

# **EPS1, EPS2**

## **Ввинчивающиеся датчики (преобразователи) давления**

### **GHM MESSTECHNIK**



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## Pressure Transmitter EPS1



- 4..20 mA two-wire pressure transducer
- Ceramic cell made from  $\text{Al}_2\text{O}_3$
- Pressure cell protected from mechanical damage
- Infinitely adjustably rotatable cable outlet for clean alignment

### Characteristics

The EPS1 pressure transformer measures static and dynamic pressures in fluids and gases. The robust 100% metal construction makes it suitable for universal industrial use.

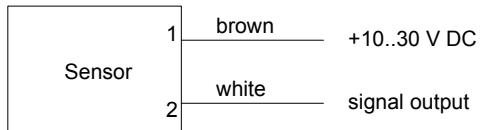
The pressure transformer consists of a measuring cell (four extension measurement cells using thick film technology applied to a ceramic substrate) and the converter / counter. This converts the bridge signal into a pressure-proportional 4..20 mA signal. The pressure cell is connected to the medium via a drilling with 8 mm diameter, and this construction protects it securely from mechanical damage.

### Technical data

<b>Sensor</b>	ceramic cell with measuring bridge using thick film technology	
<b>Process connection</b>	male thread G 1/2 A or G 1/4 A	
<b>Metering ranges</b>	(relative pressure, pressure difference from environment) in bar	
	Range	Burst pressure
	0.. 1	4
	0.. 2	4
	0.. 5	10
	0.. 10	20
	0.. 20	40
	0.. 50	100
	0..100	175
* available only on request for gases		
<b>Measurement accuracy</b>	$\pm 1\%$ of final value; plus $0.05\%/\text{K}$ at $< 0^\circ\text{C}$ and $> 60^\circ\text{C}$	
<b>Repeatability</b>	$\pm 0.5\%$ of full scale value	
<b>Pressure resistance</b>	corresponds to metering range	
<b>Media temperature</b>	$-20..+80^\circ\text{C}$ (with gooseneck option max. $120^\circ\text{C}$ )	

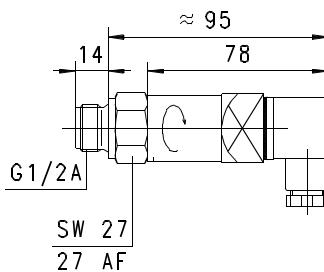
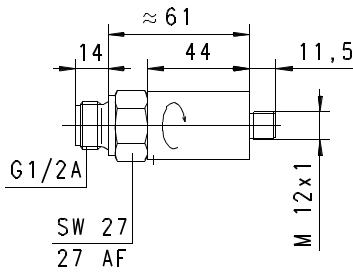
<b>Ambient temperature</b>	-20..+70 °C
<b>Storage temperature</b>	-20..+80 °C
<b>Media</b>	fluids and gases
<b>Material medium-contact</b>	probe 1.4571, $\text{Al}_2\text{O}_3$ , FKM
<b>Materials non-medium-contact</b>	CW614N, PP, NBR
<b>Supply voltage</b>	10..30 V DC $\pm 10\%$
<b>Analog output</b>	4..20 mA two-wire
<b>Load</b>	max. 800 Ohm at 24 V (100 Ohm at 10 V/1.1 kOhm at 30 V, linear at operating voltage)
<b>Electrical connection</b>	for round plug connector M12x1, 4-pole or plug DIN 43650-A / ISO 4400
<b>Reversal polarity protected</b>	yes
<b>Ingress protection</b>	IP 67 round plug connector IP 65 plug DIN 43650-A / ISO 4400
<b>Weight</b>	approx. 0.3 kg
<b>Conformity</b>	CE

### Wiring

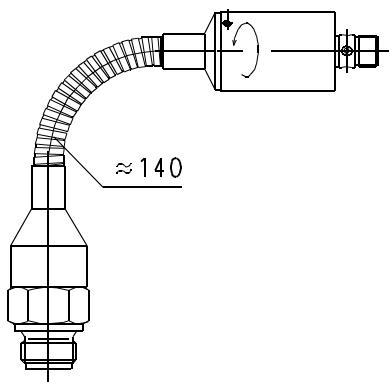


Before the electrical installation, it must be ensured that the supply voltage corresponds with the data sheet.

### Dimensions



## "Gooseneck" option for higher temperatures



## Handling and operation

### Installation

The pressure transformers are screwed into a nozzle or a T-piece in the pipework, using a suitable sealing material (e.g. Klingerit). The installation of the pressure sensor should result in no significant reduction of the cross-section of the pipework. When tightening the pressure sensor, use only the hexagonal spanner (SW27) specifically provided.

Avoid installation locations with high pressure surges (see overload limits).

In the high temperature model with flexible gooseneck, the pressure transformer can be operated up to a media temperature of 120 °C.

## Ordering code

1. 2. 3. 4. 5. 6. 7.  
EPS1 -  R  K   H

= Option

1. Metering range	
001	0.. 1 bar
002	0.. 2 bar
005	0.. 5 bar
010	0.. 10 bar
020	0.. 20 bar
050	0.. 50 bar
100	0..100 bar
2. Pressure type	
R	relative pressure
3. Connection material	
K	stainless steel 1.4571
4. Mechanical connection	
008	G 1/4
015	G 1/2
5. Mechanical connection	
H	male thread
6. Electronic connection	
S	for round plug connector M12x1, 4-pole
B	<input type="checkbox"/> plug DIN 43650-A / ISO 4400
7. Option	
H	<input type="checkbox"/> model with gooseneck

## Accessories

- Cable/round plug connector (KB...) see additional information "Accessories"
- converter / counter OMNI-TA

# Pressure Transmitter EPS2



- Measuring cell made of stainless steel, hermetically welded
- Analog signal 4..20 mA (two-wire)
- Very rapid reaction time thanks to analog signal path with mixed signal ASIC
- Ranges from 0.6..2000 bar relative pressure
- Robust full metal housing
- Class: 0.5 % standard
- Working temperature -40 °C to +100 °C
- Poly-Si on SiO<sub>2</sub> (thin film resistors)
- M12x1 plug system (or others on request)

## Characteristics

The pressure transducer measures pressures in liquids and gases. It has the following applications:

- Hydraulics
- Testing technology
- Pneumatics
- Industrial robots
- Mobile systems
- Process control
- Air-conditioning + heating
- Water technology
- Vehicle technology

The stainless steel membrane is fitted with a polysilicon thin film cell, completely vacuum-tight, extremely burst resistant, and it can be used in all applications which are compatible with stainless steel. The analog measuring path, which is conditioned by means of an ASIC, permits the most rapid response times, with the need for only a few components. The sensors are calibrated digitally, and the components have very good long term stability and a small total error.

**HONSBERG**

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EPS2

## Technical data

Sensor	thin film pressure measurement bridge on stainless steel membrane						
Process connection	male thread G 1/4 A						
Pressure type	relative pressure						
Metering ranges in bar	Range	Permitted overload pressure	Burst pressure				
● = preferred types	0.. 0.6	1.2	2.4				
	0.. 1.0	2.0	3.0	●			
	0.. 2.0	4.0	6.0	●			
	0.. 2.5	5.0	7.5				
	0.. 4.0	8.0	12.0				
	0.. 6.0	12.0	18.0	●			
	0.. 10.0	20.0	30.0	●			
	0.. 16.0	32.0	48.0				
	0.. 25.0	50.0	75.0	●			
	0.. 40.0	80.0	120.0	●			
	0.. 60.0	120.0	180.0				
	0.. 100.0	200.0	300.0	●			
	0.. 160.0	320.0	480.0				
	0.. 250.0	500.0	750.0	●			
	0.. 400.0	600.0	800.0	●			
	0.. 600.0	900.0	1200.0	●			
	0..1000.0	1200.0	1500.0	●			
	0..1600.0	1920.0	2400.0				
	0..2000.0	2400.0	3000.0				
Measurement accuracy	accuracy class 0.5  total error (Non-linearity + hysteresis + temperature effect + repeatability): -40..+20 °C ±3 % typically ±2 % -20..+85 °C ±1 % typically ±0.7 % 85..100 °C ±2.5 % typically ±1.5 %						
Response time	(10..90 %) < 1 ms						
Pressure resistance	corresponds to metering range						
Media temperature	-40..+125 °C						
Ambient temperature	-40..+105 °C						
Storage temperature	-40..+125 °C						
Media	fluids and gases						
Materials medium-contact	1.4301						
Materials, non-medium-contact	Housing	stainless steel					
	Seal	FKM					
Supply voltage	12..32 V DC						
Analog output	4..20 mA two-wire						
Load	max. (battery voltage -12 V) / 20 mA						
Electrical connection	for round plug connector M12x1, 4-pole						
Reversal polarity protected	yes						
Ingress protection	IP 65 / 67						
Weight	approx. 0.2 kg						
Conformity	CE						

<b>EMC</b>	interference radiation DIN EN 55011: < 30 dB $\mu$ V/m Interference immunity DIN EN 61000-4-3: 25 V/m
<b>Shock test</b>	1 m onto steel plate (as per IEC68-2-32) Vibration 20 g (as per IEC 68-2-6 and 68-2-36)

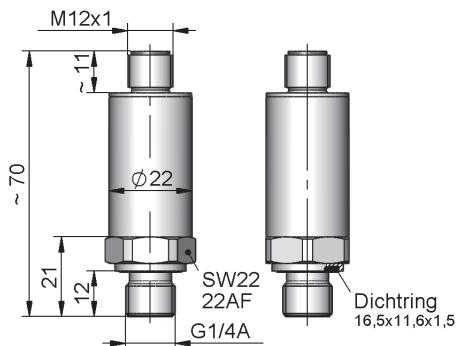
## Wiring



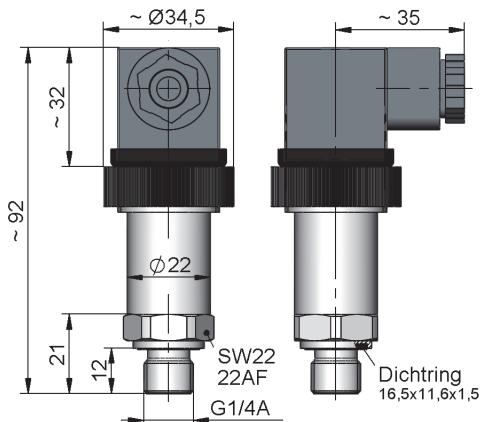
Before the electrical installation, it must be ensured that the supply voltage corresponds with the data sheet.

## Dimensions

EPS2-....S



EPS2-....B



## Handling and operation

### Installation

The pressure transducers are screwed into a nozzle or a T-piece in the pipework. The seal is made by means of the integrated ED sealing ring. The installation of the pressure transducer should result in no significant reduction of the cross-section of the pipework. When tightening the pressure transducer, use only the hexagonal spanner (SW22) specifically provided. Avoid installation locations with high pressure surges (see permitted overload pressure).

## Ordering code

EPS2 - 1.    2.    3.    4.    5.  
R    K    008

○ = Option

1. Metering range
00006 ○ 0.. 0.6 bar
00010 ○ 0.. 1.0 bar
00020 ○ 0.. 2.0 bar
00025 ○ 0.. 2.5 bar
00040 ○ 0.. 4.0 bar
00060 ○ 0.. 6.0 bar
00100 ○ 0.. 10.0 bar
00160 ○ 0.. 16.0 bar
00250 ○ 0.. 25.0 bar
00400 ○ 0.. 40.0 bar
00600 ○ 0.. 60.0 bar
01000 ○ 0.. 100.0 bar
01600 ○ 0.. 160.0 bar
02500 ○ 0.. 250.0 bar
04000 ○ 0.. 400.0 bar
06000 ○ 0.. 600.0 bar
10000 ○ 0..1000.0 bar
16000 ○ 0..1600.0 bar
20000 ○ 0..2000.0 bar
2. Pressure type
R relative pressure
3. Connection material
K stainless steel 1.4571
4. Connection size
008 male thread G 1/4 A
5. Electronic connection
S for round plug connector M12x1, 4-pole
B ○ plug DIN 43650-A / ISO 4400

## Options

- Special measuring ranges

## Accessories

- Cable/round plug connector (KB...)  
see additional information "Accessories"

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Тула (4872)74-02-29  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
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