

Relative and absolute pressure transmitter type 527 for shipbuilding

Pressure range
0 ... 1 – 60 bar



The compact type 527 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 and shipbuilding.

- Compact, rugged construction
- Negligible temperature influence on accuracy
- Certified for shipbuilding with:
 - Germanischer Lloyd
 - American Bureau of Shipping
 - Bureau Veritas
 - Det Norske Veritas
 - Lloyd's Register

Technical overview

Pressure range

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

Operating conditions

Medium	Liquids and gases	
Temperature	Medium	FPM -15 ... +125 °C (Ⓢ) -15 ... +120 °C
		EPDM -40 ... +125 °C (Ⓢ) -30 ... +120 °C
		NBR -20 ... +100 °C
	Ambient	-30 ... +85 °C (Ⓢ) -25 ... +85 °C
Tolerable overload / Rupture pressure	≤ 4 bar	3.0 x fs
	> 4 bar	2.5 x fs

Materials

Cover	Stainless steel 1.4404 / AISI 316L	
Plug accommodation	Polyarylamid 50% GF UL 94 V-0	
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

Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	7 ... 33 VDC	< $\frac{\text{supply voltage} - 7V}{0.02 A}$ [Ohm]	< 23 mA
	(Ⓢ) 4 ... 20 mA	10 ... 30 VDC	< $\frac{\text{supply voltage} - 10 V}{0.02 A}$ [Ohm]	< 23 mA
3 wire	0 ... 10 V	12 ... 33 VDC	> 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.			

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-A	IP 65
Swift connector, Connector M12x1	IP 67

Electrical connection

Swift connector with cable 1.5 m (PVC spec.)

Connector DIN EN 175301-803-A

Connector M12x1

Pressure connection

Inside thread	$\frac{7}{16}$ - 20 UNF	
	$\frac{1}{2}$ - 14 NPT	
Outside thread	$\frac{7}{16}$ - 20 UNF	
	$\frac{1}{4}$ - 18 NPT	
	G $\frac{3}{4}$	sealed at back DIN 3852-E with Profile seal ring in FPM (-30 ... +135 °C)
	G $\frac{1}{2}$	sealed at back and manometer (combi) with Profile seal ring in FPM (-30 ... +135 °C)
	M20x1.5	sealed at front and manometer (combi)
	G $\frac{1}{2}$	sealed at front

Installation arrangement

Unrestricted **Recommendation:** Pressure connection facing downwards

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
Shipbuilding	Germanischer Lloyd
	American Bureau of Shipping
	Bureau Veritas
	Det Norske Veritas Lloyd's Register

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; Ii = 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		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

¹⁾ typ. ; max. 0.5% fs (incl. zero point, full scale, linearity, hysteresis and repeatability) ²⁾ -15 ... 85 °C

		1	2	3	4	5	6	7	8	9	10	11	
Order code selection in bar		527. X X X X X X X X X X X X											
Pressure mode	Relative	9											
	Absolute	8											
Pressure range ¹⁾	0 ... 1 bar		1	1									
	0 ... 1.6 bar		1	2									
	0 ... 2.5 bar		1	4									
	0 ... 4 bar		1	5									
	0 ... 6 bar		1	7									
	0 ... 10 bar		3	0									
	0 ... 16 bar		3	1									
	0 ... 25 bar	9	3	2									
	0 ... 40 bar	9	3	3									
	0 ... 60 bar	9	4	0									
Sealing material	FPM Fluoro elastomer					0	0						
	EPDM Ethylene propylene					1	0						
	NBR Butadiene Acrylonitrile					2	0						
Output / power supply	0 ... 10 V 12 ... 33 VDC							2					
	4 ... 20 mA 7 ... 33 VDC							3					
	10 ... 30 VDC Ex protection							4	1,3				
Electrical connection	Connector	DIN EN 175301-803-A ²⁾								1			
	M12x1 ²⁾	2w: IN=1 / OUT=3	3w: IN=1 / OUT=4 / GND=3							3			
	M12x1 ²⁾	2w: IN=1 / OUT=4	3w: IN=1 / OUT=3 / GND=4							M			
	Swift connector with cable 1.5 m									L			
Pressure connection	Inside thread	1/16 - 20 UNF								K	1	1	
		1/2 - 14 NPT								D	1	1	
	Outside thread	1/16 - 20 UNF									2	1	1
		1/4 - 18 NPT									3	1	1
		G 1/4 sealed at back DIN 3852-E with Profile seal ring in FPM									4	1	1
		G 1/2 sealed at back and manometer with Profile seal ring in FPM									8	1	1
		M20x1.5 sealed at front and manometer (combi)									E	1	1
G 1/2 sealed at front									9	1	1		
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 3bar/OUT0...5V)												

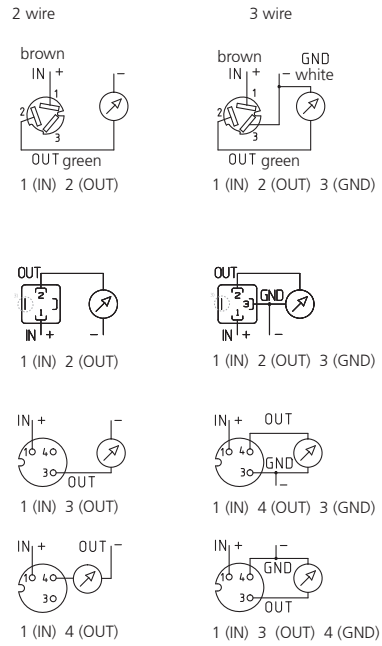
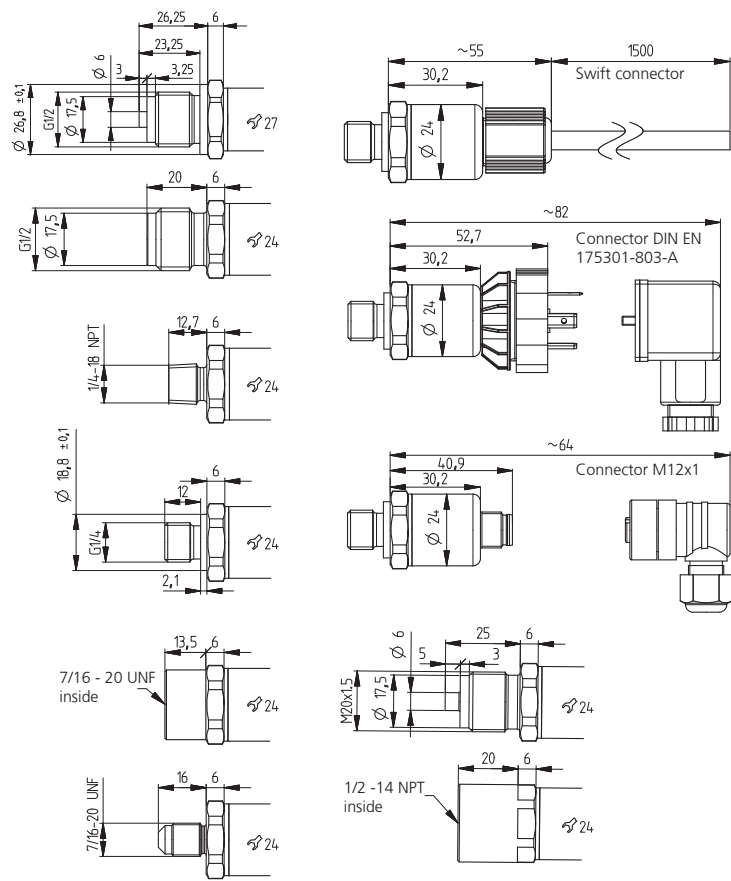
Accessories		Order number
Female connector DIN EN 175301-803-A with seal		103510
Corner-wire box for connector M12x1	3-pole	106975
Mounting bracket with screw		118716
Calibration certificate		104551

		1	2	3	4	5	6	7	8	9	10	11	
Order code selection in psi		527. X X X X X X X X X X X X											
Pressure mode	Relative	9											
	Absolute	8											
Pressure range ¹⁾	0 ... 15 psi		B	1									
	0 ... 20 psi		B	2									
	0 ... 30 psi		B	4									
	0 ... 60 psi		B	5									
	0 ... 100 psi		B	7									
	0 ... 150 psi		C	0									
	0 ... 200 psi		C	1									
	0 ... 300 psi	9	C	2									
	0 ... 500 psi	9	C	3									
	0 ... 750 psi	9	D	0									
Sealing material	FPM Fluoro elastomer					0	0						
	EPDM Ethylene propylene					1	0						
	NBR Butadiene Acrylonitrile					2	0						
Output / power supply	0 ... 10 V 12 ... 33 VDC							2					
	4 ... 20 mA 7 ... 33 VDC							3					
	10 ... 30 VDC Ex protection							4	1,3				
Electrical connection	Connector	DIN EN 175301-803-A ²⁾								1			
	M12x1 ²⁾	2w: IN=1 / OUT=3	3w: IN=1 / OUT=4 / GND=3							3			
	M12x1 ²⁾	2w: IN=1 / OUT=4	3w: IN=1 / OUT=3 / GND=4							M			
	Swift connector with cable 1.5 m									L			
Pressure connection	Inside thread	1/16 - 20 UNF								K	1	1	
		1/2 - 14 NPT								D	1	1	
	Outside thread	1/16 - 20 UNF									2	1	1
		1/4 - 18 NPT									3	1	1
		G 1/4 sealed at back DIN 3852-E with Profile seal ring in FPM									4	1	1
		G 1/2 sealed at back and manometer with Profile seal ring in FPM									8	1	1
		M20x1.5 sealed at front and manometer (combi)									E	1	1
G 1/2 sealed at front									9	1	1		
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 16psi/OUT0...5V)												

¹⁾ Other pressure ranges on request ²⁾ Delivery without female connector

Order code selection in MPa		1	2	3	4	5	6	7	8	9	10	11				
		527. X X X X X X X X X X X X														
Pressure mode	Relative	9														
	Absolute	8														
Pressure range ¹⁾	0 ... 0.1 MPa		G	1												
	0 ... 0.16 MPa		G	2												
	0 ... 0.25 MPa		G	4												
	0 ... 0.4 MPa		G	5												
	0 ... 0.6 MPa		G	7												
	0 ... 1 MPa		H	0												
	0 ... 1.6 MPa		H	1												
	0 ... 2.5 MPa	9	H	2												
	0 ... 4 MPa	9	H	3												
	0 ... 6 MPa	9	K	0												
Sealing material	FPM Fluoro elastomer				0	0										
	EPDM Ethylene propylene				1	0										
	NBR Butadiene Acrylonitrile				2	0										
Output / power supply	0 ... 10 V	12 ... 33 VDC						2								
	4 ... 20 mA	7 ... 33 VDC						3								
Electrical connection	Connector	DIN EN 175301-803-A ²⁾						4	1,3							
		M12x1 ²⁾ 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3								1						
	M12x1 ²⁾ 2w: IN=1 / OUT=4 3w: IN=1 / OUT=3 / GND=4									3						
	Swift connector with cable 1.5 m									M						
Pressure connection	Inside thread	7/16 - 20 UNF									K	1	1			
		1/2 - 14 NPT										D	1	1		
	Outside thread	7/16 - 20 UNF											2	1	1	
		1/4 - 18 NPT												3	1	1
		G 1/4 sealed at back DIN 3852-E with Profile seal ring in FPM												4	1	1
		G 1/2 sealed at back and manometer with Profile seal ring in FPM												8	1	1
M20x1.5 sealed at front and manometer (combi)												E	1	1		
G 1/2 sealed at front												9	1	1		
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 0.3MPa/OUT0...5V)															
															W	

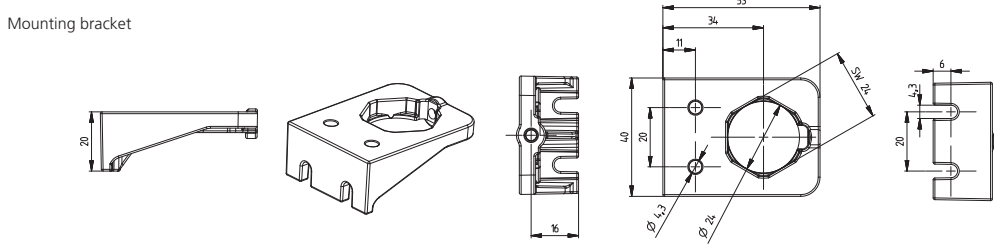
Dimensions in mm / Electrical connections



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

Connector M12x1



¹⁾ Other pressure ranges on request ²⁾ Delivery without female connector ³⁾ Not connected with transmitter housing

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