

## 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:
  - American Bureau of Shipping
  - Bureau Veritas
  - Det Norske Veritas Germanischer Lloyd
  - Lloyd's Register

## Technical overview

### Pressure range

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

### Operating conditions

Medium	Liquids and gases		
	Medium	FPM	-15 ... +125 °C (Ⓔ) -15 ... +120 °C
		EPDM	-40 ... +125 °C (Ⓔ) -30 ... +120 °C
		NBR	-20 ... +100 °C
Temperature	Ambient	-30 ... +85 °C (Ⓔ) -25 ... +85 °C	
	Storage	-50 ... +100 °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 <sub>2</sub> O <sub>3</sub> (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	< $\frac{\text{supply voltage} - 10V}{0.02 A}$ [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.			

### Dynamic response

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

### Electrical connection

Swift connector with or without cable 1.5 m (PVC spec.)	Protection standard	Protection class
Connector DIN EN 175301-803-A	IP 67	III
Connector M12x1	IP 65	III
	IP 67	III

### Pressure connection

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

### Installation arrangement

Unrestricted	<b>Recommendation:</b> Pressure connection facing downwards
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### 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 American Bureau of Shipping (ABS)
Shipbuilding	Bureau Veritas (BV)
	Det Norske Veritas Germanischer Lloyd (DNV GL)
	Lloyd's Register (LR)
EAC	

### Protection against explosion<sup>Ⓔ</sup>

Intrinsic safety «i» (with current output only)	4 ... 20 mA
EC type examination certificate	Ex II 1/2 G Ex ia IIC T4 Ga/Gb
	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
IECEX	Li = 0 nH; Ci = 0 nF SEV 16.0007

### 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 <sup>1)</sup>		% fs	± 0.3
Resolution		% fs	0.1
Thermal characteristic <sup>2)</sup>	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

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

Order code selection in bar		1	2	3	4	5	6	7	8	9	10	11				
		527.	X	X	X	X	X	X	X	X	X	X				
Pressure mode	Relative	9														
	Absolute	8														
Pressure range <sup>1)</sup>	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								
Electrical connection	Connector	10 ... 30 VDC Ex protection						4	1,3							
		DIN EN 175301-803-A <sup>2)</sup>							1							
		M12x1 <sup>2)</sup> 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3								3						
	M12x1 <sup>2)</sup> 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	<sup>7</sup> / <sub>16</sub> - 20 UNF								K	1	1				
		<sup>1</sup> / <sub>2</sub> - 14 NPT									D	1	1			
	Outside thread	<sup>7</sup> / <sub>16</sub> - 20 UNF										2	1	1		
		<sup>1</sup> / <sub>4</sub> - 18 NPT											3	1	1	
		G <sup>1</sup> / <sub>4</sub> sealed at back DIN 3852-E with Profile seal ring in FPM											4	1	1	
		G <sup>1</sup> / <sub>2</sub> sealed at back and manometer with Profile seal ring in FPM												8	1	1
		M20x1.5 sealed at front and manometer (combi)													E	1
G <sup>1</sup> / <sub>2</sub> sealed at front														9	1	1
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 3bar/OUT0...5V)															W

Order code selection in psi		1	2	3	4	5	6	7	8	9	10	11					
		527.	X	X	X	X	X	X	X	X	X	X					
Pressure mode	Relative	9															
	Absolute	8															
Pressure range <sup>1)</sup>	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									
Electrical connection	Connector	10 ... 30 VDC Ex protection						4	1,3								
		DIN EN 175301-803-A <sup>2)</sup>								1							
		M12x1 <sup>2)</sup> 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3									3						
	M12x1 <sup>2)</sup> 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	<sup>7</sup> / <sub>16</sub> - 20 UNF									K	1	1				
		<sup>1</sup> / <sub>2</sub> - 14 NPT										D	1	1			
	Outside thread	<sup>7</sup> / <sub>16</sub> - 20 UNF											2	1	1		
		<sup>1</sup> / <sub>4</sub> - 18 NPT												3	1	1	
		G <sup>1</sup> / <sub>4</sub> sealed at back DIN 3852-E with Profile seal ring in FPM												4	1	1	
		G <sup>1</sup> / <sub>2</sub> sealed at back and manometer with Profile seal ring in FPM													8	1	1
		M20x1.5 sealed at front and manometer (combi)														E	1
G <sup>1</sup> / <sub>2</sub> sealed at front															9	1	1
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 16psi/OUT0...5V)															W	

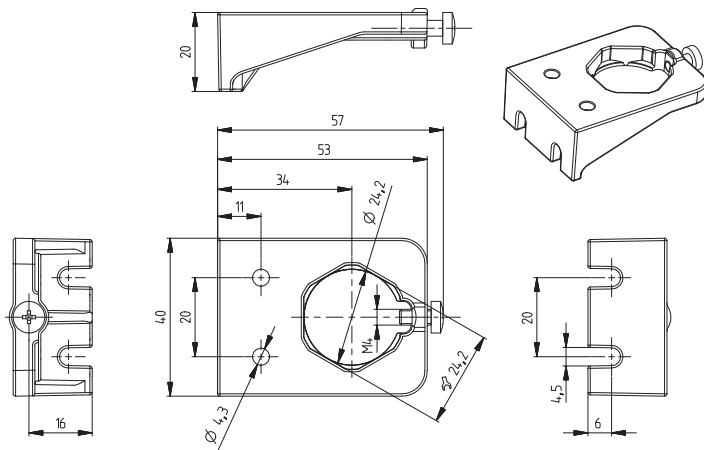
<sup>1)</sup> Other pressure ranges on request

<sup>2)</sup> Delivery without female connector

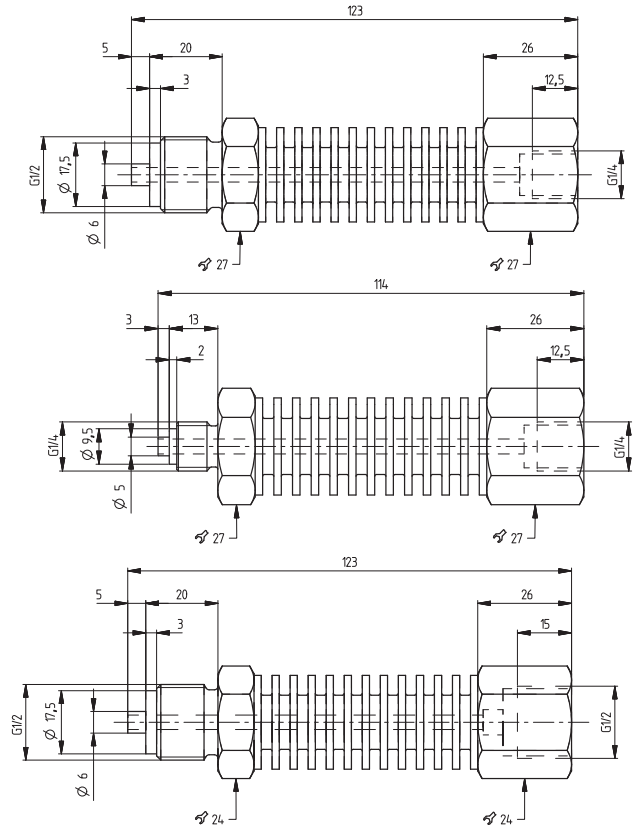
Order code selection in MPa		1	2	3	4	5	6	7	8	9	10	11	
		527. X X X X X X X X X X X X											
Pressure mode	Relative	9											
	Absolute	8											
Pressure range <sup>1)</sup>	0 ... 0.1 MPa		G	1									
	0 ... 0.16 MPa		G	2									
	0 ... 0.25 MPa		G	4									
	0 ... 0.4 MPa		G	5									
	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							4	1,3				
		DIN EN 175301-803-A <sup>2)</sup>							1				
		M12x1 <sup>2)</sup> 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3							3				
		M12x1 <sup>2)</sup> 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	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)												

Accessories (Accessories supplied loose)	Order number
Female connector DIN EN 175301-803-A with seal	103510
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
Heat sink with outside thread G 1/2 sealed at front - inside thread G 1/2	105631
Heat sink with outside thread G 1/2 sealed at front - inside thread G 1/4	105073
Heat sink with outside thread G 1/4 sealed at front - inside thread G 1/4	105074
Calibration certificate	104551

Mounting bracket

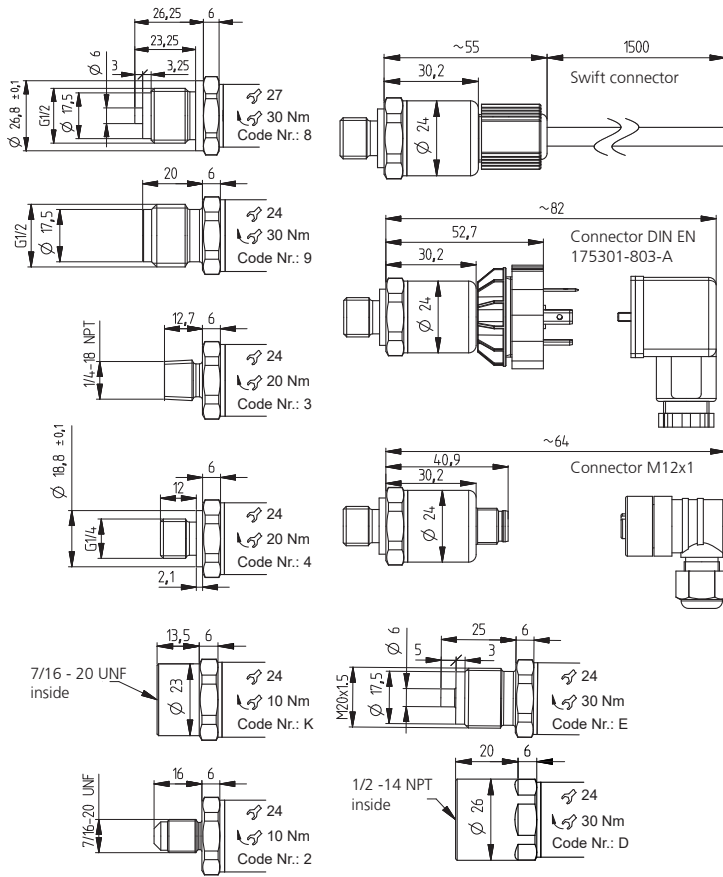


Heat sink

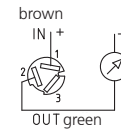


<sup>1)</sup> Other pressure ranges on request

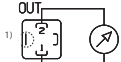
<sup>2)</sup> Delivery without female connector



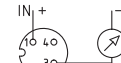
2 wire



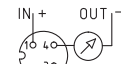
1 (IN) 2 (OUT)



1 (IN) 2 (OUT)

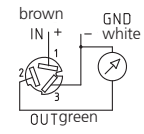


1 (IN) 3 (OUT)

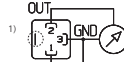


1 (IN) 4 (OUT)

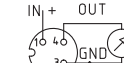
3 wire



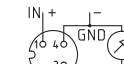
1 (IN) 2 (OUT) 3 (GND)



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



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



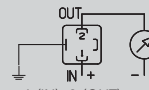
1 (IN) 3 (OUT) 4 (GND)



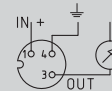
Device design with explosion protection: 4 ... 20 mA  
The grounding connection is conductively connected to the transmitter housing.

Connector DIN EN 175301-803-A

Connector M12x1



1 (IN) 2 (OUT) ↓



1 (IN) 3 (OUT) 4 (↓)

<sup>1)</sup> Not connected with transmitter housing

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