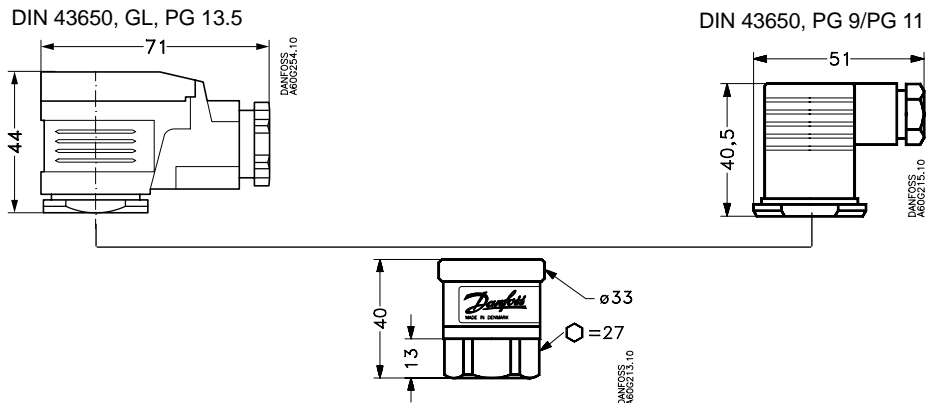


# Pressure transmitter for marine applications, type MBS 3100 and MBS 3150

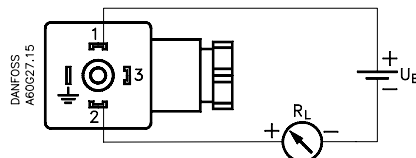


- All relevant marine approvals
- Designed to meet the strict demands on marine equipment
- Enclosure of acid-resistant stainless steel (AISI 316L)
- 4 - 20 mA output signal
- CE-marked: EMC protected in accordance with EU EMC Directive
- Temperature compensated and laser calibrated
- Typical applications:
  - Engines
  - Pumps
  - Compressors
  - Hydraulics
  - Pneumatics
  - Water treatment

## Dimensions



Dimensions				
Pressure connection	DIN 16288-B6kt-G 1/4 A	DIN 16288-B6kt-G 1/2 A	DIN 3852-G 1/4 A	1/4 - 18 NPT
Gasket			O-ring 13.3 x 1.8, NBR	
Type no.	MBS 31XX-XXXX-XAB04	MBS 31XX-XXXX-XAB08	MBS 31XX-XXXX-XBB04	MBS 31XX-XXXX-XAC04



1. Supply +
  2. Supply -
  3. Not used
- ⊥ Connected to MBS transmitter enclosure

## Technical data

## Performance (IEC 770)

Accuracy, $3\sigma$		$\leq \pm 1 \%FS \leq \pm 0.5 \%FS$ (typ.)
Non-linearity (Best fit straight line)		$\leq \pm 0.5 \%FS$
Hysteresis and repeatability		$\leq \pm 0.1 \%FS$
Thermal zero point shift		$\leq 0.1 \%FS/10K$ (typ.) $\leq 0.2 \%FS/10K$ (max.)
Thermal sensitivity (span) shift		$\leq 0.1 \%FS/10K$ (typ.) $\leq 0.2 \%FS/10K$ (max.)
Response time 10 to 90%		< 4 ms
MBS 3100	Overload pressure (static)	FS $\leq 300$ bar min. 2 x FS FS > 300 bar min. 1.5 x FS
	Burst pressure	Min. 4 x FS
MBS 3150	Overload (static) and burst pressure	10-20xFS - depending on measuring range Max. overload: 1500 bar Max. burst pressure: 2000 bar

## Electrical specifications

Nom. output signal	4 to 20 mA
Supply voltage (polarity protected)	10 to 32 V.dc
Voltage dependency	< 0.2 %FS/10V
Current limitation	28 mA (typ.)
Load, $R_L$	$R_L \leq \frac{V_{supply} - 10 V}{0.02 A} [\Omega]$

## Environmental conditions

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 8 kV	EN 50082-2 (IEC 801-2)
		Contact 4 kV	EN 50082-2 (IEC 801-2)
	RF field	10 V/m, 26 MHz - 1 GHz	EN 50082-2 (IEC 801-3)
		conducted 10 V <sub>rms</sub> , 150 kHz - 30 MHz	EN 50082-2 (IEC 801-6)
	Transient	burst 4 kV (CM) Clamp	EN 50082-2 (IEC 801-4)
		surge 1 kV (CM,DM) at Rg =42Ω	EN 50082-2 (IEC 801-5)
Insulation resistance		> 100 MΩ at 500 V.dc	
Mains frequency test	500 V, 50 Hz	SEN 361503	
Vibration stability	Sinusoidal, 20g, 25 Hz - 2 kHz	IEC 68-2-6	
	Random, 7.5g <sub>rms</sub> , 5 Hz - 1 kHz	IEC68-2-34/IEC68-2-36	
Shock resistance	Shock, 500 g / 1 ms	IEC 68-2-27	
	Free fall	IEC 68-2-32	
Enclosure	DIN 43650 Plug	IP65 - IEC 529	

## Mechanical characteristics

Wetted parts, material	DIN17440 -1.4404(AISI316L)
Enclosure material	DIN17440 -1.4404(AISI316L)
Weight	0.2 kg

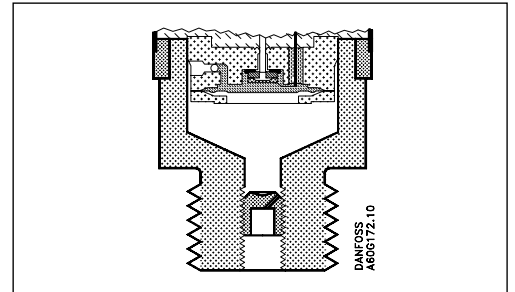
## Approvals

- Lloyd's Register of Shipping
- Det Norske Veritas
- Germanischer Lloyd
- RINA, Registro Italiano Navale
- American Bureau of Shipping
- Bureau Veritas
- Nippon Kaiji Kyokai
- Polski Rejestr. Statków
- MRS, Maritime Register of Shipping
- Korean Register of Shipping

**MBS 3150**  
**Application and media**  
**conditions**

MBS 3150 with integrated pulse snubber is designed for applications where pressure peaks, liquid hammer or cavitation may occur. Such pressure conditions are typical for instance in diesel fuel systems. The pulse snubber with the 0.3 mm nozzle effectively protects the pressure sensor against damage under these conditions. The response time of the transmitter will remain below 4 ms even at a viscosity of up to 100 cSt. during operation.

It is recommended to mount the transmitter in vertical position with the electrical connection upwards, in order to prevent clogging of the nozzle if there are particles or solids in the fluid.

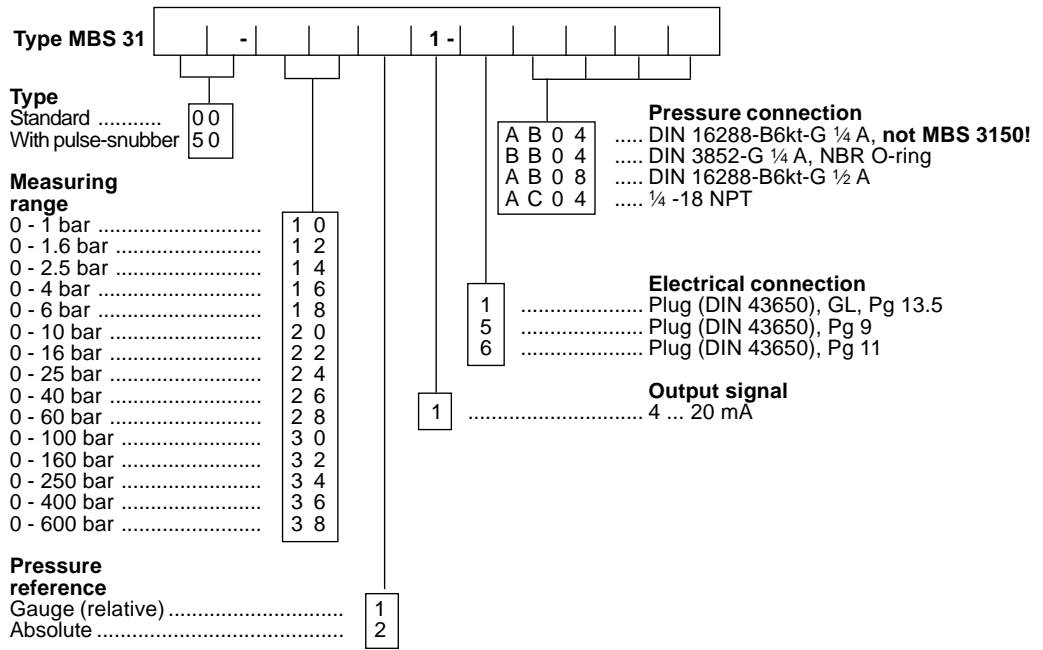

**MBS 3100 for gauge (relative) measuring - output signal 4 to 20 mA**
**Ordering**  
**Standard version with**  
**DIN 43650 plug Pg 11**

Pressure connection	Pressure range $P_g$ bar	Type no.	Code no.
G 1/4 A DIN 16288	0 - 4	MBS 3100 - 1611 - 6AB04	<b>060G1367</b>
	0 - 6	MBS 3100 - 1811 - 6AB04	<b>060G1368</b>
	0 - 10	MBS 3100 - 2011 - 6AB04	<b>060G1369</b>
	0 - 16	MBS 3100 - 2211 - 6AB04	<b>060G1370</b>
	0 - 25	MBS 3100 - 2411 - 6AB04	<b>060G1371</b>
	0 - 40	MBS 3100 - 2611 - 6AB04	<b>060G1372</b>
G 1/4 A, O-ring DIN 3852	0 - 4	MBS 3100 - 1611 - 6BB04	<b>060G1463</b>
	0 - 6	MBS 3100 - 1811 - 6BB04	<b>060G1464</b>
	0 - 10	MBS 3100 - 2011 - 6BB04	<b>060G1465</b>
	0 - 16	MBS 3100 - 2211 - 6BB04	<b>060G1466</b>
	0 - 25	MBS 3100 - 2411 - 6BB04	<b>060G1467</b>
	0 - 40	MBS 3100 - 2611 - 6BB04	<b>060G1468</b>
G 1/2 A DIN 16288	0 - 4	MBS 3100 - 1611 - 6AB08	<b>060G1469</b>
	0 - 6	MBS 3100 - 1811 - 6AB08	<b>060G1470</b>
	0 - 10	MBS 3100 - 2011 - 6AB08	<b>060G1471</b>
	0 - 16	MBS 3100 - 2211 - 6AB08	<b>060G1472</b>
	0 - 25	MBS 3100 - 2411 - 6AB08	<b>060G1473</b>
	0 - 40	MBS 3100 - 2611 - 6AB08	<b>060G3388</b>

**MBS 3150 for gauge (relative) measuring - output signal 4 to 20 mA**
**Ordering**  
**Standard version with**  
**DIN 43650 plug Pg 11**

Pressure connection	Pressure range $P_g$ bar	Type no.	Code no.
G 1/4 A, O-ring DIN 3852	0 - 6	MBS 3150 - 1811 - 6BB04	<b>060G1474</b>
	0 - 10	MBS 3150 - 2011 - 6BB04	<b>060G1475</b>
G 1/2 A DIN 16288	0 - 6	MBS 3150 - 1811 - 6AB08	<b>060G1476</b>
	0 - 10	MBS 3150 - 2011 - 6AB08	<b>060G1477</b>

Ordering, special versions



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