

Pressure transmitters for marine applications

Type MBS 33M

Features



- Designed for use in severe maritime environments
- All relevant marine approvals
- Enclosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- Pressure ranges in relative (gauge) or absolute from 0 up to 600 bar
- Standard output signal: 4 - 20 mA
- A wide range of pressure connections
- Temperature compensated and laser calibrated

Description

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

The flexible pressure transmitter programme is approved according to LR, DNV, GL, RINA, ABS, BV, NKK requirements and covers a 4-20 mA

output signals, absolute and gauge (relative) versions, measuring ranges from 0-1 to 0-600 bar and plug and cable connections.

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

Plug; Pg 13.5 (EN175301-803)

Output signal: 4-20 mA

	Measuring range P_e [bar]	Type no.	Code no.
G 1/2 A (EN 837)	0-1	MBS 33M-1011-1AB08	060G3121
	0-1.6	MBS 33M-1211-1AB08	060G3122
	0-2.5	MBS 33M-1411-1AB08	060G3123
	0-4	MBS 33M-1611-1AB08	060G3124
	0-6	MBS 33M-1811-1AB08	060G3125
	0-10	MBS 33M-2011-1AB08	060G3126
	0-16	MBS 33M-2211-1AB08	060G3127
	0-25	MBS 33M-2411-1AB08	060G3128
	0-40	MBS 33M-2611-1AB08	060G3129
	0-60	MBS 33M-2811-1AB08	060G3130
	0-100	MBS 33M-3011-1AB08	060G3131
	0-160	MBS 33M-3211-1AB08	060G3132
	0-250	MBS 33M-3411-1AB08	060G3133
0-400	MBS 33M-3611-1AB08	060G3134	

Technical data
Performance (EN 60770)

Accuracy (incl. non-linearity, hysteresis and repeatability)	±0.5% FS (typ.) ±1% 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
Supply voltage V_B (polarity protected)	10-30 V dc
Voltage dependency	<0.05% FS/10 V
Current limitation (linear output signal up to 1.5 x rated range)	28 mA
Load resistance [R_L] (Load connected 0 V)	$R_L \leq \frac{U_B - 10V}{0.02 A} [\Omega]$

Environmental conditions

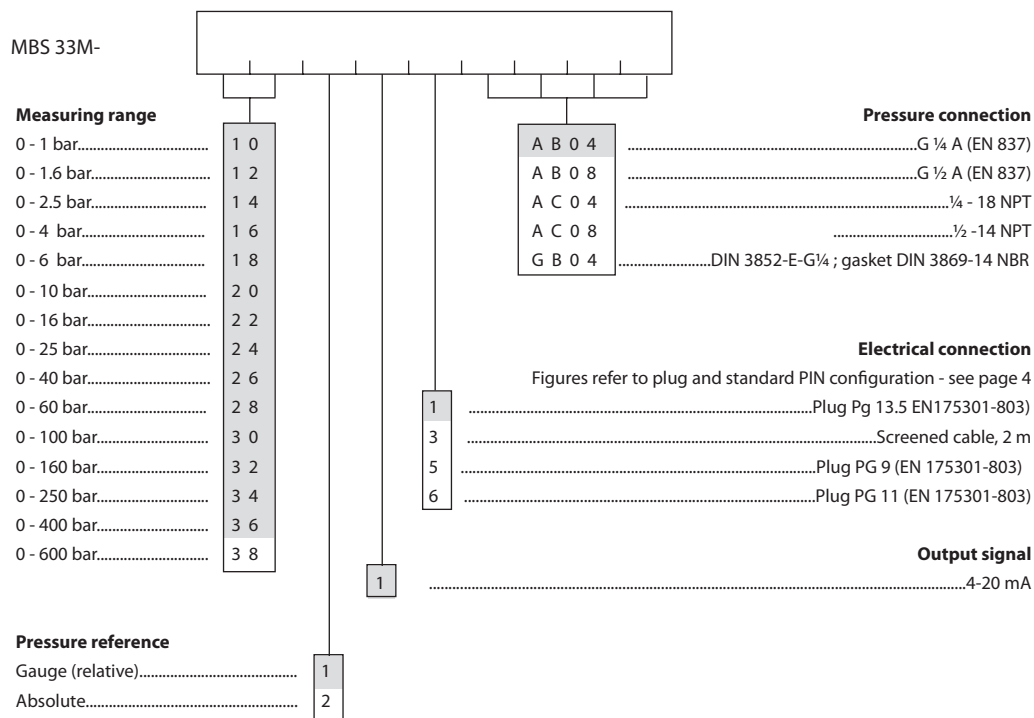
Medium temperature range	-40 → +85°C	
Ambient temperature range (depending on electrical connection)	see page 4	
Compensated temperature range	0 → +80°C	
Transport temperature range	-50 → +85°C	
EMC - Emission	EN 61000-6-3	
EMC Immunity	EN 61000-6-2	
Insulation resistance	> 100 MΩ at 100 V	
Mains frequency test	SEN 361503	
Vibration stability	Sinusoidal	15.9 mm-pp, 5 Hz-25 Hz 20 g, 25 Hz - 2 kHz
	Random	7.5 g _{rms} , 5Hz-1kHz
Shock resistance	Shock	500 g / 1 ms
	Free fall	
Enclosure (depending on electrical connection)	see page 4	

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 4
Weight (depending on pressure connection and electrical connection)	0.2 - 0.3 kg	

Ordering, Special versions

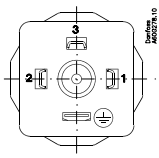
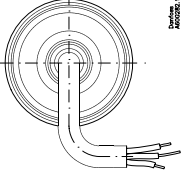
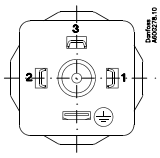
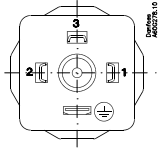
Preferred versions
 Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.



Dimensions/combinations

Type code	1	3	5	6	
	EN175301-803, Pg13.5	2 m screened cable	EN175301-803, Pg 9	EN175301-803, Pg 11	
	G ¼ A (EN 837)	G ½ A (EN 837)	¼-18 NPT	½-14 NPT	
	DIN 3852-E-G¼ Gasket: DIN 3869-14 NBR, O-ring				
Type code	AB04	AB08	AC04	AC08	GB04

Electrical connections

Type code page 3			
1	3	5	6
EN 175301-803, Pg9	2 m screened cable		
			
Ambient temperature			
-40 to +85 °C	-30 to +85 °C	-40 to +85 °C	-40 to +85 °C
Enclosure			
IP 65	IP 67	IP 65	IP 65
Materials			
Glass filled polyamid, PA 6.6	Poliolyfin cable with PE shirnkage tubing	Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6
Electrical connection, 4-20 mA output (2 wire)			
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	Pin 1: +supply Pin 2: ÷supply Pin 3: Not used Earth: Connected to MBS enclosure	Pin 1: +supply Pin 2: ÷supply Pin 3: Not used Earth: Connected to MBS enclosure