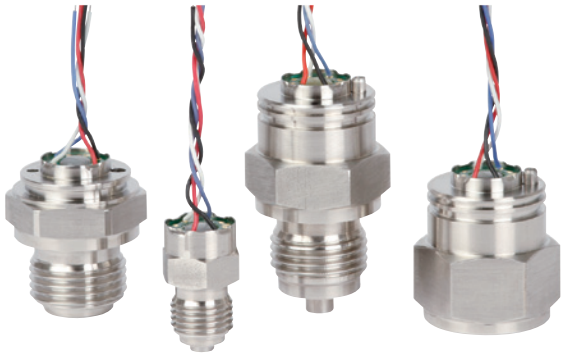
OEM pressure transducer
Thin-film technology
Model TTF-1

Applications

- Applications with limited mounting space
- Hydraulic applications
- Assembly for pressure transmitters, pressure switches and digital pressure gauges

Special features

- Measuring ranges 0 ... 10 bar to 0 ... 1,000 bar
- Non-linearity < 0.5 % of span
- Wetted parts from stainless steel
- Medium temperature -40 ... +125 °C
- Output signal in mV/V



OEM pressure transducer model TTF-1, with various process connections

Description

Robust sensor element
The cylindrical measuring cell, as standard, is made from robust stainless steel and as a result exhibits high overpressure and burst pressure safety. For specific applications suitable materials are optionally available.

Using thin-film technology a Wheatstone measuring bridge is applied to the diaphragm of the measuring cell. Thin-film technology, compared to other technologies, enables a particularly high long-term stability, since the bonding is made at an atomic level.

The model TTF-1 pressure transducer is made up of a dry measuring cell, which is welded directly to the pressure connection. As a result, the TTF-1 has no weak points as would occur, for example, when sealing with O-rings or adhesive bonding.

Customer-specific designs
A large selection of standard designs is already available and is manufactured on a flexible production line. This flexibility in manufacturing enables us to offer custom designs from a minimum order quantity of 1,000 pieces.

Technical aspects
The measuring cell is temperature compensated between -40 ... +100 °C and offers a linear output signal.

Since the output signal is available as the pure bridge signal, the final accuracy of the customer application can be set by the customer via appropriate compensation of the zero point and span offsets.

Measuring ranges

Relative pressure [bar]			
Measuring range	**0 ... 10**	**0 ... 16**	**0 ... 25**
Overpressure limit	20	32	50
Burst pressure	100	160	250
Measuring range	**0 ... 40**	**0 ... 60**	**0 ... 100**
Overpressure limit	80	120	200
Burst pressure	400	550	800
Measuring range	**0 ... 160**	**0 ... 250**	**0 ... 400**
Overpressure limit	320	500	800
Burst pressure	1,000	1,200	1,700
Measuring range	**0 ... 600**	**0 ... 1,000**	
Overpressure limit	1,200	1,500	
Burst pressure	2,400	3,000	

Other measuring ranges on request.

Vacuum tightness
Yes

Output signals

Measuring range [bar]
- 0 ... 10 1.4 ... 2.6 mV/V
- 0 ... 16 and 0 ... 25 1.5 ... 2.5 mV/V
- 0 ... 40 up to 0 ... 160 1.6 ... 2.4 mV/V
- 0 ... 250 up to 0 ... 1,000 1.7 ... 2.3 mV/V

Voltage supply

Power supply
DC 6 ... 10 V

Reference conditions (per IEC 61298-1)

Temperature
15 ... 25 °C

Atmospheric pressure
860 ... 1,060 mbar

Humidity
45 ... 75 % relative

Power supply
DC 10 V

Mounting position
Any

Time response

Settling time (10 ... 90 %)
< 1 ms

Accuracy data

Zero offset
max. ±0.5 mV/V

Bridge resistance
6.5 ±1.3 kΩ

Temperature error
Compensated temperature range: -40 ... +100 °C
Mean temperature coefficient
- Zero point: ±0.1 % of span/10 K
- Span: ±0.1 % of span/10 K

Non-linearity, typical
Measuring range [bar]
- 0 ... 10 +0.50 % of span
- 0 ... 16 +0.40 % of span
- 0 ... 25 +0.40 % of span
- 0 ... 40 +0.35 % of span
- 0 ... 60 +0.30 % of span
- 0 ... 100 +0.25 % of span
- 0 ... 160 +0.22 % of span
- 0 ... 250 +0.20 % of span
- 0 ... 400 +0.18 % of span
- 0 ... 600 +0.15 % of span
- 0 ... 1,000 +0.12 % of span

Hysteresis
≤ 0.1 % of span

Long-term stability
≤ 0.2 % of span/year

Operating conditions

Permissible temperature ranges
Medium: -40 ... +125 °C
Ambient: -40 ... +100 °C
Storage: -40 ... +100 °C

Service life
> 100 million load cycles

Process connections

Many different process connections are available on request. Examples are listed under “Dimensions in mm”.

Electrical connections

Available connections	Standard lengths
Wire with JST connector	32, 65, 87 mm
Wire with FCI blade terminal	120, 140 mm drilled
Wires	60, 80, 110, 170, 220, 340 mm

Others on request

Pin assignment

Connection	U+	U-	S+	S-
Wires with JST connector	Pin 1 red	Pin 2 blue	Pin 3 white	Pin 4 black
Wires with FCI blade terminal	Pin1 black	Pin 2 red	Pin 3 white	Pin 4 blue
Wires	black	red	white	blue

Electrical protective measures

High-voltage strength
AC 500 V

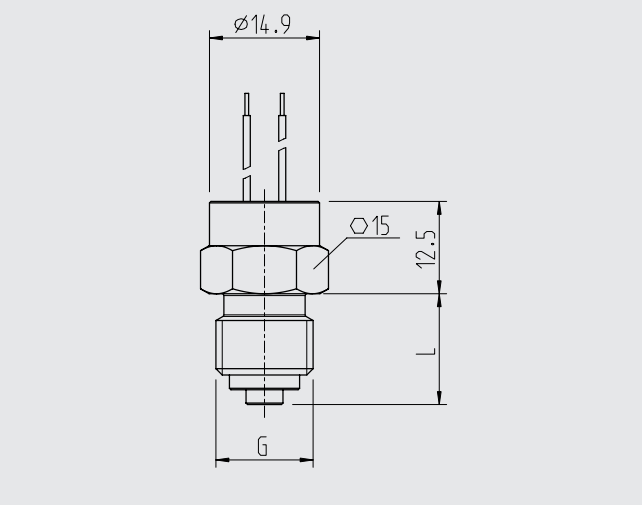
Insulation resistance
≥ 300 MΩ

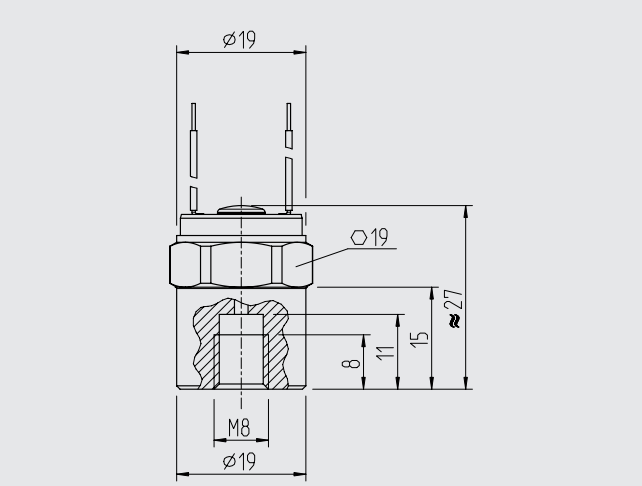
Materials

Wetted parts
Stainless steel, other materials on request

Dimensions in mm

Example designs





G	L
G ¼ B per EN 837	15
⅜-24 UNF	10

Ordering information
Measuring range / Electrical connection / Process connection

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