

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 – 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  
NSF-61

**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 <sup>6</sup> cycles

**Electrical specifications**

Nom. output signal (short-circuit protected)	4 – 20 mA	Ratiometric (10 – 90% of V <sub>supp.</sub> )
Supply voltage [U <sub>s</sub> ], 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 <sub>L</sub> ] (load connected to 0V)	R <sub>L</sub> ≤ (U <sub>s</sub> -10V)/0.02A	R <sub>L</sub> ≥ 5 KΩ @ 5 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 <sub>rms</sub> , 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

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**Ordering standard**

**MBS 1900**

Measuring range	
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 – 100 psi	5 8
0 – 200 psi	6 2
0 – 250 psi	6 3
0 – 300 psi	6 4

Pressure connection	
A B 0 4	G ¼ A (EN 837)
A B 0 8	G ½ A (EN 837)
A C 0 4	¼ – 18 NPT ANSI/ASME B 1.20.1
A C 0 2	½ – 27 NPT
G B 0 4	G ¼ – G ¼ DIN 3852-E/ISO 1179-2 (Form E); Gasket: DIN 3869-14 NBR
PT 0 4	R ¼ ISO 7-1

Pressure reference	
Gauge (relative)	1
Absolute	2

Electrical connection	
A 0	No Plug (EN 175301-803-A)
A 1	Plug Pg 9 (EN175301-803-A)
A 3	Screened cable, 2 m
C 2	Round Packard Metripack / SN

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

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	C2	A3		
	(EN175301-803-A)	EN175301-803-A, Pg 9	Round Packard Metripack / SN	2 m screened cable		
	G ¼ A (EN 837)	G ½ A (EN 837)	¼ – 18 NPT	½ – 27 NPT	DIN 3852-E/ISO 1179-2 (Form E) Gasket: DIN 3869-14	ISO 7-1 R ¼
<b>Type code</b>	<b>AB04</b>	<b>AB08</b>	<b>AC04</b>	<b>AC02</b>	<b>GB04</b>	<b>PT04</b>
Recommended torque	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm

Type code, see page 3	A0, A1	C2	A3
	<p>EN 175301-803-A</p>	<p>Round Packard metripack / SN</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: ÷ supply<sup>1)</sup> Pin 3: + output</p> Earth: Not connected to MBS enclosure	<p>Pin 1 (A): - supply<sup>1)</sup> Pin 2 (B): + supply Pin 3 (C): + output</p>	<p>Black: - supply<sup>1)</sup> Red: + supply Brown: + output Screen: not connected to MBS enclosure</p>

<sup>1)</sup> Common