



Instruction Manual

PMR06

Precision Bourdon Tube Pressure Gauge



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1 Introduction

Series PMR06 pressure gauges are noted for their reliable function and easy operation. To obtain the greatest benefit from this device, please observe the following cautionary statement:

Persons who are responsible for setting up or operating this device must be sure to read the and understand the operating instructions and the safety information pertaining to it.

2 Safety Information

2.1 General Instructions

To ensure safe operation, the device must only be operated according to the information in the operating instructions. When the device is in use, the regulations and safety standards applicable to the specific application must also be observed. This statement also applies to the use of accessories.

2.2 Proper Usage

Series PMR06 pressure gauges are designed for measuring different process pressures. Any application extending beyond this specific intended use does not constitute proper usage. Series PMR06 must not be employed as the sole means of avoiding hazardous conditions in machinery and installations. The machinery and installations must be designed in such a manner that faulty conditions and malfunctions will not present hazardous situations for operating personnel.

2.3 Qualified Personnel

Series PMR06 must only be used by qualified, knowledgeable personnel trained in correct use of these devices. Qualified personnel are those persons familiar with setting up and assembling these devices, placing them in service and operating them. In addition, such personnel must also be qualified to perform the work associated with the application for which the device is being used.

3 Functional Description

A coiled, drawn brass or stainless steel tube filled with the fluid or gas being monitored is deformed to an extent depending on the pressure exerted by the fluid or gas. The resulting movement of the coil is transmitted to an indicator mechanism with a graduated display.

4 Installation

For connections with cylindrical screw threads, use suitable gaskets to seal the pressure gauge connections to the sealing face. For connections with tapered thread (e.g. NPT screw thread), apply a sealing component such as Teflon tape directly to the screw threads (EN 837-2). In order to be able to bring the measuring device into a position where it can be most easily read, we recommend the use of a tension bushing or gland nut.

During installation and removal, pressure gauges must not be turned by the housing. Be sure to only tighten and loosen gauges with suitable wrenches at the hexagonal drive points provided for this purpose.

If the pressure gauge is to be installed below the pressure tapping point, then the process line must be thoroughly flushed out first to remove any foreign objects before the gauge is installed. Some device models have a pressure-relief opening that can be vented and closed to equalize the internal pressure. In as-delivered condition, this pressure-relief opening is closed. Before checking these devices and/or after installation but before placing them in service, these devices must be vented (refer to label on housing). When pressure testing or purging piping systems or tanks, make sure that the pressure gauge is not subjected to pressure beyond the upper scale value. If this cannot be ensured, the pressure gauge must first be isolated or removed from the system. Before removing the pressure gauge, be sure to relieve the pressure in the measuring element. To do this, it may also be necessary to relieve the pressure in the process line.

Caution: Exposure to residue and deposits of materials being measured may pose a danger to people, the environment and the apparatus.

Be sure to follow proper safety procedures. Pressure gauges with measuring elements filled with water or mixtures containing water must be protected against frost.

5 Maintenance

Mechanical pressure gauges are maintenance-free.

The measuring accuracy (as defined per DIN EN 837) of the pressure gauge should be checked regularly. Inspection or recalibration should only be performed by trained, qualified personnel with suitable equipment.

Caution: If the pressure gauge is being used to monitor **hazardous substances** such as oxygen, acetylene, flammable or combustible materials, or poisonous materials and/or being used in **refrigeration systems, compressors**, etc., then the regulations applying in such cases must be also be observed in addition to the ones generally applicable. Be sure to take appropriate precautions and follow proper safety procedures.

PMR06

Precision Bourdon Tube Pressure Gauge

- nominal sizes 160 and 250 mm
- accuracy class 0,6
- versions with brass connection and stainless steel housing or completely in stainless steel
- with or without liquid filling for vibration damping
- measuring ranges from -1200...0 mbar to 0...1600 bar



Description:

The pressure gauges of the PMR06 series operate according to the bourdon tube principle. They can be supplied in brass or stainless steel, filled or unfilled. A drawn brass or stainless steel tube formed into a spiral is filled with the medium and deforms depending on the pressure.

This movement is indicated by a pointer measuring mechanism, which can be damped by means of the optionally available liquid filling, so that vibrations or oscillations are only shown to advantage in a greatly reduced form.

The wear of the moving parts is also reduced by the natural lubrication of the filling liquid and the penetration of corrosive gases and the formation of condensation water is prevented.

The stainless steel design allows pressure measurement even in the most aggressive liquids and gases.

The pressure gauges are equipped with a threaded connection at the bottom or rear.

Typical applications:

The PMR06 pressure gauges are used wherever precise pressure measurements are required.

For mobile use, versions are available in a test case, complete with shut-off valve and connection pieces.

The stainless steel versions are resistant to most aggressive media and are often used in the chemical and petrochemical industries, in the food industry, in pharmaceutical production or in power stations, where they have been providing the best results for decades.

Models:

Nominal size: housing diameter 160 or 250 mm

Materials:




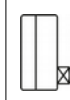
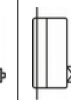

PMR06.x.M: stainless steel housing 1.4301, brass or copper alloy, from 100 bar st. steel, brass connection

PMR06.x.E: stainless steel housing 1.4301, stainless steel measuring element and connection 1.4571

Process connection: G 1/2 or 1/2" NPT bottom or back

Vibration damping: optional glycerine filling

Measuring Ranges:

Measuring range [bar]	Order code					
						
	For all nominal sizes					not for NG 250
-1200...0 mbar	A17	B17	C17	D17	E17	F17
-1...0	A16	B16	C16	D16	E16	F16
-0,6...+1,0	A18	B18	C18	D18	E18	F18
-1...+0,6	A42	B42	C42	D42	E42	F42
-1...+1,5	A43	B43	C43	D43	E43	F43
-1...+3	A44	B44	C44	D44	E44	F44
-1...+5	A45	B45	C45	D45	E45	F45
-1...+9	A46	B46	C46	D46	E46	F46
-1...+15	A49	B49	C49	D49	E49	F49
0,2...1	A50	B50	C50	D50	E50	F50
0...0,6	A67	B67	C67	D67	E67	F67
0...1	A69	B69	C69	D69	E69	F69
0...1,6	A70	B70	C70	D70	E70	F70
0...2,5	A72	B72	C72	D72	E72	F72
0...4	A73	B73	C73	D73	E73	F73
0...6	A74	B74	C74	D74	E74	F74
0...10	A75	B75	C75	D75	E75	F75
0...16	A76	B76	C76	D76	E76	F76
0...25	A78	B78	C78	D78	E78	F78
0...40	A79	B79	C79	D79	E79	F79
0...60	A80	B80	C80	D80	E80	F80
0...100	A81	B81	C81	D81	E81	F81
0...160	A82	B82	C82	D82	E82	F82
0...250	A84	B84	C84	D84	E84	F84
0...400	A86	B86	C86	D86	E86	F86
0...600	A87	B87	C87	D87	E87	F87
0...1000	A88	B88	C88	D88	E88	F88
0...1600	A89	B89	C89	D89	E89	F89

Order Code:

Order number: PMR06. 16. M. 1. 0. A75. 0. 0

Precision bourdon tube pressure gauge

Models:

16 = 160 mm
25 = 250 mm

Materials:

M = housing stainless steel, connection brass
E = housing stainless steel, connection stainless steel
S = special material
(please specify in plain text)

Process connection:

1 = G 1/2 bottom
2 = G 1/2 eccentric back
3 = 1/2" NPT bottom
4 = 1/2" NPT eccentric back
9 = special connection

Vibration damping:

0 = without
1 = with glycerine filling

Design and measuring ranges:

A17...F89 = see table "Measuring Ranges"

Additional electrical equipment:

0 = without

Options and accessories (multiple selection possible)

0 = without
xx = see table „Options and Accessories“

Technical Data:

Housing:

round stainless steel housing,
d = 160 or 250 mm
protection class IP45

Liquid-filled version:

glycerine filling with pressure relief opening and internal pressure equalization, protection class IP65

Stainless steel version:

with pressure relief opening (optional for increased safety with break-proof partition wall and blow-out rear wall)

Measuring element:

PMR06.xx.M: bourdon tube, up to 60 bar copper alloy, soft-soldered, from 100 bar stainless steel 1.4571, hard soldered

PMR06.xx.E: stainless steel bourdon tube 1.4571

Pointer mechanism:

PMR06.xx.M: brass, barrel nickel silver

PMR06.xx.E: stainless steel 1.4571/1.4301

Dial:

aluminium, white, black font
acc. to EN 837-1

Viewing class:

PMR06.xx.M: instrument glass

PMR06.xx.E: laminated safety glass

Accuracy:

class 0,6

Max. media temperature:

60 °C for PMR06.xx.M to 60 bar,
100 °C for all other devices

Overload safety:

short-term 1,3-times

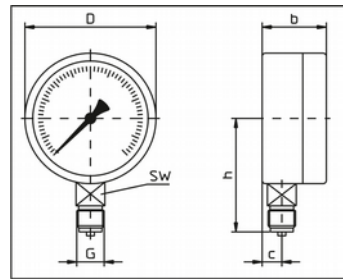
Options and Accessories:

Description:	Code	for type PMR06...
Design for increased safety (break-proof partition wall and blow-out rear wall)	ES	x.E..., unfilled, not for NG 250, only model A, B
Front ring polished	FP	models B,E,F
Tropical-proof housing	GT	only unfilled devices
Pointer movement stainless steel	ZE	x.M... unfilled
Multiple scale	SM	all types
Scale label	SA	all types
Cliché creation for special scale (1-colored or multicolored)	SS1 SSx	all types
Measuring system free of oil and grease for oxygen	MO	all types
Measuring system silicone-free	MS	all types
Glycerine filling	FG	all types
Throttle screw in connection, d = 0,8 or 0,3 mm	D08 D03	all types
Process connection G 1/4 female, M20 x 1,5, small flange DN10, stainless steel	Px	all types only x.E...
Red stamp on dial	MR	all types
Red mark pointer in the sight glass	ZR	all types
Slave pointer, resettable, 1-fold or 2-fold	ZS1 ZS2	all types
Pointer with toothed drive adjustment	ZZ	all types
Calibratable acc. to calibration regulations	E	all types
Transport case with manometer, shut-off valve and accessories	TK	only NG 160

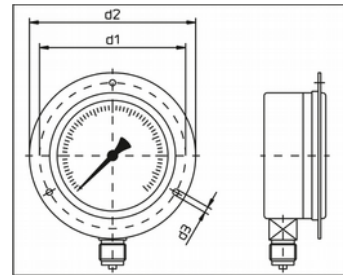
Dimensions:

Dimensions:	Value [mm]	
	NG 160	NG 250
b	50	55
b1	56	61
b2	88	93
c	14,5	16
c1	50	50
D	161,3	251
d1	178	271
d2	196	285
d3	5,8	5,8
d4	166	-
h	118	165
SW	22	22
Weight [kg]	1,1	2,2

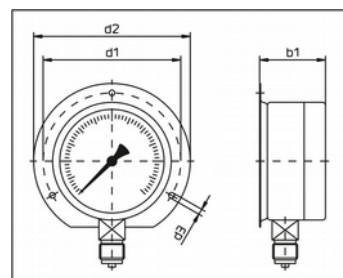
Models:



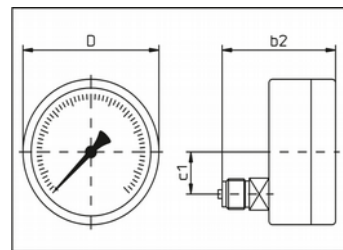
model A:
connection at bottom



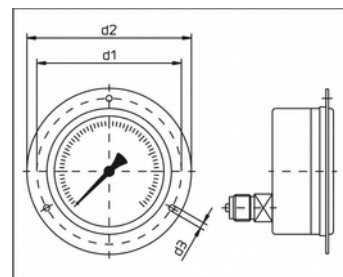
model B:
connection at bottom,
rim at front



model C:
connection at bottom,
rim at back

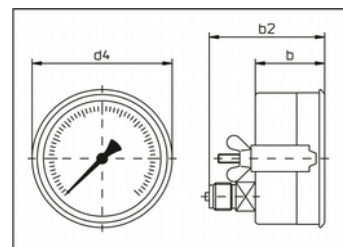


model D:
connection at back



model E:
connection at back,
rim at front

Panel cut-out:
NG 160: 165 mm
NG 250: 254 mm



model F:
triangular front ring and
mounting bracket

Panel cut-out:
NG 160: 163 mm
NG 250: /

Precision Gauge Manometer in Test Case:

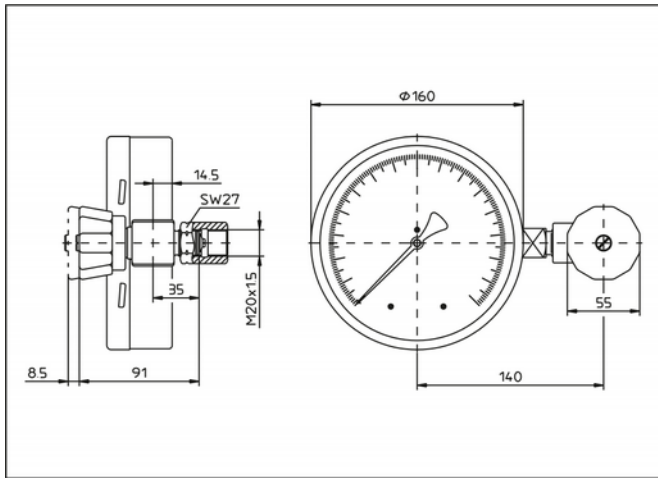
Version...TK

For mobile use, types PMR06.16... can be supplied in a service case complete with installation accessories.

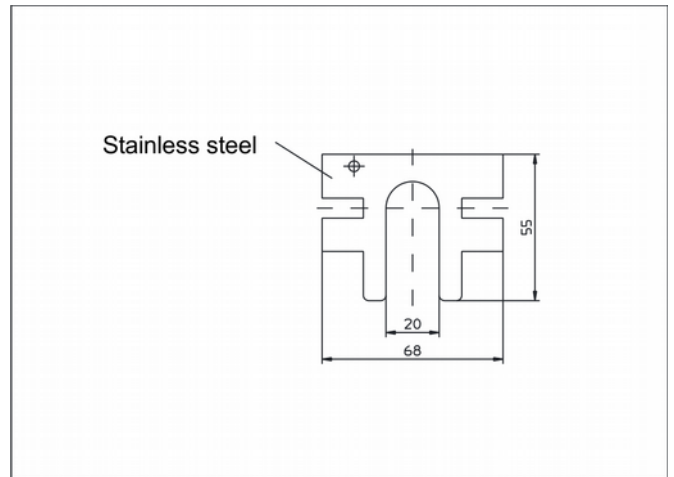
The mounting accessories include:

- shut-off valve
- clamping sleeve M20x1,5 - LH /RH acc. to DIN 16238
- intermediate piece with test flange and accessories
- fork for test flange
- solid transport case
- test report

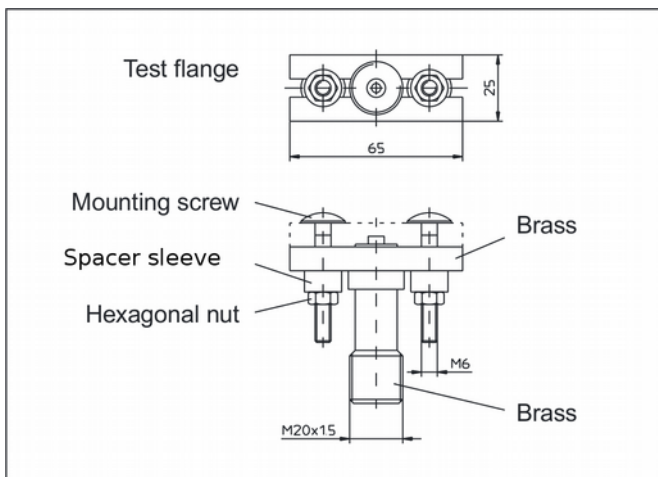
Dimensions:



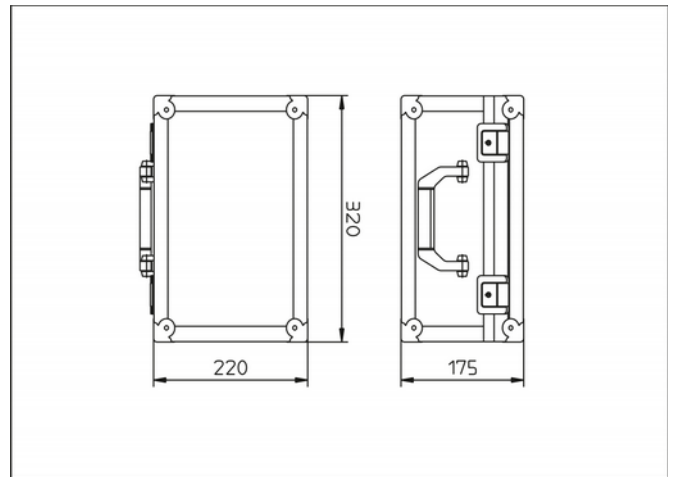
PMR06.16... with shut-off valve and clamping sleeve



fork for test flange



intermediate piece with test flange



transport case