

## Piezoresistive OEM Measuring Cell Transducer



### Customer benefits

- High accuracy and excellent long-term stability
- Reliable and highly resistant to corrosion
- Effective media isolation without degrading performance

Version: 03.05.2016

# Technical Specifications

## Pressure measuring range (bar)

	0.1 ... 0.5, (1)	> 0.5 ... 2	> 2 ... 25
<b>Overpressure</b>	3 bar	3 x FS ( $\geq 3$ bar)	3 x FS
<b>Burst pressure, (4)</b>	> 200 bar	> 200 bar	> 200 bar
<b>Accuracy, (5), (<math>\pm</math> % FS)</b>	$\leq 0.5$	$\leq 0.5 / \leq 0.25$	$\leq 0.5 / \leq 0.25$
<b>Thermal shift, (6) (<math>\pm</math> % FS/ °C)</b>			
Zero point 0 ... 70°C	$\leq 0.06$	$\leq 0.03$	$\leq 0.015$
Zero point -25 ... 85°C	$\leq 0.08$	$\leq 0.04$	$\leq 0.02$
Span 0 ... 70°C	$\leq 0.015$	$\leq 0.015$	$\leq 0.015$
Span -25 ... 85°C	$\leq 0.02$	$\leq 0.02$	$\leq 0.02$
<b>Long term stability, (7)</b>	< 0.5% FS / < 4 mbar	< 0.2% FS / < 4 mbar	< 0.1% FS / < 0.2% FS

	> 25 ... 600, (2), (3)	> 600 ... 1000
<b>Overpressure</b>	3 x FS ( $\leq 850 / \leq 1500$ bar)	1500 bar
<b>Burst pressure, (4)</b>	> 850 / $\leq 1500$ bar	> 1500 bar
<b>Accuracy, (5), (<math>\pm</math> % FS)</b>	$\leq 0.5 / \leq 0.25$	$\leq 1.0 / \leq 0.5$
<b>Thermal shift, (6) (<math>\pm</math> % FS/ °C)</b>		
Zero point 0 ... 70°C	$\leq 0.015$	$\leq 0.015$
Zero point -25 ... 85°C	$\leq 0.02$	$\leq 0.02$
Span 0 ... 70°C	$\leq 0.015$	$\leq 0.015$
Span -25 ... 85°C	$\leq 0.02$	$\leq 0.02$
<b>Long term stability, (7)</b>	< 0.1% FS / < 0.2% FS	< 0.1% FS / < 0.2% FS

(1) 50 mbar on request

(2) Titanium available  $\leq 400$  bar (burst pressure > 550 bar)

(3) Overpressure and burst pressure 1500 bar (stainless steel) optional

(4) Transducer

(5) Zero based accuracy according to DIN-16086, incl. hysteresis and repeatability at ambient temperature

(6) With compensation

(7) 1 year (typ. / max.), the long term stability can be improved by ageing (burn-in) the sensor

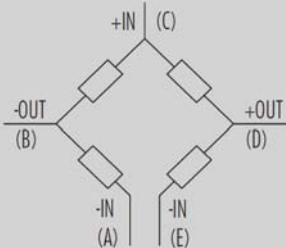
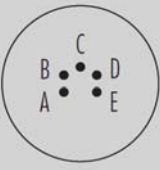
## Typical output signal (bar)

	0.1	0.25	0.6
<b>Output signal, (1), (mV)</b>	25	50	60

	1	2.5	$\geq 6$
<b>Output signal, (1), (mV)</b>	65	75	100

(1) At nominal pressure, 1 mA current excitation, uncompensated

## Electrical specifications

<b>Voltage excitation, (1),</b> (typ. / max.)	10 V DC / 15 V DC
<b>Current excitation, (1)</b> (typ. / max.)	1 mA / 2 mA
<b>Bridge resistance (typ.)</b>	3 kOhm
<b>Frequency range</b>	$\geq 10$ kHz
<b>Natural frequency (typ.)</b>	$\geq 10$ kHz
<b>Circuit</b>	
<b>Electrical connections</b>	

(1) With compensation

## Kompensation

<b>R1, R2</b>	Resistors for compensation of the zero temperature coefficient. Only the resistor indicated on the supplied measuring protocol (R1 or R2) has to be inserted into the circuit.
<b>R3, R4</b>	Zero-compensation resistors. Only the resistor indicated on the supplied measuring protocol (R3 or R4) has to be inserted into the circuit; the other resistor has to be inserted as a jumper (0 ohm resistor).
<b>RE</b>	Resistor for compensation of the temperature coefficient of the sensitivity. This resistor has a standard value of 9.4 kohm.
<b>R5</b>	Potentiometer for the zero-adjustment (recommended value: 100 ohm).
<b>Current excitation</b>	
<b>Voltage excitation</b>	

## Qualifications

<b>Vibration</b>	> 30g
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## Physical specifications

<b>Materials</b>	
Transducer	Stainless steel (316L / 1.4435), Titanium (Gr. 2), (1)
Seals	Viton (standard), EPDM, Kalrez

(1) Hastelloy (C-276) on request

## Ordering information

		X. XXXX.	XXXX.	XX.	XXX
<b>Type</b>					
	TD	10			
<b>Pressure type</b>					
	Gauge	1			
	Absolute (vacuum)	2			
	Sealed gauge	3			
<b>Pressure measuring range</b>					
	50 mbar ... < 100 mbar	XX			
	100 mbar ... 600 bar	XX			
	> 600 bar	XX			
	Negative ranges, offset, special adjustment	99			
<b>Model</b>					
	Ø 15 mm with flush diaphragm (> 1 bar), (Fig.1)	60			
	Ø 19mm with welding ring, (Fig. 2)	63			
	Ø 19mm with flush diaphragm, (Fig. 3)	64			
	Ø 18.4mm with welding ring, (Fig. 4)	67			
	Ø 18.4mm with flush diaphragm, (Fig. 5)	68			
	Customized	99			
<b>Electrical connection</b>					
	5 gold plated pins, (Fig. 6)		30		
	Silicone wires 50 mm		33		
	Silicone wires 100 mm		98		
	Customized		99		
<b>Output signal</b>					
	0 to ... mV (according to specifications)		98		
<b>Accuracy</b>					
	≤ ± 0.5 % FS (> 600 bar ≤ ± 1% FS)			0	
	≤ ± 0.25 % FS			1	
	≤ ± 0.1 % FS (auf Anfrage)			2	
<b>Temperature range</b>					
	0 ... 70°C compensated (allowed process temperature: -40 ... 150°C)			0	
	25 ... 100°C compensated (allowed process temperature: -40 ... 150°C)			7	
	-25 ... 85°C compensated (allowed process temperature: -40 ... 150°C)			5	
	Customized			9	
<b>Option 1</b>					
	Special oil filling: Anderol Food (for food applications)				G
	Special oil filling: AS 100 (suitable for media temp. -55 ... 150°C)				J
	Special oil filling: PAO4 (Silicone free)				Q
<b>Option 2</b>					
	Vent tube, (Fig. 7)				P
<b>Option 3</b>					
	Seals: Viton (standard)				U
	Seals: EPDM				S
	Seals: Kalrez				T
	Titanium Construction style Ø 19mm, Ø 18mm				K
	Titanium Construction style Ø 15mm				K

# Technical drawings

## Dimensions

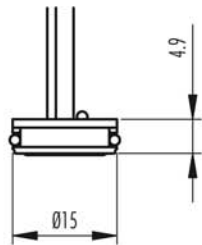


Fig. 1  
TD15 with flush diaphragm

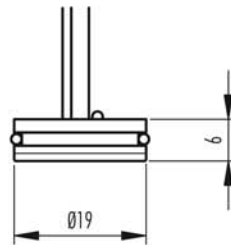


Fig. 2  
TD19 with welding ring (frontal)

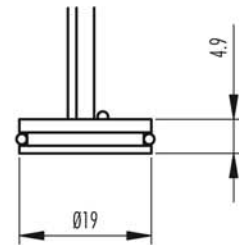


Fig. 3  
TD19 with flush diaphragm

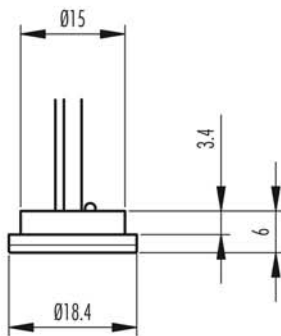


Fig. 4  
TD18 with welding ring (frontal)

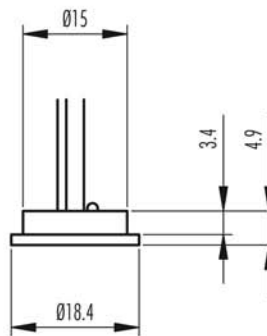


Fig. 5  
TD18 with flush diaphragm

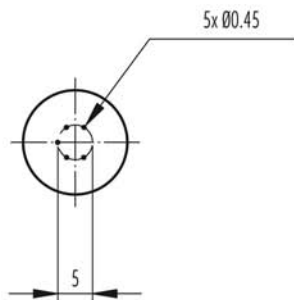


Fig. 6  
Pin dimensions

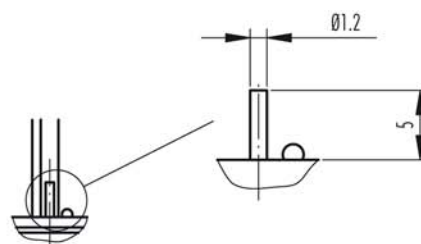


Fig. 7  
Vent tube dimensions (optional)

Specifications may change without notice.

**STS Headquarters, Switzerland:**  
STS Sensor Technik Sirmach AG  
Rüthofstrasse 8, 8370 Sirmach, Switzerland  
sales@stssensors.com | www.stssensors.com

**STS France:**  
STS France  
844 Route de la Caille, 74350 Allonzier la Caille, France  
info-fr@stssensors.com | www.stssensors.fr

**STS Germany:**  
STS Sensoren Transmitter Systeme GmbH  
Poststrasse 7, 71063 Sindelfingen, Germany  
info-de@stssensors.com | www.stssensors.de

**STS Great Britain:**  
STS Great Britain Ltd.  
Box 3942 | Warwick | CV34 9AE, United Kingdom  
contact@stssensors.com | www.stssensors.co.uk

**STS Italy:**  
STS Italia s.r.l.  
Via Gesù 5, 20090 Opera (Milano), Italy  
info-italia@stssensors.com | www.stssensors.it