

Features



- Designed for use in severe industrial environments
- CE-marked: EMC protected in accordance with EU EMC Directive
- Enclosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- Temperature compensated, linearized and laser adjusted
- Output signals:
 - MBS 32: 0-5 V, 1-5 V, 1-6 V or 0-10 V d.c.
 - MBS 33: 4-20 mA
- Many different pressure connections
- Electrical connection through plug or cable

Description

The standard pressure transmitter MBS 32 and MBS 33 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.

0-1 to 0-600 bar and a wide range of pressure and electrical connections.

The flexible pressure transmitter programme covers different output signals, absolute and gauge (relative) versions, measuring ranges from

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

*MBS 33 for absolute pressure measuring,
Output signal: 4-20 mA*

| Pressure connection | Measuring ranges P _{abs} [bar] | EN 175301-803-A plug version, Pg 9 | | Cable version (2 m) | |
|---------------------|---|------------------------------------|-----------------|---------------------|-----------------|
| | | Type no. | Code no. | Type no. | Code no. |
| G 1/2 A (EN 837) | 0-1 | MBS 33-1021-1AB08 | 060G3036 | MBS 33-1021-3AB08 | 060G3086 |
| | 0-1.6 | MBS 33-1221-1AB08 | 060G3037 | MBS 33-1221-3AB08 | 060G3087 |
| | 0-2.5 | MBS 33-1421-1AB08 | 060G3038 | - | - |
| | 0-4 | MBS 33-1621-1AB08 | 060G3039 | MBS 33-1621-3AB08 | 060G3089 |
| | 0-6 | MBS 33-1821-1AB08 | 060G3040 | MBS 33-1821-3AB08 | 060G3090 |
| | 0-10 | MBS 33-2021-1AB08 | 060G3041 | MBS 33-2021-3AB08 | 060G3091 |
| | 0-16 | MBS 33-2221-1AB08 | 060G3042 | MBS 33-2221-3AB08 | 060G3092 |
| | 0-25 | MBS 33-2421-1AB08 | 060G3043 | - | - |

**Ordering
standard versions**

MBS 33 for gauge (relative)
pressure measuring
Output signal: 4-20 mA

| Pressure connection | Measuring ranges P_e [bar] | EN 175301-803-A plug version, Pg 9 | | Cable version (2 m) | |
|---------------------|------------------------------|------------------------------------|-----------------|---------------------|-----------------|
| | | Type no. | Code no. | Type no. | Code no. |
| G 1/2 A (EN 837) | 0-1 | MBS 33-1011-1AB08 | 060G3006 | MBS 33-1011-3AB08 | 060G3056 |
| | 0-1.6 | MBS 33-1211-1AB08 | 060G3007 | - | - |
| | 0-2.5 | MBS 33-1411-1AB08 | 060G3008 | MBS 33-1411-3AB08 | 060G3058 |
| | 0-4 | MBS 33-1611-1AB08 | 060G3009 | MBS 33-1611-3AB08 | 060G3059 |
| | 0-6 | MBS 33-1811-1AB08 | 060G3010 | MBS 33-1811-3AB08 | 060G3060 |
| | 0-10 | MBS 33-2011-1AB08 | 060G3011 | MBS 33-2011-3AB08 | 060G3061 |
| | 0-16 | MBS 33-2211-1AB08 | 060G3012 | MBS 33-2211-3AB08 | 060G3062 |
| | 0-25 | MBS 33-2411-1AB08 | 060G3013 | MBS 33-2411-3AB08 | 060G3063 |
| | 0-40 | MBS 33-2611-1AB08 | 060G3014 | MBS 33-2611-3AB08 | 060G3064 |
| | 0-60 | MBS 33-2811-1AB08 | 060G3015 | MBS 33-2811-3AB08 | 060G3065 |
| | 0-100 | MBS 33-3011-1AB08 | 060G3016 | - | - |
| | 0-160 | MBS 33-3211-1AB08 | 060G3017 | MBS 33-3211-3AB08 | 060G3067 |
| | 0-250 | MBS 33-3411-1AB08 | 060G3018 | MBS 33-3411-3AB08 | 060G3068 |
| | 0-400 | MBS 33-3611-1AB08 | 060G3019 | MBS 33-3611-3AB08 | 060G3069 |
| | 0-600 | MBS 33-3811-1AB08 | 060G3020 | - | - |

MBS 32 for absolute pressure
measuring
Output signal: 0-10 V

| Pressure connection | Measuring ranges P_{abs} [bar] | EN 175301-803-A plug version, Pg 9 | |
|---------------------|----------------------------------|------------------------------------|-----------------|
| | | Type no. | Code no. |
| G 1/2 A (EN 837) | 0-1 | MBS 32-1025-1AB08 | 060G1264 |
| | 0-1.6 | MBS 32-1225-1AB08 | 060G3050 |
| | 0-2.5 | MBS 32-1425-1AB08 | 060G1266 |
| | 0-4 | MBS 32-1625-1AB08 | 060G1267 |
| | 0-6 | MBS 32-1825-1AB08 | 060G1268 |
| | 0-10 | MBS 32-2025-1AB08 | 060G1269 |
| | 0-16 | MBS 32-2225-1AB08 | 060G1270 |
| | 0-25 | MBS 32-2425-1AB08 | 060G1271 |

MBS 32 for gauge (relative)
pressure measuring
Output signal: 1-6 V or 0-10 V
EN 175301-803-A plug, Pg 9

| Pressure connection | Measuring ranges P_e [bar] | 1-6 V dc output signal | | 0-10 V dc output signal | |
|---------------------|------------------------------|------------------------|-----------------|-------------------------|-----------------|
| | | Type no. | Code no. | Type no. | Code no. |
| G 1/2 A (EN 837) | 0-1 | - | - | MBS 32-1015-1AB08 | 060G1222 |
| | 0-1.6 | - | - | MBS 32-1215-1AB08 | 060G1223 |
| | 0-2.5 | - | - | MBS 32-1415-1AB08 | 060G1224 |
| | 0-4 | MBS 32-1614-1AB08 | 060G3285 | MBS 32-1615-1AB08 | 060G1225 |
| | 0-6 | - | - | MBS 32-1815-1AB08 | 060G1226 |
| | 0-10 | MBS 32-2014-1AB08 | 060G3079 | MBS 32-2015-1AB08 | 060G2085 |
| | 0-16 | MBS 32-2214-1AB08 | 060G1286 | MBS 32-2215-1AB08 | 060G1228 |
| | 0-25 | MBS 32-2414-1AB08 | 060G1287 | MBS 32-2415-1AB08 | 060G1229 |
| | 0-40 | MBS 32-2614-1AB08 | 060G1288 | MBS 32-2615-1AB08 | 060G1239 |
| | 0-60 | - | - | MBS 32-2815-1AB08 | 060G1249 |
| | 0-100 | MBS 32-3014-1AB08 | 060G1290 | - | - |
| | 0-160 | - | - | MBS 32-3215-1AB08 | 060G1260 |
| | 0-250 | - | - | MBS 32-3415-1AB08 | 060G1261 |
| | 0-400 | - | - | MBS 32-3615-1AB08 | 060G1262 |
| | 0-600 | MBS 32-3814-1AB08 | 060G1294 | MBS 32-3815-1AB08 | 060G1263 |

Technical data
Performance (EN 60770)

| | | |
|--|--|---------|
| Accuracy (incl. non-linearity, hysteresis and repeatability) | ±0.3% FS (typ.) ±0.8% FS (max.) | |
| Non-linearity BFSL (conformity) | ≤ ±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 with viscosity < 100 cSt | < 4 ms |
| | Air and gases | < 35 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 |
| Supply voltage [U _s], polarity protected | 10 → 30 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 | – | ≤ 25Ω | |
| Load [R _L] (load connected to 0V) | R _L ≤ (U _s -10V)/0.02A | 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 5 | | |
| 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 20 g, 25 Hz - 2 kHz | IEC 60068-2-6 |
| | Random | 7.5 g _{rms} , 5Hz-1kHz | IEC 60068-2-64 |
| Shock resistance | Shock | 500 g / 1 ms | IEC 60068 - 2 - 27 |
| | Free fall | | IEC 60068 - 2 - 32 |
| Enclosure (depending on electrical connection) | see page 5 | | |

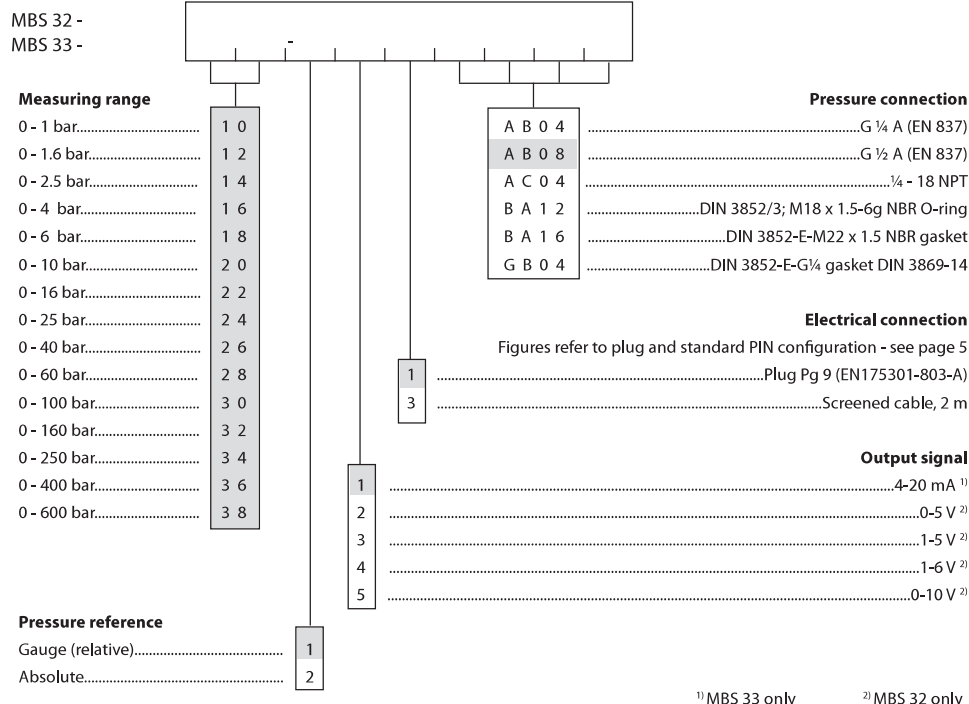
Mechanical characteristics

| | | |
|---|------------------------|---------------------------------|
| Materials | Wetted parts | EN 10088-1; 1.4404 (AISI 316 L) |
| | Enclosure | EN 10088-1; 1.4404 (AISI 316 L) |
| | Electrical connections | see page 5 |
| Weight (depending on pressure connection and electrical connection) | 0.2 - 0.3 kg | |

Ordering, Special 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 on other versions.



Dimensions/combinations

| Type code | 1 | | 3 | | | |
|-----------------------|---------------------|----------|--------------------|----------------------------------|----------|----------|
| | EN175301-803-A, Pg9 | | 2 m screened cable | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Type code | AB04 | BA12 | AB08 | AC04 | BA16 | GB04 |
| Recommended torque 1) | 30-35 Nm | 30-35 Nm | 30-35 Nm | 2-3 turns after finger tightened | 30-35 Nm | 30-35 Nm |

1)Depends of different parameters as packing material, mating material, thread lubrication and pressure level.

Electrical connections

| | |
|--|---|
| Type code page 4 | |
| 1 | 2 |
| EN 175301-803-A, Pg9 | 2 m screened cable |
| | |
| <i>Ambient temperature</i> | |
| -40 to +85 °C | -30 to +85 °C |
| Enclosure (IP protection fulfilled together with mating connector) | |
| IP 65 | IP 67 |
| <i>Materials</i> | |
| Glass filled polyamid, PA 6.6 | Poliolyfin cable with PE shirnkage tubing |
| <i>Electrical connection, 4-20 mA output (2 wire)</i> | |
| Pin 1: +supply Pin 2: ÷supply Pin 3: Not used Earth: Connected to MBS enclosure | Brown wire: + supply Black wire: ÷supply Red wire: Not used Orange: Not used Screen: Not connected to MBS enclosure |
| <i>Electrical connection, 0-5V, 1-5V, 1-6V, 0-10V output</i> | |
| Pin 1: +supply Pin 2: ÷supply Pin 3: Output Earth: Connected to MBS enclosure | Brown wire: Output Black wire: ÷supply Red wire: +supply Orange: Not used Screen: Not connected to MBS enclosure |

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequential changes being necessary in specifications already agreed. All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.