# SPT

**Industrial Standard Transmitter**

## Technical Data

| | |
|---|---|
| Measuring range | **0...10 bar** |
| Output | **4...20 mA ( 2-wire, 3-wire ) ; 0...10 V; 0...5 V; 0,5...4,5 V** |
| Pressure connector | G ¼“ Form E (Standard) |
| Operating Temperature | 0 .. +120 °C |
| Environment Temperature | -40 .. +105 °C |
| Type of protection | IP65 ( DIN 40 050) |

- Resistant to pressure peaks
- Shock- and vibration-proof
- insensitive to temperature shocks
- Enclosure IP 65 according to DIN 40050
- parts and housing made of Cr-Ni steel

### Structure

- High-grade steel diaphragm (without oil collecting main)
- Thin-film technology ( Poly-Si auf $SiO_2$ )
- Temperature –40°C bis 105°C
- class : 0,5% Standard (optional 0,25%)
- Mixed Signal ASIC

### Operational areas

- Pneumatics
- Hydraulics
- Air condition technology
- Robots
- Process control
- Heating systems
- Agricultural machinery technology
- Environmental technology

### Description

The pressure transmitters contain only a few active elements, like the sensor element, a signal processing ASIC and, if necessary, a U/I- and/or a U/U converter circuit.

The calibration takes place electronically, with which the pressure transmitters have a comparatively small gross error and are long-term stable. The hermetically welded thin film measuring cell ensures a high long-term tightness and stability. The ASIC is a programmable Praezisions CMOS ASIC with EEPROM data storage and similar signal path, which is qualified for an extended work temperature range.

The high-grade steel diaphragm is completely vacuum-tight, extremely berst protected and applicable to all standard media in hydraulics, pneumatics, environmental technology, process technique, semiconductor technology and car technology, as far as they are compatible with high-grade steel, applicable. These characteristics make it suitable for standard applications in mobile hydraulics as well as in other fields of application.

Different combinations of the mechanical and electronical connections result in various pressure transmitter versions. If necessary a test certificate is provided according to DIN ISO 9001 or DKD.

Mistakes and changes in the sense of technical improvements reserved.

| Technical Data | Type SPT |
|---|---|
| Standard Pressure rang *) | **0...10bar** |
| Over range pressure ( bar) *) | 1,5-times |
| Berst pressure ( bar) *) | 3-times |
| Pressure system | Relative to athmosphere or sealed reference |
| Pressure connector * ) | standard G1/4“ E<br>other on request |
| **used material**<br>**materials of the parts affected by the measuring**<br>**medium:**<br>**Housing:** | <br><br>CrNiCuNb 17-4 PH , no O-Ring ,<br>no silikon oil<br>X5CrNi18-10 |
| Sensor | High-grade steel diaphragm |
| Connector | in accordance with desired patch cord see manufacturer data |
| Weight ( g) | 90 g |
| **electrical parameter** | |
| Recommended max.<br>Load resistance Rl<br><br>Response time ( 10…90 %) $t_E$ | **Output range** / **Power supply**<br>**4...20 mA (2-wire)** / 12...30 V a)<br>**0 bzw. 4...20 (3-wire)** / 9...30 V b)<br>**0…10 V** / 12...30 V c)<br>**0.…5 V** / 8…30 V d)<br>**0,5…4,5 V** / 8…30 V d)<br>a) ( Ub – 12 V ) / 20 mA b) ( Ub – 9 V ) / 28 mA<br>c) ≥ 5 kΩ d) ≥ 2,5 kΩ<br>< 1 ms |
| Insulation resistance @ 50 V | ≥ 100 M Ω |
| **Electrical connection * )**<br><br>Type of protection (DIN 40 050) | Standard : Connector DIN EN175301-803 BF C<br>other on request<br>IP 65 or equal to connector |
| **Linearity error at RT ( % FS) ( BFSL) **)** | **± 0,5 max. ( optional 0,25 **** )** |
| Reproducibility % FS | < 0,1 |
| Stability per year % FS | < 0,2 ( at reference conditions) |
| **Environmental values** | |
| - Environmental Temperature (° C)<br>- Media Temperature (° C)<br>- Storage Temperature (° C)<br>- compensated temperature range (° C) | -40....+ 105 ° C<br>-40....+ 125 ° C<br>-40....+ 125 ° C<br>-40....+ 105 ° C |

Gross error ***) max. ± **** )

| - 40° C...-20 ° C | -20° C..+85°C | +25° C ± 5 ° C | +30° C... +85°C | +85° C...+105° C |
|---|---|---|---|---|
| 3,0 typ. < 2,0 % | 1,0 typ. < 0,7 % | 0,5 typ. < 0,3 % | 0,7 typ. < 0,5 % | 2,5 typ. < 1,5 % |

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|---|---|
| electromagnetic compatibility<br>Interfering radiation DIN EN 55011<br>Stability DIN EN 61000-4-3 | <br>< 30 dBµV/m<br>25 V / m |
| Resistance to shocks tested to IEC 68-2-32 | 1 m (free on steel plate) |
| Vibration resistance tested to IEC 68-2-6 and IEC 68-2-36 | 20 g |

*** ) other on request**
**** ) integrals linearity error (FS = Full Scale, BFSL = Best Fit Straight Line)**
***** ) The gross error contains non-linearity, hysteresis, repeatability and temperature influence**
****** ) customized special equipment with optional better accuracy on request**