ENGINEERING
TOMORROW

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 UL us
Certificate number: E31024
NSF-61

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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 0 V)	R_L ≤ (U_B-10V)/0.02A	R_L ≥ 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_{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

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Ordering standard

MBS 1900 [ ][ ][ ][ ] – [ ][ ][ ][ ][ ][ ]

Measuring range

0 – 4 bar	16
0 – 6 bar	18
0 – 10 bar	20
0 – 16 bar	22
0 – 25 bar	24
0 – 100 psi	58
0 – 200 psi	62
0 – 250 psi	63
0 – 300 psi	64

Pressure reference

Gauge (relative)	1
Absolute	2

Pressure connection

AB04	G ¼ A (EN 837)
AB08	G ½ A (EN 837)
AC04	¼ – 18 NPT ANSI/ASME B 1.20.1
AC02	⅛ – 27 NPT
GB04	G ¼ – G ¼ DIN 3852-E/ISO 1179-2 (Form E); Gasket: DIN 3869-14 NBR
PT04	R ¼ ISO 7-1

Electrical connection

Figures refer to plug and standard PIN configuration - see page 4

A0	No Plug (EN 175301-803-A)
A1	Plug Pg 9 (EN175301-803-A)
A3	Screened cable, 2 m
C2	Round Packard Metripack / SN

Output signal

1	4 – 20 mA
6	Ratiometric, 10 – 90%

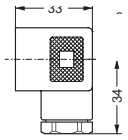
Non-standard build-up combinations may be selected. However, minimum order quantities may apply.

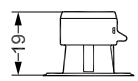
Please contact your local Danfoss office for further information or request on other versions.

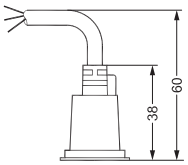
Dimensions / Combinations

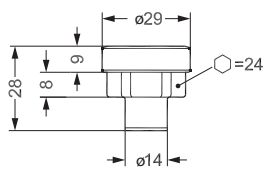
Type code	A0	A1	C2	A3
	(EN175301-803-A)	EN175301-803-A, Pg 9	Round Packard Metripack / SN	2 m screened cable

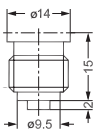


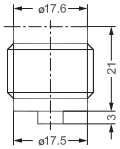


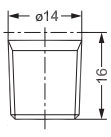


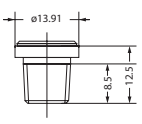


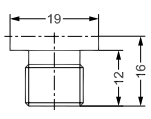


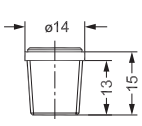




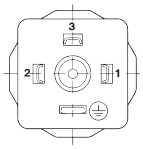
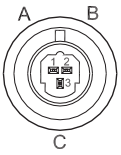
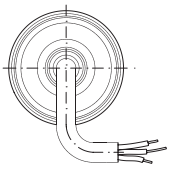
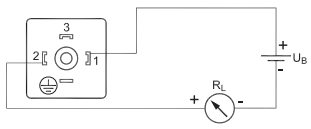
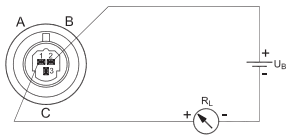
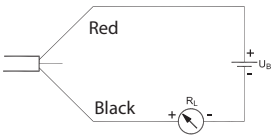
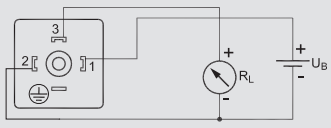
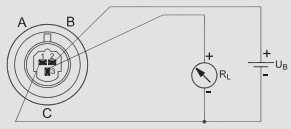
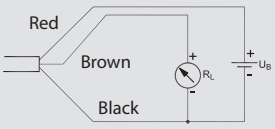








	G ¼ A (EN 837)	G ½ A (EN 837)	¼ – 18 NPT	⅛ – 27 NPT	DIN 3852-E/ISO 1179-2 (Form E) Gasket: DIN 3869-14	ISO 7-1 R ¼
Type code	**AB04**	**AB08**	**AC04**	**AC02**	**GB04**	**PT04**
Recommended torque	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm	20 Nm

Type code, see page 3	A0, A1	C2	A3
	 EN 175301-803-A	 Round Packard metripack / SN	 2 m screened cable
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)	Pin 1: + supply Pin 2: ÷ supply Pin 3: not used Earth: Not connected to MBS enclosure 	Pin 1 (A): - supply Pin 2 (B): + supply Pin 3 (C): not used 	Black: - supply Red: + supply Brown: not used Screen: not connected to MBS enclosure 
Electrical connection, Ratiometric 10 – 90%	Pin 1: + supply Pin 2: ÷ supply [1]) Pin 3: + output Earth: Not connected to MBS enclosure 	Pin 1 (A): - supply [1]) Pin 2 (B): + supply Pin 3 (C): + output 	Black: - supply [1]) Red: + supply Brown: + output Screen: not connected to MBS enclosure 

[1]) Common

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