

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	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

Pressure connection	Stainless steel 1.4404 / AISI 316L
Plug accommodation	Polyarylamide 50% GF VO
Materials in contact with medium	Pressure connection Stainless steel 1.4404 / AISI 316L
	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	24 VAC ± 15%	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	5 VDC ± 10%	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	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
Braids (for oxygen applications)	IP 30

Electrical connection

Swift connector with or without cable 1.5 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	7/16 - 20 UNF	with O-Ring seal FPM spec. (-30 ... +135 °C)
	1/2 - 14 NPT	
	G 1/4	
Outside thread	7/16 - 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	sealed at front

Installation arrangement

Unrestricted

Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
Shock acc. 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 Ex II 1/2 D Ex ia IIC T125°C Da/Db
EC type examination certificate	SEV 10 ATEX 0145
Connection to certified intrinsically safe resistive circuits with maximum values	Ui = 30 VDC; li = 100 mA = Pi = 0.75 W
Effective internal inductance and capacitance for versions with plugs complying with EN 175301-803 or M12x1	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		Einheit	
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

528. X 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									
	0 ... 40 bar		9	3	3				0									
	0 ... 60 bar		9	4	0				0									
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							
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	24 VAC ±15% (not possible with M12x1 connector 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			
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				
Pressure connection ⁶⁾	Inside thread	G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)																1
	Inside thread	7/16-20 UNF																K
	Inside thread	½ -14 NPT																D
	Outside thread	7/16 -20 UNF																2
	Outside thread	¼ -18 NPT																3
	Outside thread	G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)																4
	Outside thread	R ¼ acc. to DIN 2999																7
	Outside thread	G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)																8
	Outside thread	G ½ sealed at front																9
	Outside thread	M20x1.5 ⁴⁾													E			
	Version	without pressure tip orifice																
with pressure tip orifice ⁴⁾																		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

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									
	0 ... 500 psi		9	C	3	0									
0 ... 750 psi		9	D	0	0										
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								
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	24 VAC ±15% (not possible with M12x1 connector 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				
Electrical connection	Swift connector														
	Connector DIN EN 175301-803-A ³⁾														
	Connector DIN EN 175301-803-C (mini DIN) ³⁾														
	Connector M12x1 ³⁾	2w: IN=1 / OUT=3	3w: IN=1 / OUT=4 / GND=3												
	Connector M12x1 ³⁾	2w: IN=1 / OUT=4	3w: IN=1 / OUT=3 / GND=4												
	Connector M12x1 ^{2),3)}	2w: IN=1 / OUT=2	3w: IN=1 / OUT=2 / GND=3												
	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														
Pressure connection ¹⁾	Inside thread	G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)													1
	Inside thread	7/16-20 UNF													K
	Inside thread	½ -14 NPT													D
	Outside thread	7/16 -20 UNF													2
	Outside thread	¼ -18 NPT													3
	Outside thread	G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)													4
	Outside thread	R ¼ acc. to DIN 2999													7
	Outside thread	G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)													8
	Outside thread	G ½ sealed at front													9
	Outside thread	M20x1,5 ²⁾													E
Version	without pressure tip orifice														1 1
	with pressure tip orifice ²⁾														2 1
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 16psi/OUT1...8V)														W

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

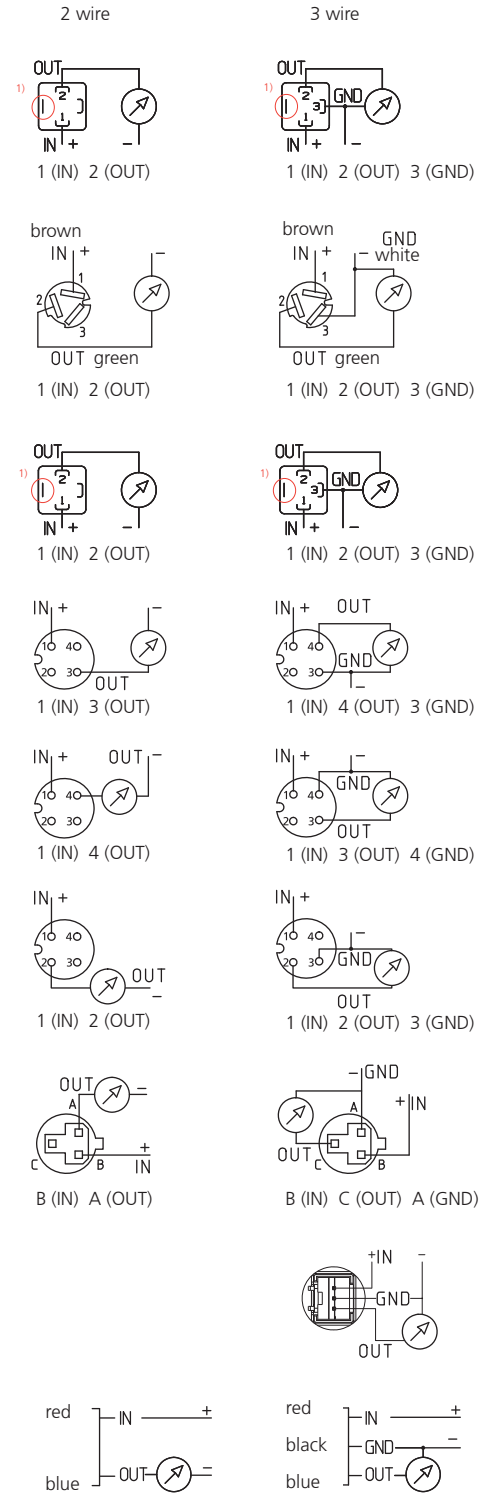
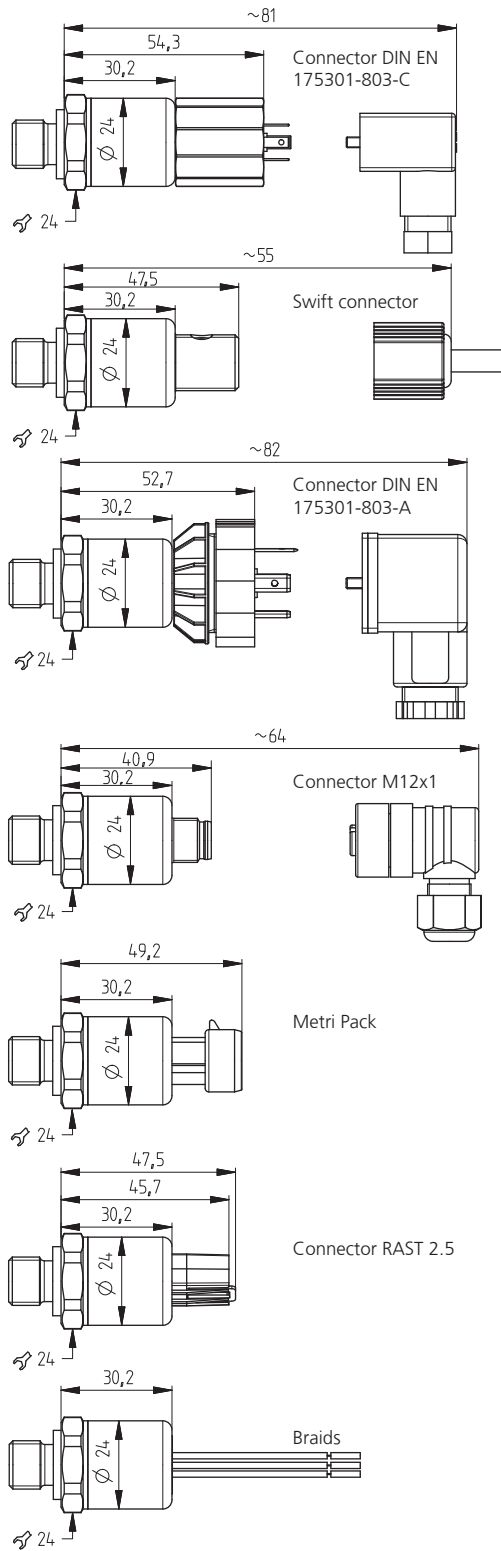
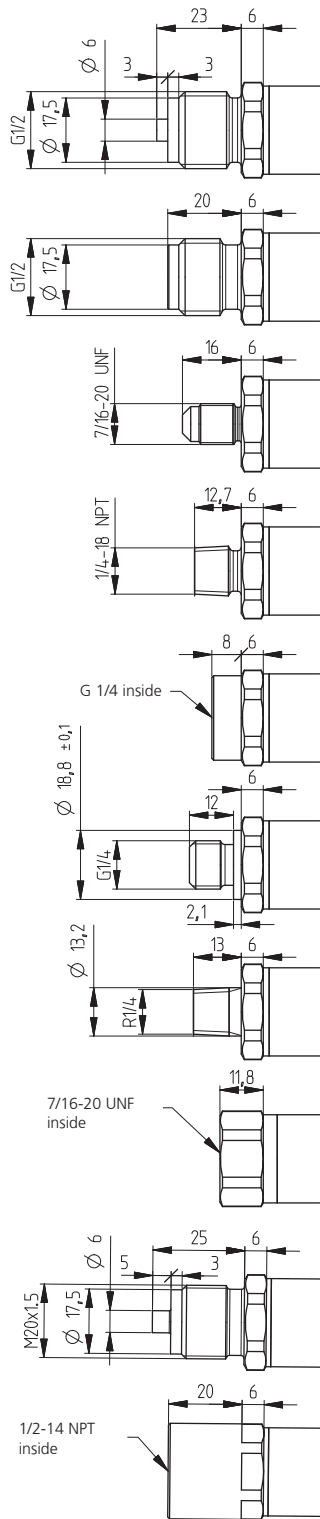
Order code selection in MPa			528.	X	X	X	X	X	X	X	X	X	X	X	X
Pressure range (relative) ¹⁾	-0.1 ... 0 MPa		9	G	0										
	0 ... 0.1 MPa		9	G	1										
	0 ... 0.16 MPa		9	G	2										
	0 ... 0.25 MPa		9	G	4	0									
	0 ... 0.4 MPa		9	G	5	0									
	0 ... 0.6 MPa		9	G	7	0									
	0 ... 1 MPa		9	H	0	0									
	0 ... 1.6 MPa		9	H	1	0									
	0 ... 2.5 MPa		9	H	2	0									
	0 ... 4 MPa		9	H	3	0									
	0 ... 6 MPa		9	K	0	0									
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								
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	24 VAC ±15% (not possible with M12x1 connector 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				
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				
Pressure connection ¹⁾	Inside thread	G ¼ with O-Ring seal FPM spec. (-30 ... +135 °C)												1	
	Inside thread	7/16-20 UNF												K	
	Inside thread	½ -14 NPT												D	
	Outside thread	7/16-20 UNF												2	
	Outside thread	¼ -18 NPT												3	
	Outside thread	G ¼ sealed at back DIN 3852 form E with Profile seal ring in FPM spec. (-30 ... +135 °C)												4	
	Outside thread	R ¼ acc. to DIN 2999												7	
	Outside thread	G ½ sealed at back and manometer (combi) with Profile seal ring in FPM spec. (-30 ... +135 °C)												8	
	Outside thread	G ½ sealed at front												9	
	Outside thread	M20x1.5 ²⁾												E	
Version	without pressure tip orifice													1	1
	with pressure tip orifice ²⁾													2	1
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 0.3MPa/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
Female connector 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 ≤ 1.6 MPa only possible if deaeration through the cable is assured



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)
 Connector M12x1 (Ex)



1 (IN) 2 (OUT) 1 (IN) 3 (OUT) 4 (GND)

¹⁾ Not connected with transmitter housing

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