

- 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 to 0...2500 bar  
 and vacuum
- Accuracy class: 0.6 or 0.25
- Options: damping liquid, contacts, special ranges

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KOBOLD Messring GmbH  
 Nordring 22-24  
 D-65719 Hofheim/Ts.  
 ☎ +49(0)6192 299-0  
 Fax +49(0)6192 23398  
 E-Mail: info.de@kobold.com  
 Internet: www.kobold.com

**Model:**  
 MAN-F

### Application

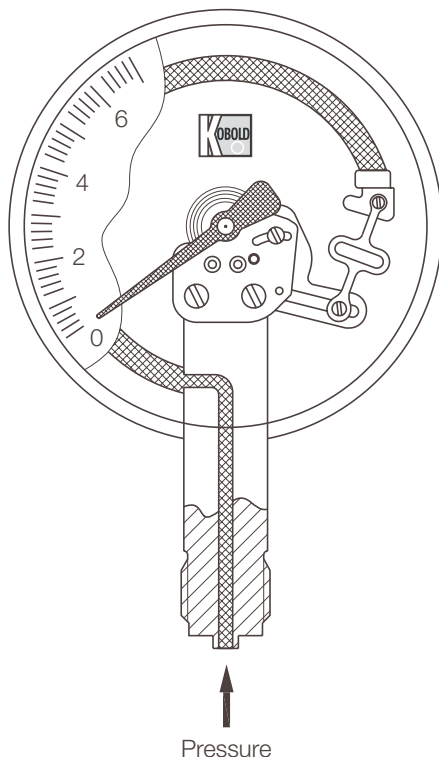
These test pressure gauges are manufactured to the very highest standards and are used to test pressures of tanks, pipes fittings and in laboratories.

### 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 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 Data

| Bourdon tube test pressure gauge       |  |         |   |                  |  |                    |  |
|--|--|---------|---|------------------|--|--------------------|--|
| Connection/housing                     |  |         | Model   |                  |  |                    |  |
| Connection bottom                      |  | MAN-... | ...FG22...                                      | ...FG32...       | ...FG26...                               | -                  | ...FG22Y...<br>...FI12...  |
| Connection eccentric back              |  | MAN-... | ...FG24...                                      | ...FG34...       | -  | -                  | -  |
| Connection lateral                     |  | MAN-... | -   | -                | -  | ...FG1B...         | -  |
| Accuracy class                         |  |         | 0.6   | 0.6              | 0.6                                      | 0.6                | 0.25<br>0.6  |
| Diameter                               |  |         | 160 mm  | 160 mm           | 160 mm                                   | 160 mm             | 160 mm<br>250 mm   |
| Housing material                       |  |         | st. steel                                       | aluminium        | st. steel                                | st. steel          | st. steel<br>steel black   |
| Housing fillable                       |  |         | yes   | yes              | yes                                      | no                 | no<br>no   |
| Ring                                   |  |         | st. steel                                       | steel black      | st. steel                                | st. steel          | st. steel<br>steel black   |
| Pointer                                |  |         | stainless steel 1.4301                          |                  |  |                    |  |
| Movement                               |  |         | brass   | brass            | st. steel                                | st. steel          | st. steel<br>st. steel   |
| Throttle D=                            |  |         | from 60 bar 0.5 mm                              |                  |  | -                  |  |
| Window                                 |  |         | instrument glass                                | instrument glass | safety glass                             | safety glass       | safety glass<br>safety glass   |
| Measuring element                      |  |         | CuBe  | CuBe             | st. st. 1.4571,<br>from 400 bar<br>Monel | stainless<br>steel | CuBe<br>from 100 bar<br>st. st. 1.4571<br>CuBe<br>from 100 bar<br>st. st. 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<br>3.0 kg   |
| Ambient temperature                    |  |         | -20...+60°C                                     | -20...+60°C      | -20...+80°C                              | -40...+60°C        | -40...+60°C<br>-20...+60°C   |
| Connection                             |  |         | brass   | brass            | st. st. 1.4571,<br>from 400 bar<br>Monel | stainless<br>steel | brass, from<br>1000 bar<br>st. steel<br>brass, from<br>1000 bar<br>st. steel     |
| Thread connection                      |  |         | G 1/2 AG  | G 1/2 AG         | G 1/2 AG                                 | M20x1.5            | G 1/2 AG<br>G 1/2 AG   |
| Max. temperature of media              |  |         | 80°C  | 60°C             | 80°C                                     | 200°C              | 60°C<br>60°C, from<br>100 bar: 100°C   |
| Contacts                               |  |         | max. 2 x  | max. 2 x         | max. 2 x                                 | no                 | no<br>no   |
| <b>Indicating range</b>                |  |         | <b>Code of indicating range</b>                 |                  |  |                    |  |
| -0.6...0 bar                           |  |         | -   | -                | ..AC                                     | ..AC               | ..AC<br>..AC   |
| -1...0 bar                             |  |         | ..AD  | ..AD             | ..AD                                     | ..AD               | ..AD<br>..AD   |
| -1...+0.6 bar                          |  |         | ..A0  | ..A0             | ..A0                                     | ..A0               | ..A0<br>..A0   |
| -1...+1.5 bar                          |  |         | ..A1  | ..A1             | ..A1                                     | ..A1               | ..A1<br>..A1   |
| -1...+3 bar                            |  |         | ..A2  | ..A2             | ..A2                                     | ..A2               | ..A2<br>..A2   |
| -1...+5 bar                            |  |         | ..A3  | ..A3             | ..A3                                     | ..A3               | ..A3<br>..A3   |
| -1...+9 bar                            |  |         | ..A4  | ..A4             | ..A4                                     | ..A4               | ..A4<br>..A4   |
| -1...+15 bar                           |  |         | ..A4  | ..A4             | ..A4                                     | ..A4               | ..A4<br>..A4   |
| 0...0.6 bar                            |  |         | -   | -                | -  | ..B1               | ..B1<br>..B1   |
| 0...1 bar                              |  |         | ..B2  | ..B2             | ..B2                                     | ..B2               | ..B2<br>..B2   |
| 0...1.6 bar                            |  |         | ..B3  | ..B3             | ..B3                                     | ..B3               | ..B3<br>..B3   |
| 0...2.5 bar                            |  |         | ..B4  | ..B4             | ..B4                                     | ..B4               | ..B4<br>..B4   |
| 0...4 bar                              |  |         | ..B5  | ..B5             | ..B5                                     | ..B5               | ..B5<br>..B5   |
| 0...6 bar                              |  |         | ..B6  | ..B6             | ..B6                                     | ..B6               | ..B6<br>..B6   |
| 0...10 bar                             |  |         | ..B7  | ..B7             | ..B7                                     | ..B7               | ..B7<br>..B7   |
| 0...16 bar                             |  |         | ..B8  | ..B8             | ..B8                                     | ..B8               | ..B8<br>..B8   |
| 0...25 bar                             |  |         | ..B9  | ..B9             | ..B9                                     | ..B9               | ..B9<br>..B9   |
| 0...40 bar                             |  |         | ..B0  | ..B0             | ..B0                                     | ..B0               | ..B0<br>..B0   |
| 0...60 bar                             |  |         | ..C1  | ..C1             | ..C1                                     | ..C1               | ..C1<br>..C1   |
| 0...100 bar                            |  |         | ..C2  | ..C2             | ..C2                                     | ..C2               | ..C2<br>..C2   |
| 0...160 bar                            |  |         | ..C3  | ..C3             | ..C3                                     | ..C3               | ..C3<br>..C3   |
| 0...250 bar                            |  |         | ..C4  | ..C4             | ..C4                                     | ..C4               | ..C4<br>..C4   |
| 0...400 bar                            |  |         | ..C5  | ..C5             | ..C5                                     | ..C5               | ..C5<br>..C5   |
| 0...600 bar                            |  |         | ..C6  | ..C6             | ..C6                                     | ..C6               | ..C6<br>..C6   |
| 0...1000 bar                           |  |         | ..D7  | ..D7             | ..D7                                     | -                  | ..D7<br>..D7   |
| 0...1600 bar                           |  |         | -   | -                | ..D8                                     | -                  | ..D8<br>..D8   |
| 0...2500 bar                           |  |         | -   | -                | ..D9                                     | -                  | -<br>-   |

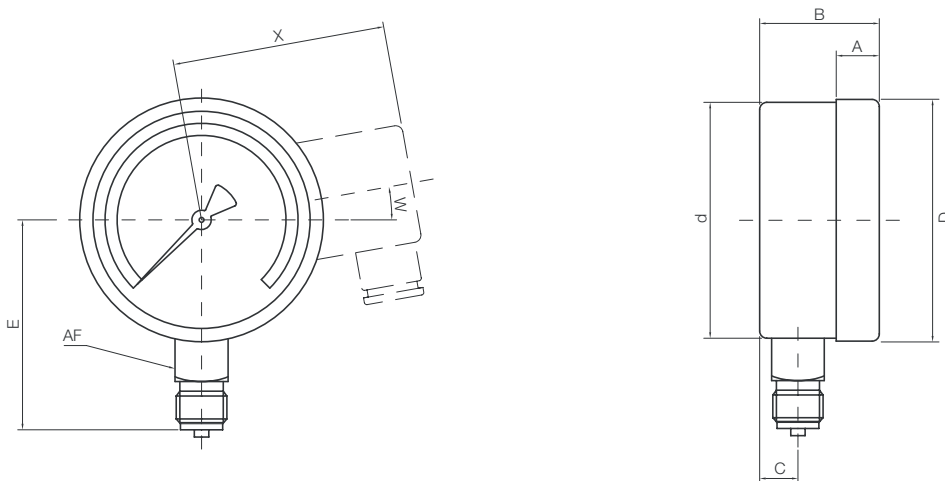
Further options on request: back flange, front flange, safety glass instead of instrument glass, double scale, throttle, other threads

**Dimensions**

**Bottom connection**

| Code         | NG         | A    | B<br>without<br>contact | B<br>1 or 2<br>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*                   | -                       | 15.5 | 159 | 161 | 118 | 22 | -   | -   |
| MAN-FG 32    | 160 mm Alu | -    | 48                      | 101                     | 18.5 | 160 | -   | 115 | 27 | 25° | 118 |
| MAN-FI 12    | 250 mm     | -    | 64.5**                  | -                       | 17   | 250 | -   | 165 | 22 | -   | -   |

\*64.5 mm (up to 4 bar and from 1600 bar) · \*\*51.5 mm (for 6 bar up to 60 bar)



**Back connection**

| Code      | NG         | A  | B<br>without<br>contact | B<br>1 or 2<br>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 Alu | -  | 48                      | 101                     | 30 | 160 | -   | 50   | 27 | 25° | 118 |

