

Pressure Transmitter

UHP-Transmitter

With thin film measuring cell

DIGDTMvUHP

Applications

UHP-transmitters are applied where highest purity of the medium and a minimum of chemical interaction caused through contamination is required.

Process gas supply
Semi conductor industry
Microelectronics
Nano-technology
Research
Analysis technology
High purity gas industry

UHP-pressure transmitters of the series DIGDTMvUHP combine the advantages of a digital pressure transmitter with the safety and robustness of a hermetically welded and dry thin film measuring cell. In comparison to oil-filled piezoresistive measuring cells, this dry construction form does not contain the risk of a system contamination in case of rupture caused by overload or corrosion.

The **ALL-IN-ONE**-version of the DIGDTMvUHP allows for universal application, operating as analogue 2-wire 4...20 mA and / or stand-alone two-channel precision pressure switch, which can be freely adjusted in switching function, switch points and switching hysteresis. Furthermore, the RS-485 interface provides the possibility of connecting up to 254 transmitters. The temperature at the measuring point is captured by the integrated platinum resistor and digitally transmitted. The active temperature compensation ensures compliance with the error class over the entire temperature measuring range without additional error. The impacts of pulsations of the medium can be eliminated through the integrated software low pass of the measuring signal.

Construction

- Robust thin film pressure transducer with diaphragm made of corrosion-free stainless steel, directly welded, hermetically dense
- Case made of stainless steel with approved EMC-shield and high IP protection degree
- CMOS RISC microprocessor: active error compensation on the entire temperature measuring range
- Besides the pressure signal, the temperature at the measuring point of the internal PT1000 is additionally available
- **ALL-IN-ONE**: pressure, temperature, analogue output 2-wire 4...20 mA with NAMUR-alarm, RS-485 interface, 2-channel precision pressure switch, spin-down scaling of measurement range, possibility of correction of offset, software low pass, software package USSCOM

Standard Version

Process Connection

1/4" VCR-M pressure screw 9/16-18UNF male thread, alternatively 1/4" VCR-F union nut with 9/16-18UNF female thread, stainless steel 316 L, hermetically welded measuring cell (leak rate < 10⁻⁹ mbar l/s)

Measuring cell / Sensor

Thin film measuring cell 1.4548 placed inside

Case

Stainless steel 1.4571, welded to process connection

Measuring ranges / Overload

Table see back of page



Rupture Pressure

Minimum 5-fold P_N

Electronical Data (Wiring see back of page):

Output signal analogue: 2-wire 4...20 mA
Digital interface: RS 485
2 short circuit protected switching outputs (PNP-switch with NC-function) for ohmic, capacitive and inductive load per 0.2 A, short circuit protected, voltage drop (at I_{max} = 0.2 A) ≤ 2 V;

Switching function: breaking contact, making contact, window or inverted window adjustable via optional software USSCOM

electronical connection: miniature angular plug connection M 16x0.75; 6-pin massively metallically shielded

Load Impedance

RL < (U_B - 8V)/0.023 A; max. 680 ohm at 24 V DC

Power Supply

+12 to +24 V DC (±25 %), reverse polarity protected

Measurement Accuracy

≤ 0.2 % in temperature measuring range (including non-linearity, hysteresis and non-repeatability)

Temperature Ranges

Transport and storage temperature: -40 °C to +85 °C (-40 °F to +185 °F)
Measuring temperature: -20 °C to +80 °C (-4 °F to +176 °F)
Reference temperature: +20 °C (+68 °F)

Long-term Stability

≤ 0.2 % FS/a (at reference conditions)

Position of Installation/Position of Connection

Any

Protection Type (EN 60 529/IEC 529)

IP 67

EC-Conformity

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

EMC-Stability

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



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Measuring Ranges / Overload, Dimensional Data and Weight, Connecting Diagram

Measuring Ranges / Overload: Spans 4 bar to 400 bar and above

overpressure (bar)	overload limit (bar)	overpressure (bar)	overload limit (bar)
-1 / 3	8	0 – 25	40
-1 / 5	12	0 – 40	100
-1 / 9	20	0 – 60	100
-1 / 15	40	0 – 100	300
0 – 4	8	0 – 160	300
0 – 6	12	0 – 250	600
0 – 10	20	0 – 400	600
0 – 16	40		

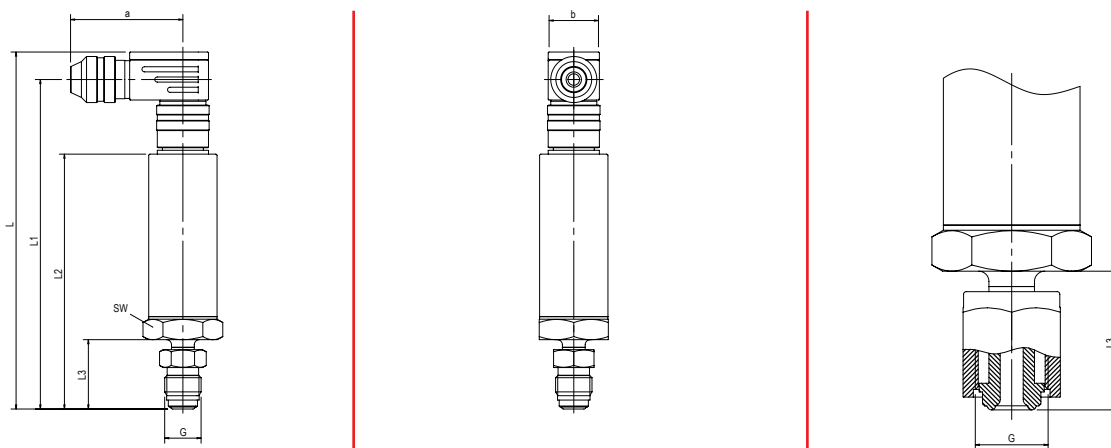
Options

- Digital indicating module model DASA
- Software USSCOM for visualisation of the measuring data and administration of the transmitter
- RS-485 / USB-converter with integrated voltage converter 5 V / 12 V; 0.15 A
- Switching output adjusted ex works
- Free cable head with cable gland (IP 68)

Specialties and further Options among others

- Other process connections upon request
- Other materials for wetted parts upon request
- Version with increased precision upon request
- Other temperature measuring ranges upon request

Case Configuration



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

	a	b	G	L	L1	L2	L3	SW	Weight (approx.)
DIGDTMvUHP	46 1.81	20 .79	9/16-18 UNF VCR-M	140 5.51	129 5.08	100 3.94	27 1.06	27 1.06	0.24
			9/16-18 UNF VCR-F						0.26 0.57

Connecting Diagram

external connection DIGDTMvUHP

