

HUBA**Type 528 Pressure Transmitter, Relative/Gage & Absolute**
F.S Pressure Ranges from Vac. to 750 PSI, Voltage/Current/Ratiometric Outputs**DESCRIPTION**

Huba Type 528 pressure transmitters have a compact design along with a high measurement accuracy.

The transmitters utilize proven Huba ceramic technology in use on Huba pressure measurement products for over 20 years.

Wetted materials include 316 SS connections, ceramic sensor and a selection of seal materials including FPM, EPDM and NBR.

These transmitters are suitable for applications across a broad spectrum of industries.



SPECIFICATIONS			
F.S. Pressure Ranges (Relative/Gage)	30" Hg, 12, 20, 30, 60, 100, 150, 200, 300, 500, 750 PSI -1 bar, 1, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60 bar		
F.S. Pressure Ranges (Absolute)	15, 20, 30, 60, 100, 150, 200 PSIA 1.6, 2.5, 4, 6, 10, 16 bar		
Medium	Compatible liquids & gases		
Temperature Operating Range	Seal Material	Non- Explosion	Explosion Rated (Ex)
	FPM	-15 ... +125 °C	-15 ... +120 °C
	EPDM	-40 ... +125 °C	-30 ... +120 °C
	NBR	-20 ... +100 °C	
	MVQ	-40 ... +125 °C	-30 ... +120 °C
FPM	-40 ... +125 °C	-30 ... +120 °C	
Ambient	-30...+85°C, (Ex) -20...+85°C		
Storage	-50...+100°C		
Max Over/Rupture Pressure	< 58 PSI (4 bar), 3 x F.S.; > 58 PSI (4 bar), 2.5 x F.S.		
Wetted Materials	Pressure Connections	AISI 316L, PVDF	
	Measuring Element	Ceramic Al ₂ O ₃ (99.6%)	
	Sealing Material	FPM, EPDM, NBR, MVQ	
Cover Material	AISI 316L		
Electrical Plug Material	Polyarylamide 50% glass filled, UL 94 V-0		
Signal Output Options			
2-wire, 4-20 mA output	Power Supply 7-33 VDC; Current Consumption- <23 mA		
	Load (Ohms)= Supply Voltage-7V÷0.02 A		
3-wire, 0-5V output	Power Supply 7-33 VDC; Current Consumption- <7 mA		
	Load - >10k Ohm/<100 nF		
3-wire, 0-10V output	Power Supply 12-33 VDC; Current Consumption- <7 mA		
	Load - >10k Ohm/<100 nF		
3-wire, ratiometric 10...90% supply voltage	Power Supply 5 VDC ±10% Current Consumption- <7 mA		

Specifications Continued	
Dynamic Response	
Response Time	<2 ms, 1 ms Typ.
Load Cycle	<100Hz
Electrical Connection Options-	
DIN EN 175301-803-A DIN EN 175301-803-C (Industrial standard 9.4 mm) M 12X1 Swift connector with or without cable 1.5 / 2.0 / 3.0 / 5.0 m (PVC) Metri Pack Serie 150 Connector RAST 2.5 (3 wire, only) Braids	
Pressure Connection	
Inside Threads: ½ -14 NPT, 7/16 - 20 UNF, G 1/4 w/FPM O-Ring seal Outside Threads: ¼ -18 NPT, 7/16 - 20 UNF, 1/8- 27 NPT, Consult us for other	
Installation Orientation	Any
Weight	90 g
Testing:	
Electromagnetic Compatibility	CE conformity acc. EN 61326-2-3
Raised noise resistancy	EN 50121-2-3
Constant shock acc. IEC 68-2-29	40 g for 6 ms, 1000x all 3 directions
Shock Per IEC 68-2-6	100 g, 11 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x)
Vibration IEC 68-2-6	20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude μ 15 mm, 1 Octave/ min. all 3 directions, 50 constant load
UL	ANSI/UL 61010-1 acc. E325110
Drinking water approval	NSF/ANSI 61/372 acc. MH60087

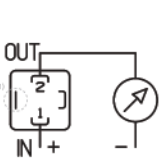
Specifications Continued		
Explosion Protection (Ex)	ratiom. 10 ... 90%	4 ... 20 mA
Intrinsic safety	Ex II 1/2 G Ex ia IIC T4 Ga/Gb	Ex II 1/2 G Ex ia IIC T4 Ga/Gb
	Ex II 1/2 D Ex ia IIIC T125AC Da/Db	Ex II 1/2 D Ex ia IIIC T125AC Da/Db
EC type examination certificate	SEV 15 ATEX 0173	SEV 10 ATEX 0145
Connection to certified intrinsically safe resistive circuits with maximum values	$U_i < 15 \text{ VDC}$; $I_i < 200 \text{ mA}$; $P_i < 750 \text{ mW}$	$U_i < 30 \text{ VDC}$; $I_i < 100 \text{ mA}$; $P_i < 750 \text{ mW}$
Effective internal inductance and capacitance for versions with plugs complying with EN 175301-803-A or M12x1	$L_i = 0 \text{ nH}$; $C_i < 150 \text{ nF}$	$L_i = 0 \text{ nH}$; $C_i = 0 \text{ nF}$

Accuracy	
Characteristic line 1	$\pm 0.3\% \text{ F.S.}$
Resolution	$0.1\% \text{ F.S.}$
Thermal characteristic 2 (max.)	$\pm 0.2\% \text{ F.S./ } 100\text{C}$
Long term stability acc. IEC EN 60770-1 (max)	$0.25\% \text{ F.S.}$
1 typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability)	
2 -15 ... 85 °C	
Test conditions: 25 °C, 45% RH, power supply 24 VDC	

ELECTRICAL CONNECTIONS

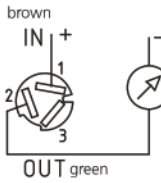
2 wire

Connector DIN EN 175301-803-A or C



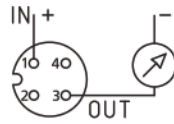
1 (IN) 2 (OUT)

Swift connector



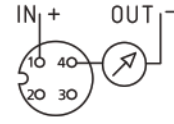
1 (IN) 2 (OUT)

Connector M12x1



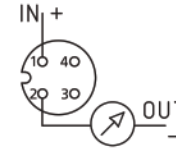
1 (IN) 3 (OUT)

Connector M12x1



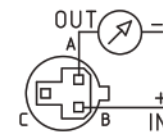
1 (IN) 4 (OUT)

Connector M12x1



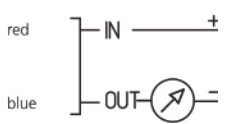
1 (IN) 2 (OUT)

Metri Pack Serie 150



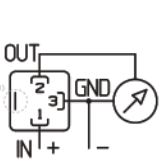
B (IN) A (OUT)

Braids



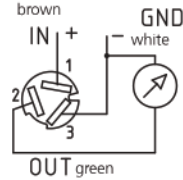
3 wire

Connector DIN EN 175301-803-A or C



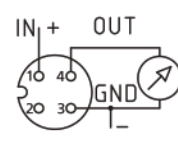
1 (IN) 2 (OUT) 3 (GND)

Swift connector



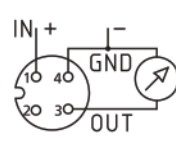
1 (IN) 2 (OUT) 3 (GND)

Connector M12x1



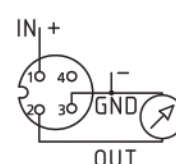
1 (IN) 4 (OUT) 3 (GND)

Connector M12x1



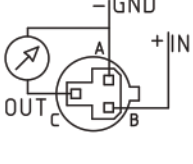
1 (IN) 3 (OUT) 4 (GND)

Connector M12x1



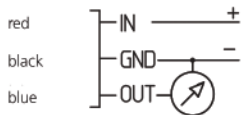
1 (IN) 2 (OUT) 3 (GND)

Metri Pack Serie 150

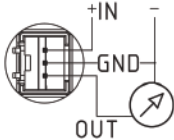


B (IN) C (OUT) A (GND)

Braids



Connector RAST 2.5



Device design with explosion protection: 4 ... 20 mA
The grounding connection is conductively connected to the transmitter housing.

Connector DIN EN 175301-803-A

1 (IN) 2 (OUT) 3 (GND)

Connector M12x1

1 (IN) 3 (OUT) 4 (GND)

Device design with explosion protection: ratiom. 10 ... 90%
The electronic GND is connected with a 1MΩ resistor to the transmitter housing.

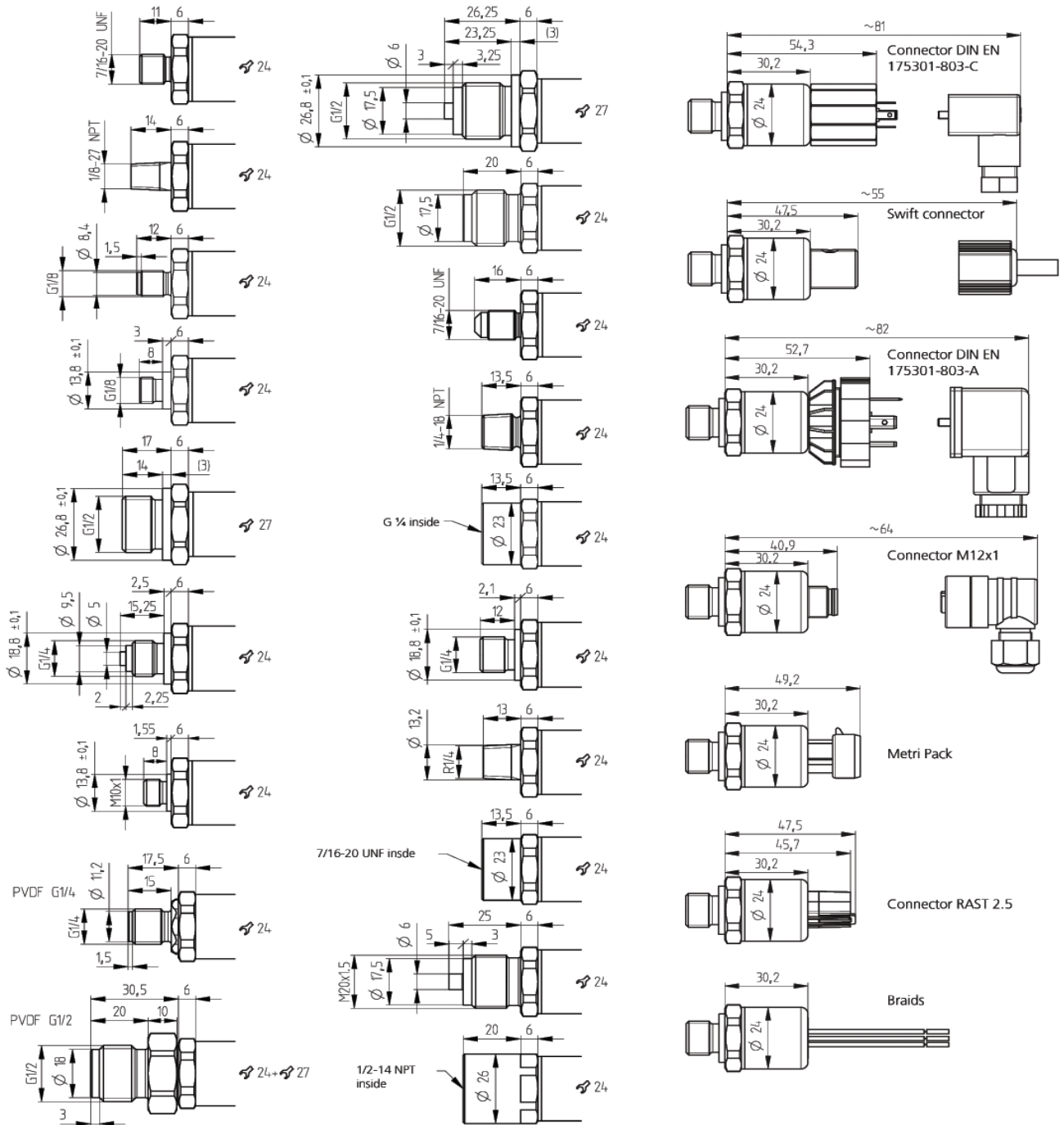
Connector DIN EN 175301-803-A

1 (IN) 2 (OUT) 3 (GND)

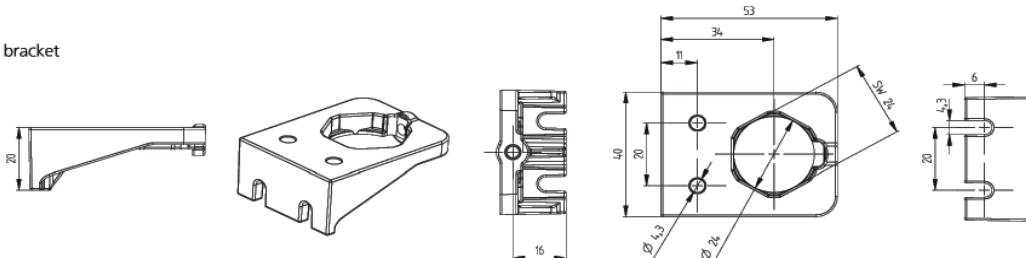
Connector M12x1

1 (IN) 3 (GND) 4 (OUT)

DIMENSIONS (MM)



Mounting bracket



Order code selection in psi				1	2	3	4	5	6	7	8	9	10	11	
				528.	X	X	X	X	X	X	X	X	X	X	X
Pressure range (relative) ¹⁾	-30 ... 0" hg			9	B	0									
	0 ... 15 psi			9	B	1									
	0 ... 20 psi			9	B	2									
	0 ... 30 psi			9	B	4			0,4						
	0 ... 60 psi			9	B	5			0,4						
	0 ... 100 psi			9	B	7			0,4						
	0 ... 150 psi			9	C	0			0,4						
	0 ... 200 psi			9	C	1			0,4						
	0 ... 300 psi			9	C	2			0,4					1	
	0 ... 500 psi			9	C	3			0,4					1	
	0 ... 750 psi			9	D	0			0,4					1	
Pressure range (absolute) ¹⁾	0 ... 15 psi			8	B	1									
	0 ... 20 psi			8	B	2									
	0 ... 30 psi			8	B	4									
	0 ... 60 psi			8	B	5									
	0 ... 100 psi			8	B	7									
	0 ... 150 psi			8	C	0									
Sealing material	FPM	Fluoro elastomer	(-15 ... +120 °C)						0						
	EPDM	Ethylene propylene	(-30 ... +120 °C)						1						
	NBR	Butadiene Acrylonitrile							2						
	MVQ	Silicone polymer	(-30 ... +120 °C)						3						
	FPM	Fluoro elastomer	(-30 ... +120 °C)						5						
Application	standard								0						
	for oxygen applications								0	1			1	1	
	with drinking water approval NSF 61								0	4			1	1	
Output / power supply	0 ... 5 V	7 ... 33 VDC										1			
	1 ... 6 V	8 ... 33 VDC										6			
	0 ... 10 V	12 ... 33 VDC										2			
		12 ... 33 VDC / 24 VAC ±15% (not possible with M12x1, metri Pack, RAST, braids)										8			
	ration. 10 ... 90%	5VDC ±10%										7			
		5VDC ±10% Ex protection										9			
	4 ... 20 mA	7 ... 33 VDC										3			
		7 ... 33 VDC Raised noise resistantcy (not possible with Braids)										A			
		10 ... 30 VDC Ex protection							0,4	4	1,3				1
	Electrical connection	Connector ²⁾	DIN EN 175301-803-A										1		
DIN EN 175301-803-C (industrial standard 9.4 mm)												2			
M12x1 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3													3		
M12x1 2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4													M		
M12x1 2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3													P		
RAST 2.5									0,4	7	4				
Braids		Metri Pack Serie 150 ³⁾							0,4		5				
		80 ±10 mm										6			
		290 ±10 mm										7			
		480 ±10 mm										8			
		730 ±10 mm										9			
		without cable										0			
		with cable 1.5 m										L			
Swift connector	with cable 2.0 m										N				
	with cable 3.0 m										Q				
	with cable 5.0 m										R				
	Pressure connection ³⁾	Inside thread	7/16-20 UNF sealing cone											K	1
			1/2-14 NPT											D	1
			G 1/4 with O-Ring seal FPM spec.											1	1
		Outside thread	7/16-20 UNF sealing cone											2	1
1/4-18 NPT													3	1	
G 1/4 sealed at back DIN 3852-E, with profile seal ring in FPM spec.													4	1	
G 1/4 sealed at back and manometer, with profile seal ring in FPM spec.													5	1	
R 1/4 acc. to EN 10226													7	1	
G 1/2 sealed at back and manometer, with profile seal ring in FPM spec.									0,1				8	1	
7/16-20 UNF sealed at front													G	1	
1/8-27 NPT													A	1	
G 1/8 sealed at front													M	1	
G 1/8 sealed at back DIN 3852-E, with Profile seal ring in FPM spec.									0,1				H	1	
G 1/8 sealed at front											J	1			
G 1/8 sealed at back and manometer, with profile seal ring in FPM spec.							0,1				C	1			
Pressure orifice	without												1		
	with												2		
	Material	Stainless steel 1.4404 / AISI 316L													1
		PVDF outside thread sealed at front G 1/4, G 1/2 < 200 psi													2
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 16psi/OUT0...5V)														

Accessories	Order number
Swift connector	107359
Female connector DIN EN 175301-803-A with seal	103510
Female connector DIN EN 175301-803-C with seal	104244
Corner-wire box for connector M12x1	106975
Corner-wire box for connector M12x1 with cable 2.0 m	114604
Straight-wire box for connector M12x1	114570
Straight-wire box for connector M12x1 with cable 2.0 m	114605
Mounting bracket with screw	118716
Calibration certificate	104551

¹⁾ Other pressure ranges or pressure connections on request ²⁾ Delivery without female connector ³⁾ For pressure ranges ≤ 150 psi (relative) only possible if deaeration through the cable is assured

Order code selection in bar		1	2	3	4	5	6	7	8	9	10	11	
		528.	X	X	X	X	X	X	X	X	X	X	
Pressure range (relative) ³⁾	-1 ... 0 bar	9	0	1									
	0 ... 1 bar	9	1	1									
	0 ... 1.6 bar	9	1	2									
	0 ... 2.5 bar	9	1	4		0,4							
	0 ... 4 bar	9	1	5		0,4							
	0 ... 6 bar	9	1	7		0,4							
	0 ... 10 bar	9	3	0		0,4							
	0 ... 16 bar	9	3	1		0,4							
	0 ... 25 bar	9	3	2		0,4					1		
	0 ... 40 bar	9	3	3		0,4					1		
0 ... 60 bar	9	4	0		0,4					1			
Pressure range (absolute) ³⁾	0 ... 1 bar	8	1	1									
	0 ... 1.6 bar	8	1	2									
	0 ... 2.5 bar	8	1	4									
	0 ... 4 bar	8	1	5									
	0 ... 6 bar	8	1	7									
	0 ... 10 bar	8	3	0									
	0 ... 16 bar	8	3	1									
Sealing material	FPM	Fluoro elastomer	(-15 ... +120 °C)			0							
	EPDM	Ethylene propylene	(-30 ... +120 °C)			1							
	NBR	Butadiene Acrylonitrile				2							
	MVQ	Silicone polymer	(-30 ... +120 °C)			3							
	FPM	Fluoro elastomer	(-30 ... +120 °C)			5							
Application	standard					0							
	for oxygen applications					0	1			1	1		
	with drinking water approval NSF 61					0	4			1	1		
Output / power supply	0 ... 5 V	7 ... 33 VDC					1						
	1 ... 6 V	8 ... 33 VDC					6						
	0 ... 10 V	12 ... 33 VDC						2					
		12 ... 33 VDC / 24 VAC ±15% <i>(not possible with M12x1, metri Pack, RAST, braids)</i>						8					
	ratiom. 10 ... 90%	5VDC ±10%						7					
		5VDC ±10% Ex protection						9					
	4 ... 20 mA	7 ... 33 VDC						3					
		7 ... 33 VDC Raised noise resistancty <i>(not possible with Braids)</i>						A					
10 ... 30 VDC Ex protection						0,4	4	1,3		1			
Electrical connection	Connector ⁴⁾	DIN EN 175301-803-A							1				
		DIN EN 175301-803-C (industrial standard 9.4 mm)							2				
		M12x1 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3								3			
		M12x1 2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4								M			
		M12x1 2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3								P			
		RAST 2.5					0,4	7	4				
	Braids	Metri Pack Serie 150 ⁵⁾					0,4		5				
		80 ±10 mm							6				
		290 ±10 mm							7				
		480 ±10 mm							8				
	Swift connector	730 ±10 mm							9				
		without cable							0				
		with cable 1.5 m							L				
		with cable 2.0 m							N				
with cable 3.0 m								Q					
Pressure connection ³⁾	Inside thread	7/16-20 UNF sealing cone								K	1		
		1/2 -14 NPT								D	1		
		G 1/4 with O-Ring seal FPM spec.									1	1	
	Outside thread	7/16 -20 UNF sealing cone									2	1	
		1/4 -18 NPT									3	1	
		G 1/4 sealed at back DIN 3852-E, with profile seal ring in FPM spec.									4	1	
		G 1/4 sealed at back and manometer, with profile seal ring in FPM spec.									5	1	1
		R 1/4 acc. to EN 10226									7	1	1
		G 1/2 sealed at back and manometer, with profile seal ring in FPM spec.					0,1				8	1	
		7/16-20 UNF sealed at front									G	1	
		1/8 - 27 NPT									A	1	
		G 1/8 sealed at front									M	1	
		G 1/8 sealed at back DIN 3852-E, with Profile seal ring in FPM spec.					0,1				H	1	
		G 1/4 sealed at front									J	1	2
		G 1/2 sealed at back and manometer, with profile seal ring in FPM spec.					0,1				C	1	
		M10x1 sealed at back, with profile seal ring in FPM spec					0,1				F	1	
		M20x1.5									E	1	
		G 1/2 sealed at front									9		
Pressure orifice	without									1			
	with									2			
Material	Stainless steel 1.4404 / AISI 316L										1		
pressure connection	PVDF outside thread sealed at front G 1/4, G 1/2										2		
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 3bar/OUT0...5V)											W	

¹⁾ typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability)

²⁾ -15 ... 85 °C

³⁾ Other pressure ranges or pressure connections on request

⁴⁾ Delivery without female connector

⁵⁾ For pressure ranges ≤ 10 bar (relative) only possible if deaeration through the cable is assured