

Flush-mounted transmitter - VARIMESS VRM 050D - series



FEATURES

- SPECIAL CONSTRUCTION OF THE MEASURING CELL AND PROCESS CONNECTION FOR SYSTEMS WITH PRESSURE SHOCKS AND VIBRATION E.G. SEPARATORS, ...
- EHEDG ASEPTIC CERTIFIED MODULAR PROCESS CONNECTION SYSTEM PZM
- ACCURACY $\leq \pm 0.2\%$ FS
- SIMPLE CALIBRATION, EVEN WITHOUT DISCONNECTION OF THE TRANSMITTER, THROUGH SWITCHABLE POWER SUPPLY PLANT/ CALIBRATOR SUPPLY
- OUTPUT SIGNAL 4...20mA, TURNDOWN 4
- SIMPLE PARAMTERING VIA 2-KEY CONCEPT AND MULTIPLE-COLOUR STATUS LED
- CAPACITATIVE MEASURING CELL, VACUUM AND OVERLOAD SAFE, STAINLESS STEEL MEMBRANE
- EASY TO CLEAN AND HIGH PROTECTION CLASS IP 67 AND IP 69K

DESCRIPTION

The VRM050D pressure transmitter is suitable for measuring the pressure and filling level in pipes. The highly overload safe capacitive measuring cells and the diaphragm seal makes the VRM050D ideal for use in applications with pressure shocks or cavitations such as in separators. Measuring ranges from -1/0...4bar to -1/0...70bar and special measuring ranges are available. The robust construction of the stainless steel field housing in IP 67 and IP 69K withstand aggressive and residue-free cleaning procedures such as those required in the food industry.

All 050D series pressure transmitter are equipped with a micro-processor controlled electronics system and an accuracy of $\leq \pm 0.2\%$ FS. They are parametrised with a simple and user-friendly operating concept via 2 keys and a multi-colour status LED. They are highly suited for applications with basic requirements of functionality and exactness.

As a process connection, the VRM050D comes equipped with a PZM modular system and is highly suited for applications placing the highest requirements of hygiene. The modular system PZM is certified according to EHEDG type EL-Aseptic Class I and is impermeable to micro-organisms.. The large range of process connection adapters such as the welded-in lugs for pipes, VARIVENT®, DRD flanges, DIN 11851 conical couplings, DIN 32676 clamps, etc. mean that the pressure transmitters can be used for a wide range of uses.

Flush-mounted transmitter

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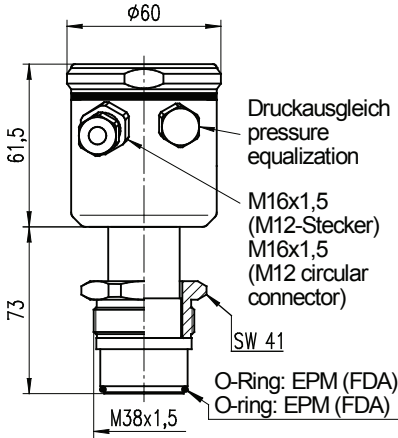
TECHNICAL DATA

General details						
Device type/measuring principle	VRM050D: capacitive					
Input						
Measuring ranges	VRM050D					
Standard nominal measuring range [bar]	Relative	OP	Relative	OP	Absolute	OP
OP = overload protection [bar]	4	25	-1 to 4	25	4	25
Special measuring ranges are available on request.	10	40	-1 to 10	40	10	40
	20	40	-1 to 20	40	20	40
	40	60	-1 to 40	60	40	60
All measurement cells are vacuum safe	70	105	-1 to 70	105	70	105
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		TD=4
	Measuring span	span:	25 to 100%	of the sensor's nominal measuring span		
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 nominal measuring range / 10K (-20...+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	-40...+140°C					
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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> Membrane, flush-welded, CrNiSt (other materials available on request) - EHEDG type EL-ASEPTIC CLASS I, certified connection system PZM / with M38x1.5 press screw and elastomer sealing - EPM process seal (FDA conform) (range -20...+150°C) 					
Construction						
Materials	<ul style="list-style-type: none"> - 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	Medical mineral 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: $(V_{\text{supply}} - 12V) / 22mA$					
Certificates	<ul style="list-style-type: none"> Calibration certificate Declaration of conformity Material certificate acc. to EN 10204 EHEDG certificate 					
Process connection adapter	See order information					

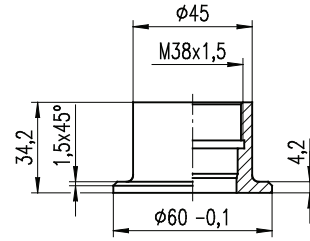
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DIMENSIONAL DRAWINGS (dimensions in mm)

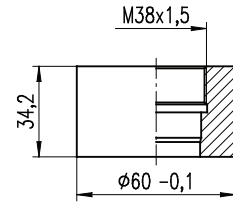
VARIMESS 050D ..._K(M)



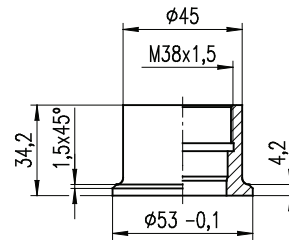
Prozessanschlussadapter: (weitere Ausführungen auf Anfrage)
 adapters for process connection: (other constructions on request)



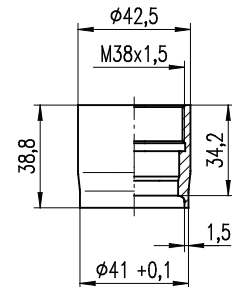
PEM4FPZM
Einschweißmuffe VPM $\phi 60$ (Tank)
welding socket VPM $\phi 60$ (tank)



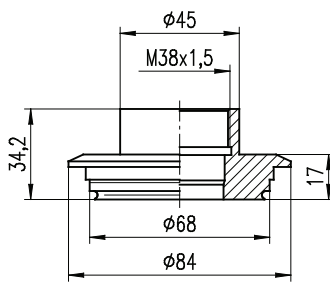
PEM5FPZM
Einschweißmuffe VPM $\phi 60$ (Tank)
welding socket VPM $\phi 60$ (tank)



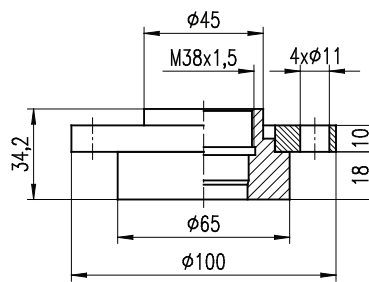
PEM3FPZM
Einschweißmuffe VPM $\phi 53$ (Tank)
welding socket VPM $\phi 53$ (tank)



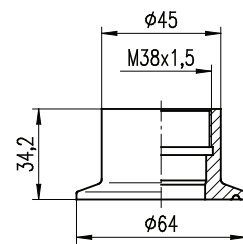
PEM9FPZM
Einschweißmuffe VPM - Rohr DN40
welding socket VPM - pipe DN40



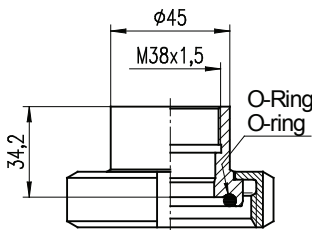
PVA6FPZM
VARIVENT-Flansch $\phi 68$
VARIVENT-flange $\phi 68$



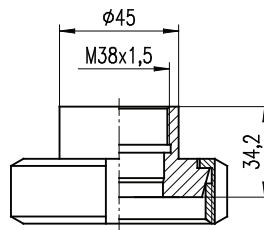
PDR6FPZM
DRD-Flansch $\phi 65$
DRD-flange $\phi 65$



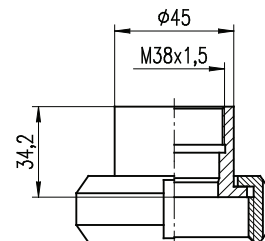
PCL5FPZM
Clamp DIN 32676 - DN50



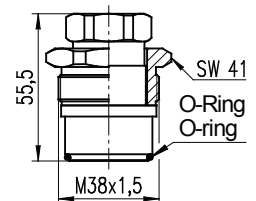
PBS...FPZM
Bundstutzen DIN 11864-1
Form A; DN40, DN50
collar nozzle DIN 11864-1
form A; DN40, DN50



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 VARIMESS VRM

Sensor measuring range / pressure type

H	4bar max. overload 25bar
K	10bar max. overload 40bar
L	20bar max. overload 40bar
N	40bar max. overload 60bar
P	70bar max. overload 105bar
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
R05	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)

VRM050D

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Nominal measurement area
if deviates from the sensor measurement area

ORDERING INFORMATION for VRM ACCESSORIES

Process connection adapter (please order separately)

Process connection adapter (please order separately)	Article number
Clamp DIN 32676, DN50/PN16, 1,4404 (AISI 316L)	Z-PCL5FPZM
DRD flange Ø 65mm; 1,4404 (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 -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
Welded-in lug VPM Ø 53mm; 1,4404 (AISI 316L)	Z-PEM3FPZM
Welded-in lug VPM Ø 60mm with weld collar, tank installation 1,4404 (AISI 316L)	Z-PEM4FPZM
Welded-in lug VPM Ø 60mm without weld collar, tank installation 1,4404 (AISI 316L)	Z-PEM5FPZM
Welded-in lug VPM 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
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.

P-VRM050D-EN-18-1/4