

# Pressure Transmitter

UHP transmitter with thin film measuring cell

Pressure ranges 0 – 4 bar to 0 – 350 bar

**DIGDTMv**  
**UHP**

## Application

UHP transmitters are used wherever the highest level of medium purity and a minimum of chemical interaction due to impurities is required, e.g. process gas supply, semiconductor industry, micro-electronics.

UHP pressure transmitters of the type series DIGDTMvUHP combine the advantages of a digital pressure transmitter with the safety and robustness of a hermetically sealed dry thin film measuring cell. In comparison with the oil-filled piezoresistive measuring cells, the unfilled construction type does not entail the risk of a system contamination in case of a burst due to overload or corrosion.

The ALL-IN-ONE design of the DIGDTMvUHP allows for universal use as analogue 2-wire 4...20 mA and/or self-sufficient 2-channel precision pressure switch, which is freely programmable regarding switching function, switching points and switching hysteresis. Furthermore, the RS-485 interface provides the possibility of connecting up to 254 transmitters. The measuring point temperature is measured by the integrated platinum resistor and transmitted digitally.

The active temperature compensation ensures compliance with the error class in the entire rated temperature range without any additional error. The impact of medium pulsation can be eliminated from the measuring signal with the integrated software low-pass.

## Construction

- Robust thin film pressure transducer with stainless steel membrane, directly welded, hermetically sealed
- Stainless steel case with excellent EMC shielding and high degree of protection
- CMOS RISC microprocessor: active error compensation in the entire rated temperature range
- In addition to the pressure signal, the measuring point temperature is available from the internal PT1000
- ALL-IN-ONE: pressure, temperature, analogue output 2-wire 4...20 mA with NAMUR alarms, RS-485 interface, 2-channel precision pressure switch, turn-down capability, available offset correction, software low-pass, software package USSCOM

## Standard Versions

### Process Connection

- 1/4" VCR-M pressure screw 9/16" – 18 UNF male thread
- 1/4" VCR-F union nut with 9/16" – 18 UNF female thread
- Stainless steel 316L, hermetically sealed with measuring cell placed inside (leakage rate <math>10^{-9}</math> mbar l/s)

### Measuring Cell/Sensor

Thin film measuring cell  
Membrane placed inside: stainless steel 630 (1.4548) welded

### Case

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

### Pressure Ranges/Overload Capability in bar

Measuring spans from 0 – 4 bar up to 0 – 350 bar

Over-pressure	Over-range Limit	Over-pressure	Over-range Limit	Over-pressure	Over-range Limit
-1 / +3	8	0 – 6	12	0 – 60	100
-1 / +5	12	0 – 10	20	0 – 100	300
-1 / +9	20	0 – 16	40	0 – 160	300
-1 / +15	40	0 – 25	40	0 – 250	350 <sup>1)</sup>
0 – 4	8	0 – 40	100	0 – 350	350 <sup>1)</sup>

### Output Signal

	Supply Voltage	Load Impedance
4...20 mA 2-wire	12...24 V DC ( $\pm 25\%$ )	( $U_B - 8\text{ V}$ ) / 0.023 A
digital RS-485		max. 680 Ohm at 24 V DC

<sup>1)</sup> limited by  $P_{max}$  pressure connection

### Burst Protection

At least 5-times PN

### Measurement Accuracy

$\leq \pm 0.2\%$  in the rated temperature range (including non-linearity, hysteresis and non-repeatability)

### Temperature Ranges

Storage temperature: -40 / +85 °C  
(-40 / +185 °F)  
Rated temperature: -20 / +60 °C  
(-4 / +140 °F)

### Reference Temperature

+20 °C (+68 °F)

### Long-term Stability

$\pm 0.2\%$  FS/a  
(at reference conditions)

### Reverse Voltage Protection

Available

### Electrical Connection

Miniature angular plug connector M16x0.75;  
6-pin massive metal 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
- Digital display module type DASA
- 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  $I_{max} = 0.2\text{ A}$ )  $\leq 2\text{ V}$
  - angular plug 6-pin

## Special Versions Upon Request

- Other process connections
- Other wetted materials
- Version with increased accuracy
- Other rated temperature ranges

## Accessory

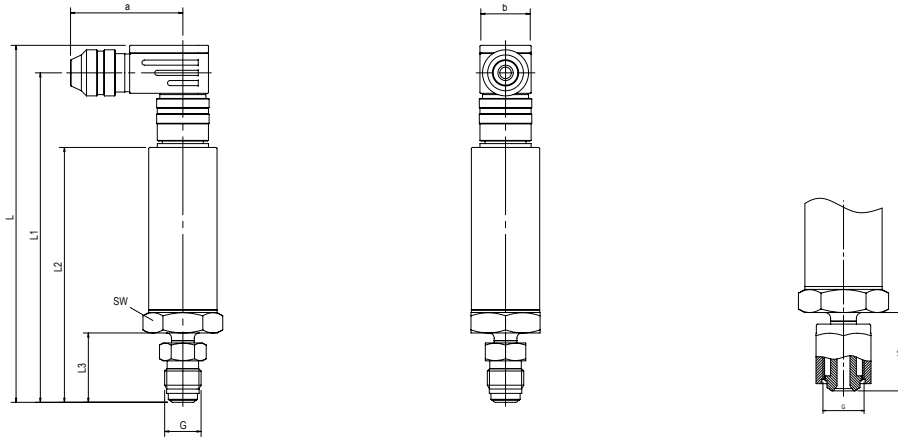
USB/RS-485 connection box for USB-PC communication with the transmitter and PC software for the administration of the transmitter:

- 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



# Case Configuration, Dimensional Data and Weight, Wiring Diagram

## Standard Version



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

a	b	G	L	L1	L2	L3	SW	approx. weight
46	20	$\frac{9}{16}$ " - 18 UNF VCR-M	140	129	100	27	27	0.24
1.81	0.79	$\frac{9}{16}$ " - 18 UNF VCR-F	5.51	5.08	3.94	1.06	1.06	0.53
								0.26
								0.57

## Wiring Diagram

### external connection DIGDTMvUHP

