FIELD DEVICES
PRODUCT CATALOG

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Temperature, R.H., Air quality Sensors Page

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Honeywell

Temperature Sensors NTC

Room temperature sensor NTC, economy

IP class	IP30
Temperature element	NTC20k
Temperature range	6 ... 40 °C
Mounting place	internal wall
Housing (HxWxD)	56 mm; 46 mm; 19.3 mm
Wiring terminals	2
Type of terminals	spring
Additional description	T7470A1009 will be delivered as one set of 5 sensors.

	Type
	T7470A1009

Room temperature sensor, NTC20k

IP class	IP30
Temperature element	NTC20k
Temperature range	10 ... 40 °C
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	2

	Type
	RF20

Air duct temperature sensor NTC 400mm

Temperature range	-40 ... 110 °C
Mounting place	air duct
Immersion depth	400 mm
Wiring terminals	2
IP class	IP54
Additional description	Humidity 5..95 %rh, non condensing.

Temperature element	Type
NTC20k	**LF20-4B54**

Temperature Sensors NTC

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	IP class	Immersion depth mm	Type
NTC10k	IP65	50	**VF10-5B65NW**
NTC10k	IP65	150	**VF10-1B65NW**
NTC10k	IP65	300	**VF10-3B65NW**

Sensor without immersion well nor flange, NTC20k

Temperature element	IP class	Immersion depth mm	Type
NTC20k	IP65	50	**VF20-5B65NW**
NTC20k	IP65	150	**VF20-1B65NW**
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**

Temperature Sensors NTC

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	IP class	Type
NTC10k	IP65	**SF10-B65**
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
IP 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**

Temperature Sensors NTC

Water temperature sensor NTC, cable type

Watertight temperature sensor with sensor cartridge.

IP 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	IP class	Type
NTC10k	IP65	**AF10-B65**
NTC20k	IP65	**AF20-B65**

Temperature Sensors NTC

Air duct temperature sensor, NTC

Temperature element	NTC20k
Temperature range	-30 ... 80 °C
Mounting place	air duct
Wiring terminals	2
Cable length	5 m
IP 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
IP class	IP20
Additional description	The 3 meters flexible rod has four sensors positioned along the length of the rod.

Type
C7085A1014

Temperature Sensors Pt1000

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

IP class	Immersion depth mm	Type
IP65	50	**VF00-5B65NW**
IP65	150	**VF00-1B65NW**
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**

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
IP class	IP30

	Type
	T7460A1018

Temperature Sensors Pt1000

Air duct temperature sensor Pt1000 400mm

Temperature element	Pt1000
Temperature range	-40 ... 110 °C
Mounting place	air duct
Immersion depth	400 mm
Wiring terminals	2
IP class	IP54
Additional description	Humidity 5..95 %rh, non condensing.

	Type
	LF00-4B54

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

IP class	Type
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
IP 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
IP class	IP65
Temperature element	Pt1000
Mounting place	universal
Immersion depth	min. 50 mm
Sensing element (dia x L)	6 mm; 50 mm
Packing unit quantity	1

Temperature range °C	Cable length m	Type
-30 ... 105	2	**KTF00-65-2M**
-20 ... 260	PFTE, 2	**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

IP class	Type
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
IP class	IP20
Additional description	The 3 meters flexible rod has four sensors positioned along the length of the rod.

	Type
	C7085A1006

Immersion probe temperature sensor, stainless steel (P)

The temperature sensors have parts in contact with the medium made of stainless steel (1.4571 / 316Ti). The temperature is sensed by a Pt100 resistance thermometer confirming to EN 60 751. The sensor is connected in a 3-wire circuit. The Pt100 resistance thermometers are suitable for use in the temperature range of - 50 ... +400 degrees C.
Sensor as per EN60751: PT100, Class A, 3-wire

Electrical connection	screw terminals
Ambient temperature	-20 ... 100 °C
Max. pressure	100 bar
Temperature range	-50 ... 400 °C
IP class	IP67
Temperature element	Pt100
Mounting place	in well
Immersion depth	100 mm
Additional description	• **Process Connection:** G1/2" • **Material:** Tube: high-grade steel 1.4571

Connection head: 1.4571/316Ti, Cabel entry: M16x1.5, Cable diameter: 6...9 mm, Protection class: IP67, Material housing and cover: 1.4571

	Type
	P100-100

Accessories,suitable only for P100-XXX

Immersion tube, G1/2, immersion length 100 mm	**G12-100**
Immersion tube, 1/2 NPT, immersion length 100 mm	**N12-100**
Immersion tube, G1/2, immersion length 200 mm	**G12-200**
Immersion tube, G1/2, immersion length 250 mm	**G12-250**
Immersion tube, 1/2 NPT, immersion length 250 mm	**N12-250**

Air duct and immersion temperature transmitter, 4..20mA

Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	duct + well
Wiring terminals	3
Power supply	24 Vacdc; 0.3 VA
IP class	IP65
Temperature range	0 ... 100 °C
Output Signal	4..20mA: Temperature
Additional description	Humidity 5..95 %rh, non condensing.

Transmitter without immersion well, nor flange

Immersion depth mm	Type
150	**LFI-100-1B65**
300	**LFI-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**

Strap-on temperature transmitter, 4..20mA

Strap diameter maximum 110 mm.

Housing (HxWxD)	56 mm; 81 mm; 40 mm
Mounting place	strap on pipe
Wiring terminals	3
Power supply	24 Vacdc; 0.3 VA
IP class	IP65
Temperature range	0 ... 50 °C
Output Signal	4..20mA: Temperature
Additional description	Humidity 5..95 %rh, non condensing.

Type
SFI-100-1B65

Relative Humidity and Temperature Sensor

Air Duct Temperature and R.H. sensor, LFH

For sensing or controlling of duct temperature and relative humidity.

Temperature range	-5 ... 55 °C
R.H. range	10 ... 90 %rh
Mounting place	air duct
Immersion depth	230 mm
Power supply	24 Vac; 3 VA
IP class	IP40
Wiring terminals	6
Output Signal	2x 0..10V: Temp/RH

Transmitters and additional passive temperature sensor

Temperature element	Type
Pt1000	**LFH00-2B65**
NTC10k	**LFH10-2B65**
NTC20k	**LFH20-2B65**

Wall module with temperature NTC20k sensor, and R.H. sensor

Temperature element	NTC20k
Temperature range	10 ... 40 °C
R.H. range	10 ... 95 %rh
R.H. sensing element	capacitive
Power supply	24 Vacdc; 0.15 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Wiring terminals	5
Output Signal	0..10V: Rel.Humidity
IP class	IP30

	Type
	T7560C1006

Relative Humidity and Temperature Sensor

Room R.H.- and temperature sensor

Combined Room Humidity and Temperature Sensor with various sensor elements

Approvals	IEC751 class B for Pt1000 sensor
IP class	IP30
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
Power supply	24 Vac; 0.48 VA
Mounting place	internal wall
Housing (HxWxD)	130 mm; 80 mm; 34 mm

Temperature element	Temperature range °C	Output Signal	Type
–	–	0..10V: Rel.Humidity	**H7012A1010**
Pt1000	0 ... 50	0..10V: Rel.Humidity	**H7012B1008**
NTC20k	0 ... 50	0..10V: Rel.Humidity	**H7012B1024**
–	0 ... 50	2x 0..10V: Temp/RH	**H7012B1030**

Outdoor R.H.- and temperature sensor/transmitter

IP class	IP34
Temperature range	-30 ... 50 °C
R.H. range	5 ... 95 %rh
R.H. sensing element	capacitive
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	Wiring terminals	Output Signal	Type
–	5	2x 0..10V: Temp/RH	**H7508B1060**
NTC20k	6	0..10V: Rel.Humidity	**H7508B1080**

Room IAQ Monitor

Rigorous design, professional test and calibration for the commercial grade indoor air quality detector. High performance for RESET and/or WELL Certificates, coordinates well with data collection and analysis system, makes multipoint real time monitoring placement easy to achieve. Suitable for intelligent building and systems, air quality data collection systems, green building evaluation systems and ventilation system.

Product description

Additional description

FEATURES

- 24-hour online real-time detection of indoor air quality.
- The sensor module in the monitor is specifically designed for detection stability to ensure reliability.
- Long-term operation stability and sensor life
- Providing PM2.5, PM10, CO2, TVOC, temperature and humidity sensing in the same module.
- Patented technologies to minimize the influence from ambient temperature and humidity to the measured values.
- Power supply: 1228 VDC/1827 VAC.
- RS-485 Modbus communication interface (optional)
- Three-color light ring indicates different levels of indoor air quality; the light ring can also be turned off.
- Ceiling mounting and wall mounting with contemporary appearance.
- Simple structure and installation, makes even ceiling mounting easy and convenient.
- RESET certified as grade B monitor for Green Building Assessment and Certification.

High precision digital integrated temperature and humidity sensor

	Type
	C7355A1050

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
IP class	IP20
Power supply	24 Vacdc; 1 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
Output Signal	0..10V: air quality
Additional description	Adjustable output offset and LED display

	Type
	C7110A1010

Room temperature/ CO2 sensor

For sensing or controlling of CO_2 concentration in buildings.

IP class	IP20
Temperature range	0 ... 50 °C
Power supply	24 Vac; 2 VA
Mounting place	internal wall
Housing (HxWxD)	104 mm; 99 mm; 30 mm
CO2 range	400 ... 2000/3000 ppm
Additional description	Automatic baseline calibration, and quick calibration options.

Temperature element	LED functions	Output Signal	Type
–	operation as CO2 indicator	2x 0..10V: Temp/CO2	**C7110C1001A**
NTC20k	–	0..10V: CO2	**C7110C1080**

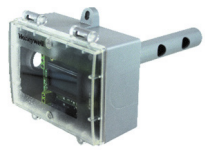
Room temperature/ CO2 sensor

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

LED functions	operation as occupancy indicator
Output Signal	0..10V: CO2
CO2 range	400 ... 2000/3000 ppm
IP class	IP20
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
CO2 range	0 ... 2000 ppm
Mounting place	air duct
Immersion depth	200 mm
Power supply	24 Vac; 3 VA
Output Signal	2x 0..10V: Temp/CO2
IP class	IP20

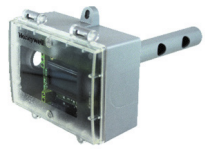
Transmitters only

Temperature element	Wiring terminals	Type
–	5	**HCTDTF1VX-EU**

Transmitter and additional passive temperature sensor

Temperature element	Wiring terminals	Type
Pt1000	6	**AQS-KAM-00**
NTC10k	6	**AQS-KAM-10**
NTC20k	6	**HCEDTF20-EU**

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



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

Temperature range	0 ... 50 °C
R.H. range	10 ... 90 %rh
CO2 range	0 ... 2000 ppm
Mounting place	air duct
Immersion depth	200 mm
Power supply	24 Vac; 3 VA
Wiring terminals	6
Output Signal	3x 0..10V: Temp/RH/CO2
IP class	IP20

Type
HCHTDTF1VX-EU

CO2 Gas detector for Duct application, CDS2000

CDS2000A3000C sensor and controller measures the carbon dioxide gas concentration in the ventilated duct. This product is used in ventilation and air conditioning systems to control the amount of fresh outdoor air supplied to maintain acceptable levels of CO2 in the space.
Specification

- Sensing method: NDIR (Non-dispersive infrared)
- Coverage area: approximately 100 m^2
- Response time: Within 120 sec (90% step)

CO2 range	0 ... 2000 ppm
Output Signal	2..10V/4..20mA/relay: CO2
Mounting place	air duct
IP class	IP63
Alarm relay	SPST relay, normally open, 1A/24Vdc contact rating; activated at greater than 1000ppm, deactivated at less than 900ppm
Power supply	24 Vac; 10 VA

	Type
	CDS2000A3000C

TR120 Touch Screen

The TR120/TR120-H are color touch screen wall modules compatible with MERLIN NX and MERLIN NX Compact VAV controllers. The wall module communicates and is powered by the Sylk bus, so no additional wiring is needed. Both versions include integral temperature, while the TR120-H also features a humidity sensor to control comfort. The device enables local controller configuration through an easy-to-use touch screen interface with menu-driven selections.

- The home screen can display one to three of any of the following parameters: Temperature Setpoint, Room Temperature, Room Humidity, Outdoor Humidity, Outdoor Temperature, and Time, or one of virtually any parameter in the controller.
- Vertical or horizontal orientation.
- Restricted tenant access to controller parameters or imposed HVAC settings limits via password protection.
- Assign labels for enumerated values.
- Link setpoint limits to a network variable.
- Access and adjust most parameters in the controller.
- Access and adjust the controller schedule.
- Balance the VAV system from the wall module.
- Permanent retention of user configuration, including setpoints after a power outage

Product description	Type
Sylk touch screen wall module, temperature sensor, scheduling and parameter access	**TR120**
Sylk touch screen wall module, temperature- and humidity sensor, scheduling and parameter access	**TR120-H**

TR40/TR42 Room Sensors and Displays

The TR40 and TR42 series of room sensors and displays are designed to operate with Trend IQX controllers. All models have an integral temperature sensor and variants are available that also include sensors for relative humidity and/or CO2 concentration. The TR42 features a monochrome backlit LCD display which can be configured to show sensor readings and allow user control of fan speed, occupancy and temperature setpoint. Up to 7 devices can be connected to the controller by a two wire Sylk bus which carries both data and power.

- Single power/data connection to controller reduces wiring.
- Temperature sensing plus versions with humidity and/or CO2
- Operates in either C or F.
- Common backplate and connections allows easy upgrade from TR40 to TR42.
- TR42 only:
- Backlit LCD display with temperature, humidity, CO2, fan speed, occupancy and setpoint display options.
- Setpoint, fan speed, and occupancy override functions

Product description	Type
Wall Module, Temp only, Sylk	**TR40**
Wall Module, Temp and Humidity, Sylk	**TR40-H**
Wall Module, Temp, CO2, Sylk	**TR40-CO2**
Wall Module, Temp, Humidity, CO2, Sylk	**TR40-H-CO2**
LCD Wall Module, Temp only, Sylk	**TR42**
LCD Wall Module, Temp and Humidity, Sylk	**TR42-H**
LCD Wall Module, Temp and CO2, Sylk	**TR42-CO2**
LCD Wall Module, Temp, Humidity, CO2, Sylk	**TR42-H-CO2**
Wall module for IQX with temperature, humidity and CO2 sensors	**TR40-HC-D1**
LCD Wall module for IQX with temperature and humidity sensors	**TR42-H-D1**

In-Duct IAQ Monitor

This monitor is an advanced, configurable device for commercial buildings. It monitors PM2.5/ PM10, CO2, TVOC, temperature and relative humidity. This device communicates using the Modbus protocol over RS-485 and easily integrates with the building management operation. The built-in commercial grade, high-precision sensor module, supports long-term stable and reliable application.

Product description

Additional description

FEATURES

- The in-duct air quality monitor is specially designed for monitoring multiple air quality parameters in the outdoor or return air ducts.
- The built-in sensor module is designed with enclosed cast aluminum structure. It ensures stability and shielding from interference.
- Built-in regulated fan insures constant air volume and improves the stability and lifetime of the sensor
- Special design of pitot tube adapts to a wider range of air speeds, allowing longer lifetime and reducing the need to change the air pump.
- Easy to clean filter mesh, can be cleaned and used many times.
- Temperature and humidity compensation reduces the impact of change in ambient environment.
- Real-time monitoring parameters: particles (PM2.5 and PM10), carbon dioxide (CO2), TVOC, air temperature and humidity.
- Isolated measurements of temperature and relative humidity in the air duct assures data accuracy
- RS-485 Modbus communication interface

Laser particle sensor

	Type
	C7355B1052

Air Quality Sensors

The C7364 indoor air quality sensors use an advanced MEMS metal oxide semiconductor sensor to detect poor air quality. The sensor reacts quickly to detect a broad range of VOCs such as smoke, cooking odors, bio-effluence, outdoor pollutants and from human activities. The sensor captures all VOC emissions that are completely invisible to CO2 sensors. The TVOC sensor emulates the human perception of air quality such as foul odors (stale) as compared to a CO2 sensor and even detects odorless, potentially hazardous substances such as carbon monoxide.

Additional description

FEATURES

- Measures total VOCs
- High sensitivity and fast response
- Stable long-term operation
- 0 to 2000 ppm CO2 equivalent output signal
- Analog stepped output for relative air quality indication
- Internal menu for easy setup
- Linear output for logging and control
- Selectable 0-5 or 0-10 Vdc signal

VOC sensors

Product description	Type
Wall mount enclosure, White ABS IP30	**C7364A1016**
Grey polycarbonate, UL94-V0, IP65	**C7364B1014**

Commercial Duct Mounted Electronic Air Cleaner

The high-efficiency F58G,H Commercial Electronic Air Cleaner is mounted to the return air duct of a forced-air heating, cooling, or ventilating system. It captures a significant amount of airborne particles 0.3 micron and larger from the air circulated through it. F58H requires connection to F58G power supply.

Additional description

FEATURES

- Capacity to 2000 cfm (3400 m3/hr) per F58G unit, 1000 cfm (1700 m3/hr) per F58H unit.
- Multiple units may be interconnected to form an array of air cleaners.
- Solid-state power supply is self-regulating and maintains peak efficiency during a wide range of cell dirt-loading conditions.
- Indicator lights signal proper operation and fault conditions.
- May be connected to a building management system
- Relay closure occurs when fault occurs or when cells need cleaning
- Galvanized cabinet protects against rust
- Test button checks system operation.
- Pre-filter screen protects cells from large dirt particles.
- F58G UV includes 55 W high irradiation UV lamp.
- UV lamp can be operated continuously during equipment operation.
- UV-C can eliminate micro-organic contaminants that adhere to the EAC cells

Product description	Type
Duct mounted, 220V/50Hz, w BMS and wash light, 2000 cfm, with UV	**F58G1016EUV**
Duct mounted, 220V/50Hz, w BMS and wash light, 2000 cfm,	**F58G1016E**
EAC, 1000CFM, Requires F58G	**F58H1006**

Duct Mounted UV System

Honeywell HUVF Series is designed for installation inside the air handling units or ductwork of the HVAC system for the purpose of surface disinfection using ultraviolet germicidal irradiation. This system is uses UV-C technology which is effective in killing mold, bacteria and viruses. This system is effective in coil cleaning and helps in maintaining the cooling coil efficiency. This UV based system is effective in deactivating the microbes and improving the overall indoor air quality by reducing the microbial load on the indoor air

Additional description

FEATURES

- Suitable for mounting in AHU near Cooling coil.
- Plug and Play design enables ease of installation.
- Effective on all types of pathogens.
- Effective in IAQ improvement.
- Effective deactivation of viruses and bacteria killing with 254 nm wavelength UVC.
- Effective in reducing microbe generated VOCs in AHU.

DUCT MOUNTED UV SYSTEM

Product description	Type
1 Lamp - 23W max.	**HUVF58C1000**
2 Lamps - 23W max. each	**HUVF58C2000**

Wall Particulate Matter Sensor

The C7363A Particulate Matter Sensor uses an optical sensor based on laser scattering principles and features innovative contamination resistance technology to perform highly accurate and reliable PM measurements. The sensor measures particles of PM2.5 and PM10, with a continuous operation lifetime of more than 8 years. The sensor will provide long-term reliability and high resolution particle size grouping for the detection of environmental dust and other particles

Product description

Additional description

FEATURES

- Laser scatter method sensor
- Detection of environmental dusts and other particles
- Highly accurate and reliable PM measurements
- Selectable PM1.0, PM2.5, PM4.0 or PM10
- 4-20 mA, 0-5 Vdc or 0-10 Vdc signal
- Internal menu for easy setup
- The C7363A series can be mounted directly to a single gang electrical box or directly to a wall. The backplate includes many mounting hole configurations to allow for mounting on a variety of electrical boxes.

Laser scatter method

	Type
	C7363A1017

TR80 MODBUS WALL MODULES

Honeywell TR80 wall module offers onboard Temperature & Humidity Sensors, integrated HVAC Display, Light & Blind control. It comes in classy black and white color with glass front. It can replace the clutter on the wall to provide one Unified room control from single pane of glass.

- Integrated HVAC, Lighting and Blind control (Avoid Wall Clutter)
- Modern and Trendy Design
- Black & White color to blend within room
- Glass front (easy to clean/disinfect, difficult to scratch)
- Backlit Capacitive Keys
- Max use of Symbols (Can be used by any country without language issues)
- Minimum SKUs, Max functionality
- Two version: with and without Honeywell Logo
- Display Indoor Air Quality Parameters
- BTS Product Patented by Honeywell

Product description	Type
Modbus Wall Module 24V AC/DC White without Logo	**TR80UWD**
Modbus Wall Module 230VAC White without Logo	**TR80UWA**
Modbus Wall Module 24VDC Black without Logo	**TR80UBD**
Modbus Wall Module 230VAC Black without Logo	**TR80UBA**
Modbus Wall Module 24V AC/DC White with Honeywell	**TR80BWD**
Modbus Wall Module 230VAC White with Honeywell	**TR80BWA**
Modbus Wall Module 24V AC/ DC Black with Honeywell	**TR80BBD**
Modbus Wall Module 230VAC Black with Honeywell	**TR80BBA**

Velocity/Flow — Page

Honeywell

Air Velocity Sensors

Air velocity sensor

Response time	4s (default) or 1s selectable by link
Velocity range	2 ... 10/15/20 m/s
Output Signal	2..10V, 4..20mA: air velocity
Mounting place	air duct
IP class	IP65
Power supply	24 Vacdc; 4 VA
Medium type	air
Media temp.	-25 ... 50 °C
Additional description	Humidity 5..95 %rh, non-condensing

Mounting	Immersion depth mm	Sensing element	**Type**
air duct, sensor on unit	between 50 and 200	probe	**HAVDTXX-EU**

Flow Switches

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.

Switch function/capacity	SPDT, capacity 250 Vac, 15(8) A
Setpoint device	screw
Sensing element	paddle
Flow setpoint range	2.5 ... 9.2 m/s
Outputs	1xSPDT
Mounting place	air duct
Immersion depth	175 mm
IP class	IP65
Medium type	air
Max. pressure	0.25 bar
Media temp.	-40 ... 85 °C

	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.

Switch function/capacity	SPDT, capacity 250Vac, 15(8) A
Setpoint device	screw
Sensing element	paddle
Flow setpoint range	0.6 ... 165 m3/h pipe size dependent
Outputs	1xSPDT
Mounting place	in pipe
Immersion depth	paddle dependent, 25..300 mm
IP class	IP65
Media temp.	-40 ... 120 °C

Medium type	Max. pressure bar	Type
liquid	11	**S6065A1003**
agressive liquid	30	**S6065A2001**

Electronical air flow switch for air (SLF + 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.

Sensing element	probe
Flow setpoint range	with ASL453 unit 0,1 ... 20 m/s
Mounting place	air duct
Immersion depth	35 mm
IP class	IP67
Medium type	air
Media temp.	-20 ... 100 °C

Sensor

	Type
	SLF3

Evaluation Units for SLF3 sensor

Evaluation Unit, output SPDT 230V 8A, Power supply 24V	**ASL453/24**
Evaluation Unit, output SPDT 230V 8A, Power supply 230V	**ASL453**

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.

Switch function/capacity	SPDT, capacity 250 Vac, 10(2) A
Sensing element	probe
Flow setpoint range	0.1 ... 30 m/s
Outputs	1xSPDT
Mounting place	air duct
Immersion depth	130 mm
IP class	IP65
Medium type	air
Max. pressure	10 bar
Setpoint device	inside
Media temp.	-10 ... 80 °C
Additional description	LED's available for indication of power supply and switch status.

Process connection PG7 + mounting flange

Power supply Vac; VA	Type
24; 4	**KSL24**
230; 4	**KSL230**

Flow Switches

Electronical flow switch for liquid and air (SWF + ASW)

The flow in fluids and gaseous media 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.

Sensing element	probe
Flow setpoint range	with ASW unit 0.05/0.5 ... 3/20 m/s
Mounting place	in pipe or duct
IP class	IP65
Medium type	liquid or air
Max. pressure	20 bar
Media temp.	-15 ... 80 °C
Additional description	LED available for indication of power supply

Sensor

Immersion depth mm	Type
25	**SWF62**
45	**SWF62L**

Evaluation Units for SWF62 sensors

Evaluation Unit, output SPDT 250V 8A, Power supply 24V	**ASW454/24**
Evaluation Unit, output SPDT 250V 8A, Power supply 230V	**ASW454**

Electronic flow switches for liquid, compact version (KSW)

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

Switch function/capacity	SPDT, capacity 250 Vac, 6 A
Setpoint device	inside
Sensing element	probe
Flow setpoint range	0.05 ... 3 m/s
Outputs	1xSPDT
Mounting place	in pipe
Immersion depth	45 mm
IP class	IP65
Medium type	liquid
Max. pressure	20 bar
Media temp.	-10 ... 80 °C
Additional description	LED's available for indication of power supply and switch status.

Process connection G1/2"

Power supply Vac; VA	Type
24; 5	**KSW24**
230; 5	**KSW230**

Pressure Switches

3

Honeywell

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
Sensing element material	Stainless Steel
Kind of pressure	differential pressure, relative
Power supply	24 Vdc; 1 VA
Medium type	liquid or gas
IP class	IP65
Ambient temperature	-20 ... 70 °C

Pressure Swith HMI

Max. pressure (bar)	Pressure adjustment range (bar)	Type
21	0 ... 6	**PSHDB0062**
60	0 ... 20	**PSHDB0202**

Accessories for Pressure Switches / Transmitters

Flanged Pressure Mediators

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
50	0.3	-40 ... 120	**ZFV184-50**
80	0.15	-40 ... 120	**ZFV184-80**

Flanged Pressure Mediators, teflon surfaced

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
50	0.3	-40 ... 120	**ZFV184-50PTFE**
80	0.15	-40 ... 120	**ZFV184-80PTFE**

Flanged Pressure Mediators with 1 m pipeline

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
50	0.3	-30 ... 300	**ZFV185-50**
80	0.15	-30 ... 300	**ZFV185-80**

Pressure Mediator

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
50	0.4	-30 ... 120	**ZFV162-50**

Pressure Mediator, teflon surfaced

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
50	0.4	-30 ... 120	**ZFV162-50PTFE**

Screw-in Pressure Mediator

DN size (mm)	Lowest pressure point (bar)	Media temp. (°C)	Type
G1	0.5	-30 ... 120	**ZFV749**

Syphons

Syphon for high temperature, steel, U-shape	**U430B**
Syphon for high temperature, steinless steel, U-shape	**U480B**
Syphon for high temperature, steel, circular	**K430D**
Syphon for high temperature, stainless steel, circular	**K480D**

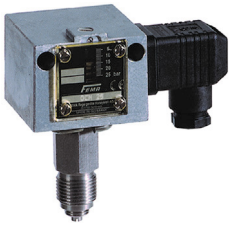
Accessories

Adapter	**NPT1**
Pressure surge reducer	**DMW**
Sealing	**P2**

Accessories for Differential Switches / Transmitters

Shut-off valve combination, 5-venting valve	**VKD5**
Male adapter union, O-ring NBR	**MAU8/MS**

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
IP 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
Medium type	liquid or gas
Scale calibration	falling pressure

Pressure Switches Standard

Fixed pressure hysteresis

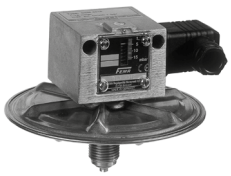
Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. bar	Max. pressure bar	Sensing element material	Type
0.04 ... 0.25	–	0.03	6	Copper + Brass	**DCM025**
0.1 ... 0.6	–	0.04	6	Copper + Brass	**DCM06**
0.2 ... 1.6	–	0.04	6	Copper + Brass	**DCM1**
0.2 ... 2.5	–	0.1	16	Stainless Steel	**DCM3**
0.5 ... 6	–	0.15	16	Stainless Steel	**DCM6**
1 ... 10	–	0.3	25	Stainless Steel	**DCM10**
3 ... 16	–	0.5	25	Stainless Steel	**DCM16**
4 ... 25	–	1	60	Stainless Steel	**DCM25**
8 ... 40	–	1.3	60	Stainless Steel	**DCM40**
16 ... 63	–	2	130	Stainless Steel	**DCM63**
0.04 ... 0.25	–	0.03	6	Stainless Steel	**DNM025**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. 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	Stainless Steel	**DCMV3**
0.5 ... 6	0.25 ... 2	–	16	Stainless Steel	**DCMV6**
1 ... 10	0.5 ... 2.8	–	25	Stainless Steel	**DCMV10**
3 ... 16	0.7 ... 3.5	–	25	Stainless Steel	**DCMV16**
4 ... 25	1.3 ... 6	–	60	Stainless Steel	**DCMV25**
8 ... 40	2.2 ... 6.6	–	60	Stainless Steel	**DCMV40**
16 ... 63	3 ... 10	–	130	Stainless Steel	**DCMV63**

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

Pressure switch for liquid, gas, small range (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
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Media temp.	-15 ... 60 °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	-15 ... 60 °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 • **-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
Medium type	liquid or gas
Scale calibration	falling pressure

Fixed pressure hysteresis

Pressure adjustment range mbar	Switching diff. mbar	Max. pressure bar	Sensing element material	Type
1 ... 16	2	1	Perbunan + Stainless Steel	**DCM4016**
4 ... 25	2	1	Perbunan + Stainless Steel	**DCM4025**
10 ... 100	12	10	Perbunan + Brass	**DCM1000**

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

Pressure switch for aggressive liquid, gas (DNS)

For monitoring and controlling pressures in devices of the chemical industry and in the process engineering as well as wherever the pressure of aggressive liquids and gases has to be monitored.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP 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	SIL2 according IEC 61508-2
Medium type	agressive liquid or gas
Scale calibration	falling pressure
Sensing element material	Stainless Steel

Fixed pressure hysteresis

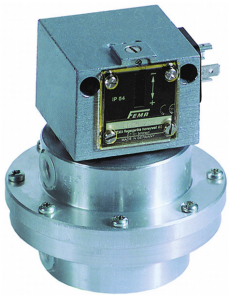
Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. bar	Max. pressure bar	Type
0.04 ... 0.25	–	0.03	6	**DNS025-351**
0.1 ... 0.6	–	0.04	6	**DNS06-201**
0.2 ... 1.6	–	0.06	6	**DNS1-201**
0.2 ... 2.5	–	0.1	16	**DNS3-201**
0.5 ... 6	–	0.15	16	**DNS6-201**
1 ... 10	–	0.3	16	**DNS10-201**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. bar	Max. pressure bar	Type
0.1 ... 0.6	0.08 ... 0.6	–	6	**DNS06-203**
1 ... 10	0.5 ... 2.5	–	16	**DNS10-203**

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

Differential pressure switch for liquid, gas (DDCM)



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

Kind of pressure	differential pressure, relative
Pressure connection	internal thread G1/4
Electrical connection	Plug DIN EN 175301
IP 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
Medium type	liquid or gas
Scale calibration	falling pressure

Pressure adjustment range bar	Switching diff. 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	Stainless Steel	**DDCM014**
0.2 ... 1.6	0.13	15	Stainless Steel	**DDCM1**
1 ... 4	0.2	25	Stainless Steel	**DDCM4**
0.5 ... 6	0.2	15	Stainless Steel	**DDCM6**
3 ... 16	0.6	25	Stainless Steel	**DDCM16**

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

Vacuum switch for liquid, gas (VCM)

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

Kind of pressure	vacuum, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP 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 (with the exception of VCM4156), IP65 • **-217**: two microswitches, 1 plug, switching in succession, adjustable switching interval (with the exception of VCM4156) • **-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
Medium type	liquid or gas
Scale calibration	falling pressure

Fixed pressure hysteresis

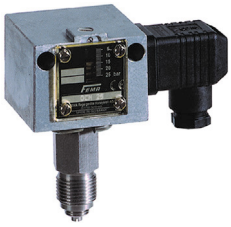
Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. mbar	Max. pressure bar	Sensing element material	Type
-0.015 ... 0.006	–	2	1	Perbunan + Stainless Steel	**VCM4156**
-0.25 ... 0.1	–	25	1.5	Copper + Brass	**VCM301**
-1 ... 0.1	–	45	3	Copper + Brass	**VCM101**
-0.9 ... 0.5	–	50	3	Copper + Brass	**VCM095**
-1 ... 0.1	–	50	6	Stainless Steel	**VNM111**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. mbar	Max. pressure bar	Sensing element material	Type
-1 ... 0.1	0.08 ... 0.35	–	3	Copper + Brass	**VCMV101**
-0.9 ... 0.5	0.09 ... 0.4	–	3	Copper + Brass	**VCMV095**
-1 ... 0.1	0.09 ... 0.65	–	6	Stainless Steel	**VNMV111**

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

Vacuum switch for aggressive liquid, gas (VNS)



For monitoring and controlling pressures in devices of the chemical industry and in the process engineering as well as wherever the pressure of aggressive liquids and gases has to be monitored.

Kind of pressure	vacuum, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP 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	SIL2 according IEC 61508-2
Medium type	agressive liquid or gas
Scale calibration	falling pressure
Pressure adjustment range	-1 ... 0.1 bar
Switching diff.	50 mbar
Max. pressure	6 bar
Sensing element material	Stainless Steel

Fixed pressure hysteresis

	Type
	VNS111-201
Syphon for high temperature, steel, U-shape (for more accessories, see Accessories for Pressure Switches / Transmitters)	**U430B**

Differential Pressure, Switch, Liquid and Gas

Differential pressure, vacuum and overpressure switches suitable for monitoring neutral and slightly aggressive liquids and non-flammable gases. It can be used as a flow switch fitted across an orifice plate.

Kind of pressure	differential pressure, relative
Pressure connection	G1/8" (DIN 259); 1/8" BSP female thread
Electrical connection	screw terminals
IP class	IP54
Housing material	Case: Brass, Cover: Plastic, Diaphragm: EPDM
Media temp.	-10 ... 80 °C
Medium	liquid/gaseous
Ambient temperature	-10 ... 80 °C
Sensing element material	EPDM
Medium type	liquid or gas
Max. pressure	10 bar

Pressure adjustment range mbar	Type
40 ... 200	**DPSL200**
150 ... 1000	**DPSL1000**
400..2000	**DPSL2000**

Differential pressure switch for air (DPS)

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

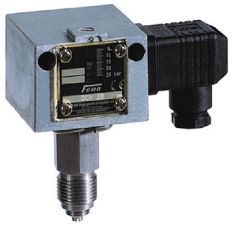
Kind of pressure	overpressure, relative
Pressure connection	plastic connection piece for 5 mm (internal) hose
Electrical connection	AMP connector 6,3x0,8 (DIN 46244) or screw terminals
IP class	IP54
Sensing element material	ABS + Silicon
Media temp.	-20 ... 85 °C
Ambient temperature	-20 ... 85 °C
Switch function/capacity	SPDT switch 240 Vac; 1,5 A (0.4)A
Certificates	CE0085AR0013 according EC Gas Appliance Directive EU/2016/426 and DIN EN 1854
Medium type	air
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 diff. Pa	Type
20 ... 200	10	**DPS200**
40 ... 400	20	**DPS400**
50 ... 500	20	**DPS500**
200 ... 1000	100	**DPS1000**
500 ... 2500	150	**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**

Maximum pressure monitor of 'special construction' (DA)



Maximum pressure monitor with selfmonitoring sensor
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
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
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
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-DW-15-132 for DWAM ...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 Directive 97/23 EC • SIL2 according IEC 61508-2
Medium type	hot water, steam
Scale calibration	rising pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. bar	Max. pressure bar	Type
0.1 ... 0.6	–	0.04	5	**DWAM06**
0.2 ... 1.6	–	0.05	5	**DWAM1**
1.2 ... 6	–	0.2	10	**DWAM6**
3 ... 16	–	0.4	20	**DWAM16**
6 ... 32	–	1.2	45	**DWAM32**

Adjustable pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. bar	Max. pressure bar	Type
1.2 ... 6	0.4 ... 1.5	–	10	**DWAMV6**
3 ... 16	0.8 ... 2.5	–	20	**DWAMV16**

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

Pressure Switches, component tested

Pressure monitor for fuel gases (DGM)

For overpressure monitoring of fuel gases.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Media temp.	-25 ... 60 °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 ... 60 °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 • **-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 • **-574**: Normally closed contact with resistance combination for minimum pressure monitoring. Gold-plated contacts. Housing with surface protection (chemical version), IP65, degree of protection Ex-i • **-575**: Normally closed contact with reclosing lock-out resistance combination for minimum pressure monitoring. Housing with surface protection (chemical version), IP65, degree of protection Ex-i • **-576**: Normally closed contact with resistance combination for maximum pressure monitoring. Gold-plated contacts. Housing with surface protection (chemical version), IP65, degree of protection Ex-i • **-577**: Normally closed contact with reclosing lock-out and resistance combination for maximum pressure monitoring. Housing with surface protection (chemical version), IP65, degree of protection Ex-i
Certificates	• CE-0085 AQ 1088 according EU/2016/426 A III B (09.03.2016) and DIN EN 1854 (01.10.2010) • SIL2 according IEC 61508-2
Medium type	fuel gas
Scale calibration	rising pressure

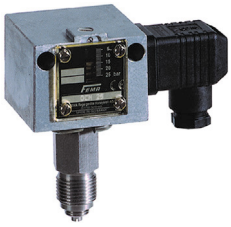
Pressure Switches, component tested

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. mbar	Max. pressure bar	Sensing element material	Type
0.015 ... 0.06	6	0.8	Copper + Brass	**DGM306A**
0.02 ... 0.1	7	0.8	Copper + Brass	**DGM310A**
0.04 ... 0.25	10	0.8	Copper + Brass	**DGM325A**
0.1 ... 0.6	25	2	Copper + Brass	**DGM06A**
0.2 ... 1.6	40	3	Copper + Brass	**DGM1A**
0.015 ... 0.06	8	5	Stainless Steel	**DGM506**
0.04 ... 0.16	12	5	Stainless Steel	**DGM516**
0.04 ... 0.16	40	5	Stainless Steel	**DGM516-301**
0.04 ... 0.16	40	5	Stainless Steel	**DGM516-363**

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

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
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
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	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2015-09 • CE-0085CL0343 according to DIN EN 1854, Issue 01.10.2010 • SIL2 according IEC 61508-2
Medium type	hot water, steam, gas, fuel
Scale calibration	rising pressure

Pressure Switches, component tested

Fixed pressure hysteresis

Pressure adjustment range bar	Adj. switching diff. bar	Switching diff. 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	Adj. switching diff. bar	Switching diff. 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 ... 1.4	–	16	**DWR3-203**
0.5 ... 6	0.3 ... 1.7	–	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**

Pressure Switches, component tested

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
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
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	• TV-DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017, DIN EN 12952-11:2007 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • ID 0000020756 according VdTUEV Memorandum Pressure 100, issue 04.83 • CE-0085CL0343 according DIN EN 1854, Issue 01.10.2010 • SIL2 according IEC 61508-2
Pressure interlock	maximum press.
Medium type	hot water, steam, gas, fuel
Scale calibration	rising pressure

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**

Pressure Switches, component tested

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

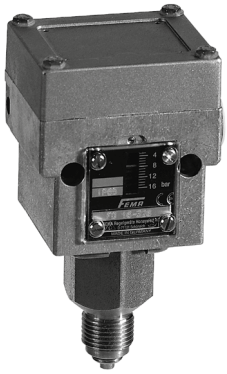
For minimum-pressure detection of steam, hot water, burnable gases, liquid fuels.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
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	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017, DIN EN 12952-11:2007 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • ID 0000020757 according VdTUEV Memorandum Pressure 100, Issue 4.83 • CE-0085CL0343 according DIN EN 1854, Issue 01.10.2010 • SIL2 according IEC 61508-2
Pressure interlock	minimum press.
Medium type	hot water, steam, gas, fuel
Scale calibration	falling pressure

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**

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

Maximum pressure limiter (FD)



Maximum pressure limiter for liquid gas systems with safety function, degree of protection Ex-i (only together with isolating switching amplifier).

Kind of pressure	overpressure, relative
Pressure connection	external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Media temp.	-25 ... 60 °C
Media temp. limit	temperatures up to 60 °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 ... 60 °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 with resistor combination for circuit- break and short-circuit
Certificates	• ID 0000033127 according VdTUEV Memorandum Pressure 100/1, Issue 07.2006 and DIN EN 12952-11, Issue 09.2007 and DIN EN 12953-9, Issue 09.2007 • 01 202 931-B-11-0002 according Directive 97/23/EC • SIL2 according IEC 61508-2
Medium type	liquid gas
Scale calibration	rising pressure
Pressure adjustment range	3 ... 16 bar
Max. pressure	40 bar
Sensing element material	Stainless Steel
Additional description	**Products only may be used in conjunction with isolating switching amplifier.**

Switching diff. bar	Pressure interlock	Type
0.5	–	**FD16-326**
2.5	maximum press.	**FD16-327**

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

Maximum pressure limiter of 'special construction' (SDB)

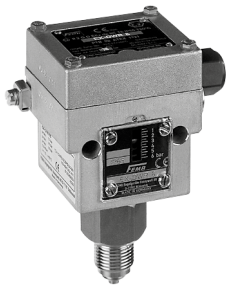
Maximum pressure limiter with selfmonitoring sensor and internal relock
For steam and hot water.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	Plug DIN EN 175301
IP class	IP54
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Sensing element material	Stainless Steel
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	maximum press.
Medium type	hot water, steam
Scale calibration	rising pressure

Pressure adjustment range bar	Switching diff. 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**

Pressure switch (Ex-d) for liquid, gas (Ex-DCM)



Pressure switch for Ex-applications. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb and Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db
For overpressure monitoring of non-aggressive liquids and gaseous media.

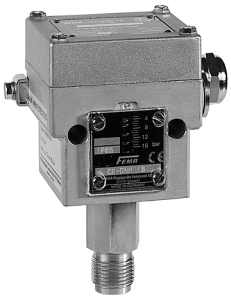
Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Media temp.	-20 ... 60 °C
Media temp. limit	Higher 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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• SIL2 according IEC 61508-2 • IBExU12ATEX1040 according to ATEX 2014/34/EU • IECEx IBE 14.0077
Medium type	liquid or gas
Ex class	Ex-d
Scale calibration	falling pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Sensing element material	Type
0.001 ... 0.016	0.002	1	Perbunan + Stainless Steel	**EX-DCM4016**
1 ... 10	0.3	16	Stainless Steel	**EX-DNM10**

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

Pressure switch (Ex-d) for aggressive liquid, gas (Ex-DNS)



For monitoring and controlling pressures in Ex-applications in devices of the chemical industry and in the process engineering as well as wherever the pressure of aggressive liquids and gases has to be monitored. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb and Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db

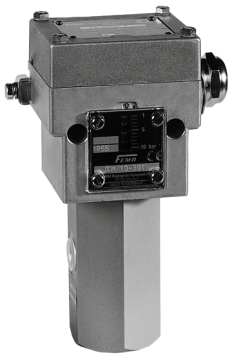
Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Media temp.	-20 ... 60 °C
Media temp. limit	Higher 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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-2
Sensing element material	Stainless Steel
Medium type	agressive liquid or gas
Ex class	Ex-d
Scale calibration	falling pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
0.04 ... 0.25	0.03	6	**EX-DNS025**
0.1 ... 0.6	0.04	6	**EX-DNS06**
0.2 ... 1.6	0.06	6	**EX-DNS1**
0.5 ... 6	0.15	16	**EX-DNS6**
1 ... 10	0.3	16	**EX-DNS10**

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

Differential pressure switch (Ex-d) for liquid, gas (Ex-DDCM)



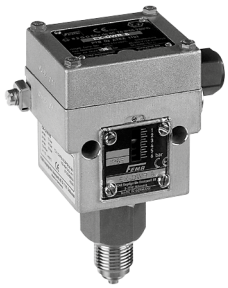
Differential pressure switch for Ex-applications. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb and Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db
For flow monitoring and differential pressure control of steam, gas, hot/cold water and automatic checking of filter plant.

Kind of pressure	differential pressure, relative
Pressure connection	internal thread G1/4
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Media temp.	-20 ... 60 °C
Media temp. limit	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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• SIL2 according IEC 61508-2 • IBExU12ATEX1040 according to ATEX 2014/34/EU • IECEx IBE 14.0077
Medium type	liquid or gas
Ex class	Ex-d
Scale calibration	falling pressure

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Sensing element material	Type
0.004 ... 0.025	0.002	0.5	Perbunan + Aluminium	**EX-DDCM252**
0.1 ... 0.6	0.035	3	Perbunan + Aluminium	**EX-DDCM6002**
-0.1 ... 0.4	0.15	15	Stainless Steel	**EX-DDCM014**
1 ... 4	0.2	25	Stainless Steel	**EX-DDCM4**

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

Vacuum switches (Ex-d) liquid, gas (Ex-VCM)



Vacuum switches for Ex-applications. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb and Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db
For monitoring vacuum of non-aggressive liquids and gaseous media.

Kind of pressure	vacuum, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12.
Media temp.	-20 ... 60 °C
Media temp. limit	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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• SIL2 according IEC 61508-2 • IBExU12ATEX1040 according to ATEX 2014/34/EU • IECEx IBE 14.0077
Medium type	liquid or gas
Ex class	Ex-d
Scale calibration	falling pressure

Pressure adjustment range mbar	Switching diff. mbar	Max. pressure bar	Sensing element material	**Type**
-15 ... 6	2	1	Perbunan + Stainless Steel	**EX-VCM4156**
-250 ... 100	45	3	Stainless Steel	**EX-VNM301**
-1000 ... 100	50	6	Stainless Steel	**EX-VNM111**

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

Pressure Switches, component tested with ATEX approval

Pressure monitor (Ex-d) for burnable gas (Ex-DGM)

For overpressure monitoring in Ex-applications of fuel gases. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb, Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db

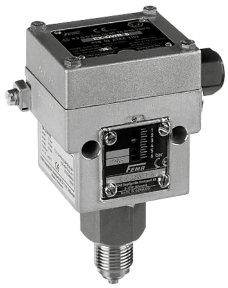
Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• CE-0085 AQ 1088 according EU/2009/142/EG (30.11.2009) and DIN EN 1854 (01.07.2006) • IBExU12ATEX1040 according ATEX 2014/34/EU • SIL2 according IEC 61508-2
Medium type	fuel gas
Ex class	Ex-d
Scale calibration	rising pressure
Max. pressure	5 bar

Pressure adjustment range mbar	Switching diff. mbar	Type
15 ... 60	10	**EX-DGM506**
40 ... 160	12	**EX-DGM516**
100 ... 250	20	**EX-DGM525**

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

Pressure Switches, component tested with ATEX approval

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



FEMA negative pressure switches detect the pressure difference relative to atmospheric pressure. All data relating to the switching pressure ranges and thus also the scale divisions on the switching devices are to be understood as the difference in pressure between the releant atmospheric pressure and the set switching pressure. The "zero" reference point on the scale of the unit corresponds to the relevant atmospheric pressure. Degree of Ex-protection: Ex II 2G Ex d e IIC T6 Gb, Ex II 1/2D Ex ta/tb IIIC T80 °C Da/Db
Flame proof enclosure Switch components and other electrical functional units capable of igniting explosive gas mixtures are encapsulated in a housing which will survive the explosive pressure of an internal explosion and the special design of which prevents the transference of this explosion to the ambient atmosphere.

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	60°C. 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 ... 60 °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 2 A inductive, 3 A resistive
Certificates	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • CE-0085CL0343 according to DIN EN 1854, Issue 07.2006 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-02
Medium type	hot water, steam, gas, fuel
Ex class	Ex-d
Scale calibration	rising pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
0.1 ... 0.6	0.04	6	**EX-DWR06**
0.2 ... 1.6	0.06	6	**EX-DWR1**
0.2 ... 2.5	0.1	16	**EX-DWR3**
0.5 ... 6	0.2	16	**EX-DWR6**
0.5 ... 6	0.25	25	**EX-DWR625**
3 ... 16	0.5	25	**EX-DWR16**
4 ... 25	1	63	**EX-DWR25**

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

Pressure Switches, component tested with ATEX approval

Minimum pressure monitor (Ex-i) for hot water, steam, gas, fuel (DWR...-574)

In many aspects, safety engineered pressure limiters offer a higher degree of safety compared with normal pressure switches and are therefore especially suitable for chemical process engineering and thermal installations in which safety is an especially critical factor in pressure monitoring. Pressure switches can also be used in Ex- zones (zone 0, 1, 2 and 20, 21, 22) and, in all cases, require an isolating amplifier. The isolating amplifier is also responsible for monitoring lines for short circuit and line break and therefore offers an additional safety advantage even in non Ex-zones. For Ex-applications, the isolating amplifier must be installed outside the Ex-zone. The lines between the isolating amplifier and the pressure switch are monitored for short circuit and line break. Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 °C Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	65°C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 MikroH
Certificates	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • CE-0085CL0343 according to DIN EN 1854, Issue 07.2006 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-02
Medium type	hot water, steam, gas, fuel
Ex class	Ex-i
Scale calibration	falling pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
0.2 ... 2.5	0.1	16	**DWR3-574**
0.5 ... 6	0.2	16	**DWR6-574**
0.5 ... 6	0.25	25	**DWR625-574**

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

Pressure Switches, component tested with ATEX approval

Minimum pressure monitor (Ex-i) with internal interlock for hot water, steam, gas, fuel (DWR...-575)

In many aspects, safety engineered pressure limiters offer a higher degree of safety compared with normal pressure switches and are therefore especially suitable for chemical process engineering and thermal installations in which safety is an especially critical factor in pressure monitoring. Pressure switches can also be used in Ex- zones (zone 0, 1, 2 and 20, 21, 22) and, in all cases, require an isolating amplifier. The isolating amplifier is also responsible for monitoring lines for short circuit and line break and therefore offers an additional safety advantage even in non Ex-zones. For Ex-applications, the isolating amplifier must be installed outside the Ex-zone. The lines between the isolating amplifier and the pressure switch are monitored for short circuit and line break. Switching contacts: silver alloy Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 °C
Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	60 °C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 MikroH
Certificates	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • CE-0085CL0343 according to DIN EN 1854, Issue 07.2006 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-02
Medium type	hot water, steam, gas, fuel
Ex class	Ex-i
Pressure interlock	minimum press.
Scale calibration	falling pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	**Type**
0.2 ... 2.5	0.1	16	**DWR3-575**
0.5 ... 6	0.25	25	**DWR625-575**
3 ... 16	0.5	25	**DWR16-575**

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

Pressure Switches, component tested with ATEX approval

Maximum pressure monitor (Ex-i) for hot water, steam, gas, fuel (DWR...-576)

In many aspects, safety engineered pressure limiters offer a higher degree of safety compared with normal pressure switches and are therefore especially suitable for chemical process engineering and thermal installations in which safety is an especially critical factor in pressure monitoring. Pressure switches can also be used in Ex- zones (zone 0, 1, 2 and 20, 21, 22) and, in all cases, require an isolating amplifier. The isolating amplifier is also responsible for monitoring lines for short circuit and line break and therefore offers an additional safety advantage even in non Ex-zones. For Ex-applications, the isolating amplifier must be installed outside the Ex-zone. The lines between the isolating amplifier and the pressure switch are monitored for short circuit and line break. Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 °C Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	60 °C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 MikroH
Certificates	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • CE-0085CL0343 according to DIN EN 1854, Issue 07.2006 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-02
Medium type	hot water, steam, gas, fuel
Ex class	Ex-i
Scale calibration	rising pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
0.5 ... 6	0.25	25	**DWR625-576**
3 ... 16	0.5	25	**DWR16-576**
4 ... 25	1	63	**DWR25-576**
8 ... 40	1.3	63	**DWR40-576**

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

Pressure Switches, component tested with ATEX approval

Maximum pressure limiter (Ex-i) with internal interlock for hot water, steam, gas, fuel (DWR...-577)

In many aspects, safety engineered pressure limiters offer a higher degree of safety compared with normal pressure switches and are therefore especially suitable for chemical process engineering and thermal installations in which safety is an especially critical factor in pressure monitoring. Pressure switches can also be used in Ex- zones (zone 0, 1, 2 and 20, 21, 22) and, in all cases, require an isolating amplifier. The isolating amplifier is also responsible for monitoring lines for short circuit and line break and therefore offers an additional safety advantage even in non Ex-zones. For Ex-applications, the isolating amplifier must be installed outside the Ex-zone. The lines between the isolating amplifier and the pressure switch are monitored for short circuit and line break. Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 °C Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-25 ... 60 °C
Media temp. limit	60 °C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 Mikro H
Certificates	• TV.DWFS (SDBFS).17-281 according VdTUEV Memorandum Pressure 100, Issue 03.2017 and DIN EN 12952-11 and DIN EN 12953-9:2007 • ID 0000035004 according DIN EN 764-7:2002 and DIN EN 13611:2008 • CE-0085CL0343 according to DIN EN 1854, Issue 07.2006 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077 • SIL2 according IEC 61508-02
Medium type	hot water, steam, gas, fuel
Ex class	Ex-i
Pressure interlock	maximum press.
Scale calibration	rising pressure

Fixed pressure hysteresis

Pressure adjustment range bar	Max. pressure bar	Type
4 ... 25	63	**DWR25-577**
8 ... 40	63	**DWR40-577**

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

Pressure Switches, component tested with ATEX approval

Maximum pressure monitor (Ex-i) of 'special construction' (DWAM...-576)

Maximum pressure monitor with selfmonitoring sensor for steam and hot water. Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 oC
Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-20 ... 60 °C
Media temp. limit	60 °C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 Mikro-H
Certificates	• TUEV-DW-15-132 for DWAM ...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 Directive 97/23 EC • SIL2 according IEC 61508-2 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077
Medium type	hot water, steam
Ex class	Ex-i

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
0.1 ... 0.6	0.04	5	**DWAM06-576**
0.2 ... 1.6	0.05	5	**DWAM1-576**
1.2 ... 6	0.2	10	**DWAM6-576**

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

Pressure Switches, component tested with ATEX approval

Maximum pressure limiter (Ex-i) of 'special construction' with internal interlock (DWAM...-577)

Maximum pressure limiter with selfmonitoring sensor and internal interlock for steam and hot water. Microswith not positive opening. Contacts: silver alloy. Explosion protection code: Ex II 1/2G Ex ia IIC T6 Ga/Gb, Ex II 1/2D Ex ia IIIC T80 oC
Intrinsically Safety: The equipment employed in explosion relevant areas are components of inherently safe electrical circuits. An electrical circuit is inherently safe if the amount of energy it contains is so small that no spark or other thermal effect can arise. This reliably prevents the ignition of explosive gas mixtures in the proximity of this equipment. In the context of this directive, pressure switches and thermostats containing no switching components with energy storage effects are referred to as "simple electrical equipment."

Kind of pressure	overpressure, relative
Pressure connection	internal thread G1/4, external thread G1/2
Electrical connection	terminal connection M16x1,5
IP class	IP65
Housing material	rugged housing of seawater resistant aluminium die casting GD Al Si 12. Aluminium housing coated with resistant plastic
Sensing element material	Stainless Steel
Media temp.	-20 ... 60 °C
Media temp. limit	60 °C. 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 ... 60 °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	Power supply circuit: Ui = 14 V DC Ri = 1500 Ohm Ci = 1 nF Li = 100 Mikro-H
Certificates	• TUEV-DW-15-132 for DWAM ...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 Directive 97/23 EC • SIL2 according IEC 61508-2 • IBExU12ATEX1040 according ATEX 2014/34/EU • IECEx IBE 14.0077
Medium type	hot water, steam
Ex class	Ex-i
Pressure interlock	maximum press.

Fixed pressure hysteresis

Pressure adjustment range bar	Switching diff. bar	Max. pressure bar	Type
1.2 ... 6	0.25	20	**DWAM625-577**
3 ... 16	0.4	20	**DWAM16-577**
6 ... 32	1.2	45	**DWAM32-577**

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

Pressure Transmitters Page

4

Honeywell

Electronic Pressure Transmitters

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 recording and monitoring of system pressure.
Features:

- 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	Stainless Steel
Certificates	All 2-wire versions are SIL2 approved according IEC 61508
Medium type	liquid or gas
Kind of pressure	overpressure, relative

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

Pressure range (bar)	Max. pressure (bar)	IP class	Ambient temperature (°C)	Output Signal	Supply voltage	Wiring system	Display	Type
-1 ... 1	4	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRV1011A2**
0 ... 4	8	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRB0041A2**
0 ... 10	20	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRB0101A2**
0 ... 16	32	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRB0161A2**
0 ... 25	50	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRB0251A2**
0 ... 40	80	IP67	-20 ... 80	4..20mA	24 Vdc	2-wire	–	**PTSRB0401A2**

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

Pressure range (bar)	Max. pressure (bar)	IP class	Ambient temperature (°C)	Output Signal	Supply voltage	Wiring system	Display	Type
0 ... 1	4	IP67	-20 ... 80	0..10V	24 Vac/dc	3-wire	–	**PTSRB0011V3**
0 ... 4	8	IP67	-20 ... 80	0..10V	24 Vac/dc	3-wire	–	**PTSRB0041V3**
0 ... 10	20	IP67	-20 ... 80	0..10V	24 Vac/dc	3-wire	–	**PTSRB0101V3**
0 ... 16	32	IP67	-20 ... 80	0..10V	24 Vac/dc	3-wire	–	**PTSRB0161V3**
0 ... 25	50	IP67	-20 ... 80	0..10V	24 Vac/dc	3-wire	–	**PTSRB0251V3**

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

Pressure range (bar)	Max. pressure (bar)	IP class	Ambient temperature (°C)	Output Signal	Supply voltage	Wiring system	Display	Type
-1 ... 1	4	IP67	-20 ... 80	4..20mA	24 Vac/dc	3-wire	–	**PTSRV1011A3**
0 ... 10	20	IP67	-20 ... 80	4..20mA	24 Vac/dc	3-wire	–	**PTSRB0101A3**

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

Pressure range (bar)	Max. pressure (bar)	IP class	Ambient temperature (°C)	Output Signal	Supply voltage	Wiring system	Display	Type
0 ... 4	8	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHRB0041A2**
0 ... 10	20	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHRB0101A2**
0 ... 16	32	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHRB0161A2**
0 ... 40	80	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHRB0401A2**

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

Pressure range (bar)	Max. pressure (bar)	IP class	Ambient temperature (°C)	Output Signal	Supply voltage	Wiring system	Display	Type
0 ... 1	4	IP65	-20 ... 70	0..10V	24 Vac/dc	3-wire	yes	**PTHRB0011V3**
0 ... 4	8	IP65	-20 ... 70	0..10V	24 Vac/dc	3-wire	yes	**PTHRB0041V3**
0 ... 10	20	IP65	-20 ... 70	0..10V	24 Vac/dc	3-wire	yes	**PTHRB0101V3**
0 ... 16	32	IP65	-20 ... 70	0..10V	24 Vac/dc	3-wire	yes	**PTHRB0161V3**
0 ... 25	50	IP65	-20 ... 70	0..10V	24 Vac/dc	3-wire	yes	**PTHRB0251V3**

Electronic Pressure Transmitters

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:

- 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

Medium type	liquid or gas
Kind of pressure	differential pressure, relative
Sensing element material	Stainless Steel
Media temp.	-20 ... 80 °C

Pressure Transmitter with HMI (2-wire)

Pressure range bar	Max. pressure bar	IP class	Ambient temperature °C	Output Signal	Supply voltage	Wiring system	Display	**Type**
0 ... 3	6	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHDB0032A2**
0 ... 6	12	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHDB0062A2**
0 ... 20	40	IP65	-20 ... 70	4..20mA	24 Vdc	2-wire	yes	**PTHDB0202A2**

Pressure Transmitter without HMI (3-wire)

Pressure range bar	Max. pressure bar	IP class	Ambient temperature °C	Output Signal	Supply voltage	Wiring system	Display	**Type**
0 ... 1	2	IP67	-20 ... 80	0..10V/4..20mA	24 Vac/dc	3-wire	–	**PTSDB0012V3**
0 ... 3	6	IP67	-20 ... 80	0..10V/4..20mA	24 Vac/dc	3-wire	–	**PTSDB0032V3**
0 ... 6	12	IP67	-20 ... 80	0..10V/4..20mA	24 Vac/dc	3-wire	–	**PTSDB0062V3**

Pressure Transmitter with HMI (3-wire)

Pressure range bar	Max. pressure bar	IP class	Ambient temperature °C	Output Signal	Supply voltage	Wiring system	Display	**Type**
0 ... 1	2	IP65	-20 ... 70	0..10V/4..20mA	24 Vac/dc	3-wire	yes	**PTHDB0012V3**
0 ... 3	6	IP65	-20 ... 70	0..10V/4..20mA	24 Vac/dc	3-wire	yes	**PTHDB0032V3**
0 ... 6	12	IP65	-20 ... 70	0..10V/4..20mA	24 Vac/dc	3-wire	yes	**PTHDB0062V3**
0 ... 20	40	IP65	-20 ... 70	0..10V/4..20mA	24 Vac/dc	3-wire	yes	**PTHDB0202V3**

Piezo-resistive Pressure Transmitters

Differential Pressure Transmitter for gas and liquid (DT)

The DT Differential Pressure Transmitters are suitable for measuring differential pressures in liquid and gaseous media. They operate according to the piezo-resistive measuring principle. The measurement cell is welded into a seal-less stainless steel measurement chamber.
Typical areas of application include:

- Compressors
- Refrigeration and HVAC/R

Electrical connection	Plug DIN EN 175301
Medium type	liquid or gas
Kind of pressure	differential pressure, relative
Sensing element material	Stainless Steel
Media temp.	-15 ... 100 °C
Pressure connection	2 x G1/8"
IP class	IP65

2-wire-system, output signal 4-20 mA, Power Supply: 10-30VDC

Pressure range bar	Max. pressure bar	Output Signal	Supply voltage	Wiring system	Type
0 ... 0.6	5	4..20mA	24 Vdc	2-wire	**DTI06**
0 ... 1	5	4..20mA	24 Vdc	2-wire	**DTI1**
0 ... 2.5	10	4..20mA	24 Vdc	2-wire	**DTI2**
0 ... 4	30	4..20mA	24 Vdc	2-wire	**DTI4**
0 ... 6	30	4..20mA	24 Vdc	2-wire	**DTI6**
0 ... 10	30	4..20mA	24 Vdc	2-wire	**DTI10**

3-wire-system, output signal 0-10 V, Power Supply: 24VAC/DC +/-10%

Pressure range bar	Max. pressure bar	Output Signal	Supply voltage	Wiring system	Type
0 ... 0.6	5	0..10V	24 Vac/dc	3-wire	**DTU06**
0 ... 1	5	0..10V	24 Vac/dc	3-wire	**DTU1**
0 ... 2.5	10	0..10V	24 Vac/dc	3-wire	**DTU2**
0 ... 4	30	0..10V	24 Vac/dc	3-wire	**DTU4**
0 ... 6	30	0..10V	24 Vac/dc	3-wire	**DTU6**
0 ... 10	30	0..10V	24 Vac/dc	3-wire	**DTU10**

Piezo-resistive Pressure Transmitters

Pressure Transmitter for gas and liquid (PT)

The PT-Pressure Transmitters are suitable for measuring the relative pressures in liquid and gaseous media. The parameter "pressure" is converted into an analog voltage signal.
Typical areas of application include:

- Compressors
- Refrigeration and HVAC/R
- Variable-frequency drives

Electrical connection	Plug DIN EN 175301
Medium type	liquid or gas
Kind of pressure	overpressure, relative
Sensing element material	Stainless Steel
Media temp.	-30 ... 125 °C
Pressure connection	G1/2"
IP class	IP65

2-wire-system, output signal 4-20 mA, Power Supply: 10-30VDC

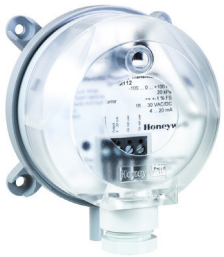
Pressure range bar	Max. pressure bar	Output Signal	Supply voltage	Wiring system	Type
0 ... 4	12	4..20mA	24 Vdc	2-wire	**PTI4**
0 ... 6	18	4..20mA	24 Vdc	2-wire	**PTI6**
0 ... 10	30	4..20mA	24 Vdc	2-wire	**PTI10**
0 ... 16	48	4..20mA	24 Vdc	2-wire	**PTI16**
0 ... 25	75	4..20mA	24 Vdc	2-wire	**PTI25**
0 ... 40	120	4..20mA	24 Vdc	2-wire	**PTI40**

3-wire-system, output signal 0-10 V, Power Supply: 24VAC/DC +/-10%

Pressure range bar	Max. pressure bar	Output Signal	Supply voltage	Wiring system	Type
0 ... 4	12	0..10V	24 Vac/dc	3-wire	**PTU4**
0 ... 6	18	0..10V	24 Vac/dc	3-wire	**PTU6**
0 ... 10	30	0..10V	24 Vac/dc	3-wire	**PTU10**
0 ... 16	48	0..10V	24 Vac/dc	3-wire	**PTU16**

Piezo-resistive Pressure Transmitters

Differential pressure transmitter for air (DPTA)



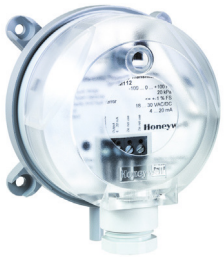
Differential pressure transmitter for air-conditioning/ventilation.
For filter-, fluid-, level monitoring, fan-, blower-, valve-, flap-, air flow control, and environmental protection.

Pressure connection	6mm hose pipe
Electrical connection	M20x1,5
Housing material	ABS and POM
Sensing method	piezoresistive
Media temp.	0 ... 50 °C
Medium type	air
Kind of pressure	differential pressure, relative
Sensing element material	ABS + POM
IP class	IP54
Output Signal	0..10V/4..20mA
Supply voltage	24 Vac/dc
Wiring system	3-wire
Additional description	• Automatic zeroing for all ranges • Duct Kit DPSK included in delivery of single package

8-range models; range selectable by rotary switch: -50/+50, -10/+100, -250/+250, -500/+500, -1000/+1000, 0-250, 0-500, 0-1000 Pa

Pressure range Pa	Display	Type
Eight ranges ... 1000	–	**DPTAQ8**
Eight ranges ... 1000	yes	**DPTAQ8D**

Single range models



Pressure range Pa	Display	Type
-25 ... 25	–	**DPTA25S**
-25 ... 25	yes	**DPTA25SD**
0 ... 25	–	**DPTA25**

Accessories

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

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

Pressure connection	6mm hose pipe
Electrical connection	M20x1,5
IP class	IP54
Housing material	ABS and POM
Sensing method	piezoresistive
Media temp.	0 ... 50 °C
Medium type	air
Kind of pressure	differential pressure, relative
Sensing element material	ABS + POM
Additional description	Duct Kit DPSK included in delivery of single package.

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	Output Signal	Display	Supply voltage	Wiring system	Type
-50 ... 50	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE50S**
-100 ... 100	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE100S**
-500 ... 500	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE500S**
-1000 ... 1000	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE1000S**
0 ... 100/250	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE100**
0 ... 250/500	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE250**
0 ... 500/1000	20	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE500**
0 ... 1000/2500	40	0..10V/4..20mA	-	24 Vac/dc	3-wire	**DPTE1000**
0 ... 5000/10000	60	0..10V/4..20mA	-	24 Vac/dc	3-wire	**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	Output Signal	Display	Supply voltage	Wiring system	Type
-50 ... 50	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE50SD**
-100 ... 100	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE100SD**
-1000 ... 1000	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE1000SD**
0 ... 100/250	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE100D**
0 ... 250/500	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE250D**
0 ... 500/1000	20	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE500D**
0 ... 1000/2500	40	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE1000D**
0 ... 5000/10000	60	0..10V/4..20mA	yes	24 Vac/dc	3-wire	**DPTE5000D**

Piezo-resistive Pressure Transmitters

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

Pressure range Pa	Max. pressure kPa	Output Signal	Display	Supply voltage	Wiring system	Type
-50 ... 50	20	4..20mA	–	24 Vdc	2-wire	**DPTE52S**
-100 ... 100	20	4..20mA	–	24 Vdc	2-wire	**DPTE102S**
0 ... 100/250	20	4..20mA	–	24 Vdc	2-wire	**DPTE102**
0 ... 250/500	20	4..20mA	–	24 Vdc	2-wire	**DPTE252**
0 ... 500/1000	20	4..20mA	–	24 Vdc	2-wire	**DPTE502**
0 ... 1000/2500	40	4..20mA	–	24 Vdc	2-wire	**DPTE1002**
0 ... 5000/10000	60	4..20mA	–	24 Vdc	2-wire	**DPTE5002**

Accessories

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

Thermostats and Humidistats — Page

5

Honeywell

Two-Stage Frost protection thermostat (FTSE)

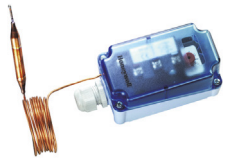
Frost protection thermostats are installed on the air side for the purpose of protecting air conditioning units, heat exchangers, radiators, and similar installations against damages due to frost or freezing.

Control input signal	0..10V=
Temp. setpoint range	1 ... 10 °C
Output Signal	0..10V: Input/Temp.
Ambient temperature	15 ... 15 °C
Switch function/capacity	SPDT 250 Vac Microswitch / 8A
Reset function	reset inside
Thermostat application	frost protection thermostat, 2-phases
Mounting place	air duct
IP class	IP40
Power supply	24 Vac; 7 VA
Temperature element	capillary
Setpoint device	inside
Additional description	The 0-10V output signal is the maximum of the input signal and the temperature value (10-0 degrees C = 0-10V)

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

Thermostats, Standard

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
Mounting place	air duct
Setpoint device	screw
Temp. setpoint range	-8 ... 8 °C
Differential fixed	2 K
IP class	IP65

Temperature element	Capillary tube length m	Reset function	**Type**
capillary with bulb	1.8	reset button	**FT6960-18**
capillary	3	reset button	**FT6960-30**
capillary	6	reset button	**FT6960-60**
capillary with bulb	1.8	automatic reset	**FT6961-18**
capillary	3	automatic reset	**FT6961-30**
capillary	6	automatic reset	**FT6961-60**

Flue gas thermostat

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

Switch function/capacity	SPDT 10A/250Vac
Mounting place	flue gas vent
Reset function	automatic reset
Setpoint device	inside
IP class	IP54
Immersion depth	150 mm
Temp. setpoint range	20 ... 400 °C
Differential setting range	10 ... 18 K
Max. media temperature	700 °C

	Type
	RGT240

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
Ambient temperature	-20 ... 70 °C
Thermostat application	room thermostat, industrial
Mounting place	internal wall
Setpoint device	knob

Temp. setpoint range °C	Differential setting range K	Switch function/capacity	Differential fixed K	IP class	Reset function	**Type**
0 ... 60	–	SPDT 250Vac 10A (1,5A)	1.5	IP54	automatic reset	**T6120A1005**
-30 ... 30	between stages: 2 ... 10	2x SPDT 250Vac 15A (8A)	1	IP65	both stages automatic	**T6120B1003**

Thermostats, component tested

Safety limiting thermostat, with hand reset (STB1)

Sealing pipe thermostat with well.

IP class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPST 230 Vac, 10 A
Immersion depth	150 mm
Certificates	TUEV-approval STB895
Thermostat application	immersion tube thermostat
Reset function	reset button
Setpoint device	inside
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 (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
IP 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
Capillary tube length	2 m
Certificates	CE, UL, PED, DIN EN 14597
Thermostat application	capillary tube thermostat
Reset function	reset inside
Mounting place	strap on pipe
Setpoint device	inside
Differential fixed	10 K

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

Accessories

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

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.

IP 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
Immersion depth	150 mm
Certificates	TUEV-approval TR/STB 900
Thermostat application	immersion tube therm. + controller
Reset function	reset button
Setpoint device	inside+outside
Temp. setpoint range	30/30 ... 110/110 °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.

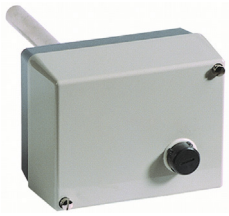
	Type
	STB+TR

Accessories

Steel well R1/2" x 150 mm	**T5NST**

5

Safety limiting thermostat, with shut-off (STBTW)



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

IP 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
Immersion depth	150 mm
Certificates	TUEV-approval TW/STB 904
Thermostat application	immersion tube therm. + monitor
Reset function	reset button
Setpoint device	2x inside
Temp. setpoint range	30/30 ... 110/110 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	130 °C
Additional description	Safety control switching differential approx. 3..4% of setpoint value. Shut-off temperature: 30..110 °C adjustable.

	Type
	STB+TW

Accessories

Steel well R1/2" x 150 mm	**T5NST**

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

Sealing pipe thermostat with well.

IP class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPDT 230 Vac, 10 A
Certificates	TUEV-approval STW(STB)894 S
Thermostat application	immersion tube thermostat
Reset function	automatic reset
Setpoint device	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 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
IP 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
Capillary tube length	2 m
Certificates	CE, UL, PED, DIN EN 14597
Thermostat application	strap-on thermostat
Reset function	automatic reset
Setpoint device	screw
Mounting place	strap on pipe
Differential fixed	10 K

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

Accessories

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

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.

IP 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
Immersion depth	150 mm
Certificates	TUEV-approval TR/STW(STB)899 S
Thermostat application	immersion tube therm. + controller
Reset function	automatic reset
Setpoint device	inside+outside
Temp. setpoint range	20/20 ... 150/150 °C
Mounting place	in pipe
Immersion well material	red brass, nickel plated
Immersion well thread	R1/2"
Max. perm. temp. at sensor	175 °C
Additional description	Safety control switching differential approx. 4% of setpoint value. Shut-off temperature: 20..150 °C adjustable.

	Type
	STW+TR

Accessories

Steel well R1/2" x 150 mm	T5NST

Safety limiting thermostat, automatic reset (TWP1)

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

IP class	IP54
Housing material	Aluminium diecasting with plastic cover
Ambient temperature	0 ... 80 °C
Switch function/capacity	SPDT 230 Vac, 10 A
Immersion depth	150 mm
Certificates	TUEV-approval TW 89 207
Thermostat application	immersion tube thermostat
Reset function	automatic reset
Setpoint device	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

	Type
	TWP1

Accessories

Steel well R1/2" x 150 mm	**T4NST**

Humidistats

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
Power supply	24 Vacdc; 0.3 VA
Switch function/capacity	potential free changeover contact; max. 24 Vac/dc, 1 A
Mounting place	strap on pipe
IP class	IP30
Setpoint device	no device
Reset function	automatic reset
R.H. setpoint range	fixed ... 90 %rh
Wiring connection	5-pole push-in terminals, max. 1,5mm^2

Type
HCP00-EU

Air duct humidistat

Line voltage immersion humidistat for air ducts or industrial areas.

Switch function/capacity	SPDT 230 Vac, 15 A
IP class	IP54
Setpoint device	knob
Reset function	automatic reset
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
Immersion depth	200 mm

Type
HGK3

Humidistats

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.

Setpoint device	knob
Reset function	automatic reset
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	IP class	**Type**
4	0 ... 60	internal wall	–	SPDT 230Vac /5A (0,2A)	IP30	**H6120A1000**

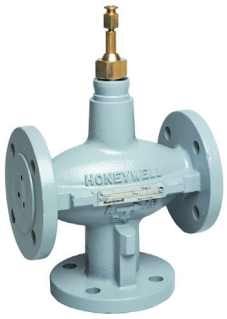
Duct humidistat H6045

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

Linear Valves — Page

3-way Linear Valve, 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
Nominal pressure	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 Valve, 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**
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**

3-way Linear Valve, 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
Nominal pressure	PN16
Port connection	ext. thread flat sealing
Flow char.	mod.equal%

20 mm

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
15	G1 1/8	2.5	1600	–	**V5013E1063**
15	G1 1/8	4	1600	–	**V5013E1071**
20	G1 1/4	6.3	1600	–	**V5013E1089**
25	G1 1/2	10	1000	1600	**V5013E1097**
32	G2	16	700	1600	**V5013E1105**
40	G2 1/4	25	460	1500	**V5013E1113**
50	G2 3/4	40	260	850	**V5013E1121**

Accessories

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

3-way Linear Valve, 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**

3-way Linear Valve, stroke 20/38mm

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

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

Valve series	V5013R
Valve type	3-way mixing
Medium type	water
Materials	body brass, stem stainless steel, plug brass
Action to open	stem down
Stroke	20 mm
Media temp.	2 ... 170 °C
Nominal pressure	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**

3-way Linear Valve, 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**

3-way Linear Valve, stroke 20/38mm

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

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

Valve series	V5329A/V5050
Medium type	water
Materials	body cast iron GG25, trim stainless steel
Action to open	stem down
Nominal pressure	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 Valve, 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**
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**

3-way Linear Valve, stroke 20/38mm

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

For closed circuit heating systems, hot water quality VDI2035.

Valve series	V5050
Medium type	water
Materials	body cast steel GS-C25, trim stainless steel
Action to open	stem down
Media temp.	2 ... 220 °C
Nominal pressure	PN25/40
Port connection	flanges ISO7005
Flow char.	linear
Valve type	3-way mixing

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

3-way Linear Valve, 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**
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 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
Nominal pressure	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**

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**
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 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
Nominal pressure	PN16
Port connection	ext. thread flat sealing
Flow char.	mod.equal%
Medium type	water

20 mm

DN size mm	Connection diameter inch	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Type
15	G1 1/8	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

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, 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
Nominal pressure	PN16
Port connection	internal threads ISO228
Flow char.	mod.equal%

20 mm, plug brass

Medium type	DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	**Type**
water	15	0.63	1600	–	**V5011R1000**
water	15	1	1600	–	**V5011R1018**
water	15	1.6	1600	–	**V5011R1026**
water	15	2.5	1600	–	**V5011R1034**
water	15	4	1600	–	**V5011R1042**
water	20	6.3	1600	–	**V5011R1059**
water	25	10	1000	1600	**V5011R1067**
water	32	16	700	1600	**V5011R1075**
water	40	25	460	1500	**V5011R1083**
water	50	40	260	850	**V5011R1091**

20 mm, plug stainless steel

Medium type	DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	**Type**
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**

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**

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
Nominal pressure	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**

2-way Linear Valves, stroke 20/38mm

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
Nominal pressure	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

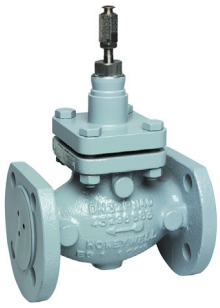
DN size mm	Kvs value	Close off pressure with 600N motor kPa	Close off pressure with 1800N motor kPa	Stroke mm	Type
100	160	–	2500	38	**V5025A1142**
125	250	–	2500	38	**V5025A1159**
150	360	–	2500	38	**V5025A1167**

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**
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
Nominal pressure	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**

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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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 inch	Kvs value	Close off 90N kPa	Close off 180N 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**

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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N 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 inch	Kvs value	Close off 90N kPa	Close off 180N 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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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**

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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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**

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 inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
15	G1/2	0.25	600	600	6.5	mod.equal%	**VSMF-415-0.25**
15	G1/2	0.4	600	600	6.5	mod.equal%	**VSMF-415-0.4**
15	G1/2	0.63	600	600	6.5	mod.equal%	**VSMF-415-0.63**
15	G1/2	1	600	600	6.5	mod.equal%	**VSMF-415-1.0**
15	G1/2	1.6	300	300	6.5	mod.equal%	**VSMF-415-1.6**
15	G1/2	2.5	100	100	6.5	mod.equal%	**VSMF-415-2.5**
20	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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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 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 180N	1000 kPa
Stroke	6.5 mm
Media temp.	2 ... 120 °C
Nominal pressure	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 inch	Kvs value	Type
15	1/2	2.5	**V5078B1005**
20	3/4	3.3	**V5078B1013**
25	1	5	**V5078B1021**
32	1 1/4	5	**V5078B1039**
40	1 1/2	11	**V5078B1047**
50	2	13	**V5078B1054**

Adapter ring	**0903403**

3-way Linear Valves, stroke 2,5/6,5mm

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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	150	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N 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 inch	Kvs value	Close off 90N kPa	Close off 180N 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**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**

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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**

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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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 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
Nominal pressure	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 90N	Close off 180N	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	1.6	150	–	2.5	on/off	**V5833A4007**
20	G3/4	2.5	50	–	2.5	on/off	**V5833A4015**

6,5 mm

DN size	Connection diameter	Kvs value	Close off 90N	Close off 180N	Stroke	Flow char.	Type
mm	inch		kPa	kPa	mm		
15	G1/2	0.25	500	800	6.5	mod.equal%	**V5833A1003**
15	G1/2	0.4	500	800	6.5	mod.equal%	**V5833A1011**
15	G1/2	0.63	500	800	6.5	mod.equal%	**V5833A1029**
15	G1/2	1	150	250	6.5	mod.equal%	**V5833A1037**
15	G1/2	1.6	150	250	6.5	mod.equal%	**V5833A1045**
20	G3/4	2.5	–	240	6.5	mod.equal%	**V5833A3009**
20	G3/4	2.5	50	100	6.5	mod.equal%	**V5833A1052**
20	G3/4	4	–	240	6.5	mod.equal%	**V5833A3017**
20	G3/4	4	50	100	6.5	mod.equal%	**V5833A1060**

Accessories

Soldering fitting for DN15 valve, pipe size 12 mm	**AC-15FS**
Soldering fitting for DN20 valve, pipe size 15 mm	**AC-20FS**
External threaded fitting for DN15 valve, pipe size 3/8"	**AC-15FT**
External threaded fitting for DN20 valve, pipe size 1/2"	**AC-20FT**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**

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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	**Type**
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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	**Type**
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**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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**

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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	A-AB open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	A-AB open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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 control valve PN16, flat sealing DN25-40, V5833A

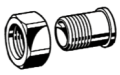
Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

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
Nominal pressure	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 inch	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 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**

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	5	–	**M7410C1015-5M**
	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**
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-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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N 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 inch	Kvs value	Close off 90N kPa	Close off 180N 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	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**

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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**

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-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**
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**
4.5 mm; 100 N	2-pt	24 Vac	valve open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	valve open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N 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 inch	Kvs value	Close off 90N kPa	Close off 180N 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**

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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**

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-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**
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**
4.5 mm; 100 N	2-pt	24 Vac	valve open	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	valve open	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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

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
Nominal pressure	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 inch	Kvs value	Close off 90N kPa	Close off 180N 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 inch	Kvs value	Close off 90N kPa	Close off 180N 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**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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-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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	valve closed	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	valve closed	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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

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
Nominal pressure	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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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 mm	Connection diameter inch	Kvs value	Close off 90N kPa	Close off 180N kPa	Stroke mm	Flow char.	Type
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**
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**
	0/2..10V=	24 Vac	–	–	–	70 s	10	**M7410E5001-10M**
	0/2..10V=	24 Vac	–	–	–	70 s	3	**M7410E5001-3M**
	0/2..10V=	24 Vac	–	–	–	70 s	5	**M7410E5001-5M**
	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-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-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	10	**M7410A1001-10M**
	3-pt	24 Vac	–	–	–	57 s	3	**M7410A1001-3M**
	3-pt	24 Vac	–	–	–	57 s	5	**M7410A1001-5M**
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**
4.5 mm; 100 N	2-pt	24 Vac	valve closed	–	–	5 min	1	**M400-AG**
	2-pt	230 Vac	valve closed	–	–	3.5 min	1	**M400-BG**
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	10	**M7410E1002-10M**
	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	3	**M7410C1007-3M**
	3-pt	24 Vac	–	–	–	150 s	5	**M7410C1007-5M**
	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

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

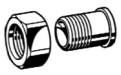
Pressure balanced control valve.
For fan coil units and small re-heaters/re-coolers; hot water or cold water (max. 50% glycol), water quality VDI2035.

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

6,5 mm

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

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	5	–	**M7410C1015-5M**
	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**
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**

2-way Linear Valves stroke 2,5/6,5mm

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
Nominal pressure	PN25
Port connection	ext. thread flat sealing
Flow char.	mod.equal%
Additional description	Approved according DIN EN 14597 in combination with ML7435E/ML6435B.

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6,5 mm

DN size mm	Connection diameter inch	Kvs value	Type
15	G3/4	0.25	**V5825B1001**
15	G3/4	0.4	**V5825B1019**
15	G3/4	0.63	**V5825B1027**
15	G3/4	1	**V5825B1035**
15	G3/4	1.6	**V5825B1043**
20	G1	2.5	**V5825B1050**
20	G1	4	**V5825B1068**
25	G1 1/4	6.3	**V5825B1076**
32	G1 1/2	10	**V5825B1084**

Accessories

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

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	5	–	**M7410C1015-5M**
	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**
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**

Rotary Valves

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Honeywell

Two way flanged control ball valves, PN25 DN50-80, PN16 DN100-150, VBF2

The VBF 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. Flow characteristic is equal percentage, linear with full port.

Medium type	water
Materials	cast iron, stem/ball 316 stainless steel
Packing	ball Teflon seals, stem EPDM O-rings
Angle of rotation	90 °
Media temp.	-30 ... 120 °C
Port connection	flanges
Valve type	2-way

Ball Valve with pre-assembled mounting bracket

Nominal pressure	DN size (mm)	Kvs value	Close off (kPa)	Type
PN25	50	25	700	**VBF2-50-25**
PN25	50	40	700	**VBF2-50-40**
PN25	65	63	700	**VBF2-65-63**
PN25	80	100	700	**VBF2-80-100**
PN16	100	160	500	**VBF2-100-160**
PN16	125	250	500	**VBF2-125-250**
PN16	150	320	500	**VBF2-150-320**
PN16	150	400	500	**VBF2-150-400**
PN16	150	560	500	**VBF2-150-560**

N10010	N10010-SW2	N10230-2POS	N1024	N1024-SW2	N20010	N20010-SW2	N20230	N20230-SW2	N2024	N2024-SW2	N34010	N34230	
0/2..10V=;2/3-pt	0/2..10V=;2/3-pt	2-pt	2/3-pt	2/3-pt	0/2..10V=	0/2..10V=	2/3-pt	2/3-pt	2/3-pt	2/3-pt	0/2..10V=	2/3-pt	Control input signal
24 Vac/dc	24 Vac/dc	230 Vac	24 Vac/dc	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac	24 Vac	24 Vac/dc	230 Vac	Supply voltage
10	10	10	10	10	20	20	20	20	20	20	34	34	Torque [Nm]
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF2-50-25**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF2-50-40**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF2-65-63**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF2-80-100**
–	–	–	–	–	•	•	•	•	•	•	–	–	**VBF2-100-160**
–	–	–	–	–	•	•	•	•	•	•	–	–	**VBF2-125-250**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF2-150-320**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF2-150-400**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF2-150-560**

N3424	S05010	S05010-SW1	S05230-2POS	S05230-2POS-SW1	S0524-2POS	S0524-2POS-SW1	S20010	S20010-SW2	S20230-2POS	S20230-2POS-SW2	S2024-2POS	S2024-2POS-SW2	
2/3-pt	0/2..10V=;3-pt	0/2..10V=;3-pt	2-pt	2-pt	2-pt	2-pt	0/2..10V=;3-pt	0/2..10V=;3-pt	2-pt	2-pt	2-pt	2-pt	Control input signal
24 Vac	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac/dc	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac/dc	24 Vac/dc	Supply voltage
34	5	5	5	5	5	5	20	20	20	20	20	20	Torque [Nm]
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF2-50-25**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF2-50-40**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF2-65-63**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF2-80-100**
–	–	–	–	–	–	–	•	•	•	•	•	•	**VBF2-100-160**
–	–	–	–	–	–	–	•	•	•	•	•	•	**VBF2-125-250**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF2-150-320**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF2-150-400**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF2-150-560**

Rotary Ball Valves

Three way flanged control ball valves, PN25 DN50-80, PN16 DN100-150, VBF3

The VBF 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. Flow characteristic Port A to AB equal percentage, Port B to AB linear with 20% reduced flow capacity.

Medium type	water
Materials	cast iron, stem/ball 316 stainless steel
Packing	ball Teflon seals, stem EPDM O-rings
Angle of rotation	90 °
Media temp.	-30 ... 120 °C
Port connection	flanges

Ball Valve with pre-assembled mounting bracket

Valve type	Nominal pressure	DN size (mm)	Kvs value	Close off (kPa)	**Type**
3-way mixing/diverting	PN25	50	25	275	**VBF3-50-25**
3-way mixing/diverting	PN25	50	40	275	**VBF3-50-40**
3-way mixing/diverting	PN25	65	63	275	**VBF3-65-63**
3-way mixing/diverting	PN25	80	100	275	**VBF3-80-100**
3-way mixing	PN16	100	160	500	**VBF3-100-160**
3-way mixing	PN16	125	250	500	**VBF3-125-250**
3-way mixing	PN16	150	320	500	**VBF3-150-320**
3-way mixing	PN16	150	400	500	**VBF3-150-400**
3-way mixing	PN16	150	560	500	**VBF3-150-560**

N10010	N10010-SW2	N10230-2POS	N1024	N1024-SW2	N20010	N20010-SW2	N20230	N20230-SW2	N2024	N2024-SW2	N34010	N34230	
0/2..10V=;2/3-pt	0/2..10V=;2/3-pt	2-pt	2/3-pt	2/3-pt	0/2..10V=	0/2..10V=	2/3-pt	2/3-pt	2/3-pt	2/3-pt	0/2..10V=	2/3-pt	Control input signal
24 Vac/dc	24 Vac/dc	230 Vac	24 Vac/dc	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac	24 Vac	24 Vac/dc	230 Vac	Supply voltage
10	10	10	10	10	20	20	20	20	20	20	34	34	Torque [Nm]
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF3-50-25**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF3-50-40**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF3-65-63**
•	•	•	•	•	–	–	–	–	–	–	–	–	**VBF3-80-100**
–	–	–	–	–	•	•	•	•	•	•	–	–	**VBF3-100-160**
–	–	–	–	–	•	•	•	•	•	•	–	–	**VBF3-125-250**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF3-150-320**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF3-150-400**
–	–	–	–	–	–	–	–	–	–	–	•	•	**VBF3-150-560**

N3424	S05010	S05010-SW1	S05230-2POS	S05230-2POS-SW1	S0524-2POS	S0524-2POS-SW1	S20010	S20010-SW2	S20230-2POS	S20230-2POS-SW2	S2024-2POS	S2024-2POS-SW2	
2/3-pt	0/2..10V=;3-pt	0/2..10V=;3-pt	2-pt	2-pt	2-pt	2-pt	0/2..10V=;3-pt	0/2..10V=;3-pt	2-pt	2-pt	2-pt	2-pt	Control input signal
24 Vac	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac/dc	24 Vac/dc	24 Vac/dc	24 Vac/dc	230 Vac	230 Vac	24 Vac/dc	24 Vac/dc	Supply voltage
34	5	5	5	5	5	5	20	20	20	20	20	20	Torque [Nm]
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF3-50-25**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF3-50-40**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF3-65-63**
–	•	•	•	•	•	•	–	–	–	–	–	–	**VBF3-80-100**
–	–	–	–	–	–	–	•	•	•	•	•	•	**VBF3-100-160**
–	–	–	–	–	–	–	•	•	•	•	•	•	**VBF3-125-250**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF3-150-320**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF3-150-400**
•	–	–	–	–	–	–	•	•	•	•	•	•	**VBF3-150-560**

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
Nominal pressure	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 inch	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 inch	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**

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	MS7103A1021/U	MS7103A2021/U	MS7103A2221/U	MS7503A2021/U	MS7503A2221/U	MVN613A1500	MVN643A1500	MVN663A1500	MVN713A1500	
3-pt	3-pt	0/2..10V=	2..10V=	2..10V=	2..10V=	0/2..10V=; 2/3-pt	0/2..10V=; 2/3-pt	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	24 Vac	24 Vac/dc	24 Vac/dc	24 Vac	24 Vac/dc	230 Vac	24 Vac/dc	Supply voltage
10	10	10	3	3	3	3	3	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
Nominal pressure	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 inch	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 inch	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**

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	MS7103A1021/U	MS7103A2021/U	MS7103A2221/U	MS7503A2021/U	MS7503A2221/U	MVN613A1500	MVN643A1500	MVN663A1500	MVN713A1500	
3-pt	3-pt	0/2..10V=	2..10V=	2..10V=	2..10V=	0/2..10V=; 2/3-pt	0/2..10V=; 2/3-pt	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	24 Vac	24 Vac/dc	24 Vac/dc	24 Vac	24 Vac/dc	230 Vac	24 Vac/dc	Supply voltage
10	10	10	3	3	3	3	3	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
Nominal pressure	PN16
Port connection	ext. thread flat sealing
Valve type	6-way
Connection diameter	G 3/4 inch
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.

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

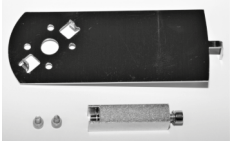
Accessories

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**

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**

Linkage for Actuators



Linkage for actuators N10.. on VBG6.. valves	**VBG6N10**

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	V5431A/F
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
Nominal pressure	PN6
Reduced delta P	40 kPa

Internal threads

DN size mm	Kvs value	Max. delta P kPa	Torque for max. delta P Nm	Torque for reduced delta P Nm	Port connection	Type
15	4	100	20	20	internal threads	**V5431A1025**
20	6.3	100	20	20	internal threads	**V5431A1033**
25	10	100	20	20	internal threads	**V5431A1041**
32	16	100	20	20	internal threads	**V5431A1058**
40	25	100	20	20	internal threads	**V5431A1066**

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	**V5431F1032**
25	10	100	20	20	flanges DIN2531	**V5431F1040**
32	16	100	20	20	flanges DIN2531	**V5431F1057**
40	25	100	20	20	flanges DIN2531	**V5431F1065**
50	40	100	20	20	flanges DIN2531	**V5431F1073**
65	63	100	20	20	flanges DIN2531	**V5431F1081**
80	100	100	30	20	flanges DIN2531	**V5431F1099**
100	160	100	40	30	flanges DIN2531	**V5431F1107**
125	250	70	40	30	flanges DIN2531	**V5431F1115**
150	630	50	40	40	flanges DIN2531	**V5431F1123**

M6061A1021	M6061A1039	M6061A1047	M6061L1027	M6061L1035	M6061L1043	M7061E1020	
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	24 Vac/dc	Supply voltage
20	30	40	20	30	40	20	Torque [Nm]
•	–	–	•	–	–	•	**V5431A1025**
•	–	–	•	–	–	•	**V5431A1033**
•	–	–	•	–	–	•	**V5431A1041**
•	–	–	•	–	–	•	**V5431A1058**
•	–	–	•	–	–	•	**V5431A1066**
•	–	–	•	–	–	•	**V5431F1032**
•	–	–	•	–	–	•	**V5431F1040**
•	–	–	•	–	–	•	**V5431F1057**
•	–	–	•	–	–	•	**V5431F1065**
•	–	–	•	–	–	•	**V5431F1073**
•	–	–	•	–	–	•	**V5431F1081**
•	•	–	•	•	–	–	**V5431F1099**
–	•	•	–	•	•	–	**V5431F1107**
–	•	•	–	•	•	–	**V5431F1115**
–	–	•	–	–	•	–	**V5431F1123**

Rotary 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 °
Nominal pressure	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**

Motorized Butterfly valve DN250

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 °
Nominal pressure	PN10
Port connection	wafer
Manual operation	with wheel
DN size	250 mm
Kvs value	5070
Torque	250 Nm
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

Control input signal	Type
3-pt	**V5422L1006**

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

Control input signal	Type
0/2..10V=; 0/4..20mA	**V5422E1001**

PICVs

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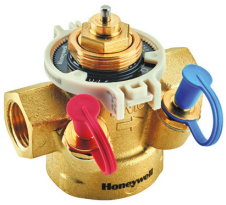
Honeywell

V5005 Pressure Independent Balancing and Control Valve



The V5005 is a Pressure Independent Control Valve (PICV). It combines a flow controller and a temperature controller in one valve. Equipped with an actuator provides a 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.
V5005 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
- 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
- Features the ability to lock the pre-setter to avoid tampering

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 (up to 3.5 bar differential pressure), According to Class III IEC 60534-2-3 (up to 4 bar differential pressure)
Valve Control function	Pressure Independent PICV

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

DN size	Port diameter	Minimum flow (qi)	Maximum flow (qs)	Delta-P	Measuring support	Type
mm	inch	l/h	l/h	kPa		
15	Rp 1/2	20	350	14 ... 400	•	**V500510150350**
15	Rp 1/2	100	1000	15 ... 400	•	**V500510151000**
20	Rp 3/4	100	1000	15 ... 400	•	**V500510201000**
20	Rp 3/4	200	1500	20 ... 400	•	**V500510201500**
25	Rp 1	100	1000	15 ... 400	•	**V500510251000**
25	Rp 1	200	1500	20 ... 400	•	**V500510251500**

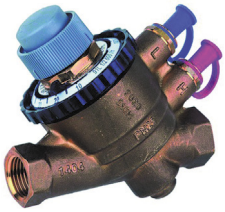
Linear valve V5005 with internal threads to DIN EN 10226-1 (ISO7) WITHOUT measuring connections

DN size	Port diameter	Minimum flow (qi)	Maximum flow (qs)	Delta-P	Measuring support	Type
mm	inch	l/h	l/h	kPa		
15	Rp 1/2	20	350	14 ... 400	–	**V500520150350**
15	Rp 1/2	100	1000	15 ... 400	–	**V500520151000**
20	Rp 3/4	100	1000	15 ... 400	–	**V500520201000**
20	Rp 3/4	200	1500	20 ... 400	–	**V500520201500**
25	Rp 1	100	1000	15 ... 400	–	**V500520251000**
25	Rp 1	200	1500	20 ... 400	–	**V500520251500**

Accessories

MT4 series thermoelectric actuators, 4mm effective stroke, 90N, on/off	**_MT4**
3-point actuator, 4mm effective stroke, 90N, floating; by use of this actuator series the max. flow of the valve is reduced by 15%.	**M7410A1001**
Thermoelectric actuator 0..10V, 4mm effective stroke, 100N (cable required)	**M4410E1510**
Thermoelectric actuator 0..10V, 4mm effective stroke, 100N (cable required)	**M4410K1515**
Thermoelectric actuator 0..10V, 2.9mm effective stroke, 90N, modulating	**M7410E5001**
BasicMes-2 handheld measuring computer Computer is supplied with case and accessories	**VM242A0101**
Spare set of 2 pressure test cocks G1/4"	**VS2600C001**

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.

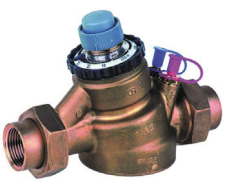
- Automatic pressure independent balancing and control
- Precise pressure independent flow performance
- Highest energy saving potential due to efficient energy transfer and minimized pump speed
- Integrated measuring possibility to find the optimal setpoint for the pump
- Reduced movements of actuators 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 DN250
- 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

Valve stroke 2.9 mm

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

Valve stroke 6.0 mm



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

Pressure Independent Control Valves

Rotary valve (90)

DN size mm	Port connection	Port diameter inch	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
32	internal threads	Rc 1/4	1800	6000	30 ... 400	**V5004TY10326000**
40	internal threads	Rc 1/2	2700	9000	35 ... 400	**V5004TY10409000**
50	internal threads	Rc 2	3300	11000	40 ... 400	**V5004TY10501200**
50	internal threads	Rc 2	5400	18000	35 ... 400	**V5004TY10501700**

Rotary valve with actuator included, providing position feedback

DN size mm	Port connection	Port diameter inch	Minimum flow (qi) l/h	Maximum flow (qs) l/h	Delta-P kPa	Type
50	flanges	–	2000	20000	40 ... 400	**V5004TF1050**
65	flanges	–	3000	30000	30 ... 400	**V5004TF1065**
80	flanges	–	3000	30000	30 ... 400	**V5004TF1080**
100	flanges	–	5500	55000	30 ... 400	**V5004TF1100**
125	flanges	–	9000	90000	35 ... 400	**V5004TF1125**
150	flanges	–	15000	150000	50 ... 400	**V5004TF1150**
200	flanges	–	20000	200000	40 ... 400	**V5004TF1200LF**
200	flanges	–	30000	300000	40 ... 400	**V5004TF1200HF**
250	flanges	–	30000	300000	40 ... 400	**V5004TF1250LF**
250	flanges	–	50000	500000	65 ... 400	**V5004TF1250HF**

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**
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**

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**
Spare shaft coupling to connect V5004TY with M6061/M7061	**V5004SA3265**

Spare Actuators for V5004TF models

Spare Actuator for V5004TF1050	**M5004F1050**
Spare Actuator for V5004TF1065	**M5004F1065**
Spare Actuator for V5004TF1080	**M5004F1080**
Spare Actuator for V5004TF1100	**M5004F1100**
Spare Actuator for V5004TF1125	**M5004F1125**
Spare Actuator for V5004TF1150	**M5004F1150**
Spare Actuator for V5004TF1150	**M5004F1150**
Spare Actuator for V5004TF1200LF	**M5004F1200LF**
Spare Actuator for V5004TF1200HF	**M5004F1200HF**
Spare Actuator for V5004TF1250LF	**M5004F1250LF**
Spare Actuator for V5004TF1250HF	**M5004F1250HF**

Linear Actuators

9

Honeywell

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**

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**
5	**M7410A1001-5M**
10	**M7410A1001-10M**

Accessories

Adapter for Danfoss RA2000	**IRA-AD**

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	–	–	3	**M7410C1007-3M**
180	24 Vac	–	–	5	**M7410C1007-5M**
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	–	–	5	**M7410C1015-5M**
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=
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	Cable length m	Type
90	2.5	–	–	70	1.5	**M7410E5001**
90	2.5	–	–	70	3	**M7410E5001-3M**
90	2.5	–	–	70	5	**M7410E5001-5M**
90	2.5	–	–	70	10	**M7410E5001-10M**

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	Cable length m	Type
180	6.5	–	–	150	1.5	**M7410E1002**
180	6.5	–	–	150	10	**M7410E1002-10M**
180	6.5	•	–	150	1.5	**M7410E2026**
180	6.5	•	2	150	1.5	**M7410E4022**

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

Stem force N	Stroke mm	Manual operation	End switches	Runtime s	Cable length m	Type
300	6.5	–	–	150	1.5	**M7410E1028**
300	6.5	•	–	150	1.5	**M7410E2034**
300	6.5	•	2	150	1.5	**M7410E4030**

Accessories

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

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

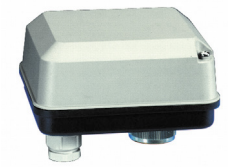
Electrical actuator modulating control, for valve series: V5825B.
Also suitable for V5832B/V5833A-series (DN25..40).

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 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**

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**

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**

Thermal Linear Actuators

Actuator thermoelectric for zone control 4,5 mm 100 N, M400

Electrical actuator with on/off control for zone valves, and pressure independent control valves.

Protection class	IP54
Position indication	with red indicator
End switch function/ capacity	SPST
Stem force	100 N
Control input signal	2-pt
Stroke	4.5 mm
Initial current	0.25 A
Cable length	1m (2,5m on request)
Additional description	Valve connection M30 x 1,5

4,5 mm; 100 N

Supply voltage	Power loss action	End switches	Runtime min	Type
24 Vac	stem retracts	–	5	**M400-AO**
24 Vac	stem retracts	1	5	**M400-AOE**
24 Vac	stem extends	–	5	**M400-AG**
24 Vac	stem extends	1	5	**M400-AGE**
230 Vac	stem retracts	–	3.5	**M400-BO**
230 Vac	stem retracts	1	3.5	**M400-BOE**
230 Vac	stem extends	–	3.5	**M400-BG**
230 Vac	stem extends	1	3.5	**M400-BGE**

Actuator thermoelectric for zone control 8 mm 100 N, M800

Electrical actuator with on/off control for zone valves, and pressure independent control valves.

Protection class	IP54
Position indication	with red indicator
End switch function/ capacity	SPST
Stem force	100 N
Control input signal	2-pt
Stroke	8 mm
Initial current	0.25 A
Cable length	1m (2,5m on request)
Additional description	Valve connection M30 x 1,5

8 mm; 100 N

Supply voltage	Power loss action	End switches	Runtime min	Type
24 Vac	stem retracts	–	5	**M800-AO**
24 Vac	stem retracts	1	5	**M800-AOE**
24 Vac	stem extends	–	5	**M800-AG**
24 Vac	stem extends	1	5	**M800-AGE**
230 Vac	stem retracts	–	3.5	**M800-BO**
230 Vac	stem retracts	1	3.5	**M800-BOE**
230 Vac	stem extends	–	3.5	**M800-BG**
230 Vac	stem extends	1	3.5	**M800-BGE**

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**

Adapters

Extra mounting adapters M30 x 1,5; 10 units	**MT-ADAPT-HW**
Mounting adapter for Herz/Polytherm valves; 10 units	**MT-ADAPT-HP**

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 4 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**
230 Vac	stem retracts	–	0.5	**M4410L4000**
230 Vac	stem extends	–	0.5	**M4410L4500**

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, 3 meter, 3 x 0,22 mm^2 (10 pieces)	**M44-MOD-3MH**

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**

Rotary Actuators — Page

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Honeywell

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

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

Auxiliary switch package	**VMS2**

Accessories for modulating control motors

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

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 and VBG ball valve actuator 3Nm, springreturn MS7103

Direct-coupled actuator with self-centering shaft adapter. Actuators are used within heating, ventilating, and air-conditioning(HVAC) systems. They can drive a variety of quarterturn, final control elements requiring spring return fail-safe operation.
Actuators can be used for:

- air dampers
- VBG2 and VBG3 ball valves (up to DN32). Mounting kit 5112-11/U to be used.

Protection class	IP54 in most orientations
End switch function/ capacity	models with 2 SPST switches 125VAC, 1A; fixed setting 10^{o} and 80^{o}
Shaft mounting	for round shafts 9..16 mm; square shafts 6..13 mm
Spring return	yes
Required materials	check accessories
Manual operation	no
Runtime	90 s
Spring return timing	25 s
Torque	3 Nm
Damper area	0.6 m^2
Wiring connection	conduit
Additional description	• Fast testing mode (30 sec drive time) • Operation from -40°C to 65°C • Optional orientable conduit • Self centering shaft adapter

Modulating

Supply voltage	Control input signal	End switches	Position feedback	Type
24 Vac	2..10V=	–	–	**MS7103A1021/U**
24 Vac	2..10V=	–	0..10V=	**MS7103A2021/U**
24 Vac	2..10V=	2	0..10V=	**MS7103A2221/U**

Diamond universal

Supply voltage	Control input signal	End switches	Position feedback	Type
24 Vac/dc	0/2..10V=;2/3-pt	–	0..10V=	**MS7503A2021/U**
24 Vac/dc	0/2..10V=;2/3-pt	2	0..10V=	**MS7503A2221/U**

Accessories

Mounting kit for VBG2/3 Ball Valves up to DN32	**5112-11/U**

Damper and VBG/VBF ball valve actuator 5/10 Nm, SmartAct

Direct coupled actuators for air dampers, ventilation flaps, louvers and VAV-units.
Actuators can also be used with VBG/VBF ball valves.

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	Position feedback	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	–	0/2..10V=	90/110	5	1	**N05010**
24 Vac/dc	0/2..10V=;2/3-pt	2	0/2..10V=	90/110	5	1	**N05010-SW2**

For damper area of 2 square meters

Supply voltage	Control input signal	End switches	Position feedback	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	–	0/2..10V=	90/110	10	2	**N10010**
24 Vac/dc	0/2..10V=;2/3-pt	2	0/2..10V=	90/110	10	2	**N10010-SW2**

Damper and VBF ball valve actuator 20/34 Nm, SmartAct

Direct-coupled actuator with self-centering shaft adapter.
Actuators can be used for:

- air dampers, air handlers, ventilation flaps, louvers and VAV-units
- VBF ball valves (direct mounting)

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
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 and VBG ball valve 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).
- For VBG ball valves

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 and VBF ball valve 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).
- For VBF ball valves

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**

Diamond Sylk damper and VBG ball valve actuator 3Nm, springreturn MS3103

The new Honeywell Diamond Sylk Spring Return Actuator provides powerful performance from a compact and intelligent package for fast and easy installation. Sylk actuators rely on the Honeywell Proprietary Sylk bus communication protocol for positioning and position feedback. Multiple devices can be controlled using the Sylk Communicating architecture without using up any controller I/O. Simplified shaft adapter, integral conduit connectors, 40% thinner and smaller overall form factor means Diamond actuators easily accommodate most length, width and depth restrictions. Polarity insensitive wiring ensures that the actuator is always installed right the first time.
Actuators can be used for:

- air dampers
- VBG2 and VBG3 ball valves (up to DN32). Mounting kit 5112-11/U to be used.

Spring return	yes
Supply voltage	24 Vac/dc
Control input signal	Sylk
Position feedback	Sylk
Runtime	90 s
Spring return timing	25 s
Torque	3 Nm

End switches	Type
–	**MS3103J1021/U**
2	**MS3103J1221/U**

Accessories

Mounting kit for VBG2/3 Ball Valves up to DN32	**5112-11/U**

Modutrol IV servo motors

Modutrol IV Motors are spring return and non-spring return motors used to control dampers and valves.

- M62xx models are three-wire floating control motors for use with controllers that provide a switched spdt or floating output and have an internal electrically isolated feedback potentiometer that provides indication of the motor shaft position.
- M72xx models accept a current or voltage signal from an electronic controller to position the motor shaft to any point between open and closed.
- M91xx and M94xx models use a 135Ohm modulating proportional signal to position the motor shaft to any point between open and closed.

Modutrol IV motors are used for damper and valve control in industrial burner applications and air handling installations.

Approvals
- CE, UL, FM, CSA, EAC

Protection class
IP44
- Weather protection kit is available as accessory to upgrade to IP54

Ambient temperature
-40 ... 66 °C

Maximum humidity
85 %rh

Features
- Screw terminals are standard.
- Adapter bracket for matching shaft height of older motors (ModIII) is available.
- Most models have field adjustable stroke (90 to 160).
- Die-cast aluminium housing.
- Two adjustable internal SPDT auxiliary switches are factory mounted.
- Dual shaft ends for normally open or normally closed valve or damper application. Both shaft ends offer the same torque rating.

Input voltage
- Default: 24 Vac
- Via optional built-in transformer: 24/120/230 Vac
- Line frequency: 50/60 Hz

Shaft mounting
9.5mm (3/8") square for all models on both ends

End switches
2

Function
Normally Closed

Additional description
- Modutrol motor timings are independant of line frequency.
- Torque ratings for dual-ended shaft motors are the sum of the shaft torques (power-end torque plus auxiliary-end torque).
- Breakaway torque is the maximum torque available to overcome occasional large loads such as a seized damper or valve. The breakaway torque is 1.5x the normal rated torque.
- Other models than listed in this catalogue are available outside Europe. Most models can be replaced by the available European models.

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3-point control non-spring return (M62x4)

Supply voltage	Power consumption W	Angle of rotation °	Comment	Runtime s	Torque Nm	Position feedback	Note	Model	Control input signal	**Type**
24 Vac	14	Adj. 90 .. 160	Factory set at 90	Var. 15 .. 27	8.5	10kohm	Linear feedback	Series 2	3-pt	**M6274F1009-F/U**
24 Vac	13	Adj. 90 .. 160	Factory set at 90	Var. 30 .. 53	17	10kohm	Linear feedback	Series 2	3-pt	**M6284F1078-F/U**
24 Vac	11	Adj. 90 .. 160	Factory set at 160	Var. 120..214	34	10kohm	Linear feedback	Series 2	3-pt	**M6294F1009-F/U**
24 Vac	14	Adj. 90 .. 160	Factory set at 90	Var. 60 .. 107	34	10kohm	Linear feedback	Series 2	3-pt	**M6294F1017-F/U**

Rotary Valve / Damper Actuators

3-point control spring return (M62x5)

Supply voltage	Power consumption W	Angle of rotation °	Comment	Runtime s	Torque Nm	Position feedback	Note	Model	Control input signal	Type
24 Vac	23	Adj. 90 .. 160	Factory set at 160	Var. 30 .. 53	6.8	10kohm	Linear feedback	Series 2	3-pt	**M6285F1001-F/U**

Analogue input control non-spring return (M72x4)

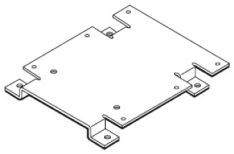
Supply voltage	Power consumption W	Angle of rotation °	Comment	Runtime s	Torque Nm	Position feedback	Note	Model	Control input signal	Type
24 Vac	14	Adj. 90 .. 160	Factory set at 90	Var. 15 .. 27	8.5	–		Series 2	4..20mA	**M7274Q1009/U**
24/120/230 Vac	13	Fixed 90		Fixed 30	17	–		Series 2	4..20mA	**M7284Q1082/U**
24 Vac	13	Adj. 90 .. 160	Factory set at 160	Var. 30 .. 53	17	–		Series 2	2..10V=	**M7284Q1098/U**
24 Vac	14	Adj. 90 .. 160	Factory set at 90	Var. 60 .. 107	34	–		Series 2	4..20mA	**M7294Q1015/U**

Analogue input control spring return (M72x5)

Supply voltage	Power consumption W	Angle of rotation °	Comment	Runtime s	Torque Nm	Position feedback	Note	Model	Control input signal	Type
24 Vac	23	Adj. 90 .. 160	Factory set at 90	Var. 30 .. 53	6.8	–		Series 2	4..20mA	**M7285Q1024/U**

Potentiometer control non-spring return (M9xx4)

Supply voltage	Power consumption W	Angle of rotation °	Comment	Runtime s	Torque Nm	Position feedback	Note	Model	Control input signal	Type
24 Vac	14	Adj. 90 .. 160	Factory set at 90	Var. 30 .. 53	17	–		Series 3	0..135ohm	**M9184F1034/U**



Accessories

Adapter bracket to adjust shaft height when replacing old ModII or ModIII motors.	**220738A/U**
Adjustable cranc arm kit	**221455A/U**
Weatherproofing kit. Protects motor from driving rain when mounted in any position	**4074ERU/U**
Internal multi tap transformer for use on 120 or 230Vac voltage or to provide galvanic insulation. 24/120/230V to 24V.	**50017460-001/U**
Cranc arm assembly short	**7617ADW/U**
Cranc arm assembly long	**7616BR/U**
Single auxiliary 135Ohm potentiometer. Can be used as feedback potentiometer or to control slave M9xxx motors.	**Q181A1007/U**
Adapter to convert M9xxx motors to analogue input version. Note: control accuracy <5%. For improved control accuracy, use M7xxx motor.	**Q7230A1005/U**

Pneumatics

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Honeywell

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

Adjustable start point kPa	Positioner	Stroke mm	Effective diaphragm area cm^2	Action actuator stem	Max. ambient temperature °C	Pressure range kPa	Type
20.7 ... 69	•	20	122.0	extends	70	20.7 ... 34.5/69	**MP953A5005**
20.7 ... 69	•	20	314	extends	70	20.7 ... 34.5/69	**MP953A5039**
20.7 ... 69	•	20	254	retracts	70	20.7 ... 34.5/69	**MP953B5003**
–	–	20	122.0	extends	120	55.2 ... 82.8	**MP953C5019**
–	–	20	122.0	extends	120	27.6 ... 75.9	**MP953C5027**
–	–	20	314	extends	120	27.6 ... 75.9	**MP953C5084**
–	–	20	254	retracts	120	55.2 ... 82.8	**MP953D5009**
–	–	20	254	retracts	120	27.6 ... 75.9	**MP953D5025**

38 mm

Adjustable start point kPa	Positioner	Stroke mm	Effective diaphragm area cm^2	Action actuator stem	Max. ambient temperature °C	Pressure range kPa	Type
20.7 ... 69	•	38	855.0	extends	70	20.7 ... 34.5/69	**MP953A5054**
–	–	38	855.0	extends	120	13.8 ... 48.3	**MP953C5142**
–	–	38	855.0	extends	120	27.6 ... 75.9	**MP953C5159**

Pneumatic 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.

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

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

Pressure range 21 ... 91 kPa

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**

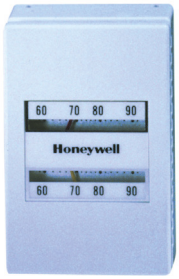
Pneumatic Capacity Relay

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 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 place	internal wall
Temp. setpoint range	15 ... 30 °C
Action	direct acting

Type
TP970A2020/U

Pressure reducing valve with Filter Regulator Station, PP907

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

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

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

Type
PP907A1008

Metering Devices — Page

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Honeywell

Hydronic Meters

EW776 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

EW7760A 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)	**EW7760A1200**
heating water	20	2.5	130	G 1	5 ... 130	16	–	Retrofittable (two slots)	**EW7760A2000**
heating water	25	6	260	G 1 1/4	5 ... 150	16	–	Retrofittable (two slots)	**EW7760A3600**
heating water	32	6	260	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A4000**
heating water	40	10	300	G 2	5 ... 150	16	–	Retrofittable (two slots)	**EW7760A4600**
heating water	40	10	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A4800**
heating water	50	15	270	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A5200**
heating water	65	25	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A6000**
heating water	80	40	300	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A7000**
heating water	100	60	360	Flanges PN25	5 ... 150	25	–	Retrofittable (two slots)	**EW7760A7800**

Hydronic Meters

EW7760A 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)	**EW7760M1200**
heating water	20	2.5	130	G 1	5 ... 130	16	M-Bus	Retrofittable (factory installed)	**EW7760M2000**
heating water	25	6	260	G 1 1/4	5 ... 150	16	M-Bus	Retrofittable (factory installed)	**EW7760M3600**

EW7761A Ultrasonic hydronic meter for heating and cooling applications Retrofittable (Two Slots)

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)	**EW7761A1200**
heating or chilled water	20	2.5	130	G 1	5 ... 105	16	–	Retrofittable (two slots)	**EW7761A2000**
heating or chilled water	25	6	260	G 1 1/4	5 ... 105	16	–	Retrofittable (two slots)	**EW7761A3600**
heating or chilled water	32	6	260	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7761A4000**
heating or chilled water	40	10	300	G 2	5 ... 105	16	–	Retrofittable (two slots)	**EW7761A4600**
heating or chilled water	40	10	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7761A4800**
heating or chilled water	50	15	270	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7761A5200**
heating or chilled water	65	25	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7761A6000**
heating or chilled water	80	40	300	Flanges PN25	5 ... 105	25	–	Retrofittable (two slots)	**EW7761A7000**

EW7761A 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	Flanges PN16	5 ... 105	16	–	Retrofittable	**EW7761A1223**

EW7761M 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)	**EW7761M1200**
heating or chilled water	20	2.5	130	G 1	5 ... 105	16	M-Bus	Retrofittable (factory installed)	**EW7761M2000**
heating or chilled water	25	6	260	G 1 1/4	5 ... 105	16	M-Bus	Retrofittable (factory installed)	**EW7761M3600**
heating or chilled water	32	6	260	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M4000**
heating or chilled water	40	10	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M4800**
heating or chilled water	50	15	270	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M5200**
heating or chilled water	65	25	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M6000**
heating or chilled water	80	40	300	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M7000**
heating or chilled water	100	60	360	Flanges PN25	5 ... 105	25	M-Bus	Retrofittable (factory installed)	**EW7761M7800**

Hydronic Meters

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

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

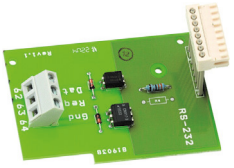
Tailpiece for connection of supply temperature sensor

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
Pulse input module with two inputs (single pack)	EWA3022074
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

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

Electrical Energy Meters

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.

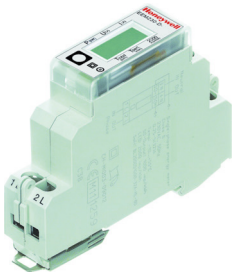
- Accuracy class B according to EN50470-3, accuracy class 1 according to IEC62053-21
- 7-digits display, clear read-out with 6 mm tall figures
- Backlighted LCD
- Metering of total and partial consumed energy, partial resettable
- 2 tariff measuring
- Display of instantaneous power for each phase and 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

Input voltage	3x 230/400V, 50Hz
Input current	up to 65A, direct measurement
Certificates	MID

Interface	Type
ModBus RTU	**EEM400-D-MO-MID**
M-Bus	**EEM400-D-M-MID**
pulse	**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, 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.

- 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

Input voltage	1x 230V, 50Hz
Input current	up to 32A, direct measurement
Certificates	MID

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

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

- 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

Input voltage	3x 230/400V, 50Hz
Input current	up to 1500A via external current transformer
Certificates	MID

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

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

Electrical Energy Meters, 1 phase, 32A, LCD

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

- 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

Input voltage	1x 230V, 50Hz
Input current	up to 32A, direct measurement
Certificates	MID

Interface	Type
ModBus RTU	**ALD1D5FD00A3A00**
M-Bus	**ALD1D5FM00A3A00**
pulse	**ALD1D5F10KA3A00**
ModBus RTU	**ALD1B5FD00A3A00**
S-Bus	**ALD1B5FS00A3A00**
S-Bus	**ALD1B5FD00A3A00**

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

Electrical Energy Meters, 3 phases, 65A, 2 Tariff, LCD

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.

- 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

Input voltage	3x 230/400V, 50Hz
Input current	up to 65A, direct measurement
Certificates	MID

Interface	Type
ModBus RTU	**ALE3D5FD10C3A00**
M-Bus	**ALE3D5FM10C3A00**
pulse	**ALE3D5F11KC3A00**
pulse	**ALE3B5F10KC3A00**
ModBus RTU	**ALE3B5FD00C3A00**
M-Bus	**ALE3B5FM00C3A00**
S-Bus	**ALE3B5FS00C3A00**
S-Bus	**ALE3D5FS10C3A00**

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

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.

- 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

Input voltage	3x 230/400V, 50Hz
Input current	up to 1500A via external current transformer
Certificates	MID

Interface	Type
M-Bus	**AWD3D5WM00C3A00**
pulse	**AWD3D5W10MC3A00**
S-Bus	**AWD3B5WS00C3A00**
ModBus RTU	**AWD3D5WD00C3A00**

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

Energy Meter Accessories

Split-core current transformer, EEM-CT

The EEM-CT split-core is a current transformer (CT) and can only be used measuring electrical alternating currents. The EEM-CT is suitable only for mounting on insulated primary conductors in a weather protected and dry location.

Protection class IP20

Approvals
- LV directive 2014/35/EU, RoHS directive (EU) 2015/863
- EN 61010-2-032:2012, WEEE directive 2012/19/EU

Output signal 0..5 A

Input signal	Max. diameter sensing cable mm	Accuracy	Type
0..150 A	18	Class 1	**EEM-CT-150-5**
0..200 A	18	Class 1	**EEM-CT-200-5**
0..250 A	18	Class 0.5	**EEM-CT-250-5**
0..300 A	28	Class 1	**EEM-CT-300-5**
0..400 A	28	Class 1	**EEM-CT-400-5**
0..500 A	28	Class 1	**EEM-CT-500-5**
0..600 A	42	Class 0.5	**EEM-CT-600-5**
0..750 A	42	Class 0.5	**EEM-CT-750-5**
0..1000 A	42	Class 0.5	**EEM-CT-1000-5**
0..1000 A	two cables 42	Class 0.5	**EEM-CT-1000-5-L**
0..1250 A	size 80x32	Class 0.5	**EEM-CT-1250-5**
0..1500 A	size 80x32	Class 0.5	**EEM-CT-1500-5**

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

Variable Frequency Drives — Page

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Honeywell

Inverters 0,37..5,5kW, 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 • Configurable inputs and outputs: 2 analog inputs (voltage or current), 6 digital inputs, 2 relays (1 normally open and 1 commutator) , 1 analog output (mA or V commutable by DIP)
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
IP class	IP20

230V series

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

400V series

Voltage	1 phase input	3 phases input	Power	Low overload Icont	Size	**Type**
			kW	A		
400V	–	•	0.55	1.9	1	**HVAC402-P55-20**
400V	–	•	0.75	2.4	1	**HVAC402-P75-20**
400V	–	•	1.1	3.3	2	**HVAC402-1P1-20**
400V	–	•	1.5	4.3	2	**HVAC402-1P5-20**
400V	–	•	2.2	5.6	2	**HVAC402-2P2-20**
400V	–	•	3	7.6	3	**HVAC402-3P0-20**
400V	–	•	4	9	3	**HVAC402-4P0-20**
400V	–	•	5.5	12	3	**HVAC402-5P5-20**

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

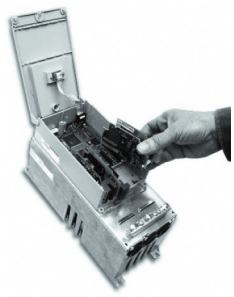
IP21

IP class	Power 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

IP class	Power 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**

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**

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**

Parts and Accessories

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**

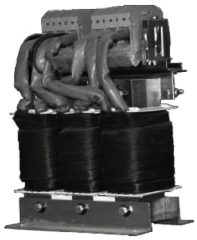
Display panel kits

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**

Parts and Accessories



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**

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**

Control Spares

Product description	HVAC400	NXL HVAC	NXS	HVAC232/402	Type
Control box and boards for HVAC400 drives	•	–	–	–	**CONTROL-BOARD1**
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**

TECHNICAL APPENDIX

14

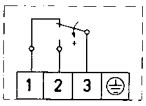
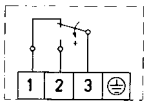
MECHANICAL PRESSURE SWITCHES / PRODUCT OVERVIEW

Typ	Medium*	Pressure ranges	European Directive	Testing basis	Comments
DPS	Air and non-aggressive gases	20Pa to 2500 Pa	EU/2016/426	DIN EN1854	Differential pressure monitor
DCM DNM	Non-aggressive liquids and gases	1 mbar to 63 bar	RL 2014/35/EU	DIN EN60730	Mechanical pressure switches
Ex-DCM Ex-DNM	Non-aggressive liquids and gases	1 mbar to 63 bar	ATEX 2014/34/EU IECEx	DIN EN60730, DIN EN60079	Mechanical Ex-Pressure switches
DNS VNS	Aggressive liquids and gases	-1...16 bar	RL 2014/35/EU	DIN EN60730	Vacuum switches with 1.4571 stainless steel sensors
Ex-DNS Ex-VNS	Aggressive liquids and gases	-1...16 bar	ATEX 2014/34/EU IECEx	DIN EN60730, DIN EN60079...	Ex-Pressure-/ Ex-Vacuum switches with 1.4571 stainless steel sensors
DDCM	Liquids and gases	4 mbar to 16 bar	RL 2014/35/EU	DIN EN60730	Differential pressure monitor
Ex-DDCM	Liquids and gases	4 mbar to 16 bar	ATEX 2014/34/EU IECEx	DIN EN60730, DIN EN60079	Ex-Differential pressure monitor
VCM VNM	Liquids and gases	-1...0,5 bar	RL 2014/35/EU	DIN EN60730	Vacuum switches
Ex-VCM Ex-VNM	Liquids and gases	-1...0,5 bar	ATEX 2014/34/EU IECEx	DIN EN60730, DIN EN60079	Ex-Vacuum switches
DWAM DWAMV SDBAM	Steam and hot water	0,1...32 bar	RL 2014/68/EU	VdTÜV Memo Pressure 100, DIN EN12952-11, DIN EN12953-9	Pressure monitors and pressure limiters
DBS	Liquids and gases	0,1 bar to 40 bar	RL 2014/68/EU ATEX 2014/34/EU IECEx	VdTÜV Memo Pressure 100, DIN EN 1854, EN 13611 DIN EN12952-11, DIN EN12953-9	Self-monitoring pressure sensors to be combined with isolating amplifiers
FD	Liquid gases	3 – 16 bar	RL 2014/68/EU ATEX 2014/34/EU IECEx	VdTÜV Memo Pressure 100, DIN EN 764-7	Self-monitoring pressure sensors to be combined with isolating amplifiers
DGM	Fuel gases	15 mbar to 1,6 bar	EU/2016/426	DIN EN1854, DIN EN13611	Pressure monitors Suitable for fuel gases
Ex-DGM	Fuel gases	15 mbar to 250 mbar	EU/2016/426 ATEX 2014/34/EU IECEx	DIN EN1854, DIN EN13611, DIN EN60079	Ex-Pressure monitors especially suitable for fuel gases
DWR	Steam, hot water, fuel gases and liquid fuels	0,1 bar to 40 bar	RL 2014/68/EU EU/2016/426	VdTÜV Memo Pressure 100, DIN EN1854, DIN EN12952-11, DIN EN12953-9	Pressure switches „of special construction“ tested with 2 million cycles.
Ex-DWR	Steam, hot water, fuel gases and liquid fuels	0,1 bar to 40 bar	RL 2014/68/EU EU/2016/426 ATEX 2014/34/EU IECEx	VdTÜV Memo Pressure 100, DIN EN1854, DIN EN12952-11, DIN EN12953-9, DIN EN60079	Ex-Pressure switches „of special construction“ tested with 2 million cycles

* Materials in contact with medium are listed in the datasheets. The test on media resistance is gererally up to the planner or technical decision maker.

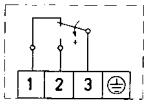
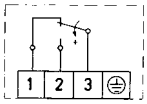
Principal technical data

Valid for all pressure switches of the DCM, DNM, DWAM, DWAMV, SDBAM, VCM, VNM, DNM, DWR, DGM, DNS and DDCM series that have a microswitch. The technical data of type tested units may differ slightly (please refer to particular type sheet).

	Standard version Plug connection	Terminal connection
	 ...200	 ...300
Switch housing	Die cast aluminium GDAlSi 12	Die cast aluminium GDAlSi 12
Pressure connection	G 1/2“ external thread (pressure gauge connec-tion) and G 1/4“ internal thread. 1/4“ internal thread for DDCM differential pressure switches	G 1/2“ external thread (pressure gauge connec-tion) and G 1/4“ internal thread. 1/4“ internal thread for DDCM differential pressure switches
Switching function and connection scheme (applies only to version with microswitch)	Floating changeover contact. With rising pressure single pole switching from 3–1 to 3–2. 	Floating changeover contact. With rising pressure single pole switching from 3–1 to 3–2 
Switching capacity (for microswitches with a silver contact)	8 A at 250 VAC 5 A at 250 VAC inductive 8 A at 24 VDC 0.2 A at 110 VDC 0.3 A at 250 VDC min. 10 mA, 12 VDC	8 A at 250 VAC 5 A at 250 VAC inductive 8 A at 24 VDC 0.2 A at 110 VDC 0.3 A at 250 VDC min. 10 mA, 12 VDC
Mounting position	Preferably vertical (see technical data sheet)	Preferably vertical (see technical data sheet)
Protection class (in vertical position)	IP 54	IP 65
Electrical connection	Plug connection	Terminal connection
Cabel entry	Pg 11	M 16 x 1.5
Ambient temperature	–25 to +70 °C (exceptions: DWAM, DWAMV, SDBAM series –20 to +70 °C DGM and FD series: –25 to +60 °C DCM4016, 4025, 1000, VCM4156: –15 to +60 °C)	–25 to +70 °C (exceptions: DWAM, DWAMV, SDBAM series –20 to +70 °C DGM and FD series: –25 to +60 °C DCM4016, 4025, 1000, VCM4156: –15 to +60 °C)
Switching point	Adjustable using the setting spindle	Adjustable using the setting spindle once the switch housing cover is removed
Hysteresis	Adjustable or not adjustable (see Product Summary)	Adjustable or not adjustable (see Product Summary)
Medium temperature	Max. 70 °C, briefly 85 °C	Max. 70 °C, briefly 85 °C
Relative humidity	15 to 95% (non-condensing)	15 to 95% (non-condensing)
Vacuum	Higher medium temperatures are possible provided the above limits for the switching device are ensured by suitable measures (e.g. siphon). All pressure switches can operate under vacuum. This will not damage the device (exception DCM1000).	
Repetition accuracy of switching points	< 1 % of the working range (for pressure ranges > 1 bar).	
Vibration resistance	No significant deviations up to 4 g.	
Mechanical durability (pressure sensor)	With sinusoidal pressure application and room temperature, 10 x 106 switching cycles. The expected life depends to a very large extent on the type of pressure application, therefore this figure can serve only as a rough estimate. With pulsating pressure or pressure impacts in hydraulic systems, pressure surge reduction is recommended.	
Electronical durability (microswitch)	100.000 switching cycles at nominal current 8 A, 250 VAC. A reduced contact load increases the number of possible switching cycles.	
Isolation values	Overvoltage category III, contamination class 3, reference surge voltage 4000 V. Conformity to DIN VDE 0110 is confirmed.	
Oil and grease-free	The parts of all pressure switches in contact with the medium are oil and grease free (except the DPS...series). The sensors are hermetically sealed and contain no seals (also see ZF1979, special packing).	

Principal technical data

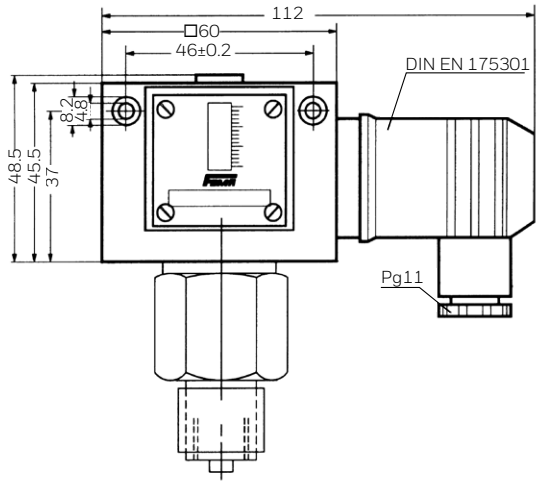
Valid for all pressure of the DCM, VCM, VNM, DNM, DWR, DGM, DNS, DWAM, DWAMV and DDCM series that have a microswitch. The technical data of type-tested units may differ slightly (please refer to particular type sheet).

	Ex-i-version	Ⓔx version (Ex-d)
	 ...500	 ...700
Switch housing	Die cast aluminium GDAlSi 12	Die cast aluminium GDAlSi 12
Pressure connection	G 1/2" external thread (pressure gauge connection) and G 1/4" internal thread. 1/4" internal thread for DDCM differential pressure switches	G 1/2" external thread (pressure gauge connection) and G 1/4" internal thread. 1/4" internal thread for DDCM differential pressure switches
Switching function and connection scheme (gilt nur für Ausführung mit Mikroschalter)	Floating changeover contact. With rising pressure single pole switching from 3–1 to 3–2 	Floating changeover contact. With rising pressure single pole switching from 3–1 to 3–2 
Switching capacity	max.: 100mA, 24VDC min.: 2mA, 5VDC	3 A at 250 VAC 2 A at 250 VAC inductive 3 A at 24 VDC 0.1 A at 250 VDC min. 2 mA, 24 VDC
Mounting position	Vertical	Vertical
Protection class (in vertical position)	IP 65	IP 65
Explosion protection Code	Ⓔx II 1/2G Ex ia IIC T6 Ga/Gb Ⓔx I 1/2D Ex ia IIIC T80 °C	Ⓔx II 2G Ex d e IIC T6 Gb Ⓔx II 1/2D Ex ta/tb IIIC T80 °C Da/Db
EC Type Examination Certificate Number	IBExU12ATEX1040	IBExU12ATEX1040
Electrical connection	Terminal connection	Terminal connection
Cabel entry	M 16 x 1,5	M 16 x 1,5
Ambient temperature	–25 to +60 °C (exceptions: DWAM series –20 to +60 °C DGM and FD series: –25 to +60 °C DCM4016, 4025, 1000, VCM4156: –15 to +60 °C)	-20 bis +60 °C
Medium temperature	max. 60 °C	max. 60 °C
Relative humidity	15 to 95% (non-condensing)	15 to 95% (non-condensing)
Switching point	After removing switch housing cover	After removing switch housing cover
Hysteresis	Not adjustable	Not adjustable
Vacuum	Higher medium temperatures are possible provided the above limits for the switching device are ensured by suitable measures (e.g. siphon). All pressure switches can operate under vacuum. This will not damage the device.	
Repetition accuracy of switching points	< 1 % of the working range (for pressure ranges > 1 bar).	
Vibration resistance	No significant deviations up to 4 g.	
Mechanical durability Mechanical durability	With sinusoidal pressure application and room temperature, 10 x 106 switching cycles. The expected life depends to a very large extent on the type of pressure application, therefore this figure can serve only as a rough estimate. With pulsating pressure or pressure impacts in hydraulic systems, pressure surge reduction is recommended.	
Electronical durability (microswitch)	100.000 switching cycles at nominal current 8 A, 250 VAC. A reduced contact load increases the number of possible switching cycles.	
Isolation values	Overvoltage category III, contamination class 3, reference surge voltage 4000 V. Conformity to DIN VDE 0110 is confirmed.	
Oil and grease-free	The parts of all pressure switches in contact with the medium are oil and grease free (except the DPS...series). The sensors are hermetically sealed and contain no seals (also see ZF1979, special packing).	

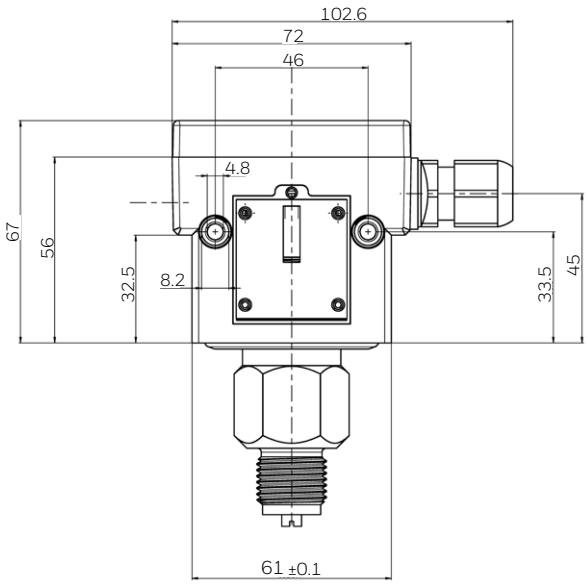
Dimensioned drawings of switch housings

(Dimensions in mm)

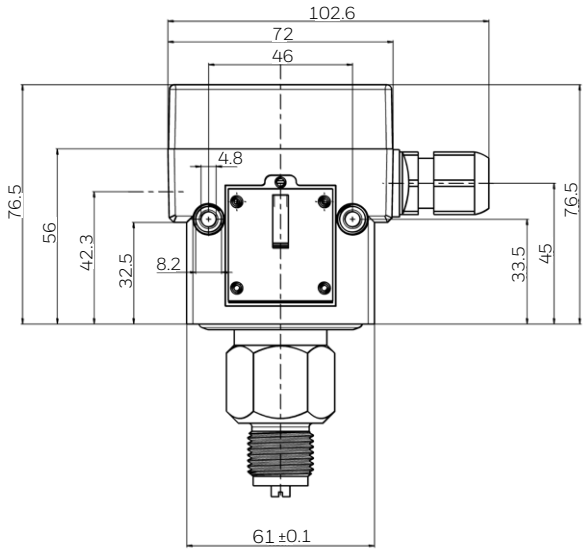
1 Housing 200 (plug connection)



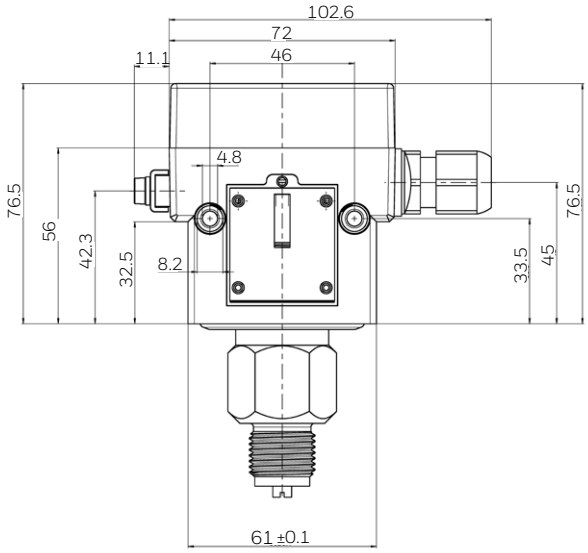
2 Housing 300 (terminal connection)



3 Housing 500 (terminal connection Ex-i)



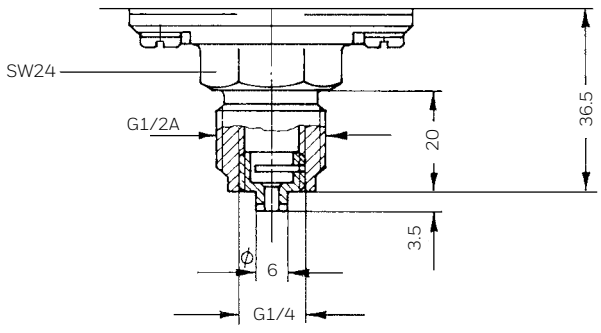
4 Housing 700 (terminal connection Ex-d)



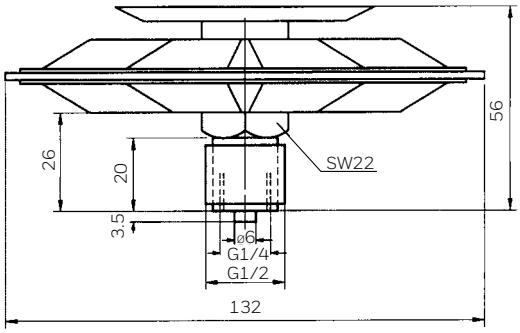
Dimensioned drawings of pressure sensors (mm)

(Dimensions in mm)

10



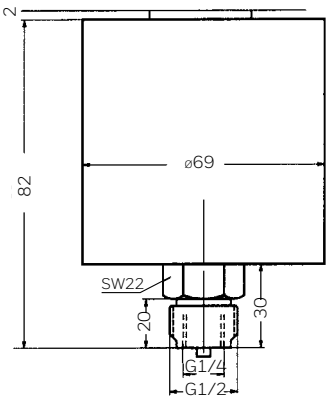
11



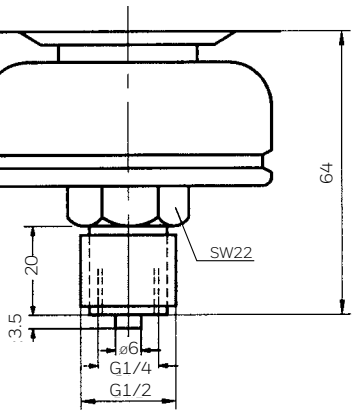
Dimensioned drawings of pressure sensors

(Dimensions in mm)

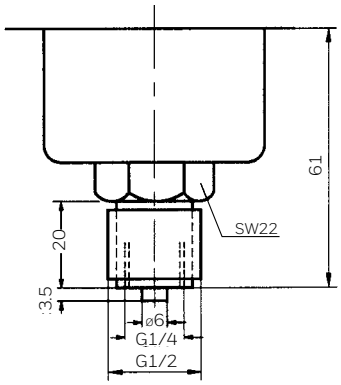
12



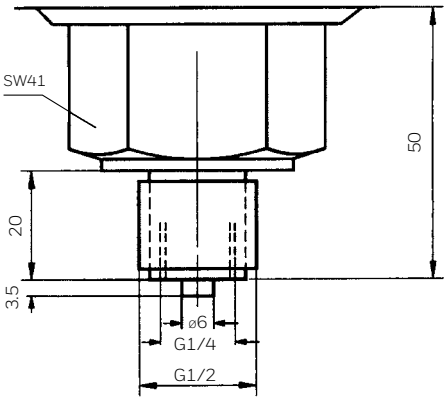
13



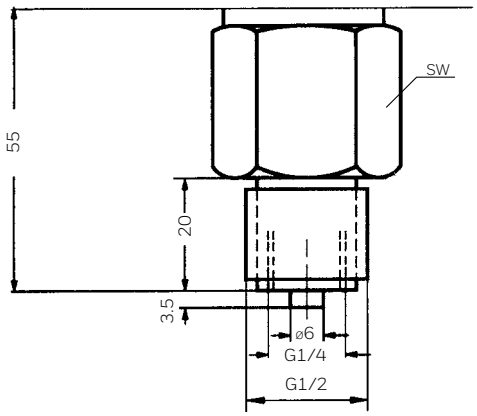
14



15

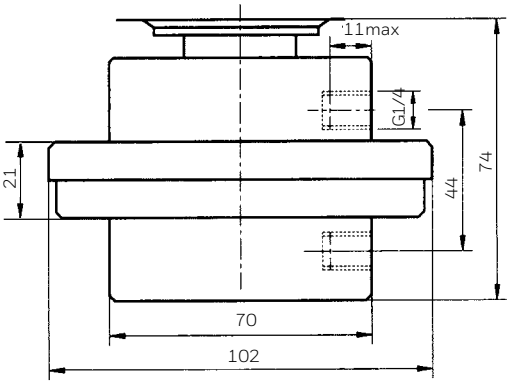


16–19

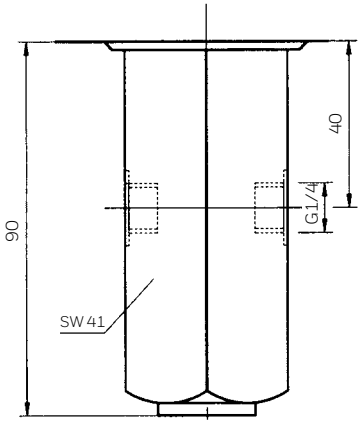


Dimensioned drawing	hex (mm)
16	22
17	24
18	30
19	32

20

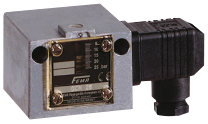
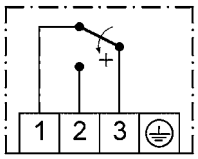
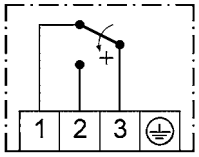
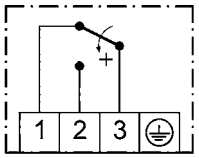
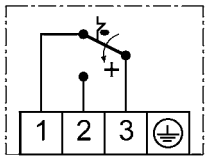
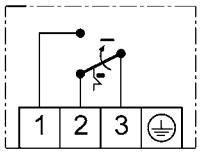


21



Pressure switches and pressure monitors

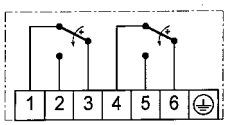
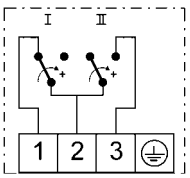
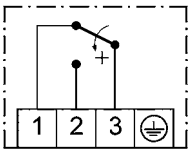
Additional functions / Connection schemes

	Plug connection, 200 series (IP 54)	Terminal connection, 300 series (IP 65)	Connection scheme
Standard version (plug connection) Micro switch, single pole switching, switching differential not adjustable			
Terminal connection housing (300)		**ZF301**	
Unit with adjustable switching differential	**ZF203**		
Maximum pressure limiter with reclosing lockout **Interlocking with rising pressure** see DWR series	**ZF205**		
Minimum pressure limiter with reclosing lockout **Interlocking with falling pressure** see DWR series	**ZF206**		

Surcharge for additional functions on request.

Note to non-available items:
In our article master all the possible technical combinations are not created. Therefore we recommend the previous request for clarification and selection of an alternative solution.

Additonal functions / Connecting schemes

	Plug connection 200 series (IP 54)	Terminal connection 300 series (IP 65)	Connection scheme
Two micro switches, switching in parallel or in succession. Fixed switching differential, only possible with terminal connection housing. **State the switching differential** (not possible with all pressure switches).		**ZF307**	
Two micro switches, 1 plug switching in succession, no adjustable switching differential. **State the switching scheme *** (not possible with all pressure switches).	**ZF217 ***		
Gold-plated silver contact, single pole switching (not available with adjustable switching differential). **Switching capacity:** max. 24 VDC, 100 mA, min. 5 VDC, 2 mA	**ZF213**		
Switch housing with surface protection (chemical version)		**ZF351**	

Surcharge for additional functions on request.

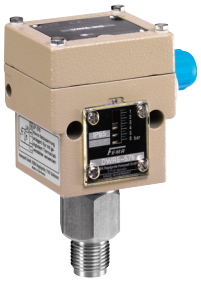
Note to non-available items:
In our article master all the possible technical combinations are not created. Therefore we recommend the previous request for clarification and selection of an alternative solution.

* Please state interval when ordering!
Example for ordering: DCM10-217A-S.
Additional text: switching scheme A4

Example for ordering:
DCM 6 – 205
- 205 — Code of additional function (e.g. maximum limiter)
- 6 — Code for pressure range
- DCM — Sensor system

How to order:
Pressure switch
DCM6-205
or DCM6 with ZF205

Pressure switches and pressure monitors



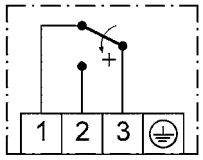
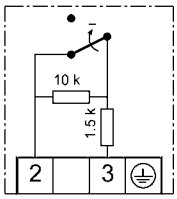
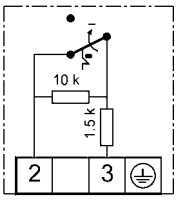
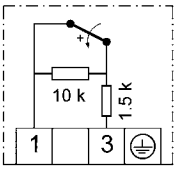
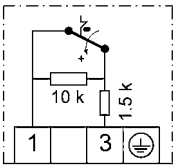
DWAM6-576

Additional functions for Ex-i-equipment

· Housing (500) with terminal connection (IP 65), „blue“ cable entry and terminals.
· Also available with resistor combination for line break and short-circuit monitoring (with isolating amplifier).

! **Important:** All pressure switches with the ZF5... additional functions listed here can only be operated in combination with a suitable isolating amplifier.

! **Additional information:** Our pressure switches and thermostats are considered to be „simple electrical equipment“ within the meaning of standard EN60079-11: 2007. Testing is not mandatory for this type of equipment.

Additional functions for Ex-equipment		Connection scheme
Gold plated contact single pole switching, fixed hysteresis, not adjustable **Switching capacity:** max. 24 V DC, 100 mA, min. 5 V DC, 2 mA **For the power supply circuit:** U_i 24 V DC C_i 1nF I_i 100 mA L_i 100 ˚H	**ZF513**	
Versions with resistor combination for line break and short-circuit monitoring in control current circuit, ZF574 – ZF577 **For the power supply circuit:** U_i 14 V DC R_i 1500 Ohm C_i 1 nF L_i 100 ˚H Normally closed contact with resistor combination, for **minimum pressure monitoring,** gold plated contact, plastic-coated housing (chemical version).	**ZF574**	
Normally closed contact **with reclosing lockout** and resistor combination, for **minimum pressure monitoring,** plastic coated housing (chemical version).	**ZF575**	
Normally closed contact with resistor combination, for **maximum pressure monitoring,** gold plated contact, plastic coated housing (chemical version).	**ZF576**	
Normally closed contact **with reclosing lockout** and resistor combination, for **maximum pressure monitoring,** plastic-coated housing (chemical version).	**ZF577**	

Surcharge for additional functions on request.

Note to non available items: In our article master all the possible technical combinations are not created. Therefore we recommend the previous request for clarification and selection of an alternative solution.

Service functions

Devices with service functions will be produced according to the customer's specifications.
The system requires that these product combinations are identified in such a way as to prevent any possibility of confusion.
These combinations are characterised by a product code with the suffix „-S" on the packaging label as well as separate labels with barcodes for each service function.

Service functions	Plug connection 200 series	Terminal connection 300 series	Ex-i/ Ex-d
Adjustment according to customer's instruction:			
- one switching point	**ZF1970***	**ZF1970***	**ZF1970***
- two switching points or defined switching differential	**ZF1972***	**ZF1972***	**–**
Adjustment and lead sealing according to customer's instruction:			
- one switching point	**ZF1971***	**–**	**–**
- two switching points or defined switching differential	**ZF1973***	**–**	**–**
Labelling of units according to customer's	**ZF1978**	**ZF1978**	**ZF1978**
instruction with sticker	**ZF1979**	**ZF1979**	**ZF1979**
Test reports according to EN 10 204			
- Certificate 2.2 based on non specific specimen test	**WZ2.2**	**WZ2.2**	**WZ2.2**
- Inspection test certificate 3.1 based on specific test	**AZ3.1B1**	**AZ3.1B1**	**AZ3.1B1**

*** Switching point adjustment:** Please specify switching point and direction of action (rising or falling pressure).

Service functions are available for the following type series (including Ex-versions):
Pressure switches: DCM, DNM, DNS, VNS, VCM, VNM, DDCM, DWR, DWAM, DWAMV, SDBAM, DGM, FD

Ordering devices with service functions

Example:
Ordering 1 DCM6, set at 4 bar rising, identified with code PSH008 as requested by the customer and acceptance test certificate 3.1. The order confirmation contains:

The order confirmation contains:
1 DCM6-S („S" is need for factory = following lines belong to this item)
1 ZF1970: set to 4 bar rising
1 ZF1978: PSH008
1 AZ3.1B1

Included items: Labels with barcodes on the packaging:
DCM6-S
ZF1970: set to 4 bar rising
ZF1978: PSH008
AZ3.1B1

Pack contents: 1 DCM6 (without „S" suffix) marked
1 ZF1970: set to 4 bar rising
1 ZF1978: PSH008
1 AZ3.1B1 will be sent by extra post
1 Installation and operating instructions

Mechanical EX-pressure switches

	Type	Medium	Pressure range	Temperature range	Directive for CE	Testing basis	Comments
druckfest-gekapselt	**EX-DCM** **EX-DNM**	non aggressive liquids and gases	1...25 mbar. 1...10 bar, 16...63 bar	-20...+60°C	ATEX 2014/34/EU IECEx	DIN EN60730 DIN EN60079	Mechanical Ex-d pressure switch
	EX-DNS **EX-VNS**	aggressive liquids and gases	-1...16 bar	-20...+60°C	ATEX 2014/34/EU IECEx	DIN EN60730 DIN EN60079	Mechanical Ex-d pressure/vacuum switch with stainless steel sensor 1.4571
	EX-DDCM	liquids and gases	4 mbar... 16 bar	-20...+60°C	ATEX 2014/34/EU IECE	DIN EN60730 DIN EN60079	Mechanical Ex-d differential pressure monitor
	EX-VCM **EX-VNM**	liquids and gases	-1...0,5 bar	-20...+60°C	ATEX 2014/34/EU IECEx	DIN EN60730 DIN EN60079	Mechanical Ex-d vacuum switch
	EX-DGM	fuel gases	15... 250 mbar	-20...+60°C	ATEX 2014/34/EU IECEx EU/2016/426	DIN EN 1854 DIN EN60730 DIN EN60079	Mechanical Ex-d pressure monitor for gases in accordance with DVGW work sheet G260
	EX-DWR	Steam, hot water, fuel gases and liquied fuels	0,1...40 bar	-20...+60°C	ATEX 2014/34/EU IECEx DGR 2014/68/EU EU/2016/426	VdTÜV Druck 100 DIN EN 1854 DIN EN12952-11 DIN EN12953-9 DIN EN 764-7 DIN EN60079	Mechanical Ex-d pressure switch, Sensor of special construction by testing with 2 milion operating cycles
eigensicher	**DCMx-5xx**	non aggressive liquids and gases	1 mbar... 63 bar	-25...+60°C*	ATEX 2014/34/EU IECEx	DIN EN60730	Mechanical Ex-i pressure switch
	VCMx-5xx **VNMx-5xx**	liquids and gases	-1...0,1 bar	-25...+60°C*	ATEX 2014/34/EU IECEx	DIN EN60730	Mechanical Ex-i vacuum switch
	VNSx-5xx **DNSx-5xx**	aggressive liquids and gases	-1...16 bar	-25...+60°C	ATEX 2014/34/EU IECEx	DIN EN60730	Mechanical Ex-i pressure/vacuum switch with stainless steel sensor 1.4571
	DDCMx-5xx	liquids and gases	0,2 bar... 16 bar	-25...+60°C	ATEX 2014/34/EU IECEx	DIN EN60730 DIN EN 60079	Mechanical Ex-i differential pressure monitor
	DWAMx-5xx	Steam and hot water	0,4...32 bar	-20...+60°C	ATEX 2014/34/EU IECEx DGR 2014/68/EU	VdTÜV Druck 100 DIN EN 12952-11 DIN EN 12953-9	Mechanical Ex-i Pressure monitor and Pressure limiter
	DGMx-5xx	fuel gases	15...1,6 bar	-25...+60°C	ATEX 2014/34/EU IECEx EU/2016/426	DIN EN 1854	Mechanical Ex-i pressure monitor for gases in accordance with DVGW work sheet G260
	DGMx-5xx	Steam, hot water, fuel gases and liquied fuels	0,1...40 bar	-25...+60°C	ATEX 2014/34/EU IECEx EU/2016/426 DGR 2014/68/EU	VdTÜV Druck 100 DIN EN 1854 DIN EN12952-11 DIN EN12953-9 DIN EN 764-7 DIN EN60079	Mechanical Ex-i pressure switch, Sensor of special construction by testing with 2 milion operating cycles
	FD16-326 **FD16-327**	liquid gas	3...16 bar	-25...+60°C	ATEX 2014/34/EU IECEx DGR 2014/68/EU	VdTÜV Druck 100 DIN EN 764-7	Mechanical Ex-i maximum pressure limiter for liquid gas installations

*: -15....+60°C für DCM4016-5..,DCM4025-5.., VCM4156-5..

Electronic pressure switches and Pressure transmitter

Type	Medium	Pressure range	Temperature range (Medium)	Directive for CE	Testing basis	Outputs	Comments
Smart DCM **PSHR...**	Liquids and Gases	-1...16 bar	-20...+80°C	2004/108/EG	EN61326-1 EN61326-2-3	1 x Open Collector	Electronic pressure switch Parts in contact with medium: Stainless steel 1.4571
Smart DCM DIFF **PSHD....**	Liquids and Gases	0...20 bar	-20...+80°C	2004/108/EG	EN61326-1 EN61326-2-3	1 x Open Collector	Electronic differential pressure switch Parts in contact with medium: Stainless steel 1.4404
Smart SN **PTSR... PTHR...**	Liquids and Gases	-1...40 bar	-20...+80°C	2004/108/EG	EN61326-1 EN61326-2-3	0/4...20 mA 0/2...10 V	Microprocessor supported pressure transmitter 2- and 3-wire Parts in contact with medium: stainless steel 1.4571
Smart SN DIFF **PTHD... PTSD...**	Liquids and Gases	0...20 bar	-20...+80°C	2004/108/EG	EN61326-1 EN61326-2-3	0/4...20 mA 0/2...10 V	Microprocessor supported pressure transmitter 2- and 3-wire Parts in contact with medium: stainless steel 1.4404
PTI	Liquids	0...40 bar	-30...+125°C	2014/30/EU	EN61326-1	4...20 mA	Pressure transmitter 2-wire parts in contact with medium: 1.4305
PTU	Liquids	0...40 bar	-30...+125°C	2014/30/EU	EN61326-1	0...10 V	Pressure transmitter 2-wire parts in contact with medium: 1.4305
DTI.../ DTU...	Liquids and Gases	0...10 bar	-15...+100°C	2014/30/EU	EN61326-1 EN61326-2-3	4...20 mA 0...10 V	Differential pressure transmitter 2- and 3-wire Parts in contact with medium: 1.4571, 1.4435, 1.4305
DPTE	Air and non aggressive gases	-50... 10.000 Pa -0,5...100 mbar	0....50°C	2004/108/EG	EN61326-1	4...20 mA 0...10 V	Differential pressure transmitter 2- and 3- wire Parts in contact with medium: ABS, POM
DPTA	Air and non aggressive gases	-25...50 Pa -0,25...0,5 mbar	0....50°C	2004/108/EG	EN61326-1	4...20 mA 0...10 V	Differential pressure transmitter with automatic re-zeroing, 3-wire, Parts in contact with medium: ABS, POM
DPTAQ8	Air and non aggressive gases	-50...1000 Pa -0,5...10 mbar	0....50°C	2004/108/EG	EN61326-1	4...20 mA 0...10 V	8-range differential pressure transmitter with automatic re-zeroing, 3-wire, Parts in contact with medium: ABS, POM

MECHANICAL THERMOSTATS

Product overview

Typ	Temperature range	Directive for CE	Testing basis	Comments
FT69	-8...+8°C	2014/35/EU	DIN EN 60335-1	Frost protection thermostat
FTSE	-8...+8°C	2014/30/EU 2014/35/EU	DIN EN 61326-1 DIN EN 60730-1 DIN EN 60730-2-9	Electronic frost protection thermostat
STW	+20...130°C	2014/35/EU 2014/30/EU 2014/68/EU	DIN EN 14597 DIN EN 61326-1 DIN EN 60730 DIN EN 55014-1	Temperatur Monitor
STB	+20...130°C	2014/35/EU 2014/30/EU 2014/68/EU	DIN EN 14597 DIN EN 61326-1 DIN EN 60730 DIN EN 55014-1	Temperature Limiter
T6120A	0...60°C	2014/35/EU	DIN EN 60335-1	Room thermostat with 1 c/o contact
T6120B	-30...+30°C	2014/35/EU	DIN EN 60335-1	Room thermostat with 2 c/o contact

Saia-Burgess Controls AG
Bahnhofstrasse 18
3280 Murten
Switzerland
Phone +41 26 580 30 00
www.saia-pcd.com
info@saia-pcd.com
www.sbc-support.com

Honeywell GmbH
Böblinger Straße 17
71101 Schönaich
Germany
Phone +49 7031 637 01
info@centraline.com
www.centraline.com

Trend Control System
St Mark's Court, North St
Horsham RH12 1BW
United Kingdom
Phone +44 1403 211 888
www.trendcontrols.com

Find out more
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Home and Building Technologies
Honeywell GmbH
Böblinger Straße 17
71101 Schönaich / Germany
Phone +49 7031 637 01
www.honeywell.com

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