

MicroDrop®



Pressure Transmitter Type MBS 33M

The Danfoss MBS 33M pressure transmitter is designed for direct installation at the measuring point. It has been developed to monitor and regulate pressure in maritime and industrial environments.

The output signal is an amplified, linearized and temperature-compensated current signal of 4 to 20 mA. The signal can be transmitted over a long distance without difficulty.

Application

The MBS 33M pressure transmitter is designed for operation in harsh environments.

The climatic environment

The pressure transmitter is reliable, even when subjected to extreme humidity and temperature. The enclosure is filled with a silicone compound, which gives maximum protection against dust and moisture.

The electrical environment

The pressure transmitter has a built-in HF filter which gives high protection against electro-magnetic noise.

The mechanical environment

The construction make the pressure transmitter resistant to pressure peaks, over-pressure, and vibration up to 20 g ($g = 9.81 \text{ m/s}^2$) in the frequency range 20 Hz to 2 kHz.

Applications

Diesel engines, gears, compressors, pumps, boilers, generator sets, hydraulic and pneumatic control systems, lifts, powerpacks.

Description

The MBS 33M pressure transmitter has a stainless steel enclosure and diaphragm.

Accuracy class 1.

The pressure range is from 1 to 600 bar.

The pressure connection is G 1/2 A, the supply voltage 10 to 30 V d.c. and the output signal 4 to 20 mA.

Electrical connection is by DIN plug (43650) or with 2 m fixed cable.

The transmitters are available in two versions:
a: relative (gauge) pressure transmitter
b: absolute pressure transmitter

The relative pressure transmitters use atmospheric pressure as reference.

The absolute pressure transmitters use perfect vacuum as reference.

Approvals

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| <ul style="list-style-type: none"> • Lloyd's Register of Shipping • Det Norske Veritas • Germanischer Lloyd • Registro Italiano Navale • American Bureau of Shipping | <ul style="list-style-type: none"> Bureau Veritas • Nippon Kaiji Kyokai • Polski Rejestr. Stufk ow • Russian Maritime Register of Shipping |
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Technical Data

Performance (IEC 770)

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| Accuracy (at reference conditions) | ≤±0.3% FS (typ.) ≤±0.8% FS (max.) |
| Non-linearity (Best fit straight line) | ≤±0.2% 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 (liquids) | < 4 ms |

Electrical specifications for 4 - 20 mA output signal

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| Nom. output signal | 4 to 20 mA |
| Supply voltage, V_{supply} (polarity protected) | 10 to 30 V d.c. |
| Voltage dependency | ≤± 0.05% FS/10 V |
| Current limitation (linear output signal up to 1.5 × nom. range) | approx. 28 mA |
| Max load R_L (field of operation) | $R_L \leq \frac{V_{supply} - 10V}{0.02A}$ [Ω] |

Environmental conditions

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|-------------------------------|-------------------------|------------------------------------|--------------------------------------|------------------------|
| Operating temperature range | -40 to 85°C | | | |
| Compensated temperature range | 0 to 80°C | | | |
| Transport temperature range | -50 to 85°C | | | |
| EMC - Emission | EN 50081-1 | | | |
| EMC - Immunity | Electrostatic discharge | Air mode 8 kV Contact mode 4 kV | EN 50082-2 (IEC 801-2) | |
| | RF | Field | 10 V/m, 26 MHz - 1 GHz | EN 50082-2 (IEC 801-3) |
| | | Conducted | 10V _{rms} , 150 kHz - 30MHz | EN 50082-2 (IEC 801-6) |
| | Transient | burst surge | 4 kV (CM), Clamp | EN 50082-2 (IEC 801-4) |
| | | | 1 kV (CM,DM), Rg=42 Ω | EN 50082-2 (IEC 801-5) |
| Insulation resistance | | > 100 M Ω at 100 V d.c. | | |
| Mains frequency test | 500 V, 50 Hz | SEN 361503 | | |
| Vibration stability | Sinusoidal | 20 g, 25 Hz - 2kHz | IEC 68-2-6 | |
| | Random | 7,5 g _{rms} , 5 Hz - 1kHz | IEC 68-2-34, IEC 68-2-36 | |
| Shock resistance | Shock | 500 g / 1 ms | IEC 68-2-27 | |
| | Free fall | | IEC 68-2-32 | |
| Enclosure | DIN 43650 Plug | | IP 65 - IEC 529 | |
| | 2 m cable | | IP 67 - IEC 529 | |

Mechanical Characteristics

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| Material | Wetted parts | DIN 17440-1.4404 (AISI 316 L) |
| | Housing | DIN 17440-1.4404 (AISI 316 L) |
| Weight | | 0.2 kg |