

Relative pressure transmitter type 512 for mobile hydraulic

Pressure range
0 ... 40 – 1000 bar



The pressure transmitter type 512 with cable connection meets the highest demands of industrial and mobil hydraulic applications. This sensor is available with protection standard IP 69K. The standard pressure orifice prevents damage due to pressure peaks.

The compact and rugged design meets the requirement of shock- and vibration stability according Kfz-norm ISO 16750. The pressure transmitter type 512 guarantees highest EMC stability according to various Kfz regulations with test level up to 100V/m.

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

- Compact and rugged construction for highest operational reliability
- Welded construction – no elastomer seals
- Negligible temperature influence on accuracy
- Excellent EMC-capacity
- Rugged PUR cable with IP 69K

Technical Overview

Pressure range				
Relative		0 ... 40 – 1000 bar		
Operating conditions				
Medium		Liquids and gases		
Temperature	Medium	-40 ... +125 °C		
	Ambient	-40 ... +100 °C		
	Storage	-40 ... +100 °C		
Tolerable overload	≤ 400 bar	3 x FS		
	> 400 bar	2.5 x FS (max. 1500 bar)		
Rupture pressure	≤ 400 bar	6 x FS		
	> 400 bar	4 x FS (max. 2500 bar)		
Materials				
Case		Stainless steel 1.4404 / AISI 316 L		
Cable		PUR		
Materials in contact with the medium	Pressure connection	Stainless steel 1.4404 / AISI 316 L		
	Sensor	Stainless steel		
Electrical overview				
2 wire	Output	Power supply	Load	Current consumption
	4 ... 20 mA	9.5 ... 33 VDC	< $\frac{\text{Power supply} - 9.5 \text{ V}}{0.02 \text{ A}}$ [Ohm]	< 23 mA
3 wire	0 ... 5 V	7.5 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	1 ... 6 V	8.5 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	0 ... 10 V	12.5 ... 33 VDC	>10 kOhm / < 100 nF	< 7 mA
	ration. 10 ... 90%	5 VDC ± 10%	>10 kOhm / < 100 nF	< 7 mA
Insulation voltage			1000 VDC	
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 (10... 90%, typ. 1 ms)		
Load cycle		< 100 Hz		
Electrical connection		Protection standard	Protection class	
Cable PUR 1.5 m		IP 69K, IP 68	III	
Pressure connection				
Outside thread	7/16 - 20 UNF	sealed at back SAE-4 with O-Ring seal FPM (-20 ... +135 °C)		
	1/4 - 18 NPT			
	G 1/4	sealed at back DIN 3852-E with profile seal FPM (-30 ... +135 °C)		
	M14x1.5	sealed at back DIN 3852-E with profile seal FPM (-30 ... +135 °C)		
	9/16 - 18 UNF	sealed at back SAE-6 with O-Ring seal FPM (-20 ... +135 °C)		
R 1/4	EN 10226			
Installation arrangement				
Unrestricted				
Tests / Admissions				
Electromagnetic compatibility	Noise immunity / Noise emission		Noise immunity automotive guideline	Noise emission automotive guideline
	ISO 13766 - earth-moving equipment		ISO 11452-2, HF (Field), 100 V/m (200 ... 2000 MHz)	CISPR11
	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 ¹⁾		ISO 7637-2, puls, test level 4 ^{2), 3)}	
	Automotive guideline 2004/104/EG ¹⁾		ISO 16750-2, Load Dump, 155 V (1Ω, 300 ms)	
EN 61326-2-3 - pressure transducer				
EN 61000-6-2				
Noise immunity (industry)				
Noise emission (residential and commercial area)				
EN 61000-6-3				
Environmental test				
ISO 16750-Z-J-A-L-Z IP69K				
Shock acc. IEC 68-2-27		50 g, 11 ms, half sine wave, 1000x / axis		
Vibration acc. ISO 16750-3		Test VI (12 g, sinusoidal 18 g random vibration)		
cULus		ANSI/UL 61010-1 acc. E325110		
Weight				
~ 176 g				
Packaging (Please state on order)				
Single packaging in cardboard				
Multiple packaging in cardboard (2 pcs)				
Multiple packaging in cardboard (25 pcs)				

Accuracy

Parameter		Unit	
Characteristic line acc. IEC 61298-2 ⁴⁾		% fs	± 0.5
Resolution		% fs	0.1
Thermal characteristic ⁵⁾	max.	% fs/10K	± 0.2
Long term stability acc. IEC 61298-2	max.	% fs	± 0.3

Test conditions: 25 °C, 45% rF

¹⁾ E1 approval for customer specific type on request

²⁾ Puls 1, 2a, 2b, 3a, 3b

³⁾ Pressure sensor for 12 V and 24 V power system (0 ... 5 V, 0 ... 10 V / 1 ... 6 V and 4 ... 20 mA)

⁴⁾ incl. zero point, full scale, linearity, hysteresis and repeatability

⁵⁾ -40 ... 100 °C

Order code selection table in bar		512.	X	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... + 40 bar	9	3	3	S	0									
	0 ... + 60 bar	9	4	0	S	0									
	0 ... + 100 bar	9	4	1	S	0									
	0 ... + 160 bar	9	4	2	S	0									
	0 ... + 250 bar	9	4	3	S	0									
	0 ... + 400 bar	9	5	4	S	0									
	0 ... + 600 bar	9	5	5	S	0									
	0 ... + 1000 bar	9	5	7	S	0									
Output / power supply	0 ... 5 V 7.5 ... 33 VDC									1					
	0 ... 10 V 12.5 ... 33 VDC									2					
	1 ... 6 V 8.5 ... 33 VDC									6					
	4 ... 20 mA 9.5 ... 33 VDC									3					
	10 ... 90% ratiom. 5VDC ±10%									7					
Electrical connection	Cable 1.5 m									L					
Pressure connection ¹⁾	Outside thread	⁷ / ₁₆ -20 UNF sealed at back SAE-4 with O-Ring seal FPM										G	2	1	
		¹ / ₄ -18 NPT											3	2	1
		G ¹ / ₄ sealed at back DIN 3852-E with profile seal FPM											4	2	1
		M14x1.5 sealed at back DIN 3852-E with profile seal FPM											6	2	1
		R ¹ / ₄ acc. EN 10226											7	2	1
	⁹ / ₁₆ -18 UNF sealed at back SAE-6 with O-Ring seal FPM											V	2	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g. W0... + 300bar/Out1...8V)													W	

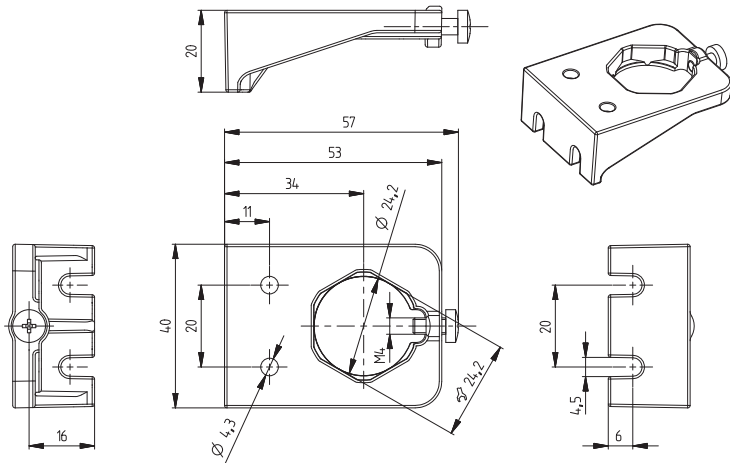
Order code selection table in psi		512.	X	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... + 600 psi	9	C	4	S	0									
	0 ... + 750 psi	9	D	0	S	0									
	0 ... + 1000 psi	9	D	1	S	0									
	0 ... + 2000 psi	9	D	2	S	0									
	0 ... + 3000 psi	9	D	3	S	0									
	0 ... + 5000 psi	9	E	4	S	0									
	0 ... + 7500 psi	9	E	5	S	0									
	0 ... + 14500 psi	9	E	7	S	0									
Output / power supply	0 ... 5 V 7.5 ... 33 VDC									1					
	0 ... 10 V 12.5 ... 33 VDC									2					
	1 ... 6 V 8.5 ... 33 VDC									6					
	4 ... 20 mA 9.5 ... 33 VDC									3					
	10 ... 90% ratiom. 5VDC ±10%									7					
Electrical connection	Cable 1.5 m									L					
Pressure connection ¹⁾	Outside thread	⁷ / ₁₆ -20 UNF sealed at back SAE-4 with O-Ring seal FPM										G	2	1	
		¹ / ₄ -18 NPT											3	2	1
		G ¹ / ₄ sealed at back DIN 3852-E with profile seal FPM											4	2	1
		M14x1.5 sealed at back DIN 3852-E with profile seal FPM											6	2	1
		R ¹ / ₄ acc. EN 10226											7	2	1
	⁹ / ₁₆ -18 UNF sealed at back SAE-6 with O-Ring seal FPM											V	2	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g. W0... + 4000psi/Out1...8V)													W	

Order code selection table in MPa		512.	X	X	X	X	X	X	X	X	X	X	X	X	
Pressure range ¹⁾	0 ... + 4 MPa	9	H	3	S	0									
	0 ... + 6 MPa	9	K	0	S	0									
	0 ... + 10 MPa	9	K	1	S	0									
	0 ... + 16 MPa	9	K	2	S	0									
	0 ... + 25 MPa	9	K	3	S	0									
	0 ... + 40 MPa	9	L	4	S	0									
	0 ... + 60 MPa	9	L	5	S	0									
	0 ... + 100 MPa	9	L	7	S	0									
Output / power supply	0 ... 5 V 7.5 ... 33 VDC									1					
	0 ... 10 V 12.5 ... 33 VDC									2					
	1 ... 6 V 8.5 ... 33 VDC									6					
	4 ... 20 mA 9.5 ... 33 VDC									3					
	10 ... 90% ratiom. 5VDC ±10%									7					
Electrical connection	Cable 1.5 m									L					
Pressure connection ¹⁾	Outside thread	⁷ / ₁₆ -20 UNF sealed at back SAE-4 with O-Ring seal FPM										G	2	1	
		¹ / ₄ -18 NPT											3	2	1
		G ¹ / ₄ sealed at back DIN 3852-E with profile seal FPM											4	2	1
		M14x1.5 sealed at back DIN 3852-E with profile seal FPM											6	2	1
		R ¹ / ₄ acc. EN 10226											7	2	1
	⁹ / ₁₆ -18 UNF sealed at back SAE-6 with O-Ring seal FPM											V	2	1	
Pressure range variation (optional)	Indicate W and state range on order (e.g. W0... + 30MPa/Out1...8V)													W	

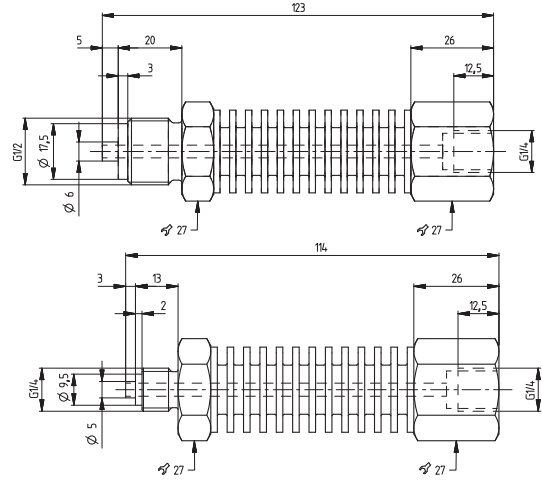
¹⁾ Other pressure range or pressure connection on request

Mounting bracket with screw	118716
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

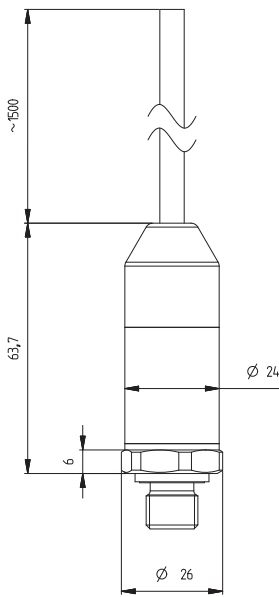
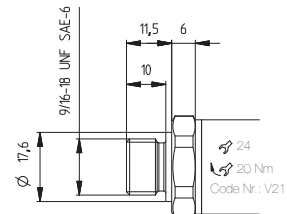
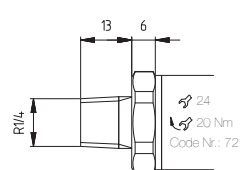
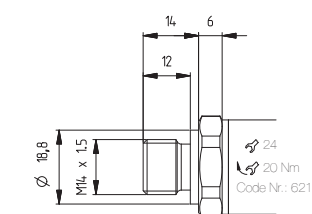
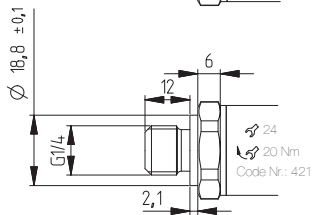
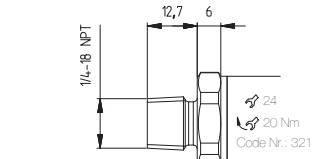
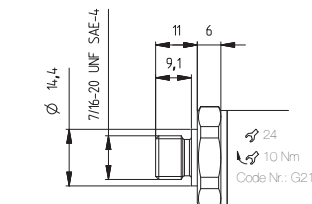
Mounting bracket



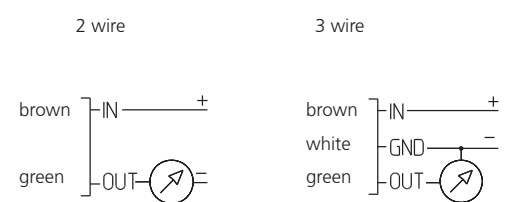
Heat sink



Dimensions in mm / Electrical connections



Attention: min. bending radius cable PUR ≥ 15x cladding-Ø



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