

Relative and absolute pressure transmitter type 528

Pressure range
-1 ... 0 – 60 bar



The compact type 528 pressure transmitter is based upon the well proven ceramic technology developed by Huba Control over 20 years ago.

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

- Compact, rugged construction
- Negligible temperature influence on accuracy
- Saving time by quick cable mounting by the customer with swift connector
- Large selection of connections available

Technical overview

Pressure range

Relative	-1 ... 0 – 60 bar
Absolute	0 ... 1 – 16 bar

Operating conditions

Medium		Liquids and gases	
Temperature	Medium	FPM	-15 ... +125 °C
		EPDM	-40 ... +125 °C
		NBR	-20 ... +100 °C
		MVQ	-40 ... +125 °C
		Ambient	-30 ... +85 °C
	Storage	-50 ... +100 °C	
Tolerable overload / Rupture pressure	≤ 4 bar	3.0 x fs	
	> 4 bar	2.5 x fs	

Materials

Plug accommodation		Polyarylamide 50% GF VO
Materials in contact with medium	Pressure connection	Stainless steel 1.4404 / AISI 316L
		PVDF
	Sensor	Ceramic Al ₂ O ₃ (96%)
	Sealing material	FPM, EPDM, NBR, MVQ

Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	7 ... 33 VDC	< $\frac{\text{supply voltage} - 7 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 23 mA
2 wire (Ex)	4 ... 20 mA	10 ... 30 VDC	< $\frac{\text{supply voltage} - 10 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 23 mA
3 wire	0 ... 5 V	7 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	1 ... 6 V	8 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	12 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	12 ... 33 VDC / 24 VAC ± 15%	>10 kOhm / < 100 nF	< 7 mA
	ration. 10 ... 90%	5 VDC ± 10%	>10 kOhm / < 100 nF	< 7 mA
Polarity reversal protection	Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.			
Insulation voltage	500 VDC			

Protection class

Protection class III

Dynamic response

Response time	< 2 ms, 1 ms typ.
Load cycle	< 100 Hz

Protection standard

Connector DIN EN 175301-803, Braids	IP 65
Connector RAST 2.5	IP 00
Swift connector, Metri Pack, Connector M12x1	IP 67

Electrical connection

Swift connector with or without cable 1.5 / 2 / 3 / 5 m (PVC spec.)
Connector DIN EN 175301-803-A
Connector DIN EN 175301-803-C (mini DIN)
Metri Pack Serie 150
Connector M12x1
Braids
Connector RAST 2.5 (3 wire, only)

Pressure connection

Inside thread	1/16 - 20 UNF	with O-Ring seal FPM spec. (-30 ... +135 °C)	
	1/2 -14 NPT		
	G 1/4		
Outside thread	1/16 - 20 UNF	sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)	
	1/4 -18 NPT		
	G 1/4		
	R 1/4		DIN 2999
	G 1/2		sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)
	M20x1.5		
	G 1/4		sealed at front
G 1/2	sealed at front		

Installation arrangement

Unrestricted

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
Shock acc. IEC IEC 68-2-27	100 g, 11 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x)
Constant shock acc. IEC 68-2-29	40 g for 6 ms, 1000x all 3 directions
Vibration acc. IEC 68-2-6	20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load
UL recognized component marks	acc. E325110

Protection against explosion

Intrinsic safety «i» (with current output only)	Ex II 1/2 G Ex ia IIC T4 Ga/Gb
EC type examination certificate	Ex II 1/2 D Ex ia IIC T125°C Da/Db
Connection to certified intrinsically safe resistive circuits with maximum values	SEV 10 ATEX 0145
Effective internal inductance and capacitance for versions with plugs complying with EN 175301-803 or M12x1	Ui = 30 VDC; li = 100 mA = Pi = 0.75 W Li = 0 nH; Ci = 0 nF

Weight

~ 90 g

Packaging (Please state on order)

Single packaging in cardboard	accessories integrated
Multiple packaging in cardboard (25 pcs)	

Accuracy

Parameter	Unit	
Characteristic line ¹⁾	% fs	± 0.3
Resolution	% fs	0.1
Thermal characteristic ²⁾	max. % fs/10K	± 0.2
Long term stability acc. IEC EN 60770-1	max. % fs	± 0.25

Test conditions: 25 °C, 45% RH, power supply 24 VDC

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						
	0 ... 4 bar		9	1	5		0						
	0 ... 6 bar		9	1	7		0						
	0 ... 10 bar		9	3	0		0						
	0 ... 16 bar		9	3	1		0						
	0 ... 25 bar		9	3	2		0					1	
	0 ... 40 bar		9	3	3		0					1	
0 ... 60 bar		9	4	0		0					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					0						
	EPDM	Ethylene propylene					1						
	NBR	Butadiene Acrylonitrile					2						
	MVQ ⁴⁾	Silicone polymer					3						
Application	standard						0						
	for oxygen applications					0	1				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					
	0 ... 10 V	12 ... 33 VDC / 24 VAC ±15% (not possible with M12x1 or metri Pack)						8					
	ratiom. 10 ... 90%	5VDC ±10%						7					
	4 ... 20 mA	7 ... 33 VDC						3					
	4 ... 20 mA	10 ... 30 VDC	Ex protection				0	4	1,3		1	1	
Electrical connection	Swift connector							0					
	Connector DIN EN 175301-803-A ⁵⁾							1					
	Connector DIN EN 175301-803-C (mini DIN) ⁵⁾							2					
	Connector M12x1 ⁵⁾	2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3						3					
	Connector M12x1 ⁵⁾	2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4						M					
	Connector M12x1 ^{4),5)}	2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3						P					
	Connector RAST 2.5 ⁵⁾						0	7	4				
	Metri Pack Serie 150 ^{5),6)}						0		5				
	Braids	80 ±10 mm							6				
	Braids	290 ±10 mm							7				
	Braids	480 ±10 mm							8				
	Braids	730 ±10 mm							9				
	Swift connector with cable 1.5 m								L				
	Swift connector with cable 2.0 m ⁴⁾								N				
	Swift connector with cable 3.0 m ⁴⁾								Q				
Swift connector with cable 5.0 m ⁴⁾								R					
Pressure connection ⁶⁾	Inside thread	G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)								1		1	
	Inside thread	½ -14 NPT								D		1	
	Inside thread	7/16 -20 UNF								K		1	
	Outside thread	7/16 -20 UNF								2		1	
	Outside thread	¼ -18 NPT								3		1	
	Outside thread	G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)								4		1	
	Outside thread	G ¼ sealed at front								J	1	2	
	Outside thread	R ¼ acc. to DIN 2999								7		1	
	Outside thread	G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)								8		1	
	Outside thread	M20x1.5 ⁴⁾								E		1	
	Outside thread	G ½ sealed at front								9			
	Version	without pressure tip orifice											1
with pressure tip orifice ⁴⁾												2	1
Material	Stainless steel 1.4404 / AISI 316L												1
	PVDF	≤ 16 bar (without UL-admission)										1	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)
⁴⁾ UL admission applied

²⁾ -15 ... 85 °C
⁵⁾ Delivery without female connector

³⁾ Other pressure ranges or pressure connections on request
⁶⁾ For pressure ranges ≤ 16 bar only possible if deaeration through the cable is assured

			1	2	3	4	5	6	7	8	9	10	11
Order code selection in psi			528. X 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						
	0 ... 60 psi		9	B	5		0						
	0 ... 100 psi		9	B	7		0						
	0 ... 150 psi		9	C	0		0						
	0 ... 200 psi		9	C	1		0						
	0 ... 300 psi		9	C	2		0					1	
	0 ... 500 psi		9	C	3		0					1	
0 ... 750 psi		9	D	0		0					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								
	0 ... 200 psi		8	C	1								
Sealing material	FPM	Fluoro elastomer					0						
	EPDM	Ethylene propylene					1						
	NBR	Butadiene Acrylonitrile					2						
	MVQ ²⁾	Silicone polymer					3						
Application	standard						0						
	for oxygen applications						0	1			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
	0 ... 10 V	12 ... 33 VDC / 24 VAC ±15% (not possible with M12x1 or metri Pack)											8
	ratiom. 10 ... 90%	5VDC ±10%											7
	4 ... 20 mA	7 ... 33 VDC											3
	4 ... 20 mA	10 ... 30 VDC	Ex protection				0	4	1,3		1	1	
Electrical connection	Swift connector												0
	Connector DIN EN 175301-803-A ³⁾												1
	Connector DIN EN 175301-803-C (mini DIN) ³⁾												2
	Connector M12x1 ³⁾	2w: IN=1 / OUT=3	3w: IN=1 / OUT=4 / GND=3										3
	Connector M12x1 ³⁾	2w: IN=1 / OUT=4	3w: IN=1 / OUT=3 / GND=4										M
	Connector M12x1 ^{2),3)}	2w: IN=1 / OUT=2	3w: IN=1 / OUT=2 / GND=3										P
	Connector RAST 2.5 ³⁾						0	7					4
	Metri Pack Serie 150 ^{3),4)}						0						5
	Braids	80 ±10 mm											6
	Braids	290 ±10 mm											7
	Braids	480 ±10 mm											8
	Braids	730 ±10 mm											9
	Swift connector with cable 1.5 m												L
	Swift connector with cable 2.0 m ²⁾												N
	Swift connector with cable 3.0 m ²⁾												Q
Swift connector with cable 5.0 m ²⁾												R	
Pressure connection ⁶⁾	Inside thread G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)											1	1
	Inside thread ½ -14 NPT											D	1
	Inside thread 7/16 -20 UNF											K	1
	Outside thread 7/16 -20 UNF											2	1
	Outside thread ¼ -18 NPT											3	1
	Outside thread G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)											4	1
	Outside thread G ¼ sealed at front											J	1 2
	Outside thread R ¼ acc. to DIN 2999											7	1
	Outside thread G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)											8	1
	Outside thread M20x1.5 ²⁾											E	1
Outside thread G ½ sealed at front											9		
Version	without pressure tip orifice											1	
	with pressure tip orifice ²⁾											2	1
Material	Stainless steel 1.4404 / AISI 316L												1
pressure connection	PVDF	≤ 200 psi (without UL-admission)											2
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 16psi/OUT1...8V)											W	

Accessories

	Order number
Swift connector	107359
Female connector DIN EN 175301-803-A with seal	103510
Female connector DIN EN 175301-803-C (mini DIN) with seal	104244
Corner-wire box for connector M12x1	106975
Calibration certificate	104551

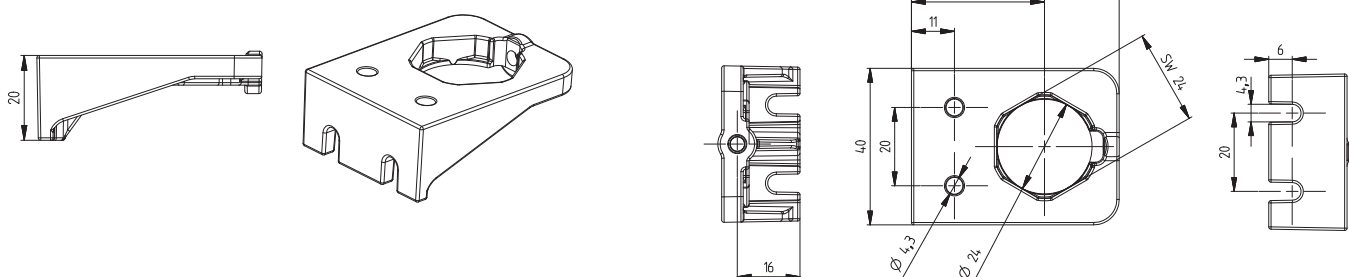
¹⁾ Other pressure ranges or pressure connections on request
³⁾ Delivery without female connector

²⁾ UL admission applied
⁴⁾ For pressure ranges ≤ 200 psi only possible if deaeration through the cable is assured

			1	2	3	4	5	6	7	8	9	10	11	
Order code selection in MPa			528. X X X X X X X X X X X X											
Pressure range (relative) ¹⁾	-0.1 ... 0 MPa		9	G	0									
	0 ... 0.1 MPa		9	G	1									
	0 ... 0.16 MPa		9	G	2									
	0 ... 0.25 MPa		9	G	4		0							
	0 ... 0.4 MPa		9	G	5		0							
	0 ... 0.6 MPa		9	G	7		0							
	0 ... 1 MPa		9	H	0		0							
	0 ... 1.6 MPa		9	H	1		0							
	0 ... 2.5 MPa		9	H	2		0					1		
	0 ... 4 MPa		9	H	3		0					1		
	0 ... 6 MPa		9	K	0		0					1		
	Pressure range (absolute) ¹⁾	0 ... 0.1 MPa		8	G	1								
		0 ... 0.16 MPa		8	G	2								
0 ... 0.25 MPa			8	G	4									
0 ... 0.4 MPa			8	G	5									
0 ... 0.6 MPa			8	G	7									
0 ... 1 MPa			8	H	0									
0 ... 1.6 MPa			8	H	1									
Sealing material	FPM	Fluoro elastomer					0							
	EPDM	Ethylene propylene					1							
	NBR	Butadiene Acrylonitrile					2							
	MVQ ²⁾	Silicone polymer					3							
Application	standard						0							
	for oxygen applications						0	1			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					
	0 ... 10 V	12 ... 33 VDC / 24 VAC ±15% (not possible with M12x1 or metri Pack)							8					
	ration. 10 ... 90%	5VDC ±10%							7					
	4 ... 20 mA	7 ... 33 VDC							3					
	4 ... 20 mA	10 ... 30 VDC	Ex protection				0	4	1,3		1	1		
	Electrical connection	Swift connector										0		
Connector DIN EN 175301-803-A ³⁾											1			
Connector DIN EN 175301-803-C (mini DIN) ³⁾											2			
Connector M12x1 ³⁾		2w: IN=1 / OUT=3	3w: IN=1 / OUT=4 / GND=3								3			
Connector M12x1 ³⁾		2w: IN=1 / OUT=4	3w: IN=1 / OUT=3 / GND=4								M			
Connector M12x1 ^{2),3)}		2w: IN=1 / OUT=2	3w: IN=1 / OUT=2 / GND=3								P			
Connector RAST 2.5 ³⁾							0	7			4			
Metri Pack Serie 150 ^{3),4)}							0				5			
Braids		80 ±10 mm									6			
Braids		290 ±10 mm									7			
Braids		480 ±10 mm									8			
Braids		730 ±10 mm									9			
Swift connector with cable 1.5 m											L			
Swift connector with cable 2.0 m ²⁾											N			
Swift connector with cable 3.0 m ²⁾											Q			
Swift connector with cable 5.0 m ²⁾										R				
Pressure connection ⁶⁾	Inside thread G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)										1		1	
	Inside thread ½ -14 NPT										D		1	
	Inside thread 7/16 -20 UNF										K		1	
	Outside thread 7/16 -20 UNF										2		1	
	Outside thread ¼ -18 NPT										3		1	
	Outside thread G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)										4		1	
	Outside thread G ¼ sealed at front										J	1	2	
	Outside thread R ¼ acc. to DIN 2999										7		1	
	Outside thread G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)										8		1	
	Outside thread M20x1.5 ²⁾										E		1	
Outside thread G ½ sealed at front										9				
Version	without pressure tip orifice											1		
	with pressure tip orifice ²⁾											2	1	
Material	Stainless steel 1.4404 / AISI 316L												1	
pressure connection	PVDF	≤ 1.6 MPa											2	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 0.3MPa/OUT1...8V)											W		

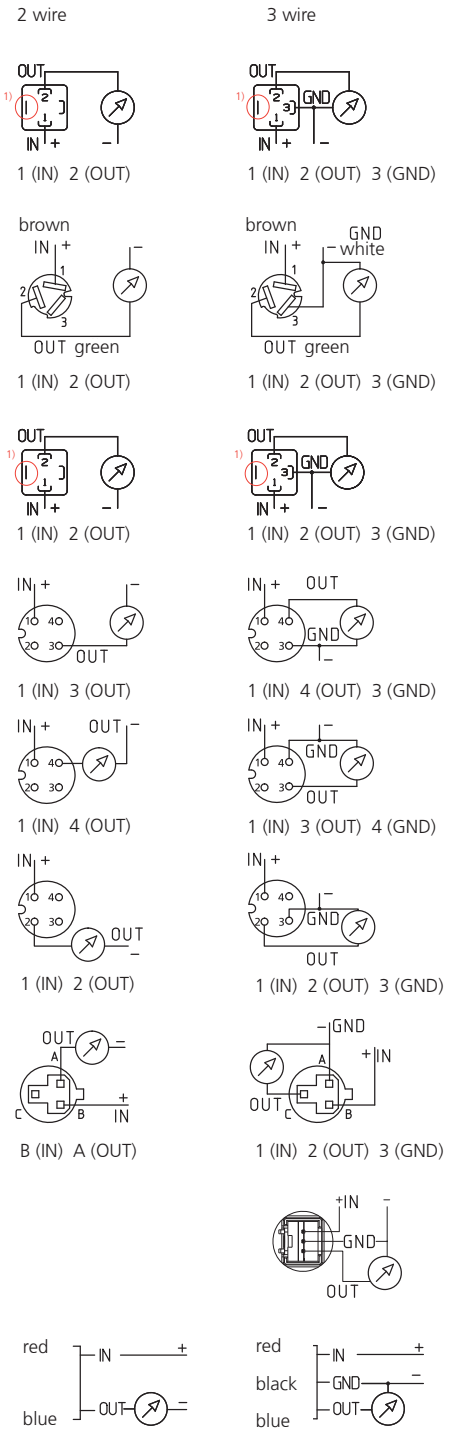
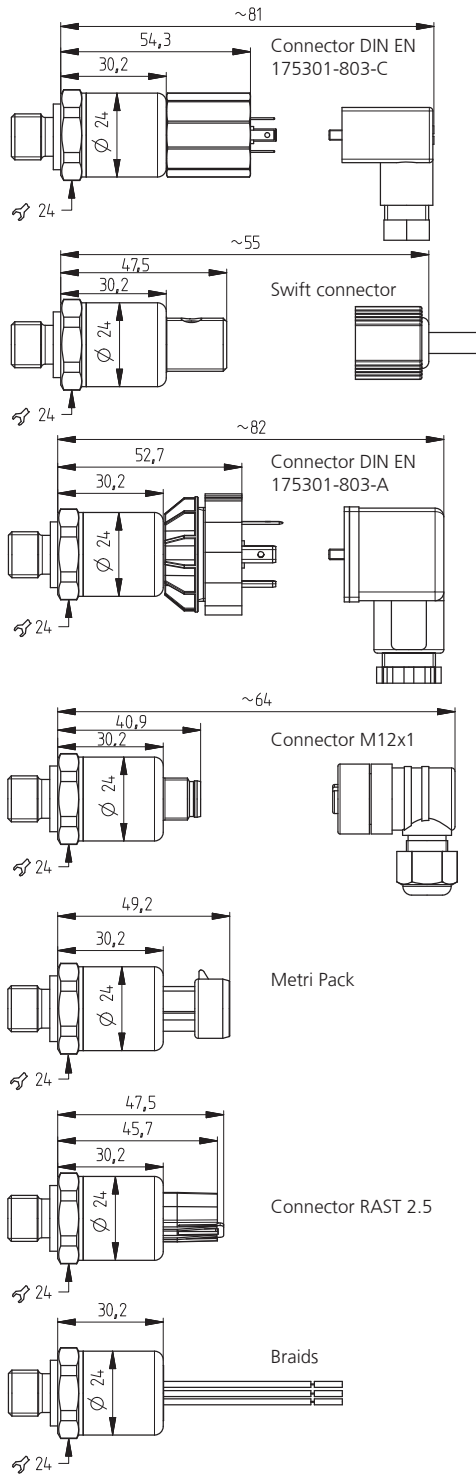
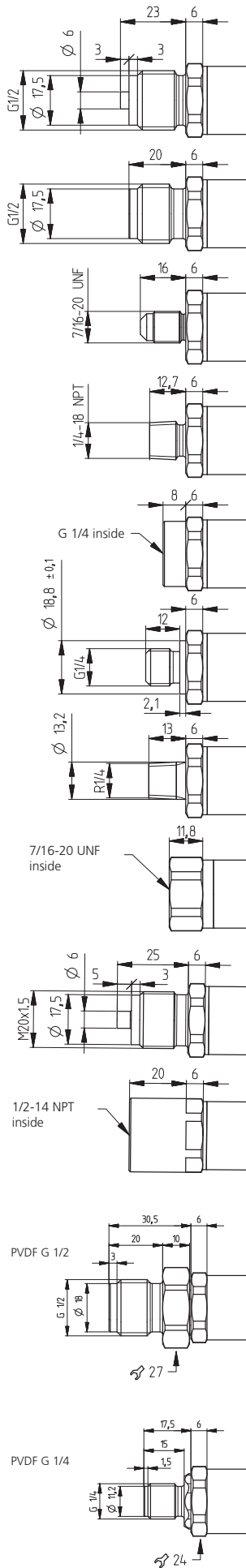
Dimensions accessories in mm

Mounting bracket



¹⁾ Other pressure ranges or pressure connections on request
³⁾ Delivery without female connector

²⁾ UL admission applied
⁴⁾ For pressure ranges ≤ 1.6 MPa only possible if deaeration through the cable is assured



¹⁾ Not connected with transmitter housing

Ex

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

Connector DIN EN 175301-803-A (Ex)

1 (IN) 2 (OUT)

Connector M12x1 (Ex)

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

Huba Control AG
Headquarters

Industriestrasse 17
5436 Würenlos
Telefon +41 (0) 56 436 82 00
Telefax +41 (0) 56 436 82 82
info.ch@hubacontrol.com

Huba Control AG
Niederlassung Deutschland

Schlattgrabenstrasse 24
72141 Walddorfhäslach
Telefon +49 (0) 7127 23 93 00
Telefax +49 (0) 7127 23 93 20
info.de@hubacontrol.com

Huba Control SA
Succursale France

Rue Lavoisier
Technopôle Forbach-Sud
57602 Forbach Cedex
Téléphone +33 (0) 387 847 300
Télécopieur +33 (0) 387 847 301
info.fr@hubacontrol.com

Huba Control AG
Vestiging Nederland

Hamseweg 20A
3828 AD Hoogland
Telefoon +31 (0) 33 433 03 66
Telefax +31 (0) 33 433 03 77
info.nl@hubacontrol.com

Huba Control AG
Branch Office United Kingdom

Unit 13 Berkshire House
County Park Business Centre
Shrivenham Road
Swindon Wiltshire SN1 2NR
Phone +44 (0) 1993 776667
Fax +44 (0) 1993 776671
info.uk@hubacontrol.com