

Data Sheet

Pressure transmitter
Type **MBS 4010**

Designed for all industrial applications with nonuniform, high viscous or crystallizing mediums.



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

Product specification

Technical data

Table 1: Performance (EN 60770)

Features	Description
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

Table 2: Electrical specifications

Features	Description
Nom. output signal (short-circuit protected)	4 – 20 mA
Supply voltage [U _b], polarity protected	10 – 30 V DC
Supply voltage dependency	< 0.1% FS / 10 V
Current limitation (linear output signal up to 1.5 × rated range)	28 mA
Load [RL] (load connected to 0 V)	RL ≤ (UB - 10V) / 0.02 A [Ω]

Table 3: Environmental conditions

Features	Description
Sensor temperature range	Normal ATEX Zone 2 -40 – 85 °C -10 – 85 °C
Media temperature range	115 - (0.35 × Ambient temp.)
Ambient temperature range (depending on electrical connection)	See Electrical connections
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 IEC 60068-2-6 Random 7.5 _{grms} , 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

Table 4: Explosive atmospheres

Zone 2 applications	II 3G Ex nA IIA T3 Gc -20C<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.

Table 5: Mechanical characteristics

Features	Description
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

Pressure transmitter, MBS 4010

Features	Description
Wetted parts, material	EN 10088-1; 1.4401 (AISI 316)
Enclosure material	EN 10088-1; 1.4401 (AISI 316)
Net Weight	0.3 kg

Dimensions

Table 6: Dimensions

Cable version	Plug version EN 175301-803-A	Thread hole for MBS 4010

Electrical connections

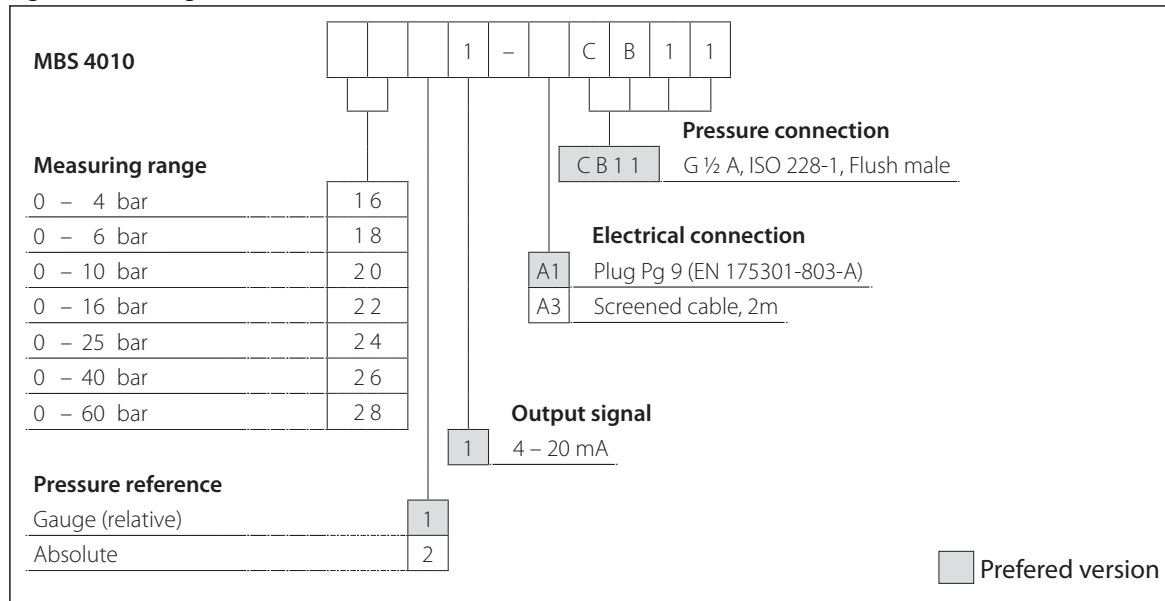
Table 7: Dimensions

Type code	A1	A3
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 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

Ordering

Ordering standards

Figure 1: Ordering standards



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.

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 8: Certificates, declarations and approvals

File name	Document type	Document topic	Approval Authority
UL E227388	Explosive - Safety Certificate	Hazardous Locations	UL
UL E31024	Electrical - Safety Certificate		UL
UL E311982	Electrical - Safety Certificate		UL
GOST DK.C.30.018.A 31316	Measuring - Performance Certificate		GOST
064G9615.06	EU Declaration	ATEX/EMCD/RoHS	Danfoss
060R3160.00	Manufacturers Declaration	China RoHS	Danfoss
064R9402.00	Manufacturers Declaration	PED	Danfoss
B-BK-60210-1170_19	Food and Health - Performance Certificate		PZH
E494625	Electrical - Safety Certificate		UL
E494625	Electrical - Safety Certificate		UL
1786330	Explosive - Safety Certificate		CSA

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