Flush-mounted pressure and filling level transmitter - Modular system PZM 050*D* - series

FEATURES

- **EHEDG ASEPTIC CERTIFIED MODULAR PROCESS CONNECTION SYSTEM**
- **ACCURACY ≤ ± 0.2% FS**
- **OUTPUT SIGNAL 4...20mA, TURNDOWN 4**
- **SIMPLE PARAMTERING VIA 2-KEY CONCEPT AND MULTIPLE-COLOUR STATUS LED**
- **VACUUM AND OVERLOAD SAFE**
- **EASY TO CLEAN AND HIGH PROTECTION CLASS IP 67 AND IP 69K**
- **FOR MEASUREMENT OF THE PRESSURE AND FILLING LEVEL IN TANKS AND PIPES WITH BASIC REQUIREMENTS**
- **SIMPLE CALIBRATION, EVEN WITHOUT DISCONNECTION OF THE TRANSMITTER, THROUGH SWITCHABLE POWER SUPPLY PLANT/ CALIBRATOR SUPPLY**

DESCRIPTION

The PZM050*D* pressure transmitter is suitable for measuring the pressure and filling level, fulfilling the basic requirements of exactness. The robust stainless steel field housing in the hygienic design and the checked protection classes IP 67 and IP 69K withstand all aggressive and residue-free cleaning procedures such as those required in the food industry.

The 050*D* series pressure transmitter are equipped with a micro-processor controlled electronics system and an accuracy of ≤ ± 0.2% FS. They are parametrised with a simple and user-friendly operating concept via 2 keys and a multi-colour status LED. A TurnDown of up to 4 can be set using the full and empty adjustment.

The modular process connection system PZM acts as the process connection and gives its name to the pressure transmitter. This enables universal connection to almost any process connection from DN40 using only a single pressure transmitter and a suitable process connection adapter. The PZM pressure transmitters make a considerable contribution to achieving sustainable process chains. The process connection adapters available: Welded-in lugs for pipes and tanks, threaded and DIN 11851, conical couplings , VARIVENT® DIN 11864-1 female unions, DIN32676 clamps, etc. The PZM modular process connection is certified according to EHEDG type EL-Aseptic class I and has thus been successfully tested for use in applications with the highest requirements made of hygiene. The design with press screws and O-ring seals enables alignment of the transmitter with simultaneous micro-organism impermeability.

The PZM050*D* pressure transmitters are highly-suited to use in applications with strict standards of hygiene and basic requirements of functionality and accuracy.

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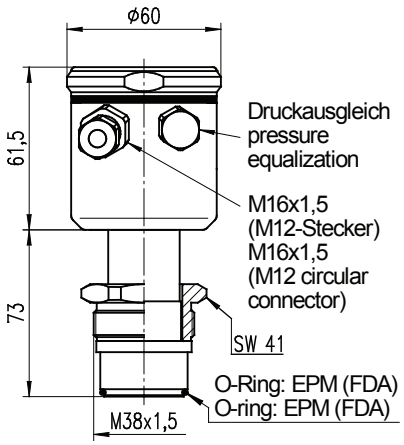
TECHNICAL DATA

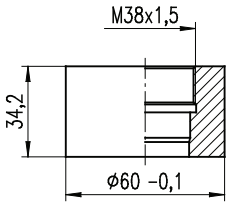
General details								
Device type/measuring principle	PZM050*D*: piezoresistive							
Input								
Measuring ranges	PZM050*D*							
Standard nominal measuring range [bar]	Relative	OP	Absolute	OP	Relative	OP	Absolute	OP
OP = overload protection [bar]	0 to 0.35	1			-1/0 to 10	30	0 to 10	30
	0 to 1	3	0 to 1	3	-1/0 to 30	90	0 to 30	90
Special measuring ranges are available on request.	-1/0 to 2.5	8	0 to 2.5	8	-1/0 to 100	250	0 to 100	250
All measurement cells are vacuum safe	-1/0 to 5	15	0 to 5	15				
Setting the measuring ranges	via the 2 keys within the transmitter							
Setting ranges	Measuring range begin zero: 0 to 75% of the sensor's nominal measuring span Measuring span span: 25 to 100% of the sensor's nominal measuring span							TD=4
Burst pressure DIN16086	>= 4-fold nominal measuring range							
Output								
Output signal	2-wire: 4 to 20mA with a test circuit connection in the device							
Fault signal	22mA							
Current limitation	3.8mA and 21mA (normal operation, cannot be set)							
Measuring accuracy								
Reference conditions	acc. to DIN IEC 770							
Linearity, hysteresis and repeatability acc. to the limit point method DIN IEC 770	≤ ± 0.2% of the sensor nominal measuring range							
Activation time	< 2 s (The device will carry out a self-test.)							
Setting time	< 1s							
Long-time drift	≤ 0.2% of the span per year							
Thermal hysteresis	≤ 0.2% of the sensor's nominal measuring range / 10K (-20 to +80°C) from 4 bar ≤ 0.3% of the sensor's nominal measuring range / 10K (-20 to +80°C) up to 0.6 bar							
Conditions of use								
Installation position / calibration position	Any position / standing vertically							
Medium temperature	T1: -40 °C to +125 °C (140 °C for max. an hour) T2: -40...+200°C (high-temperature version)							
Ambient storage temperature	-40...+85°C (below -20 °C danger of cable breakage)							
Protection class acc. to EN60529	IP 67 and IP 69K							
Electromagnetic compatibility	acc.to EN 61326-1							
Construction								
Electrical connection	- Standard: M16x1.5 cable screw connection, nickel-plated brass (stainless steel available on request) - Optional: M12x1 round plug-in connector, nickel-plated brass (stainless steel available on request) - Optional: angle plug acc. to EN 175301-803 - Optional: reference cable							
Process connection	- Membrane, flush-welded on the front, CrNiSt (other materials available on request) - EHEDG type EL-ASEPTIC CLASS I, certified connection system PZM / with press screw M38x1.5 and elastomer sealing - EPM process seal (FDA conform) (range -20...+150°C, standard with temperature version T1) - Process seal FPM (FDA conform) (range -40...+200°C, standard with temperature version T2)							
Construction								
Materials	- Field housing / lid: CrNiSt 1.4301 (304) - Electronics cast: Silgel - Housing seal: FPM (Viton®) - Pressure compensation element: Polyamide - Process connection / connection adapter: CrNiSt 1.4404 (304) - Process membrane: CrNiSt 1.4435/1.4404 (316L) - Reference cable, 5-wire with reference tube: PUR (recommended: 80 m maximum)							
Filling fluid	Silicon oil (FDA)							
Display and operation								
Display	Multiple-colour status LED							
Operation	2-key concept							
Auxiliary energy resources								
Power supply / burden	12...30V DC, max. burden: (V_{supply} – 12V) / 22mA							
Accessories 050*D*								
Certificates	Calibration certificate Declaration of conformity Material certificate acc. to EN 10204 EHEDG certificate							
Process connection adapter	See order information							

DIMENSIONAL DRAWINGS (dimensions in mm)

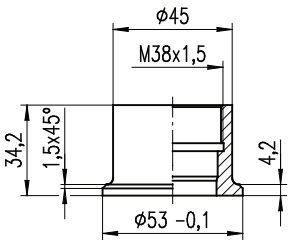
PIEZOMESS 050*D* ... _K(M)



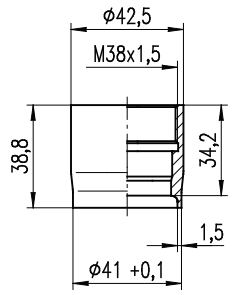
Prozessanschlussadapter: (weitere Ausführungen auf Anfrage)
adapters for process connection: (other constructions on request)



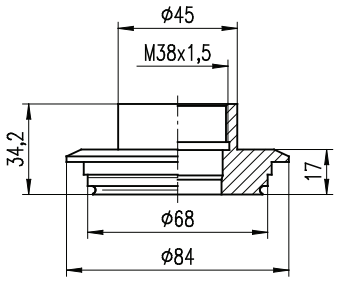
PEM5FPZM
Einschweißmuffe VPM Ø60 (Tank)
welding socket VPM Ø60 (tank)



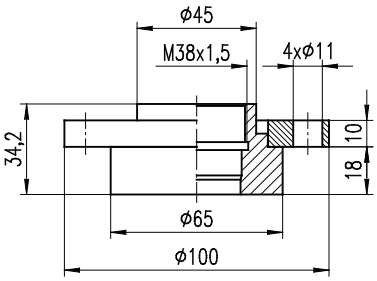
PEM3FPZM
Einschweißmuffe VPM Ø53 (Tank)
welding socket VPM Ø53 (tank)



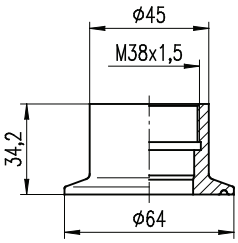
PEM9FPZM
Einschweißmuffe VPM - Rohr DN40
welding socket VPM - pipe DN40



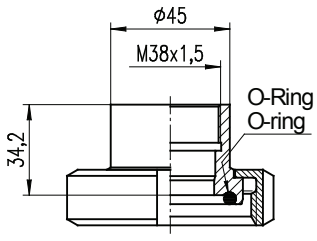
PVA6FPZM
VARIVENT-Flansch Ø68
VARIVENT-flange Ø68



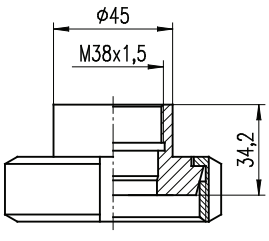
PDR6FPZM
DRD-Flansch Ø65
DRD-flange Ø65



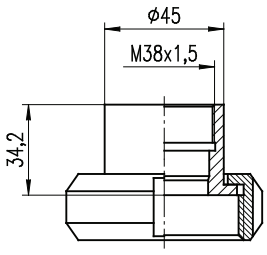
PCL5FPZM
Clamp DIN 32676 - DN50



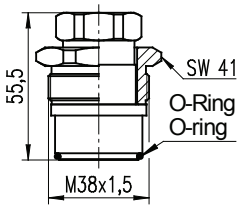
PBS...FPZM
Bundstutzen DIN 11864-1
Form A; DN40, DN50
collar nozzle DIN 11864-1
form A; DN40, DN50



PMN...FPZM
Kegelstutzen DIN 11851
conical nozzle DIN 11851
DN40, DN50, DN65



PSN...FPZM
SMS-Bundstutzen DN38
SMS collar nozzle DN38



PVS1FPZM
Verschlussstopfen PZM
closing plug PZM

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ORDERING INFORMATION for PIEZOMESS (PZM)

Sensor measuring range / pressure type

C		0.35bar max. overload 1bar
E		1bar max. overload 3bar
G		2.5bar max. overload 8bar
J		5bar max. overload 15bar
K		10bar max. overload 30bar
M		30bar max. overload 90bar
Q		100bar max. overload 250bar
	R	Relative pressure, overpressure (0...xxxbar)
	N	Relative pressure, vacuum (-1...xxxbar)
	A	Absolute pressure

Electrical connection

K	M16x1.5 cable screw connection
M	M12x1 round plug-in connector
R5	Reference cable 5m, permanently connected
R10	Reference cable 10m, permanently connected
R15	Reference cable 15m, permanently connected
R20	Reference cable 20m, permanently connected
R25	Reference cable 25m, permanently connected
RXX	Reference cable, length over 25m, please specify in plain text (max. 80m)

Temperature version

T1	Normal temperature version
T2	Optional high temperature version for medium temperatures up to 200°C

PZM050D [ ] [ ] [ ] [ ] [ ]

Nominal measurement area if deviates from the sensor measurement area

ORDERING INFORMATION for PZM ACCESSORIES (please order separately)

Process connection adapter	Article number
Clamp DIN 32676, DN50/PN16, 1,4404 (AISI 316L)	Z-PCL5FPZM
DRD flange Ø 65mm; 1,4404 (AISI 316L)	Z-PDR6FPZM
Conical coupling with DIN 11851 groove union nut, DN40/PN40, 1,4404 (AISI 316L)	Z-PMN4FPZM
Conical coupling with DIN 11851 groove union nut, DN50/PN25, 1,4404 (AISI 316L)	Z-PMN5FPZM
Conical coupling with DIN 11851 groove union nut, DN65/PN25, 1,4404 (AISI 316L)	Z-PMN6FPZM
DIN 11851 male thread, DN40/PN40, 1,4404 (AISI 316L)	Z-PMG4FPZM
DIN 11851 male thread, DN50/PN25, 1,4404 (AISI 316L)	Z-PMG5FPZM
Female unions with DIN 11864-1 groove union nut, DN40/PN40, 1,4404 (AISI 316L)	Z-PBS4FPZM
Female unions with DIN 11864-1 groove union nut, DN40/PN40, with 3 leakage holes, 1,4404 (AISI 316L)	Z-PBS4LPZM
Female unions with DIN 11864-1 groove union nut, DN50/PN25, 1,4404 (AISI 316L)	Z-PBS5FPZM
SMS female unions with DN38 groove union nut (DN1½"), 1,4404 (AISI 316L)	Z-PSN3FPZM
SMS female unions with DN51 groove union nut (DN2"), 1,4404 (AISI 316L)	Z-PSN5FPZM
VARIVENT® flange Ø 68mm, DN40-125/PN16, 1,4404 (AISI 316L)	Z-PVA6FPZM
VARIVENT® flange Ø 68mm, DN40-125/PN16 with 3 leakage holes 1,4404 (AISI 316L)	Z-PVA6LPZM
VPM welded-in lug Ø 60mm without weld collar, tank installation 1,4404 (AISI 316L)	Z-PEM5FPZM
VPM welded-in lug Ø 60mm without weld collar, with 3 leakage holes, tank installation 1,4404 (AISI 316L)	Z-PEM6FPZM
VPM welded-in lug for DIN EN 10357 series A pipes, DN40, 1,4404 (AISI 316L)	Z-PEM9FPZM
VPM welded-in lug for DIN EN 10357 series A pipes, DN40 with 3 leak holes 1,4404 (AISI 316L)	Z-PEM9LPZM
VPM welded-in lug for DIN EN 10357 series A pipes, DN50, 1,4404 (AISI 316L)	Z-PEM3FPZM
Other process connection	available on request
Accessories/assembly parts	
O-ring 28x2.5 made of EPDM (FDA), set consisting of 10 x article BT-ORD 28x2,5 EPDM (FDA)	P-POR1FPZM
O-ring 28x2.5 made of FKM (FDA), set consisting of 10 x article BT-ORD 28x2,5 FKM (FDA)	P-POR2FPZM

Please observe the permissible nominal pressure of the process connection selected.
All specifications and certifications specified are only guaranteed when Hengesbach original components are used.
Our devices are subject to constant development; subject to technical modification.