

Pressure transmitters for industrial applications

Type MBS 4510

Technical brochure

Features



- Designed for use in severe industrial environments
- Enslosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- Pressure ranges in relative (gauge) or absolute up to 25 bar
- Output signal: 4 - 20 mA
- Temperature compensated and laser calibrated
- Accuracy 0,5% FS
- Zero and span adjustment
- USDA-H1 approved oil filling

Description

The high accuracy flush diaphragm pressure transmitter MBS 4510 is designed for use in non-uniform, high viscous or crystallizing media within 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 and gauge (relative) versions, measuring ranges from 0-0.25 to 0-25 bar zero and span adjustment. A rotatable plug connection and a G1A conic pressure connection with flush mounted diaphragm. Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

Ordering standard versions

Plug: Pg 9 (EN 175301-803-A)
Output: 4-20 mA
Pressure connection: G 1 A with cone

Measuring range Pe [1] [bar]	Max. operating pressure [bar]	Min. burst pressure [bar]	Code. no.
0 -0.25	2	50	**060G2418**
0 - 0.4	2	50	**060G2419**
0 - 0.6	2	50	**060G2420**
0 - 1	2	50	**060G2421**
0 - 1.6	8	50	**060G2422**
0 -2.5	8	50	**060G2423**
0 - 4	8	50	**060G2424**
0 - 6	20	50	**060G2425**
0 - 10	20	50	**060G2426**
0 - 16	50	100	**060G2427**
0 - 25	50	100	**060G2428**

1) Relative/ gauge

Technical data

Performance (EN 60770)

Accuracy (incl. non-linearity, hysteresis and repeatability)		±0.2% FS (typ.) ±0.5% FS (max.)
Non-linearity BFSL (conformity)		≤ ±0.2% FS
Hysteresis and repeatability		≤ ±0.1% FS
Thermal zero point shift	Measuring range: 0-250 mbar	≤ ±0.4% FS/10K
	Measuring range: 0-400 mbar	≤ ±0.3% FS/10K
	Measuring range: ≥0-600 mbar	≤ ±0.2% FS/10K
Thermal sensitivity (span) shift	Measuring range: 0-250 mbar	≤ ±0.4% FS/10K
	Measuring range: 0-400 mbar	≤ ±0.35% FS/10K
	Measuring range: ≥0-600 mbar	≤ ±0.2% FS/10K
Response time		< 4 ms
Max. operating pressure		See page 2
Burst pressure	P_e versions	See page 2
	P_{abs} versions	Min. 300 bar
Durability, P: 10-90% FS		$>10\times10^6$ cycles
Zero point adjustment	0-0.25 to 0-10 bar mearsuring range	-5 to +20 % FS
	0-16 to 0-25 bar measuring range	-5 to +10% FS
Span adjustment	0-0.25 to 0-25 bar measuring range	-5 to +5% FS

Electrical specifications

Nom. output signal (short curcuit protected)	4 to 20 mA
Supply voltage, U_B (polarity protected)	10 to 30 V d.c.
Supply voltage dependency	≤ ±0.05% FS/10 V
Current limitation (linear output signal up to 1.5 × rated range)	28 mA (typ.)
Load [R_L] (load connected to 0 V)	$R_L \leq \frac{U_B - 10\ V}{0.02\ A}$ [Ω]

Environmental conditions

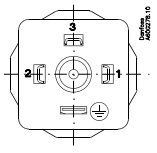
Media temperature range			–10 → +85 °C
Ambient temperature range			–10 → + 85 °C
Compensated temperature range			0 → +80°C
Transport temperature range			–25 → +85°C
EMC - Emission			EN 61000-6-3
EMC Immunity			EN 61000-6-2
Insulation resistance			> 100 MΩ at 100 V
Mains frequency test			SEN 361503
Vibration stability	Sinusoidal	15.9 mm-pp, 5 Hz-25 Hz 20 g, 25 Hz - 2 kHz	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		IEC 60068 - 2 - 32
Enclosure (IP protection fulfilled together with mating connector)			IP65

Mechanical characteristics

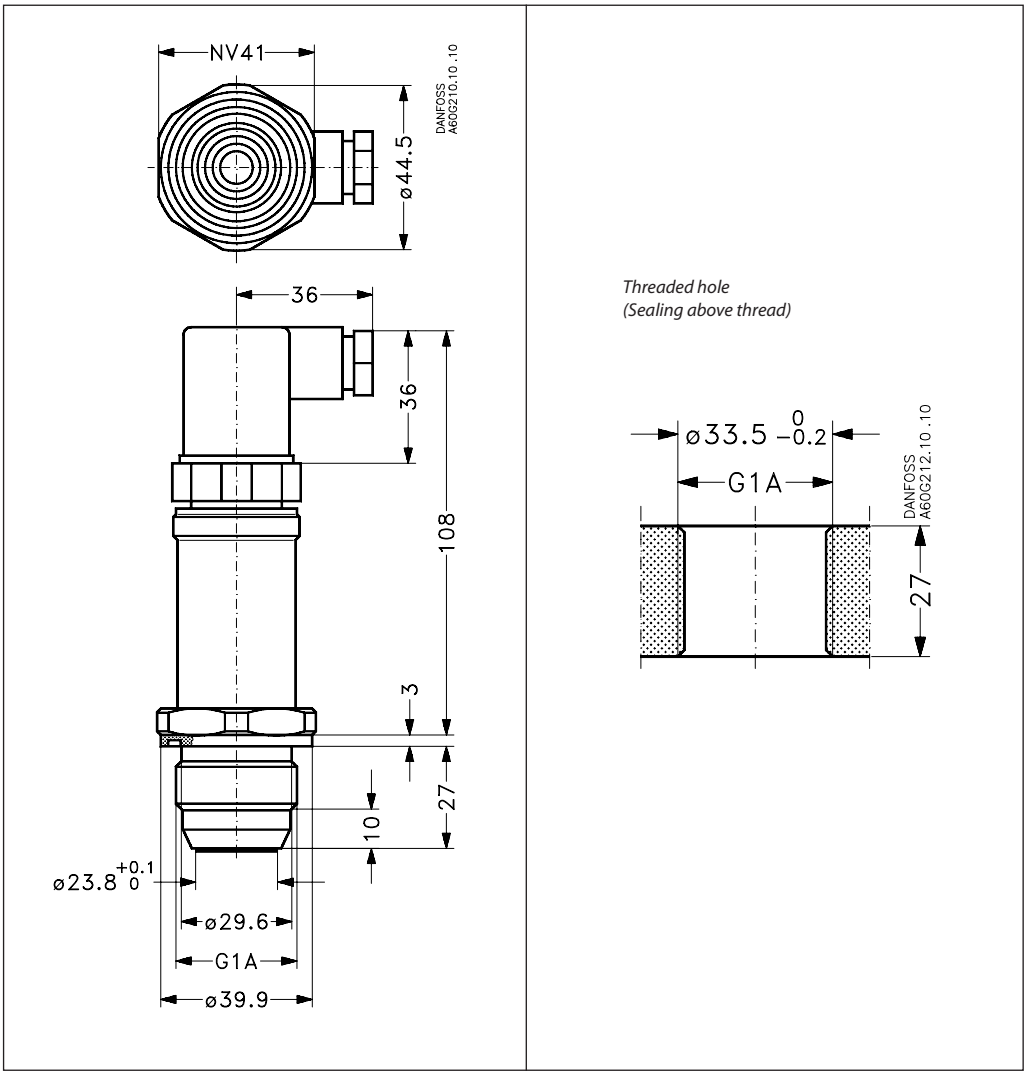
Materials	Wetted parts	EN 10088-1; 1.4404 (AISI 316 L)
	Enclosure	EN 10088-1; 1.4404 (AISI 316 L)
	Electrical connections	Glass filled polyamid, PA 6.6
Gasket (above thread)		DIN 3869-33-NBR
Weight		0.4 kg

Electrical connections

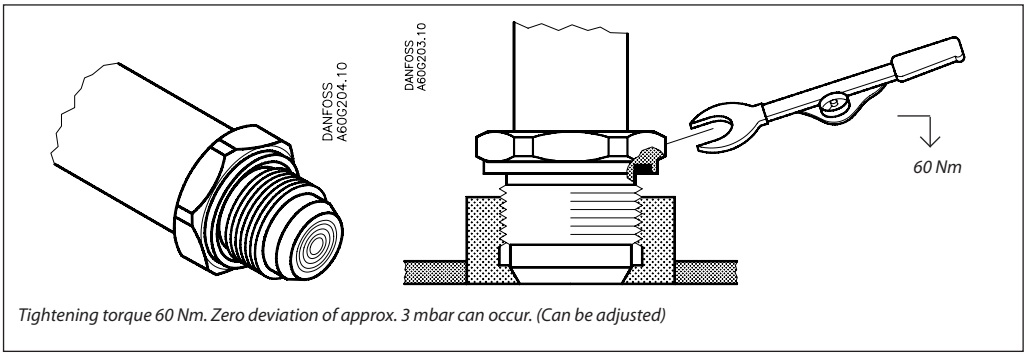
Type code	
1	Electrical connection, 4 - 20 mA output (2 wire)
EN 175301-803-A, Pg 9	*Pin1: + supply* *Pin 2: ÷ supply* *Pin 3: Not used* *Earth: Connected to MBS enclosure*



Dimensions

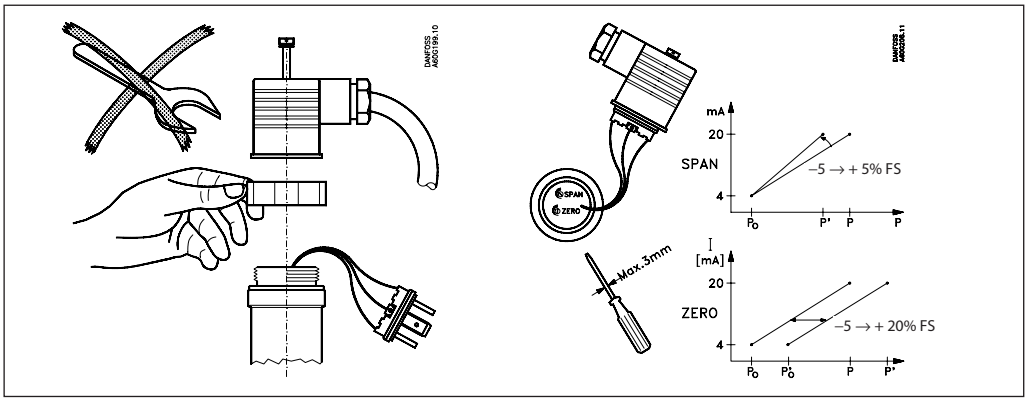


Installation

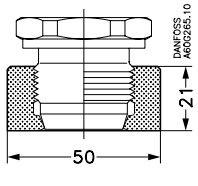


Tightening torque 60 Nm. Zero deviation of approx. 3 mbar can occur. (Can be adjusted)

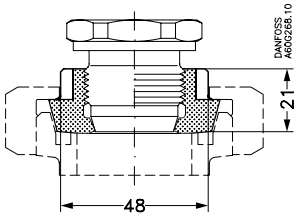
Adjustment



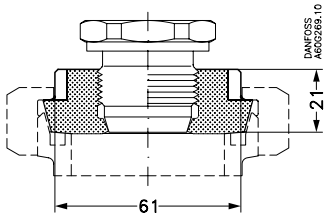
Accessories



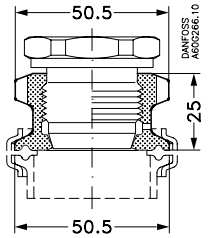
Welding nipple for conic metal/metal seal
Code no.: 060G2501



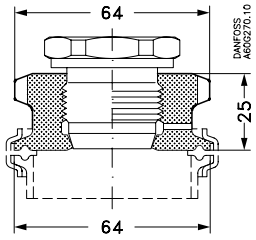
DIN 11851 (dairy connection), DN40
Code no.: 060G2505



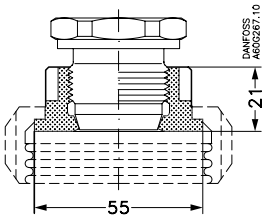
DIN 11851 (dairy connection), DN50
Code no.: 060G2506



Clamp, ISO 2852, 1½ in.
Code no.: 060G2502



Clamp, ISO 2852, 2 in.
Code no.: 060G2510



SMS 1145 connection, 1½ in.
Code no.: 060G2503

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