

Data sheet

Pressure transmitter for air and water applications

Type MBS 1900



The pressure transmitter MBS 1900 is designed for use in air and water applications like Booster Pumps and Air Compressors. The semi-flexible pressure transmitter programme covers different output signals, absolute or gauge (relative) versions, measuring ranges from 0 – 4 bar to 0 – 25 bar and a wide range of pressure and electrical connections. Enclosure material is stainless steel AISI 316L.

Features

- Designed for use in air and water applications
- Wetted parts of stainless steel (AISI 304)
- Pressure ranges in relative (gauge) or absolute from 0 up to 25 bar
- Output signals: 4 – 20 mA, or ratio metric
- Absolute or relative (gauge) sensor element
- A wide range of pressure and electrical connections
- Digitally compensated

Approvals

UL Approval, c  us
 Certificate number: E31024

Technical data
Performance (EN 60770)

Accuracy (@ 20 °C) (incl. non-linearity, hysteresis and repeatability)	≤ ± 1.0% FS
Non-linearity BFSL (conformity)	≤ ± 0.5% FS
Hysteresis and repeatability	≤ ± 0.1% FS
Total error band inside the compensated temperature range	≤ ± 3.0% FS
Response time	< 4 ms
Overload pressure (Static)	3 × FS (max. 75 bar)
Burst pressure	4 × FS (max. 100 bar)
Durability, P: 10 – 90% FS	> 10×10 ⁶ cycles

Electrical specifications

Nom. output signal (short-circuit protected)	4 – 20 mA	Ratiometric (10 – 90% of V _{supp.})
Supply voltage [U _B], polarity protected	9 – 28 V	5 V ± 10%
Supply – current consumption	–	≤ 5 mA
Supply voltage dependency	≤ ± 0.1% FS / 10 V	≤ ± 0.1% FS / 10 V
Load [R _L] (load connected to 0V)	$R_L \leq (U_B - 10V) / 0.02A$	$R_L \geq 5 \text{ K}\Omega @ 5 \text{ V d.c.}$
Output impedance	–	< 25 Ω

Environmental conditions

Sensor temperature range	0 – 80 °C		
Max. media temperature	110 – (0.35 × ambient temperature)		
Ambient temperature range (depending on electrical connection)	-20 – 80 °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 500 V		
Vibration stability	Sinusoidal	15 g, 5 Hz – 2 kHz	IEC 60068-2-6
	Random	7.5 g _{rms} , 5 Hz – 1 kHz	IEC 60068-2-64
Shock resistance	Shock	200 g / 1 ms	IEC 60068-2-27
	Free fall	1 m	IEC 60068-2-32
Enclosure (depending on electrical connection)	see page 4		

Mechanical characteristics

Materials	Wetted parts	EN 10088-1; 1.4301 (AISI 304)
	Enclosure	EN 10088-1; 1.4404 (AISI 316 L)
	Electrical connections	see page 4
Net weight (depending on pressure connection and electrical connection)		0.15 – 0.3 kg

Mounting instructions

Width across flats	24 mm
Mounting torque max.	20 Nm

Ordering standard

MBS 1900

Measuring range	Pressure connection
0 – 4 bar	A B 0 4 G ¼ A (EN 837)
0 – 6 bar	G B 0 8 G ½ A (EN 837)
0 – 10 bar	A C 0 4 ¼ – 18 NPT ANSI/ASME B 1.20.1, excl. gasket
0 – 16 bar	A C 0 8 ½ – 14 NPT ANSI/ASME B 1.20.1, excl. gasket
0 – 25 bar	PT 0 4 R ¼ ISO 7-1
-1 – -15 bar	G B 0 4 G ¼ – DIN 3852-E; Gasket: DIN 3869-14 NBR
0 – 100 psi	
0 – 200 psi	
0 – 250 psi	
0 – 300 psi	

Pressure reference	Electrical connection
Gauge (relative)	A 0 No Plug (EN 175301-803-A)
Absolute	A 1 Plug Pg 9 (EN175301-803-A)
	A 3 Screened cable, 2 m
	B 1 Round Packard Metripack 150.2

Output signal
1 4 – 20 mA
6 Ratiometric, 10 – 90%

■ Preferred version

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.

Dimensions / Combinations

Type code	A0	A1	B1	A3		
	(EN175301-803-A)	EN175301-803-A, Pg 9	Round Packard Metripack 150.2	2 m screened cable		
	G ¼ A (EN 837)	G ½ A (EN 837)	¼ – 18 NPT	½ – 14 NPT	DIN 3852-E-G ¼ A Gasket: DIN 3869-14	ISO 7-1 R ¼
Type code	AB04	AB08	AC04	AC08	GB04	PT04
Recommended torque	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm

Type code, see page 3	A0, A1	B1	A3
	<p>EN 175301-803-A</p>	<p>Round Packard metripack 150.2</p>	<p>2 m screened cable</p>
Ambient temperature	-20 – 80 °C	-20 – 80 °C	-20 – 80 °C
Enclosure (IP protection fulfilled together with mating connector)	IP65	IP67	IP67
Material	Glass filled polyamid, PA 6.6	Glass filled, PBT	Glass filled polyamid, PA 6.6. PVC
Electrical connection, 4 – 20 mA output (2 wire)	<p>Pin 1: + supply Pin 2: ÷ supply Pin 3: not used</p> Earth: Not connected to MBS enclosure	<p>Pin 1 (A): - supply Pin 2 (B): + supply Pin 3 (C): not used</p>	<p>Black: - supply Red: + supply Brown: not used Screen: not connected to MBS enclosure</p>
Electrical connection, Ratiometric 10 – 90%	<p>Pin 1: + supply Pin 2: ÷ supply¹⁾ Pin 3: + output</p> Earth: Not connected to MBS enclosure	<p>Pin 1 (A): - supply¹⁾ Pin 2 (B): + supply Pin 3 (C): + output</p>	<p>Black: - supply¹⁾ Red: + supply Brown: + output Screen: not connected to MBS enclosure</p>

¹⁾ Common