EPS1, EPS2
Ввинчиваемые датчики (преобразователи) давления GHM MESSTECHNIK

Технические характеристики

Pressure Transmitter EPS1

- **4..20 mA two-wire pressure transducer**
- **Ceramic cell made from Al_2O_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

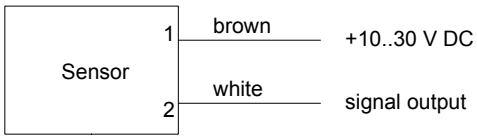
Sensor	ceramic cell with measuring bridge using thick film technology
Process connection	male thread G $^1/_2$ A or G $^1/_4$ A
Metering ranges	(relative pressure, pressure difference from environment) in bar

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

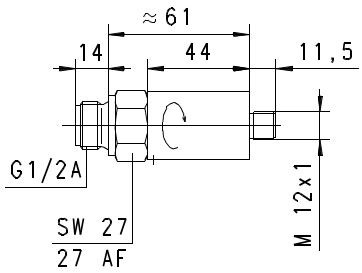
Measurement accuracy	±1 % of final value; plus 0.05 %/K at < 0 °C and > 60 °C
Repeatability	±0.5 % of full scale value
Pressure resistance	corresponds to metering range
Media temperature	-20..+80 °C (with gooseneck option max. 120 °C)
Ambient temperature	-20..+70 °C
Storage temperature	-20..+80 °C
Media	fluids and gases
Material medium-contact	probe 1.4571, Al_2O_3, FKM
Materials non-medium-contact	CW614N, PP, NBR
Supply voltage	10..30 V DC ±10 %
Analog output	4..20 mA two-wire
Load	max. 800 Ohm at 24 V (100 Ohm at 10 V/1.1 kOhm at 30 V, linear at operating voltage)
Electrical connection	for round plug connector M12x1, 4-pole or plug DIN 43650-A / ISO 4400
Reversal polarity protected	yes
Ingress protection	IP 67 round plug connector IP 65 plug DIN 43650-A / ISO 4400
Weight	approx. 0.3 kg
Conformity	CE

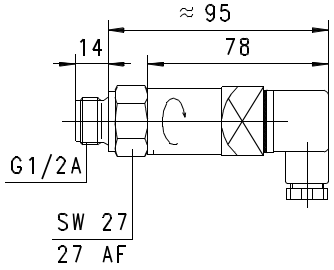
Wiring



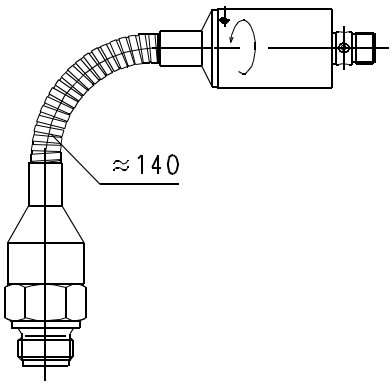
Before the electrical installation, it must be ensured that the supply voltage corresponds with the data sheet.

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	❍	plug DIN 43650-A / ISO 4400
7.	**Option**		
	H	❍	model with gooseneck

Accessories

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

Pressure Transmitter EPS2

HONSBERG
Member of GHM GROUP

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_2 (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

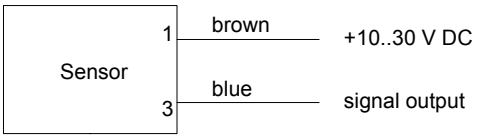
The stainless steel membrane is fitted with a polysilicon thin film cell, completely vacuum-tight, extremely burst resistant, and it can be used in all applications which are compatible with stainless steel. The analog measuring path, which is conditioned by means of an ASIC, permits the most rapid response 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.

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 Seal	stainless steel 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			

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

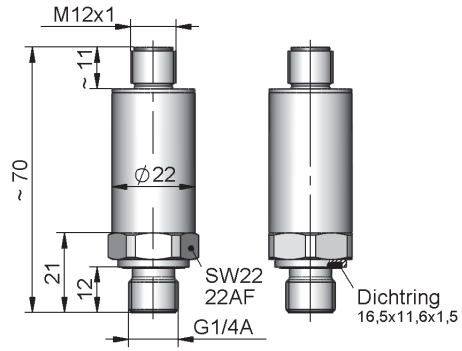
Wiring



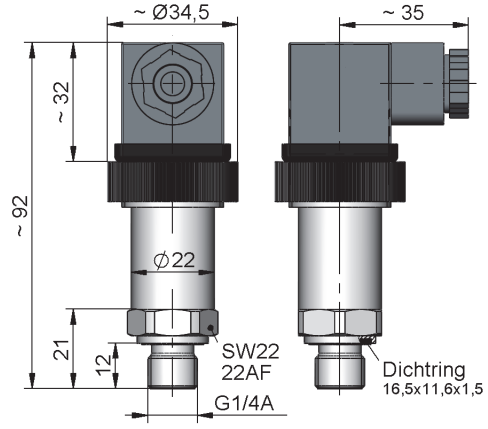
Before the electrical installation, it must be ensured that the supply voltage corresponds with the data sheet.

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

	1.	2.	3.	4.	5.
EPS2 -		**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”