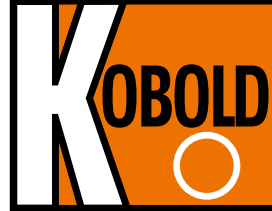




## Bourdon Tube Test Pressure Gauges

according to EN 837-1



measuring  
•  
monitoring  
•  
analysing

### MAN-F



- Housing: 160 mm, 250 mm
- Connection: G ½
- Material  
Housing: aluminium,  
steel black, stainless steel  
Connection: brass, stainless steel
- Measuring ranges:  
-0.6...0 bar to 0...2500 bar
- Accuracy class: 0.6 or 0.25
- Options: damping liquid,  
contacts, special ranges



P1

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### Application

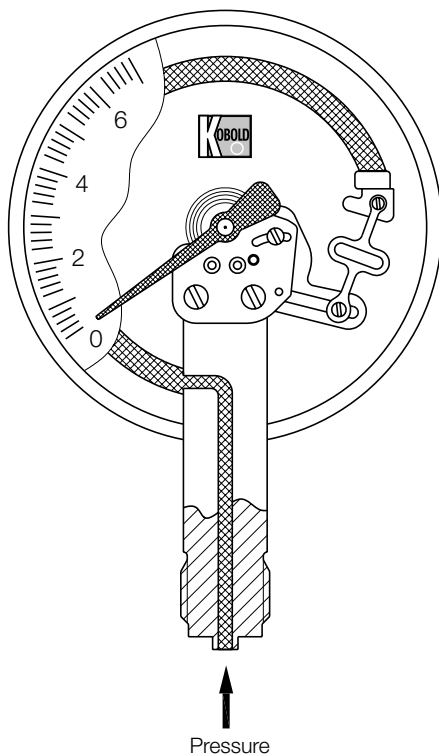
These test pressure gauges are manufactured to the very highest standards and are used to test pressures of tanks, pipes fittings and in laboratories.

### Measuring principle

The precision test pressure gauges have a high-grade measuring element. The pressure proportional elastic deformation of the Bourdon tube is transmitted through a low friction movement to the knife edge pointer.

With the help of the scale on the dial you can read the current pressure at measuring element.

### Unifilar drawing



### Housing

Following housing diameter are available:

160 mm, 250 mm. The housing material is stainless steel, aluminium or steel, black painted.

### Installation

The gauges are most often installed straight into the customer's screw necks.

### Connection

The gauges are supplied with a G $\frac{1}{2}$  connecting thread as standard. The connection is made of brass or stainless steel. The gauges can be used with non aggressive gaseous or liquid, but not with highly viscous or crystallizing media. Other connection types are available on request.

### Measuring ranges

The measuring ranges are graduated according to DIN recommendations and lie between -0.6 bar and 2500 bar. Other scales with measuring ranges in PSI, Pa or with your company logo are available on request.

### Damping liquid

Pressure gauges with liquid filling are used in locations with high alternating dynamic loads, strong vibrations and pulses. The filling ensures easy readability through steady pointer movement even when subjected to extreme loading and heavy vibration. The lubricating effect of the glycerine also keeps wear to a minimum. Glycerine is always used as a matter of principle. In gauges with a contact or an electrical measuring transducer, liquid paraffin is used as a non-conductive alternative.

Silicon fillings of various viscosities are also optionally available. Please note, that not all precision type devices can be filled with liquid.

### Contacts




For monitoring the system pressure gauges can be fitted up to 2 limit contacts.

Inductive contacts are also available. (see Chapter Contact Device).

### Application areas

- Test benches
- Control and adjustment of operating pressure-measuring gauges
- Laboratories
- Calibration centres, board of weights and measures

Technical Details

Bourdon tube test pressure gauge						
Connection/housing	Model					
Connection bottom 	MAN-..	...FG22...	...FG32...	...FG26...	-	...FG22Y... ...FI12...
Connection eccentric back 	MAN-..	...FG24...	...FG34...	-	-	-
Connection lateral 	MAN-..	-	-	-	...FG1B...	-
Accuracy class	0.6	0.6	0.6	0.6	0.25	0.6
Diameter	160 mm	160 mm	160 mm	160 mm	160 mm	250 mm
Housing material	stainless steel	aluminium	stainless steel	st. steel	stainless steel	steel black
Housing fillable	yes	yes	yes	no	no	no
Ring	stainless steel	steel black	stainless steel	st. steel	stainless steel	steel black
Pointer	stainless steel 1.4301					
Movement	Messing	Messing	stainless steel	st. steel	stainless steel	stainless steel
Throttle D=	from 60 bar 0.5 mm					
Window	instrument glass	instrument glass	safety glass	safety glass	safety glass	safety glass
Measuring element	CuBe	CuBe	st. steel 1.4571, from 400 bar Monel	stainless steel	CuBe, from 100 bar st. steel 1.4571	CuBe, from 100 bar st. steel 1.4571
Protection	IP 65			IP 54		
Overrange (rest / change / short time)	1.0 times / 0.9 times / 1.3 times of full scale					
Weight (with contacts plus 0.3 kg)	1.0 kg	1.2 kg	1.0 kg	3.8 kg	1.3 kg	3.0 kg
Ambient temperature	-20...+60 °C	-20...+60 °C	-20...+80 °C	-40...+60 °C	-40...+60 °C	-20...+60 °C
Connection	brass	brass	st. steel 1.4571, from 400 bar Monel	st. steel	brass, from 1000 bar st. steel	brass, from 1000 bar st. steel
Thread connection	G ½ male	G ½ male	G ½ male	M20x1,5	G ½ male	G ½ male
Max. temperature of media	80 °C	60 °C	80 °C	200 °C	60 °C	60 °C, from 100 bar: 100 °C
Contacts	max. 2 x	max. 2 x	max. 2 x	no	no	no
Indicating range	Code of indicating range					
-0.6...0 bar	-	-	..AC	..AC	..AC	..AC
-1...0 bar	..AD	..AD	..AD	..AD	..AD	..AD
-1...+0.6 bar	..A0	..A0	..A0	..A0	..A0	..A0
-1...+1.5 bar	..A1	..A1	..A1	..A1	..A1	..A1
-1...+3 bar	..A2	..A2	..A2	..A2	..A2	..A2
-1...+5 bar	..A3	..A3	..A3	..A3	..A3	..A3
-1...+9 bar	..A4	..A4	..A4	..A4	..A4	..A4
-1...+15 bar	..A5	..A5	..A5	..A5	..A5	..A5
0...0.6 bar	-	-	-	..B1	..B1	..B1
0...1 bar	..B2	..B2	..B2	..B2	..B2	..B2
0...1.6 bar	..B3	..B3	..B3	..B3	..B3	..B3
0...2.5 bar	..B4	..B4	..B4	..B4	..B4	..B4
0...4 bar	..B5	..B5	..B5	..B5	..B5	..B5
0...6 bar	..B6	..B6	..B6	..B6	..B6	..B6
0...10 bar	..B7	..B7	..B7	..B7	..B7	..B7
0...16 bar	..B8	..B8	..B8	..B8	..B8	..B8
0...25 bar	..B9	..B9	..B9	..B9	..B9	..B9
0...40 bar	..B0	..B0	..B0	..B0	..B0	..B0
0...60 bar	..C1	..C1	..C1	..C1	..C1	..C1
0...100 bar	..C2	..C2	..C2	..C2	..C2	..C2
0...160 bar	..C3	..C3	..C3	..C3	..C3	..C3
0...250 bar	..C4	..C4	..C4	..C4	..C4	..C4
0...400 bar	..C5	..C5	..C5	..C5	..C5	..C5
0...600 bar	..C6	..C6	..C6	..C6	..C6	..C6
> 600 bar	..On request					

Further options on request: back flange, front flange, safety glass instead of instrument glass, double scale, throttle, other threads

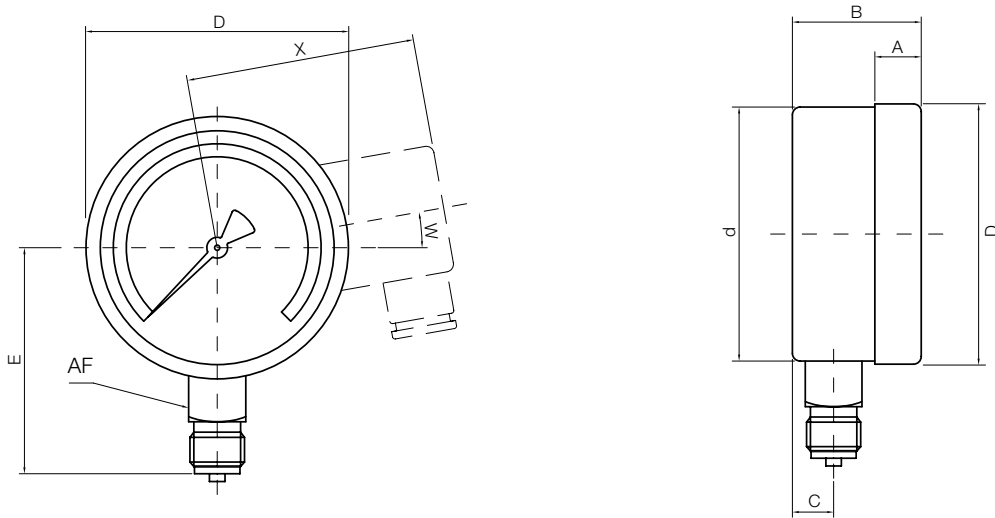
**Dimensions**

**Bottom connection**

Code	NG	A	B without contact	B 1 or 2 contacts	C	d	D	E	AF	W	X
MAN-FG 22/26	160 mm VA	21	50	101	15	159	162	117	22	0	118
MAN-FG 22Y	160 mm VA	17.5	49.5 <sup>1)</sup>	-	15.5	159	161	118	22	-	-
MAN-FG 32	180 mm Alu	-	48	101	18.5	160	-	115	27	25°	118
MAN-FI 12	250 mm	-	64.5 <sup>2)</sup>	-	17	250	-	165	22	-	-

<sup>1)</sup> 64.5 mm (up to 4 bar and from 1600 bar)

<sup>2)</sup> 51.5 mm (for 6 bar up to 60 bar)



**Back connection**

Code	NG	A	B without contact	B 1 or 2 contacts	C	d	D	E	AF	W	X
MAN-FG 24	160 mm VA	21	50	101	34	159	162	32.5	17	0	118
MAN-FG 34	160 mm VA	-	48	101	30	160	-	50	27	25°	118

