OEM Pressure transmitter for industrial applications
Type MBS 1200

Technical brochure

Features

- Designed for use in severe industrial OEM applications
- For medium and ambient temperatures up to 125°C
- All standard output signals: 4-20 mA, 0-5 V, 1-5 V, 1-6 V, 0-10 V, 10-90% ratiometric voltage
- Wetted parts made of stainless steel
- A wide range of pressure and electrical connections
- EMC protection up to 100 V/m
- UL 508 recognized
- CE marked
- Dual output transmitters, for further information please contact Danfoss.

Description

The compact OEM pressure transmitter MBS 1200 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions. Excellent vibration stability, robust construction, and a high degree of EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

Technical data

Performance (EN 60770)

Accuracy (incl. nonlinearity, hysteresis and repeatability)	±0.5% FS
Thermal zero point shift	<± 0.15% FS/ 10K
Thermal span shift	<±0.15% FS/ 10K
Response time liquids(10-90%)	> 0.5 ms
Overload pressure (static)	See table below
Burst pressure	See table below
Durability, P: 10-90% FS	>10 ×10^6 cycles

Overload and burst pressure

Nominal pressure [bar]	20	25	40	60	100	160	250	400	600	1000*	1600*	2200*
Overload pressure	80	80	140	140	200	320	500	800	1400	2000	2500	3000
Burst pressure	800	800	1400	1400	2000	1600	2500	4000	>4000	>4000	>4000	>4000

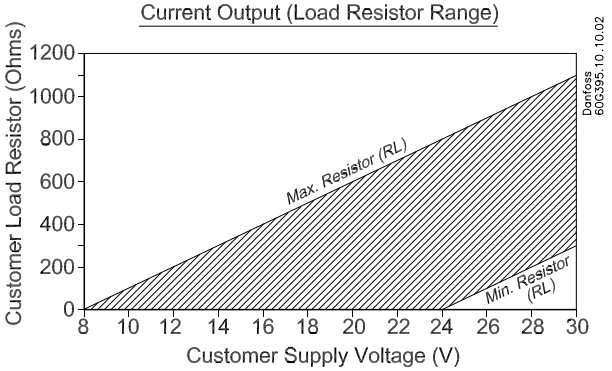
* Only available with M12 x 1.5P high pressure port, type FC06.

Technical data (continued)

Electrical specifications

Nom. output signal (Short-circuit protected)	4 to 20 mA (2 wire)	0 to 5, 1 to 5 1 to 6 V	0 to 10 V	10 to 90% ratiometric
Supply voltage [UB], polarity protected	8 to 30 V	8 to 30 V	12 to 30 V	5V ±0.5 V
Supply - current consumption	–	4.5 mA	4.5 mA	4.5 mA
Output impedance	–	≤90 Ω	≤90 Ω	≤90 Ω
Load [R_L] (connected to 0 V)	See chart below	RL≥10 kΩ	RL≥ 10 kΩ	RL≥5 kΩ
Load [R_L] (connected to + V)	See chart below	Not possible	Not possible	RL≥5 kΩ

4 to 20 mA output - min. / max. resistance vs. supply voltage



Note:
Loop current should not exceed 22 mA continuous or 25 mA temporarily due to pressure peaks

Environmental conditions

Media temperature range		–40°C → +125°C
Ambient temperature range		see page 5
Compensated temperature range		–40°C → +125°C
Transport temperature range		–40°C → +125°C
EMC - Emission		EN 55022
EMC - Immunity RF field	100 V/m, 26Mhz-1Ghz 3 V/m, 1.4 GHz - 2.7 GHz	EN 61000-6-2 Cable < 30 m
Electrical performance comply with		ISO 7637
DC isolation		500 V line to line 250 V line to earth
Vibration stability	20g, 10-2000 Hz, sinus	EN 60068-2-6
Shock resistance	100 g	EN 60068-2-27
Enclosure (depending on electrical connection)		See page 5

Mechanical conditions

Materials:		
	Wetted parts	17-4PH
	Enclosure	AISI 304 or plastic
	Pressure connection	17-4PH
	Electrical connection	See page 5

Ordering of adaptor code numbers

From pressure connection	To pressure connection	Single pack Code no.
G ¼" DIN 3852	7/16-20 UNF - flare	**063G0300**
	7/16-20 UNF - 2A	**063G0301**
	9/16-18 UNF - 2A	**063G0302**
	¼" NPT	**063G0303**
	R ¼ "	**063G0304**

Ordering of versions

MBS 1200 [ ][ ] 1 [ ] - [ ][ ][ ] -

Measuring Range (Gauge)

0 to 20 bar	2 3
0 to 25 bar	2 4
0 to 40 bar	2 6
0 to 60 bar	2 8
0 to 100 bar	3 0
0 to 160 bar	3 2
0 to 250 bar	3 4
0 to 400 bar	3 6
0 to 500 bar	3 7
0 to 600 bar	3 8
0 to 1000 bar	4 0
0 to 1600 bar	4 2
0 to 2200 bar	4 5

Pressure reference

Gauge(relative) 1

Output Signal

4 to 20 mA	1
0 to 5 V	2
1 to 5 V	3
1 to 6 V	4
0 to 10 V	5
Ratiometric, 10-90%	6

Gasket

Defined type of pressure connection

Pressure connections (HEX 22 mm)

GB04	G 1/4A DIN 3852-E [1]
AC04	1/4-18 NPT
AC02	1/8-27 NPT
BD08	7/16-20 UNF-2A[1]
AF04	1/4-18 NPTF
AF02	1/8-27 NPTF
PT04	1/4-19 PT
FC06	M12 x 1.5P High pressure (washer seal) [2]

[1] Incl. Viton gasket. Min. medium temperature is –25°C

[2] Incl. washer.

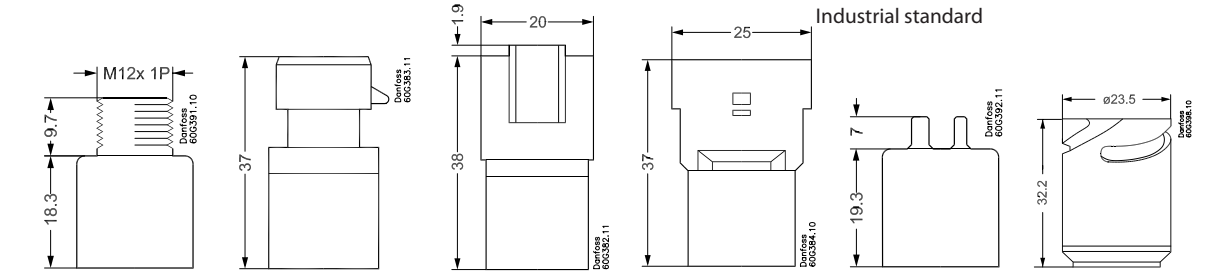
Electrical connections

C 1	M12x1 EN60947-5-2
C 2	Round Packard Metri-Pack
C 3	Deutsch plug
C 4	AMP superseal
C 5	Mini DIN plug EN 175301-803-C Industrial standard
C 6	ISO 15170-A1-4.1

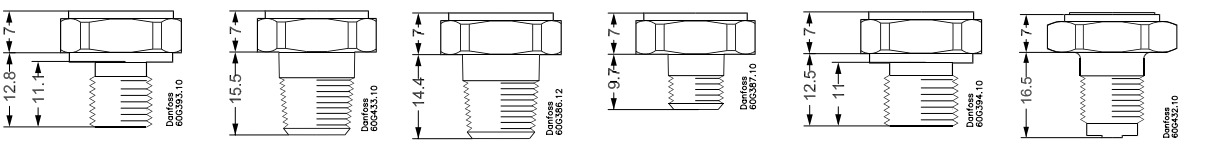
Dimensions/ Combination

Type code	C1	C2	C3	C4	C5	C6
	M12x1 EN60947-5-2	Round Packard Metri-Pack	Deutsch DT04	AMP Superseal	Rectangular connector EN175301-803-C Industrial standard	ISO 15170-A1-4.1

Note: The diameter of all housings is 19 mm.



Note: HEX is 22 mm across flats.

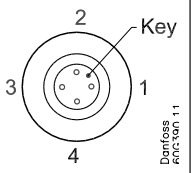
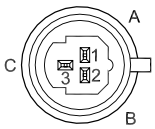
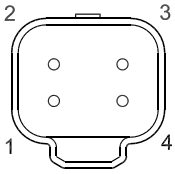
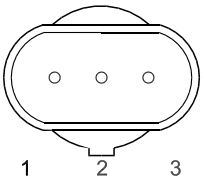
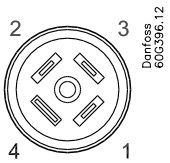
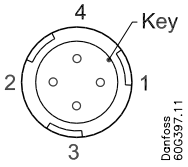


7/16-20 UNF-2A | 1/4-19 PT | 1/4-18 NPT/NPTF | 1/8-27 NPT/NPTF | G1/4A DIN 3852-E | M12 x 1.5 P

Type code	BD08	PT04	AC04/AF04	AC02/AF02	GB04	FC06
Recommended torque 1)	18-20 Nm	2-3 turns after finger tightend	2-3 turns after finger tightend	2-3 turns after finger tightend	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					
C1	C2	C3	C4	C5	C6
M12x1 EN60947-5-2 	Round Packard Metri-Pack 	Deutsch DT04 	AMP Superseal 1.5 	Rectangular connector EN175301-803 C Industrial standard 	ISO 15170-A1-4.1 
Ambient temperature 4-20 mA					
-40 to +100 °C	-40 to +100 °C	-40 to +100 °C	-40 to +100 °C	-40 to +100 °C	-40 to +100 °C
Ambient temperature, 0-5 V, 1-5 V, 1-6 V, 0-10 V, ratiometric 10-90%					
-40 to +125 °C	-40 to +125 °C	-40 to+125 °C	-40 to +125 °C	-40 to +125 °C	-40 to +125 °C
Enclosure (IP protection fulfilled together with mating connector)					
IP 67	IP 67	IP 67	IP 67	IP 40	IP 67
Material					
SS, PBT 30% GFR Gold (Au) plated	Glass filled PBT 30% GFR Tin (Sn) plated	Glass filled PBT 30% GFR Gold (Au) plated	Glass filled PBT 30% GFR Tin (Sn) plated	304 ss, PBT 30% GFR Tin (Sn) plated	Glass filled PBT 30% GFR Gold (Au) plated
Electrical connections, 4-20 mA (2 wire)					
Pin 1: + supply Pin 2: Do not connect Pin 3: ÷ supply Pin 4: PE, connected to MBS enclosure	Pin A: ÷ supply Pin B: + supply Pin C: Do not connect	Pin 1: ÷ supply Pin 2: + supply Pin 3: PE, connected to MBS enclosure Pin 4: Do not connect	Pin 1: Do not connect Pin 2: ÷ supply Pin 3: + supply	Pin 1: Do not connect Pin 2: + supply Pin 3: PE, connected to MBS enclosure Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3: Do not connect Pin 4: PE, connected to MBS enclosure
Electrical connections, 0-5V, 1-5V, 1-6V, 0-10V, ratiometric 10-90%					
Pin 1: + supply Pin 2: Output Pin 3: ÷ supply Pin 4: PE, connected to MBS enclosure	Pin A: ÷ supply Pin B: + supply Pin C: Output	Pin 1: ÷ supply Pin 2: + supply Pin 3: PE, connected to MBS enclosure Pin 4: Output	Pin 1: Output Pin 2: ÷ supply Pin 3: + supply	Pin 1: Output Pin 2: + supply Pin 3: PE, connected to MBS enclosure Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3: Output Pin 4: PE, connected to MBS enclosure