

Data Sheet

Pressure transmitter
Type **MBS 4500**

For all industrial applications



The high accuracy pressure transmitter MBS 4500 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.

The flexible pressure transmitter programme covers a 4 – 20 mA output signal, absolute or gauge (relative) versions, measuring ranges from 0 – 1 to 0 – 600 bar zero and span adjustment. A rotatable plug connection and a wide range of pressure connections.

Excellent vibration stability, robust construction, 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)
- Pressure ranges in relative (gauge) or absolute from 0 up to 600 bar
- Output signal: 4 – 20 mA
- A wide range of pressure connections
- Temperature compensated and laser calibrated
- Accuracy 0.5% FS
- Zero and span adjustment

Product specification

Technical data

Table 1: Performance (EN 60770)

Features		Description
Accuracy (incl. non-linearity, hysteresis and repeatability)		$\leq \pm 0.2\%$ FS (typ.)
		$\leq \pm 0.5\%$ 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/10 K (typ.)
		$\leq \pm 0.2\%$ FS/10 K (max.)
Thermal sensitivity (span) shift		$\leq \pm 0.1\%$ FS/10 K (typ.)
		$\leq \pm 0.2\%$ FS/10 K (max.)
Response time		< 4 ms
Overload pressure		6 × FS (max. 1500 bar)
Burst pressure		6 × FS (max. 2000 bar)
Durability, P: 10 – 90% FS		> 10 × 10 ⁶ cycles
Zero point adjustment	0 – 1 to 0 – 10 bar measuring range	-5 – 20% FS
	0 – 16 to 0 – 40 bar measuring range	-5 – 10% FS
	0 – 60 to 0 – 600 bar measuring range	-2.5 – 5% FS
Span adjustment	0 – 1 to 0 – 600 bar measuring range	-5 – 5% FS

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	$\leq \pm 0.1\%$ FS/10 V
Current limitation (linear output signal up to 1.5 × rated range)	28 mA (typ.)
Load [RL] (load connected to 0 V)	RL ≤ (U _B - 10 V) [Ω] 0.02 A

Table 3: Environmental conditions

Features			Description
Sensor temperature range	Normal		-40 – 85 °C
Medium temperature range			115 – (0.35 × Ambient temp.)
Ambient temperature range			-40 – 85 °C
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 g _{rms} , 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)			IP65

Table 4: Mechanical characteristics

Features		Description
Materials	Wetted parts	EN 10088-1; 1.4404 (AISI 316 L)
	Enclosure	EN 10088-1; 1.4404 (AISI 316 L)
	Electrical connections	Glass filled polyamid, PA 6.6
Net weight (depending on pressure connection)		0.2 – 0.3 kg

Dimensions/Combinations

Figure 1: Dimensions/Combinations

Type code	A1					
	<p>EN175301-803-A, Pg 9</p>					
	<p>DANFOSS A60G171.10</p> <p>G 1/4 A (EN 837)</p>	<p>G 3/8 A (EN 837)</p>	<p>G 1/2 A (EN 837)</p>	<p>1/4 - 18 NPT</p>	<p>1/2 - 14 NPT</p>	<p>DIN 3852-E-G 1/4 Gasket: DIN 3869-14</p>
Type code	AB04	AB06	AB08	AC04	AC08	GB04
Recommended torque ¹⁾	30 – 35 Nm	30 – 35 Nm	30 – 35 Nm	2 – 3 turns after finger tightened	2 – 3 turns after finger tightened	30 – 35 Nm

¹⁾ Depends on different parameters such as gasket material, mating material, thread lubrication and pressure level

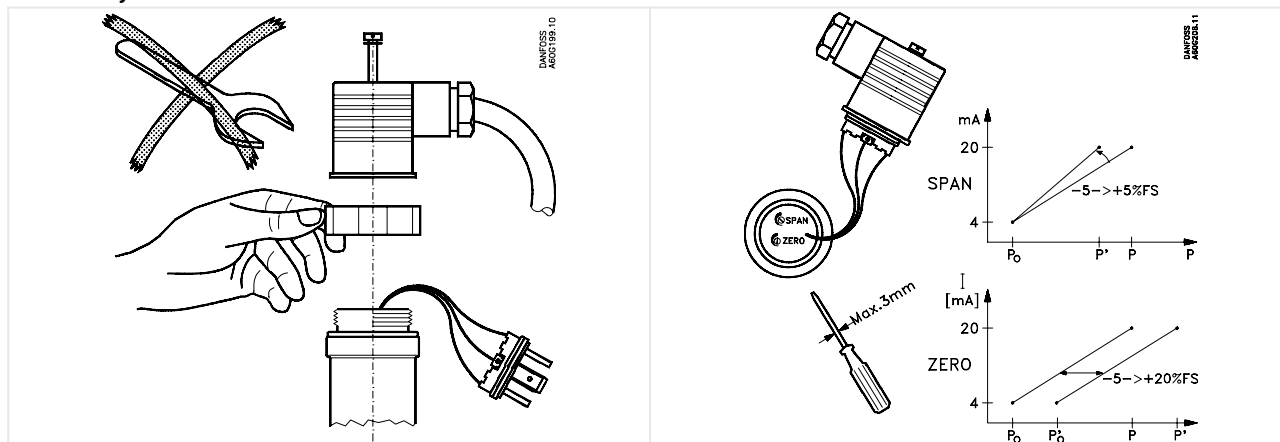
Electrical connection

Table 5: Electrical connection

Type	A1
	<p>EN 175301-803-A</p> <p>Pin 1: + supply Pin 2: - supply Pin 3: not used Earth: Connected to MBS enclosure</p>
Electrical connection, 4 – 20 mA output (2 wire)	

Adjustment

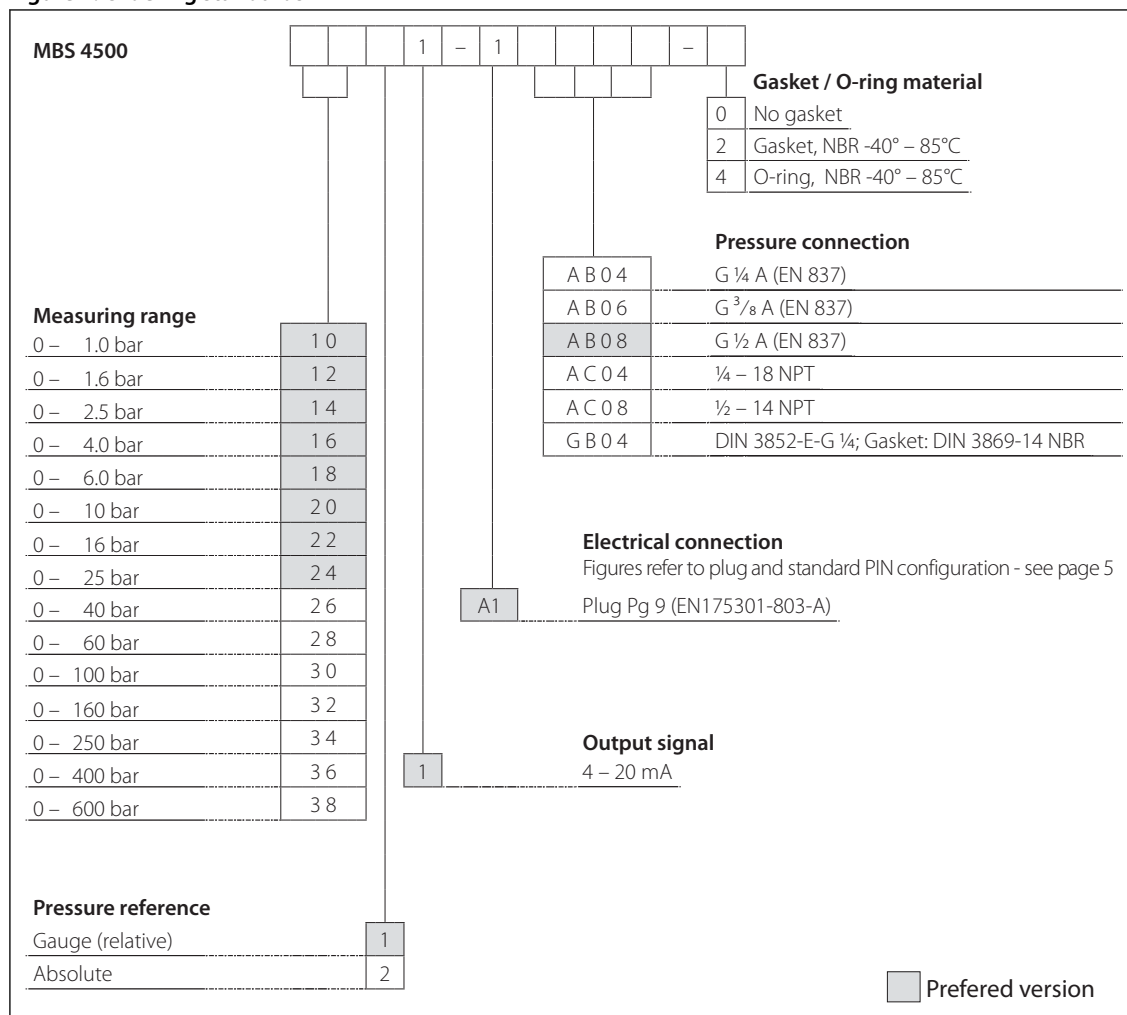
Table 6: Adjustment



Ordering

Ordering standards

Figure 2: 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 7: Certificates, declarations and approvals

File name	Document type	Document topic	Approval authority
UL E31024	Electrical - Safety Certificate		UL
UL E311982	Electrical - Safety Certificate		UL
B-BK-60210-1170_19	Food and Health - Performance Certificate		PZH
DK.C.30.018.A 31316	Measuring - Performance Certificate		GOST
0F18477.5123467890YTN	Pressure - Safety Certificate	CRN	TSSA
1786330	Explosive - Safety Certificate		CSA

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