

Pressure transmitter for industrial applications

Type MBS 3000

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
- All standard output signals: 4 - 20 mA, 0 - 5 V, 1 - 5 V, 1 - 6 V, 0 - 10 V, 1 - 10 V
- A wide range of pressure and electrical connections
- Temperature compensated and laser calibrated

Description

The compact pressure transmitter MBS 3000 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 different output signals, absolute and

gauge (relative) versions, measuring ranges from 0-1 to 0-600 bar and a wide range of pressure and electrical 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.

Ordering standard versions

Plug: Pg 9 (EN 175301-803)

Output signal: 4-20 mA

Pressure connection:
G 1/4 A (EN 837)

Measuring range P_e ¹⁾ [bar]	Type	Code no.
0 - 1	MBS 3000 - 1011 - 1 AB04	060G1113
0 - 1.6	MBS 3000 - 1211 - 1 AB04	060G1429
0 - 2.5	MBS 3000 - 1411 - 1 AB04	060G1122
0 - 4	MBS 3000 - 1611 - 1 AB04	060G1123
0 - 6	MBS 3000 - 1811 - 1 AB04	060G1124
0 - 10	MBS 3000 - 2011 - 1 AB04	060G1125
0 - 16	MBS 3000 - 2211 - 1 AB04	060G1133
0 - 25	MBS 3000 - 2411 - 1 AB04	060G1430
0 - 40	MBS 3000 - 2611 - 1 AB04	060G1105
0 - 60	MBS 3000 - 2811 - 1 AB04	060G1106
0 - 100	MBS 3000 - 3011 - 1 AB04	060G1107
0 - 160	MBS 3000 - 3211 - 1 AB04	060G1112
0 - 250	MBS 3000 - 3411 - 1 AB04	060G1111
0 - 400	MBS 3000 - 3611 - 1 AB04	060G1109
0 - 600	MBS 3000 - 3811 - 1 AB04	060G1110

¹⁾ Relative/gauge

Technical data

Performance (EN 60770)

Accuracy (incl. non-linearity, hysteresis and repeatability)	±0.5% FS (typ.) ±1% FS (max.)
Non-linearity BFSL (conformity)	≤ ±0.5% 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	< 4 ms
Overload pressure (static)	6 × FS (max. 1500 bar)
Burst pressure	> 6 × FS (max. 2000 bar)
Durability, P: 10-90% FS	> 10×10 ⁶ cycles

Electrical specifications

	Nom. output signal (short-circuit protected)		
	4 – 20 mA	0 - 5, 1 - 5, 1 - 6 V	0 - 10 V, 1 - 10 V
Supply voltage [U _B], polarity protected	9 → 32 V	9 → 30 V	15 → 30 V
Supply - current consumption	–	≤ 5 mA	≤ 8 mA
Supply voltage dependency	≤ ±0.05% FS/10 V		
Current limitation	28 mA (typ.)	–	
Output impedance	–		
Load [R _L] (load connected to 0V)	R _L ≤ (U _B - 9V)/0.02 A	R _L ≥ 10 kΩ	R _L ≥ 15 kΩ

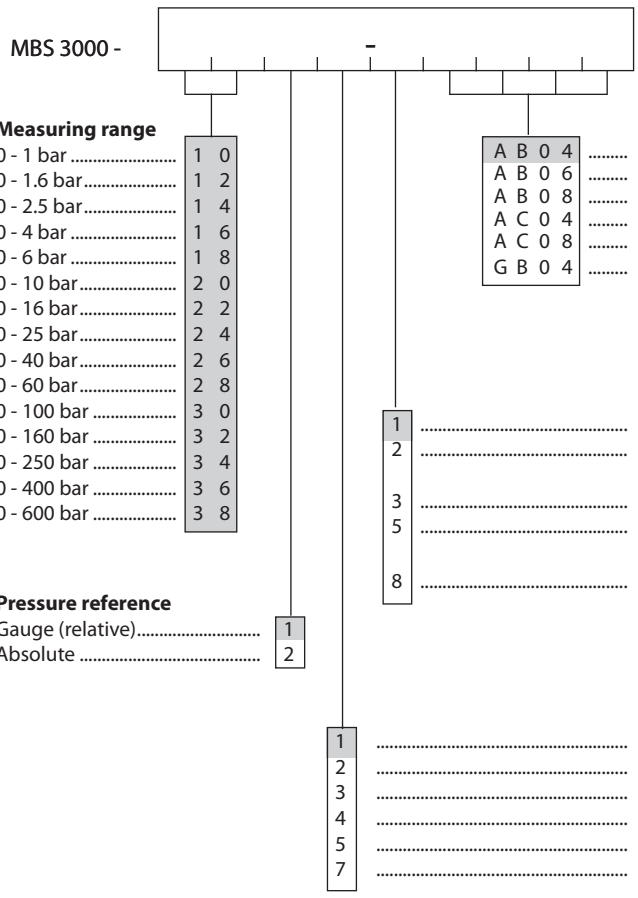
Environmental conditions

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	IEC 60068-2-6
		20 g, 25 Hz - 2 kHz	
		Random 7.5 g _{rms} , 5 Hz - 1 kHz	
Shock resistance	Shock	500 g / 1 ms	IEC 60068 - 2 - 27
	Free fall		IEC 60068 - 2 - 32
Enclosure (depending on electrical connection)	see page 4		

Mechanical characteristics

Materials	Wetted parts	EN 10088-1; 1.4404 (AISI 316 L)
	Enclosure	EN 10088-1; 1.4404 (AISI 316 L)
	Electrical connections	see page 4
Weight (depending on pressure connection and electrical connection)	0.2 - 0.3 kg	

Ordering of special versions



Measuring range

0 - 1 bar	1 0
0 - 1.6 bar	1 2
0 - 2.5 bar	1 4
0 - 4 bar	1 6
0 - 6 bar	1 8
0 - 10 bar	2 0
0 - 16 bar	2 2
0 - 25 bar	2 4
0 - 40 bar	2 6
0 - 60 bar	2 8
0 - 100 bar	3 0
0 - 160 bar	3 2
0 - 250 bar	3 4
0 - 400 bar	3 6
0 - 600 bar	3 8

Pressure reference

Gauge (relative)	1
Absolute	2

A B 0 4
A B 0 6
A B 0 8
A C 0 4
A C 0 8
G B 0 4

Pressure connection

G ¼ A (EN 837)
G 3/8 A (EN 837)
G ½ A (EN 837)
¼ -18 NPT
½ -14 NPT
DIN 3852-E-G ¼
Gasket: DIN 3869-14 NBR

Electrical connection

Figures refer to plug and standard PIN configuration - see page 4
 Plug Pg 9 (EN175301-803)
 *) Plug, AMP Econoseal, J series, male, excl. female plug
 Screened cable, 2 m
 *) Plug, IEC 947-5-2, M12 x 1, male, excl. female plug
 *) Plug, AMP Superseal 1.5 series male, excl. female plug

Output signal

4 - 20 mA
0 - 5 V
1 - 5 V
1 - 6 V
0 - 10 V
1 - 10 V

*) Gauge versions only available as sealed gauge versions

Preferred versions

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 for other versions.

Dimensions / Combinations

Type code	1	2	3	5	8	
	EN175301-803, Pg 9	AMP Econoseal	2 m screened cable	EN 60947 - 5 - 2 M12x1; 4-pin	AMP Superseal	
	G ¼ A (EN 837)	G 3/8 A (EN 837)	G ½ A (EN 837)	¼ - 18 NPT	½ - 14 NPT	
					DIN 3852-E-G ¼ Gasket: DIN 3869-14	
Type code	AB04	AB06	AB08	AC04	AC08	GB04

Electrical connections

Type code, page 3				
1	2	3	5	8
EN 175301-803, Pg 9 	AMP Econoseal J series (male) 	2 m screened cable 	EN 60497-5-2 M12x1 4-pin 	AMP Superseal 1.5 series (male)
<i>Ambient temperature</i>				
-40 → +85 °C	-40 → +85 °C	-30 → +85 °C	-25 → +85 °C	-40 → +85 °C
<i>Enclosure</i>				
IP 65	IP 67	IP 67	IP 67	IP 67
<i>Materials</i>				
Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6 ¹⁾	Poliolyfin cable with PE shrinkage tubing	Nickel plated brass, CuZn/Ni	Glass filled polyamid, PA 6.6 ²⁾
<i>Electrical connection, 4 - 20 mA output (2 wire)</i>				
Pin1: + supply Pin 2: ÷ supply Pin 3: Not used Earth: Connected to MBS enclosure	Pin 1: + supply Pin 2: ÷ supply Pin 3: not used	Brown wire: + supply Black wire: ÷ supply Red wire: Not used Orange: Not used Screen: Not connected to MBS enclosure	Pin 1: + supply Pin 2: Not used Pin 3: Not used Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3 Not used
<i>Electrical connection, 0 - 5V, 1 - 5 V, 1 - 6 V, 0 - 10 V, 1 - 10 V output</i>				
Pin 1: + supply Pin 2: ÷ supply Pin 3: Output Earth: Connected to MBS enclosure	Pin 1: + supply Pin 2: ÷ supply Pin 3: Output	Brown wire: Output Black wire: ÷ supply Red wire: + supply Orange: Not used Screen: Not connected to MBS enclosure	Pin 1: + supply Pin 2: Not used Pin 3: Output Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3: Output

¹⁾ Female plug: Glass filled polyester, PBT

²⁾ Wire: PETFE (teflon)

Protection sleeve: PBT mesh (polyester)