

Pressure transmitter with flush diaphragm

Type MBS 4010

Features



- Designed for use in severe industrial environments
- Enclosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- Minimum dead volume
- O-ring sealing ahead of thread
- Pressure ranges in relative (gauge) from 0 up to 60 bar and absolute from 0 up to 25 bar
- Output signal: 4-20 mA
- Electrical connections: Plug Pg 9; EN 175301-803 or 2 m screened cable
- Pressure connection: G 1/2 A; ISO 228/1
- Temperature compensated and laser calibrated

Description

The standard pressure transmitter MBS 4010 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.

The pressure transmitters with 4-20 mA output signal cover absolute from 0-4 up to 0-25 bar and gauge (relative) versions, measuring ranges from 0-4 to 0-60 bar.

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.

Ordering standard programme

Gauge/relative pressure measuring
Output 4-20 mA

Pressure connection	Measuring range $P^{1)}_e$ [bar]	Max. operation pressure [bar]	Min. burst pressure [bar]	Code. no Plug version EN 175301-803	Code. no Cable version (2 m)
G 1/2 A ISO 228/1	0 - 4	8	16	060G3211	060G3232
	0 - 6	20	40	060G3212	060G3233
	0 - 10	20	40	060G3213	060G3234
	0 - 16	50	100	060G3214	-
	0 - 25	50	100	060G3215	060G3236
	0 - 40	80	160	060G3216	060G3237
	0 - 60	200	400	060G3217	-

¹⁾ Relative/gauge

Absolute pressure measuring
Output 4-20 mA

Pressure connection	Measuring range P_{abs} [bar]	Max. operating pressure [bar]	Min. burst pressure [bar]	Code no. Plug version EN 175301-803	Code no. Cable version (2 m)
G 1/2 A ISO 228/1	0 - 4	8	200	060G3203	060G3224
	0 - 6	20	200	060G3204	-
	0 - 10	20	200	060G3205	060G3226
	0 - 16	50	200	060G3206	060G3227
	0 - 25	50	200	060G3207	-

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
	Air and gases	< 35 ms
Overload pressure (Static)	2 × FS	
Burst pressure	min. 4 × FS	
Durability, P: 10-90% FS	>10×10 ⁶ cycles	

Electrical specifications

Nom. output signal (short circuit protected)	4-20 mA
Supply voltage V_B (polarity protected)	10-30 V dc
Voltage dependency	<0.05% FS/10 V
Current limitation (linear output signal up to 1.5 x rated range)	28 mA
Load resistance $[R_L]$ (Load connected 0 V)	$[R_L] \leq \frac{U_B - 10V}{0.02 A} [\Omega]$

Environmental conditions

Medium temperature range	-40 → +85°C	
Ambient temperature range (depending on electrical connection)	see page 4	
Compensated temperature range	0 → +80°C	
Transport 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	SEN 361503	
Vibration stability	Sinusoidal	15.9 mm-pp, 5 Hz-25 Hz 20 g, 25 Hz - 2 kHz
	Random	7.5 g _{rms} , 5Hz-1kHz
Shock resistance	Shock	500 g / 1 ms
	Free fall	
Enclosure (depending on electrical connection)	see page 4	

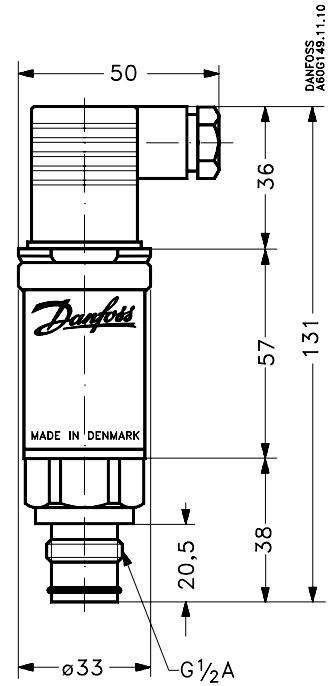
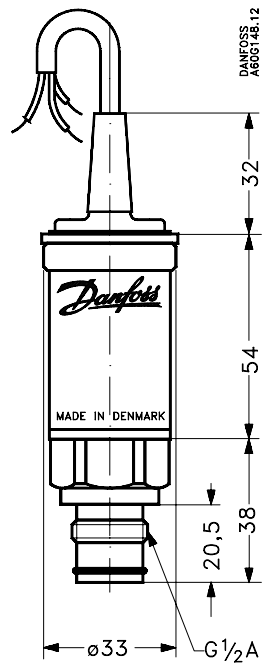
Mechanical characteristics

Pressure connection	Thread	G 1/2 A, ISO 228/1
	Seal behind thread	DIN 3852 form E, NBR
	Seal ahead of thread	O-ring 15 × 2, NBR
Electrical connection	Plug	EN 175301-803; Pg 9
	Cable	2 m screened PE-cable
Wetted parts, material	EN 10088-1; 1.4401 (AISI 316)	
Enclosure material	EN 10088-1; 1.4301 (AISI 304)	
Weight	0.3 kg	

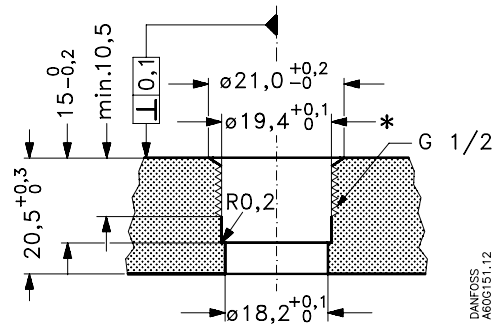
Dimensions

Cable version

Plug version EN 175301-803 Pg9

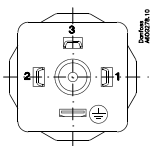
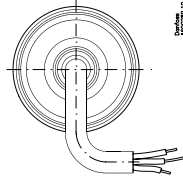


Thread hole for MBS4010



* Chamfer $\varnothing 19.4^{+0.1}$ after tapping

Electrical connections

Type code	
1	3
EN 175301-803, Pg 9	2 m screened cable
	
Ambient temperature	
-40 → + 85 °C	-30 → +85 °C
Enclosure	
IP 65	IP 67
Materials	
Glass filled polyamid, PA 6.6	Poliolyfin cable with PE shrinkage tubing
Electrical connection, 4-20 mA output (2-wire)	
Pin 1: + supply Pin 2: ÷ supply Pin 3: Not used Earth: Connected to MBS enclosure	Brown wire: + supply Black wire: ÷ supply Red wire: Not used Orange: Not used Screen: Not connected to MBS enclosure

Accessories

	Code no.
Adaptor for amoured hose	060G0211
Plug EN 175301-803 IP67 5 m cable	060G1034
Weld nipple G½A	060G0289

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