

## 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

**Technical data**
*Performance (EN 60770)*

Accuracy (incl. non-linearity, hysteresis and repeatability)		≤ ± 0.3% FS (typ.)
		≤ ± 0.8% FS (max.)
Non-linearity BFSL (conformity)		≤ ± 0.2% FS
Hysteresis and repeatability		≤ ± 0.1% FS
Thermal zero point shift		≤ ± 0.1% FS / 10K (typ.)
		≤ ± 0.2% FS / 10K (max.)
Thermal sensitivity (span) shift		≤ ± 0.1% FS / 10K (typ.)
		≤ ± 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 <sup>6</sup> cycles

*Electrical specifications*

Nom. output signal (short-circuit protected)		4 – 20 mA
Supply voltage [U <sub>B</sub> ], 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 <sub>L</sub> ] (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	IEC 60068-2-6
		20 g, 25 Hz – 2 kHz	
	Random	7.5 g <sub>rms</sub> , 5 Hz – 1 kHz	IEC 60068-2-64
Shock resistance	Shock	500 g / 1 ms	IEC 60068-2-27
	Free fall	1 m	IEC 60068-2-32
Enclosure (IP protection fulfilled together with mating connector)		See page 5	

**Technical data**  
(continued)

*Explosive atmospheres*

Zone 2 applications	<b>II 3G</b> <b>Ex nA IIA T3 Gc</b> <b>-20C&lt;Ta&lt;+85C</b>	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**

<b>Measuring range</b>	
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**

1 Gauge (relative)

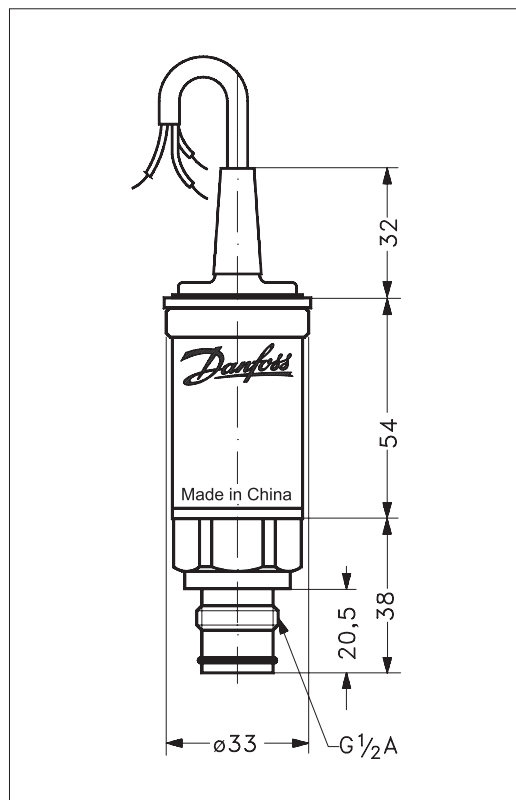
2 Absolute

Preferred version

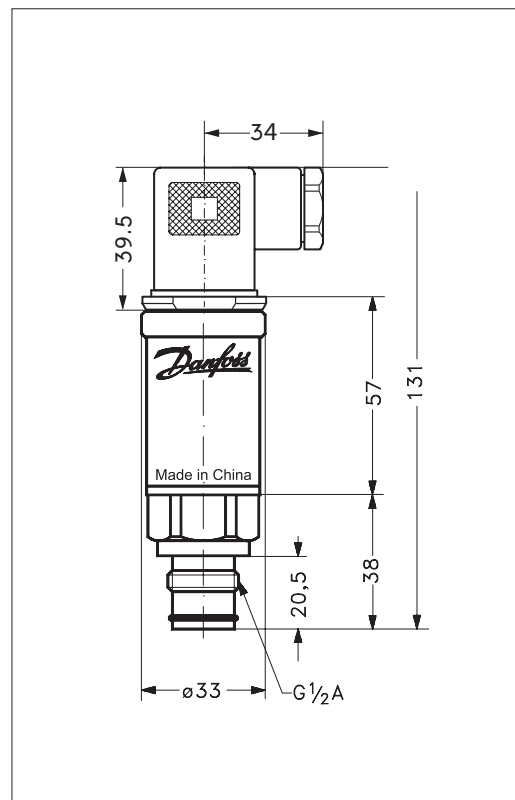
Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.

Dimensions

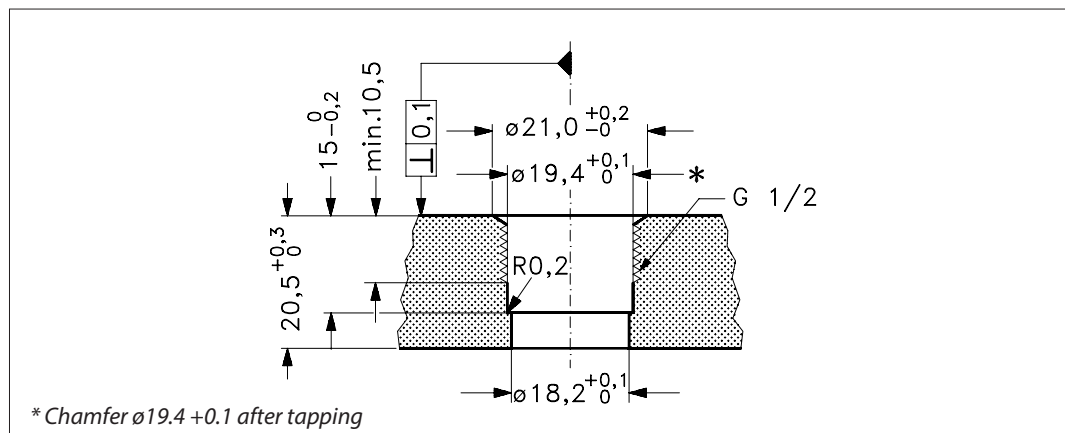
Cable version



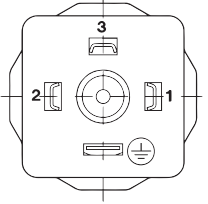
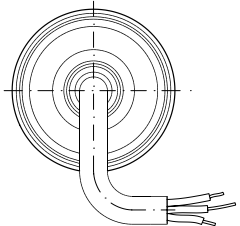

Plug version EN 175301-803-A Pg 9



Thread hole for MBS 4010



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>