



Pressure switch

# Huba Control

## Pressure Transmitter with display and programmable switching outputs

### Type 540

The  $\mu$ P-regulated, programmable pressure transmitter type 540 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 540 is based upon the Huba Control developed thick film technology where the pressure measuring cell is fully welded.



**Pressure range**  
**0 ... 60 – 600 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 0 ... 60 – 600 bar

### Operating conditions

Medium		Liquids and gases
Temperature	Medium / Ambient	-20 ... +80 °C
	Storage	-40 ... +80 °C
Overload		3 x fs (max. 1500 bar)
Rupture pressure		6 x fs (max. 2500 bar)

### Materials

Case		Polyarylamid 50% GF black
Materials in contact with medium	Sensor	Stainless steel
	Pressure connection	Stainless steel 1.4404 / AISI 316L

### Electrical overview

Output	0 ... 10 V	
	4 ... 20 mA	Open-collector 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 be 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 stainless steel 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	Protection standard	Protection class
Connector M12x1	IP 65 and IP 67 acc. IEC 60529	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
	1/4 -18 NPT	
Outside thread	1/4 -18 NPT	
	G 1/4	sealed at back DIN 3852-E 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	WRAS

### 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)

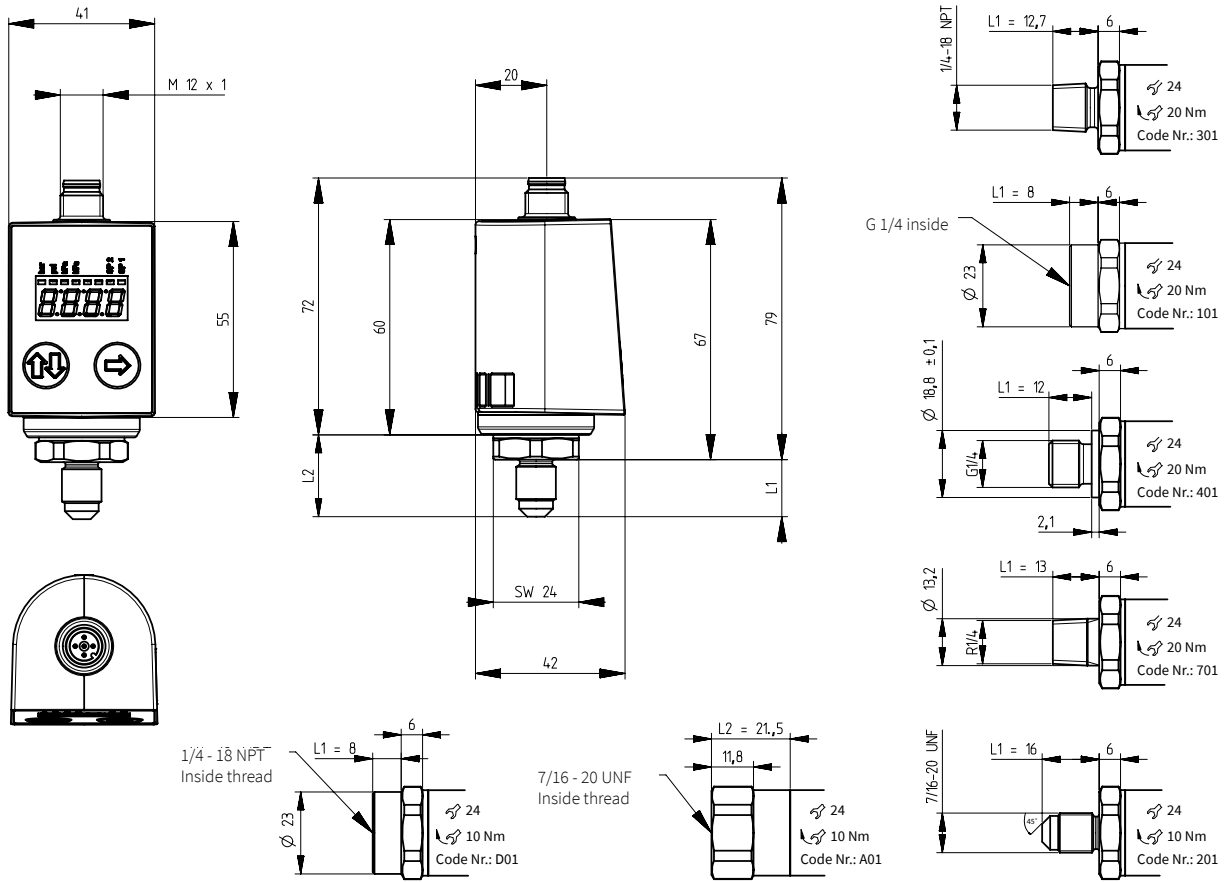
<sup>2)</sup> -15 ... 85 °C

Order code selection table					1	2	3	4	5	6	7	8	9	10
					540.	X	X	X	X	X	X	X	X	X
<b>Pressure range <sup>1)</sup></b> <b>(adjustment in bar)</b>	bar	psi	kPa	MPa										
	0 ... 60	0 ... 870	0 ... 100	0 ... 6	9	4	0	S						
	0 ... 100	0 ... 1450		0 ... 10	9	4	1	S						
	0 ... 160	0 ... 2320		0 ... 16	9	4	2	S						
	0 ... 250	0 ... 3625		0 ... 25	9	4	3	S						
	0 ... 400	0 ... 5800		0 ... 40	9	5	4	S						
0 ... 600	0 ... 8700		0 ... 60	9	5	5	S							
<b>Pressure range <sup>1)</sup></b> <b>(adjustment in psi)</b>	psi	bar	kPa	MPa										
	0 ... 750	0 ... 52	0 ... 5172	0 ... 5.17	9	D	0	S						
	0 ... 1000	0 ... 69	0 ... 6897	0 ... 6.90	9	D	1	S						
	0 ... 2000	0 ... 138		0 ... 13.79	9	D	2	S						
	0 ... 3000	0 ... 207		0 ... 20.69	9	D	3	S						
	0 ... 5000	0 ... 345		0 ... 34.48	9	E	4	S						
0 ... 7500	0 ... 517		0 ... 51.72	9	E	5	S							
<b>Pressure indication</b>	bar								0					
	psi								1					
	MPa								3					
<b>Output</b>	1 analogue output	4 ... 20 mA	diagnostic input						0	0				
		0 ... 10 V	diagnostic input						1	0				
		4 ... 20 mA	1 digital output						2	1,2				
		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				
	0 ... 10 V	1 analogue output							6	1,2				
<b>Electrical connection <sup>2)</sup></b>	M12x1 without digital output									0				
	M12x1 NPN									1				
	M12x1 PNP									2				
<b>Pressure connection</b>	Inside thread	7/16 -20 UNF sealed at front SAE J1926-1, ISO 11926-1									A	0	1	
		G 1/4 with O-ring sealing FPM									1	0	1	
		1/4 -18 NPT										D	0	1
	Outside thread	7/16 -20 UNF sealing cone										2	0	1
		1/4 -18 NPT										3	0	1
		G 1/4 sealed at back DIN 3852-E with profile seal ring FPM										4	0	1
	R 1/4 acc. EN 10226										7	0	1	

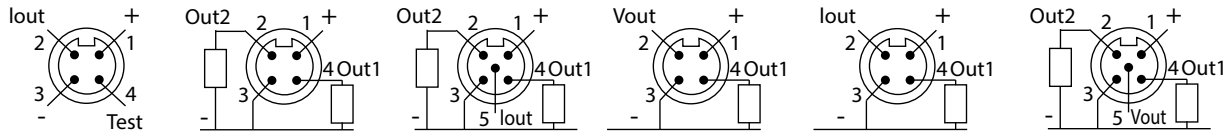
Accessories (supplied loose)				Order Number
Mounting bracket with screw				118716
Heat sink with outside thread G 1/2 - inside thread G 1/4				105073
Heat sink with outside thread G 1/4 - inside thread G 1/4				105074
Straight-wire box for connector M12x1 with cable		5-pole	200 cm	114564
Straight-wire box for connector M12x1 with cable (with UL-admission)		5-pole	200 cm	118099
Calibration certificate (available for analogue output, only)				104551

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

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

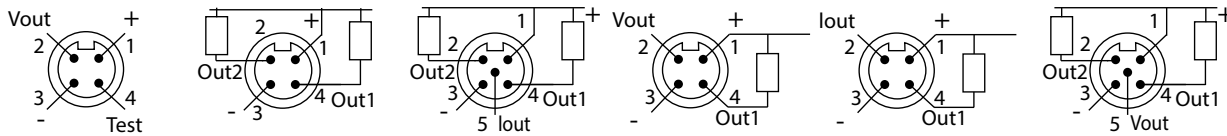


PNP

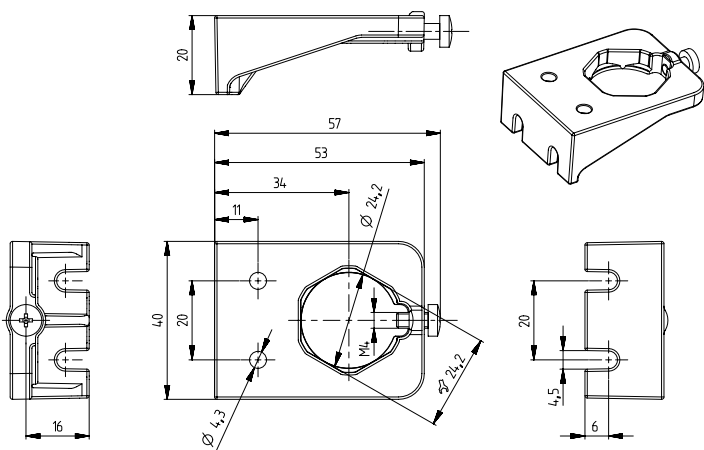


Pin	Colour
1	brown
2	white
3	blue
4	black
5	grey

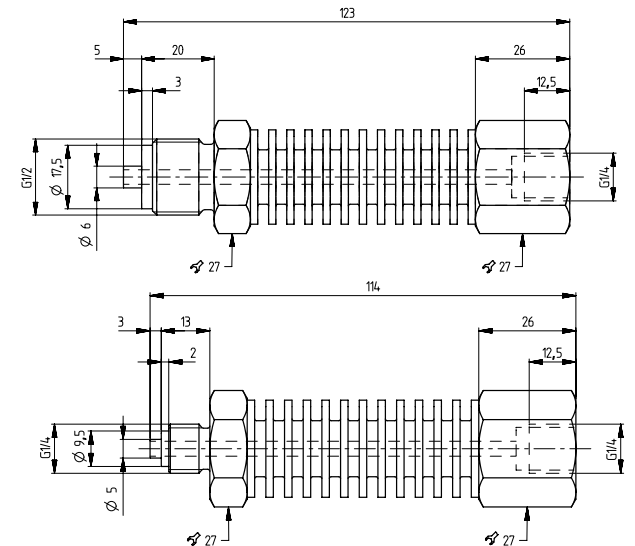
NPN



Mounting bracket



Heat sink



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