



## SD-STP

*pressure transmitter  
with stainless steel thin-film measuring cell*



**SENSOR DATA**

# SD-SPT

## *Pressure transmitter with stainless steel thin-film measuring cell*

- **SEAL FREE**
- **EXTREMELY ROBUST**
- **LONG TERM STABILITY**
- **OVERLOAD-PROOF**



## TECHNICAL FEATURES

- Vacuum and 600 mbar up to 600 bar
- Relative pressure, absolute pressure, sealed reference
- (0) 4... 20 mA, 0...(5)10 V, ratiometric and more
- ISO 4400, M12x1, cable, and many more
- Accuracy < 0.5% FS (limit point adjustment)
- Wetted parts made of stainless steel
- Response time < 1ms

## DESCRIPTION

The piezoresistive MEMS thin-film measuring cell of the SPT industrial pressure transmitter is made of stainless steel and adjusted with the process connection material by welding. It is thus absolutely vacuum-tight. Leaks, caused by material fatigue or internal seals, are thus excluded in advance.

It has no disturbing pressure transmission fluid and no large pressurized areas. The connection to the connection pins takes place via golden plates and is perfectly stable even at low temperatures, shocks, or vibration. The signal processing of the measuring bridge via a mixed-signal ASIC. The SPT is an allrounder due to his large diversity of varieties.

## APPLICATIONS

- **HYDRAULICS**
- **MECHANICAL ENGINEERING**
- **MEDICAL TECHNOLOGY**
- **MOBILE HYDRAULICS**
- **WATER TECHNOLOGY**
- **GAS TECHNOLOGY**

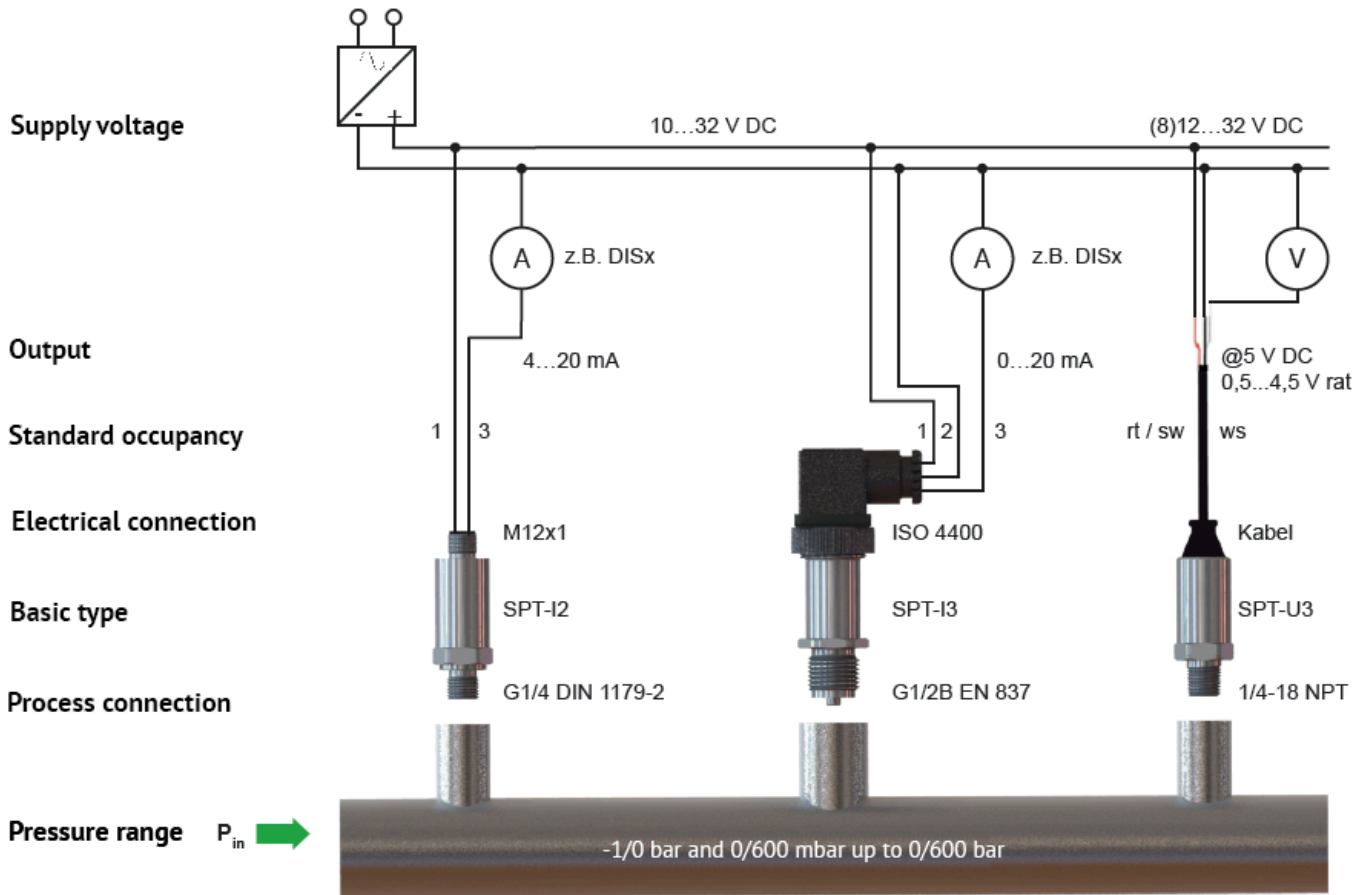


# TECHNICAL SPECIFICATIONS

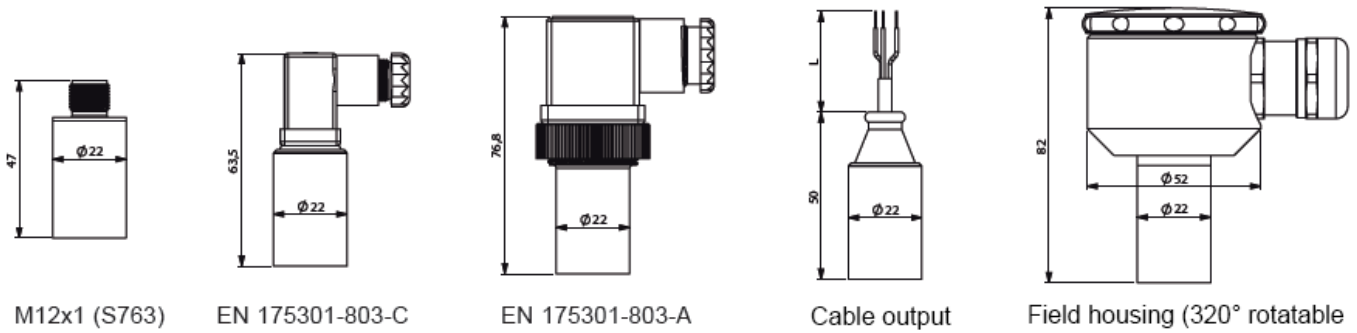
Technical Specifications	Type: SD-SPT
Pressure range (bar *)	-1 0,6 1 1,6 2,5 4 25 40 60 100 160 250 400 600
Overload range *)	Max. 1,5 times; Pressure range up to 400 bar: 1,2 times
Bursting pressure *)	3 times; pressure range from 600 bar: 1,5 times
Pressure type	Relative to atmosphere or sealed reference
Messprinzip	piezoresistive thin-film measuring cell (MEMS) (Semiconductor on stainless steel <b>plated</b> with gold)
Wetted parts	up to 400 bar: Membran 17-4 PH (1.4542 / AISI 630), Gewindestutzen 1.4301 (AISI 304); ab 600 bar: komplett 17-4 PH (1.4542 / AISI 630),
<b>Internal seals</b>	none (hermetically welded stainless steel measuring cell)
<b>Pressure transmission medium</b>	none (dry stainless steel measuring cell)
Housing material	1.4301 / AISI 304
Process connections *)	G1/4 and G1/2 acc. to DIN 3852-Form E, G1/4 and G1/2 acc. to EN 837 (Manometernippel), 1/4" and 1/2" NPT, 7/16" UNF-20 UNF, 3/8"-24 UNF-2AC
Elektrical connections *)	Connectors according to M12x1, Field housing, cable output
Weight	around 120 g
Output, supply voltage and load resistance	4 ... 20 mA, 2-wire RA $\leq$ (UB-10V) / 20 mA (Supply 10 ... 32 V DC) 0 ... 10V, 3-wire RL > 5 k $\Omega$ (Supply 12 ... 32 V DC) 0 ... 5 V, 3-wire RL > 2,5 k $\Omega$ (Supply 7 ... 32 V DC) 0,5 ... 4,5 V ratiometric, 3-wire RL > 4,7 k $\Omega$ (Supply 5 V DC +/- 10%)
Response time (T90)	< 1 ms
Total error **)	$\leq$ 0,5% FS <b>boundary settings</b> ( $\leq$ 0.35% FS BFSL) acc. to DIN EN 61298-2 (including non-linearity, zero point error, hysteresis and repeatability) in the compensated range
Non-linearity	$\leq$ 0,2 % FS <b>boundary settings</b> ( $\leq$ 0,1 % FS to BFSL)
Non-repeatability	$\leq$ 0,10 % FS
Hysteresis	$\leq$ 0,15 % FS
average TK of the offset	$\leq$ 0,15 % FS / 10K
average TK of the long-term stability span	$\leq$ 0,15 % FS / 10K $\leq$ 0,1 % FS each year at reference conditions
<b>Environmental values</b>	
Media temperature	- 40 ... + 125°C
Environmental temperature	- 40 ... + 105°C
Storage temperature	- 40 ... + 125°C
Compensated temperature range	0 ... + 80°C
<b>CE-Conformity</b>	
<b>Pressure equipment</b>	2014 / 68 / EU
<b>EMV-Directive</b>	2004 / 108 / EG according to EN61326
Sock resistance	g 1000 to IEC 60068-2-32
Vibration resistance	g 20 to IEC 60068-2-6
<b>Electrical protection</b>	
<b>Voltage strength</b>	350 VDC
<b>Short circuit strength</b>	Out+ / UB- (für 1s)
<b>Reverse polarity protection</b>	available UB+ / UB
IP Type of protection *)	Connectors according to EN 175301-803 IP65, M12 x 1 and cable IP 67. <b>IP protection classes specified in the data sheets are usually with connected plug.</b> <b>For relative transmitters a ventilated connector is required, to ensure the atmospheric pressure and / or cable equal pressure.</b> <b>For a pressure range from 60 bar a ventilated connector and / or cables is not required.</b>

\*) Others on request; \*\*) Special solutions with optional higher accuracy on request

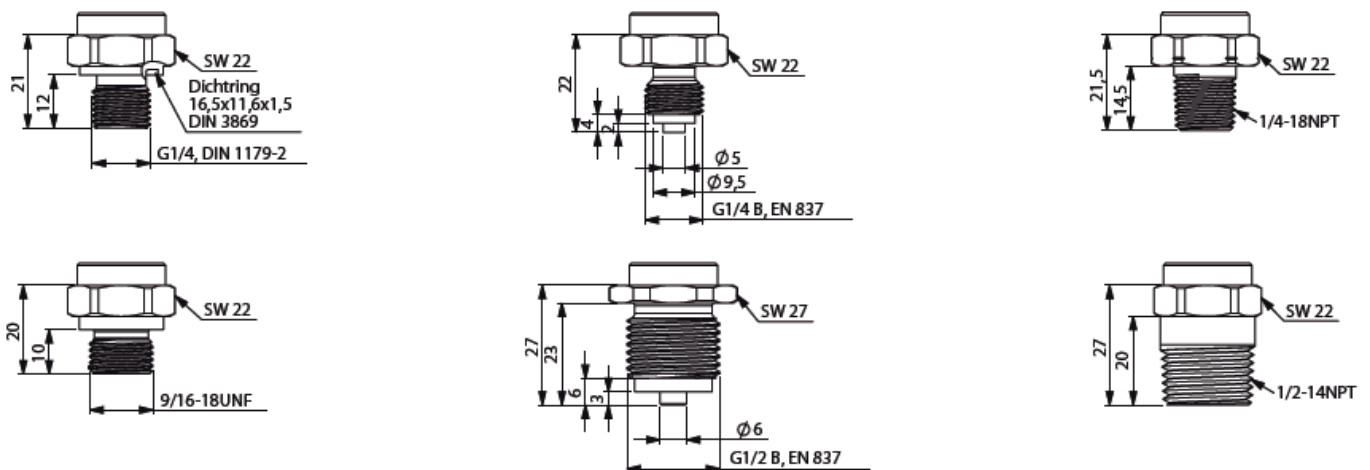
# SYSTEM CONSTRUCTION



# ELEKTRICAL CONNECTION



# PROCESS CONNECTION



# OPTIONS

In addition to the above parameters, a variety of specific wishes can be realized:

- Material of the wetted parts of the housing (E.g. 1.4404, Titan, Hasteloy and various coatings)
- Other process connections and electrical connections are available in large varieties
- Analog output signals will be adjusted on request.

**Sprechen Sie uns darauf an!**

# ACCESSORIES FOR THE MEASURING CELL

**LEDD** – This plug-in display for plug ACC. to EN 175301-803-A is simply mounted between the plug on the transmitter and the cable box. It is powered out of the 4 ... 20 mA-Loop and requires no additional auxiliary voltage



Signal input	4 ... 20 mA
Measuring range	- 1999 to 9999, free adjustable
Display	4-digits 7 mm LED
Settings	Scaling, decimal point, damping
Housing	Plastic, IP 65
Options	1x switching point PNP

**DIS4** is a 4,5 digit digital display and control unit for the control panel installation. It will be completely parameterised - delivered due to the pressure transmitter. The connected transmitter is operated via the internal power supply and evaluated.



Signal input	0 ... 5 V DC 0 ... 10 V DC 4 ... 20 mA
Measuring range	1999 to 9999, configured at the factory
Display	4,5-digits 7 mm LED
Installation dimensions	48 x 48 mm
Housing	Plastic, IP 60
Options	1 or 2 relays outputs

# OTHER MEASURING DEVICES



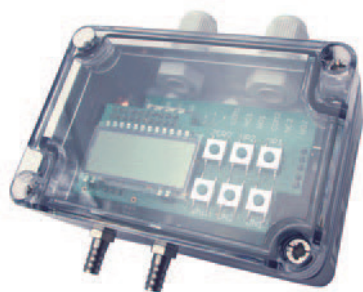
**front-flush pressure transmitter**



**Level probes**



**Compact temperature transmitter**



**Differential pressure switch for low pressures**



**Differential pressure transmitter for low pressures**