Pressure transmitter

Huba Control

Relative pressure transmitter for hydrogen applications

Type 555



The pressure transmitter type 555 has been developed for alternative drive systems. This high-pressure transmitter is suitable for vehicles and stationary applications thanks to the hydrogen approval acc. EC79.
This transmitter is available with protection standard IP 67 or IP 69K.

The compact and rugged design meets the requirement of shock- and vibration stability according to the road vehicle standards ISO 16750.

The measuring cell is based upon the Huba Control developed thick film technology on stainless steel and is fully hermetically welded.

Pressure range

0 ... 10 – 900 bar

+ Suitable for gaseous hydrogen
+ Compact and rugged construction for highest operational reliability
+ Welded without sealing parts, no elastomer seals
+ Excellent EMC capacity
+ Negligible temperature influence on accuracy

Technical Overview

Pressure range

Relative	0 ... 10 – 900 bar

Operating conditions

Medium		Gaseous hydrogen
Temperature	Medium	-40 ... +85 °C
	Ambient	-40 ... +85 °C
	Storage	-50 ... +100 °C
Tolerable overload	acc. order code selection table	
Rupture pressure	acc. order code selection table	

Materials

Case		Stainless steel 1.4404 / AISI 316 L
Plug accommodation		Polyarylamide 50%GF UL 94 V-0
Materials in contact with the medium	Pressure connection	Stainless steel 1.4404 / AISI 316 L
	Sensor	Stainless steel 1.4435

Electrical overview

	Output	Power supply	Load	Current consumption
2 wire	4 ... 20 mA	7.5 ... 33 VDC	$< \frac{\text{Power supply - 7.5 V}}{0.02\ A}$ [Ohm]	< 23 mA
3 wire	0 ... 5 V	7 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	12 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	ratiom. 10 ... 90%	5 VDC ± 10%	>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.			
Insulation voltage				500 VDC

Dynamic response

Response time	< 2 ms (10 ... 90%, typ. 1 ms)
Load cycle	< 100 Hz

Elektrical connection [1]	**Protection standard**	**Protection class**
Kostal SLK 2.8 coding A	IP 69K	III
AMP-JPT	IP 67	III
AMP Superseal 1.5	IP 67	III
Deutsch DT04-3P	IP 69K	III
Deutsch DT04-4P	IP 69K	III
Metri Pack 150 P2S Series	IP 67	III
M12x1	IP 69K	III

Pressure connection

Inside thread	$^{7}/_{16}$ - 20 UNF, Autoclave SF250CX
Outside thread	$^{7}/_{16}$ - 20 UNF-2A, ISO 11926-1, SAE 4 with O-Ring seal
	$^{3}/_{8}$ - 24 UNF-2A, ISO 11926-1, SAE 3 with O-Ring seal
	$^{9}/_{16}$ - 18 UNF-2A, ISO 8434 with O-Ring seal
	¼ - 18 NPT
	G ¼ B, DIN EN 837 Manometer

Installation arrangement

Unrestricted

Tests / Admissions

	Noise immunity / Noise emission	Noise immunity automotive guideline
Electromagnetic compatibility	IISO 13766 - earth-moving equipment	ISO 11452-2, HF (Field), 100 V/m (200 ... 2000 MHz)
	DIN EN 13309 - construction equipment	ISO 11452-4, HF (BCI), 100 mA (20 ... 400 MHz)
	DIN ISO 14982 - agriculture and forestry	ISO 10605, ESD, ±15 kV contact, ±15 kV air
	Automotive guideline ECE R10	ISO 7637-2 [2], puls 1, 2a, 2b, 3a, 3b (test level 4)
	Automotive guideline 2004/104/EG	ISO 16750-2, Load Dump, 155 V (1 Ω, 300 ms)
	EN 61326-2-3 - pressure transducer [3]	
	EN 12895:2015 - industrial trucks	
	CISPR11	
Shock acc. ISO 16750-3		50 *g*, 11 ms, half sine wave, 1000x / axis
Vibration acc. ISO 16750-3		Test VI (12 g, sinusodial 18 g random vibration)
EAC		
EC79/2009		

Weight

~ 90 g

Packaging (Please state on order)

Single packaging in cardboard	accessories integrated
Multiple packaging in cardboard (25 pcs)	

[1] Warranty of IP protection only with suitable classified plug (consider manufacturers' instructions)

[2] Pressure sensor for 12 V and 24 V power system (0 ... 5 V, 0 ... 10 V and 4 ... 20 mA)

[3] types M12x1 only

Accuracy

Parameter	Unit	
Characteristic line acc. IEC 61298-2 [1), 2)]	%fs	± 0.5
Resolution	%fs	0.1
Thermal characteristic [3)] max.	%fs/10K	± 0.2
Long termin stabilit (acc. IEC EN 60770-1)	%fs	± 0.3

Test conditions: 25 °C, 45% rF

Order code selection table in bar

555.	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X

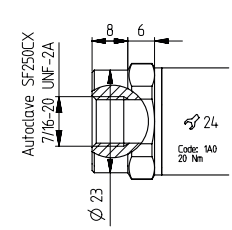
	P_{NWP}	P_{max} [5)]	P_{Berst}													
Pressure range [4)]	0 ... 10 bar	30 bar	60 bar			9	3	0	S	0						
	0 ... 16 bar	48 bar	96 bar			9	3	1	S	0						
	0 ... 25 bar	75 bar	150 bar			9	3	2	S	0						
	0 ... 40 bar	120 bar	240 bar			9	3	3	S	0						
	0 ... 60 bar	180 bar	240 bar			9	4	0	S	0						
	0 ... 100 bar	300 bar	600 bar			9	4	1	S	0						
	0 ... 160 bar	480 bar	960 bar			9	4	2	S	0						
	0 ... 250 bar	750 bar	1500 bar			9	4	3	S	0						
	0 ... 350 bar	1050 bar	2100 bar			9	5	3	S	0						
	0 ... 400 bar	1200 bar	2400 bar			9	5	4	S	0						
	0 ... 600 bar	1500 bar	2500 bar			9	5	5	S	0						
	0 ... 700 bar	1500 bar	2500 bar			9	5	6	S	0						
	0 ... 900 bar	1500 bar	2500 bar			9	5	9	S	0			1	A	O	
Output / power supply	0 ... 5 V	7 ... 33 VDC									1					
	0 ... 10 V	12 ... 33 VDC									2					
	4 ... 20 mA	7.5 ... 33 VDC									3					
	ratiom. 10 ... 90%	5 VDC ±10%									7					
Electrical connection [6)]	Kostal SLK 2.8 coding A			*3L:* IN=3 / OUT=1 / GND=2							7	1				
			2L: IN=3 / OUT=2	*3L:* IN=3 / OUT=2 / GND=1								A				
	AMP-JPT											2				
	AMP Superseal 1.5											3				
	Deutsch DT04-3P											4				
	Deutsch DT04-4P											Y				
	Metri Pack 150 P2S											5				
	M12x1		*2L:* IN=1 / OUT=3	*3L:* IN=1 / OUT=4 / GND=3								S				
			2L: IN=1 / OUT=4	*3L:* IN=1 / OUT=3 / GND=4								M				
Pressure connection	Inner thread		$^7/_{16}$-20 UNF	Autoclave SF250CX									1	A	0	
	Outside thread		$^7/_{16}$-20 UNF-2A, ISO 11926-1, SAE 4 with O-Ring seal										2	8	0	
			$^3/_8$ - 24 UNF-2A, ISO 11926-1, SAE 3 with O-Ring seal										1	G	0	
			$^9/_{16}$ - 18 UNF-2A, ISO 8434-3 with O-Ring seal										2	V	0	
			¼ - 18 NPT										1	R	0	
			G ¼ B, DIN EN 837 Manometer										1	T	0	
Pressure range variation (optional)	Indicate W and state range on order (e.g.: W0... + 50bar/Out 1 ... 8V)															W

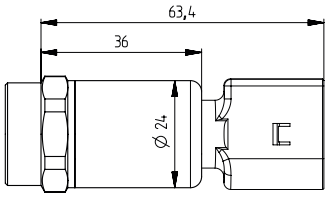
Accessories *(supplied loose)*

		Order Number
Corner-wire box for connector M12x1	3 wire	106975
Corner-wire box for connector M12x1 with cable	3 wire	114604
Straight-wire box for connector M12x1	3 wire	114570
Straight-wire box for connector M12x1 with cable	3 wire	114605
Set - Female connector Kostal SLK 2.8 coding A	2 wire (3 wire with 1 blanking plug)	120369
Set - Female connector Kostal SLK 2.8 coding A	3 wire	120368
Set - Female connector AMP JPT	2 wire (3 wire with 1 blanking plug)	110442
Set - Female connector AMP JPT	3 wire	108767
Set - Female connector AMP Superseal 1.5 (0.5 - 1.0 mm^2)	3 wire (1 Blanking Plug to enable 2 wire)	120254
Set - Female connector AMP Superseal 1.5 (1.0 - 1.5 mm^2)	3 wire (1 Blanking Plug to enable 2 wire)	120255
Set - Female connector Metri Pack 150 P2S Series	3 wire	120345
Calibration certificate (< 600 bar)		104551

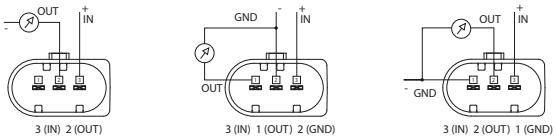
[1)] incl. zero point, full scale, linearity, hysteresis and repeatability
[2)] Considering EMC interference < ±1.5% fs
[3)] -40 ... +85 °C
[4)] pressure range corresponds to the output signal range
[5)] to comply with EC79:2009, only use up to a PMAX=PNWP x 1.25
[6)] Delivery without female connector

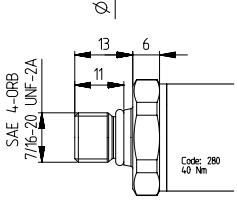
Dimensions in mm / Electrical connections

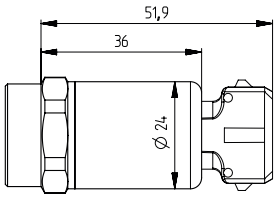




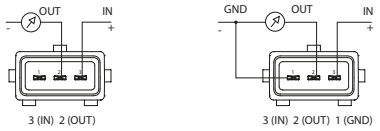
Kostal SLK 2.8

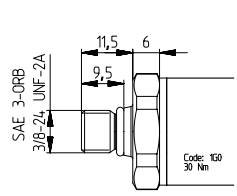


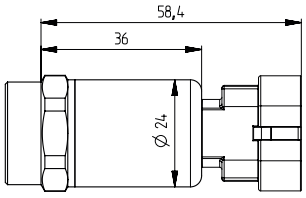




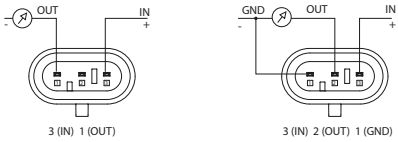
AMP JPT

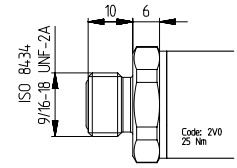


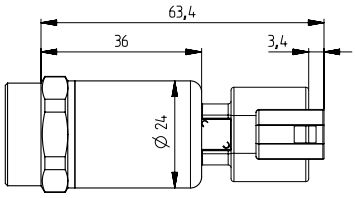




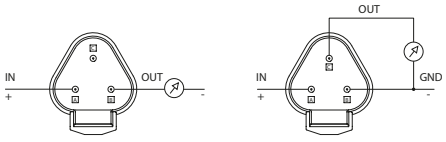
AMP Superseal 1.5

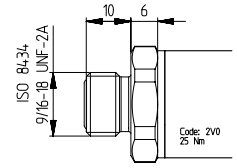


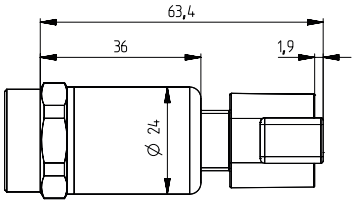




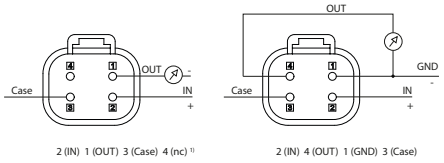
Deutsch DT04-3P

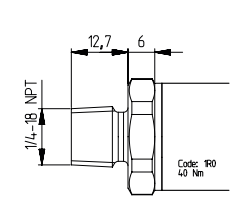


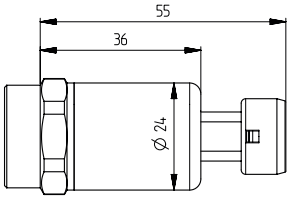




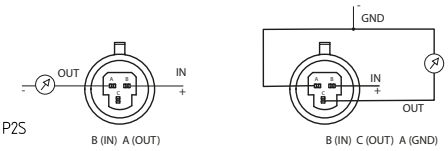
Deutsch DT04-4P

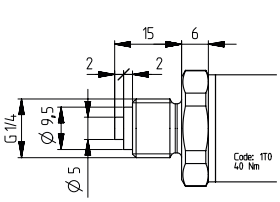


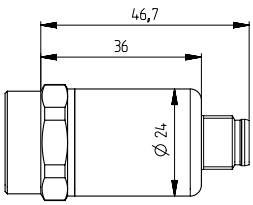




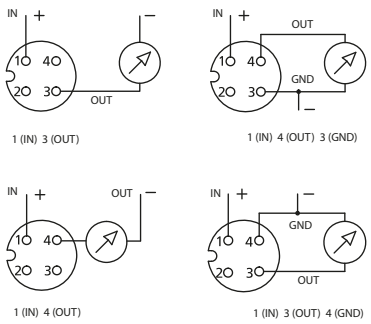
Metri Pack Series 150 P2S







M12x1



1) not connected

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