New Pressure Sensors
Type HT-PD
from HYDROTECHNIK
Product range pressure sensors type HT-PD

The latest thinfilm WSG pressure sensor type HT-PD from Hydrotechnik was developed in order to measure pressures and pressure peaks within an extended temperature band. Its strongest attributes lie in the following areas:

- Reliability
- Repeatability
- Temperature stability
- Robust industrial design
- Media compatibility
- Resistance to thermal shocks and vibrations

The HD-PD's simple yet advanced design features very few active components. These include the sensor element, signal processing circuit and associated protective components. The calibration is executed electronically with on-board storage of all parameters. The benefit of this feature is an extended working temperature range with excellent long-term stability and comparatively small total error. The mechanical dimensions of this latest model have been reduced once more achieving major size and weight saving and an increased resistance to thermal shocks and vibrations.

Major features

- Compact and lightweight
- High temperature operating range (-40°C up to +100°C, for a brief period up to 120°C)
- High resistance to thermal shocks and vibrations
- Ideally suited to use in mobile hydraulics at higher temperatures
- High IP protection (up to IP 69 K) depending on the choice of cable connection
- Custom application suitability due to modular sensor construction (construction kit principle)

Application ranges

- Industrial hydraulics
- Mobile hydraulics
- Pneumatics
- Industrial robot
- Process & control
- Testing & development
- Quality control
- Service and maintenance
- Laboratory & calibration
Construction kit principle HT-PD

For user with custom requirements

Available connection options

- **Pressurized connection**
  - ISO 228-G 1/4
  - M 14 x 1.5

- **Standard connection with 5-pole plug**
  (Amphenol type T3362000 or Binder type 09-0115-00-05 series 723)
  - IP 40

- **4-pole plug integrated within the pressure sensor**
  (Hirschmann MINI, type A 14)
  - IP 65

- **4-pole plug integrated within the pressure sensor**
  (Hirschmann type GDM acc. to DIN 43650)
  - IP 65

- **5-pole plug integrated within the pressure sensor**
  (Lumberg-plug type RSF 5)
  - IP 67 *)

- **Cable flow chart connector from the pressure sensor**
  0.5 m with connected 2-pole plug (AMP type 106462)
  - IP 67 *)

- **Free cable end integrated within the pressure sensor**
  without cable plug
  - IP 69K
  (only valid for pressure sensors with cable)

*)  IP 67 rating is only valid when the connection is made as screw-in or as plug-in connection

Further options on request
Pressure sensor type HT-PD

Plug and cable connections options

- Cable without plug (length of cable optional)
- Amphenol
- AMP-superseal
- Hirschmann Mini
- Lemosa
- Lumberg
- Deutsch
- Angle plug according to DIN 43650

Further options on request

Output signals

- 0 to 20 mA
- 4 to 20 mA
- 0 to 5 VDC
- 1 to 5 VDC
- 1 to 6 VDC
- 0 to 10 VDC
- 1 to 10 VDC
- 0.5 to 4.5 VDC ratio
- and other signal outputs

Pressure ranges (bar)

- -1 to 6
- 0 to 60
- 0 to 200
- 0 to 400
- 0 to 600

Further options on request

Measuring principle:

Thinfilm (WSG) wire strain gauge on steel diaphragm

Mechanical connections

- ISO 228- G1/4
- 1/4 NPT

Further options on request
**Technical data HT-PD**

Reference of the specific data 20 °C±3 K

**Measure principle:** Thinfilm WSG / relative pressure

**Measuring output signal:** Options 0 to 20 mA (three-wire), 4 to 20 mA (two-wire) or 0 to 10 VDC (three-wire)

**Supply voltage:** 10 to 30 VDC (signal 0 to 20 mA /4 to 20 mA) 12 to 30 VDC (signal 0 to 10 VDC)

**Over voltage protection:** To max. 35 VDC

**Current consumption:** 12 mA (0 to 20 mA/4 to 20 mA) 8 mA max. (0 to 10 VDC)

**Non-linearity and hysteresis:** ±0.5 % of full-scale output

**Error limit:** Typically 1.5% in the temperature range -40 °C to +100 °C

**Repeatability:** ±0.1 % of full-scale output

**Mechanical overload capacity:** 1.5 x nominal pressure

**Bursting pressure:** 3 x nominal pressure

**Working temperature range:** -40 °C to +100 °C (for a brief period +120 °C)

**Media temperature:** -40 °C to +130 °C

**Stock temperature range:** -40 °C to +130 °C

**Long-term stability:** 0.1 % of final scale/year

**Load resistor:** Current source: $R_L = \frac{V_s - 5V}{20mA}$ (0 to 20 mA),  $R_L = \frac{V_s - 10V}{20mA}$ (4 to 20 mA)

Voltage source: $R_L = 5 \text{kOhm}$

**Environmental rating (EN 60529/IEC 529):** IP 40 to IP 69K (depending on plug connection)

**Fatigue life (FS cycles):** > 10 x 10⁷

**Frequency response (amplifier):** DC to >1 kHz

**Reaction time:** < 1 ms

**Insulation resistance:** Minimum 100 MΩhm

**CE-mark:** Interference emission acc. to EN 50081-2, immune to interference acc. to EN 50082-2

**Resistance to vibrations:** 20 g (1mm vibration way 10 bis 2000 Hz)

**Resistance to thermal shocks:** 50 g (6 ms half sinusoid)

**Electrical connection:** 5-pole Plug (standard)

**Pressurized connection G (mechanical):** ISO 228-G1/4 A: maximum 25 Nm, gasket: Gi-ring: FKM (Viton)

**Material:** Wetted parts: 1.4542 stainless steel

**Weight:** 0.06 Kg

Please ask for further information:
Technical data HT-PD concerning standard HT-PD

Technical data corresponding to page 3

Physical dimensions:

Connection scheme 0 to 20 mA
3-wire technology

Signal connection, pressure measuring ranges

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Connection scheme 4 to 20 mA
2-wire technology

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