



Data sheet

Pressure transmitter with flush diaphragm Type MBS 4010



The standard pressure transmitter MBS 4010 with flush diaphragm is designed for use in almost all industrial applications with non-uniform, high viscous or crystallizing mediums, and offers a reliable pressure measurement, even under harsh environmental conditions.

A robust design, an excellent vibration stability and a high degree of EMC / EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

Features

- Designed for use in severe industrial environments
- Enclosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- O-ring sealing ahead of thread
- Output signal: 4 – 20 mA
- Electrical connections: Plug Pg 9; EN 175301-803-A or 2 m screened cable
- Pressure connection: G ½ A; ISO 228/1
- Temperature compensated and laser calibrated
- For use in zone 2 explosive atmospheres

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Technical data

Performance (EN 60770)

Accuracy (incl. non-linearity, hysteresis and repeatability)	$\leq \pm 0.3\%$ FS (typ.)
	$\leq \pm 0.8\%$ FS (max.)
Non-linearity BFSL (conformity)	$\leq \pm 0.2\%$ FS
Hysteresis and repeatability	$\leq \pm 0.1\%$ FS
Thermal zero point shift	$\leq \pm 0.1\%$ FS / 10K (typ.)
	$\leq \pm 0.2\%$ FS / 10K (max.)
Thermal sensitivity (span) shift	$\leq \pm 0.1\%$ FS / 10K (typ.)
	$\leq \pm 0.2\%$ FS / 10K (max.)
Response time	Liquids with viscosity < 100 cSt < 4 ms
Overload pressure (static)	2 × FS
Burst pressure	4 × FS
Durability, P: 10 – 90% FS	> 10 × 10 ⁶ cycles

Electrical specifications

Nom. output signal (short-circuit protected)	4 – 20 mA
Supply voltage [U _B], polarity protected	10 – 30 V d.c.
Supply voltage dependency	< 0.1% FS / 10 V
Current limitation (linear output signal up to 1.5 × rated range)	28 mA
Load [R _L] (load connected to 0 V)	$R_L \leq (U_B - 10V) / 0.02 \text{ A } [\Omega]$

Environmental conditions

Sensor temperature range	Normal	-40 – 85 °C
	ATEX Zone 2	-10 – 85 °C
Media temperature range	115 - (0.35 × Ambient temp.)	
Ambient temperature range (depending on electrical connection)	See page 5	
Compensated temperature range	0 – 80 °C	
Transport / storage temperature range	-50 – 85 °C	
EMC – Emission	EN 61000-6-3	
EMC – Immunity	EN 61000-6-2	
Insulation resistance	> 100 MΩ at 100 V	
Mains frequency test	Based on SEN 361503	
Vibration stability	Sinusoidal	15.9 mm-pp, 5 Hz – 25 Hz
		20 g, 25 Hz – 2 kHz
	Random	7.5 g _{rms} , 5 Hz – 1 kHz
Shock resistance	Shock	500 g / 1 ms
	Free fall	1 m
Enclosure (IP protection fulfilled together with mating connector)	See page 5	

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Technical data
(continued)

Explosive atmospheres

Zone 2 applications	II 3G Ex nA IIA T3 Gc -40C<Ta<+85C	EN60079-0; EN60079-15
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When used in ATEX Zone 2 areas at temperatures <-10 °C the cable and plug must be protected against impact.

Mechanical characteristics

Materials	Thread	G ½ A, ISO 228/1
	Seal behind thread	DIN 3852 form E, NBR
	Seal ahead of thread	O-ring 15 × 2, NBR
Gasket (above thread)	Plug	EN 175301-803-A; Pg 9
	Cable	2 m screened PE-cable
Wetted parts, material		EN 10088-1; 1.4401 (AISI 316)
Enclosure material		EN 10088-1; 1.4401 (AISI 316)
Net Weight		0.3 kg

Ordering standard

MBS 4010

Measuring range	
0 – 4 bar	1 6
0 – 6 bar	1 8
0 – 10 bar	2 0
0 – 16 bar	2 2
0 – 25 bar	2 4
0 – 40 bar	2 6
0 – 60 bar	2 8

Pressure connection

C B 1 1 G ½ A, ISO 228-1, Flush male

Electrical connection

1 Plug Pg 9 (EN 175301-803-A)

3 Screened cable, 2m

Output signal

1 4 – 20 mA

Pressure reference

Gauge (relative) **1**

Absolute **2**

Preferred version

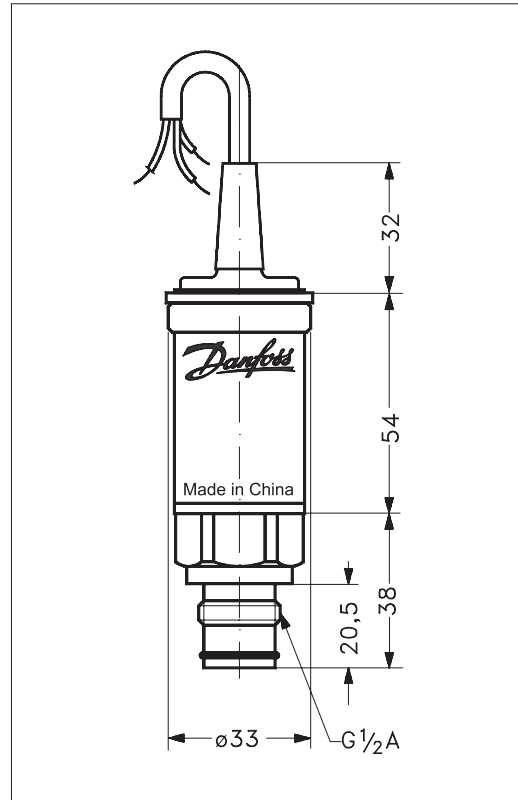
Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.

Data sheet

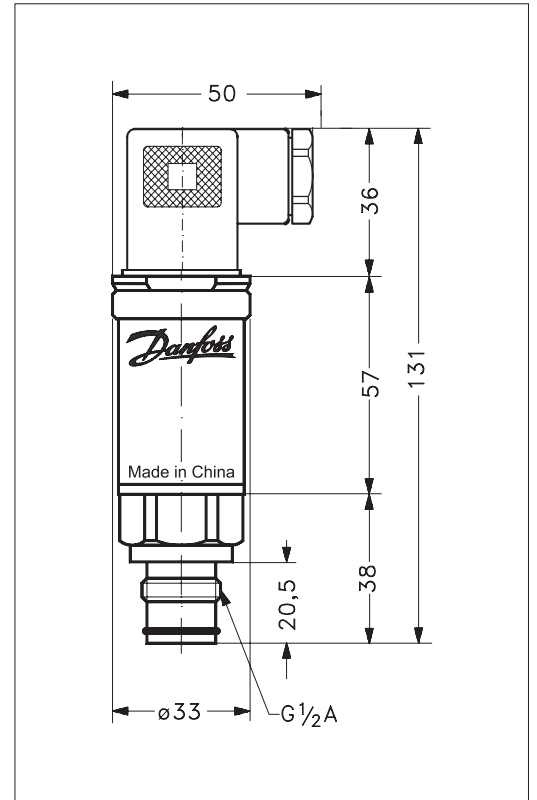
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Dimensions

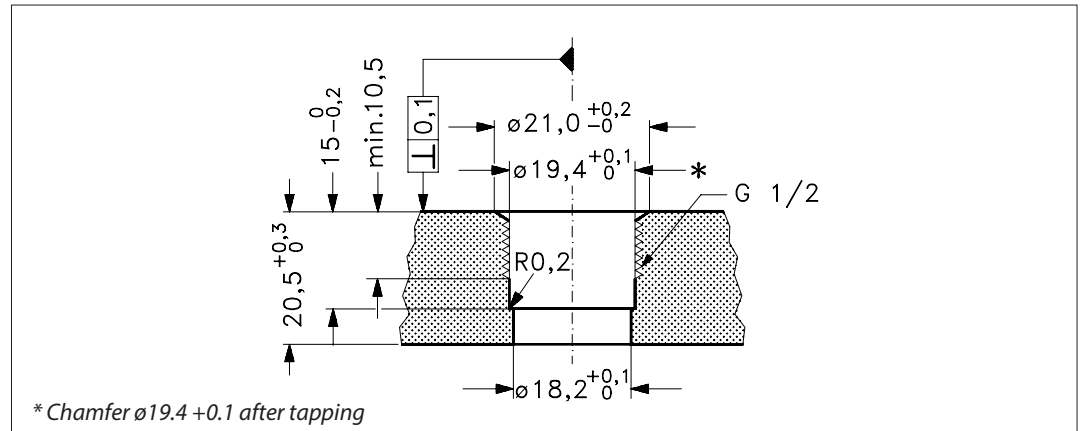
Cable version



Plug version EN 175301-803-A Pg 9



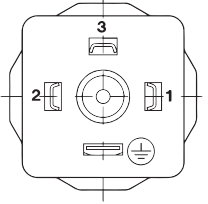
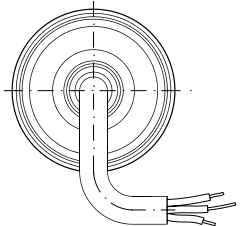

Thread hole for MBS 4010



Data sheet

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Electrical connections

Type code	1	3
	 <p>EN 175301-803-A, Pg 13.5</p>	 <p>2 m screened cable</p>
Ambient temperature	-40 – 85 °C	-40 – 85 °C
Enclosure (IP protection fulfilled together with mating connector)	IP65	IP67
Material	Glass filled polyamid, PA 6.6	Poliolyfin cable with PE shirkage tubing
Electrical connection, 4 – 20 mA output (2 wire)	<p>Pin 1: + supply Pin 2: ÷ supply Pin 3: not used</p>  <p>Earth: Connected to MBS enclosure</p>	<p>Brown wire: + supply Black wire: ÷ supply Red wire: not used Orange: not used Screen: not connected to MBS enclosure</p>

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