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

Hengesbach Prozessmesstechnik

Das modulare Anschlusssystem
MODULAR
von Hengesbach

FDA

FEATURES

- **SIMPLE PARAMETERING VIA 2-KEY CONCEPT AND MULTIPLE-COLOUR STATUS LED**
- **ACCURACY ≤ ± 0.2% FS**
- **OUTPUT SIGNAL 4...20mA, TURNDOWN 4**
- **MEASURING RANGES FROM -1/0...0.35bar to -1/0...100bar**
- **EASY TO CLEAN AND HIGH PROTECTION CLASSES IP67 AND IP69K**
- **SIMPLE CALIBRATION, EVEN WITHOUT DISCONNECTION OF THE TRANSMITTER, THROUGH SWITCHABLE POWER SUPPLY PLANT/ CALIBRATOR SUPPLY**
- **FOR MEASUREMENT OF THE PRESSURE AND FILLING LEVEL IN TANKS AND PIPES WITH BASIC REQUIREMENTS**

DESCRIPTION

The PZT050*D* pressure transmitters are characterised by their modular process connection system and are suitable for measuring pressure and filling level in hygiene applications. The flush-mounted measuring cell with stainless steel membrane enables measuring ranges of -1/0…0.35bar to -1/0…100bar. The robust construction of the stainless steel field housing containing the protection classes IP 67 and IP 69K, makes the PZT050*D* pressure transmitter suitable for all common exterior cleaning procedures.

The 050*D* series pressure transmitters 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 process connection is characterised by the elastomer-free sealing cone, providing a metallic seal.
A wide range of hygienic process connections are available as process connection adapters. This includes the female unions DIN 11864-1, VARIVENT®, DRD, DIN 32676 clamp etc.. The modular process connection system of the PZT050*D* pressure transmitter makes an active contribution to cost-reduction.

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TECHNICAL DATA

General details								
Device type/measuring principle	PZT050*D*: piezoresistive							
Input								
Measuring ranges	PZT050*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.....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 - Elastomer-free sealing cone and M38x1.5 press screw							
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) - Centring O-ring: NBR 55							
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							

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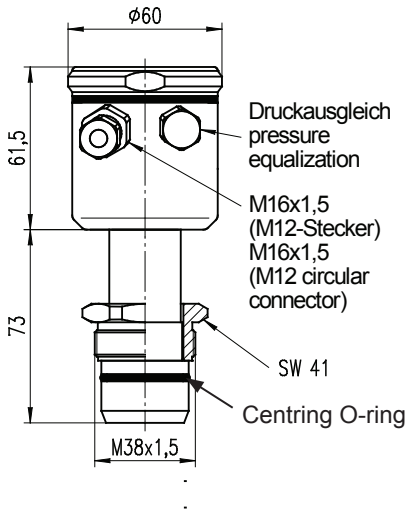
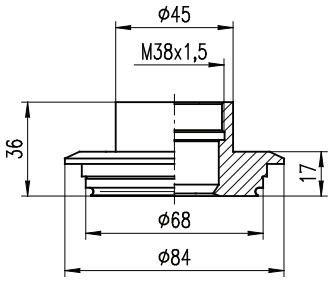
Accessories series 050*D*	
Certificates	Calibration certificate Declaration of conformity Material certificate acc. to EN 10204
Process connection adapter	See order information

DIMENSIONAL DRAWINGS (dimensions in mm)

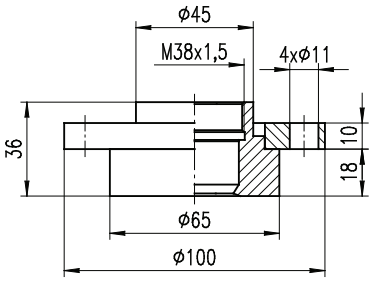
PIEZOTEC 050*D* ... _K(M)



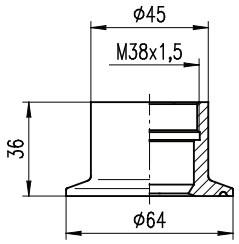
Prozessanschlussadapter: (weitere Ausführungen auf Anfrage)
adapters for process-connection: (other constructions on request)



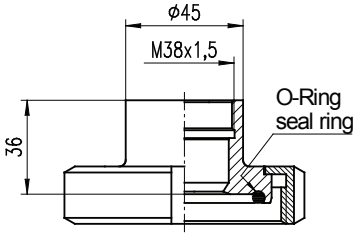
PVA6FPZT
VARIVENT-Flansch Ø68
VARIVENT-flange Ø68



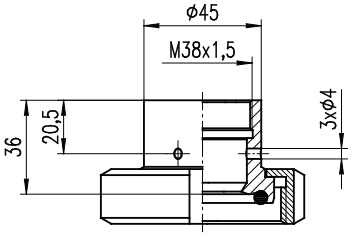
PDR6FPZT
DRD-Flansch Ø65
DRD-flange Ø65



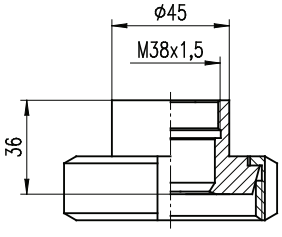
PCL5FPZT
Clamp DIN 32676 - DN50



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



PBS4LPZT
Bundstutzen DIN 11864-1
DN40, mit 3 Leckagebohrungen
collar nozzle DIN 11864-1
DN40, with 3 leakage drills



PMN...FPZT
Kegelstutzen DIN 11851
conical nozzle DIN 11851
DN40, DN50

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ORDERING INFORMATION for PIEZOTEC (PZT)

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)

Design options

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

PZT050*D* [ ] [ ] [ ] [ ] [ ]

Nominal measurement area if deviates from the sensor measurement area

ORDERING INFORMATION for PZT ACCESSORIES

Process connection adapter (please order separately)	**Article number**
DIN 32676 clamp, DN50, 1,4404 (316L)	Z-PCL5FPZT
DRD flange Ø 65 mm; 1,4404 (316L)	Z-PDR6FPZT
Conical coupling with DIN 11851 groove union nut, DN40, 1,4404 (316L)	Z-PMN4FPZT
Conical coupling with DIN 11851 groove union nut, DN50, 1,4404 (316L)	Z-PMN5FPZT
Conical coupling with DIN 11851 groove union nut, DN65, 1,4404 (316L)	Z-PMN6FPZT
DIN 11851 male thread, DN40, 1,4404 (316L)	Z-PMG4FPZT
DIN 11851 male thread, DN50, 1,4404 (316L)	Z-PMG5FPZT
Female unions with DIN 11864-1 groove union nut, DN40, 1,4404 (316L)	Z-PBS4FPZT
Female unions with DIN 11864-1 groove union nut, DN40, with 3 leakage holes, 1,4404 (316L)	Z-PBS4LPZT
Female unions with DIN 11864-1 groove union nut, DN50, 1,4404 (316L)	Z-PBS5FPZT
VARIVENT® flange Ø 68 mm, DN40-125, 1,4404 (316L)	Z-PVA6FPZT
VARIVENT® flange Ø 68 mm, DN40-125 with 3 leakage holes 1,4404 (316L)	Z-PVA6LPZT
Other process connection	available on request

Accessories/assembly parts (please order separately)	**Article number**
OPUS*M* external operating module, for 101 electronics, 1.4301 (304)	OPUS*M*
O-ring 28x2.5 made of EPDM (FDA)	Z-POR1FPZM
DRD weld-in block flange DRD, 1.4435 (316L)	Z-PBF9FDRD
Flat seal made of ePTFE for DRD flange (FDA)	Z-FLD ePTFE DRD
4 x fastening screws for DRD flange, 1.4301 (304)	Z-ZDRDSK10/20
Reference cable made of PUR with pressure compensation capillary (please specify length in m)	BT-RK DTM
Approval certificate 3.1 acc. to EN 10204 for material composition	Z-WZ31-3.1_M01
Approval certificate 3.1 acc. to EN 10204 for surface quality ≤ 0.8µm or standard	Z-WZ31-3.1_OF1
Certificate of compliance 2.1 acc. to EN 10204	Z-WZ21-2.1
Test report 2.2 acc. to EN 10204	Z-WZ22-2.2

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.

PN-PZT050D-D-20-2/4