



## Pressure Transmitter HPT 1400S smart

Relative pressure      Accuracy 0.5%

Added value thanks to:

- Process data
- Condition data
- Smart data

**smart**

CANopen®

CAN interface

### Description:

The new generation of smart sensors is designed to generate further relevant information in addition to the operation data. This ensures the support of dynamic, real-time optimised and self-organising processes, which optimises the availability as well as the resource consumption and reduces operating costs.

The pressure transmitter series HPT 1400S has been specifically developed for series application and for the use in extremely limited space conditions.

Like most of our pressure transmitter series, the HPT 1400S is based on a robust and long-life, thin-film sensor.

All of the parts in contact with the fluid (sensor and pressure port) are made of stainless steel and are welded together. This means that there are no sealing points in the interior of the sensor. The risk of leakage has been eliminated. The transmitters are available providing various pressure ranges.

A basic accuracy of  $\leq \pm 0.5\%$  FS, combined with a small temperature drift, opens up a broad range of applications for the HPT 1400S.

The measured pressure value is digitized and made available to the CAN field bus system via the CANopen protocol. The instrument parameters can be viewed and configured by the user using standard CAN software.

In addition, the HPT 1400S provides a wide range of additional smart information.

### Technical Data

| Input data  |     |     |     |     |   |     |      |      |      |
|---|-----|-----|-----|-----|---|-----|------|------|------|
| Measuring range   | bar | 16  | 25  | 40  | 60  | 100 | 250  | 400  | 600  |
| Overload pressure   | bar | 50  | 50  | 80  | 120   | 200 | 500  | 800  | 1000 |
| Burst pressure  | bar | 125 | 125 | 200 | 300   | 500 | 1250 | 2000 | 2000 |
| Tightening torque, recommended  |     |     |     |     | 20 Nm   |     |      |      |      |
| Parts in contact with fluid   |     |     |     |     | Mechanical connection: stainless steel  |     |      |      |      |
|   |     |     |     |     | Seal: FKM   |     |      |      |      |
| Output variables  |     |     |     |     |   |     |      |      |      |
| Output signal   |     |     |     |     | CANopen   |     |      |      |      |
| Accuracy acc. to DIN 16086  |     |     |     |     | $\leq \pm 0.5\%$ FS typ.  |     |      |      |      |
| Max. setting  |     |     |     |     | $\leq \pm 1.0\%$ FS max.  |     |      |      |      |
| Accuracy at Min. setting (B.F.S.L)  |     |     |     |     | $\leq \pm 0.25\%$ FS typ.   |     |      |      |      |
|   |     |     |     |     | $\leq \pm 0.5\%$ FS max.  |     |      |      |      |
| Temperature compensation, zero point  |     |     |     |     | $\leq \pm 0.0125\%$ / °C typ.   |     |      |      |      |
|   |     |     |     |     | $\leq \pm 0.025\%$ / °C max.  |     |      |      |      |
| Temperature compensation, over range  |     |     |     |     | $\leq \pm 0.0125\%$ / °C typ.   |     |      |      |      |
|   |     |     |     |     | $\leq \pm 0.025\%$ / °C max.  |     |      |      |      |
| Non-linearity acc. to DIN 16086 terminal based                                      |     |     |     |     | $\leq \pm 0.3\%$ FS max.  |     |      |      |      |
| hysteresis  |     |     |     |     | $\leq \pm 0.4\%$ FS max.  |     |      |      |      |
| Repeatability   |     |     |     |     | $\leq \pm 0.1\%$ FS max.  |     |      |      |      |
| Long-term drift <sup>1)</sup>   |     |     |     |     | $\leq \pm 0.2\%$ FS typ. / year   |     |      |      |      |
| Rise time   |     |     |     |     | $\leq 1$ ms   |     |      |      |      |
| Smart Functions   |     |     |     |     |   |     |      |      |      |
| Operating data logging (resettable as well as persistent over the whole life cycle) |     |     |     |     | Pressure (Min / max / average value) Operating time i.e.<br>-General (hour counter)<br>-Arrhenius value (temp. compensated operating time)  |     |      |      |      |
| Measuring channel-related events  |     |     |     |     | General measuring channel-related operating times<br>Events counter<br>Statistic for the actual use (operation per Measuring range segment / over / undershooting, overload etc.) |     |      |      |      |
| Communication   |     |     |     |     | CANopen   |     |      |      |      |
| Ambient Conditions  |     |     |     |     |   |     |      |      |      |
| Compensated temperature range   |     |     |     |     | -25 .. +85° C   |     |      |      |      |
| Operating temperature range <sup>1)</sup>   |     |     |     |     | -40 .. +100 °C  |     |      |      |      |
| Storage temperature range   |     |     |     |     | -40 .. +100 °C  |     |      |      |      |
| Fluid temperature range   |     |     |     |     | -40 .. +125 °C  |     |      |      |      |
| CE-Marked   |     |     |     |     | EN 61000-6-1 / -2 / -3 / -4   |     |      |      |      |
| Vibration resistance acc. to IEC 68-2-6 at 10 .. 500Hz 500Hz                        |     |     |     |     | $\leq 25$ g   |     |      |      |      |
| Shock resistance acc. to DIN EN 60068-2-27  |     |     |     |     | 100 g / 6 ms / half-sine<br>500 g / 1 ms / half-sine  |     |      |      |      |
| Protection class to IEC 60529 <sup>2)</sup>   |     |     |     |     | IP 67   |     |      |      |      |
| Other data  |     |     |     |     |   |     |      |      |      |
| Supply voltage  |     |     |     |     | 9 .. 35 V DC  |     |      |      |      |
| Residual ripple of supply voltage   |     |     |     |     | $\leq 5\%$  |     |      |      |      |
| Current consumption   |     |     |     |     | $\leq 25$ mA  |     |      |      |      |
| Weight:   |     |     |     |     | approx. 45 g  |     |      |      |      |

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

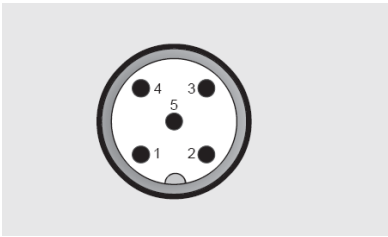
FS (Full Scale) = relative to complete measuring range

<sup>1)</sup> in the standard up to -25°C with FKM seal, -40 °C on request

<sup>2)</sup> with mounted mating connector in corresponding protection class

## Pin connections:

M12x1, 5 pole



| Pin | Signal          | Description            |
|-----|-----------------|------------------------|
| 1   | PE              | Shield / housing       |
| 2   | +U <sub>B</sub> | Supply +               |
| 3   | 0 V             | Supply - / GND         |
| 4   | CAN_H           | Bus line dominant high |
| 5   | CAN_L           | Bus line dominant low  |

## Protocol Data CANopen

|                                     |  |
|-------------------------------------|--|
| Communication profile               | CiA DS 301 V4.2  |
| Device profile                      | CiA DS 404 V1.3  |
| Layer setting services and protocol | CiA DSP 305 V2.2   |
| Automatic bit-rate detection        | CiA AN 801   |
| Baud rates                          | 10 kbit .. 1 Mbit corresp. to DS305 V2.2   |
| Transmission services               | measured value as 16/32 bit and float, status synchronous, asynchronous, cyclical, measured value change, exceeding boundaries |
| - PDO                               |  |
| - Transfer                          |  |
| Node ID/baud rate                   | Can be set via Manufacturer Specific Profile   |

## Model Code:

HPT 14XXS – F11- XXXX – 000

### Mechanical connection

4 = G 1/4 A ISO 1179-2 with orifice 0.5 mm

### Electrical connection

8 = M12x1, 5 pole

### Enhanced functions

S = smart

### Output signal

F11 = CANopen

### Pressure ranges in bar

0016; 0025; 0040; 0060; 0100; 0160; 0250; 0400; 0600

### Modification Number

000 = Standard

### Accessories:

Appropriate accessories, such as mating connectors for electrical connection, can be found in the HYDAC ELECTRONIC Product Catalogue.

## Note:

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described please contact the relevant technical department.

Subject to technical modifications.

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## Dimensions:

