

## Electronic pressure switch type 548

Pressure range  
-1 ... 0 – 40 bar



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

- 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. 200 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.	
Response time		≤ 5 ms

### Protection class

Protection class III

### 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.

### Protection standard

IP 65 and IP 67 acc. IEC 60529

### Electrical connection

Connector M12x1

### Pressure connection

Inside thread	G ¼	with O-Ring sealing FPM spec.
	7/16 - 20 SAE	
	¼ -18 NPT	
Outside thread	¼ -18 NPT	sealed at back DIN 3852 Form E with profile seal ring FPM spec.
	G ¼	
	R ¼	
	7/16 - 20 UNF	

### 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

### 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



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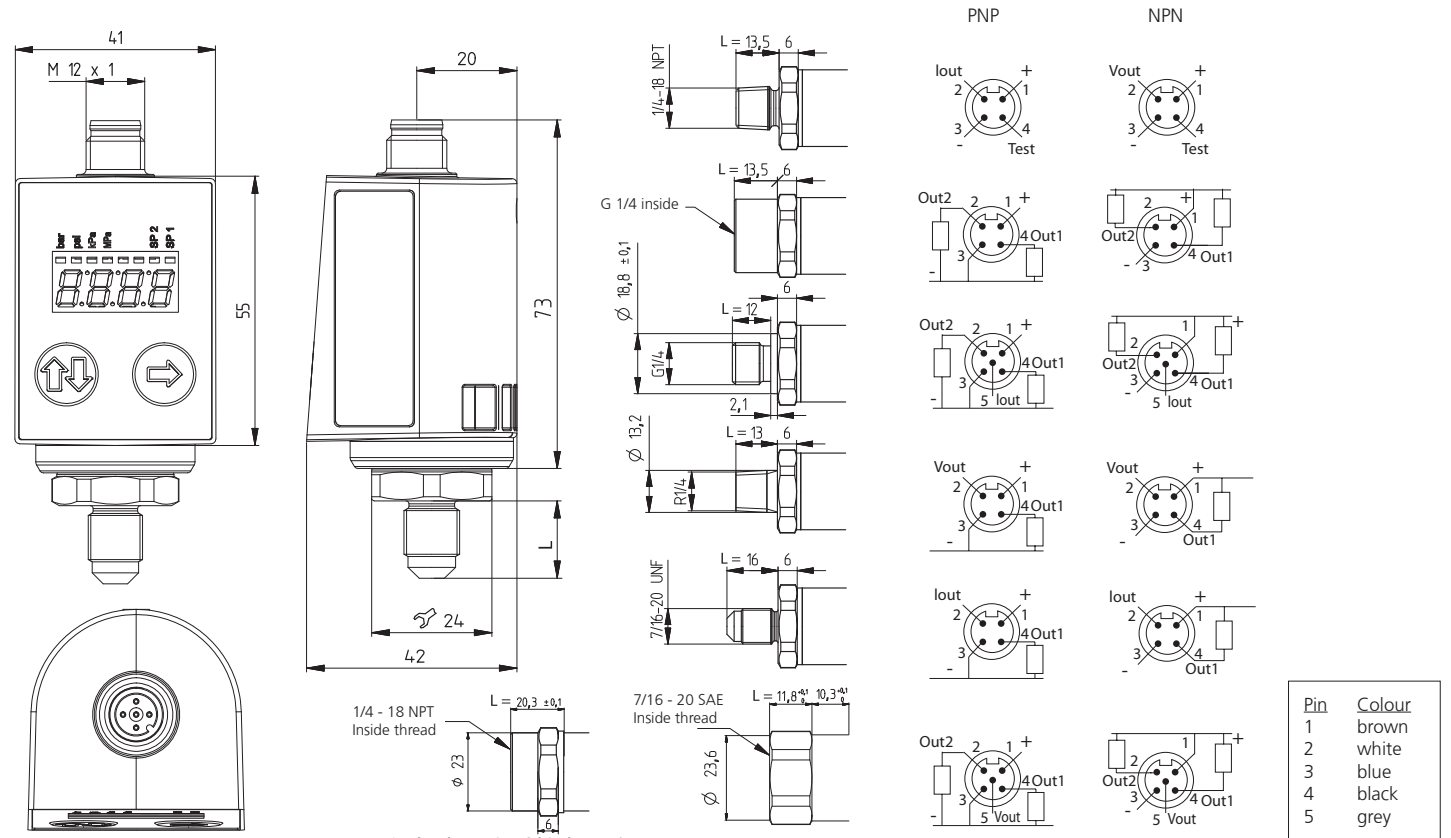
<sup>1)</sup> typical; (incl. zero point, full scale, linearity, hysteresis and repeatability)

<sup>2)</sup> -15 ... 85 °C

					1	2	3	4	5	6	7	8	9	10	
<b>Order code selection table</b>					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	-100 ... 0	-0.1 ... 0	9	0	1	0							
	0 ... 1	0 ... 14.5	0 ... 100	0 ... 0.1	9	1	1	0							
	0 ... 2.5	0 ... 36.25	0 ... 250	0 ... 0.25	9	1	4	0							
	0 ... 6.0	0 ... 87	0 ... 600	0 ... 6.0	9	1	7	0							
	0 ... 10	0 ... 145	0 ... 1000	0 ... 1.0	9	3	0	0							
	0 ... 16	0 ... 232	0 ... 1600	0 ... 1.6	9	3	1	0							
	0 ... 25	0 ... 362.5	0 ... 2500	0 ... 2.5	9	3	2	0							
0 ... 40	0 ... 580	0 ... 4000	0 ... 4.0	9	3	3	0								
Pressure range <sup>1)</sup> (adjustment in psi)	psi	bar	kPa	MPa											
	-14.5 ... 0	-1 ... 0.00	-100 ... 0	-0.1 ... 0.00	9	A	1	0							
	0 ... 15	0 ... 1.03	0 ... 103	0 ... 0.10	9	B	1	0							
	0 ... 30	0 ... 2.07	0 ... 207	0 ... 0.21	9	B	4	0							
	0 ... 100	0 ... 6.90	0 ... 690	0 ... 0.69	9	B	7	0							
	0 ... 145	0 ... 10.00	0 ... 1000	0 ... 1.00	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	factory calibration in bar										0			
	psi	factory calibration in bar										1			
	kPa	factory calibration in bar										2			
	MPa	factory calibration in bar										3			
Output	1 analogue output	4 ... 20 mA	diagnostic input									0	0		
	1 analogue output	0 ... 10 V	diagnostic input									1	0		
	1 analogue output	4 ... 20 mA	1 digital output									2	1,2		
	1 analogue output	0 ... 10 V	1 digital output									3	1,2		
	2 digital outputs											4	1,2		
	2 digital outputs	4 ... 20 mA	1 analogue output									5	1,2		
2 digital outputs	0 ... 10 V	1 analogue output									6	1,2			
Electrical connection <sup>2)</sup>	M12x1 without digital output											0			
	M12x1 NPN											1			
	M12x1 PNP											2			
Pressure connection	Inside thread	7/16 -20 SAE											A	0 1	
	Inside thread	G 1/4 with O-ring sealing FPM spez.											1	0 1	
	Inside thread	1/4 -18 NPT											D	0 1	
	Outside thread	7/16 -20 UNF												2	0 1
	Outside thread	1/4 -18 NPT												3	0 1
	Outside thread	G 1/4 sealed at back DIN 3852 Form E, with profile seal ring FPM spez.												4	0 1
	Outside thread	R 1/4 acc. DIN 2999												7	0 1

Accessories <sup>3)</sup>				Order Number
Straight-wire box for connector M12x1 with cable <sup>4)</sup>	5-pole	200 cm		114564
Calibration certificate (available for analogue output, only)				104551

**Dimensions in mm / Electrical connections**



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<sup>1)</sup> Other pressure on request <sup>2)</sup> Delivery without female connector <sup>3)</sup> Accessories supplied loose <sup>4)</sup> without UL-Listing; Cable with UL-Listing on request