



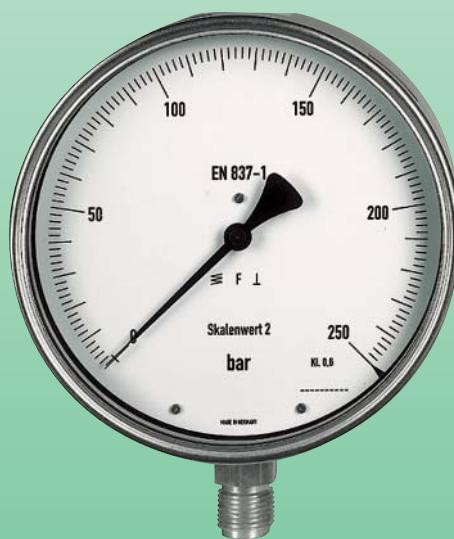
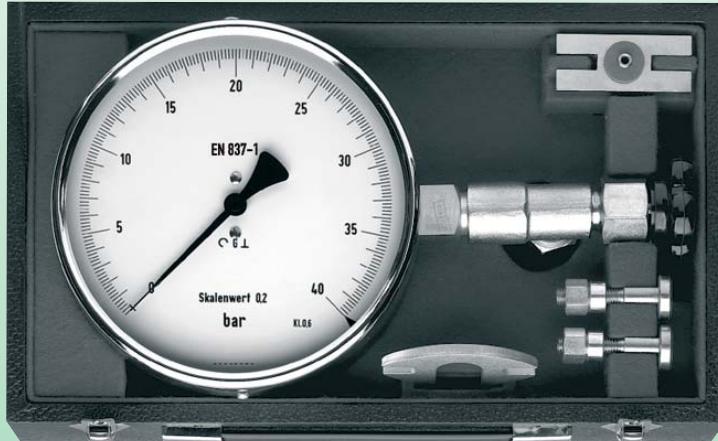
## Bourdon Tube Test Pressure Gauges

according to EN 837-1



measuring  
• monitoring  
• analysing

MAN-F



- Housing: 160 mm, 250 mm
- Connection: G 1/2
- Material  
Housing: aluminium, steel black, stainless steel  
Connection: brass, stainless steel
- Measuring ranges:  
from 0 ... 0.6 bar ... 0 ... 2500 bar and vacuum
- Accuracy class: 0.6 or 0.25
- Options: damping liquid, contacts, special ranges



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## Application

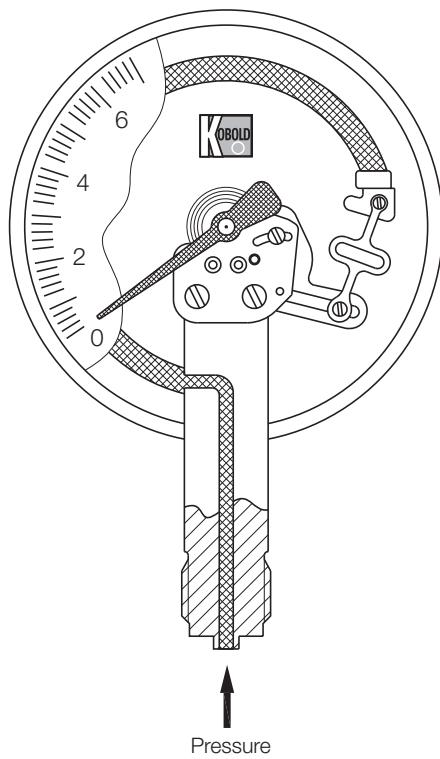
These test pressure gauges are manufactured to the very highest standards and are used to test pressures of tanks, pipes fittings and in laboratories.

## 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. The fine pressure gauge in carrying case is assembled using the accessories supplied (valve etc.).

## 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

### Fine pressure gauge in carrying case:

- On site verification of operating pressure measuring gauges

### 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 1/2 male	G 1/2 male	G 1/2 male	M20x1,5	G 1/2 male	G 1/2 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	

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

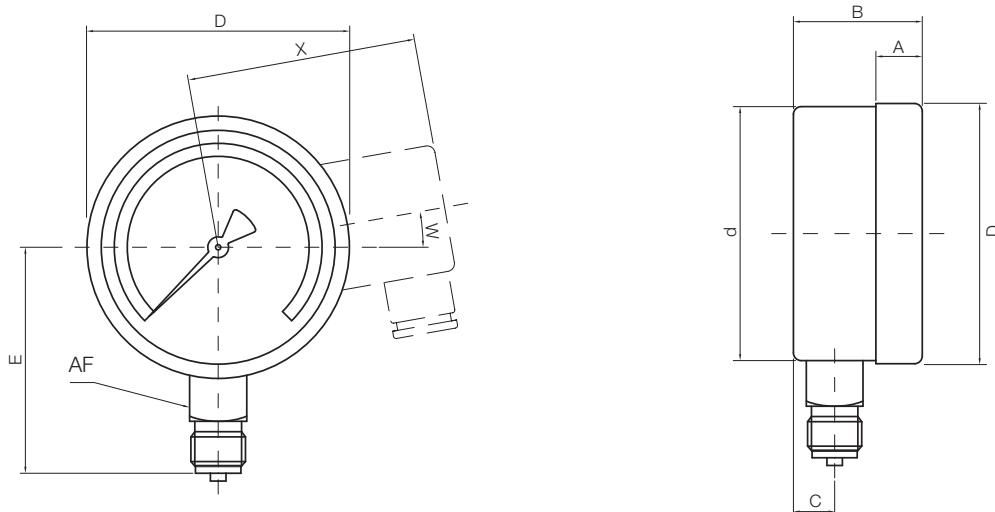
## Dimensions

### 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

