

Technical Information

Cerabar M PMC41/45, PMP41/45/46/48

Pressure transmitters with ceramic and metal membranes

Overload-resistant and function-monitored

With Analog, HART® or Profibus® PA Electronics



Application

The Cerabar M pressure transmitter measures the gauge and absolute pressure in gases, vapors, and liquids and can be used in all areas of chemical and process engineering. The modular design of the Cerabar M enables it to be used in all industrial environments including hazardous areas. Process connections available include threaded, hygienic, flange, in-line flow-thru seals, Varivent®, Tri-clamp®, and flush mounted.

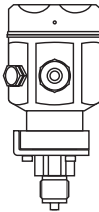
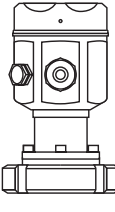
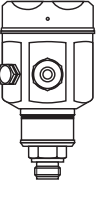

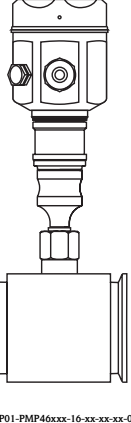
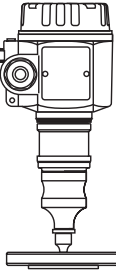
Your benefits

- Accuracy
 - Measured error better than 0.2% of the set measuring range (optional: non-linearity better than 0.1%)
 - Configurable measuring range up to TD 10:1
 - Long-term stability better than 0.25 % / 3 years
- SIL 2 certified according to IEC 61508/IEC 61511-1
- Sensors
 - Dry capacitance ceramic sensor (Ceraphire®) for measuring ranges up to 600 psi (40 bar), corrosion and abrasion resistant and high overload protection
 - Piezoresistive sensor with metal diaphragm for measuring ranges up to 6000 psi (400 bar)
- Output signals: 4 to 20 mA, 4 to 20 mA with HART, Profibus-PA
- Housing

With its stainless steel housing, the Cerabar M fulfills sanitary requirements of the food and pharmaceutical industries. The polyester-epoxy coated aluminum housing is field-proven in the process industry.
- Device versions conformity with ASME-BPE
- Ceramic diaphragm biological reactivity tested per USP Class VI

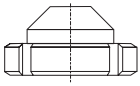
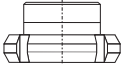

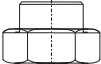
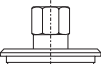

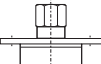



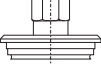
Function and system design

Device selection





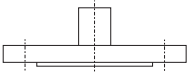
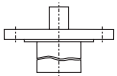
Cerabar M – product family	PMC41	PMC45	PMP41	PMP45	PMP46	PMP48
	 P01-PMC41xxx-16-xx-xx-xx-000	 P01-PMC45xxx-16-xx-xx-xx-000	 P01-PMP41xxx-16-xx-xx-xx-000	 P01-PMP45xxx-16-xx-xx-xx-000	 P01-PMP46xxx-16-xx-xx-xx-000	 P01-PMP48xxx-16-xx-xx-xx-000
	With capacitance measuring cell and ceramic measuring diaphragm (Ceraphire®)		With piezoresistive measuring cell and metal measuring diaphragm		With piezoresistive measuring cell, and diaphragm seal	
Field of application	Absolute pressure and overpressure					
Process connections	Threaded connections	Flush-mounted hygienic connections	Threaded connections	Flush-mounted hygienic connections	Hygiene diaphragm seal, diaphragm seals compliant with ASME-BPE → see following section "Overview of PMP46 diaphragm seals"	Flange diaphragm seal, separator with threaded connection → see following section "Overview of PMP48 diaphragm seals"
Measuring ranges	Up to 600 psi (40 bar)		Up to 6000 psi (400 bar)			
Overpressure limit (OPL) ¹	Max. 870 psi (60 bar)		Max. 8700 psi (600 bar)			
Process temperature range	-40 to +100°C (-40 to +212°F)	-40 to +125°C (-40 to +257°F), +150°C (+302°F) for 1 h	-40 to +100°C (-40 to +212°F)	-40 to +125°C (-40 to +257°F), +150°C (+302°F) for 1 h	-70 to +400°C (-94 to +752°F)	
Ambient temperature range	40 to +85°C (-40 to +185°F)					
Maximum measured error	- ±0.2% of set span - Optional: non-linearity ±0.1% of set span				±0.2% of set span	
Supply voltage	- For non-hazardous areas: 11.5 to 45 V DC - Hazardous areas: 11.5 to 30 V DC					
Output	4 to 20 mA, 4 to 20 mA with superimposed HART protocol, PROFIBUS PA					
Options	- 3.1 Inspection certificate - Materials compliant with FDA - Mounting bracket	- 3.1 Inspection certificate - Materials compliant with FDA	- 3.1 Inspection certificate - Materials compliant with FDA - Mounting bracket	- 3.1 Inspection certificate - Materials compliant with FDA	- 3.1 Inspection certificate - Materials compliant with FDA - Temperature isolator - Electropolished surface - Mounting bracket	
Specialties	- Flexibility thanks to modular design - Large selection of approvals, including ATEX, FM and CSA - Wide range of cable entries, cable glands and connectors - Choice of robust housing made of stainless steel (AISI 316L) or coated aluminum housing for strict hygienic requirements - Electropolished wetted surfaces - Dry ceramic cell (without fill fluid), resistant to abrasion and corrosion, compliant with FDA: Ceraphire® - Special cleaning of the transmitter to remove paint-wetting impairment substances, for use in paint shops					

1) Depends on the element of the selected components which has the lowest pressure rating

Overview of diaphragm seals for PMP46

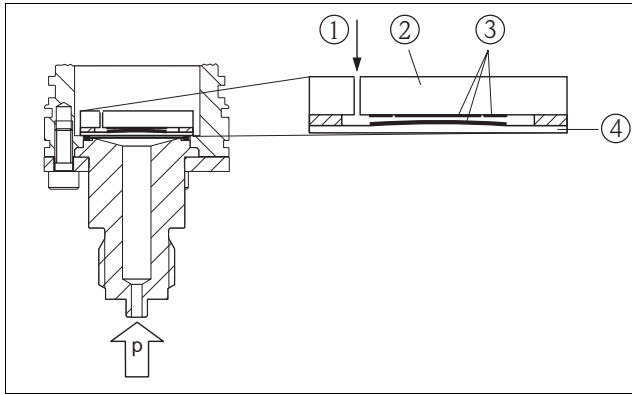
Design	Diaphragm seal	Connection	Version	Standard	Nominal diameter	Nominal pressure/Class	
Hygienic version	Membrane diaphragm seal	Nozzle with coupling nut	 P01-PMP46xxx-03-xx-xx-000	DIN 11851	- DN 32 - DN 40 - DN 50	- PN 40 - PN 40 - PN 25	
			 P01-PMP46xxx-03-xx-xx-001	SMS	- 1 1/2" - 2"	PN 25	
			 P01-PMP46xxx-03-xx-xx-002	RJT	- 1 1/2" - 2"	PN 40	
			 P01-PMP46xxx-03-xx-xx-003	ISS	- 1 1/2" - 2"	PN 40	
		Varivent	 P01-PMP46xxx-03-xx-xx-004		- Type F for pipes DN 25 – DN 32 - Type N for pipes DN 40 – DN 162	PN 40	
		Clamp	 P01-PMP46xxx-03-xx-xx-005	ISO 2852	- DN 25 (1") - DN 38 (1 1/2") - DN 51 (2") - DN 76.1 (3")	Dependent on the clamp used	
		DRD	 P01-PMP46xxx-03-xx-xx-006		DN50 (65 mm)	PN 25	
		Pipe diaphragm seal	Threaded adapter	 P01-PMP46xxx-03-xx-xx-007	DIN 11851	- DN 25	PN 40
						- DN 40	PN 40
			Clamp	 P01-PMP46xxx-03-xx-xx-008	ISO 2852	- DN 10 (3/4") - DN 16 (3/4") - DN 25 (1") - DN 38 (1 1/2") - DN 51 (2")	Dependent on the clamp used
Versions compliant with ASME-BPE for use in biotechnical processes; wetted surfaces $R_a \leq 0.38 \mu\text{m}$ (15 μin ; 240 grit), electropolished	Membrane diaphragm seal	Clamp	 P01-PMP46xxx-03-xx-xx-005	ISO 2852	- DN 38 (1 1/2") - DN 51 (2")	Dependent on the clamp used	
		Varivent	 P01-PMP46xxx-03-xx-xx-004		- Type N for pipes DN 40 – DN 162	PN 40	

Overview of diaphragm seals for PMP48

Design	Diaphragm seal	Connection	Version	Standard	Nominal diameter	Nominal pressure/Class
Threaded connection	Membrane diaphragm seal	G	 P01-PMP48xxx-03-xx-xx-xx-000	DIN ISO 228/1	<ul style="list-style-type: none"> - G 1 A - G 1 1/2 A - G 2 A 	Up to 6000 psi (400 bar)
		NPT	 P01-PMP48xxx-03-xx-xx-xx-001	ANSI B1.20.1	<ul style="list-style-type: none"> - 1 NPT - 1 1/2 NPT - 2 NPT 	
Threaded connection with separator	Membrane diaphragm seal	G	 P01-PMP48xxx-03-xx-xx-xx-002	ISO 228/EN 837	G 1/2	Up to 2320 psi (160 bar)
		NPT	 P01-PMP48xxx-03-xx-xx-xx-003	ANSI B1.20.1	1/2 NPT	
flange	Membrane diaphragm seal	EN/DIN flange	 P01-PMP48xxx-03-xx-xx-xx-004	EN 1092-1/DIN 2527 and DIN 2501-1	<ul style="list-style-type: none"> - DN 25 - DN 50 - DN 80 	<ul style="list-style-type: none"> - Up to PN 400 - Up to PN 400 - Up to PN 40
		ANSI flange		ANSI B.16.5	<ul style="list-style-type: none"> - 1" - 2" - 3" - 4" 	<ul style="list-style-type: none"> - Up to 2500 lbs - Up to 2500 lbs - Up to 300 lbs - Up to 300 lbs
		JIS flange		B 2220	<ul style="list-style-type: none"> - 25 A - 50 A - 80 A 	Up to 10 K
Flange with extended diaphragm seal	Membrane diaphragm seal	EN/DIN flange	 P01-PMP48xxx-03-xx-xx-xx-005	EN 1092-1/DIN 2527	<ul style="list-style-type: none"> - DN 50 - DN 80 	Up to PN 40
		ANSI flange		ANSI B.16.5	<ul style="list-style-type: none"> - 2" - 3" - 4" 	Up to 150 lbs

Measuring principle

Ceramic measuring diaphragm used for PMC41 and PMC45 (Ceraphire®)

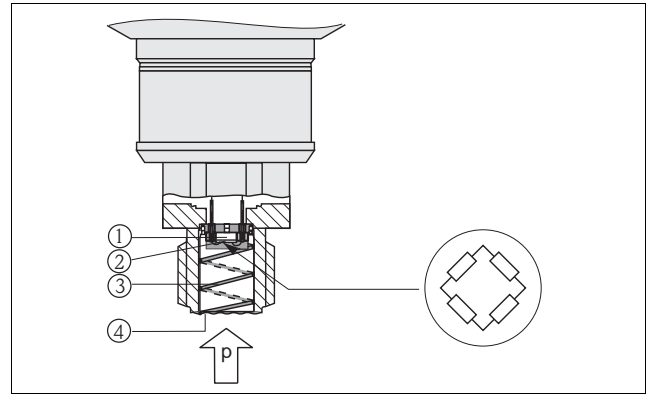


P01-PMC71xxx-03-xx-xx-xx-000

Ceramic sensor

- 1 Air pressure (overpressure sensors)
- 2 Ceramic carrier
- 3 Electrodes
- 4 Ceramic diaphragm

Metal measuring diaphragm used in PMP41, PMP45, PMP46 and PMP48



P01-PMP4xxxx-03-xx-xx-xx-000

Metal sensor

- 1 Silicon measuring element, carrier
- 2 Measuring diaphragm with Wheatstone bridge
- 3 Channel with fill fluid
- 4 Flush-mounted metal diaphragm

Ceramic measuring diaphragm used for PMC41 and PMC45 (Ceraphire®)

The ceramic sensor is a dry sensor, i.e. the process pressure acts directly on the robust ceramic diaphragm and deflects it. A pressure-dependent change in capacitance is measured at the electrodes of the ceramic carrier and the diaphragm. The measuring range is determined by the thickness of the ceramic diaphragm.

Advantages:

- Guaranteed overload resistance up to 40 times the nominal pressure (max. 870 psi / 60 bar)
- Thanks to 99.9% high-purity ceramic (Ceraphire®, → see also www.endress.com/ceraphire)
 - Extremely high chemical stability
 - Less relaxation
 - High mechanical stability
- Suitable for vacuums
- Very suitable for hygienic processes as the ceramic material Al_2O_3 is safe and not harmful to health (FDA 21CFR186.1256, USP Class VI)

Metal measuring diaphragm used for PMP41, PMP45, PMP46 and PMP48

PMP41 and PMP45

The operating pressure deflects the separating diaphragm and a fill fluid transfers the pressure to a resistance measuring bridge (semiconductor technology). The pressure-dependent change in the bridge output voltage is measured and processed further.

Advantages:

- Can be used with process pressures up to 6000 psi (400 bar)
- High long-term stability
- Guaranteed overload resistance up to 4 times the nominal pressure (max. 8700 psi / 600 bar)
- Compact solution even for small hygienic connections

PMP46 and PMP48

The operating pressure acts on the diaphragm of the diaphragm seal and is transferred to the separating diaphragm of the sensor by a diaphragm seal fill fluid. The separating diaphragm is deflected and a fill fluid transfers the pressure to a resistance measuring bridge. The pressure-dependent change in the bridge output voltage is measured and processed further.






Advantages:

- Can be used with process pressures up to 6000 psi (400 bar)
- High long-term stability
- Guaranteed overload resistance up to 4 times the nominal pressure (max. 8700 psi / 600 bar)

Communication protocol

- 4 to 20 mA without communication protocol
 - 4 to 20 mA with HART communication protocol
 - PROFIBUS PA
 - The Endress+Hauser devices meet the FISCO model requirements.
 - Due to the low current consumption of 11 mA \pm 1 mA the following can be operated at one bus segment when installing to FISCO:
 - Up to 9 Cerabar M for EEx ia, CSA IS and FM IS applications
 - Up to 32 Cerabar M for all other applications, e.g. in non-hazardous areas, EEx nA, etc.
- Further information on PROFIBUS PA can be found in Operating Instructions BA034S "PROFIBUS DP/PA: Guidelines for planning and commissioning" and in the PNO Guidelines (Profibus User Organization).

Certificates and approvals

CE mark	The device meets the legal requirements of the relevant EC directive. Endress+Hauser confirms that the device has been tested successfully by attaching the CE mark.
Ex approvals	All explosion protection data are given in separate documentation which is available upon request. The Ex documentation is supplied as standard with all devices approved for use in hazardous areas. → See also Page 82 ff, "Safety conventions and icons" and "Installation/Control Drawings" sections.
Suitability for hygienic processes	<p>The Cerabar M PMP45 and PMP46 is suitable for use in hygienic processes. Overview of permitted process connections → Page 31 ff. Many versions meet the requirements of 3A-Sanitary Standard No. 74. Endress+Hauser confirms this by attaching the 3A symbol.</p> <p> Note! Gap-free connections can be cleaned without residue using the usual cleaning methods.</p> <div style="text-align: right;">     </div>
CRN approval	Some device versions have a CRN approval. For a CRN-approved device, a CRN-approved process connection (→ see Page 31 feature 70 "Process connection") must be ordered together with a CSA approval (→ see Page 67 feature 10 "Approval"). PMP41 devices are not CRN-approved. The CRN-approved devices are fitted with a separate plate bearing the registration number 0F10525.5C.
Pressure Equipment Directive (PED)	<ul style="list-style-type: none"> – This measuring device corresponds to Article 3 (3) of the EC directive 97/23/EC (Pressure Equipment Directive) and has been designed and manufactured according to good engineering practice. – PMP41 with threaded connection, PN > 200: suitable for stable gases in Group 1, Category I – PMP46 with pipe diaphragm seal ≥ 1.5"/PN40 or DN40/PN40: suitable for stable gases in Group 1, Category II
Functional safety SIL 2/ IEC 61508/IEC 61511-1	The Cerabar M pressure transmitters with 4 to 20 mA HART electronics have been assessed by an independent body according to the IEC 61508/IEC 61511-1 standards. These devices can be used for monitoring process pressure up to SIL 2. → For a detailed description of safety functions with Cerabar M, settings and characteristic quantities for functional safety, see the "Functional Safety Manual – Cerabar M SD172P".
Standards and guidelines	<p>DIN EN 60770 (IEC 60770): Transmitters for use in industrial-process control systems Part 1: Methods for performance evaluation</p> <p>DIN 16086: Electrical pressure measuring instruments - Pressure transmitters, pressure measuring instruments - Concepts, specifications on data sheets</p> <p>EN 61326-X: EMC product family standard for electrical equipment for measurement, control and laboratory use.</p>

Ordering information

PMC41

This overview does not identify options which are mutually exclusive.

10		Approval:		
	R	For non-hazardous areas		
	G	ATEX II 1/2 G EEx ia IIC T6		
	F	ATEX II 1 G EEx ia IIC T6		
	H	ATEX II 2 G EEx ia IIC T6		
	N	ATEX II 3 G EEx nA II T5		
	J	ATEX II 1/2 G 1/2 D EEx ia IIC T6		
	K	ATEX II 1/2 D EEx ia IIC T6		
	L	ATEX II 1/3 D		
	C	CSA General Purpose		
	S	CSA IS, Class I, II, III Division 1, Groups A - G		
	T	CSA Class II, III, Division 1, Groups E - G (Dust Ex), Class I, Division 2, Groups A - D		
	P	FM IS, Class I, II, III, Division 1, Groups A - G		
	M	FM DIP, Class II, III Division 1, Groups E - G		
	D	IECEx Zone 1 Ex ia IIC T6		
	U	NEPSI Ex ia IIC T6		
	Y	Special version, to be specified		
20		Housing; Electrical connection:		
	E1	316L; gland M20, IP 66		
	C1	316L; thread NPT 1/2, IP 66		
	G1	316L; thread G 1/2, IP 66		
	H1	316L; plug Han7D, IP 65		
	L1	316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
	K1	316L; cable 5 m, IP 68 + atmospheric pressure compensation		
	E2	Alu; gland M20, IP 66		
	C2	Alu; thread NPT 1/2, IP 66		
	G2	Alu; thread G 1/2, IP 66		
	H2	Alu; plug Han7D, IP 65		
	L2	Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
	K2	Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
	V2	Alu; valve plug M16 ISO4400, IP64		
	Y9	Special version, to be specified		
30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
		Sensors for overpressure		
	1C	0 to 100 mbar/10 kPa/1.5 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	1F	0 to 400 mbar/40 kPa/6 psi	5.3 bar/530 kPa/80 psi	8 bar/800 kPa/120 psi
	1H	0 to 1 bar/100 kPa/15 psi	6.7 bar/670 kPa/100 psi	10 bar/1 MPa/150 psi
	1M	0 to 4 bar/400 kPa/60 psi	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
	1P	0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
	1S	0 to 40 bar/4 MPa/600 psi	40 bar/4 MPa/600 psi	60 bar/6 MPa/900 psi
		Sensors for negative overpressure		
	5C	-100 to 100 mbar/-10 to 10 kPa/ -1.5 to 1.5 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	5F	-400 to 400 mbar/-40 to 40 kPa/-6 to 6 psi	5.3 bar/530 kPa/80 psi	8 bar/800 kPa/120 psi
	5H	-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	6.7 bar/670 kPa/100 psi	10 bar/1 MPa/150 psi
	5M	-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
	5P	-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
		Sensors for absolute pressure		
	2F	0 to 400 mbar/40 kPa/6 psi absolute	5.3 bar/530 kPa/80 psi	8 bar/800 kPa/120 psi
	2H	0 to 1 bar/100 kPa/15 psi absolute	6.7 bar/670 kPa/100 psi	10 bar/1 MPa/150 psi
	2M	0 to 4 bar/400 kPa/60 psi absolute	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
	2P	0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
	2S	0 to 40 bar/4 MPa/600 psi absolute	40 bar/4 MPa/600 psi	60 bar/6 MPa/900 psi
	9Y	Special version, to be specified		
40		Calibration; Unit:		
	1	0.2% sensor range; mbar/bar		
	2	0.2% sensor range; kPa/MPa		
	3	0.2 % sensor range; mmH ₂ O/mH ₂ O		
	4	0.2% sensor range; inH ₂ O/ftH ₂ O		
	5	0.2% sensor range; kgf/cm ²		
	6	0.2% sensor range; psi		

PMC45

This overview does not identify options which are mutually exclusive.

10		Approval:		
R				For non-hazardous areas
G				ATEX II 1/2 G EEx ia IIC T6
F				ATEX II 1 G EEx ia IIC T6
H				ATEX II 2 G EEx ia IIC T6
N				ATEX II 3 G EEx nA II T5
S				CSA IS, Class I, II, III Division 1, Groups A – D, G + coal dust
P				FM IS, Class I, II, III, Division 1, Groups A – G
D				IECEx Zone 1 Ex ia IIC T6
U				NEPSI Ex ia IIC T6
Y				Special version, to be specified

20		Housing; Electrical connection:		
E1				316L; gland M20, IP 66
C1				316L; thread NPT 1/2, IP 66
G1				316L; thread G 1/2, IP 66
H1				316L; plug Han7D, IP 65
L1				316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)
K1				316L; cable 5 m, IP 68 + atmospheric pressure compensation
E2				Alu; gland M20, IP 66
C2				Alu; thread NPT 1/2, IP 66
G2				Alu; thread G 1/2, IP 66
H2				Alu; plug Han7D, IP 65
L2				Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)
K2				Alu; cable 5 m, IP 68 + atmospheric pressure compensation
V2				Alu; valve plug M16 ISO4400, IP64
Y9				Special version, to be specified

30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
Sensors for overpressure				
1C		0 to 100 mbar/10 kPa/1.5 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
1F		0 to 400 mbar/40 kPa/6 psi	5.3 bar/530 kPa/80 psi	8 bar/800 kPa/120 psi
1H		0 to 1 bar/100 kPa/15 psi	6.7 bar/670 kPa/100 psi	10 bar/1 MPa/150 psi
1M		0 to 4 bar/400 kPa/60 psi	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
1P		0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
1S		0 to 40 bar/4 MPa/600 psi	40 bar/4 MPa/600 psi	60 bar/6 MPa/900 psi
Sensors for negative overpressure				
5C		-100 to 100 mbar/-10 to 10 kPa/-1.5 to 1.5 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
5F		-400 to 400 mbar/-40 to 40 kPa/-6 to 6 psi	5.3 bar/530 kPa/80 psi	8 bar/800 kPa/120 psi
5H		-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	6.7 bar/670 kPa/100 psi	10 bar/1 MPa/150 psi
5M		-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
5P		-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
Sensors for absolute pressure				
2F		0 to 400 mbar/40 kPa/6 psi absolute	5.3 bar/530 kPa/40 psi	8 bar/800 kPa/120 psi
2H		0 to 1 bar/100 kPa/150 psi absolute	6.7 bar/670 kPa/80 psi	10 bar/1 MPa/150 psi
2M		0 to 4 bar/400 kPa/60 psi absolute	16.7 bar/1.67 MPa/250 psi	25 bar/2.5 MPa/375 psi
2P		0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
2S		0 to 40 bar/4 MPa/600 psi absolute	40 bar/4 MPa/600 psi	60 bar/6 MPa/900 psi
9Y		Special version, to be specified	40 bar/4 MPa/600 psi	60 bar/6 MPa/900 psi

40		Calibration; Unit:		
1				0.2% sensor range; mbar/bar
2				0.2% sensor range; kPa/MPa
3				0.2 % sensor range; mmH ₂ O/mH ₂ O
4				0.2% sensor range; inH ₂ O/ftH ₂ O
5				0.2% sensor range; kgf/cm ²
6				0.2% sensor range; psi
B				0.2% see additional specification
C				0.1% see additional specification
D				DKD certificate; see additional specification
9				Special version, to be specified

50		Output; Operation:		
A				4 to 20 mA analog; without display
C				4 to 20 mA analog; display bar graph

80										Sensor seal:	
										1	FKM Viton
										2	HNBR (FDA)
										4	EPDM (FDA)
										C	Chemraz
										7	Kalrez
										M	Kalrez, cleaned for silicone-free service
										A	FKM Viton, cleaned from oil + grease
										L	FKM Viton, cleaned for silicone-free service
										9	Special version, to be specified
PMC45										Complete order code	

PMP41

This overview does not identify options which are mutually exclusive.

10		Approval:		
R		For non-hazardous areas		
G		ATEX II 1/2 G EEx ia IIC T6		
F		ATEX II 1 G EEx ia IIC T6		
H		ATEX II 2 G EEx ia IIC T6		
N		ATEX II 3 G EEx nA II T5		
J		ATEX II 1/2 G 1/2 D EEx ia IIC T6		
K		ATEX II 1/2 D EEx ia II T6		
L		ATEX II 1/3 D		
C		CSA General Purpose		
S		CSA IS, Class I, II, III Division 1, Groups A - G		
T		CSA Class II, III, Division 1, Groups E - G (Dust Ex); Class I, Division 2, Groups A - D		
P		FM IS, Class I, II, III Division 1, Groups A - G		
M		FM DIP, Class I, II, III Division 1, Groups E - G		
D		IECEX Zone 1 Ex ia IIC T6		
U		NEPSI Ex ia IIC T6		
Y		Special version, to be specified		
20		Housing; Electrical connection:		
E1		316L; gland M20, IP 66		
C1		316L; thread NPT 1/2, IP 66		
G1		316L; thread G 1/2, IP 66		
H1		316L; plug Han7D, IP 65		
L1		316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K1		316L; cable 5 m, IP 68 + atmospheric pressure compensation		
E2		Alu; gland M20, IP 66		
C2		Alu; thread NPT 1/2, IP 66		
G2		Alu; thread G 1/2, IP 66		
H2		Alu; plug Han7D, IP 65		
L2		Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K2		Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
V2		Alu; valve connector M16 ISO 4400, IP 64		
K2		Special version, to be specified		
30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
		Sensors for overpressure		
3H		0 to 1 bar/100 kPa/15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
3M		0 to 4 bar/400 kPa/60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
3P		0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
3S		0 to 40 bar/4 MPa/600 psi	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
3U		0 to 100 bar/10 MPa/1500 psi	100 bar/10 MPa/1500 psi	400 bar/40 MPa/6000 psi
3Z		0 to 400 bar/40 MPa/6000 psi	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
		Sensors for negative overpressure		
7H		-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
7M		-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
7P		-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
		Sensors for absolute pressure		
4H		0 to 1 bar/100 kPa/15 psi absolute	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
4M		0 to 4 bar/400 kPa/60 psi absolute	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
4P		0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
4S		0 to 40 bar/4 MPa/600 psi absolute	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
4U		0 to 100 bar/10 MPa/1500 psi absolute	100 bar/10 MPa/1500 psi	400 bar/40 MPa/6000 psi
4Z		0 to 400 bar/40 MPa/6000 psi absolute	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
9Y		Special version, to be specified		
40		Calibration; Unit:		
1		0.2% sensor range; mbar/bar		
2		0.2% sensor range; kPa/MPa		
3		0.2% sensor range; mmH ₂ O/mH ₂ O		
4		0.2% sensor range; inH ₂ O/ftH ₂ O		
5		0.2% sensor range; kgf/cm ²		
6		0.2% sensor range; psi		
B		0.2% see additional specification		
C		0.1% see additional specification		

40				Calibration; Unit:	
				D	DKD certificate; see additional specification
				9	Special version, to be specified
50				Output; Operation:	
				A	4 to 20 mA analog; without display
				C	4 to 20 mA analog; display bar graph
				H	4 to 20 mA SIL HART; without display
				J	4 to 20 mA SIL HART; display 4-digit + bar graph
				P	PROFIBUS PA; without display
				R	PROFIBUS PA; display 4-digit + bar graph
				W	Without electronics; without display
				Y	Special version, to be specified
60				Additional option:	
				1	Basic version
				2	Mounting bracket, wall/pipe
				C	EN10204-3.1 (wetted) inspection certificate
				S	GL/RINA marine approval
				B	SIL + EN10204-3.1 material (wetted parts) inspection certificate SIL Declaration of Conformity
				U	SIL Declaration of Conformity
				9	Special version, to be specified
70				Process connection:	
					Threaded connection
				1M	Thread ISO 228 G1/2, 316L
				1D	Thread ISO 228 G1/2 seal O-ring, 316L, flush-mounted (adapter 52002643)
				1F	Thread ISO 228 G1/2 seal DIN 3852, 316L, flush-mounted
				1G	Thread ANSI MNPT 1/2 hole 11.4 mm, 316L
				1X	Thread ANSI FNPT 1/2, 316L
				1S	Thread JIS B0202 G1/2 (male), 316L
				1 K	Thread JIS B0203 R1/2 (male) bore 11.4 mm, AISI 316L
				1T	Thread DIN13 M 20x1.5, AISI 316L
				9Y	Special version, to be specified
80				Seal; Fill fluid:	
				1	FKM Viton; synthetic oil
				4	FKM Viton, inert oil, cleaned from oil + grease
				F	NBR O-ring; synthetic oil
				H	FKM Viton O-ring; synthetic oil
				P	FTFE; synthetic oil
				A	Welded; mineral oil
				C	Welded; inert oil, oxygen service ₂
				D	Welded, inert oil, cleaned from oil+grease
				9	Special version, to be specified
PMP41				Complete order code	

PMP45

This overview does not identify options which are mutually exclusive.

10		Approval:		
R		For non-hazardous areas		
G		ATEX II 1/2 G EEx ia IIC T6		
F		ATEX II 1 G EEx ia IIC T6		
H		ATEX II 2 G EEx ia IIC T6		
N		ATEX II 3 G EEx nA II T5		
J		ATEX II 1/2 G 1/2D EEx ia IIC T6		
K		ATEX II 1/2 D EEx ia IIC T6		
L		ATEX II 1/3 D		
C		CSA General Purpose		
S		CSA IS, Class I, II, III Division 1, Groups A - G		
T		CSA Class II, III, Division 1, Groups E - G (Dust Ex), Class I, Division 2, Groups A - D		
P		FM IS, Class I, II, III, Division 1, Groups A - G		
M		FM DIP, Class II, III Division 1, Groups E - G		
D		IECEx Zone 1 Ex ia IIC T6		
U		NEPSI EX ia IIC T6		
Y		Special version, to be specified		
20		Housing; Electrical connection:		
E1		316L; gland M20, IP 66		
C1		316L; thread NPT 1/2, IP 66		
G1		316L; thread G 1/2, IP 66		
H1		316L; plug Han7D, IP 65		
L1		316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K1		316L; cable 5 m, IP 68 + atmospheric pressure compensation		
E2		Alu; gland M20, IP 66		
E2		Alu; gland M20, IP 66		
G2		Alu; thread G 1/2, IP 66		
H2		Alu; plug Han7D, IP 65		
L2		Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K2		Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
V2		Alu; valve connector M16 ISO 4400, IP 64		
Y9		Special version, to be specified		
30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
		Sensors for overpressure		
	3H	0 to 1 bar/100 kPa/15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	3M	0 to 4 bar/400 kPa/60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	3P	0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
	3S	0 to 40 bar/4 MPa/600 psi	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
	3U	0 to 100 bar/10 MPa/1500 psi	100 bar/10 MPa/1500 psi	400 bar/40 MPa/6000 psi
	3Z	0 to 400 bar/40 MPa/6000 psi	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
		Sensors for negative overpressure		
	7H	-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	7M	-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	7P	-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
		Sensors for absolute pressure		
	4H	0 to 1 bar/100 kPa/15 psi absolute	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	4M	0 to 4 bar/400 kPa/60 psi absolute	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	4P	0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi g
	4S	0 to 40 bar/4 MPa/600 psi absolute	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
	4U	0 to 100 bar/10 MPa/1500 psi absolute	100 bar/10 MPa/1500 psi	400 bar/40 MPa/6000 psi
	4Z	0 to 400 bar/40 MPa/6000 psi absolute	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
	9Y	Special version, to be specified		
40		Calibration; Unit:		
	1	0.2% sensor range; mbar/bar		
	2	0.2% sensor range; kPa/MPa		
	3	0.2% sensor range; mmH ₂ O/mH ₂ O		
	4	0.2% sensor range; inH ₂ O/ftH ₂ O		
	5	0.2% sensor range; kgf/cm ²		
	6	0.2% sensor range; psi		
	B	0.2% see additional specification		
	C	0.1% see additional specification		

40				Calibration; Unit:	
				D	DKD certificate; see additional specification
				9	Special version, to be specified
50				Output; Operation:	
				A	4 to 20 mA analog; without display
				C	4 to 20 mA analog; display bar graph
				H	4 to 20 mA SIL HART; without display
				J	4 to 20 mA SIL HART; display 4-digit + bar graph
				P	PROFIBUS PA; without display
				R	PROFIBUS PA; display 4-digit + bar graph
				W	Without electronics; without display
				Y	Special version, to be specified
60				Additional option:	
				1	Basic version
				C	EN10204-3.1 (wetted) inspection certificate
				S	GL (German Lloyd) marine certificate
				U	SIL Declaration of Conformity
				B	SIL + EN10204-3.1 material (wetted parts) inspection certificate SIL Declaration of Conformity
				9	Special version, to be specified
70				Process connection:	
					Threaded connection
				CD	Thread ISO 228 G1 seal metal joint, 316L, flush-mounted, adapter 52005087
				BB	Thread ANSI MNPT 3/4, 316L, flush-mounted (CRN)
					Clamp connections
				DA	Mini clamp ISO 2852 DN 22, 316L, EHEDG, 3A, DIN 32676 DN 20 (CRN)
				DB	Tri-Clamp, ISO 2852 DN 25 – 38 (1 to 1 1/2"), 316L, EHEDG, 3A, DIN 32676 DN 25 - 40 (CRN)
				DL	Tri-Clamp, ISO 2852 DN 40 – 51 (2"), 316L, EHEDG, 3A, DIN 32676 DN50 (CRN)
					Hygienic connections
				EB	SMS 1" PN 25, 316L, EHEDG, 3A
				EG	SMS 1 1/2" PN 25, 316L, EHEDG, 3A
				LB	Varivent F for pipes DN 25 – 32 PN 40, 316L, EHEDG, 3A (CRN)
				LG	Varivent B for pipes DN 10 – 15 PN 40, AISI 316L, EHEDG, 3A (CRN)
				AB	DIN 11851 DN 25 PN 40, 316L, EHEDG, 3A (CRN)
				MJ	KingGage 1777-2 (short), 316L, 3A
				MK	KingGage 1777-2 (middle), 316L, 3A
				ML	KingGage 1777-2 (long), 316L, 3A
				YY	Special version, to be specified
80				Diaphragm, Fill fluid:	
				A	316L, synthetic oil
				F	316L, synthetic oil (FDA)
				Y	Special version, to be specified
PMP45					Complete order code

PMP46

This overview does not identify options which are mutually exclusive.

10		Approval:		
R		For non-hazardous areas		
G		ATEX II 1/2 G EEx ia IIC T6		
F		ATEX II 1 G EEx ia IIC T6		
H		ATEX II 2 G EEx ia IIC T6		
N		ATEX II 3 G EEx nA II T5		
J		ATEX II 1/2 G 1/2D EEx ia IIC T6		
K		ATEX II 1/2 D EEx ia IIC T6		
L		ATEX II 1/3 D		
C		CSA General Purpose		
S		CSA IS, Class I, II, III Division 1, Groups A - G		
T		CSA Class II, III, Division 1, Groups E - G (Dust Ex), Class I, Division 2, Groups A - D		
P		FM IS, Class I, II, III, Division 1, Groups A - G		
M		FM DIP, Class II, III Division 1, Groups E - G		
D		IECEX Zone 1 Ex ia IIC T6		
U		NEPSI Ex ia IIC T6		
Y		Special version, to be specified		
20		Housing; Electrical connection:		
E1		316L; gland M20, IP 66		
C1		316L; thread NPT 1/2, IP 66		
G1		316L; thread G 1/2, IP 66		
H1		316L; plug Han7D, IP 65		
L1		316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K1		316L; cable 5 m, IP 68 + atmospheric pressure compensation		
E2		Alu; gland M20, IP 66		
C2		Alu; thread NPT 1/2, IP 66		
G2		Alu; thread G 1/2, IP 66		
H2		Alu; plug Han7D, IP 65		
L2		Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K2		Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
V2		Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
Y9		Special version, to be specified		
30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
		Sensors for overpressure		
3H		0 to 1 bar/100 kPa/15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
3M		0 to 4 bar/400 kPa/60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
3P		0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
3S		0 to 40 bar/4 MPa/600 psi	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
		Sensors for negative overpressure		
7H		-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
7M		-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
7P		-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
		Sensors for absolute pressure		
4H		0 to 1 bar/100 kPa/15 psi absolute	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
4M		0 to 4 bar/400 kPa/60 psi absolute	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
4P		0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi g
4S		0 to 40 bar/4 MPa/600 psi absolute	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
9Y		Special version, to be specified		
40		Calibration; Unit:		
1		0.2% sensor range; mbar/bar		
2		0.2% sensor range; kPa/MPa		
3		0.2 % sensor range; mmH ₂ O/mH ₂ O		
4		0.2% sensor range; inH ₂ O/ftH ₂ O		
5		0.2% sensor range; kgf/cm ²		
6		0.2% sensor range; psi		
B		0.2% see additional specification		
D		DKD certificate; see additional specification		
9		Special version, to be specified		
50		Output; Operation:		
A		4 to 20 mA analog; without display		
C		4 to 20 mA analog; display bar graph		

80								Transmitter mounting; Fill fluid:	
								J m capillary; silicone oil (capillary > 1 m, only as of DN 50/2"; capillary length: 1 – 10 m, price independent of length)
								B m capillary; inert oil
								R ft capillary; high-temperature oil (capillary > 3 ft, only as of DN 50/2"; capillary length: 3 – 33 ft, price independent of length)
								U ft capillary; low-temperature oil (capillary > 3 ft, only as of DN 50/2"; capillary length: 3 – 33 ft, price independent of length)
								S ft capillary; vegetable oil (FDA) (capillary > 3 ft, only as of DN 50/2"; capillary length: 3 – 33 ft, price independent of length)
								T ft capillary; silicone oil (capillary > 3 ft, only as of DN 50/2"; capillary length: 3 – 33 ft, price independent of length)
								C ft capillary; inert oil (capillary > 3 ft, only as of DN 50/2"; capillary length: 3 – 33 ft, price independent of length)
								Y	Special version, to be specified
PMP46									Complete order code

PMP48

This overview does not identify options which are mutually exclusive.

10		Approval:		
R		For non-hazardous areas		
G		ATEX II 1/2 G EEx ia IIC T6		
F		ATEX II 1 G EEx ia IIC T6		
H		ATEX II 2 G EEx ia IIC T6		
N		ATEX II 3 G EEx nA II T5		
J		ATEX II 1/2 G 1/2D EEx ia IIC T6		
K		ATEX II 1/2 D EEx ia IIC T6		
L		ATEX II 1/3 D		
C		CSA General Purpose		
S		CSA IS, Class I, II, III Division 1, Groups A – G		
T		CSA Class II, III, Division 1, Groups E – G (Dust Ex), Class I, Division 2, Groups A – D		
P		FM IS, Class I, II, III, Division 1, Groups A – G		
M		FM DIP, Class II, III Division 1, Groups E – G		
D		IECEX Zone 1 Ex ia IIC T6		
U		NEPSI Ex ia IIC T6		
Y		Special version, to be specified		
20		Housing; Electrical connection:		
E1		316L; gland M20, IP 66		
C1		316L; thread NPT 1/2, IP 66		
G1		316L; thread G 1/2, IP 66		
H1		316L; plug Han7D, IP 65		
L1		316L; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K1		316L; cable 5 m, IP 68 + atmospheric pressure compensation		
E2		Alu; gland M20, IP 66		
C2		Alu; thread NPT 1/2, IP 66		
G2		Alu; thread G 1/2, IP 66		
H2		Alu; plug Han7D, IP 65		
L2		Alu; plug M12, IP 66 (in conjunction with absolute pressure sensors IP 68/NEMA 6P)		
K2		Alu; cable 5 m, IP 68 + atmospheric pressure compensation		
Y9		Special version, to be specified		
30		Sensor range; MWP; OPL:		
		Sensor range	MWP (maximum working pressure)	OPL (overpressure limit)
		Sensors for overpressure		
	3H	0 to 1 bar/100 kPa/15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	3M	0 to 4 bar/400 kPa/60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	3P	0 to 10 bar/1 MPa/150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
	3S	0 to 40 bar/4 MPa/600 psi	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
	3U	0 to 100 bar/10 MPa/1500 psi	100 bar/10 MPa/ 1500 psi	400 bar/40 MPa/6000 psi
	3Z	0 to 400 bar/40 MPa/6000 psi	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
		Sensors for negative overpressure		
	7H	-1 to 1 bar/-100 to 100 kPa/-15 to 15 psi	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	7M	-1 to 4 bar/-100 to 400 kPa/-15 to 60 psi	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	7P	-1 to 10 bar/-0.1 to 1 MPa/-15 to 150 psi	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi
		Sensors for absolute pressure		
	4H	0 to 1 bar/100 kPa/15 psi absolute	2.7 bar/270 kPa/40 psi	4 bar/400 kPa/60 psi
	4M	0 to 4 bar/400 kPa/60 psi absolute	10.7 bar/1.07 MPa/160 psi	16 bar/1.6 MPa/240 psi
	4P	0 to 10 bar/1 MPa/150 psi absolute	26.7 bar/2.67 MPa/400 psi	40 bar/4 MPa/600 psi g
	4S	0 to 40 bar/4 MPa/600 psi absolute	106.7 bar/10.67 MPa/1600 psi	160 bar/16 MPa/2400 psi
	4U	0 to 100 bar/10 MPa/1500 psi absolute	100 bar/10 MPa/ 1500 psi	400 bar/40 MPa/6000 psi
	4Z	0 to 400 bar/40 MPa/6000 psi absolute	400 bar/40 MPa/6000 psi	600 bar/60 MPa/9000 psi
	9Y	Special version, to be specified		
40		Calibration; Unit:		
	1	0.2% sensor range; mbar/bar		
	2	0.2% sensor range; kPa/MPa		
	3	0.2 % sensor range; mmH ₂ O/mH ₂ O		
	4	0.2% sensor range; inH ₂ O/ftH ₂ O		
	5	0.2% sensor range; kgf/cm ²		
	6	0.2% sensor range; psi		
	B	0.2% see additional specification		
	D	DKD certificate; see additional specification		
	9	Special version, to be specified		

50						Output; Operation: A 4 to 20 mA analog; without display C 4 to 20 mA analog; display bar graph H 4 to 20 mA SIL HART; without display J 4 to 20 mA SIL HART; display 4-digit + bar graph P PROFIBUS PA; without display R PROFIBUS PA; display 4-digit + bar graph W Without electronics; without display Y Special version, to be specified
60						Additional option: 1 Basic version 2 Mounting bracket, wall/pipe C EN10204-3.1 material (wetted) inspection certificate S GL (German Lloyd) marine certificate U SIL Declaration of Conformity B SIL + EN10204-3.1 material (wetted parts) inspection certificate, SIL Declaration of Conformity Y Special version, to be specified
70						Process connection: Threaded connection CA Thread ISO 228 G 1/2, 316L, separator AF Thread ISO 228 G 1, 316L AG Thread ISO 228 G 1 1/2, 316L AR Thread ISO 228 G 2, 316L DA Thread ANSI NPT 1/2, 316L, separator (CRN) BF Thread ANSI NPT 1, 316L (CRN) BG Thread ANSI NPT 1 1/2, 316L (CRN) BR Thread ANSI NPT 2, 316L (CRN) EN flanges EB DN 25 PN 10 – 40 B1, 316L, flange EN10921-1 (DIN2527 D) EC DN 25 PN 64 – 160 E, 316L, flange DIN2501 ED DN 25 PN 250 E, 316L, flange DIN2501 EF DN 25 PN 400 E, 316L, , flange DIN2501 EK DN 50 PN 10-40 B1, 316L, flange EN10921-1 (DIN2527 D) EM DN 50 PN 63 B2, 316L, flange EN10921-1 (DIN2527 E) EN DN 50 PN 100-160 E, 316L, flange DIN2501 EP DN 50 PN 250 E, 316L, flange DIN2501 ER DN 50 PN 400 E, 316L, flange DIN2501 EU DN 80 PN 10 – 40 B1, 316L, flange EN10921-1 (DIN2527 D) EN flanges with extended diaphragm seal FK DN 50 PN 10 – 40 B1, 316L, 50 mm barrel (DIN2527 D) GK DN 50 PN 10 – 40 B1, 316L, 100 mm barrel (DIN2527 D) JK DN 50 PN 10 – 40 B1, 316L, 200 mm barrel (DIN2527 D) FU DN 80 PN 10 – 40 B1, 316L, 50 mm barrel (DIN2527 D) GU DN 80 PN 10 – 40 B1, 316L, 100 mm barrel (DIN2527 D) JU DN 80 PN 10 – 40 B1, 316L, 200 mm barrel (DIN2527 D) ANSI flanges KB 1" 150 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KC 1" 300 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KD 1" 400/600 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KE 1" 900/1500 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KF 1" 2500 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KJ 2" 150 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KK 2" 300 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KL 2" 400/600 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KM 2" 900/1500 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KN 2" 2500 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KU 3" 150 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KV 3" 300 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KW 4" 150 lbs RF, 316/316L, flange ANSI B16.5 (CRN) KX 4" 300 lbs RF, 316/316L, flange ANSI B16.5 (CRN) ANSI flanges with extended diaphragm seal LJ 2" 150 lbs RF, 316/316L, 2" barrel, flange ANSI B16.5 (CRN) MJ 2" 150 lbs RF, 316/316L, 4" barrel, flange ANSI B16.5 (CRN) NJ 2" 150 lbs RF, 316/316L, 6" barrel, flange ANSI B16.5 (CRN) LU 3" 150 lbs RF, 316/316L, 2" barrel, flange ANSI B16.5 (CRN) MU 3" 150 lbs RF, 316/316L, 4" barrel, flange ANSI B16.5 (CRN) NU 3" 150 lbs RF, 316/316L, 6" barrel, flange ANSI B16.5 (CRN)

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