connection	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
4029289075802	20	internal threads	Rc 3/4	220	2200	25 ... 400	**V5004TY10202200**
4029289075819	20	internal threads	Rc 3/4	270	2700	25 ... 400	**V5004TY10202700**
4029289075826	25	internal threads	Rc 1	220	2200	25 ... 400	**V5004TY10252200**
4029289075833	25	internal threads	Rc 1	270	2700	25 ... 400	**V5004TY10252700**
4029289075840	32	internal threads	Rc 11/4	270	2700	25 ... 400	**V5004TY10322700**
4029289075857	32	internal threads	Rc 11/4	300	3000	35 ... 400	**V5004TY10323000**

Rotary valve (90)

EAN code	DN size mm	Port connection	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
4029289079978	32	internal threads	Rc 11/4	1800	6000	30 ... 400	**V5004TY10326000**
4029289075864	40	internal threads	Rc 11/2	2700	9000	35 ... 400	**V5004TY10409000**
4029289075871	50	internal threads	Rc 2	3300	11000	40 ... 400	**V5004TY10501200**
4029289075888	50	internal threads	Rc 2	5400	18000	35 ... 400	**V5004TY10501700**

Rotary valve with actuator included, providing position feedback

EAN code	DN size mm	Port connection	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
4029289075901	50	flanges	-	2000	20000	40 ... 400	**V5004TF1050**
4029289075918	65	flanges	-	3000	30000	30 ... 400	**V5004TF1065**
4029289075925	80	flanges	-	3000	30000	30 ... 400	**V5004TF1080**
4029289075932	100	flanges	-	5500	55000	30 ... 400	**V5004TF1100**
4029289075949	125	flanges	-	9000	90000	35 ... 400	**V5004TF1125**
4029289075956	150	flanges	-	15000	100000	50 ... 400	**V5004TF1150**

Accessories for V5004TY Kombi QM (DN15-DN25) valves with 2.9 mm stroke

MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NO-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024S-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NC-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NC-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024S-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NO-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NO-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230S-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NC-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230S-NC**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-BO**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-BG**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-AO**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-AG**
M7410A actuators 3-point, 4 mm effective stroke, 90N, floating; by use of this actuator series the max. flow of the valve is reduced by 15%.	**M7410A1001**
M7410A-3M actuators 3-point, 4 mm effective stroke, 90N, floating; by use of this actuator series the max. flow of the valve is reduced by 15%.	**M7410A1001-3M**
M4410 actuators thermoelectric 0..10V, 4.0 mm effective stroke, 100N. (cable required)	**M4410E1510**
M4410 actuators thermoelectric 0..10V, 4.0 mm effective stroke, 100N. (cable required)	**M4410K1515**
M44-MOD Cable for M4410 actuator, 1m, 10pcs	**M44-MOD-1M**
M7410 actuators thermoelectric 0..10V, 2.9 mm effective stroke, 90N, modulating.	**M7410E5001**
Radiator Thermostat Thera-2080WL with remote sensor for water and air	**T750120**

Accessories for V5004TY Kombi QM (DN20-DN32) valves with stroke 6.0mm

MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024-NO**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024-NO-2.5M**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024S-NO**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024-NC**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024-NC-2.5M**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-024S-NC**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230-NO**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230-NO-2.5M**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230S-NO**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230-NC**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230-NC-2.5M**
MT8 actuators thermoelectric, 6.5 mm effective stroke, 90N, on/off.	**MT8-230S-NC**
M5410 actuators fast motorized, 6.5 mm effective stroke, 100N, on/off.	**M5410C1001**
M5410 actuators fast motorized, 6.5 mm effective stroke, 100N, on/off.	**M5410L1001**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M7410C1007**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M7410C1007-10M**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M6410C2023**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M6410C4029**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M6410L2023**
M7410C 180N floating, actuators 3-point, 6.5 mm effective stroke.	**M6410L4029**
M7410E 180N modulating, actuators 0/2..10V, 6.5 mm effective stroke.	**M7410E1002**
M7410E 180N modulating, actuators 0/2..10V, 6.5 mm effective stroke.	**M7410E2026**
M7410E 180N modulating, actuators 0/2..10V, 6.5 mm effective stroke.	**M7410E4022**

Accessories for V5004TY Kombi QM (DN32-DN65) for Rotary Valve

Actuator 3 point, floating, 90, 10Nm, rotating, floating	**M6061A1013**
Actuator 3 point, floating, 90, 10Nm, rotating, floating	**M6061L1019**
Actuator 0/2...10V, modulating, 90, 10 Nm, rotating, modualting	**M7061E1012**

V5005T Kombi-FCU Pressure Independent Balancing and Control Valve

The V5005T Kombi-FCU is a Pressure Independent Control Valve (PICV). It combines a flow controller and a full stroke, full authority temperature controller in one valve. Equipped with an actuator Kombi-FCU provides a full stroke modulating temperature control. It is suitable for use in variable and constant flow systems. They may be used as constant flow limiter in constant flow systems (without an actuator) or as a Pressure Independent Control Valve in variable flow systems. V5005T Kombi-FCU is typically used for balancing and temperature control of fan coil units, chilled ceilings and one-pipe heating systems.

- Automatic pressure independent balancing and control
- Precise pressure independent flow performance
- Highest energy saving potential due to efficient energy transfer and minimized pump speed
- Measuring possibility to find the optimal setpoint for the pump
- Versions with or without measuring connections available
- Reduced movements of actuators as pressure fluctuations do not influence the required temperature
- No complex calculation needed for selection
- No balancing method needed for commissioning
- Wide range of application
- Sizes DN15 to DN25 cover all popular sizes on FCUs
- Various versions to support standard flow rates as well as low flow and high flow needs
- Covers hydronic balancing and temperature control in one valve thus reducing mounting costs
- Easy commissioning
- Presetting with visual flow scale indicating directly the preset liters per hour
- Pre-setting by hand without the need of tools
- Pre-setting possible even when the system is running and an actuator is already mounted
- Can balance a system even if only parts of a building are in operation
- Maintenance friendly
- Emergency shutoff function with plastic cap - not for permanent use
- Measuring possibility for problematic applications (only with versions having measuring connections)
- Dirt resistant no dead zones in the valves. Continuous flow assures self cleaning effects

Medium type	water or water-glycol mixture according to VDI 2035
Media temp.	-10 ... 120 °C
Max. delta P	400 kPa
Pre-setting	yes
Automatic balancing support	yes
Connection of accessories	side connections
Place in installation	return
Port connection	internal threads
Additional description	Leakage: According to Class IV IEC 60534-2-3
Valve Control function	Pressure Independent PICV
More Information	http://www.hydronic-balancing.info/home-en.html

Linear valve V5005 Kombi- FCU with internal threads to DIN EN 10226-1 (ISO7) with measuring connections

DN size mm	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
15	Rp 1/2	20	350	14 ... 400	**V5005TY10150350**
15	Rp 1/2	100	1000	15 ... 400	**V5005TY10151000**
20	Rp 3/4	100	1000	15 ... 400	**V5005TY10201000**
20	Rp 3/4	200	1500	20 ... 400	**V5005TY10201500**
25	Rp 1	100	1000	15 ... 400	**V5005TY10251000**
25	Rp 1	200	1500	20 ... 400	**V5005TY10251500**

Linear valve V5005 Kombi- FCU with internal threads to DIN EN 10226-1 (ISO7) without measuring connections

DN size mm	Port diameter in.	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
15	Rp 1/2	20	350	14 ... 400	**V5005TY20150350**
15	Rp 1/2	100	1000	15 ... 400	**V5005TY20151000**
20	Rp 3/4	100	1000	15 ... 400	**V5005TY20201000**
20	Rp 3/4	200	1500	20 ... 400	**V5005TY20201500**
25	Rp 1	100	1000	15 ... 400	**V5005TY20251000**
25	Rp 1	200	1500	20 ... 400	**V5005TY20251500**

Accessories

MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NO-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024S-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024-NC-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-024S-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NO-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230S-NO**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NC**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230-NC-2.5M**
MT4 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**MT4-230S-NC**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-BO**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-BG**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-AO**
M100 actuators thermoelectric, 4.0 mm effective stroke, 90N, on/off.	**M100-AG**
M7410A actuators 3-point, 4 mm effective stroke, 90N, floating; by use of this actuator series the max. flow of the valve is reduced by 15%.	**M7410A1001**
M7410A-3M actuators 3-point, 4 mm effective stroke, 90N, floating; by use of this actuator series the max. flow of the valve is reduced by 15%.	**M7410A1001-3M**
M4410 actuators thermoelectric 0..10V, 4.0 mm effective stroke, 100N. (cable required)	**M4410E1510**
M4410 actuators thermoelectric 0..10V, 4.0 mm effective stroke, 100N. (cable required)	**M4410K1515**
M44-MOD Cable for M4410 actuator, 1m, 10pcs	**M44-MOD-1M**
M7410 actuators thermoelectric 0..10V, 2.9 mm effective stroke, 90N, modulating.	**M7410E5001**
Radiator Thermostat Thera-2080WL with remote sensor for water and air	**T750120**
BasicMes-2 handheld measuring computer Computer is supplied with case and accessories	**VM242A0101**
Draining valve	**VA3401A008**
Spare set of 2 pressure test cocks G1/4"	**VS2600C001**

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
Pressure rating	PN16
Port connection	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 in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
15	G1/2	1	600	–	2.5	on/off	**VSOC-315-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOC-315-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOC-315-2.5**
20	1 1/8 x 14	2.5	200	–	2.5	on/off	**VSOC-320-2.5**
20	1 1/8 x 14	4	100	–	2.5	on/off	**VSOC-320-4.0**
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 50% open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	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	4	50	50	6.5	mod.equal%	**VSMC-320-4.0**
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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 in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	Type
15	G1/2	1	600	–	2.5	on/off	**VSOF-315-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOF-315-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOF-315-2.5**
20	G3/4	2.5	200	–	2.5	on/off	**VSOF-320-2.5**
20	G3/4	4	100	–	2.5	on/off	**VSOF-320-4.0**
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 50% open; B-AB is linear and the Kvs is one stage smaller then A-AB

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	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	G3/4	2.5	150	150	6.5	mod.equal%	**VSMF-320-2.5**
20	G3/4	4	50	50	6.5	mod.equal%	**VSMF-320-4.0**
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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.	Type
mm	in.		kPa	kPa	mm		
15	G1/2	1	600	–	2.5	on/off	**VSOC-415-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOC-415-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOC-415-2.5**
20	1 1/8 x 14	2.5	200	–	2.5	on/off	**VSOC-420-2.5**
20	1 1/8 x 14	4	100	–	2.5	on/off	**VSOC-420-4.0**
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 50% 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.	Type
mm	in.		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	4	50	50	6.5	mod.equal%	**VSMC-420-4.0**
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

2

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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.	Type
mm	in.		kPa	kPa	mm		
15	G1/2	1	600	–	2.5	on/off	**VSOF-415-1.0**
15	G1/2	1.6	300	–	2.5	on/off	**VSOF-415-1.6**
15	G1/2	2.5	150	–	2.5	on/off	**VSOF-415-2.5**
20	G3/4	2.5	200	–	2.5	on/off	**VSOF-420-2.5**
20	G3/4	4	100	–	2.5	on/off	**VSOF-420-4.0**
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 50% 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.	Type
mm	in.		kPa	kPa	mm		
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	G3/4	2.5	150	150	6.5	mod.equal%	**VSMF-420-2.5**
20	G3/4	4	50	50	6.5	mod.equal%	**VSMF-420-4.0**
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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
Pressure rating	PN16
Port connection	internal threads ISO228
Flow char.	mod.equal%
Additional description	Adapter ring 0903403 must be used for mechanical interface if an optional motor actuator is used. It has to be ordered seperately.

6,5 mm

DN size mm	Connection diameter in.	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**

Adapter ring	**0903403**

Actuators	Control input signal	Supply voltage	Manual operation	End switches	Runtime s	Cable length m	Type
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	150	1.5	**M7410E1002**
	0/2..10V=	24 Vac	•	–	150	1.5	**M7410E2026**
	0/2..10V=	24 Vac	•	2	150	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	150	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	150	10	**M7410C1007-10M**
	3-pt	24 Vac	•	–	150	1.5	**M6410C2023**
	3-pt	24 Vac	•	2	150	1.5	**M6410C4029**
	3-pt	230 Vac	•	–	150	1.5	**M6410L2023**
	3-pt	230 Vac	•	2	150	1.5	**M6410L4029**
	LON	24 Vac	–	–	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
Pressure rating	PN16
Port connection	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 mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	**Type**
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 mm	Connection diameter in.	Kvs value	Close off pressure with 90N motor kPa	Close off pressure with 180N motor kPa	Stroke mm	Flow char.	**Type**
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**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

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

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	**Type**
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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	in.		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	in.		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**
External threaded fitting for DN15 valve, pipe size 3/8"	**ACN-15T**
External threaded fitting for DN20 valve, pipe size 1/2"	**ACN-20T**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

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

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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
Pressure rating	PN16
Port connection	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	in.		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	in.		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**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	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
Pressure rating	PN16
Port connection	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	in.		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	in.		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**
Brush for WV108	**WV108B**
Spare adjustment cap (pack of 10)	**5585100**

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

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Cable length m	Type
2.5 mm; 90 N	0/2..10V=	24 Vac	–	–	–	70 s	1.5	**M7410E5001**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**MT4-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	2.5	**MT4-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**MT4-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**MT4-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	2.5	**MT4-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	4 min	1	**MT4-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**MT4-230-NC**
	2-pt	230 Vac	A-AB open	–	–	4 min	2.5	**MT4-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**MT4-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**MT4-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	4 min	2.5	**MT4-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	4 min	1	**MT4-230S-NO**
	3-pt	24 Vac	–	–	–	57 s	0.9	**M7410A1001**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	LON	24 Vac	–	–	–	53 s	1.5	**M7410G1008**
2.5 mm; 100 N	0..10V=	24 Vac	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410E1510**
	0..10V=	24 Vdc	A-AB open	–	–	75 s	optional: 1, 3,5	**M4410K1515**
	2-pt	24 Vac/dc	A-AB open	–	–	4 min	1	**M4410C4500**
	2-pt	24 Vac/dc	A-AB open	–	1	4 min	1	**M4410C4540**
	2-pt	24 Vac/dc	A-AB closed	–	–	4 min	1	**M4410C4000**
	2-pt	230 Vac	A-AB open	–	–	4 min	1	**M4410L4500**
	2-pt	230 Vac	A-AB open	–	1	4 min	1	**M4410L4540**
	2-pt	230 Vac	A-AB closed	–	–	4 min	1	**M4410L4000**
6.5 mm; 90 N	2-pt	24 Vac/dc	A-AB open	–	–	6 min	1	**MT8-024-NC**
	2-pt	24 Vac/dc	A-AB open	–	–	6 min	2.5	**MT8-024-NC-2.5M**
	2-pt	24 Vac/dc	A-AB open	–	1	6 min	1	**MT8-024S-NC**
	2-pt	24 Vac/dc	A-AB closed	–	–	3,6/16 s	1.5	**M5410C1001**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	1	**MT8-024-NO**
	2-pt	24 Vac/dc	A-AB closed	–	–	6 min	2.5	**MT8-024-NO-2.5M**
	2-pt	24 Vac/dc	A-AB closed	–	1	6 min	1	**MT8-024S-NO**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	1	**MT8-230-NC**
	2-pt	230 Vac	A-AB open	–	–	6.5 min	2.5	**MT8-230-NC-2.5M**
	2-pt	230 Vac	A-AB open	–	1	6.5 min	1	**MT8-230S-NC**
	2-pt	230 Vac	A-AB closed	–	–	3,6/16 s	1.5	**M5410L1001**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	1	**MT8-230-NO**
	2-pt	230 Vac	A-AB closed	–	–	6.5 min	2.5	**MT8-230-NO-2.5M**
	2-pt	230 Vac	A-AB closed	–	1	6.5 min	1	**MT8-230S-NO**
6.5 mm; 180 N	0/2..10V=	24 Vac	–	–	–	150 s	1.5	**M7410E1002**
	0/2..10V=	24 Vac	–	•	–	150 s	1.5	**M7410E2026**
	0/2..10V=	24 Vac	–	•	2	150 s	1.5	**M7410E4022**
	3-pt	24 Vac	–	–	–	150 s	1.5	**M7410C1007**
	3-pt	24 Vac	–	–	–	150 s	10	**M7410C1007-10M**
	3-pt	24 Vac	–	•	–	150 s	1.5	**M6410C2023**
	3-pt	24 Vac	–	•	2	150 s	1.5	**M6410C4029**
	3-pt	230 Vac	–	•	–	150 s	1.5	**M6410L2023**
	3-pt	230 Vac	–	•	2	150 s	1.5	**M6410L4029**
	LON	24 Vac	–	–	–	150 s	1.5	**M7410G1016**

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

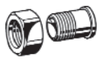
Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

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
Pressure rating	PN16
Port connection	ext. thread flat sealing
Flow char.	linear
Additional description	Valves are supplied with adjustment cap.

6,5 mm

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 300N motor kPa	Close off pressure with 400N motor kPa	Type
25	G1 1/2	4	600	1600	**V5833A2076**
25	G1 1/2	6.3	600	1600	**V5833A2084**
25	G1 1/2	10	600	1600	**V5833A2092**
32	G2	16	300	1200	**V5833A2100**
40	G2 1/4	25	-	1000	**V5833A2118**

Accessories



External threaded fitting for DN25 valve, pipe size R1"	**AC-25T**
External threaded fitting for DN32 valve, pipe size R1 1/4"	**AC-32T**
External threaded fitting for DN40 valve, pipe size R1 1/2"	**AC-40T**
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**
Spare adjustment cap (pack of 10)	**5585100**

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

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime s	Cable length m	Spring return	Type
6.5 mm; 300 N	0/2..10V=	24 Vac	–	–	–	150	1.5	–	**M7410E1028**
	0/2..10V=	24 Vac	–	•	–	150	1.5	–	**M7410E2034**
	0/2..10V=	24 Vac	–	•	2	150	1.5	–	**M7410E4030**
	3-pt	24 Vac	–	–	–	150	1.5	–	**M7410C1015**
	3-pt	24 Vac	–	•	–	150	1.5	–	**M6410C2031**
	3-pt	24 Vac	–	•	2	150	1.5	–	**M6410C4037**
	3-pt	230 Vac	–	•	–	150	1.5	–	**M6410L2031**
	3-pt	230 Vac	–	•	2	150	1.5	–	**M6410L4037**
	LON	24 Vac	–	–	–	150	1.5	–	**M7410G1024**
6.5 mm; 400 N	0/2..10V=	24 Vac	–	•	–	15	–	–	**ML7430E1005**
	0/2..10V=	24 Vac	A-AB closed	–	–	60	–	•	**ML7435E1004**
	3-pt	24 Vac	A-AB closed	–	–	60	–	•	**ML6435B1008**
	3-pt	230 Vac	A-AB closed	–	–	60	–	•	**ML6435B1016**

2

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
Pressure rating	PN16
Port connection	ext. thread flat sealing
Flow char.	mod.equal%

20 mm

DN size mm	Connection diameter in.	Kvs value	Close off pressure with 300N motor kPa	Close off pressure with 400N 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**

3-way linear valves, stroke 20/38mm

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	A-AB open	–	optional	1.8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24 Vac	A-AB closed	–	optional	1.8	•	2..10V=	**ML7425B6007**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	24 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3014**
	3-pt	230 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**

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
Pressure rating	PN16
Port connection	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**

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime min	Spring return	Position feedback	Type
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	A-AB open	–	optional	1.8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24 Vac	A-AB closed	–	optional	1.8	•	2..10V=	**ML7425B6007**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	24 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3014**
	3-pt	230 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	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
Pressure rating	PN6
Port connection	flanges ISO7005
Flow char.	mod.equal%

20 mm

DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	**Type**
mm		kPa	kPa	mm	°C	
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	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Media temp.	**Type**
mm		kPa	kPa	mm	°C	
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	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Spring return	Position feedback	**Type**
						min			
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	A-AB open	–	optional	1.8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24 Vac	A-AB closed	–	optional	1.8	•	2..10V=	**ML7425B6007**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	24 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3014**
	3-pt	230 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	optional	3.5	–	–	**ML6421B3012**

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
Pressure rating	PN16
Port connection	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

2

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Spring return	Position feedback	**Type**
						min			
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	A-AB open	–	optional	1.8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24 Vac	A-AB closed	–	optional	1.8	•	2..10V=	**ML7425B6007**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	24 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3014**
	3-pt	230 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	optional	3.5	–	–	**ML6421B3012**

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
Pressure rating	PN25/40
Port connection	flanges ISO7005
Flow char.	linear
Valve type	3-way mixing

20 mm

DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Type
mm		kPa	kPa	mm	
15	2.5	1000	2500	20	**V5050A1124**
15	4	1000	2500	20	**V5050A1132**
20	6.3	1000	2500	20	**V5050A1140**
25	10	1000	2500	20	**V5050A1157**
32	16	600	2000	20	**V5050A1165**
40	25	350	1300	20	**V5050A1173**
50	40	200	750	20	**V5050A1181**
65	63	120	500	20	**V5050A1199**
80	100	50	230	20	**V5050A1207**

38 mm, mixing

DN size	Kvs value	Close off pressure with 600N motor	Close off pressure with 1800N motor	Stroke	Type
mm		kPa	kPa	mm	
100	160	–	230	38	**V5050A1215**

3-way linear valves, stroke 20/38mm

2

Actuators	Control input signal	Supply voltage	Power loss action	Manual operation	End switches	Runtime	Spring return	Position feedback	Type
						min			
20 mm; 600 N	0/2..10V=	24 Vac	–	•	optional	0.5	–	2..10V=	**ML7420A6017**
	0/2..10V=	24 Vac	–	•	optional	1.0	–	2..10V=	**ML7420A6009**
	0/2..10V=	24 Vac	A-AB open	–	optional	1.8	•	2..10V=	**ML7425A6008**
	0/2..10V=	24 Vac	A-AB closed	–	optional	1.8	•	2..10V=	**ML7425B6007**
	2..10V=	24 Vac	–	–	optional	1.0	–	–	**ML7420A6025**
	3-pt	24 Vac	–	–	optional	1.0	–	optional	**ML6420A3072**
	3-pt	24 Vac	–	•	optional	0.5	–	optional	**ML6420A3023**
	3-pt	24 Vac	–	•	optional	1.0	–	optional	**ML6420A3007**
	3-pt	24 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3006**
	3-pt	24 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3005**
	3-pt	230 Vac	–	•	optional	0.5	–	optional	**ML6420A3031**
	3-pt	230 Vac	–	•	optional	1.0	–	optional	**ML6420A3015**
	3-pt	230 Vac	A-AB open	–	optional	1.8	•	optional	**ML6425A3014**
	3-pt	230 Vac	A-AB closed	–	optional	1.8	•	optional	**ML6425B3021**
20 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	1.9	–	2..10V=	**ML7421A3004**
	3-pt	24 Vac	–	•	optional	1.9	–	optional	**ML6421A3005**
	3-pt	230 Vac	–	•	optional	1.9	–	–	**ML6421A3013**
38 mm; 1800 N	0/2..10V=; 0/4..20mA	24 Vac	–	•	optional	3.5	–	2..10V=	**ML7421B3003**
	3-pt	24 Vac	–	•	optional	3.5	–	optional	**ML6421B3004**
	3-pt	230 Vac	–	•	optional	3.5	–	–	**ML6421B3012**

Valves rotary

3

Honeywell

Two way characterized control ball valves, PN25, DN15-50, VBG2

The VBG Control Ball Valves control hot and chilled water with glycol solutions up to 50% according to VDI2035 in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions.
The valves have a flow control insert. The characteristic is equal percentage.

Medium type	water
Materials	body brass, stem brass, ball chrome-plated brass, flow control insert Noryl
Packing	seat Teflon seals with EPDM O-rings
Angle of rotation	90 °
Media temp.	5 ... 120 °C
Pressure rating	PN25
Port connection	ext. thread flat sealing
Valve type	2-way

DN15..32 Valves; supplied with MVNAAA adapter for MVN actuators

DN size mm	Connection diameter in.	Kvs value	Close off kPa	Type
15	G 1	0.25	890	**VBG2-15-0.25**
15	G 1	0.4	890	**VBG2-15-0.4**
15	G 1	0.63	890	**VBG2-15-0.63**
15	G 1	1	890	**VBG2-15-1**
15	G 1	1.6	890	**VBG2-15-1.6**
15	G 1	2.5	890	**VBG2-15-2.5**
15	G 1	4	890	**VBG2-15-4**
15	G 1	6.3	890	**VBG2-15-6.3**
20	G 1 1/4	4	890	**VBG2-20-4**
20	G 1 1/4	6.3	890	**VBG2-20-6.3**
20	G 1 1/4	8.6	890	**VBG2-20-8.6**
25	G 1 1/2	6.3	680	**VBG2-25-6.3**
25	G 1 1/2	10	680	**VBG2-25-10**
25	G 1 1/2	16	680	**VBG2-25-16**
25	G 1 1/2	25	680	**VBG2-25-25**
32	G 2	16	680	**VBG2-32-16**
32	G 2	25	680	**VBG2-32-25**

DN40, DN50 Valves; supplied with 5112-51 adapter for M60, M70 actuators

DN size mm	Connection diameter in.	Kvs value	Close off kPa	Type
40	G 2 1/4	25	680	**VBG2-40-25**
40	G 2 1/4	40	680	**VBG2-40-40**
50	G 2 3/4	40	680	**VBG2-50-40**
50	G 2 3/4	63	680	**VBG2-50-63**

Control Ball valves

3

Accessories for DN15..32 valves

Internal threaded fitting for VBG DN15 valve, pipe size Rp 1/2"	**AC-15TF-1**
Internal threaded fitting for VBG DN20 valve, pipe size Rp 3/4"	**AC-20TF**
Internal threaded fitting for VBG DN25 valve, pipe size Rp 1"	**AC-25TF**
Internal threaded fitting for VBG DN32 valve, pipe size Rp 1 1/4"	**AC-32TF**
Replacement valve adaptor standard profile, for VBG valves, DN15..DN32	**MVNAAA/U**

Accessories for DN40, DN50 valves

Internal threaded fitting for VBG DN40 valve, pipe size Rp 1 1/2"	**AC-40TF**
Internal threaded fitting for VBG DN50 valve, pipe size Rp 2"	**AC-50TF**
Linkage set for VBG valves DN40, DN50 to M6061, M7061	**5112-51/U**

Linkage set for Damper actuators

Linkage set for VBG valves; DN15-32 for usage with S03.. actuators; DN15-50 for usage with N05.., S05.. actuators	**5112-11/U**

M6061A1013	M6061L1019	M7061E1012	MVN613A1500	MVN643A1500	MVN663A1500	MVN713A1500	
3-pt	3-pt	0/2..10V=	2/3-pt	2/3-pt	2/3-pt	0/2..10V=	Control input signal
24 Vac	230 Vac	24 Vac/dc	24 Vac	24 Vac/dc	230 Vac	24 Vac/dc	Supply voltage
10	10	10	3	3	3	3	Torque [Nm]
–	–	–	•	•	•	•	**VBG2-15-0.25**
–	–	–	•	•	•	•	**VBG2-15-0.4**
–	–	–	•	•	•	•	**VBG2-15-0.63**
–	–	–	•	•	•	•	**VBG2-15-1**
–	–	–	•	•	•	•	**VBG2-15-1.6**
–	–	–	•	•	•	•	**VBG2-15-2.5**
–	–	–	•	•	•	•	**VBG2-15-4**
–	–	–	•	•	•	•	**VBG2-15-6.3**
–	–	–	•	•	•	•	**VBG2-20-4**
–	–	–	•	•	•	•	**VBG2-20-6.3**
–	–	–	•	•	•	•	**VBG2-20-8.6**
–	–	–	•	•	•	•	**VBG2-25-6.3**
–	–	–	•	•	•	•	**VBG2-25-10**
–	–	–	•	•	•	•	**VBG2-25-16**
–	–	–	•	•	•	•	**VBG2-25-25**
–	–	–	•	•	•	•	**VBG2-32-16**
–	–	–	•	•	•	•	**VBG2-32-25**
•	•	•	–	–	–	–	**VBG2-40-25**
•	•	•	–	–	–	–	**VBG2-40-40**
•	•	•	–	–	–	–	**VBG2-50-40**
•	•	•	–	–	–	–	**VBG2-50-63**

Three way characterized control ball valves, PN25, DN15-50, VBG3

The VBG Control Ball Valves control hot and chilled water with glycol solutions up to 50% according to VDI2035 in heating, ventilating, and air conditioning (HVAC) systems to provide two-position or modulating functions.
The valves have a flow control insert. The characteristic is equal percentage.

Medium type	water
Materials	body brass, stem brass, ball chrome-plated brass, flow control insert Noryl
Packing	seat Teflon seals with EPDM O-rings
Angle of rotation	90 °
Media temp.	5 ... 120 °C
Pressure rating	PN25
Port connection	ext. thread flat sealing
Valve type	3-way mixing/diverting

DN15..32 Valves; supplied with MVNAAA adapter for MVN actuators

DN size mm	Connection diameter in.	Kvs value	Close off kPa	Type
15	G 1	0.63	340	**VBG3-15-0.63**
15	G 1	1	340	**VBG3-15-1**
15	G 1	1.6	340	**VBG3-15-1.6**
15	G 1	2.5	340	**VBG3-15-2.5**
15	G 1	4	340	**VBG3-15-4**
15	G 1	6.3	340	**VBG3-15-6.3**
20	G 1 1/4	4	340	**VBG3-20-4**
20	G 1 1/4	6.3	340	**VBG3-20-6.3**
20	G 1 1/4	8.6	340	**VBG3-20-8.6**
25	G 1 1/2	6.3	340	**VBG3-25-6.3**
25	G 1 1/2	10	340	**VBG3-25-10**
25	G 1 1/2	16	340	**VBG3-25-16**
32	G 2	16	270	**VBG3-32-16**
32	G 2	25	270	**VBG3-32-25**

DN40, DN50 Valves; supplied with 5112-51 adapter for M60, M70 actuators

DN size mm	Connection diameter in.	Kvs value	Close off kPa	Type
40	G 2 1/4	25	680	**VBG3-40-25**
40	G 2 1/4	40	680	**VBG3-40-40**
50	G 2 3/4	40	680	**VBG3-50-40**
50	G 2 3/4	63	680	**VBG3-50-63**

Control Ball valves

Accessories for DN15..32 valves

Internal threaded fitting for VBG DN15 valve, pipe size Rp 1/2"	**AC-15TF-1**
Internal threaded fitting for VBG DN20 valve, pipe size Rp 3/4"	**AC-20TF**
Internal threaded fitting for VBG DN25 valve, pipe size Rp 1"	**AC-25TF**
Internal threaded fitting for VBG DN32 valve, pipe size Rp 1 1/4"	**AC-32TF**
Replacement valve adaptor standard profile, for VBG valves, DN15..DN32	**MVNAAA/U**

Accessories for DN40, DN50 valves

Internal threaded fitting for VBG DN40 valve, pipe size Rp 1 1/2"	**AC-40TF**
Internal threaded fitting for VBG DN50 valve, pipe size Rp 2"	**AC-50TF**
Linkage set for VBG valves DN40, DN50 to M6061, M7061	**5112-51/U**

Linkage set for Damper actuators

Linkage set for VBG valves; DN15-32 for usage with S03.. actuators; DN15-50 for usage with N05.., S05.. actuators	**5112-11/U**

M6061A1013	M6061L1019	M7061E1012	MVN613A1500	MVN643A1500	MVN663A1500	MVN713A1500	
3-pt	3-pt	0/2..10V=	2/3-pt	2/3-pt	2/3-pt	0/2..10V=	Control input signal
24 Vac	230 Vac	24 Vac/dc	24 Vac	24 Vac/dc	230 Vac	24 Vac/dc	Supply voltage
10	10	10	3	3	3	3	Torque [Nm]
–	–	–	•	•	•	•	**VBG3-15-0.63**
–	–	–	•	•	•	•	**VBG3-15-1**
–	–	–	•	•	•	•	**VBG3-15-1.6**
–	–	–	•	•	•	•	**VBG3-15-2.5**
–	–	–	•	•	•	•	**VBG3-15-4**
–	–	–	•	•	•	•	**VBG3-15-6.3**
–	–	–	•	•	•	•	**VBG3-20-4**
–	–	–	•	•	•	•	**VBG3-20-6.3**
–	–	–	•	•	•	•	**VBG3-20-8.6**
–	–	–	•	•	•	•	**VBG3-25-6.3**
–	–	–	•	•	•	•	**VBG3-25-10**
–	–	–	•	•	•	•	**VBG3-25-16**
–	–	–	•	•	•	•	**VBG3-32-16**
–	–	–	•	•	•	•	**VBG3-32-25**
•	•	•	–	–	–	–	**VBG3-40-25**
•	•	•	–	–	–	–	**VBG3-40-40**
•	•	•	–	–	–	–	**VBG3-50-40**
•	•	•	–	–	–	–	**VBG3-50-63**

Six way ball valve, change-over, PN16, DN15-20, VBG6

VBG6 6-way ball valves, are designed as change-over valve to connect a 2-pipe heat exchanger (Fan-coil Unit or Ceiling) to a 4-pipe system, ideally together with the Kombi-FCU Pressure Independent Control Valve used for dynamic balancing.
The simultaneous rotation of two balls, mechanically connected to one stem, opens supply and return on one side (e.g. cooling) and closes at the same time the other side (heating). That avoids any mixing between the flows, and reduces potential energy losses. VBG6 valves are designed to be actuated by a MR6 rotary valve actuator (on/off or modulating). Position feedback on the modulating actuator can be used for remote system monitoring and system check.

Medium type	water or water-glycol mixture according to VDI 2035
Materials	body brass, inner parts brass
Packing	EPDM, PTFE, FKM
Angle of rotation	90 °
Media temp.	2 ... 110 °C
Pressure rating	PN16
Port connection	ext. thread flat sealing
Connection diameter	G 3/4 in.
Close off	200 kPa
Additional description	VBG6 valves are delivered with a flow limiter kit in the valve box. This gives flexibility in the flow rate adjustment. During installation, the used Kv value should be written on the label stripped on the valve neck.

DN size mm	Kvs value	Type
15	1.25	**VBG6-15**
20	2.8	**VBG6-20**
20	4	**VBG6-20HF**

Accessories

Fastening base for VBG6	**VBG6-063ZA**
Insulation shell for DN15 type	**VBG6-063GI-15**
Insulation shell for DN20 type	**VBG6-063GI-20**
Pliers for Kv disks	**VBG6-091SOS**
External threaded fitting for DN15 valve, pipe size R1/2"	**ACS-15T**
External threaded fitting for DN20 valve, pipe size R3/4"	**ACS-20T**

Actuators

Actuator 24Vac, on/off control; with cable 1m	**MR6-24-2POS**
Actuator 24Vac, modulating control 0/2..10V or 0/4..20mA; with cable 1m	**MR6-24-010**

MR6-24-010	MR6-24-2POS	
0/2..10V=; 0/4..20mA	2-pt	Control input signal
24 Vac	24 Vac	Supply voltage
8	8	Torque [Nm]
•	•	**VBG6-15**
•	•	**VBG6-20**
•	•	**VBG6-20HF**

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 °
Media temp.	2 ... 130 °C
Pressure rating	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**
15	2.5	100	20	20	internal threads	**DR15-2GMLA**
15	4	100	20	20	internal threads	**DR15GMLA**
20	6.3	100	20	20	internal threads	**DR20GMLA**
25	10	100	20	20	internal threads	**DR25GMLA**
32	16	100	20	20	internal threads	**DR32GMLA**
40	25	100	20	20	internal threads	**DR40GMLA**

Flanges

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Torque for reduced delta P Nm	Port connection	**Type**
20	6.3	100	20	20	flanges DIN2531	**DR20GFLA**
25	10	100	20	20	flanges DIN2531	**DR25GFLA**
32	16	100	20	20	flanges DIN2531	**DR32GFLA**
40	25	100	20	20	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**

M6061A1021	M6061A1039	M6061A1047	M6061L1027	M6061L1035	M6061L1043	M7061E1020	VMM40-24F	VMM40F	
3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	0/2..10V=	3-pt	3-pt	Control input signal
24 Vac	24 Vac	24 Vac	230 Vac	230 Vac	230 Vac	24 Vac/dc	24 Vac	230 Vac	Supply voltage
20	30	40	20	30	40	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, angle pattern, DR

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

Valve series	DR
Valve type	3-way rotary mixing, angle
Medium type	water
Materials	body cast iron GG20, inner parts chrome plated
Packing	double O-ring sealing
Angle of rotation	90 °
Media temp.	2 ... 130 °C
Pressure rating	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**
15	4	100	10	10	internal threads	**DR15MA**
20	6.3	100	10	10	internal threads	**DR20MA**
25	10	100	10	10	internal threads	**DR25MA**
32	16	100	10	10	internal threads	**DR32MA**
40	25	100	20	10	internal threads	**DR40MA**

Flanges

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Torque for reduced delta P Nm	Port connection	**Type**
40	25	100	20	10	flanges DIN2531	**DR40FA**
50	40	100	20	20	flanges DIN2531	**DR50FA**
65	63	100	20	20	flanges DIN2531	**DR65FA**
80	100	100	30	20	flanges DIN2531	**DR80FA**
100	160	100	40	30	flanges DIN2531	**DR100FA**
125	250	70	40	30	flanges DIN2531	**DR125FA**
150	630	50	40	40	flanges DIN2531	**DR150FA**
200	1600	50	40	40	flanges DIN2531	**DR200FA**

M6061A1021	M6061A1039	M6061A1047	M6061L1027	M6061L1035	M6061L1043	M7061E1020	VMM40-24F	VMM40F	
3-pt	3-pt	3-pt	3-pt	3-pt	3-pt	0/2..10V=	3-pt	3-pt	Control input signal
24 Vac	24 Vac	24 Vac	230 Vac	230 Vac	230 Vac	24 Vac/dc	24 Vac	230 Vac	Supply voltage
20	30	40	20	30	40	20	40	40	Torque [Nm]
•	–	–	•	–	–	•	–	–	**DR15MA**
•	–	–	•	–	–	•	–	–	**DR20MA**
•	–	–	•	–	–	•	–	–	**DR25MA**
•	–	–	•	–	–	•	–	–	**DR32MA**
•	–	–	•	–	–	•	–	–	**DR40MA**
•	–	–	•	–	–	•	–	–	**DR40FA**
•	–	–	•	–	–	•	–	–	**DR50FA**
•	–	–	•	–	–	•	–	–	**DR65FA**
–	•	–	–	•	–	–	–	–	**DR80FA**
–	•	–	–	•	–	–	–	–	**DR100FA**
–	•	–	–	•	–	–	–	–	**DR125FA**
–	•	–	–	•	–	–	–	–	**DR150FA**
–	–	•	–	–	•	–	•	•	**DR200FA**

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
Pressure rating	PN6
Port connection	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 Vac	24 Vac	230 Vac	230 Vac	Supply voltage
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
Pressure rating	PN6
Port connection	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 Vac	24 Vac	230 Vac	230 Vac	Supply voltage
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 °
Pressure rating	PN6

Internal threads

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Reduced delta P kPa	Torque for reduced delta P Nm	Media temp. °C	Port connection	Type
15	4	100	20	80	20	2 ... 130	internal threads	**ZR15MA**
20	6.3	100	20	80	20	2 ... 130	internal threads	**ZR20MA**
25	10	100	20	80	20	2 ... 130	internal threads	**ZR25MA**
32	16	100	20	80	20	2 ... 130	internal threads	**ZR32MA**
40	25	100	20	70	20	2 ... 130	internal threads	**ZR40MA**

Flanges

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Reduced delta P kPa	Torque for reduced delta P Nm	Media temp. °C	Port connection	Type
25	10	100	20	80	20	2 ... 130	flanges DIN2531	**ZR25FA**
32	16	100	20	80	20	2 ... 130	flanges DIN2531	**ZR32FA**
40	25	100	20	70	20	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**

M6061A1021	M6061A1039	M6061L1027	M6061L1035	M7061E1020	VMM40-24F	VMM40F	
3-pt	3-pt	3-pt	3-pt	0/2..10V=	3-pt	3-pt	Control input signal
24 Vac	24 Vac	230 Vac	230 Vac	24 Vac/dc	24 Vac	230 Vac	Supply voltage
20	30	20	30	20	40	40	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
Pressure rating	PN6
Port connection	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 Vac	24 Vac	230 Vac	230 Vac	Supply voltage
7	7	7	7	Torque [Nm]
•	•	•	•	**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
Pressure rating	PN6
Port connection	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 Vac	24 Vac	230 Vac	230 Vac	Supply voltage
7	7	7	7	Torque [Nm]
•	•	•	•	**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
Pressure rating	PN10
Port connection	external threads
Max. delta P	100 kPa
Torque for max. delta P	20 Nm

Universal Rotary Valve

DN size mm	Kvs value	Type
25	2.5	**DRU25-2.5**
25	4	**DRU25-4.0**
25	6.3	**DRU25-6.3**
25	10	**DRU25-10**
25	16	**DRU25-16**
32	10	**DRU32-10**
32	16	**DRU32-16**
32	25	**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**

M6061A1021	M6061L1027	M7061E1020	
3-pt	3-pt	0/2..10V=	Control input signal
24 Vac	230 Vac	24 Vac/dc	Supply voltage
20	20	20	Torque [Nm]
•	•	•	**DRU25-2.5**
•	•	•	**DRU25-4.0**
•	•	•	**DRU25-6.3**
•	•	•	**DRU25-10**
•	•	•	**DRU25-16**
•	•	•	**DRU32-10**
•	•	•	**DRU32-16**
•	•	•	**DRU32-25**

Rotary valves

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 °
Media temp.	2 ... 130 °C
Pressure rating	PN10
Port connection	external threads
DN size	25 mm
Max. delta P	100 kPa
Torque for max. delta P	20 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 with gasket and cap nut, DN25, pipe size 18 mm	**LSU25-18**
Soldering socket with gasket and cap nut, DN25, pipe size 22 mm	**LSU25-22**
Soldering socket with 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**

M6061A1021	M6061L1027	M7061E1020	
3-pt	3-pt	0/2..10V=	Control input signal
24 Vac	230 Vac	24 Vac/dc	Supply voltage
20	20	20	Torque [Nm]
•	•	•	**DRR25-2.5**
•	•	•	**DRR25-4.0**
•	•	•	**DRR25-6.3**
•	•	•	**DRR25-10**
•	•	•	**DRR25-16**

Butterfly valves

Butterfly valve DN25..200

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 °
Pressure rating	PN16
Port connection	wafer
Additional description	Without flanges. Actuators (M6061.., M7061.., 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 DN25-150	**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 Vac	24 Vac	24 Vac	230 Vac	230 Vac	230 Vac	230 Vac	24 Vac/dc	Supply voltage
20	30	40	20	30	40	40	20	Torque [Nm]
•	–	–	•	–	–	–	•	**V5421B1009**
•	–	–	•	–	–	–	•	**V5421B1017**
•	–	–	•	–	–	–	•	**V5421B1025**
•	–	–	•	–	–	–	•	**V5421B1033**
•	–	–	•	–	–	–	•	**V5421B1041**
–	•	–	–	•	–	–	–	**V5421B1058**
–	–	•	–	–	•	–	–	**V5421B1066**
–	–	•	–	–	•	–	–	**V5421B1074**
–	–	•	–	–	•	–	–	**V5421B1082**
–	–	–	–	–	–	•	–	**V5421B1090**

Butterfly valves

Motorized Butterfly valve DN250..300

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 °
Pressure rating	PN10
Port connection	wafer
Manual operation	with wheel
Power supply	230 Vac; 276 VA
Runtime	30 s
Media temp.	-10 ... 120 °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	Control input signal	**Type**
250	5070	250	3-pt	**V5422L1006**
300	7430	600	3-pt	**V5422L1014**

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

DN size mm	Kvs value	Torque Nm	Control input signal	**Type**
250	5070	250	0/2..10V=; 0/4..20mA	**V5422E1001**
300	7430	600	0/2..10V=; 0/4..20mA	**V5422E1019**

Frequency inverters

4

Honeywell

Inverters 0,37..18,5kW, IP20/IP21, HVAC232/402

Variable frequency drives for induction and permanent magnet motors. Compliant with EMC and LVD. HVAC232 and HVAC402 are compact in size and flexible in application with one free slot for an option board. Easy to operate and commissioning with an embedded wizard.
Torque characteristics can be adjusted to square for pumps and fans or to constant for machines in industrial or process operation.

Features
- Start up wizard
- Embedded soft-filling-and sleep function
- Configurable inputs and outputs: 2 analog inputs (voltage or current), 6 digital inputs, 3 digital outputs (2 relays, 1 open collector), 1 analog output (mA)

Series	HVAC232/402
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
Safety	EN61800-5, CE

230V series

Protection class	Voltage	1 phase input	3 phases input	Low overload (for Fan/Pump) kW	Low overload Icont A	Size	Type
IP20	230V	•	–	0.37	2.4	1	**HVAC232-P37-20**
IP20	230V	•	–	0.55	2.8	1	**HVAC232-P55-20**
IP20	230V	•	–	0.75	3.7	2	**HVAC232-P75-20**
IP20	230V	•	–	1.1	4.8	2	**HVAC232-1P1-20**
IP20	230V	•	–	1.5	7	2	**HVAC232-1P5-20**
IP20	230V	•	–	2.2	9.6	3	**HVAC232-2P2-20**

400V series

Protection class	Voltage	1 phase input	3 phases input	Low overload (for Fan/Pump) kW	Low overload Icont A	Size	Type
IP20	400V	–	•	0.55	1.9	1	**HVAC402-P55-20**
IP20	400V	–	•	0.75	2.4	1	**HVAC402-P75-20**
IP20	400V	–	•	1.1	3.3	2	**HVAC402-1P1-20**
IP20	400V	–	•	1.5	4.3	2	**HVAC402-1P5-20**
IP20	400V	–	•	2.2	5.6	2	**HVAC402-2P2-20**
IP20	400V	–	•	3	7.6	3	**HVAC402-3P0-20**
IP20	400V	–	•	4	9	3	**HVAC402-4P0-20**
IP20	400V	–	•	5.5	12	3	**HVAC402-5P5-20**
IP21	400V	–	•	7.5	16	4	**HVAC402-7P5-21**
IP21	400V	–	•	11	23	4	**HVAC402-11P-21**
IP21	400V	–	•	15	31	5	**HVAC402-15P-21**
IP21	400V	–	•	18.5	38	5	**HVAC402-18P-21**

Inverters 1,1..160kW, IP21/IP54, SmartDrive HVAC

Variable speed drives for induction- and permanent magnet 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 advanced commissioning display/keypad (parameter copy function)
- 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 controller etc.
- U/f control

Series	SmartDrive HVAC
RFI-filter	integrated
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 • EN61800-3, category C1 with optional filters Type: RFI.. (see Accessories) • EN61000-3-12
Safety	EN61800-5, CE, UL, cUL
1 phase input	no
3 phases input	yes
More Information	http://hwll.co/inverter

IP21

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	Size	Type
IP21	1.1	3.4	4	**HVAC400-1P1-21A**
IP21	1.5	4.8	4	**HVAC400-1P5-21A**
IP21	2.2	5.6	4	**HVAC400-2P2-21A**
IP21	3	8	4	**HVAC400-3P0-21A**
IP21	4	9.6	4	**HVAC400-4P0-21A**
IP21	5.5	12	4	**HVAC400-5P5-21A**
IP21	7.5	16	5	**HVAC400-7P5-21A**
IP21	11	23	5	**HVAC400-11P-21A**
IP21	15	31	5	**HVAC400-15P-21A**
IP21	18.5	38	6	**HVAC400-18P-21A**
IP21	22	46	6	**HVAC400-22P-21A**
IP21	30	61	6	**HVAC400-30P-21A**
IP21	37	72	7	**HVAC400-37P-21A**
IP21	45	87	7	**HVAC400-45P-21A**
IP21	55	105	7	**HVAC400-55P-21A**
IP21	75	140	8	**HVAC400-75P-21A**
IP21	90	170	8	**HVAC400-90P-21A**
IP21	110	205	8	**HVAC400-110-21A**
IP21	132	261	9	**HVAC400-132-21A**
IP21	160	310	9	**HVAC400-160-21A**

IP54

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	Size	Type
IP54	1.1	3.4	4	**HVAC400-1P1-54A**
IP54	1.5	4.8	4	**HVAC400-1P5-54A**
IP54	2.2	5.6	4	**HVAC400-2P2-54A**
IP54	3	8	4	**HVAC400-3P0-54A**
IP54	4	9.6	4	**HVAC400-4P0-54A**
IP54	5.5	12	4	**HVAC400-5P5-54A**
IP54	7.5	16	5	**HVAC400-7P5-54A**
IP54	11	23	5	**HVAC400-11P-54A**
IP54	15	31	5	**HVAC400-15P-54A**
IP54	18.5	38	6	**HVAC400-18P-54A**
IP54	22	46	6	**HVAC400-22P-54A**
IP54	30	61	6	**HVAC400-30P-54A**
IP54	37	72	7	**HVAC400-37P-54A**
IP54	45	87	7	**HVAC400-45P-54A**
IP54	55	105	7	**HVAC400-55P-54A**
IP54	75	140	8	**HVAC400-75P-54A**
IP54	90	170	8	**HVAC400-90P-54A**
IP54	110	205	8	**HVAC400-110-54A**
IP54	132	261	9	**HVAC400-132-54A**
IP54	160	310	9	**HVAC400-160-54A**

Inverters 1,1..30kW, 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
Protection class	IP54
More Information	http://hwll.co/inverter

IP54

Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	Type
1.1	3.3	0.75	2.2	**HVAC03C5**
1.5	4.3	1.1	3.3	**HVAC04C5**
2.2	5.6	1.5	4.3	**HVAC05C5**
3	7.6	2.2	5.6	**HVAC07C5**
4	9	3	7.6	**HVAC09C5**
5.5	12	4	9	**HVAC12C5**
7.5	16	5.5	12	**HVAC16C5**
11	23	7.5	16	**HVAC23C5**
15	31	11	23	**HVAC31C5**
18.5	38	15	31	**HVAC38C5**
22	46	18.5	38	**HVAC46C5**
30	61	22	46	**HVAC61C5**

Inverters 1,1..400kW, 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
Safety	EN61800-5, CE, UL, cUL
RFI-filter	integrated
1 phase input	no
3 phases input	yes
More Information	http://hwll.co/inverter

IP21, wall mounted; Emissions EN61800-3 (category C2), C-Tick

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	Brake chopper	**Type**
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**

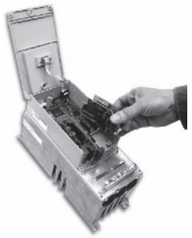
IP21, stand-alone cabinet; Emissions EN61800-3 (category 3)

Protection class	Low overload (for Fan/Pump) kW	Low overload Icont A	High overload (for Machines) kW	High overload Icont A	Brake chopper	**Type**
IP21	200	385	160	300	–	**NXS0385V35A2L0**
IP21	250	460	200	385	–	**NXS0460V35A2L0**
IP21	315	590	250	520	–	**NXS0590V35A2L0**
IP21	355	650	315	590	–	**NXS0650V35A2L0**
IP21	400	730	355	650	–	**NXS0730V35A2L0**

IP54, wall mounted; Emissions EN61800-3 (category C2), C-Tick

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.

Fieldbus cards

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
LonWorks	•	•	•	–	**OPTC4**

Fieldbus cards

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
Modbus/N2 (RS485)	–	–	•	–	**NXOPTC2**
Profibus DP	–	•	•	–	**NXOPTC3**
CANopen (slave)	–	•	•	–	**NXOPTC6**
DeviceNet	–	•	•	–	**NXOPTC7**
BACnet MS/TP (RS485)	–	•	•	–	**NXOPTCJ**
Modbus TCP, Ethernet/IP	•	–	–	•	**OPTE9**

Input/output expander cards

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
6 digital inputs/outputs (programmable)	•	–	•	–	**OPTB1**
1 analog input (mA), 2 analog output (mA)	•	•	•	–	**OPTB4**
3 relays (NO)	•	•	•	–	**OPTB5**
1 relay, 5 Vac inputs (42..240 Vac)	•	–	•	–	**OPTB9**
1 analog input (mA/V), 1 relay (NO), 1 digital output (open collector)	•	–	–	–	**OPTBF**
3 digital inputs, 1 relay (NO/NC), 1 digital output	–	•	–	–	**NXLOPTAA**
standard NXS slot A board: 6 DI, 1 DO (open collector), 2 AI, 1 AO	–	–	•	–	**NXOPTA1**
2 relays (1 NO, 1 NO/NC), 1 thermistor	–	•	•	–	**NXOPTB2**
3 Pt100 input	–	–	•	–	**NXOPTB8**
1 Thermistor, 2x RO	–	–	–	•	**OPTB2**
Pt1000, Ni1000, KTY84x	•	–	–	•	**OPTBH**
Required external cover to fix option boards on HVAC232/402 frame size 1..3 for devices up to 5,5 kW	–	–	–	•	**ENC-Slot-MI1-MI3**
Required internal moulding to fix option boards on HVAC232/402 frame size 4..5 for devices bigger than 5,5 kW	–	–	–	•	**ENC-Slot-MI4-MI5**

SmartDrive PC connection tools and cables

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	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**

NXL/NXS PC connection tools and cables

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
NXL RS232 adapter (for PC connection)	–	•	–	–	**NXLPANRS**
2 m RS232 cable	–	•	•	–	**RS232C2M**
4 m RS232 cable	–	•	•	–	**RS232C-4M**

SmartDrive HVAC display panels

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
SmartDrive HVAC advanced commissioning display/keypad with parameter copy function	•	–	–	–	**HVAC-HMI-A**

NXL Display panels

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
NXL standard 7 -segment display	–	•	–	–	**NXLPANC**

NXS Display panels

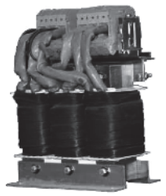
Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
NXS standard alpha-numeric display	–	–	•	–	**NXPANA**
NXS special display for Cyrillic or Chinese letters	–	–	•	–	**NXPANG**

Display panel kits

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	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**
HVAC232/402 door installation set including 2m cable and display	–	–	–	•	**HVACDOORKIT**
SmartDrive HVAC door installation set for display panel, 3m cable	•	–	–	–	**HVAC-DOOR-KIT**

HVAC232/402 IP20 to IP21 upgrade kits

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
IP21 enclosure upgrade kit for SmartDrive HVAC232/402, size MI1	–	–	–	•	**COMP-IP21-KIT1**
IP21 enclosure upgrade kit for SmartDrive HVAC232/402, size MI2	–	–	–	•	**COMP-IP21-KIT2**
IP21 enclosure upgrade kit for SmartDrive HVAC232/402, size MI3	–	–	–	•	**COMP-IP21-KIT3**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive HVAC232/402, size MI1	–	–	–	•	**COMP-NEMA1-KIT1**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive HVAC232/402, size MI2	–	–	–	•	**COMP-NEMA1-KIT2**
IP21 enclosure upgrade kit with additional wiring terminal cover for SmartDrive HVAC232/402, size MI3	–	–	–	•	**COMP-NEMA1-KIT3**



NXL HVAC/NXS IP21 to IP54 upgrade kits

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	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	HVAC400	NXL HVAC	NXS	HVAC232/402	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**

SmartDrive HVAC C1 conducted emission filter IP54

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
C1 RFI-filter for size 4	•	–	–	–	**RFI-0012-5-IP54**
C1 RFI-filter for size 5	•	–	–	–	**RFI-0031-5-IP54**
C1 RFI-filter for size 6	•	–	–	–	**RFI-0061-5-IP54**
C1 RFI-filter for size 7	•	–	–	–	**RFI-0105-5-IP54**

Main cooling fan spare parts for inverters

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
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**
SmartDrive HVAC spare part fan size 4 (HVAC400-1P1..HVAC400-5P5)	•	–	–	–	**HVAC-FAN-4**
SmartDrive HVAC spare part fan size 5 (HVAC400-7P5..HVAC400-15P)	•	–	–	–	**HVAC-FAN-5**
SmartDrive HVAC spare part fan size 6 (HVAC400-18P..HVAC400-30P)	•	–	–	–	**HVAC-FAN-6**
SmartDrive HVAC spare part fan size 7 (HVAC400-37P..HVAC400-55P)	•	–	–	–	**HVAC-FAN-7**
SmartDrive HVAC spare part fan size 8 (HVAC400-75P..HVAC400-110P)	•	–	–	–	**HVAC-FAN-8**
SmartDrive HVAC spare part fan size 9 (HVAC400-132P..HVAC400-160P)	•	–	–	–	**HVAC-FAN-9**

Parts and accessories for inverters

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HVAC400 Cooling Fans

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
HVAC400, Internal fan, frame size 4, HVAC400-1P1x - HVAC400-5P5x	•	–	–	–	**HVAC-IP54FAN-FR04**
HVAC400, Internal fan, frame size 5, HVAC400-7P5x - HVAC400-15Px	•	–	–	–	**HVAC-IP54FAN-FR05**
HVAC400, Internal fan, frame size 6, HVAC400-18Px - HVAC400-55Px	•	–	–	–	**HVAC-IP54FAN-FR06**
HVAC400, Internal fan, frame size 8, HVAC400-75Px - HVAC400-110x	•	–	–	–	**HVAC-IP54FAN-FR08**
HVAC400, Internal fan, frame size 9, HVAC400-132x - HVAC400-160x	•	–	–	–	**HVAC-IP54FAN-FR09**
HVAC400, power supply, frame size 8, HVAC400-75Px - HVAC400-110x	•	–	–	–	**HVAC-FAN-SUP-FR08**
HVAC400, power supply, frame size 9, HVAC400-132x - HVAC400-160x	•	–	–	–	**HVAC-FAN-SUP-FR09**

HVAC232/402 Cooling Fans

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
HVAC402, main fan, size 4, HVAC402-7P5-21 - HVAC402-11P-21	–	–	–	•	**HVAC402-FAN-FR4**
HVAC402, main fan, size 5, HVAC402-15P-21 - HVAC402-18P-21	–	–	–	•	**HVAC402-FAN-FR5**

NX Cooling Fans

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
NX drives, internal fan, frame size 4, power 1.15 - 5 kW	–	•	•	–	**NX-FAN-INT4**
NX drives, internal fan, frame size 5, power 7.5 - 15 kW	–	•	•	–	**NX-FAN-INT5**
NX drives, internal fan, frame size 6-7, power 18.5 - 55 kW	–	•	•	–	**NX-FAN-INT6-7**
NXS drives, internal fan, frame size 8, 75 - 110 kW	–	•	–	–	**NX-FAN-INT8**
NXS drives, internal fan, 52 mm, frame size 9, power 132 - 160 kW	–	•	–	–	**NX-FAN-INT-FR9-1**
NXS drives, internal fan, 80 mm, frame size 9, power 132 - 160 kW	–	•	–	–	**NX-FAN-INT-FR9-2**
NXS drives, main fan, frame size 8, power 75 - 110 kW	–	•	–	–	**NX-FAN-8**
NXS drives, fan retrofit kit, (main fan, power supply), frame size 8, power 75 - 110 kW, SN -13068696, Date: 2012-10-05	–	•	–	–	**RET-NX-FAN-8-SET**
NXS drives, fan retrofit kit, (main fan, power supply), frame size 9, power 132 - 160 kW, SN -13068696, Date: 2012-10-05	–	•	–	–	**RET-NX-FAN-9-SET**
NXS drives, fan kit, main fan and internal fan, frame size 8, 62 - 140 A	–	•	–	–	**NX-FAN-8-SET1**
NXS drives, fan kit, main fan and two internal fans, frame size 8, 168 - 205 A	–	•	–	–	**NX-FAN-8-SET2**
NXS drives, fan set, frame size 9, power 132 - 160 kW	–	•	–	–	**NX-FAN-9-SET**
NXS drives, fan kit, (main fans, 2x intern fans, fan power supply), frame size 9, power 132 - 160 kW	–	•	–	–	**NX-FAN-9-FULLSET**
NXS drives, fan power supply kit, frame size 8, power 75 - 110 kW	–	•	–	–	**NX-FAN-SUP-FR08**
NXS drives, fan power supply kit, frame size 9, power 132 - 160 kW	–	•	–	–	**NX-FAN-SUP-FR09**

Parts and accessories for inverters

Control Spares

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
Control box and boards for HVAC400 drives	•	–	–	–	**CONTROL-BOARD1**
Set of linking cable for HVAC400 older than March 2018	•	–	–	–	**CABLE-CONTROL**
Varnished control unit for NXS with enclosure	–	–	•	–	**NXS-CONTROL-BOX**
5 pieces of real time clock batteries	•	–	–	–	**OPT-BT-MC02-5**
Kit of terminal for HVAC400x drives	•	–	–	–	**HVAC-TERM-KIT**

Sensors Page

5

Honeywell

Wall modules for heating applications, NTC20k

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
Product description	Wall module with set-point wheel and mode selector
Additional description	Models with setpoint potentiometer delivered with 4 setpoint wheels; white and blue, relative and absolute scale.

	Type
	TF22

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

Air duct and immersion temperature sensor, NTC

Temperature range	-40 ... 150 °C
Mounting place	duct + well
Wiring terminals	2

Sensor without immersion well nor flange, NTC10k

Temperature element	Protection class	Immersion depth mm	Type
NTC10k	IP54	50	**VF10-5B54NW**
NTC10k	IP65	50	**VF10-5B65NW**
NTC10k	IP54	150	**VF10-1B54NW**
NTC10k	IP65	150	**VF10-1B65NW**
NTC10k	IP54	300	**VF10-3B54NW**
NTC10k	IP65	300	**VF10-3B65NW**

Sensor without immersion well nor flange, NTC20k

Temperature element	Protection class	Immersion depth mm	Type
NTC20k	IP54	50	**VF20-5B54NW**
NTC20k	IP65	50	**VF20-5B65NW**
NTC20k	IP54	150	**VF20-1B54NW**
NTC20k	IP65	150	**VF20-1B65NW**
NTC20k	IP54	300	**VF20-3B54NW**
NTC20k	IP65	300	**VF20-3B65NW**

Wells

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Flange

Mounting flange for air-duct application (10 pieces)	**LF-MF**

Strap-on temperature sensor, NTC

Strap diameter maximum 110 mm.

Temperature range	-30 ... 110 °C
Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	strap on pipe
Wiring terminals	2

Temperature element	Protection class	Type
NTC10k	IP54	**SF10-B54**
NTC10k	IP65	**SF10-B65**
NTC20k	IP54	**SF20-B54**
NTC20k	IP65	**SF20-B65**

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.

Temperature range	-20 ... 140 °C
Mounting place	in pipe
Wiring terminals	2
Cable length	2.5 m
Protection class	IP65
Additional description	Reaction time max. 2,5 sec. Sensing material steel 1.4571. Immersion depth adjustable.

NTC10k

Temperature element	Immersion depth mm	Sensing element (dia x L) mm; mm	Type
NTC10k fast	max. 75	5; 25	**VFF10-75P65**
NTC10k fast	max. 220	5; 170	**VFF10-220P65**
NTC10k fast	max. 300	5; 250	**VFF10-300P65**

NTC20k

Temperature element	Immersion depth mm	Sensing element (dia x L) mm; mm	Type
NTC20k fast	max. 75	5; 25	**VFF20-75P65**
NTC20k fast	max. 220	5; 170	**VFF20-220P65**
NTC20k fast	max. 300	5; 250	**VFF20-300P65**

Water temperature sensor NTC, cable type

Watertight temperature sensor with sensor cartridge.

Protection class	IP65
Temperature range	-30 ... 105 °C
Mounting place	universal
Immersion depth	50 mm
Sensing element (dia x L)	6 mm; 50 mm
Wiring terminals	2
Cable length	2 m
Additional description	Metal immersion spring is not included

Temperature element	Type
NTC10k	**KTF10-65-2M**
NTC20k	**KTF20-65-2M**

Immersion wells. KTF probe fixation with M12 Gland (do not use VF-SPRING)

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Accessory

Spring for use with old style VF immersion wells	**VF-SPRING**

Outdoor temperature sensor, NTC

Temperature range	-40 ... 70 °C
Mounting place	wall outside
Housing (HxWxD)	56 mm; 81 mm; 49 mm
Wiring terminals	2

Temperature element	Protection class	Comment	Type
NTC10k	IP54	–	**AF10-B54**
NTC10k	IP65	–	**AF10-B65**
NTC20k	IP54	–	**AF20-B54**
NTC20k	IP65	–	**AF20-B65**
NTC20k	IP65	no logo	**AF20-B65-N**

Air duct temperature sensor, NTC

Temperature element	NTC20k
Temperature range	-30 ... 80 °C
Mounting place	air duct
Wiring terminals	2
Cable length	5 m
Protection class	IP65
Additional description	Humidity 5..95 %rh, non condensing.

Immersion depth mm	Type
157	**LF20-1P65-5M**
307	**LF20-3P65-5M**

Unit temperature sensor

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

Protection class	IP65
Mounting place	air duct
Temperature element	NTC20k
Temperature range	-30 ... 70 °C
Wiring terminals	2
Additional description	Sensor supplied with mounting bracket. Sensing element size: diameter 6 mm, length 55 mm.

Cable length m	Type
2	**PF20-65-2M**
5	**PF20-65-5M**

Air duct temperature sensor, average measurement, NTC

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

Room temperature sensor, NTC20k

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**

Wall module, Pt1000

Wall module for direct wring to Excel 800, Excel Web, Excel IRC, Honeywell Comfort Point Open; or other systems using Pt1000 sensing elements

Temperature element	Pt1000
Temperature range	6 ... 40 °C
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Protection class	IP30

	Type
	T7460A1018

Air duct and immersion temperature sensor, Pt1000

Temperature element	Pt1000
Temperature range	-40 ... 150 °C
Mounting place	duct + well
Wiring terminals	2

Sensor without immersion well, nor flange

Protection class	Immersion depth mm	Type
IP54	50	**VF00-5B54NW**
IP65	50	**VF00-5B65NW**
IP54	150	**VF00-1B54NW**
IP65	150	**VF00-1B65NW**
IP54	300	**VF00-3B54NW**
IP65	300	**VF00-3B65NW**

Wells

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Flange

Mounting flange for air-duct application (10 pieces)	**LF-MF**

Strap-on temperature sensor, Pt1000

Strap diameter maximum 110 mm.

Temperature range	-30 ... 110 °C
Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	strap on pipe
Wiring terminals	2
Temperature element	Pt1000

Protection class	Type
IP54	**SF00-B54**
IP65	**SF00-B65**

Water temperature sensor Pt1000, fast reaction time

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

Temperature element	Pt1000 fast
Temperature range	-20 ... 140 °C
Mounting place	in pipe
Wiring terminals	2
Cable length	2.5 m
Protection class	IP65
Additional description	Reaction time max. 2,5 sec. Sensing material steel 1.4571. Immersion depth adjustable.

Immersion depth mm	Sensing element (dia x L) mm; mm	Type
max. 75	5; 25	**VFF00-75P65**
max. 220	5; 170	**VFF00-220P65**
max. 300	5; 250	**VFF00-300P65**

Water temperature sensor Pt1000, cable type

Approvals	IEC751 class B
Protection class	IP65
Temperature element	Pt1000
Mounting place	universal
Immersion depth	min. 50 mm
Sensing element (dia x L)	6 mm; 50 mm

Temperature range °C	Cable length m	Packing unit quantity	Type
-30 ... 105	2	1	**KTF00-65-2M**
-30 ... 105	2	50	**KTF00-65-2M-B**
-30 ... 105	5	50	**KTF00-65-5M-B**
-20 ... 260	PFTE, 2	1	**KTF00-65-2M-300**

Immersion wells. KTF probe fixation with M12 Gland (do not use VF-SPRING)

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Accessory

Spring for use with old style VF immersion wells	**VF-SPRING**

Outdoor temperature sensor, Pt1000

Approvals	IEC751 class B
Temperature element	Pt1000
Temperature range	-40 ... 70 °C
Mounting place	wall outside
Housing (HxWxD)	56 mm; 81 mm; 49 mm
Wiring terminals	2

Protection class	Type
IP54	**AF00-B54**
IP65	**AF00-B65**

Air duct temperature sensor, average measurement, Pt1000

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

Air duct and immersion temperature sensor, Ni1000

Temperature element	Ni1000
Temperature range	-40 ... 150 °C
Mounting place	duct + well
Wiring terminals	2

Sensor without immersion well, nor flange

Protection class	Immersion depth mm	Type
IP54	50	**VF01-5B54NW**
IP65	50	**VF01-5B65NW**
IP54	150	**VF01-1B54NW**
IP65	150	**VF01-1B65NW**
IP54	300	**VF01-3B54NW**
IP65	300	**VF01-3B65NW**

Wells

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Flange

Mounting flange for air-duct application (10 pieces)	**LF-MF**

Strap-on temperature sensor, Ni1000

Strap diameter maximum 110 mm.

Temperature range	-30 ... 110 °C
Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	strap on pipe
Wiring terminals	2
Temperature element	Ni1000

Protection class	Type
IP54	**SF01-B54**
IP65	**SF01-B65**

Water temperature sensor Ni1000, fast reaction time

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

Temperature element	Ni1000 fast
Temperature range	-20 ... 140 °C
Mounting place	in pipe
Wiring terminals	2
Cable length	2.5 m
Protection class	IP65
Additional description	Reaction time max. 2,5 sec. Sensing material steel 1.4571. Immersion depth adjustable.

Immersion depth mm	Sensing element (dia x L) mm; mm	Type
max. 75	5; 25	**VFF01-75P65**
max. 220	5; 170	**VFF01-220P65**
max. 300	5; 250	**VFF01-300P65**

Water temperature sensor Ni1000, cable type

Protection class	IP65
Temperature element	Ni1000
Mounting place	universal
Immersion depth	min. 50 mm
Sensing element (dia x L)	6 mm; 50 mm
Cable length	2 m

Temperature range °C	Type
-30 ... 105	**KTF01-65-2M**
-20 ... 260	**KTF01-65-2M-300**

Immersion wells. KTF probe fixation with M12 Gland (do not use VF-SPRING)

Stainless steel well, 50 mm, R1/2, PN25	**WS50**
Brass well, 50 mm, R1/2, PN10	**WB50**
Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Accessory

Spring for use with old style VF immersion wells	**VF-SPRING**

Temperature sensors Ni1000

Outdoor temperature sensor, Ni1000

Temperature element	Ni1000
Temperature range	-40 ... 70 °C
Mounting place	wall outside
Housing (HxWxD)	56 mm; 81 mm; 49 mm
Wiring terminals	2

Protection class	Type
IP54	**AF01-B54**
IP65	**AF01-B65**

Temperature sensors active 0-10V

Strap-on temperature transmitter

Strap diameter maximum 110 mm.

Protection class	IP65
Output signal	0..10V
Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	strap on pipe
Wiring terminals	3
Power supply	24 Vacdc; 0.3 VA
Additional description	Humidity 5..95 %rh, non condensing.

Temperature range °C	Type
0 ... 50	**SFV-050-1B65**
0 ... 100	**SFV-100-1B65**

Air duct and immersion temperature transmitter, 0..10V

Protection class	IP65
Output signal	0..10V
Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	duct + well
Wiring terminals	3
Power supply	24 Vacdc; 0.3 VA
Additional description	Humidity 5..95 %rh, non condensing.

Transmitter without immersion well, nor flange

Immersion depth mm	Temperature range °C	Type
150	0 ... 50	**LFV-050-1B65**
300	0 ... 50	**LFV-050-3B65**
150	0 ... 100	**LFV-100-1B65**
300	0 ... 100	**LFV-100-3B65**

Wells

Stainless steel well, 150 mm, R1/2, PN25	**WS150**
Brass well, 150 mm, R1/2, PN10	**WB150**
Stainless steel well, 300 mm, R1/2, PN25	**WS300**
Brass well, 300 mm, R1/2, PN10	**WB300**

Flange

Mounting flange for air-duct application (10 pieces)	**LF-MF**

Air Duct Temperature and R.H. sensor, LFH

For sensing or controlling of duct temperature and relative humidity.

Output voltage	2 outputs: • 0..10V for Temperature • 0..10V for Relative Humidity
Temperature range	-5 ... 55 °C
R.H. range	10 ... 90 %rh
Protection class	IP65 for enclosure; IP40 for sensing part
Mounting place	air duct
Immersion depth	230 mm
Power supply	24 Vac; 3 VA

Transmitters only

Temperature element	Wiring terminals	Type
–	4	**LFHV-2B65**

Transmitters and additional passive temperature sensor

Temperature element	Wiring terminals	Type
Pt1000	6	**LFH00-2B65**
Ni1000	6	**LFH01-2B65**
NTC10k	6	**LFH10-2B65**
NTC20k	6	**LFH20-2B65**

Wall module with temperature NTC20k sensor, 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..10V=
Power supply	24 Vac; 0.48 VA
Mounting place	internal wall
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Temperature element	Output signal	Temperature range °C	Type
–	–	–	**H7012A1010**
Pt1000	–	0 ... 50	**H7012B1008**
NTC20k	–	0 ... 50	**H7012B1024**
–	temp: 0..10V=	0 ... 50	**H7012B1030**

Outdoor R.H.- and temperature sensor/transmitter

Protection class	IP34
Temperature range	-30 ... 50 °C
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
R.H. output signal	0..10V=
Power supply	24 Vacdc; 0.25 VA
Mounting place	wall outside
Housing (HxWxD)	172 mm; 132 mm; 60 mm
Additional description	Relative humidity sensor accuracy class: 3%.

Temperature element	Output signal	Wiring terminals	Type
–	temp: 0..10V=	5	**H7508B1060**
NTC20k	–	6	**H7508B1080**

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

Room temperature/ CO2 sensor

For sensing or controlling of CO_2 concentration in buildings.

LED functions	operation as CO_2 indicator
Output signal	• CO_2: 0..10 V for 0..2000 ppm (factory setting) or 0..3000 ppm • temperature: 0..10 V
Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Additional description	Automatic baseline calibration, and quick calibration options.

Type
C7110C1001A

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	CO_2: 0..10 V for 0..2000 ppm (factory setting) or 0..3000 ppm
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
Additional description	• Temperature setpoint potentiometer delivered with 4 setpoint wheels; white and blue, relative and absolute scale. • Automatic baseline calibration, and quick calibration options.

Type
C7110D1009A

Air duct CO2 and Temperature sensor, AQS

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

Temperature range	0 ... 50 °C
Protection class	IP65 when probe mounted downwards, otherwise IP20
Mounting place	air duct
Immersion depth	200 mm
Power supply	24 Vac; 3 VA

Transmitters only

Output voltage	Temperature element	Wiring terminals	Type
0..10V: 0..50°C; 0..10V: 0..2000 ppm	-	5	**AQS71-KAM-T**

Transmitter and additional passive temperature sensor

Output voltage	Temperature element	Wiring terminals	Type
0..10V: 0..2000 ppm	Pt1000	6	**AQS-KAM-00**
0..10V: 0..2000 ppm	Ni1000	6	**AQS-KAM-01**
0..10V: 0..2000 ppm	NTC10k	6	**AQS-KAM-10**
0..10V: 0..2000 ppm	NTC20k	6	**AQS-KAM-20**

Air duct CO2, Temperature and R.H. transmitter, AQS

For sensing or controlling of CO_2 concentration, temperature and Relative Humidity measurement in buildings.

Output voltage	3 outputs 0..10V: • 0..2000 ppm • 0..50°C • 10..90 %rh
Temperature range	0 ... 50 °C
R.H. range	10 ... 90 %rh
Protection class	IP65 when probe mounted downwards, otherwise IP20
Mounting place	air duct
Immersion depth	200 mm
Power supply	24 Vac; 3 VA
Wiring terminals	6

Type
AQS-KAM-RH-V

Air velocity transmitter

Air velocity sensor

Media	Air, 0 to 10m/s (default); selectable by link for 0 to 15m/s or 0 to 20m/s
Response time	4s (default) or 1s selectable by link
Mounting place	air duct
Protection class	IP 65 Housing
Output signal	2..10Vdc + 4..20mA
Additional description	Humidity 5..95 %rh, non-condensing

Mounting	Type
in duct	**AV-D-10**
remote	**AV-R-10**

IRC/XL10 sensors, Wall modules

Wall modules for EXCEL 5000 controllers

Room temperature sensor for Excel 10/12 and Excel 50..800 controllers. Models available with setpoint 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**

Spare parts for all T7460 models

Blind cover, blue (25 pieces)	**WMSPS-1**
Blind cover, white (25 pieces)	**WMSPS-2**
Round knob, blue (25 pieces)	**WMSPS-3**
Round knob, white (25 pieces)	**WMSPS-4**

Spare parts for T7460B,C,D,E,F

Setpoint wheel, blue (scale +/-5K) (25 pieces)	**WMSPS-8**
Setpoint pack, consists of 1 blind cover white, 1 setpoint wheel blue (scale 12..30). 1 setpointwheel white (scale 12..30), 1 setpointwheel white, scale +/-5 (10 complete setpoint packs)	**WMSPS-9**

Spare parts for T7460D,E,F

Fanspeed knob (50 pieces)	**WMSPS-10**

Spare parts for T7460C,E,F

Occupancy button (50 pieces)	**WMSPS-11**

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**

Accessories

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

Spare parts

Blind cover, blue (25 pieces)	**WMSPS-1**
Blind cover, white (25 pieces)	**WMSPS-2**
Round knob, blue (25 pieces)	**WMSPS-3**
Round knob, white (25 pieces)	**WMSPS-4**
Setpoint wheel, blue, unprinted (25 pieces)	**WMSPS-5**
Setpoint wheel, white, unprinted (25 pieces)	**WMSPS-6**

Wall modules for EXCEL 12 controllers, with display, and light buttons

Room temperature sensor with digital display. With setpoint adjustment, occupancy extension, lights on/off/dim buttons and on/off button.

Display functions	room temperature, setpoint temperature, occupancy status
Temperature element	NTC20k
Temperature range	10 ... 40 °C
Setpoint knob	-5 ... 5 °C
Extra setp. knob	12 ... 30 °C
Occupancy switch	on/off
Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	7
Model	blue knobs/wheel
Additional description	Tool-free configuration: • relative / absolute setpoint • enable/disable space temperature display • centigrade/fahrenheit

	Type
	T7560A1036

Accessories

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

Spare parts

Round knob, white (25 pieces)	**WMSPS-4**
Setpoint wheel, white, unprinted (25 pieces)	**WMSPS-6**

Pneumatic Products — Page

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Honeywell

Controllers

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 °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 reset and CPA	**RP920B1007**
P + I controller with reset and CPA	**RP920D1003**

Damper/Valve Actuators

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**
70	45	80	145	**MP913C1074**

Damper/Valve Actuators

Pneumatic 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

20 mm

Pressure range kPa	Adjustable start point kPa	Positioner	Stroke mm	Action actuator stem	Max. ambient temperature °C	Diaphragm in.	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	•	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**
55,2...82,8	–	–	20	retracts	120	7	**MP953D5009**
27,6...75,9	–	–	20	retracts	120	7	**MP953D5025**

38 mm

Pressure range kPa	Adjustable start point kPa	Positioner	Stroke mm	Action actuator stem	Max. ambient temperature °C	Diaphragm in.	Type
34,5 or 69	20.7 ... 69	•	38	extends	70	13	**MP953A5054**
13,8...48,3	–	–	38	extends	120	13	**MP953C5142**
27,6...75,9	–	–	38	extends	120	13	**MP953C5159**

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.

	Type
Used with V5049A up to 65mm, V5050A up to 80mm, V5328A 40mm to 80mm, V5329A 40mm to 80mm	**43161276-001**

Relays

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/U

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
Model	Switching pilot relay SPDT, range 3..7 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
	RP670A1001/U

Relays

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

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/U

Pneumatic Electrical

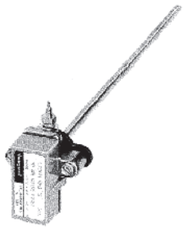
Electric-pneumatic signal conversion module

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**

Sensors

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	**LP914A1003/U**
-40 ... 70	175	duct or well	**LP914A1045/U**
5 ... 115	175	well	**LP914A1052/U**
-5 ... 50	380	duct or well	**LP914A1144/U**

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

Thermostat/Humidistat

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
Submaster set-up	no
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	Type
direct acting	**TP937A1006**
reverse acting	**TP937B1004**

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**

Thermostat/Humidistat

Pneumatic room temperature sensor, TP974

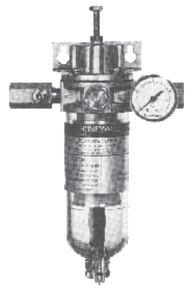
One- or two-pipe direct-acting temperature sensor used with RP908/RP920 controllers to provide proportional control of pneumatic valve and damper actuators.

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/U
Cover without scale	**14004406-300/U**

Miscellaneous

Pressure reducing valve with Filter Regulator Station, PP907



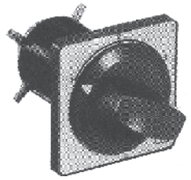
Provides reducing of inlet pressure to a constant operating pressure and filtering e.g. of condensates, dust, oil and rust particles.

- 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**

Power supply and signal devices — Page

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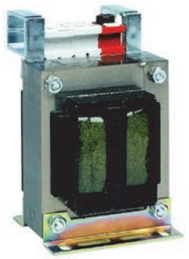
Honeywell

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
Additional description Power 45 VA
- With mains cable 1,5 m and mains plug.
- With low voltage cable 3 m, without plug.

Type
ETR2

DC Power Supply

Single phase switched power supply 24 Vdc
- Output short circuit protection
- DIN rail mounting
- 2 x 24 V push in terminals
- Voltage adjustment

Product description	Type
DC Power Supply 1,3A	**DCPSU-24-1.3**
DC Power Supply 2,5A	**DCPSU-24-2.5**
DC Power Supply 4A	**DCPSU-24-4**

Electrical Signal modules

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 2 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, 6 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

Electrical 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	3x 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)
Manual operation functions	4 x switch for LED status inversion
LED functions	4 x red or green LED showing the status of the input
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

Humid and thermal switches

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Honeywell

Humidistats

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

Room and air duct humidistats (H)

The H6045A1002 single-stage duct hygrostat and the H6120A1000 single-stage room hygrostat are designed for monitoring relative humidity in air conditioning systems and climatic chambers and for controlling air humidifiers and dehumidifiers in indoor swimming pool buildings. Further applications include air humidity regulation in food storage premises, the textile and paper industries, printing works, the optical and chemical industries, greenhouses, hospitals and wherever relative air humidity levels need to be measured, controlled and monitored.

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**

Dew point switch

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 Vacdc; 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

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
Heating /Cooling application	H or C
Manual operation functions	on/off switch
Fan switch	1/2/3
Product literature language	Multilingual
Earthing	double insulated
Housing (HxWxD)	83 mm; 84 mm; 27 mm

Type
Q6371A1006

Pressure switches and sensors — Page

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Honeywell

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 EN 175301
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 necessary, degree of protection Ex-i
Certificates	SIL 2 according IEC 61508-2

Pressure switches

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**

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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 EN 175301
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 necessary, degree of protection Ex-i
Certificates	SIL2 according IEC 61508-2

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 EC Gas Appliance Directive EU/2009/142/EG and DIN EN 1854
Max. pressure	10 kPa
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

Duct Kit, including 2m silicone-hose and 2 joining pipes DPSJ with screws	**DPSK**
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 EN 175301
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 necessary, degree of protection Ex-i
Certificates	• TUEV.DWFS (SDBFS).12-281 according VdTUEV Memorandum Pressure 100, DIN EN 12952-11 and DIN EN 12953-9 • ID 0000035004 according DIN EN 764-7 and DIN EN 13611 • CE-0085CL0343 according to DIN EN 1854 • 01 202 931-B-11-0003 according Directive PED 2014/68/EU • SIL2 according IEC 61508-2

Pressure switches

Fixed pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Type
0.1 ... 0.6	–	0.04	6	**DWR06**
0.2 ... 1.6	–	0.06	6	**DWR1**
0.2 ... 2.5	–	0.1	16	**DWR3**
0.5 ... 6	–	0.2	16	**DWR6**
0.5 ... 6	–	0.25	25	**DWR625**
3 ... 16	–	0.5	25	**DWR16**
4 ... 25	–	1	63	**DWR25**
8 ... 40	–	1.3	63	**DWR40**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adjustable switching differential bar	Switching differential bar	Max. pressure bar	Type
0.1 ... 0.6	0.08 ... 0.5	-	6	**DWR06-203**
0.2 ... 1.6	0.15 ... 0.6	-	6	**DWR1-203**
0.2 ... 2.5	0.17 ... 1.2	-	16	**DWR3-203**
0.5 ... 6	0.3 ... 1.4	-	16	**DWR6-203**
0.5 ... 6	0.4 ... 2.5	-	25	**DWR625-203**
3 ... 16	0.75 ... 3.15	-	25	**DWR16-203**
4 ... 25	1.3 ... 6	-	63	**DWR25-203**
8 ... 40	2.3 ... 6.6	-	63	**DWR40-203**

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

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

For maximum-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 EN 175301
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	• TUEV-DWFS (SDBFS).12-281 according VdTUEV Memorandum Pressure 100, DIN EN 12952-11:2007 and DIN EN 12953-9 • ID 0000035004 according DIN EN 764-7 and DIN EN 13611 • ID 0000020756 according VdTUEV Memorandum Pressure 100, DIN EN12952-11 and DIN EN12953-9 • CE-0085CL0343 according DIN EN 1854 • 01 202 931-B-11-0003 according to Directive PED 2014/68/EU • SIL2 according IEC61508-2
Pressure interlock/Reset	maximum press./button

Pressure adjustment range bar	Max. pressure bar	Type
0.1 ... 0.6	6	**DWR06-205**
0.2 ... 1.6	6	**DWR1-205**
0.2 ... 2.5	16	**DWR3-205**
0.5 ... 6	16	**DWR6-205**
0.5 ... 6	25	**DWR625-205**
3 ... 16	25	**DWR16-205**
4 ... 25	63	**DWR25-205**
8 ... 40	63	**DWR40-205**

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 EN 175301
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	• TUEV.DWFS (SDBFS).12-281 according VdTUEV Memorandum Pressure 100, DIN EN 12952-11 and DIN EN 12953-9 • ID 0000035004 according DIN EN 767-7 and DIN EN 13611 • ID 000007042 according VdTUEV Memorandum Pressure 100, DIN EN12952-11 and DIN EN 12953-9 • CE-0085CL0343 according DIN EN 1854 • 01 202 931-B-11-0003 according to directive PED 2014/68/EU • SIL2 according IEC 61508-2
Pressure interlock/Reset	minimum press./button

Pressure adjustment range bar	Max. pressure bar	Type
0.1 ... 0.6	6	**DWR06-206**
0.2 ... 1.6	6	**DWR1-206**
0.2 ... 2.5	16	**DWR3-206**
0.5 ... 6	16	**DWR6-206**
0.5 ... 6	25	**DWR625-206**
3 ... 16	25	**DWR16-206**
4 ... 25	63	**DWR25-206**
8 ... 40	63	**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 EN 175301
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-11-134 according VdTUEV Memorandum Pressure 100, Issue 07.2006, DIN EN 12952-11, Issue 09.2007 and DIN EN 12953-9, Issue 09.2007 • 01 202 931-B-11-0001 according to Directive 97/23/EC • SIL2 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 Differential Pressure Switches for gas and liquid (Smart DCM DIFF)

Electronic Differential Pressure Switches are microprocessor-controlled pressure measurement devices for a differential pressure range of 0 ... 20 bar. They are suitable for an extremely wide range of applications, including the precision recording, monitoring and control of system pressure. They come complete with an angled M12X1 plug and are mounted directly to the pipe via two G1/4" internal thread connections.
Features:

- Open-collector
- Configurable as min./max./window monitor
- LCD graphical display (Human-Machine-Interface models, only) can be swiveled for better readability; display can be rotated in 90° steps by software for better readability; HMI can be freely swiveled 310°
- Self-monitoring electronics
- Adjustable drop-in/drop-out delay

Media temp.	-20 ... 80 °C
Protection class	IP65
Ambient temperature	-20 ... 70 °C

Pressure Swith HMI

Pressure range bar	Max. pressure bar	Type
0 ... 0.1	0.9	**PSHDM1002**
0 ... 0.3	0.9	**PSHDM3002**
0 ... 1	3	**PSHDB0012**
0 ... 3	9	**PSHDB0032**
0 ... 6	21	**PSHDB0062**
0 ... 20	60	**PSHDB0202**

Differential pressure transmitter for air (DPTA)

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
Output signal	0-10 V and 4-20 mA
Additional description	• Automatic zeroing for all ranges • 3-wire connection • Duct Kit DPSK included in delivery of single package

8-range models; range selectable by rotary switch

Pressure range Pa	Display	Type
Selectable ... -50/+50, -10/+100, -250/+250, -500/+500, -1000/+1000, 0-250, 0-500, 0-1000	no	**DPTAQ8**
Selectable ... -50/+50, -10/+100, -250/+250, -500/+500, -1000/+1000, 0-250, 0-500, 0-1000	yes	**DPTAQ8D**

Single range models

Pressure range Pa	Display	Type
-25 ... 25	no	**DPTA25S**
-25 ... 25	yes	**DPTA25SD**
0 ... 25	no	**DPTA25**
0 ... 25	yes	**DPTA25D**

Accessories

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

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 and 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	All 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 • **Plugs have to be ordered separately !**

Switch + Transmitter + Relay output

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, angled version	**ST12-5-A**
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)	**U430B**

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 and 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	All 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.
Output signal	0..10Vdc / 4..20 mA + switch + relay
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 • **Plugs have to be ordered separately !**

Switch + Transmitter + Relay output

Pressure range bar	Max. pressure bar	Kind of pressure	Type
-1 ... 1	6	vacuum, relative	**PSTV01RG12S-R**
0 ... 0.25	1	overpressure, relative	**PSTM250RG12S-R**
0 ... 0.4	2	overpressure, relative	**PSTM400RG12S-R**
0 ... 0.6	2	overpressure, relative	**PSTM600RG12S-R**
0 ... 1	6	overpressure, relative	**PST001RG12S-R**
0 ... 1.6	6	overpressure, relative	**PST002RG12S-R**
0 ... 4	12	overpressure, relative	**PST004RG12S-R**
0 ... 10	30	overpressure, relative	**PST010RG12S-R**
0 ... 25	75	overpressure, relative	**PST025RG12S-R**
0 ... 60	180	overpressure, relative	**PST060RG12S-R**
0 ... 100	300	overpressure, relative	**PST100RG12S-R**
0 ... 250	500	overpressure, relative	**PST250RG12S-R**
0 ... 600	1000	overpressure, relative	**PST600RG12S-R**
0 ... 2	6	absolute	**PST002AG12S-R**
0 ... 10	30	absolute	**PST010AG12S-R**

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

5-prong M12 plug connector, angled version	**ST12-5-A**
4-prong M12 plug connector, angle 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	**U430B**

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
Protection class	IP65
Ambient temperature	-20 ... 70 °C

Pressure Switch HMI

Pressure range bar	Max. pressure bar	Type
-1 ... 1	4	**PSHRV1011**
0 ... 1	4	**PSHRB0011**
0 ... 4	8	**PSHRB0041**
0 ... 10	20	**PSHRB0101**
0 ... 16	32	**PSHRB0161**
0 ... 25	50	**PSHRB0251**
0 ... 40	80	**PSHRB0401**

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	4	IP67	-20 ... 80	**PTSRV1011A2**
0 ... 1	4	IP67	-20 ... 80	**PTSRB0011A2**
0 ... 4	8	IP67	-20 ... 80	**PTSRB0041A2**
0 ... 10	20	IP67	-20 ... 80	**PTSRB0101A2**
0 ... 16	32	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	4	IP67	-20 ... 80	**PTSRV1011V3**
0 ... 1	4	IP67	-20 ... 80	**PTSRB0011V3**
0 ... 4	8	IP67	-20 ... 80	**PTSRB0041V3**
0 ... 10	20	IP67	-20 ... 80	**PTSRB0101V3**
0 ... 16	32	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	4	IP67	-20 ... 80	**PTSRV1011A3**
0 ... 1	4	IP67	-20 ... 80	**PTSRB0011A3**
0 ... 4	8	IP67	-20 ... 80	**PTSRB0041A3**
0 ... 10	20	IP67	-20 ... 80	**PTSRB0101A3**
0 ... 16	32	IP67	-20 ... 80	**PTSRB0161A3**
0 ... 25	50	IP67	-20 ... 80	**PTSRB0251A3**
0 ... 40	80	IP67	-20 ... 80	**PTSRB0401A3**

Pressure sensors

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

Pressure range bar	Max. pressure bar	Protection class	Ambient temperature °C	Type
-1 ... 1	4	IP65	-20 ... 70	**PTHRV1011A2**
0 ... 1	4	IP65	-20 ... 70	**PTHRB0011A2**
0 ... 4	8	IP65	-20 ... 70	**PTHRB0041A2**
0 ... 10	20	IP65	-20 ... 70	**PTHRB0101A2**
0 ... 16	32	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	4	IP65	-20 ... 70	**PTHRV1011V3**
0 ... 1	4	IP65	-20 ... 70	**PTHRB0011V3**
0 ... 4	8	IP65	-20 ... 70	**PTHRB0041V3**
0 ... 10	20	IP65	-20 ... 70	**PTHRB0101V3**
0 ... 16	32	IP65	-20 ... 70	**PTHRB0161V3**
0 ... 25	50	IP65	-20 ... 70	**PTHRB0251V3**
0 ... 40	80	IP65	-20 ... 70	**PTHRB0401V3**

Differential pressure transmitter for air (DPTE)

Differential pressure transmitter for air-conditioning/ventilation.
Air-conditioning and ventilation systems, Building automation, Environmental protection, Fan and ventilation control, Valve and shutter control, Filter and fan monitoring

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	**DPTE50S**
-100 ... 100	20	**DPTE100S**
-500 ... 500	20	**DPTE500S**
-1000 ... 1000	20	**DPTE1000S**
0 ... 100/250	20	**DPTE100**
0 ... 250/500	20	**DPTE250**
0 ... 500/1000	20	**DPTE500**
0 ... 1000/2500	40	**DPTE1000**
0 ... 5000/10000	60	**DPTE5000**

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

Pressure range Pa	Max. pressure kPa	Type
-50 ... 50	20	**DPTE50SD**
-100 ... 100	20	**DPTE100SD**
-500 ... 500	20	**DPTE500SD**
-1000 ... 1000	20	**DPTE1000SD**
0 ... 100/250	20	**DPTE100D**
0 ... 250/500	20	**DPTE250D**
0 ... 500/1000	20	**DPTE500D**
0 ... 1000/2500	40	**DPTE1000D**
0 ... 5000/10000	60	**DPTE5000D**

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

Pressure range Pa	Max. pressure kPa	Type
-50 ... 50	20	**DPTE52S**
-100 ... 100	20	**DPTE102S**
0 ... 100/250	20	**DPTE102**
0 ... 250/500	20	**DPTE252**
0 ... 500/1000	20	**DPTE502**
0 ... 1000/2500	40	**DPTE1002**
0 ... 5000/10000	60	**DPTE5002**

Accessories

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

Pressure sensors

Electronic Differential Pressure transmitter for gas and liquid (Smart SN DIFF)

Electronic Differential Pressure Transmitters are microprocessor-controlled pressure measurement devices for a differential pressure range of 0 ... 20 bar. They are suitable for an extremely wide range of applications, including the precision recording and monitoring of system pressure. They come complete with an angled M12X1 plug and are mounted directly to the pipe via two G1/4" internal thread connections.
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 for better readability; HMI can be freely swiveled 310°
- Self-monitoring electronics
- Power supply 24 VAC/DC (3-wire models)
- Power supply 18-35 V DC (2-wire models)

Media temp. -20 ... 80 °C

Pressure Transmitter with HMI (2-wire)

Pressure range bar	Max. pressure bar	Protection class	Ambient temperature °C	Type
0 ... 0.1	0.9	IP65	-20 ... 70	**PTHDM1002A2**
0 ... 0.3	0.9	IP65	-20 ... 70	**PTHDM3002A2**
0 ... 1	3	IP65	-20 ... 70	**PTHDB0012A2**
0 ... 3	9	IP65	-20 ... 70	**PTHDB0032A2**
0 ... 6	21	IP65	-20 ... 70	**PTHDB0062A2**
0 ... 20	60	IP65	-20 ... 70	**PTHDB0202A2**

Pressure Transmitter without HMI (3-wire)

Pressure range bar	Max. pressure bar	Protection class	Ambient temperature °C	Type
0 ... 0.1	0.9	IP67	-20 ... 80	**PTSDM1002V3**
0 ... 0.3	0.9	IP67	-20 ... 80	**PTSDM3002V3**
0 ... 1	3	IP67	-20 ... 80	**PTSDB0012V3**
0 ... 3	9	IP67	-20 ... 80	**PTSDB0032V3**
0 ... 6	21	IP67	-20 ... 80	**PTSDB0062V3**
0 ... 20	60	IP67	-20 ... 80	**PTSDB0202V3**

Pressure Transmitter with HMI (3-wire)

Pressure range bar	Max. pressure bar	Protection class	Ambient temperature °C	Type
0 ... 0.1	0.9	IP65	-20 ... 70	**PTHDM1002V3**
0 ... 0.3	0.9	IP65	-20 ... 70	**PTHDM3002V3**
0 ... 1	3	IP65	-20 ... 70	**PTHDB0012V3**
0 ... 3	9	IP65	-20 ... 70	**PTHDB0032V3**
0 ... 6	21	IP65	-20 ... 70	**PTHDB0062V3**
0 ... 20	60	IP65	-20 ... 70	**PTHDB0202V3**

Thermostats Page

10

Honeywell

Frost thermostats

Single-stage frost protection thermostat (FT69)

Suitable for use as frost-protection thermostats for the protection of downstream air heaters in ventilation and climate control systems as well as heat exchangers in cooling systems. Can also be used to control electrical heating systems and to switch acoustic or optical alarm signals.

Housing material	Polycarbonate and ABS
Ambient temperature	-20 ... 55 °C
Switch function/capacity	SPDT 24..250 Vac, 15(8)A
Thermostat application	frost protection thermostat
Protection class	IP65

Temperature element	Capillary tube length m	Mechanical lock/reset	Type
capillary with bulb	1.8	manual	**FT6960-18**
capillary	3	manual	**FT6960-30**
capillary	6	manual	**FT6960-60**
capillary with bulb	1.8	automatic	**FT6961-18**
capillary	3	automatic	**FT6961-30**
capillary	6	automatic	**FT6961-60**

Two-Stage Frost protection thermostat (FTSE)

Frost protection thermostats are installed on the air side for the purpose of protecting air conditioning units, heat exchangers, radiators, and similar installations against damages due to frost or freezing. With the FTSE Electonic Frost Protection Thermostat, Honeywell FEMA has expanded its line of electromechanical products with an electronic device.

Ambient temperature	15 ... 15 °C
Switch function/capacity	SPDT 250 Vac Microswitch / 8A
Additional description	• Protection Class: IP42 • Setting Range: 1 ... 10 Degrees C • Electrical Connection: Terminals with tension clamp • Power Supplay: 24 V AC, +10/-20% • Analog Input: 0-10V • Analog Output: 0-10V • Temperature Output: 0-10V @ 0-10 degrees C

Capillary tube length m	Type
2	**FTSE20**
6	**FTSE60**

Safety thermostats

Safety strap-on thermostat (temperature limiter) for floor heating applications (STB) including 2m capillary (tube)

The STB Servies of universal strap-on thermostats are designed for floor heating applications. They are suitable for use as strap-on, wall-mounted, or (with optional immersion well) immersion thermostat.
Devices of the STB Series likewise measure temperature. If the sensor temperature exceeds the set value, a snap-action switch opens, interrupting the electrical circuit, and remains open until reset manually. (Also, if the sensor temperatuire drops to below approx. - 20 degrees C, the snap-action switch opens, but closes again automatically after the temperature rises again.) To manually reset the device, the sensor temperature must drop by more than approx. 10 K.

Electrical connection	M20x1,5
Protection class	IP54
Housing material	PA, ABS, PMMA
Ambient temperature	0 ... 80 °C
Switch function/capacity	max: 230Vac, 12 (2,5) A / min: 24 Vac/dc, 100 mA
Mechanical lock/reset	manual reset
Setpoint device	knob
Certificates	CE, UL, PED, DIN EN 14597
Thermostat application	strap-on thermostat
Differential fixed	10 K

	Temp. setpoint range °C	Type
	20 ... 80	**STB2080**
	70 ... 130	**STB70130**

Accessories

Immersion Well, G1/2	**STG12-100**

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 STB895
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 strap-on thermostat for floor heating applications (STW)including 2m capillary (tube)

The STW Servies of universal strap-on thermostats are designed for floor heating applications. They are suitable for use as strap-on, wall-mounted, or (with optional immersion well) immersion thermostat.
Devices of the STW Series measure temperature. If the sensor temperature exceeds the set value, a snap-action switch opens, interrupting the electrical circuit. As soon as the sensor temperature drops by more than 10 K, the snap-action switch again closes automatically. (Also, if the sensor temperature drops to below approx. 20 degrees C, the snap-action switch opens, but closes again automatically after the temperature rises again.

Electrical connection	M20x1,5
Protection class	IP54
Housing material	PA, ABS, PMMA
Ambient temperature	0 ... 80 °C
Switch function/capacity	max: 230 Vac, 12 (2,5) A min: 24 Vac/dc, 100 mA
Mechanical lock/reset	automatic reset
Setpoint device	knob
Certificates	CE, UL, PED, DIN EN 14597
Thermostat application	strap-on thermostat
Differential fixed	10 K

Temp. setpoint range °C	Type
20 ... 80	**STW2080**
70 ... 130	**STW70130**

Accessories

Immerson well, G1/2, 100 mm	**STG12-100**

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)894 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 900
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)899 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 thermostats

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 904
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**

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 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 EN 175301
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, degree of protection Ex-i
Certificates	SIL 2 according IEC 61508-2
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

Sealing	**P2**
Heat conducting compound	**WLP1**

Flue gas thermostat

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

Metering

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Honeywell

EW100 Series Singlejet Water Meters DN15...20

Honeywell EW100 Series singlejet water meters are used for flow measurement of cold or warm water in residential potable water systems. They are available in sizes DN15 and DN20 and have a roller counter with the option to upgrade to RF output. EW1000 watermeters are suitable for cold water up to 30C. EW1001 watermeters are suitable for warm water up to 90C.
Metering of cold or warm potable water.

Approvals	MID
Features	• Compact design • Rotatable counter • Retrofittable RF modules
Product description	EW100 Series water meters with RF module are only suitable for integration into Honeywell heat cost allocator systems.
Measuring method	single jet
Display functions	Roller counter, 8-digit
Max. operating pressure	16 bar
Interface	none (retrofittable)

EW100 Series for cold water

Medium	Permanent flow m^3/h	Media temp. °C	DN size mm	Length mm	Connection	Type
cold potable water	1.5	1 ... 30	15	80	G 3/4	**EW1000AZ1101**
cold potable water	1.5	1 ... 30	15	110	G 3/4	**EW1000AZ1201**
cold potable water	2.5	1 ... 30	20	130	G 1	**EW1000AZ2001**

EW100 Series for warm water

Medium	Permanent flow m^3/h	Media temp. °C	DN size mm	Length mm	Connection	Type
warm potable water	1.5	1 ... 90	15	80	G 3/4	**EW1001AZ1101**
warm potable water	1.5	1 ... 90	15	110	G 3/4	**EW1001AZ1201**
warm potable water	2.5	1 ... 90	20	130	G 1	**EW1001AZ2001**

Set of two union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)

For DN15, thread 1/2"	**EWA1500035**
For DN20, thread 3/4"	**EWA1500042**

Set of union nut, sealing and Sanpress red bronze crimp fitting (two packs per meter required)

For DN15, for 15mm pipe-diameter	**VA7404A015**
For DN15, for 18mm pipe-diameter	**VA7404A018**
For DN20, for 22mm pipe-diameter	**VA7404A020**

Set of union nut, sealing and Mapress stainless steel crimp fitting (two packs per meter required)

For DN15, for 15mm pipe-diameter	**VA7403A015**
For DN15, for 18mm pipe-diameter	**VA7403A018**
For DN20, for 22mm pipe-diameter	**VA7403A020**

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Set of union nut, sealing and internally threaded red bronze tailpiece (two packs per meter required)

For DN15, thread Rp1/2"	**VA7405A015**
For DN20, thread Rp3/4"	**VA7405A020**

Clip on RF modules

Fixed network (AMR) module	**EW9106AFZ001**
Mobile network (walk by) module	**EW9106AFZ002**

EW105 Singlejet Pulse out Water Meters DN15...20

Honeywell EW105 Singlejet pulse out water meters are used for flow measurement of cold or warm water in residential potable water systems. They are available in sizes DN15 and DN20 and have a roller counter as well as a pulse cable permanently attached to the housing.
EW1050 water meters are suitable for cold water up to 30C. EW1051 water meters are suitable for warm water up to 90C.

Features	• Fully resistant to external magnetic fields • Robust singlejet flow sensor • Pulse output as standard
Medium	warm or cold potable water
Max. operating pressure	16 bar
Measuring method	single jet
Display functions	Five digit roller counter
Approvals	MID
Interface	Pulse out
Interface type	Fixed

EW1050 for cold water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Type
15	2.5	110	G 3/4	T30	**EW1050AP1200**
20	4	130	G 1	T30	**EW1050AP2000**

EW1051 for warm water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Type
15	2.5	110	G 3/4	T90	**EW1051AP1200**
20	4	130	G 1	T90	**EW1051AP2000**

Set of union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)

For DN15, thread 1/2"	**EWA1500035**
For DN20, thread 3/4"	**EWA1500042**

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EW110 Series Singlejet Water Meters DN15...40

Honeywell EW110 Series singlejet water meters are used for consumption metering of cold or warm water in residential potable water systems. They are available in sizes DN15 to DN40 and have a roller counter. They can be fitted with clip on modules to enable M-Bus or pulse out communication. EW1100 water meters are suitable for cold water up to 30C. EW1101 water meters are suitable for warm water up to 90C or 130C.

Features
- Compact design
- Rotatable counter
- Retrofittable clip on modules for M-Bus or pulse out

Medium warm or cold potable water

Max. operating pressure 16 bar

Measuring method single jet

Display functions
- DN15...20: Eight digit roller counter
- DN25...40: Five digit roller counter with dials for decimal places

Approvals MID
- DN15...20: ACS, KTW
- DN25...40: WRAS

EW1100 for cold water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Interface	Interface type	Type
15	1.6	110	G 3/4	T30	–	Retrofittable	**EW1100AC0600**
15	2.5	80	G 3/4	T30	–	Retrofittable	**EW1100AC1100**
15	2.5	110	G 3/4	T30	–	Retrofittable	**EW1100AC1200**
20	2.5	130	G 1	T30	–	Retrofittable	**EW1100AC1400**
20	4	130	G 1	T30	–	Retrofittable	**EW1100AC2000**
25	6.3	260	G 1 1/4	T30	–	Retrofittable	**EW1100CC2800**
32	10	260	G 1 1/2	T30	–	Retrofittable	**EW1100CC3900**
40	16	300	G 2	T30	–	Retrofittable	**EW1100CC4600**

EW1101 for warm water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Interface	Interface type	Type
15	1.6	110	G 3/4	T90	–	Retrofittable	**EW1101AC0600**
15	2.5	80	G 3/4	T90	–	Retrofittable	**EW1101AC1100**
15	2.5	110	G 3/4	T90	–	Retrofittable	**EW1101AC1200**
20	2.5	130	G 1	T90	–	Retrofittable	**EW1101AC1400**
20	4	130	G 1	T90	–	Retrofittable	**EW1101AC2000**
25	6.3	260	G 1 1/4	T130	–	Retrofittable	**EW1101CC2800**
32	10	260	G 1 1/2	T130	–	Retrofittable	**EW1101CC3900**
40	16	300	G 2	T130	–	Retrofittable	**EW1101CC4600**

EW1100 for cold water, with M-Bus module fitted

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Interface	Interface type	Type
15	2.5	110	G 3/4	T30	M-Bus	Retrofittable (factory installed)	**EW1100CM1200**
20	4	130	G 1	T30	M-Bus	Retrofittable (factory installed)	**EW1100CM2000**
25	6.3	260	G 1 1/4	T30	M-Bus	Retrofittable (factory installed)	**EW1100CM2800**
32	10	260	G 1 1/2	T30	M-Bus	Retrofittable (factory installed)	**EW1100CM3900**
40	16	300	G 2	T30	M-Bus	Retrofittable (factory installed)	**EW1100CM4600**

EW1101 for warm water, with M-Bus module fitted

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Interface	Interface type	Type
15	2.5	110	G 3/4	T90	M-Bus	Retrofittable (factory installed)	**EW1101CM1200**
20	4	130	G 1	T90	M-Bus	Retrofittable (factory installed)	**EW1101CM2000**
25	6.3	260	G 1 1/4	T130	M-Bus	Retrofittable (factory installed)	**EW1101CM2800**
32	10	260	G 1 1/2	T130	M-Bus	Retrofittable (factory installed)	**EW1101CM3900**
40	16	300	G 2	T130	M-Bus	Retrofittable (factory installed)	**EW1101CM4600**

Set of two union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)

For DN15, thread 1/2"	**EWA1500035**
For DN20, thread 3/4"	**EWA1500042**
For DN25, thread 1"	**EWA1500062**
For DN32, thread 1 1/4"	**EWA1500067**
For DN40, thread 1 1/2"	**EWA1500072**

Alwa shutoff valves with internal threads

DN15, 1/2" internal threads	**V4020YY0015**
DN20, 3/4" internal threads	**V4020YY0020**
DN25, 1" internal threads	**V4020YY0025**
DN32, 1 1/4" internal threads	**V4020YY0032**
DN40, 1 1/2" internal threads	**V4020YY0040**

Alwa shutoff valves with internal threads and closed body

DN20, 3/4" internal threads	**V4000YY0020**
DN25, 1" internal threads	**V4000YY0025**
DN32, 1 1/4" internal threads	**V4000YY0032**

Retrofittable clip on communication modules

Wired M-Bus clip on module for EW110, DN15-20	**EWA110C1520-MBUS**
Wired M-Bus clip on module for EW110, DN25-40	**EWA110C2540-MBUS**
Pulse out clip on module for EW110, DN15-20	**EWA110C1520-PO**
Pulse out clip on module for EW110, DN25-40	**EWA110C2540-PO**

Meter configuration

Programming interface for all pulse out modules	**EWA3001797**
EWA110C...-MBUS M-Bus module configuration software, download free of charge from http://metering.ecc.emea.honeywell.com/	**EWASET-MBUS**
EWA110C...-PO pulse out module configuration software, download free of charge from http://metering.ecc.emea.honeywell.com/	**EWASET-PO**

EW171 Series Woltman Bulk Water Meters DN50...300

Honeywell EW171 Series bulk water meters are used for consumption metering of cold or warm water in potable water system networks. They are available in sizes DN50 to DN300 and have a roller counter. They can be fitted with M-Bus or pulse out clip on modules for remote readout applications.
EW1710 are suitable for cold water up to 30C. EW1711 are suitable for warm water up to 130C.

Features	• Robust design with Woltman WP flow sensor • Available up to DN300 • Retrofittable with clip on modules for M-Bus or pulse out
Medium	warm or cold potable water
Max. operating pressure	16 bar
Measuring method	woltmann wheel
Display functions	Six-digit roller counter with dials for decimal places
Approvals	MID, KTW, WRAS
Connection	Flanges PN16
Interface type	Retrofittable

EW1710 for cold water

DN size mm	Permanent flow m^3/h	Length mm	Temperature class	Type
50	40	200	T30	**EW1710AC5000**
65	63	200	T30	**EW1710AC5600**
80	100	225	T30	**EW1710AC6500**
100	160	250	T30	**EW1710AC7300**
125	250	250	T30	**EW1710AC8100**
150	400	300	T30	**EW1710AC8500**
200	630	350	T30	**EW1710AC8900**
250	1000	450	T30	**EW1710AC9100**
300	1600	500	T30	**EW1710AC9200**

EW1711 for warm water

DN size mm	Permanent flow m^3/h	Length mm	Temperature class	Type
50	25	200	T130	**EW1711AC5000**
65	40	200	T130	**EW1711AC5600**
80	63	225	T130	**EW1711AC6500**
100	100	250	T130	**EW1711AC7300**
125	160	250	T130	**EW1711AC8100**
150	250	300	T130	**EW1711AC8500**
200	400	350	T130	**EW1711AC8900**
250	630	450	T130	**EW1711AC9100**
300	1000	500	T130	**EW1711AC9200**

Retrofittable clip on communication modules

Wired M-Bus clip on module	**EWA171C-MBUS**
Pulse out clip on module	**EWA171C-PO**

Meter configuration

Programming interface for pulse out module	**EWA3001797**
EWA110C...-MBUS M-Bus module configuration software, download free of charge from http://metering.ecc.emea.honeywell.com/	**EWASET-PO**
EWA110C...-PO pulse out module configuration software, download free of charge from http://metering.ecc.emea.honeywell.com/	**EWASET-MBUS**

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S110 Singlejet Pulse out Water Meters DN15...20

Honeywell S110 singlejet water meters are used for sub metering of cold or warm water in residential drinking water systems. They are available in sizes DN15 and DN20 and have a mechanical counter. They can be retrofitted with a clip on M-Bus and pulse out combimodule for integration into remote readout networks.

Features	• Retrofittable with wired M-Bus / pulse out communication
Medium	warm or cold potable water
Max. operating pressure	16 bar
Measuring method	single jet
Display functions	8-digit roller counter
Approvals	MID 2014/32/EU (based on OIML R49, EN14154) • ACS, UBA, KTW
Interface	M-Bus
Interface type	Retrofittable

Singlejet Pulse Out Water Meter, cold water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Type
15	2.5	80	G 3/4	T30	**LA0003518**
15	2.5	110	G 3/4	T30	**LA0003519**
20	2.5	130	G 1	T30	**LA0005650**
20	4	130	G 1	T30	**LA0003521**

Singlejet Pulse Out Water Meter, warm water

DN size mm	Permanent flow m^3/h	Length mm	Connection	Temperature class	Type
15	2.5	80	G 3/4	T90	**LA0003814**
15	2.5	110	G 3/4	T90	**LA0003816**
20	2.5	130	G 1	T90	**LA0005651**
20	4	130	G 1	T90	**LA0003818**

Connection set Set of two union nuts, two sealings and two externally threaded brass tailpieces (one pack per meter required) sealable with locking wire

For DN15, thread 1/2"	**EWA1500035**
For DN20, thread 3/4"	**EWA1500042**

Alwa shutoff valves with internal threads

For DN15, thread 1/2"	**V4020YY015**
For DN20, thread 3/4"	**V4020YY020**

Alwa shutoff valves with internal threads and closed body

For DN20, thread 3/4"	**V4000YY020**

Wired M-Bus / pulse out combination module

For DN20, thread 3/4"	**TMP-F**

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Water meters

H4000 Heavy-duty Woltman Bulk Water Meters DN50 to DN300

Honeywell H4000 Woltman bulk water meters are used for volume measurement of cold water in drinking water networks. The versatile H4000 is ideally suited for applications such as production, distribution, conservation and commercial billing. It features a mechanical roller counter and can be equipped with clip-on modules for remote readout applications. Clip-on modules are available for wired M-Bus and pulse output. The clip-on modules are retrofittable.

Features
- Horizontal and vertical installation position possible
- Low pressure loss
- Retrofittable clip-on modules for remote readout
- Resonant target inductive damping for robust data output
- Hydrodynamic rotor for enduring accuracy and durability
- Hard synthetic sapphire and tungsten carbide bearings
- Optionally with pressure monitoring port

Medium	cold potable water
Max. operating pressure	16 bar
Measuring method	woltmann wheel
Display functions	Six- or seven-digit roller counter with dials for decimal places
Approvals	• MID 2004/22/EC (based on OIMLR-49, EN14154 and ISO4064:2005) • WRAS • ACS
Connection	Flanges PN16
Temperature class	T50
Interface type	Retrofittable

H4000 Woltman bulk water meters with ISO short (WP) body

DN size mm	Permanent flow m^3/h	Length mm	Type
50	63	200	**LUPPB4854**
65	63	200	**LUPPC4855**
80	160	200	**LUPPD4854**
100	160	250	**LUPPE4854**
125	160	250	**LUPPF4800**
150	400	300	**LUPPG4854**
200	630	350	**LUPPH4854**
250	1000	450	**LUPPJ4854**
300	1600	500	**LUPPK4854**

H4000 Woltman bulk water meters with ISO long body

DN size mm	Permanent flow m^3/h	Length mm	Type
50	63	300	**LUPPB4810**
80	160	350	**LUPPD4810**
100	160	350	**LUPPE4810**

Clip-on modules

PR7M wired M-Bus module	**LU2925M1269**
PR7 pulse out module 10/10, with 5m cable	**LU2925M1222**
PR7 pulse out module 1/10, with 5m cable	**LU2925M1224**
PR7 pulse out module 1/100, with 5m cable	**LU2925M1263**
PR7 pulse out module 1/100, with 10m cable	**LU2925M1289**
PR7 pulse out module 1/1000, with 5m cable	**LU2925M1264**
PR7 pulse out module 10/100, with 5m cable	**LU2925M1280**
PR7 pulse out module 25/50, with 5m cable	**LU2925M1283**

Heat and flow meters

EW370 Series Woltman Flow Meters DN40...300

Honeywell EW370 Series Woltman flow meters are used for volume measuring of heating or chilled water in heating and air conditioning system networks. They are available in sizes DN40 to DN300 and have a roller counter. They are fitted with a pulse cable for connection to an energy calculator, e.g. Honeywell EW500 Series.

Features
- Robust design with Woltman WP flow sensor
- Available up to DN300
- Pulse out as standard for connection to energy calculator

Medium	heating or chilled water
Max. operating pressure	16 bar
Measuring process	woltmann wheel
Display functions	Eight digit roller counter
Approvals	MID
Connection	Flanges PN16
Media temp.	1 ... 130 °C
Interface	Pulse out
Interface type	Fixed

DN size mm	Nominal flow (qp) m^3/h	Length mm	Type
40	15	200	**EW3701AP4900**
50	15	200	**EW3701AP5000**
65	25	200	**EW3701AP5600**
80	40	200	**EW3701AP6500**
100	60	250	**EW3701AP7300**
125	100	250	**EW3701AP8100**
150	200	300	**EW3701AP8500**
200	250	350	**EW3701AP8900**
250	400	450	**EW3701AP9100**
300	600	500	**EW3701AP9200**

EW600 Series Singlejet Heat Meters DN15...20

Honeywell EW600 Series singlejet heat meters are used for heating and/or cooling energy measurement in hydronic heating, cooling or air conditioning systems. They are typically used for submetering applications.

Features

- The meter can be integrated into a system of Walk-By or AMR Network
- Various communication options, including IrDA interface, S- and C-Mode, RF-AMR Walk-By and M-Bus with two pulse inputs and RS232
- Communication modules retrofittable
- Suitable for horizontal and vertical installation
- Ten year battery lifetime
- Hydraulic impeller wheel sensor with magnet-free scanning according to the inductive principle for lowwear and reliable long-term measuring operation
- Storage of the maximum supply flow and return flow temperatures as well as the maximum current flow with date

Measuring process	single jet
Display functions	Seven digit LCD display
Approvals	• MID approved (MI004), class 3 • CE
Medium	heating or chilled water
Media temp.	5 ... 105 °C
Max. operating pressure	16 bar
Additional description	Interface type • IrDA • Retrofitable RF • Retrofitable M-Bus

EW6001AC without communication module

DN size mm	Nominal flow (qp) m^3/h	Dynamic range	Length mm	Connection	Interface	Interface type	**Type**
15	0.6	25:1	110	G 3/4	–	Retrofittable (one slot)	**EW6001AC0100**
15	1.5	50:1	110	G 3/4	–	Retrofittable (one slot)	**EW6001AC1200**
20	2.5	50:1	130	G 1	–	Retrofittable (one slot)	**EW6001AC2000**

EW6001BK with integrated M-Bus communication module

DN size mm	Nominal flow (qp) m^3/h	Dynamic range	Length mm	Connection	Interface	Interface type	**Type**
15	0.6	25:1	110	G 3/4	M-Bus + pulse in	Fixed	**EW6001BK0100**
15	1.5	50:1	110	G 3/4	M-Bus + pulse in	Fixed	**EW6001BK1200**
20	2.5	50:1	130	G 1	M-Bus + pulse in	Fixed	**EW6001BK2000**

Retrofittable communication modules, suitable for all EW6001AC

M-Bus	**EWA600C-MBUS**
RF AMR	**EWA600C-RF04**
RF walk by	**EWA600C-RF05**
S-Mode	**EWA600C-RF55S**
C-Mode	**EWA600C-RF55C**

Set of union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)

For DN15, thread 1/2" x 3/4"	**EWA1500035**
For DN20, 3/4" x 1"	**EWA1500042**

Tailpiece for direct connection of supply temperature sensor

R 1/2" external thread, M10x1 sensor thread	**EWA087HY003**
G 1/4" external thread, M10x1 sensor thread	**EWA354830**

Ball valve with internal threads

For DN15, G 1/2" internal threads	**EWA087HY004**
For DN20, G 3/4" internal threads	**EWA087HY005**

EW773 Series Ultrasonic Hydronic Meters DN15-100

Static compact hydronic meter with electronic measurement based on the ultrasonic principle, consisting of electronic energy calculator, ultrasonic flowmeter and temperature sensors. Metering of hydronic heating and/or cooling energy in hydronic systems based on volume, supply and return temperature.

Features
- Improved power efficiency
- High long term stability, tested and verified by independent AGFW test
- Insensitive to dirt
- Versatile power supply
- Optionally with integrated RF, Open Metering Standard, 868MHz
- Individual remote reading (AMR) with add on plug & play modules

Measuring process ultrasonic

Display functions LCD, 8-digit

Power source
- Standard: 3.6V A-cell lithium battery (11 year lifetime)
- Optional: 3.6V D-cell lithium battery (16 year lifetime), 230Vac or 24Vac mains unit

Approvals
- Approval for ultrasonic meter with dynamic range of 1:250 (qi:qp) in class 2
- Approved according MID in class 2 and 3 and PTB K 7.2 (cooling)

Dynamic range 1:250

EW7730A Ultrasonic hydronic meter for heating applications

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating water	15	1.5	110	G 3/4	5 ... 130	16	–	Retrofittable (two slots)	**EW7730A1200**
heating water	20	1.5	130	G 1	5 ... 130	16	–	Retrofittable (two slots)	**EW7730A1400**
heating water	20	2.5	130	G 1	5 ... 130	16	–	Retrofittable (two slots)	**EW7730A2000**
heating water	25	6	260	G 1 1/4	5 ... 150	16	–	Retrofittable (two slots)	**EW7730A3600**
heating water	32	6	260	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A4000**
heating water	40	10	300	G 2	5 ... 150	16	–	Retrofittable (two slots)	**EW7730A4600**
heating water	40	10	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A4800**
heating water	50	15	270	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A5200**
heating water	65	25	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A6000**
heating water	80	40	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A7000**
heating water	100	60	360	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7730A7800**

EW7730F Ultrasonic hydronic meter for heating applications, with RF on board

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating water	15	1.5	110	G 3/4	5 ... 130	16	RF	Fixed	**EW7730F1200**
heating water	20	2.5	130	G 1	5 ... 130	16	RF	Fixed	**EW7730F2000**

EW7730M Ultrasonic hydronic meter for heating applications, with M-Bus module

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating water	15	1.5	110	G 3/4	5 ... 130	16	M-Bus	Retrofittable (factory installed)	**EW7730M1200**
heating water	20	2.5	130	G 1	5 ... 130	16	M-Bus	Retrofittable (factory installed)	**EW7730M2000**
heating water	25	6	260	G 1 1/4	5 ... 150	16	M-Bus	Retrofittable (factory installed)	**EW7730M3600**

Heat and flow meters

EW7730K Ultrasonic hydronic meter for heating applications; with M-Bus and pulse input modules

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating water	15	1.5	110	G 3/4	5 ... 130	16	M-Bus + pulse in	Retrofittable (factory installed)	**EW7730K1200**
heating water	20	2.5	130	G 1	5 ... 130	16	M-Bus + pulse in	Retrofittable (factory installed)	**EW7730K2000**

EW7731A Ultrasonic hydronic meter for heating and cooling applications

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating or chilled water	15	1.5	110	G 3/4	5 ... 105	16	–	Retrofittable (two slots)	**EW7731A1200**
heating or chilled water	20	2.5	130	G 1	5 ... 105	16	–	Retrofittable (two slots)	**EW7731A2000**
heating or chilled water	25	6	260	G 1 1/4	5 ... 105	16	–	Retrofittable (two slots)	**EW7731A3600**
heating or chilled water	32	6	260	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A4000**
heating or chilled water	40	10	300	G 2	5 ... 105	16	–	Retrofittable (two slots)	**EW7731A4600**
heating or chilled water	40	10	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A4800**
heating or chilled water	50	15	270	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A5200**
heating or chilled water	65	25	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A6000**
heating or chilled water	80	40	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A7000**
heating or chilled water	100	60	360	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7731A7800**

EW7731F Ultrasonic hydronic meter for heating and cooling applications; with RF and two pulse inputs

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating or chilled water	15	1.5	110	G 3/4	5 ... 105	16	RF	Fixed	**EW7731F1200**
heating or chilled water	20	2.5	130	G 1	5 ... 105	16	RF	Fixed	**EW7731F2000**

EW7731M Ultrasonic hydronic meter for heating and cooling applications; with M-Bus module

Medium	DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Media temp. °C	Max. operating pressure bar	Interface	Interface type	**Type**
heating or chilled water	15	1.5	110	G 3/4	5 ... 105	16	M-Bus	Retrofittable (factory installed)	**EW7731M1200**
heating or chilled water	20	2.5	130	G 1	5 ... 105	16	M-Bus	Retrofittable (factory installed)	**EW7731M2000**
heating or chilled water	25	6	260	G 1 1/4	5 ... 105	16	M-Bus	Retrofittable (factory installed)	**EW7731M3600**
heating or chilled water	32	6	260	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M4000**
heating or chilled water	40	10	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M4800**
heating or chilled water	50	15	270	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M5200**
heating or chilled water	65	25	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M6000**
heating or chilled water	80	40	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M7000**
heating or chilled water	100	60	360	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7731M7800**

Set of two union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)

For DN15, thread 1/2"	**EWA1500035**
For DN20, thread 3/4"	**EWA1500042**
For DN25, thread 1"	**EWA1500062**
For DN25, thread 1 1/2"	**EWA1500072**

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Set of union nut, sealing and Sanpress red bronze crimp fitting (two packs per meter required)

For DN15, for 15 mm pipe-diameter	VA7404A015
For DN15, for 18 mm pipe-diameter	VA7404A018
For DN20, for 22 mm pipe-diameter	VA7404A020
For DN25, for 28 mm pipe-diameter	VA7404A025

Set of union nut, sealing and Mapress stainless steel crimp fitting (two packs per meter required)

For DN15, for 15 mm pipe-diameter	VA7403A015
For DN15, for 18 mm pipe-diameter	VA7403A018
For DN20, for 22 mm pipe-diameter	VA7403A020
For DN25, for 28 mm pipe-diameter	VA7403A025

Set of union nut, sealing and internally threaded red bronze tailpiece (two packs per meter required)

For DN15, thread Rp1/2"	VA7405A015
For DN20, thread Rp3/4"	VA7405A020
For DN25, thread Rp1"	VA7405A025

Temperature sensor installation kit (bulk pack of 20pcs)

Brass, max. 130C	EWA3001303
Plastic, max. 90C	EWA3001305

Ball valve with connection for supply temperature probe

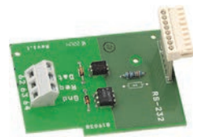
DN15, G1/2" internal threads	EWA087HY004
DN20, G3/4" internal threads	EWA087HY005
DN25, G1" internal threads	EWA087HY006

Tailpiece for connection of supply temperature sensor

R1/2" external thread, M10x1 sensor thread	EWA087HY003
G1/4" external thread, M10x1 sensor thread	EWA354830

Brass immersion pockets (MID approved)

35mm, for DN15...32	EWA3002684
52mm, for DN40...65	EWA3002685
85mm, for DN80...125	EWA3004406



Modules

M-Bus communication module (single pack)	EWA3022071
M-Bus communication module (bulk pack of 72pcs)	EWA3023125
Pulse output module with two outputs	EWA3022073
Pulse input module with two inputs (single pack)	EWA3022074
Pulse input module with two inputs (bulk pack of 72pcs)	EWA3023130
Combined pulse input/output module	EWA3022075
RS232 interface module with cable	EWA3028129
RS485 interface module	EWA3022101
Analogue 4...20mA module (occupies both slots)	EWA3022106

Power supply

A-cell battery 3.6V DC (11 year lifetime) as replacement for standard battery	EWA3022102
D-cell battery 3.6V DC (16 year lifetime)	EWA3022103
Mains supply unit 230V AC	EWA3022076
Mains supply unit 24V AC	EWA3022079
Replacement backup battery for mains supply units	EWA3022097

Calculator mounts

Wall mount (single pack)	EWA3007090
Wall mount (bulk pack of 20pcs)	EWA3007091
Angle mount 105	EWA3026160
Distance mount	EWA54300011
DIN rail mount	EWA54300012

Bluetooth optohead

For all EW773	EWA3001799

IzarSet Expert dongle

For all EW773	EWP3021322

Calibration certificates

For up to five meters	EWA3003095A
For six to 20 meters	EWA3003095B
For more than 20 meters	EWA3003095C

Modules and Accessories for EW773 (type 773) - former generation, built till end of 2010

M-Bus communication module (for EW773xA types)	EWA54200001
Pulse output module (2 outputs)	EWA54200002
Pulse input module (2 inputs)	EWA54200003
Mains power supply unit 230V AC	EWA54200004
Mains power supply unit 24V AC	EWA54200005

EW773 Series Kits

Static compact hydronic meter with electronic measurement based on the ultrasonic principle, consisting of electronic energy calculator, ultrasonic flowmeter and temperature sensors. Metering of hydronic heating and/or cooling energy in hydronic systems based on volume, supply and return temperature.

Features
- Kit including meter with suitable pipe fittings as well as sensor fittings or immersion pockets
- Suitable for both heating and chilled water
- With factory installed M-Bus module and one free slot for additional plug and play communications modules

Measuring process	ultrasonic
Display functions	LCD, 8-digit
Power source	Lithium battery with 11 years lifetime
Approvals	MID (for heating)
Medium	heating or chilled water
Dynamic range	1:250
Media temp.	5 ... 105 °C
Max. operating pressure	16 bar
Interface	M-Bus
Interface type	Retrofittable (factory installed)

EW7731M Ultrasonic hydronic meter for heating and cooling applications; with M-Bus module

DN size mm	Nominal flow (qp) m^3/h	Length mm	Connection	Type
15	1.5	110	G 3/4	**EW7731M1200/K1**
20	2.5	130	G 1	**EW7731M2000/K1**
25	6	260	G 1 1/4	**EW7731M3600/K1**
40	10	300	G 2	**EW7731M4600/K1**

EW480 Series Magnetic Inductive Flow Meters DN100-250

Honeywell EW480 Series magnetic inductive flow meters are used for flow measurement in hydronic heating, cooling or air conditioning systems. They consist of a flow sensor with preassembled converter and are typically used with an EW500 Series energy calculator for heat energy metering.

Features
- Horizontal and riser installation position
- No pressure loss
- Rugged design
- Indifferent to dirt in the system
- Sizes larger DN250 available on request

Measuring process	magnetic inductive
Power source	100-240 Vac / 44-66 Hz
Approvals	MID approved (MI004), CE marked
Protection class	IP67
Accuracy	0.8%
Mounting position	horizontal or vertical
Media temp.	-20 ... 100 °C
Medium	heating or chilled water
Interface	Pulse out
Dynamic range	100:1
Connection	Flanges PN16
Additional description	Minimum conductivity: 5 mikroSiemens/cm

DN size mm	Nominal flow (qp) m^3/h	Length mm	Type
100	250	250	**EW4801AP7323**
125	400	250	**EW4801AP8123**
150	630	300	**EW4801AP8523**
200	1000	350	**EW4801AP8923**
250	1600	450	**EW4801AP9123**

Associated product

Calculator (HEAT,COOL), Configurable, 10 liters /pulse	**EW5001CDZ**

EW500 Series Energy Calculators

EW500 Series Electronic energy calculators were designed for use with ultrasonic or mechanical flow sensors and 2-wire Pt500 temperature sensors. The combination of EW500, flow and temperature sensors provides fluid energy metering of heating and chilled water systems. Metering of hydronic heating and / or cooling energy in hydronic systems based on volume, supply and return temperature. Suitable for energy metering of cooling, heating and combined cooling and heating systems.

Features
- Two slots for retrofittable communication modules
- Replaceable battery
- Extensive readable data memory

Medium type water

Display functions LCD, 8-digit

Power source Battery with 11 year nominal lifetime

Approvals MID

EW500 Series with no modules installed

Product description	Pulse value	Interface	Interface type	Type
Energy unit: MWh with 1 decimal place	1 litre	–	Retrofittable (two slots)	**EW5001CD0001**
Energy unit: MWh with 1 decimal place	2.5 litres	–	Retrofittable (two slots)	**EW5001CD0003**
Energy unit: kWh with 0 decimal places	10 litres	–	Retrofittable (two slots)	**EW5001CD0010**
Energy unit: MWh with 1 decimal place	50 litres	–	Retrofittable (two slots)	**EW5001CD0050**
Energy unit: MWh with 1 decimal place	100 litres	–	Retrofittable (two slots)	**EW5001CD0100**
Energy unit: MWh with 1 decimal place	250 litres	–	Retrofittable (two slots)	**EW5001CD0250**
Energy unit: MWh with 1 decimal place	1,000 litres	–	Retrofittable (two slots)	**EW5001CD1000**

EW500 Series with installed M-Bus module and one free slot

Product description	Pulse value	Interface	Interface type	Type
Energy unit: kWh with 0 decimal places	10 litres	M-Bus	Retrofittable (factory installed)	**EW5001CM0010**
Energy unit: MWh with 1 decimal place	100 litres	M-Bus	Retrofittable (factory installed)	**EW5001CM0100**

EW500 Series with installed Modbus module and one free slot

Product description	Pulse value	Interface	Interface type	Type
Energy unit: kWh with 0 decimal places	10 litres	Modbus	Retrofittable (factory installed)	**EW5001CT0010**
Energy unit: MWh with 1 decimal place	100 litres	Modbus	Retrofittable (factory installed)	**EW5001CT0100**

Configurable EW500 with no modules installed

Product description	Pulse value	Interface	Interface type	Type
Programmable pulse value, installation place and energy unit	–	–	Retrofittable (two slots)	**EW5001CDZ**

Calculators and system components

Pair of Pt500 temperature sensors, 5.2mm (MID approved)

Cable length 2m	**EWA3002680**
Cable length 3m	**EWA3002681**
Cable length 5m	**EWA3002682**
Cable length 10m	**EWA3002679**

Temperature sensor installation kit (bulk pack of 20pcs)

Brass, max. 130C	**EWA3001303**
Plastic, max. 90C	**EWA3001305**

Tailpiece for connection of supply temperature sensor

R1/2 external thread, M10 x 1 sensor thread	**EWA087HY003**

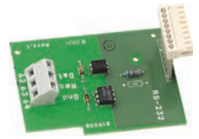
Brass immersion pockets (MID approved)

35mm, for DN25...32	**EWA3002684**
52mm, for DN40...65	**EWA3002685**
85mm, for DN80...125	**EWA3004406**
120mm, for DN150	**EWA3004407**

Ballvalves with connection for supply temperature sensor

G 1/2" internal thread	**EWA087HY004**
G 3/4" internal thread	**EWA087HY005**
G 1" internal thread	**EWA087HY006**

Modules



Lonworks communication module	**EWA500C-LON**
Wired M-Bus communication module	**EWA500C-MBUS**
Modbus communication module	**EWA500C-RS485**
RS232 communication module	**EWA500C-RS232**
Pulse out communication module	**EWA500C-PO**
Pulse in/out communication module	**EWA500C-PIPO**

Power supply

230V mains power supply	**EWA500P-230V**

Meter configuration

Optical interface with USB connection	**EWA3001798**
EW500 configuration software, download free of charge from http://metering.ecc.emea.honeywell.com/	**EW500SET**
EW500SET expert dongle for advanced configuration of EW500 Series	**EWP500-XPRT**

EW535 Series M-Bus System Components

EW535 Series M-Bus System Components enable remote recording and reading out of M-Bus capable meters, e.g. Honeywell EW773 Series Ultrasonic Heat Meters.
The M-Bus system is used to connect various meters, typically M-Bus capable heat meters and water meters but also gas or electricity meters to a central M-Bus master unit. Values recorded by the meter are stored in the master unit and can be read out directly by connecting a PC or remotely, e.g. by telephone line or LAN converter.Many non M-Bus capable meters can be connected to the M-Bus system by using a converter.

Materials	Housing made of grey heat resistant plastic
Ambient temperature	-20 ... 70 °C
Maximum humidity	90 %rh

EW535

Model name	Product description	Type
IzarCenter 25	M-Bus level converter/repeater for max. 25 M-Bus devices	**EW535M6338**
IzarCenter 25 Memory	M-Bus master for max. 25 M-Bus devices, 256MB data logger memory	**EW535M6337**
IzarCenter 60	M-Bus level converter/repeater for max. 60 M-Bus devices	**EW535M5777**
IzarCenter 60 Memory	M-Bus master for max. 60 M-Bus devices, 256MB data logger memory	**EW535M5781**
IzarCenter 120	M-Bus level converter/repeater for max. 120 M-Bus devices	**EW535M5778**
IzarCenter 120 Memory	M-Bus master for max. 120 M-Bus devices, 256MB data logger memory	**EW535M5782**
IzarCenter 250	M-Bus level converter/repeater for max. 250 M-Bus devices	**EW535M5780**
IzarCenter 250 Memory	M-Bus master for max. 250 M-Bus devices, 256MB data logger memory	**EW535M5783**
Hydro-Port Pulse	Pulse meter to M-Bus converter, 2 pulse inputs	**EW535M0056**

EW535M0131 M-Bus RF Receiver

Receiver for stationary readout of suitable hydronic meters with RF capability and conversion into M-Bus signal. Remote readout and data logging is done in combination with an IzarCenter M-Bus master or repeater. Configuration is also done via the IzarCenter.

Features	• No wiring from meter to master necessary • Powered through M-Bus interface no external power source required • Two wire M-Bus interface for direct connection to MBus master • Internal memory to buffer last radio telegram of up to 450 meters
Interface	M-Bus

	Type
	EW535M0131

Connections for Heat and Water Meters

Fittings and pipe connections for heat and water meters

	Type
	_EWAconn

Set of union nut, sealing and externally threaded brass tailpiece, sealable with sealing wire (one pack per meter required)

DN15, 1/2 x 3/4	**EWA1500035**
DN20, 3/4 x 1	**EWA1500042**
DN25, 1 x 1 1/4	**EWA1500062**
DN32, 1 1/4 x 1 1/2	**EWA1500067**
DN40, 1 1/2 x 2	**EWA1500072**

Set of union nut, sealing and Sanpress red bronze crimp fitting (two packs per meter required)

DN15, for 15 mm pipe	**VA7404A015**
DN15, for 18 mm pipe	**VA7404A018**
DN20, for 22 mm pipe	**VA7404A020**
DN25, for 28 mm pipe	**VA7404A025**

Set of union nut, sealing and Mapress stainless steel crimp fitting (two packs per meter required)

DN15, for 15 mm pipe	**VA7403A015**
DN15, for 18 mm pipe	**VA7403A018**
DN20, for 22 mm pipe	**VA7403A020**
DN25, for 28 mm pipe	**VA7403A025**

Set of union nut, sealing and internally threaded brass tailpiece (two packs per meter required)

DN15, Rp 1/2	**VA7405A015**
DN20, Rp 3/4	**VA7405A020**
DN25, Rp 1	**VA7405A025**

Calculators and system components

EWA600 Series Modules for EW600 Heat Meter

The EWA600 add-on modules are intended to retrofit the basic HON EW600AC... compact heat meters for use in the HON Walk-By and HON AMR systems. These add-on module receive the data from the EW600 heat meters and transmits them within these Walk-By or AMR readout system. The add-on module is equipped with an optical interface for parameter setting. Add-on radio modules of the type EWA600C-RF04 are part of the Q AMR system. Add-on radio modules of the type EWA600C-RF05 are part of the Q Walk-By system.

Features

- Acquisition of the heat measurement data from the heat meter and/or arithmetic unit
- Acquisition of the cooling energy measurement data for combined heat and cold metering
- Storage of consumption data and Due date values
- Readout via radio and transmission of the consumption values to a readout unit without direct access to the device
- One add-on radio module is required per EW600 compact heat meter

Approvals

- CE

Options

Product description	Type
EW600 RF Retrofit Module, M-BUS	**EWA600C-MBUS**
EW600 RF Retrofit Module, AMR-MODE	**EWA600C-RF04**
EW600 RF Retrofit Module, WB-MODE	**EWA600C-RF05**
EW600 RF Retrofit Module, C 5.5	**EWA600C-RF55C**
EW600 RF Retrofit Module, S 5.5	**EWA600C-RF55S**

Heat cost allocator and Accessories

E53205 - Heat cost allocator with AMR and 2-sensor Walk-By technology

The E53205 is an electronic device for the allocation of heating costs based on the heat dispersion of radiators. With regard to metering technology, the E53205 model is fully compatible with the previous E43205 version. Its physical features and dimensions are also identical to the E43205 version. The difference lies in its improved and extended wireless properties, both in S mode (Walk-by and AMR) and C mode (Walk-by and OMS). Communication with current software versions of the HMA Suite (V 2.2 or later) and of ACT46 (V 1.6 or later) is available without limitation. The E53205 electronic heat cost allocator is intended for decentralised use. Values are measured by two temperature sensors (radiator and ambient). During operation, the device determines the actual difference between the temperature of the room and of the radiator. These measured values are then used as the basis for the consumption calculation. The main area of application is in centralised heating systems where energy for heating is used individually by various consumers. Typical applications include:

- Residential complexes
- Office buildings and buildings used by public bodies

Thanks to a wide range of mounting kits, the electronic meter can be fixed to almost any kind of radiator, including ribbed or tubular radiators, convector heaters, and so on, regardless of whether it is a new installation or a replacement.

- Compliant with Directive ETS 300 220-1
- Certified in accordance with EN 834
- Battery powered (battery included), 10-year life span

Product description	Type
Heat cost allocator with AMR and 2-sensor Walk-By technology - S Mode	**E53205S-HW**
Heat cost allocator with AMR and 2-sensor Walk-By technology - C Mode	**E53205C-HW**

Remote temperature probe with 2.5 m cable suitable for Walk-By and AMR allocators (min 10 pieces)	**HCAI-K010-0S2**
WalkBy Data Collector for C and S mode	**RML5-STD**
Network node for AMR systems	**RNN5-STD**
USB Cable adapter for reading and programming RNN5-STD	**RNN5.USB-1**
Assembly kit for steel/cast iron radiators	**HCAI-K001 001**
Allocator mounting set for radiators with elements with a pitch of less than 40 mm	**HCAI-K001 002**
Mounting kit for compact radiators M3x15	**HCAI-K002 001**
Mounting kit for aluminium and cast iron radiators	**HCAI-K001 004**
Aluminium profiles for heat cost allocators	**FKA0005**
Tamper for allocators - blue (package of 200 pieces)	**FKK0037**
70 mm adapter for mounting on vertical cast iron radiators	**FKT0020**
Mounting prism for radiators	**FKA0001**
Mounting set for allocators on lamellar radiators	**HCAI-K007 001**
50 mm adapter for mounting on vertical cast iron radiators	**FKT0016**
Remote sensor installation kit for panel/vertical radiators	**FKT0019**
Remote sensor installation kit for convector heaters	**HCAI-K010 001**
Remote probe mounting kit for panel radiators	**HCAI-K010 005**
Remote probe mounting kit for convector heaters	**HCAI-K010-012**
Wall bracket for heat cost allocators	**HCAI-K010-0P2**

Network node for AMR Systems, RNN5

The Honeywell RNN5 network node collectors are designed to receive and store the data transmitted within the AMR System (Automatic Metering Readout System) of the associated devices (Heat Cost Allocators, Heat- and Water- Meters and associated RF-modules) They are available as battery powered or 230 V powered variants. All RNN5 node collector communicate data with each other units if they are in the same network. This means that AMR data from all associated devices can be read from any RNN5 collector within the system. The RNN5 are normally operating with the RNG5 gateway for wireless data readout from different devices within the AMR system. Up to 5 AMR networks can operate within one RNG5. The RNN5 can also be used with the WFZ.R5RC (Radio Unit Receiver) for wireless data readout from the associated AMR devices. This WFZ.RM5C receiver is measuring as well the radio signal strength and so enable the installer to select the optimum position for the network node in any AMR system. The RNN5 are equipped as well with a standard plug connector for M-Bus service connection. The RNN5.USB-1 USB adaptor allows Firmware reprogramming and reading of node and network. The RNN5 network nodes powerful radio system works well in complex buildings even when there are fire doors and glass walls. Typical applications include: Apartment blocks Office buildings Business Centres.
Transmitter: Integrated for the creation of networks.

Power source battery

Features

- Receives and stores data transmitted by AMR devices
- AMR technology allows reliable and fast data collection with no disturbance to the client
- Allows building services companies to monitor heat consumption without disturbing customers
- Automatic setup of up to 12 nodes in the same Network with a maximum of 500 AMR devices per RNN5 and up to 2500 devices in total
- 868MHz radio communications
- S-Mode wireless Data Transfer (Safe data exchange through AES encryption)
- M-Bus connection and IrDA interface
- RNN5-230V: RS232 interface
- Backup battery for ten years
- Data stored and protected in the event of battery failure or replacement
- RNN5-STD: Five year main battery life
- Software suite (HON HSMP) allows simple product setup and data recording
- Meets all necessary European standards for wireless AMR systems

AMR data collection units

Product description	Type
G5 Network Node, Battery powered	**RNN5-STD**
G5 Network Node, AC 230V powered	**RNN5-230V**

Acessory Products

USB adapter for RNN5	**RNN5.USB-1**
Data Collector set for G5 AMR systems	**WTZ.RM5S**
RF Activator	**WFZ.PS**
Radio Unit (Emitter)	**WFZ.R5DS**
Radio Unit (Receiver)	**WFZ.R5RC**
HON AMR Gateway, Battery powered	**RNG5-STD**
HON AMR AC 230V powered	**RNG5-230V**

Heat cost allocator and Accessories

Network Gateway for AMR Systems, RNG5

The Honeywell RNG5 gateway collects the consumption data remotely from the associated RNN5 node (collector) stations within the AMR System (Automatic Metering Readout System) and transmitting the data via mobile GPRS / EDGE to a centralized server. The data is sent from the server in an encrypted format to the customer via email. The RNG5 gateway works with the RNN5 (or RNN4) nodes for wireless data readout from different devices within the AMR system. Up to 5 AMR networks can operate within one RNG5. Up to a total of 2.500 measuring devices (Heat Cost Allocators, Heat- and Water-Meters and RF-Modules - in total up to 500 units per RNN5 node) can be recorded and integrated with one single RNG5 gateway. The RNG5 gateway operates within the HSMP Portal (HONEYWELL Smart Metering Platform). This HSMP Portal compiles the data received from the AMR network. It provides options and choices for transfersing the data to the customer, the functionality for setup of gateway Parameters and coordinates the different gateways in various customer locations.
Typical applications for the RNG5 are: - Apartment blocks - Office buildings - Business Centres

Power source

- RNG5-STD: Power supply 3,6 V battery, not rechargeable
- RNG5-230V: 230VAC Power supply

Features

- Highest possible wireless connectivity by national and international roaming
- Safe mobile data transfer in the ISM and GSM bands
- Integrated GSM & ISM antennas
- Quad-band GSM/GPRS/EDGE (850, 900, 1800 and 1900 MHz)
- Automatic selection of the optimum Network guarantees maximum battery service life
- Pre-installed SIM card and self-configuration of keyparameters
- Management via HSMP (HONEYWELL Smart Metering Platform)
- Wireless M-Bus 868 MHz
- Simple on-site installation
- Indoor wall-mount
- Tamper detection and alarming
- High-precision temperature-compensated RTC with calendar, deviation < 2 ppm

Network Gateway for AMR Systems

Product description	Type
RNG5 Gateway (Battery supply)	**RNG5-STD**
RNG5 Gateway (230VAC supply)	**RNG5-230V**

Accessory Products

G5 Network node (Battery supply)	**RNN5-STD**
G5 Network Node (230VAC supply)	**RNN5-230V**

Electrical Energy meter

Electrical Energy Meters, 1 phase, 32A, LCD, EEM230-D

Electrical energy meter with direct reading of all relevant data, such as energy (total and partial), current and voltage, active and reactive power.

- Single phase energy meter, 230VAC 50 Hz
- Direct measurement up to 32 A
- Accuracy class B according to EN50470-3, accuracy class 1 according to IEC62053-21
- 7-digits display, clear read-out with 6 mm tall figures
- Backlighted LCD
- Metering of total and partial consumed energy
- Resettable value of partial energy
- Display of instantaneous power
- Reactive power available through interface
- Display of voltage
- Display of current
- Clear fault indication

Interface	Certificates	Type
ModBus RTU	–	**EEM230-D-MO**
ModBus RTU	MID	**EEM230-D-MO-MID**
M-Bus	–	**EEM230-D-M**
M-Bus	MID	**EEM230-D-M-MID**
pulse	–	**EEM230-D-P**
pulse	MID	**EEM230-D-P-MID**

20 sealcaps (for 10 energy meters)	**EEM230-SEALCAP**

Electrical Energy Meters, 1 phase, 32A, LCD, Economic, EEM230-E

Energy meter with LCD display and integrated S0 interface. The S0 interface is a hardware interface for the transmission of measured values in building automation.

- Single phase energy meter, 230VAC 50 Hz
- Direct measurement up to 32 A
- 7-digit LC-Display
- Lead seal possible with cap as accessory
- Precision class 1 according to IEC62053-21
- S0 output according to IEC62053-31
- Clear fault indication

Interface pulse

	Type
	EEM230-E-P

20 sealcaps (for 10 energy meters)	**EEM230-SEALCAP**

Electrical Energy meter

Electrical Energy Meters, 3 phases, 65A, 2 Tariff, LCD, EEM400-D

Electrical energy meter with direct reading of all relevant data, such as energy (total and partial), current and voltage for every phase and active and reactive power for every phase and for the three phases.

- 3-phase energy meter, 3 x 230/400 VAC 50 Hz
- Direct measurement up to 65 A
- Accuracy class B according to EN50470-3, accuracy class 1 according to IEC62053-21
- 7-digits display, clear read-out with 6 mm tall figures
- Backlighted LCD
- Metering of total and partial consumed energy, partial resettable
- 2 tariff measuring
- Display of instantaneous power for each phase and all phases
- Display of voltage of each phase
- Display of current
- Reactive power for every and/or all phases available through interface
- Energy value readable without power supply
- Clear fault indication

Interface	Certificates	Type
ModBus RTU	–	**EEM400-D-MO**
ModBus RTU	MID	**EEM400-D-MO-MID**
M-Bus	–	**EEM400-D-M**
M-Bus	MID	**EEM400-D-M-MID**
pulse	–	**EEM400-D-P**
pulse	MID	**EEM400-D-P-MID**

Panel mounting kit for front door of cabinet	**PMK-EEM400**
20 sealcaps (for 5 energy meters)	**EEM400-SEALCAP**

Electrical Energy Meters, 3 phases for current transformer 5A, LCD, EEM400C-D

Electrical energy meter with direct reading of all relevant data, such as energy (total and partial), current and voltage for every phase and active and reactive power for every phase and for the three phases.

- 3-phase energy meter, 3 x 230/400 VAC 50 Hz
- Measurement up to 1.500 A over external current transformer
- Accuracy class B according to EN50470-3, accuracy class 1 according to IEC62053-21
- 7-digits display, clear read-out with 6 mm tall figures
- Backlighted LCD
- Metering of total and partial consumed energy, partial resettable
- CT ratio is blocked through a wire bridge
- Display of instantaneous power for each phase and all phases
- Display of voltage of each phase
- Display of current
- Reactive power for every and/or all phases available through interface
- Energy value readable without power supply
- Clear fault indication

Interface	Certificates	Type
ModBus RTU	–	**EEM400C-D-MO**
ModBus RTU	MID	**EEM400C-D-MO-MID**
M-Bus	–	**EEM400C-D-M**
M-Bus	MID	**EEM400C-D-M-MID**
pulse	–	**EEM400C-D-P**
pulse	MID	**EEM400C-D-P-MID**

Panel mounting kit for front door of cabinet	**PMK-EEM400**
20 sealcaps (for 5 energy meters)	**EEM400-SEALCAP**

Electrical Energy meter

S0-Pulse counter, 4 inputs, EEM-CONVERT

The S0-Pulse counter with Modbus Interface allows to count pulse from Meters (Electrical, Gas, Water, etc.) with S0-Pulse (without intelligent Interface such Modbus), memorize this and send to the BMS System over one Modbus RTU Interface.

- 230 Vac, 50 Hz power supply
- Up to 99 S0-Modbus Modules on the same bus
- 4 S0 pulse inputs (S01+...S04+) per S0-Modbus Module
- Up to 396 S0 devices on the same Modbus
- The inputs comply with the S0 standard EN62053-31
- Integrated RS-485 termination resistor
- LED for bus activity indication

Interface ModBus RTU

	Type
	EEM-CONVERT

Flow and leakage detection Page

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Honeywell

Flow monitors

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..100 °C.

Sensor

Mounting place	Immersion depth mm	Power supply Vac; VA	Type
air duct	150	–; –	**SLF15**

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)

The flow in fluids can be monitored reliably with flow sensors SWF62 and SWF62L and evaluation unit ASW454. The sensitivity can be adjusted accurately with a rough and fine potentiometer. The switching state is indicated by LED. The sensor element must be located in the flow.

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

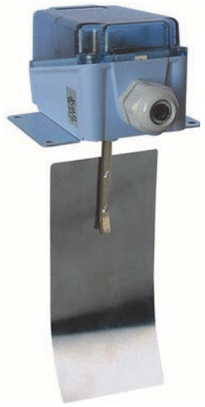
Power supply Vac; VA	Mounting place	Immersion depth mm	Connection diameter in.	Type
–; –	in pipe	25	G1/4	**SWF62**
–; –	in pipe	45	G1/2	**SWF62L**

Evaluation unit

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

Flow monitors

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 employed in HVAC applications.
For monitoring flow in water, oil, cooling circuits, and lubrication systems.

Protection class	IP65
Switch function/capacity	SPDT, 250Vac, (8)15 A
Setpoint device	screw
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**

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**

Flow monitors

Electronic flow switches for air, compact version (KSL)

These compact flow monitors reliably measure air flow in air ducts and detect any falling below a predefined switching point. The sensitivity and hence the switching point can be set very precisely with a potentiometer. The switching state is shown by a yellow LED. The sensor tip must be completely immersed in the medium. Signal evaluation and the switching process take place within the unit itself so that no additional space is required inside the switch cabinet.

Protection class	IP65
Switch function/capacity	SPDT, 250 Vac, 10(2) A
Immersion depth	115 mm
Setpoint range	0,1..30 m/s
Max. media temperature	80 °C
Max. pressure	10 bar
Additional description	LED's available for indication of power supply and switch status.

Process connection PG7 + mounting flange

Power supply Vac; VA	Type
24; 10	**KSL24**
230; 10	**KSL230**

Leakage Alarm System

Leakage Alarm System SeaHawk

The SeaHawk Leakage Alarm System is a distance-read leak detection supervised system that continuously monitors a length of cable for continuity and leaks. When a cable break, contamination or leak is detected, the module calculates and annunciates the distance to the leak. This distance can then be cross-referenced with a cable reference map or immediately located by accessing an interactive map.
The SeaHawk controller can be applied for standalone operation including detection annunciation display or can be integrated into a building management system via Modbus to the Hawk controller providing a centralized source of monitoring, communication and notification capabilities.

Control software	configurable with COACH-AX software
Hardware inputs	sensing cable for water detection, length 11..3000 m
Output signal	• relay SPDT contact 30 Vdc 5 A resistive, 250 Vac 8 A resistive; minimum load 10 mA 5 Vdc (signal) • audible alarm 85 dB(A) at 0,6 m
Display functions	• red LED for leak alarm • yellow LED for cable contamination or fault • 4-character LED display for distance or fault status
Stand-alone operation	yes
Bus system description	EIA-485, Modbus (RTU)
Mounting	DIN rail, or wall mounting with screws
Protection class	IP30
Type of terminals	screw terminals with terminal block
Power supply	12..24 Vacdc
Housing (HxWxD)	109 mm; 71 mm; 61 mm

SeaHawk Controller

	Type
	LAS-SH10

Cables

Sensing cable, length 7,6 meter	**LAS-SC7**
Sensing cable, length 15,2 meter	**LAS-SC15**
Sensing cable, length 30,4 meter	**LAS-SC30**
Non-sensing cable, length 7,6 meter	**LAS-NSC7**

Spot detector

Spot detector	**LAS-SD-Z**

Accessories

Weighted cable connector (simulates 15,2 meter of sensing cable)	**LAS-WCCS**
Cable fixations (installation fixation for both the sensing cable and the non-sensing cable (25 pieces)	**LAS-CLIP-25**
Power supply 230 V, 50 Hz / 24 Vdc	**LAS-PSWA**

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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://ecc.emea.honeywell.com/sphider/search.php

OLD TYPES A..Z	Product description	Type
AF20	Outdoor temperature sensor, NTC	AF20-B54
AFF-L	Outdoor temperature sensor LON (new Type needs converter)	AF00-B54
AQS31	CO2 Sensor /temperature sensor (new Type can also be C7110D1009)	C7110C1001A
AQS31-KAM	CO2 Sensor for air duct	AQS71-KAM-T
AQS41	CO2 Sensor /temperature sensor/display	C7110D1009A
AQS51	CO2 Sensor /temperature sensor	C7110C1001A
AQS51-KAM	CO2 Sensor /temperature sensor for air duct	AQS71-KAM-T
AQS61	CO2 Sensor /temperature sensor/display	C7110C1001A
AQS61-KAM	CO2 Sensor /temperature sensor/display for air duct	AQS71-KAM-T
AQS71-KAM	CO2 Sensor for air duct	AQS71-KAM-T
C7068A1007B	Unit temperature sensor	PF20-65-2M
C7068A1007	Unit temperature sensor	PF20-65-2M
C7068A1007-3M	Unit temperature sensor	PF20-65-5M
C7068A1007-5M	Unit temperature sensor	PF20-65-5M
C7068A1007-8M	Unit temperature sensor	PF20-65-5M
C7110A1005	Air quality sensor	C7110A1010
DAF20	Outdoor temperature sensor, NTC	AF20-B54
H600A1022	Room humidistat	H6120A1000
H7012A1009	Room R.H. sensor	H7012A1010
H7012B1007	Room R.H./temperature sensor	H7012B1008
H7012B1023	Room R.H./temperature sensor	H7012B1024
H7015A1006	Air duct R.H.- and temperature/transmitter	LFHV-2B65
H7015B1020	Air duct R.H.- and temperature sensor/transmitter	LFH20-2B65
H7015B1060	Air duct R.H.- and temperature transmitter	LFHV-2B65
H7015B1080	Air duct R.H.- and temperature sensor/transmitter	LFH20-2B65
H7508A1034	Outdoor R.H.- and temperature sensor/transmitter (new Type needs: H7012BALCO500KIT)	H7508B1060
H7508A1042	Outdoor R.H.- and temperature sensor/transmitter	H7508B1080
HGK1	Duct Hygrostat	H6045A1002
HKF1	Air duct humidity sensor	LFHV-2B65
HRF1	Room humidity sensor	H7012A1010
KTF20	Water temperature sensor NTC, cable type	KTF20-65-2M
KTF20AC	Water temperature sensor NTC, cable type	KTF20-65-2M
LF00-1B54	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-1B54NW
LF00-3B54	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-3B54NW
LF10	Air duct temperature sensor, NTC (new Type needs: LF-MF)	VF10-3B54NW
LF10-3B54	Air duct temperature sensor, NTC (new Type needs: LF-MF)	VF10-3B54NW
LF20	Air duct temperature sensor, NTC (new Type needs: LF-MF)	VF20-3B54NW
LF20-3B54	Air duct temperature sensor, NTC (new Type needs: LF-MF)	VF20-3B54NW
LF20-3B65	Air duct temperature sensor, NTC (new Type needs: LF-MF)	VF20-3B65NW
LF20-C	Air duct temperature sensor, NTC	LF20-3P65-5M
LMS31	Air duct, average temperature sensor, PTC	C7085A1006
LQR1	Air quality sensor	C7110A1010
RF20A	Room temperature sensor, NTC	RF20
SWM1/FS1-F	Dew point sensor	HSS-DPS
T6046A1006	Frost protection thermostat	FT6960-18
T6046A1014	Frost protection thermostat	FT6960-30

OLD TYPES A..Z	Product description	Type
T6950A1000	Frost protection thermostat	FT6960-18
T6950A1018	Frost protection thermostat	FT6960-30
T6950A1026	Frost protection thermostat	FT6960-60
T6951A1009	Frost protection thermostat	FT6961-18
T6951A1017	Frost protection thermostat	FT6961-30
T6951A1025	Frost protection thermostat	FT6961-60
T6960A1008	Frost protection thermostat	FT6960-18
T6960A1016	Frost protection thermostat	FT6960-30
T6960A1024	Frost protection thermostat	FT6960-60
T6961A1007	Frost protection thermostat	FT6961-18
T6961A1015	Frost protection thermostat	FT6961-30
T6961A1023	Frost protection thermostat	FT6961-60
T7411A1001	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-1B54NW
T7411A1019	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-3B54NW
T7411A1027	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-3B54NW
T7411B1009	Air duct temperature sensor, NTC, flexible probe	PF20-65-2M
T7411B1017	Air duct temperature sensor, Pt1000 (new Type needs: LF-MF)	VF00-3B54NW
T7412A1000	Room temperature sensor NTC20k	T7460A1001
T7412A1018	Room temperature sensor Pt1000	T7460A1018
T7413A1009	Water temperature sensor, Pt1000 (new Type needs well)	VF00-1B54NW
T7413A1041	Water temperature sensor, Pt1000	VF00-1B54NW
T7413A1058	Water temperature sensor, Pt1000	VF00-3B54NW
T7413A1066	Water temperature sensor, Pt1000	VF00-1B54NW
T7413A1074	Water temperature sensor, Pt1000	VF00-3B54NW
T7414A1008	Water temperature sensor, Pt1000, strap-on	SF00-B54
T7414C1004	Water temperature sensor, Pt1000, strap-on	SF00-B54
T7414C1012	Water temperature sensor, NTC 20k strap-on	SF20-B54
T7415A1007	Water temperature sensor, Pt1000, cable type	KTF00-65-2M
T7416A1006	Outdoor temperature sensor, Pt1000	AF00-B54
T7416A1014	Outdoor temperature sensor, Pt1000	AF00-B54
T7416A1022	Outdoor temperature sensor, NTC 20k	AF20-B54
T7416A1030	Outdoor temperature sensor, NTC 10k	AF10-B54
T7416C1002	Outdoor, strap-on temperature sensor, Pt1000	SF00-B54
T7416C1010	Outdoor, strap-on temperature sensor, NTC	SF20-B54
T7460H	Room temperature sensor, setpoint adjustment, occupancy extension	TF22
VF00-1B54	Water temperature sensor, Pt1000 (new Type needs well)	VF00-1B54NW
VF00-1B65	Water temperature sensor, Pt1000 (new Type needs well)	VF00-1B65NW
VF10A	Water temperature sensor, NTC 10k strap-on	SF10-B54
VF10T	Water temperature sensor, NTC 10k immersion (new Type needs well)	VF10-1B54NW
VF10-1B54T	Water temperature sensor, NTC 10k immersion (new Type needs well)	VF10-1B54NW
VF20A	Water temperature sensor, NTC 20k strap-on	SF20-B54
VF20L	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-3B54NW
VF20LN	Water temperature sensor, NTC 20k immersion (new Type needs steel well)	VF20-3B54NW
VF20L-L	Immersion Sensor, LON 300 mm (new Type needs converter + VFL)	VF00-3B54NW
VF20NT	Water temperature sensor, NTC 20k immersion (new Type needs steel well)	VF20-1B54NW
VF20T	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-1B54NW
VF20-1B54	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-1B54NW
VF20-1B54S	Water temperature sensor, NTC 20k immersion (new Type needs steel well)	VF20-1B54NW
VF20-1B65	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-1B65NW
VF20-1B65S	Water temperature sensor, NTC 20k immersion (new Type needs steel well)	VF20-1B65NW
VF20-3B54	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-3B54NW
VF20-3B54S	Water temperature sensor, NTC 20k immersion (new Type needs steel well)	VF20-3B54NW
VF20-5B54	Water temperature sensor, NTC 20k immersion (new Type needs well)	VF20-5B54NW

OLD TYPES Phase over list, Pressure Sensors/Switches

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://ecc.emea.honeywell.com/sphider/search.php

Sensors

OLD TYPES A..Z	Product description	Type
DPT100, DPTM100	Differential pressure sensor for air	DPTE100
DPT1000, DPTM1000	Differential pressure sensor for air	DPTE1000
DPT1000D, DPTM1000D	Differential pressure sensor for air	DPTE1000D
DPT1002, DPTM1002	Differential pressure sensor for air	DPTE1002
DPT100D, DPTM100D	Differential pressure sensor for air	DPTE100D
DPT102, DPTM102	Differential pressure sensor for air	DPTE102
DPT110, DPTM110	Differential pressure sensor for air	DPTE100S
DPT1100, DPTM1100	Differential pressure sensor for air	DPTE1000S
DPT1100D, DPTM1100D	Differential pressure sensor for air	DPTE1000SD
DPT110D, DPTM110D	Differential pressure sensor for air	DPTE100SD
DPT112, DPTM112	Differential pressure sensor for air	DPTE102S
DPT250, DPTM250	Differential pressure sensor for air	DPTE250
DPT250D, DPTM250D	Differential pressure sensor for air	DPTE250D
DPT50, DPTM50	Differential pressure sensor for air	DPTE50S
DPT500, DPTM500	Differential pressure sensor for air	DPTE500
DPT5000, DPTM5000	Differential pressure sensor for air	DPTE5000
DPT5000D, DPTM5000D	Differential pressure sensor for air	DPTE5000D
DPT5002, DPTM5002	Differential pressure sensor for air	DPTE5002
DPT500D, DPTM500D	Differential pressure sensor for air	DPTE500D
DPT502, DPTM502	Differential pressure sensor for air	DPTE502
DPT50D, DPTM50D	Differential pressure sensor for air	DPTE50SD
DPT52, DPTM52	Differential pressure sensor for air	DPTE52S
DPT550, DPTM550	Differential pressure sensor for air	DPTE500S
DPT550D, DPTM550D	Differential pressure sensor for air	DPTE500SD
SK10	Differential pressure sensor 0-1000Pa	DPTE1000
SK10-AK	Differential pressure sensor 0-1000Pa / Display	DPTE1000D
SK20	Differential pressure sensor 0-2000Pa	DPTE1000
SK20-AK	Differential pressure sensor 0-2000Pa / Display	DPTE1000D
SK5	Differential pressure sensor 0-500Pa	DPTE500
SK5-AK	Differential pressure sensor 0-500Pa / Display	DPTE500D
SKV10	Differential pressure sensor +/- 1000Pa	DPTE1000S
SKV10-AK	Differential pressure sensor +/- 1000Pa / Display	DPTE1000SD
SKV5	Differential pressure sensor +/- 500Pa	DPTE500
SKV5-AK	Differential pressure sensor +/- 500Pa / Display	DPTE500D
SL10-2	Differential pressure sensor 0-1000Pa, 2-wire	DPTE502
SL10-3	Differential pressure sensor 0-1000Pa, 3-wire	DPTE500
SL20-3	Differential pressure sensor 0-2000Pa, 3-wire	DPTE1002
SL5-3	Differential pressure sensor 0-500Pa, 3-wire	DPTE250

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

OLD TYPES A..Z	Product description	Type
PSTV01RG12S	Pressure switch vacuum -1..1 bar	PSTV01RG12S-R
PSTM250RG12S	Pressure switch overpressure relative 0..0,25 bar	PSTM250RG12S-R
PSTM400RG12S	Pressure switch overpressure relative 0..04 bar	PSTM400RG12S-R
PSTM600RG12S	Pressure switch overpressure relative 0..0,6 bar	PSTM600RG12S-R
PST001RG12S	Pressure switch overpressure relative 0..1 bar	PST001RG12S-R
PST002RG12S	Pressure switch overpressure relative 0..1,6 bar	PST002RG12S-R
PST004RG12S	Pressure switch overpressure relative 0..4 bar	PST004RG12S-R
PST010RG12S	Pressure switch overpressure relative 0..10 bar	PST010RG12S-R
PST025RG12S	Pressure switch overpressure relative 0..25 bar	PST025RG12S-R
PST060RG12S	Pressure switch overpressure relative 0..60 bar	PST060RG12S-R
PST100RG12S	Pressure switch overpressure relative 0..100 bar	PST100RG12S-R
PST250RG12S	Pressure switch overpressure relative 0..250 bar	PST250RG12S-R
PST600RG12S	Pressure switch overpressure relative 0..600 bar	PST600RG12S-R
PST002AG12S	Pressure switch absolute 0..2 bar	PST002AG12S-R
PST010AG12S	Pressure switch absolute 0..10 bar	PST010AG12S-R

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

OLD TYPES A..Z	Product description	Type
PSTV01RG34F	Pressure switch vacuum -1..1 bar	PSTV01RG34F-R
PSTM250RG34F	Pressure switch overpressure relative 0..0,25 bar	PSTM250RG34F-R
PSTM400RG34F	Pressure switch overpressure relative 0..04 bar	PSTM400RG34F-R
PSTM600RG34F	Pressure switch overpressure relative 0..0,6 bar	PSTM600RG34F-R
PST001RG34F	Pressure switch overpressure relative 0..1 bar	PST001RG34F-R
PST002RG34F	Pressure switch overpressure relative 0..1,6 bar	PST002RG34F-R
PST004RG34F	Pressure switch overpressure relative 0..4 bar	PST004RG34F-R
PST010RG34F	Pressure switch overpressure relative 0..10 bar	PST010RG34F-R
PST025RG34F	Pressure switch overpressure relative 0..25 bar	PST025RG34F-R
PST002AG34F	Pressure switch absolute 0..2 bar	PST002AG34F-R
PST010AG34F	Pressure switch absolute 0..10 bar	PST010AG34F-R

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://ecc.emea.honeywell.com/sphider/search.php

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	MT4-024-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	MT4-024-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-BO-L	Thermal actuator, 230V, 4mm, NO, 2,5m cable	MT4-230-NO-2.5M
M4450A1009	Thermal actuator, 230V, 8mm, NO, 2,5m cable	MT8-230-NO-2.5M
M452A1006	Thermal actuator, 230V, 8mm, switch	MT8-230S-NC
M452B1005	Thermal actuator, 24V, 8mm, switch	MT8-024S-NC
M5410C4005	Fast motoric actuator 24V, 2,5mm, 90N, 1,5m cable	M5410C1001
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 (new Type needs M44-MOD-1M)	M4410E1510
MT010-N	Thermal actuator, 24V, 3,5mm, 0..10V, 1m (new Type needs M44-MOD-1M)	M4410E1510
MT010-3M	Thermal actuator, 24V, 3,5mm, 0..10V, 3m (new Type needs M44-MOD-3M)	M4410E1510
MT010-3MN	Thermal actuator, 24V, 3,5mm, 0..10V, 3m (new Type needs M44-MOD-3M)	M4410E1510
MT4-024LC-NC	Thermal actuator, 24V, 4mm, NC	MT4-024-NC
MT4-024LC-NO	Thermal actuator, 24V, 4mm, NO	MT4-024-NO
MT4-230LC-NC	Thermal actuator, 230V, 4mm, NC	MT4-230-NC
MT4-230LC-NO	Thermal actuator, 230V, 4mm, NO	MT4-230-NO
MT8-024LC-NC	Thermal actuator, 24V, 8mm, NC	MT8-024-NC
MT8-024LC-NO	Thermal actuator, 24V, 8mm, NO	MT8-024-NO
MT8-230LC-NC	Thermal actuator, 230V, 8mm, NC	MT8-230-NC
MT8-230LC-NO	Thermal actuator, 230V, 8mm, NO	MT8-230-NO
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

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Old catalogs data: http://ecc.emea.honeywell.com/sphider/search.php

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

OLD TYPES A..Z	Product description	Type
V5833A1102	3- way control valve PN16 flat sealing	V5833A2118
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

Phase over lists

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://ecc.emea.honeywell.com/sphider/search.php

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

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Old catalogs data: http://ecc.emea.honeywell.com/sphider/search.php

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

OLD TYPES A..Z	Product description	Type
V5013A2003	3-way control valve PN16 threaded	V5013R1032
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

OLD TYPES A..Z	Product description	Type
V5050A1058	3-way control valve PN16 flanged	V5329A1053
V5050A1066	3-way control valve PN16 flanged	V5329A1061
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, Frequency Inverters

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://ecc.emea.honeywell.com/sphider/search.php

HVAC Frequency Inverters 400V IP21

OLD TYPES A..Z	Product description	Type
HVAC400-1P1-21	Inverter 1.1kW/3.4A; new type with advanced HMI	HVAC400-1P1-21A
HVAC400-1P5-21	Inverter 1.5kW/4.8A; new type with advanced HMI	HVAC400-1P5-21A
HVAC400-2P2-21	Inverter 2.2kW/5.6A; new type with advanced HMI	HVAC400-2P2-21A
HVAC400-3P0-21	Inverter 3kW/8A; new type with advanced HMI	HVAC400-3P0-21A
HVAC400-4P0-21	Inverter 4kW/9.6A; new type with advanced HMI	HVAC400-4P0-21A
HVAC400-5P5-21	Inverter 5.5kW/12A; new type with advanced HMI	HVAC400-5P5-21A
HVAC400-7P5-21	Inverter 7.5kW/16A; new type with advanced HMI	HVAC400-7P5-21A
HVAC400-11P-21	Inverter 11kW/23A; new type with advanced HMI	HVAC400-11P-21A
HVAC400-15P-21	Inverter 15kW/31A; new type with advanced HMI	HVAC400-15P-21A
HVAC400-18P-21	Inverter 18.5kW/38A; new type with advanced HMI	HVAC400-18P-21A
HVAC400-22P-21	Inverter 22kW/46A; new type with advanced HMI	HVAC400-22P-21A
HVAC400-30P-21	Inverter 30kW/61A; new type with advanced HMI	HVAC400-30P-21A
HVAC400-37P-21	Inverter 37kW/72A; new type with advanced HMI	HVAC400-37P-21A
HVAC400-45P-21	Inverter 45kW/87A; new type with advanced HMI	HVAC400-45P-21A

OLD TYPES A..Z	Product description	Type
HVAC400-55P-21	Inverter 55kW/105A; new type with advanced HMI	HVAC400-55P-21A
HVAC400-75P-21	Inverter 75kW/140A; new type with advanced HMI	HVAC400-75P-21A
HVAC400-90P-21	Inverter 90kW/168A; new type with advanced HMI	HVAC400-90P-21A
HVAC400-110-21	Inverter 110kW/205A; new type with advanced HMI	HVAC400-110-21A
HVAC400-132-21	Inverter 132kW/261A; new type with advanced HMI	HVAC400-132-21A
HVAC400-160-21	Inverter 160kW/310A; new type with advanced HMI	HVAC400-160-21A

HVAC Frequency Inverters 400V IP54

OLD TYPES A..Z	Product description	Type
HVAC400-1P1-54	Inverter 1.1kW/3.4A; new type with advanced HMI	HVAC400-1P1-54A
HVAC400-1P5-54	Inverter 1.5kW/4.8A; new type with advanced HMI	HVAC400-1P5-54A
HVAC400-2P2-54	Inverter 2.2kW/5.6A; new type with advanced HMI	HVAC400-2P2-54A
HVAC400-3P0-54	Inverter 3kW/8A; new type with advanced HMI	HVAC400-3P0-54A
HVAC400-4P0-54	Inverter 4kW/9.6A; new type with advanced HMI	HVAC400-4P0-54A
HVAC400-5P5-54	Inverter 5.5kW/12A; new type with advanced HMI	HVAC400-5P5-54A
HVAC400-7P5-54	Inverter 7.5kW/16A; new type with advanced HMI	HVAC400-7P5-54A
HVAC400-11P-54	Inverter 11kW/23A; new type with advanced HMI	HVAC400-11P-54A
HVAC400-15P-54	Inverter 15kW/31A; new type with advanced HMI	HVAC400-15P-54A
HVAC400-18P-54	Inverter 18.5kW/38A; new type with advanced HMI	HVAC400-18P-54A
HVAC400-22P-54	Inverter 22kW/46A; new type with advanced HMI	HVAC400-22P-54A
HVAC400-30P-54	Inverter 30kW/61A; new type with advanced HMI	HVAC400-30P-54A
HVAC400-37P-54	Inverter 37kW/72A; new type with advanced HMI	HVAC400-37P-54A
HVAC400-45P-54	Inverter 45kW/87A; new type with advanced HMI	HVAC400-45P-54A
HVAC400-55P-54	Inverter 55kW/105A; new type with advanced HMI	HVAC400-55P-54A
HVAC400-75P-54	Inverter 75kW/140A; new type with advanced HMI	HVAC400-75P-54A
HVAC400-90P-54	Inverter 90kW/168A; new type with advanced HMI	HVAC400-90P-54A
HVAC400-110-54	Inverter 110kW/205A; new type with advanced HMI	HVAC400-110-54A
HVAC400-132-54	Inverter 132kW/261A; new type with advanced HMI	HVAC400-132-54A
HVAC400-160-54	Inverter 160kW/310A; new type with advanced HMI	HVAC400-160-54A

SmartDrive Compact IP20

OLD TYPES A..Z	Product description	Type
COMP230-P37-20	Inverter 0,4 kW	HVAC232-P37-20
COMP230-P55-20	Inverter 0,6 kW	HVAC232-P55-20
COMP230-P75-20	Inverter 0,8 kW	HVAC232-P75-20
COMP230-1P1-20	Inverter 1,1 kW	HVAC232-1P1-20
COMP230-1P5-20	Inverter 1,5 kW	HVAC232-1P5-20
COMP230-2P2-20	Inverter 2,2 kW	HVAC232-2P2-20
COMP400-P55-20	Inverter 0,6 kW	HVAC402-P55-20
COMP400-P75-20	Inverter 0,8 kW	HVAC402-P75-20
COMP400-1P1-20	Inverter 1,1 kW	HVAC402-1P1-20
COMP400-1P5-20	Inverter 1,5 kW	HVAC402-1P5-20
COMP400-2P2-20	Inverter 2,2 kW	HVAC402-2P2-20
COMP400-3P0-20	Inverter 3,0 kW	HVAC402-3P0-20
COMP400-4P0-20	Inverter 4,0 kW	HVAC402-4P0-20
COMP400-5P5-20	Inverter 5,5 kW	HVAC402-5P5-20

HVAC Frequency Inverters Accessories

OLD TYPES A..Z	Product description	Type
HVAC-HMI-S	Advanced comm.	HVAC-HMI-A

Phase over lists

OLD TYPES Phase over list, Rotary Valves

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Old catalogs data: http://ecc.emea.honeywell.com/sphider/search.php

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

Phase over lists

OLD TYPES Phase over list, Damper Actuators

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Old catalogs data: http://ecc.emea.honeywell.com/sphider/search.php

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
M7531A1005	Damper Actuator 24Vac, 15Nm, 0...10V	N20010
M7535A1001-7	Spring Return Damper Actuator 24Vac, 12Nm, 3-pos	S10010
ML4115C1007/U	Fire and Smoke Damper Actuator	MS4604F1010/U
ML4115D1006/U	Fire and Smoke Damper Actuator	MS4604F1010/U
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

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OLD TYPES A..Z	Product description	Type
ML7161E3028	Damper Actuator 24Vac, 5Nm, 0...10V, switches	N05010-SW2
ML7174E2004	Damper Actuator 24Vac, 4Nm, 0...10V	N05010
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
ML8115A1005/U	Fire and Smoke Damper Actuator	MS8104F1010/U
ML8115B1004/U	Fire and Smoke Damper Actuator	MS8104F1010/U
ML8195E1003	Spring Return Damper Actuator 24Vac, 16Nm, 2-pos	S2024-2POS
ML8195E1011	Spring Return Damper Actuator 24Vac, 16Nm, 2-pos, switches	S2024-2POS-SW2
MS4709F1014/U	Fire and Smoke Damper Actuator	MS4609F1010/U
MS4809F1012/U	Fire and Smoke Damper Actuator	MS4609F1010/U
MS8209F1003/U	Fire and Smoke Damper Actuator	MS8109F1010/U
MS8309F1001/U	Fire and Smoke Damper Actuator	MS8109F1010/U
N20230-2POS	Damper Actuator 230Vac, 20Nm, 2-pos	N20230
N2024-2POS	Damper Actuator 24Vac, 20Nm, 2-pos	N2024
N20010A	Damper Actuator 24Vac, 20Nm, 0...10V	N20010
N20010A-SW2	Damper Actuator 24Vac, 20Nm, 0...10V, switches	N20010-SW2
N20230A	Damper Actuator 230Vac, 20Nm, 3-pos	N20230
N20230A-SW2	Damper Actuator 230Vac, 20Nm, 3-pos, switches	N20230-SW2
N2024A	Damper Actuator 24Vac, 20Nm, 3-pos	N2024
N2024A-SW2	Damper Actuator 24Vac, 20Nm, 3-pos, switches	N2024-SW2
N34010A	Damper Actuator 24Vac, 34Nm, 0...10V	N34010
N34230A	Damper Actuator 230Vac, 34Nm, 3-pos	N34230
N3424A	Damper Actuator 24Vac, 34Nm, 3-pos	N3424

Phase over lists

OLD TYPES Phase over list, Pneumatics

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Old catalogs data: http://ecc.emea.honeywell.com/sphider/search.php

OLD TYPES A..Z	Product description	Type
LP914A1037	Pneumatic temperature sensor	LP914A1003/U
LP914A1045	Pneumatic temperature sensor	LP914A1045/U
LP914A1052	Pneumatic temperature sensor	LP914A1052/U
LP914A1060	Pneumatic temperature sensor	LP914A1045/U
LP914A1151/U	Pneumatic temperature sensor	LP914A1003/U
LP914A1193/U	Pneumatic temperature sensor	LP914A1045/U
LP914A1201/U	Pneumatic temperature sensor	LP914A1052/U
LP914A1235/U	Pneumatic temperature sensor	LP914A1144/U
PP902	Pressure reducing valve	PP907A1008
RP403D2023	Electric-pneumatic relay	RP416A2008
RP416A1000	Electric-pneumatic relay	RP416A2008
RP7507A1000	Electric-pneumatic signal conversion module	RP7517A1009
RP908B1045	Pneumatic Sensor Controller System	RP920B1007
RP908B1052	Pneumatic Sensor Controller System	RP920B1007
RP914B1047	Pneumatic Sensor Controller System	RP920B1007
RP914B1062	Pneumatic Sensor Controller System	RP920B1007
RP914B1088	Pneumatic Sensor Controller System	RP920B1007
RP914B1096	Pneumatic Sensor Controller System	RP920B1007
TP910A1429	Pneumatic room temperature controller	TP970A2020/U
TP913B1036	Pneumatic room temperature controller	TP970A2020/U
TP925A1000	Pneumatic room temperature sensor (new Type needs 14002362-001)	TP974A2000/U
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
TP974A1000	Pneumatic room temperature sensor	TP974A2000/U

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://ecc.emea.honeywell.com/sphider/search.php

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	MP904D1057
MP913C1066	Pneumatic Damper Actuator Shaft connection	MP904D1057
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
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
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

OLD TYPES A..Z	Product description	Type
MP953C1216	Pneumatic Valve Actuator	MP953C5019
MP953C1224	Pneumatic Valve Actuator	MP953C5027
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
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

A

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.

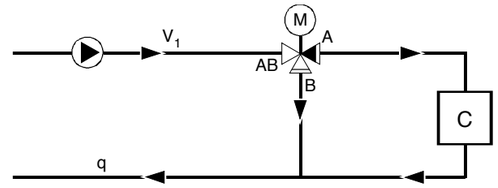

Fig. 1: 3-way valve as a diverting valve

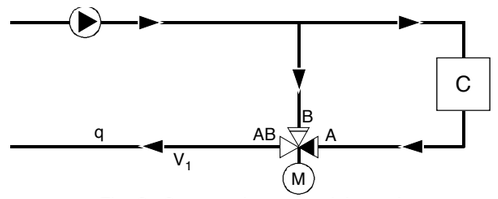

Fig. 2: 3-way valve as a mixing valve

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.

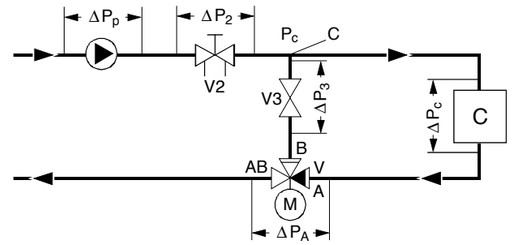

Fig. 3: Pressure drops in typical mixing valve circuit

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.

A

Pressure at plug A: $p_A = p_c - \Delta p_c - \Delta p_A$

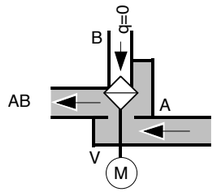

Fig. 4: 3-way valve with water path A open

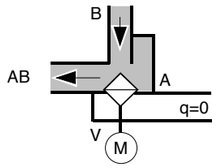

Fig. 5: 3-way valve with water path B open

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.

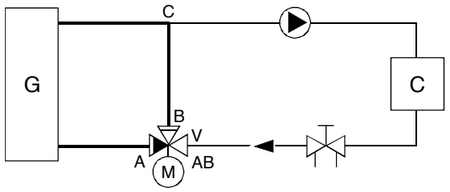

Fig. 6: Diverting three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pG + \Delta p\mathrm{A}C}$$

b. Mixing three way valve

Port A: Pipes CA + pressure drop across G.
Port B: CB.

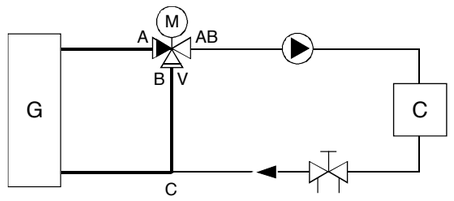

Fig. 7: Mixing three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta pG + \Delta p\mathrm{A}C}$$

c. Diverting three way valve

Port A: Pipes AD + CE
Port B: BC
.

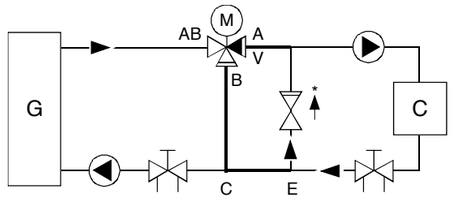

Fig. 8: Diverting three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta p\mathrm{A}D + \Delta pCE}$$

d. Mixing three way valve

Port A: Pipes AE + CD.
Port B: CB.

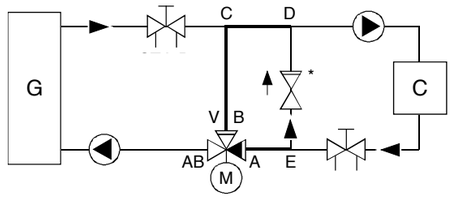

Fig. 9: Mixing three way valve

$$\beta = \frac{\Delta pV}{\Delta pV + \Delta p\mathrm{A}E + \Delta pCD}$$

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

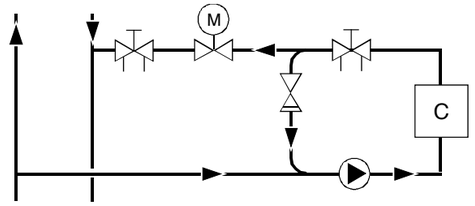

Fig. 10: Preheating coil which can be subject to freezing

System 2

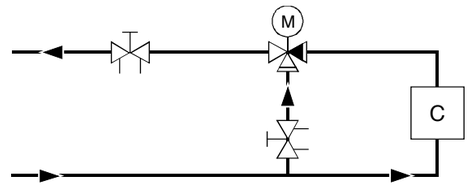

Fig. 11: Reheating system in cases not subject to freezing

System 3

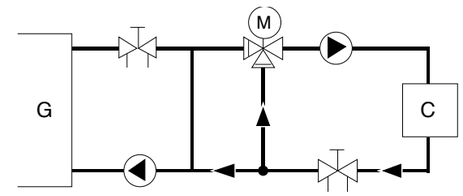

Fig. 12: Radiator circuit connected to boiler heating plant

System 4

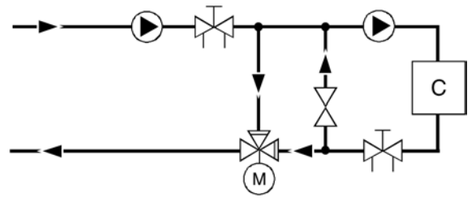

Fig. 13: System with constant primary and secondary flows

System 5

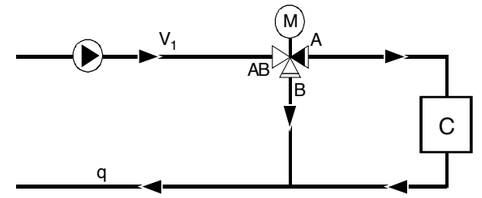

Fig. 14: System with constant primary and secondary flows

System 6

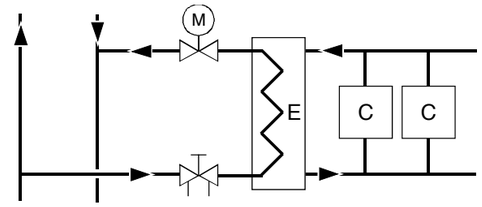

Fig. 15: Fig.15 Heating system connected to district heating network

System 7

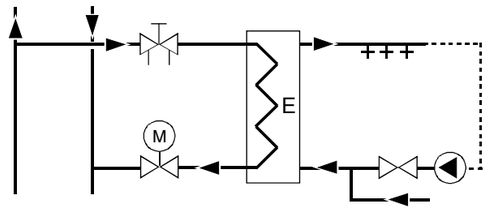

Fig. 16: Domestic hot water system connected to district heating network

3.1 System 1, 2-way valve with primary pump

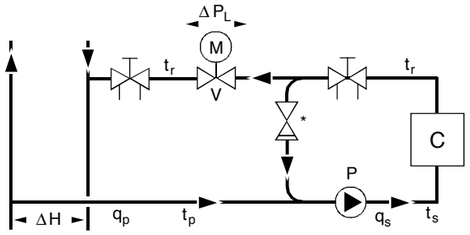

Fig. 17: 2-way valve with primary pump

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.

$$K_v = \frac{36 \cdot q_p}{\sqrt{\Delta H}} (\mathrm{kPa}, 1/s)$$

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

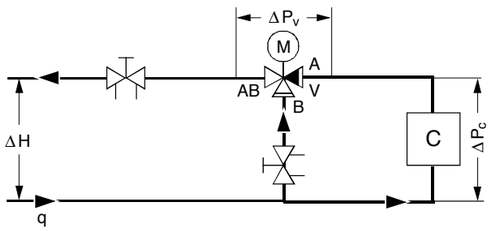

Fig. 18: 3-way mixing valve with primary pump

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

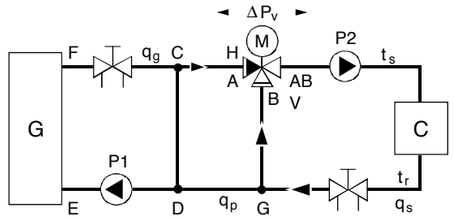

Fig. 19: Constant flow in boiler

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

β = 1

$$\Delta p_v > \Delta_{GD} + \Delta_{CH}$$

not less than 3 kPa

$$K_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (\mathrm{kPa}, 1/s)$$

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

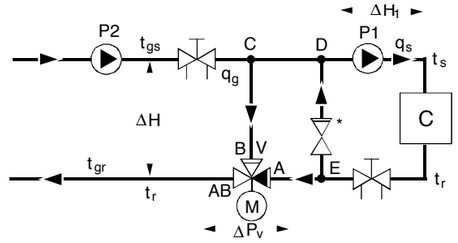

Fig. 20: Coil in air handling unit

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.

$$q_g \cdot (t_{gs} - t_{gr}) = q_s (t_s - t_r)$$

$$q_{gs} < q_s \qquad t_{gs} > t_s$$

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:

$$\Delta p_v > 3kPa \qquad \text{(Linear)}$$

$$K_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

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

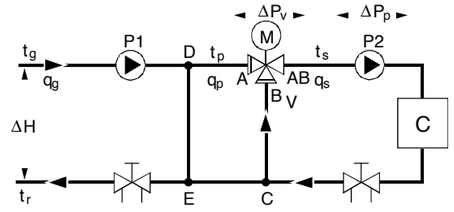

Fig. 21: Constant flow in primary/secondary circuit

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:

$$\Delta p_v \geq 3kPa \qquad \text{(Linear)}$$

$$K_v = \frac{36 \cdot q_s}{\sqrt{\Delta p_v}} (kPa, 1/s)$$

3.6 System 6, 2-way valve with primary pump water/water

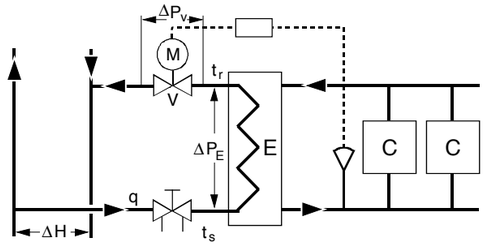

Fig. 22: Heat exchanger, heating system

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

$$\Delta p_v = \Delta H - \Delta p_E$$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} (kPa, l/s)$$

$$\beta = \frac{\Delta p_v}{\Delta H} \geq 0.5$$

Flow characteristic: EQ% (Logarithmic)

3.7 System 7, 2-way valve with primary pump water/(domestic) water

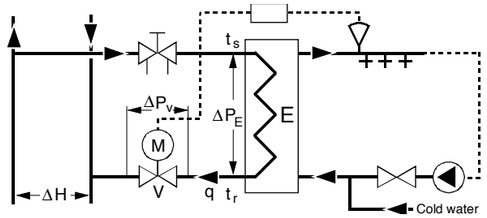

Fig. 23: Heat exchanger, hot water

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

$$\Delta p_v = \Delta H - \Delta p_E$$

$$K_v = \frac{36 \cdot q}{\sqrt{\Delta p_v}} (kPa, l/s)$$

$$\beta = \frac{\Delta p_v}{\Delta H} \geq 0.5$$

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 = m³/h
q_w = 1/s
q_A = m³/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/m² living area
Well insulated buildings	50 W m² living area
Not very well insulated buildings	60 W/m² living area
Poorly insulated buildings	100 W/m² living area
Cellars	15 W/m² living area

Calculation of valve leakage using the temperature method:

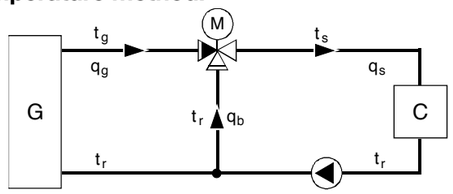

Fig. 24: Calculation of leakage using the temperature method

$$\frac{q_g}{q_s} = \frac{t_s - t_r}{t_g - t_r} \qquad \frac{q_b}{q_s} = \frac{t_s - t_g}{t_r - t_g}$$

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, m³/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/dm³ (note units)
q = Liquid flow rate, m³/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.

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

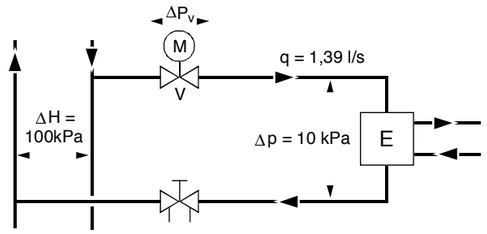

Fig. 25: Example 1

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

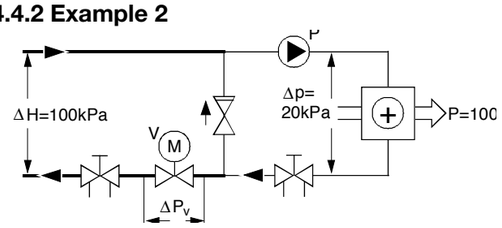

Fig. 26: Example 2

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 m³/h = 0,371 l/s

The pump *P* should be dimensioned for the flow, q = 1.3 m³/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 m².
A heating demand of 60W/m² gives

$$P = 50 \cdot 65 \cdot 60 = 195\ kW$$

Similarly, a cellar area of 600m², with a heating demand of 15 W/m², 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

DIAGRAM 1: k_{VS} - Dimensioning, Medium Water

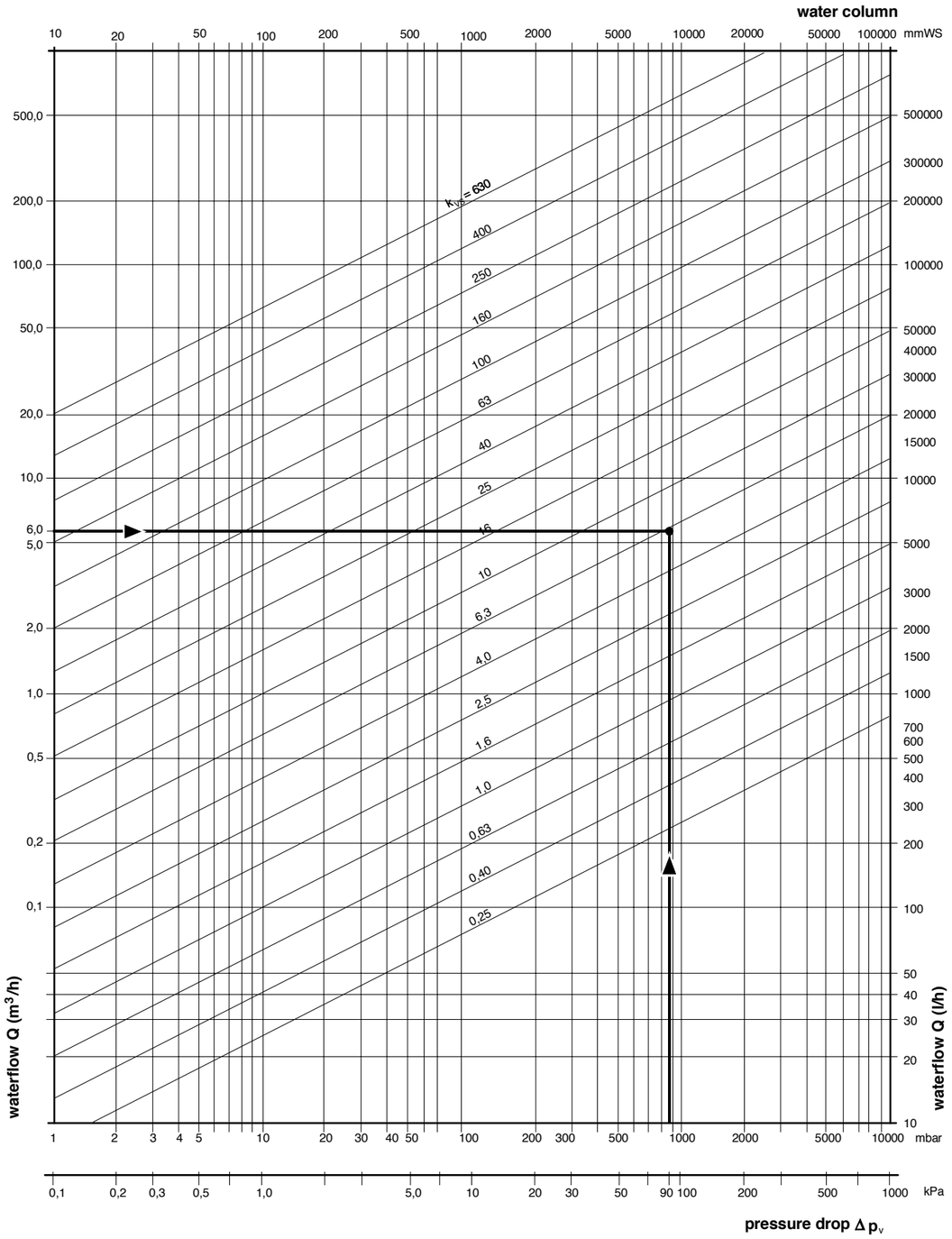

Fig. 27: Example for k_{VS}-dimensioning, medium water

DIAGRAM 2 k_{VS} - Dimensioning, Medium Steam

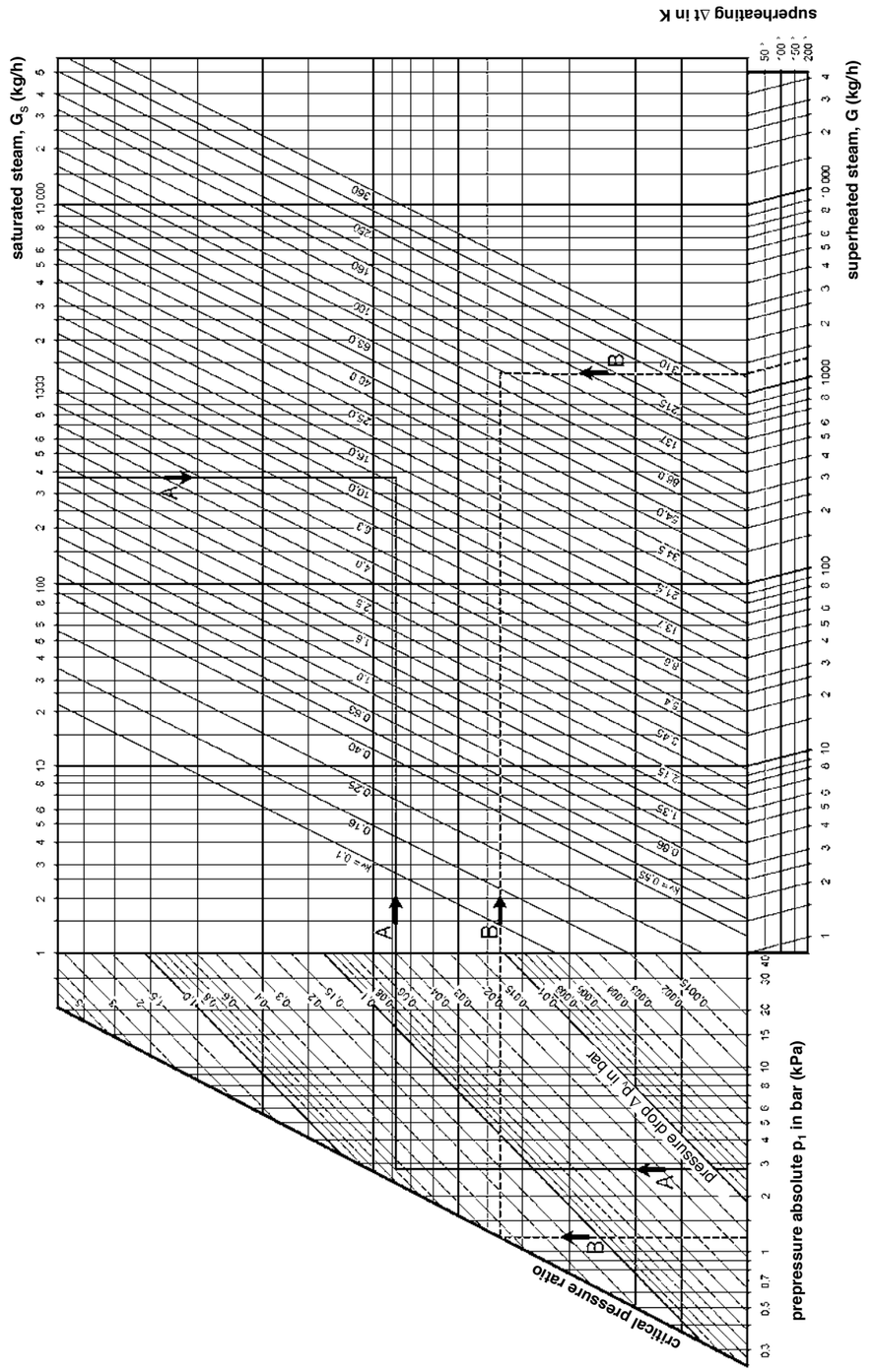

Fig. 28: Example for k_{VS}-dimensioning, medium steam

Applications and Dimensioning

Applicable Literature:

- Technikum Luzern: ”Arbeitsunterlagen Heizungstechnik (Abt. HLK)”
- Recknagel/Sprenger ”Taschenbuch für Heizungs- und Klimatechnik”
- - Honeywell ”Engineering Manual of Automatic Control”

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EN3B-0260GE51 R0318
March 2018

Honeywell