Pressure Sensors Special for Mobile Hydraulics SIL2

Accuracy 1%

with internal diaphragm for gauge pressure

Standard output: 4...20 mA; 3-wire

Description:

The sensor meets very high safety requirements in the hydraulics field. The two independent output signals of the (2-channel) redundant pressure measurement allow control-side plausibility monitoring of the pressure sensor.

With TÜV (German technical inspectorate) certifications of conformity to safety standards ISO 13849-1 and IEC 61508, the requirements of the revised EU machinery directive are already met. Existing safety parameters such as MTTF values are made possible by evaluating safety-oriented control.

Since the device is built specifically for mobile use, it can resist shock loads of up to 500g and vibrations of up to 20g according to IEC 60068

Operational reliability is guaranteed even when subjected to high temperature shocks. Besides the standard electrical connectors, an IP 69 K cable variant is available for extreme applications.

The pressure sensors meet electromagnetic compatibility requirements (EMC) according to EN 61326.

Features:

- Measuring ranges from 60 to 600 bar
- Finely graded selection of ranges to EN
- Corrosion resistant stainless steel design
- Extremely resistant to shock and vibration
- SIL 2 according to IEC 61508
- Category 3 performance level d
- according to ISO 13849-1
- Redundant pressure measuring and output signals
- Protection type IP65 up to IP69K
- High peak pressure resistance

Measuring ranges

Gauge pressure

positive 0...60 bar to 0...1000 bar

Applications

Mobile hydraulics:

Farm trucks,

Cranes,

Special vehicles

Model: P3375

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Technical data

Model	P3375	Option
Pressure type	positive gauge pressure	
Output signal	4...20 mA - 1 circuit / 2 circuit, inverse signal 20…4 mA	Other on request
Accuracy % of F.S. 1)	≤ 1,0	
Non-liniarity % of F.S.	≤ 0,4 (BFSL) according to IEC 61298-2	
Ranges acc. to EN (bar)		
Measuring range 1	60 | 100 | 160 | 250 | 400 | 600 | 1000	
Measuring range 2 Overrange limit	60 | 100 | 160 | 160 | 250 | 250 | 400 | 400 | 600 | 600 | 1000 | 1000	
Burst pressure	120 | 200 | 320 | 500 | 800 | 1200 | 1500	
	550 | 800 | 1000 | 1200 | 1700 | 2400 | 3000	
Power supply U+	6 ... 32 VDC	
Sensor element	thin film	
Stability per year	≤ 0,3 % F.S. by reference conditions	
Lifetime	10 Mio. load cycle	
Wetted parts	Stainless steel	
Case	Stainless steel	
Pressure connection	G 1/4 A acc. to DIN 3852-E 7/16-20 UNF-2A with Boss O-ring R1/4 ISO 7 1/4 NPT	
Electrical Connection	Round plug connector M12 x 1 (4-pin) IP67	Cable outlet, 1.5m cable IP 69K
Permissable liability RA	Nominal value RA ≤ 500 Ohm Max. liability by U+ = 6 V RA ≤ 250 Ohm Max. liability by U+ = 11 V RA ≤ 500 Ohm Min. liability by U+ ≤ 20 V RA ≥ 0 Ohm Min. liability by U+ > 20 V RA = 50 Ohm x (U+-20 V) = 500 Ohm to 30V	
Current consumption by max. U+	< 20 mA	
Pressure setting time (10…90%)	≤ 2 ms	
Isolation voltage	500 VAC	
Temperature influence	≤ 2% by permissable temperature range	
Protection class (acc. to EN 60529/IEC 529)	IP 67 by round plug connector M12x1 IP 69K (steam jet proof) by cable outlet	
Highly resistance to shock	500 g acc. to IEC 60068-2-27 (shock mechanical)	
Vibration	20g acc. to IEC 60068-2-6 (vibration by resonance)	
Elektrical protection types - short-circuit strength - inverse-polarity protection	 S+ against U- U+ against U-	
Temperature ranges – Storage – Media – Ambient	 -40 … +85 °C -40 … +85 °C -40 … +85 °C	
RoHS-conformity	yes	
CE - conformity 2) - Pressure equipment directive - EMV-directive	 97/23/EG 2004/108/EG, EN 61326 Emission (group 1, class B) and interference resistance (industrial range)	
MTTF-values	n.n.	
Machine directives	2006/42/EG category 3 performance level d according to ISO 13849-1 additional SIL 2 acc. to IEC 61508	
Weight	approx. 0,16 kg	

of F.S. = of full scale value

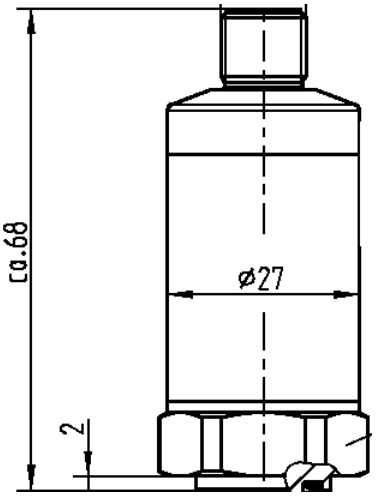
1) Incl. non-linearity, hysteresis, zero point- and full scale value-variations (conform to measurement-variations acc. to IEC 61298-2)

2) Declaration of conformity certificate on request

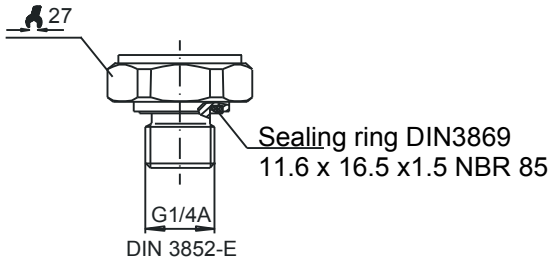
Dimension (mm)

Case

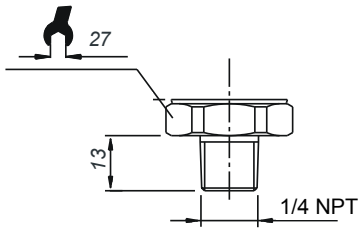
round plug connector M12x1



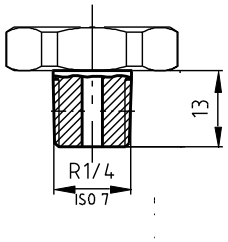
Pressure connections



G1/4 DIN 3852-E



1/4 NPT



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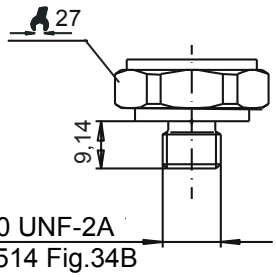

7/16-20 UNF-2A
SAE J514 Fig.34B

7/16-20 UNF
with Boss o-ring FKM
max. permitted temperature -10…85 °C

Electrical Connection

Three-wire system

round plug connector
M12x1, 4-pin

Connection table for plug or cable outlet

	4...20 mA (3-wire)	
	plug M12x1	**cable outlet**
Power supply : UB+	1	n.n.
Power supply : 0V	3	n.n.
Signal: S+	4	n.n.
Signal: S-	2	n.n.
Protection acc. to IEC 60 529	IP 65	IP 69 K
	The specified protection apply only in the plugged condition with the cable connectors according to protection	

Order details

1. Model
2. Measuring range
3. Output signal
4. Options

Subject to technical changes