

# Pressure Transmitter with local readout, Type 08.M28 - DS 100

# 08.M28

- ✓ - *Double elastic element: Bourdon tube and ceramic sensor.*
- ✓ - *Vibrations and pulsations proof.*
- ✓ - *EMC immunity: as per EN 61326.*
- ✓ - *Wiring: shieldless cable.*
- ✓ - *Calibration: adjustable.*



**CE** Compliance to requirements of directives:  
EMC 89/336/EEC - PED 97/23/EC.

## Functional characteristics

**Ranges:** 0...0,6/0...600 bar, relative;  
-1...0/-1...+15 bar, relative.

**Accuracy (% F.S.V.):**  
local readout, - 0,5;  
transmitter, - 0,25 typical; - 0,5 max.

**Working pressure** (referred to the full scale value): max 90% for pulsating pressure; 100% for static pressure

**Overpressure** (referred to the full scale value):  
- standard, 30%;

- 200%, with option code EHW, for pressure ranges - 400 bar;  
- 500 bar, with accessories 5.48 and 5.49,  
for pressure ranges - 160 bar.

**Process fluid temperature:** -25...+100 °C;  
-10...+65°C, when dampening liquid filled.

## Electrical characteristics

**Ranges:** the same of those of the readout (for different ranges please ask to the Technical Department).

**Output signals:** 4...20 mA, 0...5 Vdc, 0...10 Vdc.

**Calibration:** limit-point as per DIN 16086.

**Zero calibration:** ± 10 % F.S.V. typical.

**Range calibration:** ± 10 % F.S.V. typical.

**Compensated temperature range:** -10...+80 °C.

**Thermal drift:** - 0,02 % F.S.V. / °C.

**Annual drift:** - 0,2 % F.S.V.

**Supply and max load:** see on page 4.

**Response time (10...90%):** <3 ms.

## Constructive characteristics

8.M28.1 - Standard

**Electric connection:** junction box as per VDE with exit for cables ø7...13.

**Sensor:** ceramic.

**Gasket:** VITON.

**Protection:** IP 55 as per IEC 529.

**Process connection:** AISI 316L st.st..

**Elastic element:** AISI 316L st.st. seamless tube.

**Welding:** AISI 316 TIG.

**Case:** AISI 304 st.st.

**Ring:** AISI 304 st.st. , bayonet lock.

**Window:** safety glass.

**Movement:** stainless steel with internal limit stops for minimum and maximum pressure.

**Dial:** aluminium, white with black markings.

**Pointer:** aluminium, micrometric adjustable.

**Ambient temperature:** -25...+65 °C.

**Window gasket and filling plug:** EPDM.

8.M28.3 - Liquid filled

**Protection:** IP 65 as per IEC 529.

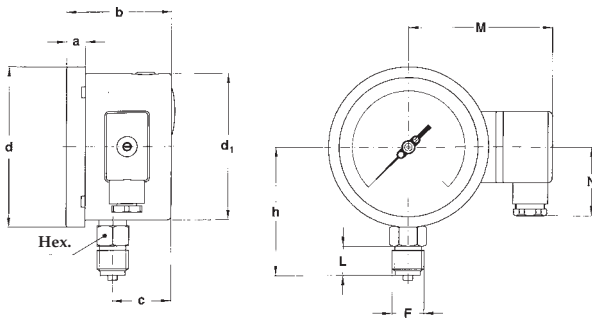
**Filling liquid:** dielectric oil.

**Ambient temperature:** -10...+65 °C.

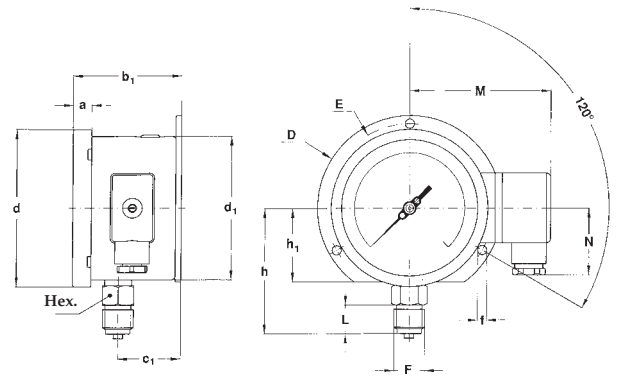
**Window gasket, blow out vent and filling plug:** VITON.

**Other features:** as type 8.M28.1.

TYPE, DIMENSIONS AND WEIGHTS



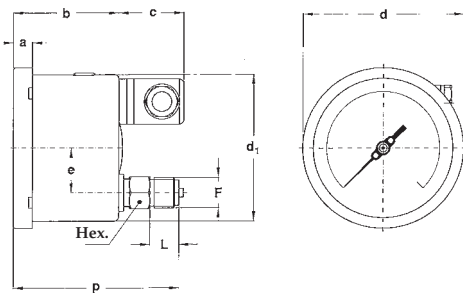
**TYPE A**  
stem mounting;  
lower connection.



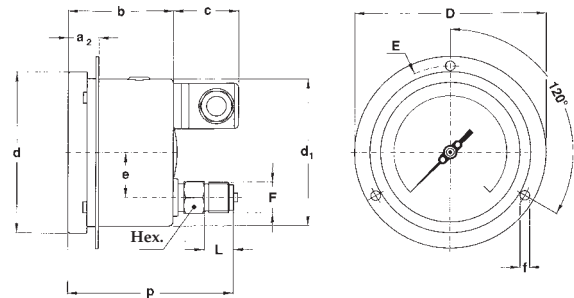
**TYPE C**  
surface mounting, back flange;  
lower connection.

Type	a	b	b <sub>1</sub>	c	c <sub>1</sub>	d	d <sub>1</sub>	f	h <sub>1</sub>	D	E	M	N	Weight 8.M28.1	Weight 8.M28.3
A	13	72,3	-	40,1	-	110,6	101	-	-	-	-	90,4	34,5	0,76 Kg.	1,1 Kg.
C	13	-	76,3	-	44,1	110,6	101	6	85	130	118	90,4	34,5	0,84 Kg.	1,18 Kg.

(dimensions : mm.)



**TYPE D**  
stem mounting;  
back connection.



**TYPE E**  
flush mounting, front flange;  
back connection.

Type	a	a <sub>2</sub>	b	c	d	d <sub>1</sub>	e	f	D	E	Weight 8.M28.1	Weight 8.M28.3
D	13	-	72,3	34	110,6	101	31	-	-	-	0,77 Kg.	1,05 Kg.
E	-	20	72,3	34	110,6	101	31	6	132	118	0,83 Kg.	1,11 Kg.

(dimensions : mm.)

F	Code	DS 100			
		ES	L	h	p
1/2" BSP	41M	22	20	88,5	113,7
1/2-14 NPT	43M	22	20	88,5	113,7
1/4" BSP	21M	22	13	81,5	106,7
1/4-18 NPT	23M	22	15	83,5	108,7

RANGES

PRESSURE

TAB. 1

Ranges	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...0,6 (1)	◆			◆	◆	
0...1	◆		◆	◆	◆	
0...1,6	◆		◆	◆	◆	
0...2,5	◆		◆	◆	◆	
0...4	◆		◆	◆	◆	
0...6	◆		◆	◆	◆	
0...10	◆		◆	◆		◆
0...16	◆		◆	◆		◆
0...25	◆		◆	◆		◆
0...40	◆		◆	◆		◆
0...60	◆		◆ (2)	◆		◆
0...100	◆	◆		◆		◆
0...160	◆	◆		◆		◆
0...250	◆	◆		◆		◆
0...400	◆	◆		◆		◆
0...600	◆ (2)	◆		◆ (2)		◆ (2)
0...1000		◆				
0...1600		◆				
0...2500		◆				

(1) not available for 8.M28.3  
(2) Overpressure 10% max of F.S.V.

VACUUM & COMPOUND

TAB. 3

Ranges	bar	kPa	bar ext.	bar ext.
			*psi int.	kPa int.
-1...0	◆		◆	◆
-1...0,6	◆		◆	◆
-1...1,5	◆		◆	◆
-1...3	◆		◆	◆
-1...5	◆		◆	◆
-1...9	◆		◆	◆
-1...15	◆		◆	◆
-1...24	◆		◆	◆
-100...0		◆		
-100...150		◆		
-100...300		◆		
-100...500		◆		
-100...900		◆		
-100...1500		◆		

\* vacuum unit of measurement: "inHg"

TAB. 2

Ranges	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	kg/cm <sup>2</sup> int.
0...15	◆	◆	◆	◆
0...30	◆	◆	◆	◆
0...60	◆	◆	◆	◆
0...100	◆	◆	◆	◆
0...160	◆	◆	◆	◆
0...200	◆	◆	◆	◆
0...300	◆	◆	◆	◆
0...400	◆	◆	◆	◆
0...600	◆	◆	◆	◆
0...1000	◆	◆	◆	◆
0...1500	◆	◆	◆	◆
0...2000	◆	◆	◆	◆
0...3000	◆	◆	◆	◆
0...4000	◆	◆	◆	◆
0...5000	◆	◆	◆	◆
0...6000	◆	◆	◆	◆
0...10000 (1)	◆	◆	◆	◆

(1) Overpressure 10% max of F.S.V.

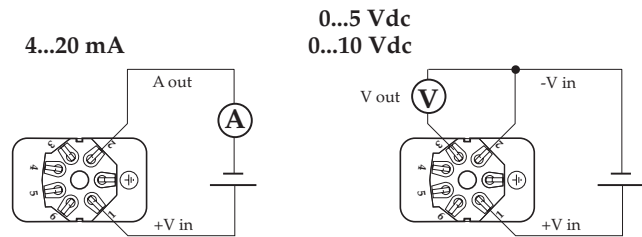
TAB. 4

Ranges	* psi	* psi int.	* psi ext.	* psi ext.
		kPa ext.	bar int.	kg/cm <sup>2</sup> int.
-30...0	◆	◆	◆	◆
-30...15	◆	◆	◆	◆
-30...30	◆	◆	◆	◆
-30...150	◆		◆	

\* vacuum unit of measurement: "inHg"

WIRING

Output signal	4...20 mA	0...5 Vdc	0...10 Vdc
N. wires	2	3	3
Load (Ohm)	$R_L - (V_{in}-10)/0,02$	5 KOhm min.	10 KOhm min.
Supply: +Vin	10...30	8...30	14...30
Ground	(pls. refer to Installation Manual)		



ORDER-CODE:

<b>08</b>	08 - electronic instruments
<b>M28</b>	M28 - pressure transmitter with local readout
<b>3</b>	1 - dry (not filled) 3 - filled version
<b>C</b>	A - lower connection - stem mounting C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
<b>E</b>	E - DS 100
<b>0/10 bar</b>	See ranges table
<b>41M</b>	41M - 1/2" BSP 43M - 1/2-14 NPT 21M - 1/4" BSP 23M - 1/4-18 NPT
<b>10E</b>	10E - 4...20 mA; +Vin:10...30 Vdc 40F - 0...5 Vdc; +Vin: 8...30 Vdc 50D - 0...10 Vdc; +Vin:14...30 Vdc
<b>V11</b>	Options EHW - overpressure 200% F.S.V. (1) V11 - restrictor $\varnothing$ 0,7 mm

(1) accuracy: - 1% of F.S.V.  
Available for pressure ranges - 400 bar.

ACCESSORIES

**Digital indicator:** the display range is from -1.999 to +1.999, and 2 built-in alarms relay control the local process. Provide also supply to the transmitter. For further details refer to relevant data sheet.

**Diaphragm seals:** a complete range of diaphragm seals are available with a choice of materials of construction . Specifically for corrosive and difficult process fluids plus hygienic applications. PN up to 600 bar. For further details refer to relevant data sheets.

**Adjustable over-load protector:** this is useful for installations which may generate high overpressures, the pressure gauges is automatically excluded at the pre-set pressure returns to normal. Available for pressure ranges - 160 bar. PN 500 bar. For further details refer to relevant data sheet.

**Pressure snubbers:** for further details refer to relevant data sheet.

**Pigtail and siphons:** recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

**Valves:** for construction details and for use limits refer to relevant data sheet.



**DRUCK & TEMPERATUR Leitenberger GmbH**  
Postfach 64 • D-72136 Kirchentellinsfurt • Germany  
Tel.: +49-7121-9 09 20 - 0 • Fax: +49-7121-9 09 20 - 99  
E-Mail: DT-Export@Leitenberger.de  
Internet: www.Leitenberger.com