

# Pressure Transmitter

digital high-precision transmitter with piezoresistive measuring cell

**DIGPTMv**

## Application

Pressure transmitters DIGPTMv are conceived for high-precision recording- and monitoring of absolute- and overpressures of liquid, as well as gaseous media for measuring spans 4 bar up to 100 bar. By integration of a separate temperature sensor as well as the conjunction of the pressure- and temperature signals in the internal microprocessor a higher stability and accuracy over the full rated temperature is being reached.

The robust full metal version and the resulting EMC-stability (double test level) predestines the DIGPTMv for industrial applications. The use of stainless steel grants a high IP-degree of protection and high chemical resistance.

With its two switching outputs, which are absolutely freely programmable regarding switching function, switch point and switch hysteresis, as well as the integrated RS-485-port, the DIGPTMv constitutes a synergy of pressure transmitter and pressure switch in only one instrument. Simple, pressure controlled switching operations can be realised without additional SPC or logic modules and can be administrated by the user at any time with the software via RS-485.

## Construction

- Piezoresistive pressure transmitter with diaphragm made of stainless steel
- An exact temperature signal of the internal PT1000 is additionally available besides the pressure signal, whereby the error- and temperature compensation is being realised mathematically
- CMOS RISC Microcontroller:
  - Calculation of error compensation,
  - Analogue output 4 .. 20mA,
  - Permanent status request and exposition of NAMUR-alarm conditions,
  - Optional functions

## Standard Version

### Process Connection

G 1/2 B (1/2" BSP), 1.4571 (316 Ti stainless steel), welded hermetically dense to internal measuring cell (leakage rate  $<10^{-9}$  mbar l/s)

### Measuring Cell / Sensor

Piezoresistive measuring cell: 1.4435 (316 L stainless steel)  
Internal diaphragm: 1.4435 (316 L stainless steel)

### Case

1.4571 (316 Ti stainless steel, welded to process connection)

### Pressure Ranges

Spans 4 bar up to 100 bar, e. g.

-1 – 3 bar
0 – 6 bar absolute
0 – 100 bar

### Electrical Data

Output signal: analogue: 2-wire 4 .. 20 mA  
digital: RS 485

Electrical connection: Miniature- angular plug connector M16x0.75; 4- resp. 6-pin massively metallic screened

Load impedance: RL < (UB-8V)/ 0.023A; max. 680 Ohm at 24VDC

Power supply: +12 to +24VDC ( $\pm 25\%$ ); reverse voltage protected

### Accuracy of the measurement

$\leq 0.08\%$  in rated temperature range (including non-linearity, hysteresis and non-repeatability),



### Temperature Ranges

Transport- and storage temperature:  $-40\text{ }^{\circ}\text{C}$  to  $+85\text{ }^{\circ}\text{C}$  ( $-40\text{ }^{\circ}\text{F}$  to  $+185\text{ }^{\circ}\text{F}$ )  
Rated temperature:  $-40\text{ }^{\circ}\text{C}$  to  $+80\text{ }^{\circ}\text{C}$  ( $-40\text{ }^{\circ}\text{F}$  to  $+176\text{ }^{\circ}\text{F}$ )

### Reference Temperature

$+20\text{ }^{\circ}\text{C}$  ( $+68\text{ }^{\circ}\text{F}$ )

### Long Term Stability

$\leq 0.05\%$ FS/ a (for reference conditions)

### Position of Installation / Position of Connection

any

### Protection Type (EN 60529/ IEC 529)

IP 67

### CE- Conformity

IEC 61 326-1: 2006  
EN 61 326-2-3: 2006

### EMC- Stability

RL2004/108/EG/2004/108/EC	IEC 61000-4-5: $\pm 1\text{ kV}$
IEC 61000-4-2: 8kV	IEC 61000-4-6: 10V
IEC 61000-4-3: 10V/m	NE 21: 2007
IEC 61000-4-4: $\pm 4\text{ kV}$	GL VI part 7, chapter 2: 2003

## Options

- Other process connections upon request
- Other measuring span  $\leq 4$  bar upon request
- High-precision version with accuracy  $\leq 0.05\%$  upon request
- Other rated temperature ranges upon request
- Free cable head (IP68) with 1.5 m cable
- Installation to pressure connection of the pressure gauge
- Software low-pass
- Switching output preset ex works:
  - 2 separate PNP-switches with NC-function; available freely as bottom contact or normally open contact or window or inverted window; switch point and -hysteresis adjustable;
  - for ohmic, capacitive and inductive load each 0.2A;
  - short-circuit proof; fall of voltage (at  $I_{\text{max}} = 0.2\text{ A}$ )  $\leq 2\text{ V}$ , preset ex works
- digital communication via RS-485 for administration of the transmitter:
  - Adjustment of switching operations, set points and switching hysteresis,
  - Adjustment of software low-pass, if applicable offset,
  - RS-485-bus address,
  - Output signal-transformation (flow),
  - Indication of the digital value of the measurement

## Accessory

- USB / RS-485 junction box for USB- PC-communication with the transmitter via USB
- PC- software



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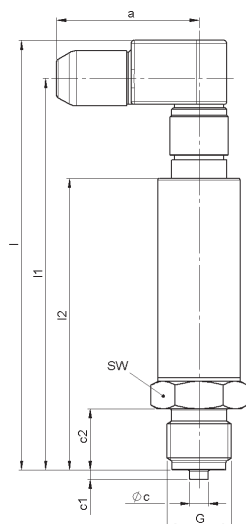
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## Case Configuration



**Dimensional data (mm / inches) and weights (kg / lb)**

a	b	c	c1	c2	G	L	L1	L2	SW	weight (approx.)
46	20	Ø 6	3	20	G ½	140	128	95	27	0.300
1.81	.79	Ø .24	.12	.79	½" BSP	5.51	5.04	3.74	1.06	.66

Technical changes, replacement of materials and errors excepted.