



Pressure switch

## Pressure Transmitter with display and programmable switching outputs

### Type 548

The  $\mu$ P-regulated, programmable pressure transmitter type 548 has a robust industry design. The parameters are easily adjustable with two function keys in the configuration menu which disposes of up to two programmable switching points.

All systems are equipped with a diagnostic function. The large 4 digit LED display assures a good accuracy of reading.

The pressure transmitter type 548 is based upon the well proven ceramic technology developed by Huba Control over 20 years ago.



**Pressure range**  
**-1 ... 0 – 40 bar**

- + Compact, rugged construction
- + High over pressure
- + Clearly readable display
- + Sensitive operation keys
- + Diagnostic function
- + with analogue signal available
- + by up to 2 programmable switching outputs

## Technical overview

### Pressure range

Relative -1 ... 0 bar / 0 ... 40 bar

### Operating conditions

Medium		Liquids and gases
Temperature	Medium / ambient	-20 ... +80 °C
	Storage	-40 ... +80 °C
Overload / Rupture pressure	≤ 10 bar	4.0 x FS
	> 10 bar	3.5 x FS

### Materials

Case		Polyarylamid 50% GF black
Materials in contact with medium	Sensor	ceramic Al <sub>2</sub> O <sub>3</sub> (96%)
	Pressure connection	Stainless steel 1.4404 / AISI 316L
	Sealing material	FPM

### Electrical overview

Output	0 ... 10 V	
	4 ... 20 mA	Switching output for max. 250 mA, contact NO or contact NC
Power supply		17 ... 33 VDC
Load	0 ... 10 V	> 10 kOhm
	4 ... 20 mA	< 500 Ohm
Current consumption		max. 50 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	≤ 5 ms
Load cycle	< 100 Hz

### Displays (rotatable by 180°)

7 Segment LED, 4 digits for the indication of pressure measuring values and parameter values.  
Point-LED for state indication of switching points.  
Point-LED for indication of programmed measuring unit.

### Programming

All settings can made in unpressurised state or during the operation. Ex works with standard setting.

**Analogue output:** characteristic line adjustable of 75 ... 125% FS

Digital output: Measuring range

rising pressure 8 ... 100% fs

falling pressure 5 ... 97% fs

P or N-switching, open-close-contact, rise delay time eligible Rise delay time 0 – 50 s, Switch off delay time 0 – 50 s, Response time 5 ... 500 ms.

### Diagnostic function

Manual operation with keyboard: Test of sensor circuit and of ceramic cell. Version available with diagnostic function.

Version with diagnostic input (shunt-cal): feed-back with 50% fs signal 12 mA or 5 V.

### Electrical connection

Connector M12x1 Protection standard P 65 and IP 67 acc. IEC 60529 Protection class III

### Pressure connection

Inside thread	G 1/4	with O-Ring sealing FPM
	7/16 - 20 UNF	sealed at front SAE J1926-1, ISO 11926-1
Outside thread	1/4 -18 NPT	
	1/4 -18 NPT	
	G 1/4	sealed at back DIN EN ISO 1179-2 with profile seal ring FPM
	R 1/4	EN 10226
	7/16 - 20 UNF	sealing cone 45°

### Installation arrangement

Unrestricted (Electrical connection not recommended down)

### Tests / Admissions

Electromagnetic compatibility	CE conformity acc. EN 61326-2-3
UL acc. 61010-1	
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)
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
Drinking water approval	NSF/ANSI 61/372 acc. MH60087
EAC	

### Weight

~ 120 g

### Packaging

Single packaging in cardboard

## Accuracy

### Parameter

### Unit

Characteristic line <sup>1)</sup>	% FS	± 1.0
Thermal characteristic <sup>2)</sup>	max. % FS/10K	± 0.65
Long term stability acc. IEC EN 60770-1	max. % FS	± 0.3

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

<sup>1)</sup> typical; (incl. zero point, full scale, linearity, hysteresis and repeatability)

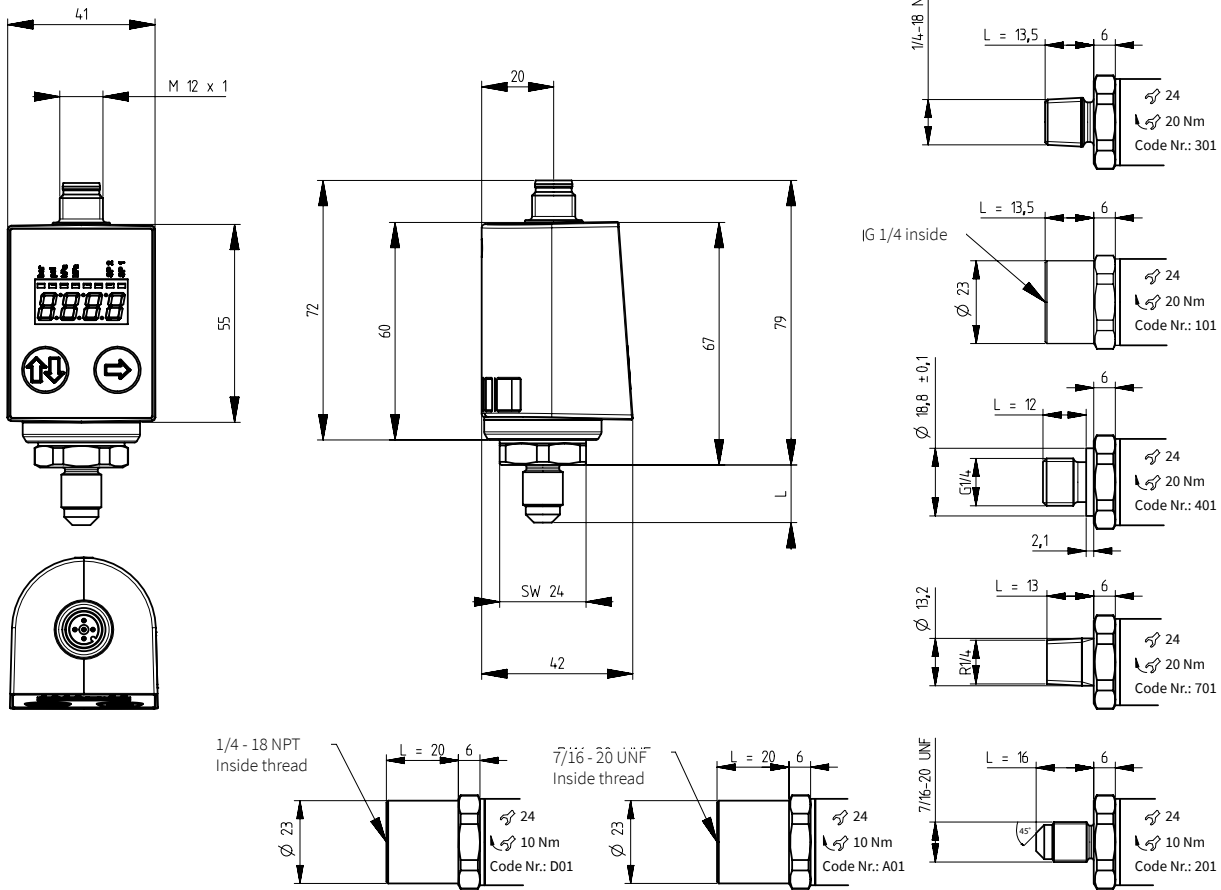
<sup>2)</sup> -15 ... 85 °C

Order code selection table					1	2	3	4	5	6	7	8	9	10		
					548.	X	X	X	X	X	X	X	X	X		
Pressure range <sup>1)</sup> (adjustment in bar)	bar	psi	kPa	MPa												
	-1 ... 0	-14.5 ... 0.00	-100 ... 0		9	0	1	0								
	0 ... 1	0 ... 14.50	0 ... 100		9	1	1	0								
	0 ... 2.5	0 ... 36.25	0 ... 250		9	1	4	0								
	0 ... 6	0 ... 87.00	0 ... 600		9	1	7	0								
	0 ... 10	0 ... 145.00	0 ... 1000	0 ... 1.00	9	3	0	0								
	0 ... 16	0 ... 232.00	0 ... 1600	0 ... 1.60	9	3	1	0								
	0 ... 25	0 ... 362.50	0 ... 2500	0 ... 2.50	9	3	2	0								
0 ... 40	0 ... 580.00	0 ... 4000	0 ... 4.00	9	3	3	0									
Pressure range <sup>1)</sup> (adjustment in psi)	psi	bar	kPa	MPa												
	-14.5 ... 0	-1 ... 0.00	-100 ... 0		9	A	1	0								
	0 ... 15	0 ... 1.03	0 ... 103		9	B	1	0								
	0 ... 30	0 ... 2.07	0 ... 207		9	B	4	0								
	0 ... 100	0 ... 6.90	0 ... 690		9	B	7	0								
	0 ... 145	0 ... 10.00	0 ... 1000	0 ... 1.03	9	C	0	0								
	0 ... 200	0 ... 13.79	0 ... 1379	0 ... 1.38	9	C	1	0								
	0 ... 300	0 ... 20.69	0 ... 2069	0 ... 2.07	9	C	2	0								
0 ... 500	0 ... 34.48	0 ... 3448	0 ... 3.45	9	C	3	0									
Pressure indication	bar								0							
	psi								1							
	kPa								2							
	MPa								3							
Output	1 analogue output	4 ... 20 mA	diagnostic input						0	0						
		0 ... 10 V	diagnostic input						1	0						
	2 digital outputs	4 ... 20 mA	1 digital output						2	1,2						
		0 ... 10 V	1 digital output						3	1,2						
	2 digital outputs	4 ... 20 mA	1 analogue output						4	1,2						
		0 ... 10 V	1 analogue output						5	1,2						
Electrical connection <sup>2)</sup>	M12x1 without digital output								6	1,2						
	M12x1 NPN									0						
	M12x1 PNP									1						
Pressure connection	Inside thread	<sup>7</sup> / <sub>16</sub> -20 UNF sealed at front SAE J1926-1, ISO 11926-1									A	0	1			
		G ¼ with O-ring sealing FPM										1	0	1		
		¼ -18 NPT											D	0	1	
	Outside thread	<sup>7</sup> / <sub>16</sub> -20 UNF sealing cone											2	0	1	
		¼ -18 NPT											3	0	1	
		G ¼ sealed at back DIN EN ISO 1179-2 with profile seal ring FPM											4	0	1	
	R ¼ acc. EN 10226											7	0	1		

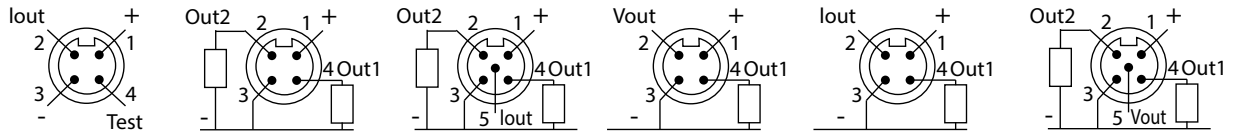
Accessories <i>(supplied loose)</i>	Order Number
Mounting bracket with screw	118716
Heat sink with outside thread G ½ - inside thread G ¼	105073
Heat sink with outside thread G ¼ - inside thread G ¼	105074
Straight-wire box for connector M12x1 with cable	114564
Straight-wire box for connector M12x1 with cable (with UL-admission)	118099
Calibration certificate (available for analogue output, only)	104551

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

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

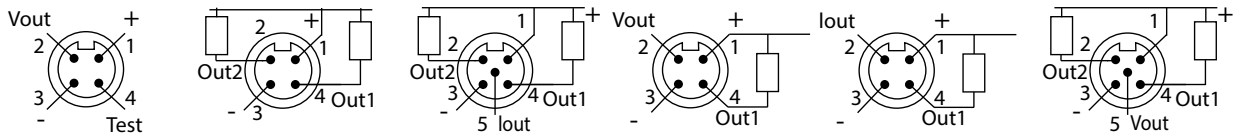


PNP

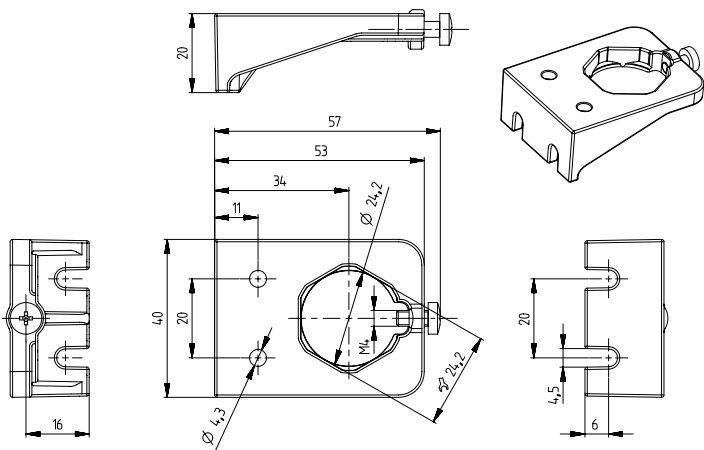


Pin	Colour
1	brown
2	white
3	blue
4	black
5	grey

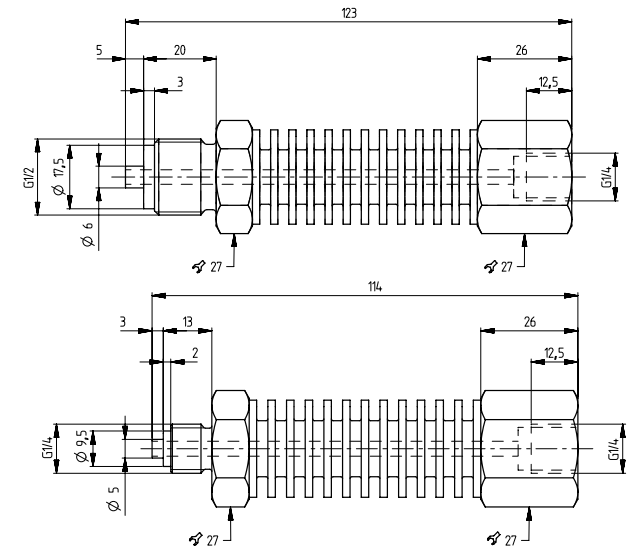
NPN



Mounting bracket



Heat sink



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