

OEM-Pressure Transducer in Thin-Film Technology Model TTF-1

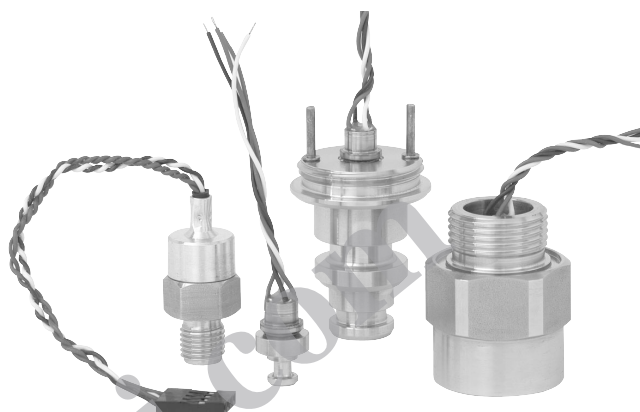
WIKA Data Sheet PE 81.16

Applications

- Applications with limited mounting space
- Design-in solutions
- Hydraulic applications

Special Features

- Thin-film technology
- Pressure ranges from 0 ... 10 bar to 0 ... 1000 bar
- Wetted parts of stainless steel
- Medium temperature -40 °C ... +100 °C
- Integrated temperature compensation



Possible versions of the pressure transducer TTF-1
(previous model 881.09.5295)

Description

Various assembly possibilities

The thin film transducer offers flexibility in mounting and processing. Due to its compact size the pressure transducer can especially be used in applications where mounting space is limited.

Robust sensor element

The sensor element is made of a cylindrical high grade stainless steel body, the end of which takes the form of a separating diaphragm. On this diaphragm the thin film Wheatstone measuring bridge is located, which forms a tight atomic bond with the stainless steel body. Compared to sensor elements with adhesive-fixed strain gauges, the risk of „creeping“ is therefore eliminated.

The high grade steel design of the sensor element offers complete media separation. A pressure transmission fluid is not required (dry cell).

The sensor element is welded to the pressure port to avoid weak points that usually occur when o-rings or adhesive

joints are used for sealing.

Excellent performance

In all pressure ranges the transducer provides an internal temperature compensation over the range -40 °C ... +100 °C, so that in nearly all applications no additional compensation in the amplifier is necessary.

The pressure transducer offers high overpressure safety and is resistant to pressure peaks and changing loads. Furthermore it is an optimal solution for all applications where high accuracy, good zero point stability and low temperature error are also essential requirements.

Individual customer designs

Based on many years of experience and know-how in production, WIKA also offers customer-specific solutions for quantities above 1000 pieces by individually adapting the geometry and the connections of the transducer to the given application.

Specification

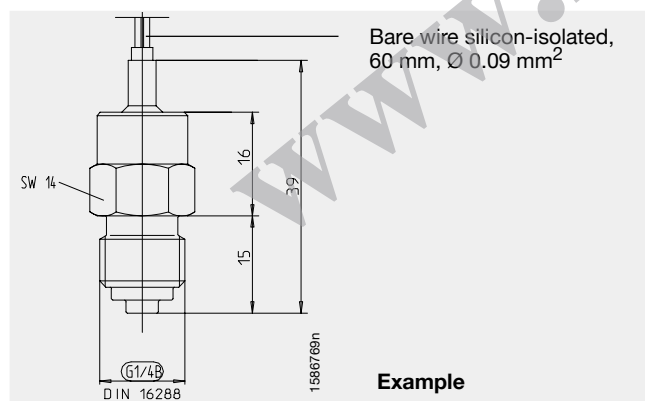
Model TTF-1

Pressure ranges	bar	10 ¹	16 ¹	25	40	60	100	160	250	400	600	1000 ²
Over pressure safety	bar	20	32	50	80	120	200	320	500	800	1200	1500
Burst pressure	bar	100	160	250	400	550	800	1000	1200	1700	2400	3000
Pressure connection		On request										
Materials												
■ Wetted parts		Stainless steel 1.4571 and 1.4542 {other on request}										
Power supply U_B	DC V	Typical 6 (6 ... 10 recommended) {other on request}										
Strength voltage	AC V	500										
Insulation resistance	MOhm	> 300										
Bridge resistance R_B	kOhm	6.5 ± 1.3 (between + U_S and - U_S)										
Span at nominal pressure	mV/V	2										
Zero signal	mV/V	Typical 0 ± 0.2 (maximum 0 ± 0.5)										
Response time (10 ... 90%)	ms	< 0.1										
Linearity		(Limit point calibration)										
■ With pressure range	bar	10	16	25	40	60	100	160	250	400	600	1000
■ Typical	% of span	+0.3	+0.3	+0.25 ³	+0.35	+0.30	+0.25	+0.22	+0.20	+0.18	+0.15	+0.12
Span tolerance	% of span	± 20	± 20	$\pm 15^3$	± 20	± 15	± 15	± 15	± 10	± 10	± 10	± 10
Hysteresis		≤ 0.1										
1-year stability		≤ 0.2 (at reference conditions)										
Permissible temperature of												
■ Medium	°C	-40 ... +100 / -40 ... +212 °F										
■ Ambient	°C	-40 ... + 80 / -22 ... +176 °F {extended temperature range on request}										
■ Storage	°C	-40 ... + 80 / -22 ... +176 °F {extended temperature range on request}										
Compensated temperature range	°C	-40 ... +100 / -40 ... +212 °F										
Temperature coefficients in compensated temperature range:												
■ Mean TC of zero	% of span	Typical $\pm 0.1/10K$										
■ Mean TC of range	% of span	Typical $\pm 0.1/10K$										
Dimensions		See drawing (depending on the respective version)										

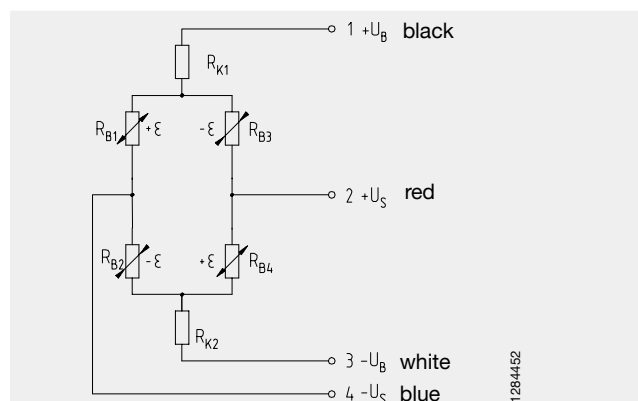
Items in curved brackets { } are optional extras

- 1) Depending on the respective version
- 2) Higher pressure ranges available on request
- 3) Improved specification for specific versions on request

Dimensions in mm



Circuit diagram



Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



WIKAL Alexander Wiegand GmbH & Co. KG
 Alexander-Wiegand-Straße 30
 63911 Klingenberg/Germany
 Telefon (+49) 93 72/132-0
 Telefax (+49) 93 72/132-406
 E-Mail support-tronic@wika.de
 www.wika.de