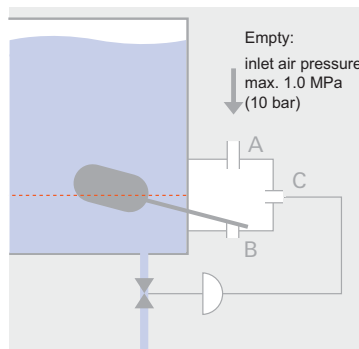
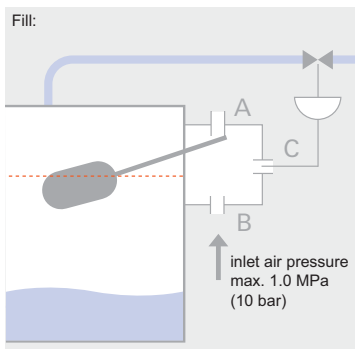
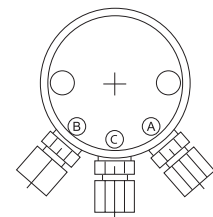
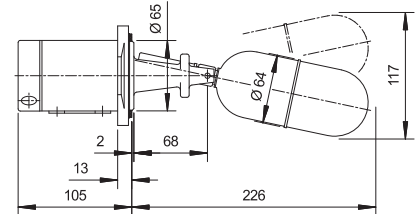


Type P 01 04 - For pneumatic control applications

Equipped with a directly controlled 3/2 way valve (ON/OFF) for control air of 0 to 10 bar. Operation with other non-corrosive gases or fluids is possible.

Nominal pressure	PN 25, max. 25 bar up to 250°C
Operating temperature	1 to 250°C
Ambient temperature	1 to 80°C
Density of liquid	min. 0.7 kg/dm ³
Operating differential	fixed 12 mm
Rod extension	see page 36
Control connections	G 1/8" (BSPP) inside thread
Max. control pressure	10 bar
Internal orifice	1.5 mm
Kv Factor	1
Internal leakage rate at 10 bar	max. 1 cm ³ /min
Air flow	90 NI/min at 6 bar
Pressure drop	1 bar
Wetside material	Stainless steel (CrNiMo)
Flange material	Stainless steel (CrNiMo)
Housing material	Sea water resistant die cast aluminium
Counterflange	see page 38
Flange dimensions	square 92 x 92 mm, PCD 92 mm
Weight	approx. 1.7 kg
Air quality	class 4, ISO 8571 (max. particle size 15 µm, max. particle density 8 mg/m ³)



The air supply to the 3/2 way valve may be connected to either A or B, according to whether filling or emptying operation is desired or whether the actuator is normally closed or open when pressurized. E.g. pressure can be applied through A to C and exhausted from C through B, alternatively pressure can be applied through B to C and exhausted from C through A.

Type 5P 01 04 - For critical environments or high temperatures. All parts stainless steel. As P 01 04, but switch housing also in stainless steel (CrNiMo) and therefore, highly corrosion resistant and suitable for temperatures up to 300°C. Weight approximately 2.2 kg.

Type PV 01 04 - For moist control air. As P 01 04, but with drain valve for condensate removal.

Type FP 01 04 - For hazardous applications. As P 01 04, but functionally tested. With declaration of conformity for use in explosion proof areas.

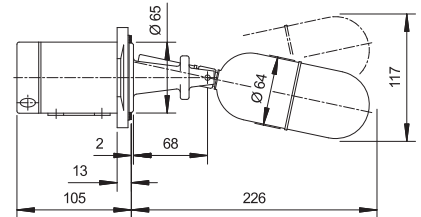
Type FPV 01 04 - For moist control air in hazardous applications. As FP 01 04, but with drain valve for condensate removal. With declaration of conformity for use in explosion proof areas.



Type M 01 04 - For pneumatic proportional control applications

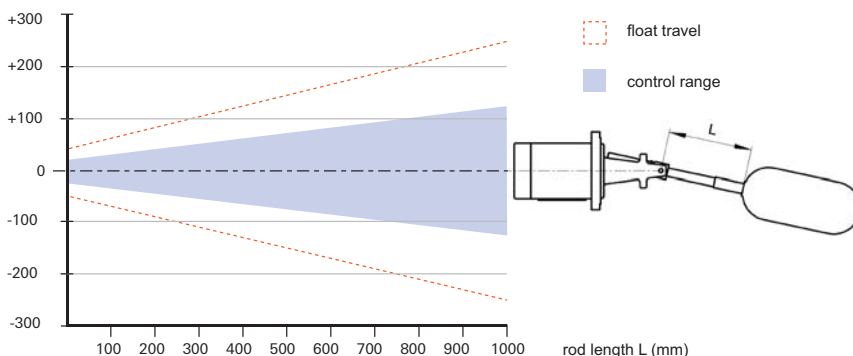
Equipped with a pneumatic control valve which converts the supply pressure of 1.4 bar to an output signal of 0.2 to 1 bar (Option: 7 to 15 psi), proportional to changes in the liquid level.

Nominal pressure	PN 25, max. 25 bar up to 250°C
Operating temperature	1 to 250°C
Ambient temperature	1 to 80°C
Density of liquid	min. 0.7 kg/dm ³
Control range	see table below
Control connections	G 1/8" (BSPP) inside thread
Control pressure	1.4 bar
Output signal	0.2 to 1 bar
Linearity	±5% (of full scale output)
Air flow	3.5 to 6.0 NI/min. (can be increased by using external booster valve)
Air consumption	max. 0.4 Nm ³ /h
Wetside material	Stainless steel (CrNiMo)
Flange material	Stainless steel (CrNiMo)
Housing material	Sea water resistant die cast aluminium
Flange dimensions	square 92 x 92 mm, PCD 92 mm
Counterflange	see page 38
Weight	approx. 1.7 kg
Air quality	class 3, ISO 8571 (max. particle size 5 µm, max. particle density 5 mg/m ³)



For operation at higher control pressure up to max. 10 bar

Control pressure in bar	Output signal in bar		Control range P max / P min
	min.	max.	
2	0.25	1.5	6
4	0.6	3.1	5.17
6	1.1	4.8	4.36
8	1.8	6.5	3.61
10	2.5	8.3	3.32



Control range

The normal control range is 30 mm, i.e. +15 mm/-15 mm from the centre line, measured in water at 20°C. With the float in the central position, the output is 0.6 bar. The control range can be increased by lengthening the float arm (see graph left).

Type 5M 01 04 - For critical environments or high temperatures.**All parts stainless steel.**

As M 01 04, but housing also in stainless steel (CrNiMo) and therefore, highly corrosion resistant and suitable for operating temperatures up to 300°C.
Weight approximately 2.2 kg.

Type MV 01 04 - For moist control air

As M 01 04, but with drain valve for condensate removal.

Type FM 01 04 - For hazardous applications

As M 01 04, but functionally tested. With declaration of conformity for use in explosion proof areas.

Type FMV 01 04 - For moist control air in hazardous applications

As FM 01 04, but with drain valve for condensate removal.

With declaration of conformity for use in explosion proof areas.

**Control function**

The standard air connection configuration is shown here (fig. A). When filling, the output signal is decreasing proportionally to the rising level.

The reverse function is obtained by turning the switch housing 180°

(see fig. B). This can be accomplished without interrupting the process.

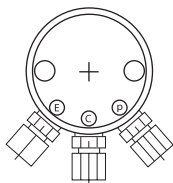


figure A

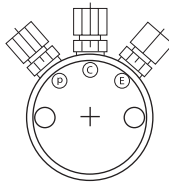


figure B

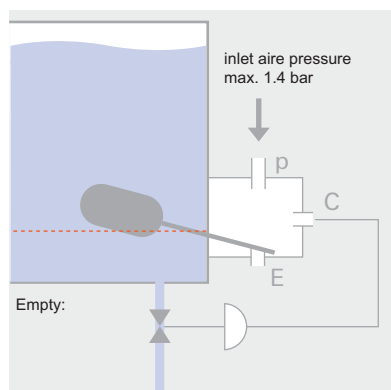
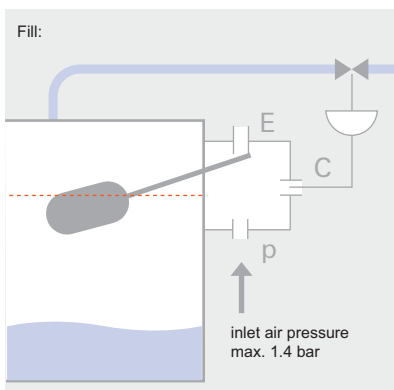


Table 13**Pneumatic modules**

The pneumatic modules are described in detail on pages 14 to 16.

The housings are in sea water resistant aluminium. Pressure connections: G 1/8" (BSPP) inside thread.



Type	Function	Connection diagram	Temperature in °C	
			Operating	Ambient
P	Pneumatic switch with ON/OFF 3/2 way valve. Input air pressure 0 to 10 bar		+1 to +250	+1 to +80
PV	Pneumatic switch with ON/OFF 3/2 way valve and drain valve for condensate removal. Input air pressure 0 to 10 bar		+1 to +250	+1 to +80
FP	Pneumatic switch with ON/OFF 3/2 way valve, 0 to 10 bar function checked, may be used in hazardous areas.		+1 to +250	+1 to +80
FPV	Pneumatic switch with ON/OFF 3/2 way valve, 0 to 10 bar function checked, may be used in hazardous areas with drain valve for condensate removal.		+1 to +250	+1 to +80
M	Pneumatic proportional control valve, input air pressure 1.4 bar (max. 10 bar). Output signal 0.2 to 1 bar (3-15 psi).		+1 to +250	+1 to +80
MV	Pneumatic proportional control valve and drain valve for condensate removal. Input air pressure 1.4 bar (max. 10 bar). Output signal 0.2 to 1 bar (3-15 psi).		+1 to +250	+1 to +80
FM	Pneumatic proportional control valve, input air pressure 1.4 bar (max. 10 bar). Output signal 0.2 to 1 bar (3-15 psi) function checked may be used in hazardous areas.		+1 to +250	+1 to +80
FMV	Pneumatic proportional control valve and drain valve for condensate removal. Input air pressure 1.4 bar (max. 10 bar). Output signal 0.2 to 1 bar (3-15 psi) function checked, may be used in hazardous areas.		+1 to +250	+1 to +80

Chromated housing

The types in Table 13 are also available with chromated housing. Designation prefix is 2.

Example: 2P or F2M

Stainless steel housing

All switch modules in Table 13 are also available in stainless steel. The operating temperature range is increased to 400°C. Designation prefix is 5.

Example: 5MV or F5MV