



# Pressure transmitters for industrial applications

## Type MBS 4510

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

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 <sub>e</sub> versions	See page 2
	P <sub>abs</sub> versions	Min. 300 bar
Durability, P: 10-90% FS		>10×10 <sup>6</sup> cycles
Zero point adjustment	0-0.25 to 0-10 bar measuring 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 circuit protected)	4 to 20 mA
Supply voltage, U <sub>b</sub> (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 <sub>L</sub> ] (load connected to 0 V)	$R_L \leq \frac{U_b - 10 \text{ V}}{0.02 \text{ A}} [\Omega]$

## 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
		Random 7.5 g <sub>rms</sub> , 5 Hz - 1 kHz
Shock resistance	Shock	500 g / 1 ms
	Free fall	
Enclosure (IP protection fulfilled together with mating connector)		IP65

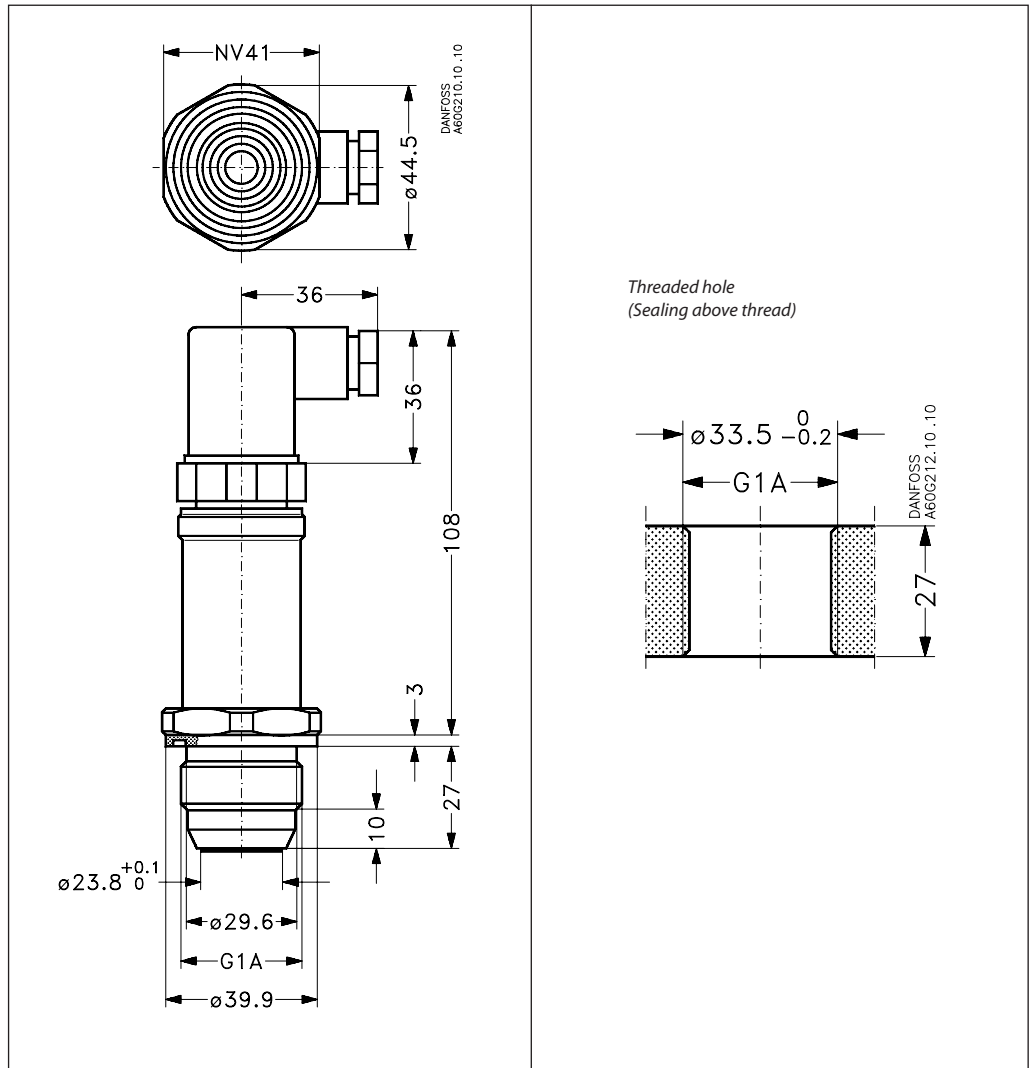
## Mechanical characteristics

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

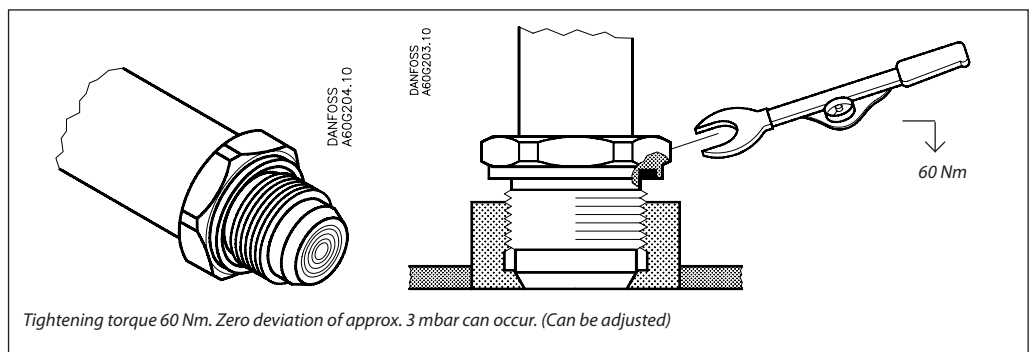
## Electrical connections

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

Dimensions



Installation



Adjustment

Accessories

<p>Welding nipple for conic metal/metal seal Code no.: 060G2501</p>	<p>DIN 11851 (dairy connection), DN40 Code no.: 060G2505</p>
<p>DIN 11851 (dairy connection), DN50 Code no.: 060G2506</p>	<p>Clamp, ISO 2852, 1 1/2 in. Code no.: 060G2502</p>
<p>Clamp, ISO 2852, 2 in. Code no.: 060G2510</p>	<p>SMS 1145 connection, 1 1/2 in. Code no.: 060G2503</p>

