

Pressure Transmitter

DIGPTMv

Digital precision pressure transmitter with piezoresistive measuring cell
Pressure ranges 0 – 4 bar to 0 – 160 bar

Application

Pressure transmitters DIGPTMv are designed for measuring and monitoring absolute pressures and overpressures of liquid and gaseous media for measuring spans from 4 bar up to 160 bar.

By integrating a separate temperature sensor and linking the pressure and temperature signal in the internal microprocessor, a higher stability and accuracy is achieved over the entire rated temperature range.

The robust all-metal version and the resulting EMC stability (double test level) make the DIGPTMv ideal for industrial applications. The use of stainless steel guarantees a high degree of protection and high chemical resistance.

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

Construction

- Piezoresistive pressure transducer with stainless steel membrane
- In addition to the pressure signal, a precise temperature signal is available from the internal PT1000, with which the error and temperature compensation is realised mathematically
- CMOS RISC microprocessor:
 - calculation of the error compensation
 - analogue output 4...20 mA
 - permanent status request and indication of NAMUR alarms
 - optional functions

Standard Versions

Process Connection

G ½B, stainless steel 316Ti (1.4571), hermetically sealed with measuring cell placed inside (leakage rate 10^{-9} mbar l/s)

Measuring Cell/Sensor

Piezoresistive measuring cell: stainless steel 316L
Membrane placed inside: stainless steel 316L welded

Case

Stainless steel 316Ti (1.4571), degree of protection IP67 according to DIN EN 60 529

Pressure Ranges/Overload Capability

Measuring spans from 0 – 4 bar up to 0 – 160 bar

Overpressure / Absolute Pressure (a) in bar					
-1 / +3	0 – 4	(a)	0 – 25	(a)	
-1 / +5	0 – 6	(a)	0 – 40	(a)	
-1 / +9	0 – 10	(a)	0 – 60	(a)	
-1 / +15	0 – 16	(a)	0 – 100	(a)	
			0 – 160	(a)	

Output Signal

4...20 mA 2-wire

digital RS-485

Supply Voltage

12...24 V DC ($\pm 25\%$)

Load Impedance

$(U_B - 8 V) / 0.023 A$
max. 680 Ohm at
24 V DC

Measurement Accuracy

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

Temperature Limitations

Storage temperature: $-40 / +85\text{ }^\circ\text{C}$ ($-40 / +185\text{ }^\circ\text{F}$)

Rated temperature: $-20 / +60\text{ }^\circ\text{C}$ ($-4 / +140\text{ }^\circ\text{F}$)

Reference Temperature

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

Long-term Stability

$\pm 0.05\%$ FS/a
(at reference conditions)

Reverse Voltage Protection

Available

Electrical Connection

Miniature angular plug connector M 16x0.75;
6-pin massive metall shielded

Position of Installation/Position of Connection

Any

CE Conformity

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

EMC

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

- Free cable end (IP68) with 1.5 m cable
- Installation to pressure connection of the pressure gauge
- Switching output adjusted ex works:
 - 2 separate PNP switches with NC function; breaking contact, making contact, window or inverted window (see page 2)
 - for ohmic, capacitive and inductive load each 0.2 A
 - short-circuit proof
 - voltage drop (at $I_{max} = 0.2 A$) $\leq 2 V$
 - angular plug 6-pin

Special Versions Upon Request

- Other process connections
- Other measuring spans
- Version with increased accuracy $\leq 0.05\%$
- Other rated temperature ranges
- Other scale units, e.g. psi

Accessory

USB/RS-485 connection box for USB-PC communication with the transmitter and PC software for the administration of the transmitter:

- Setting of switching functions, switching points and switching hysteresis
- Setting of the software low-pass, offset if applicable
- RS-485 bus address
- Output signal transformation (current)
- Indication of the digital value of the measurand

Ordering Information

Please specify in your order:

- Switching function
- Switching points
- Switching hysteresis

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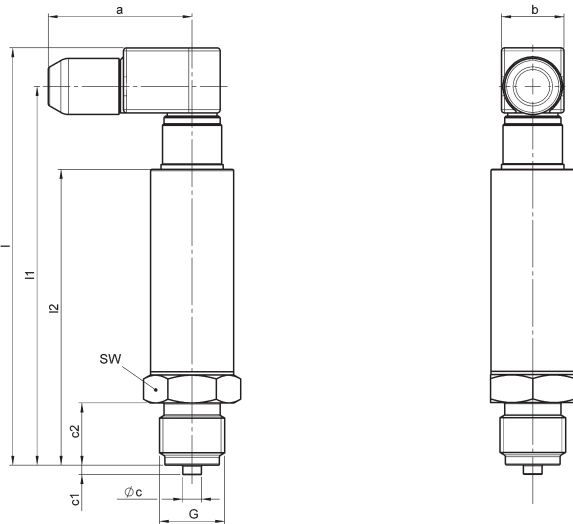
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Case Configuration, Dimensional Data and Weight, Wiring Diagram

Standard Version

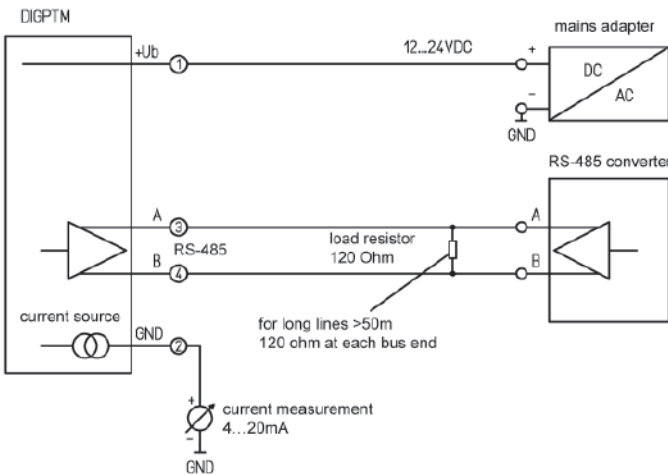


Dimensional Data (mm/inch) and Weight (kg/lb)

a	b	c	c1	c2	G	L	L1	L2	SW	approx. weight
46	20	Ø 6	3	20	G 1/2	134	121.6	95	27	0.3
1.81	0.79	0.24	0.12	0.79		5.28	4.79	3.74	1.06	0.66

Wiring Diagram

external connection DIGPTM standard



external connection DIGPTM with switching output

