



## Capsule Element Pressure Gauges

according to EN 837-3 · for low positive/negative pressures in gaseous media



measuring  
•  
monitoring  
•  
analysing

## MAN-K



- Housing: 63 mm, 80 mm, 100 mm, 160 mm
- Connection:  
G ¼ (63 mm housing)  
G ½ (80, 100, 160 mm housing)
- Material  
Housing: stainless steel  
Connection: brass or stainless steel
- Measuring ranges:  
-10 ... 0 mbar ... -600 ... 0 mbar  
0 ... 10 mbar ... 0 ... 600 mbar
- Accuracy class: 1.6



P1

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### Application

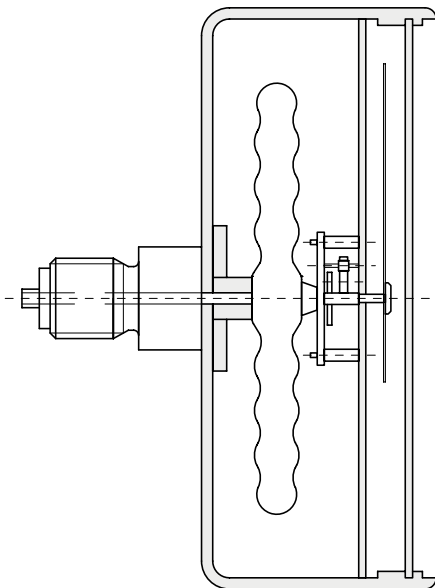
The KOBOLD pressure gauges with capsule elements are being used to measure low positive/negative pressures in gaseous media. All stainless steel pressure gauges with capsule element are manufactured by using high-quality stainless steel and are therefore suitable for use with corrosive gases.

All the pressure gauges comply with general international guidelines and take account of standard as well as application-specific requirements. They are the result of the over 70 years experience we have in building pressure gauges.

### Measuring principle

The capsule system consists of two half capsule elements which are soldered together. The element makes a defined stroke when subjected to pressure. A special measuring mechanism converts this movement into pointer-rotation.

### Unifilar drawing



### Housing

The following housing diameters are available:

63 mm, 80 mm, 100 mm and 160 mm. The housing material is stainless steel.

### Installation

The gauges are most often installed straight into the customer's screw necks. Depending on the required installation the instruments can be supplied with a panel clamp, triangular front ring or mounting flange. Optional gauge models with an installation border on the front are also available for installation into or onto control panels.

### Connection

The gauges with 63 and 80 mm housing diameter are supplied with a G $\frac{1}{4}$  connecting thread as standard, gauges with housing diameter of 100 mm and above with G $\frac{1}{2}$  connecting thread. The connection is made of brass or stainless steel. Other connection types are available on request.

### Measuring ranges

The measuring ranges of the various types are graduated according to DIN recommendations and lie between -10...0 mbar to -600...0 mbar and 0...+10 mbar to 0...+600 mbar. Other scales with measuring ranges in PSI, Pa or with your company logo are available on request.

### Damping liquid

Pneumatic capsule gauges cannot be supplied with damping fluid.

### Contacts

Pneumatic capsule gauges cannot be supplied with contacts.

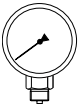


### Fields of application

- Medical technology
- Filter status measurements
- Leak testing
- Air-conditioning technology
- Exhaust-gas measurements
- Gas production

**Capsule Element Pressure Gauges**  
according to EN 837-3 for low positive/negative pressures in gaseous media Model MAN-K



**Technical Details**

Standard Capsule element pressure gauges for gases									
Connection/Housing		NG 63		NG 80		NG 100		NG 160	
Model									
Bottom connection		MAN-...	..KD21..	..KD21Y*..	..KE22*..	..KF22..	..KF22Y*..	..KG22..	..KG22Y*..
Back connection		MAN-...	..KD23.. central	..KD23Y*.. central	..KE24*.. central	..KF24.. central	..KF24Y*.. central	..KG24.. central	-
Triangular front ring and clamp, Back connection		MAN-...	..KD23K.. central	-	..KE24K*.. central	..KF24K.. central	-	..KG24K.. central	-
Accuracy class	1,6								
Housing version	stainless steel 1.4301								
Filling	without								
Ring	stainless steel 1.4301								
Pointer	aluminium, black anodized								
Movement	brass								
Throttle	without								
Window	instrument glass								
Measuring element	CuBe2								
Protection	IP 43				IP 54				
Overrange protection (short time)	1.3 times	10 times	1.3 times	1.3 times	10 times	1.3 times	10 times	1.3 times	10 times
Weight	see table								
Ambient temperature	-20...+60 °C								
Connection	brass								
Thread connection	G ¼ male				G ½ male				
Max. temperature of medium	80 °C								
Contacts	none								
<b>Indicating range</b>	<b>Code of indicating range</b>								
-10...0 mbar	-	-	-	..E5	-	..E5	-	-	-
-16...0 mbar	-	-	..E6	..E6	-	..E6	-	-	-
-25...0 mbar	-	-	..E7	..E7	-	..E7	-	-	-
-40...0 mbar	..E8	..E8	..E8	..E8	..E8	..E8	..E8	..E8	..E8
-60...0 mbar	..E9	..E9	..E9	..E9	..E9	..E9	..E9	..E9	..E9
-100...0 mbar	..E0	..E0	..E0	..E0	..E0	..E0	..E0	..E0	..E0
-160...0 mbar	..E1	..E1	..E1	..E1	..E1	..E1	..E1	..E1	..E1
-250...0 mbar	..E2	..E2	..E2	..E2	..E2	..E2	..E2	..E2	..E2
-400...0 mbar	..E3	..E3	..E3	..E3	..E3	..E3	..E3	..E3	..E3
-600...0 mbar	..E4	..E4	..E4	..E4	..E4	..E4	..E4	..E4	..E4
0...10 mbar	-	-	..F7	..F7	-	..F7	-	-	-
0...16 mbar	-	-	..F8	..F8	-	..F8	-	-	-
0...25 mbar	..F9	-	..F9	..F9	-	..F9	-	-	-
0...40 mbar	..F0	..F0	..F0	..F0	..F0	..F0	..F0	..F0	..F0
0...60 mbar	..F1	..F1	..F1	..F1	..F1	..F1	..F1	..F1	..F1
0...100 mbar	..F2	..F2	..F2	..F2	..F2	..F2	..F2	..F2	..F2
0...160 mbar	..F3	..F3	..F3	..F3	..F3	..F3	..F3	..F3	..F3
0...250 mbar	..F4	..F4	..F4	..F4	..F4	..F4	..F4	..F4	..F4
0...400 mbar	..F5	..F5	..F5	..F5	..F5	..F5	..F5	..F5	..F5
0...600 mbar	..F6	..F6	..F6	..F6	..F6	..F6	..F6	..F6	..F6




\* Minimal order amount 5 pcs



## Capsule Element Pressure Gauges

according to EN 837-3 for low positive/negative pressures in gaseous media Model MAN-K

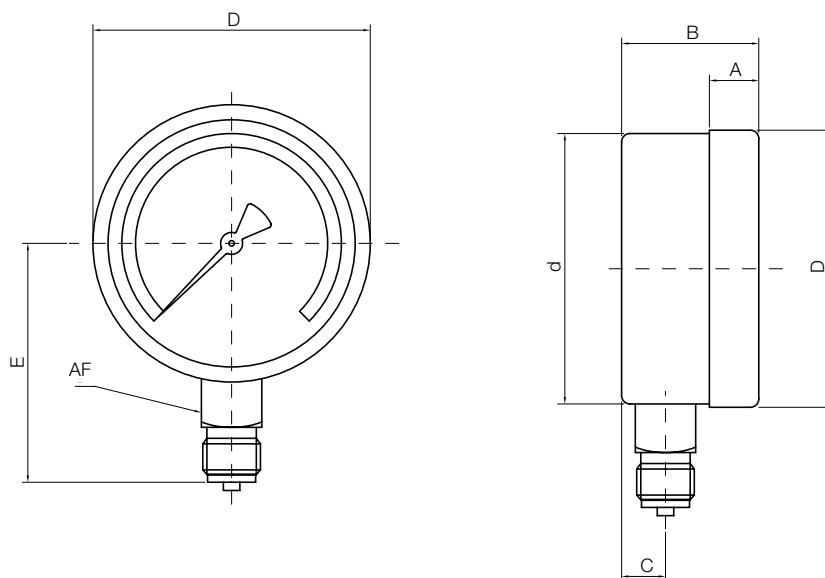
### Technical Details (continued)

All stainless steel capsule element pressure gauges for industrial applications				
Connection/Housing		NG 63	NG 100	NG 160
Typ				
Bottom connection	 MAN-...	..KD25..	..KF26..	..KG26..
Back connection	 MAN-...	..KD27.. central	..KF28.. central	..KG28.. central
Triangular front ring and clamp, back connection	 MAN-...	..KD27K.. central	..KF28K.. central	..KG28K.. central
Accuracy class		1,6		
Housing version		stainless steel 1.4301		
Filling		ohne		
Ring		stainless steel 1.4301		
Pointer		aluminium, black anodized		
Movement		stainless steel 1.4571		
Throttle		none		
Window		safety glass		
Measuring element		stainless steel 1.4571		
Protection		IP 43	IP 54	
Overrange protection (short time)		1.0 times/0.9 times/1.3 times of full scale		
Weight		see table		
Ambient temperature		-20...+80°C		
Connection		stainless steel 1.4571		
Thread connection		G 1/4 male	G 1/2 male	
Max. temperature of medium		80 °C		
Contacts		none		
Indicating range		Code of indicating range		
-10...0 mbar	-	-	-	-
-16...0 mbar	-	-	-	-
-25...0 mbar	..E7	..E7	..E7	..E7
-40...0 mbar	..E8	..E8	..E8	..E8
-60...0 mbar	..E9	..E9	..E9	..E9
-100...0 mbar	..E0	..E0	..E0	..E0
-160...0 mbar	..E1	..E1	..E1	..E1
-250...0 mbar	..E2	..E2	..E2	..E2
-400...0 mbar	..E3	..E3	..E3	..E3
-600...0 mbar	..E4	..E4	..E4	..E4
0...10 mbar	-	-	-	..F7
0...16 mbar	-	-	-	..F8
0...25 mbar	..F9	..F9	..F9	..F9
0...40 mbar	..F0	..F0	..F0	..F0
0...60 mbar	..F1	..F1	..F1	..F1
0...100 mbar	..F2	..F2	..F2	..F2
0...160 mbar	..F3	..F3	..F3	..F3
0...250 mbar	..F4	..F4	..F4	..F4
0...400 mbar	..F5	..F5	..F5	..F5
0...600 mbar	..F6	..F6	..F6	..F6

**Dimensions [mm]**

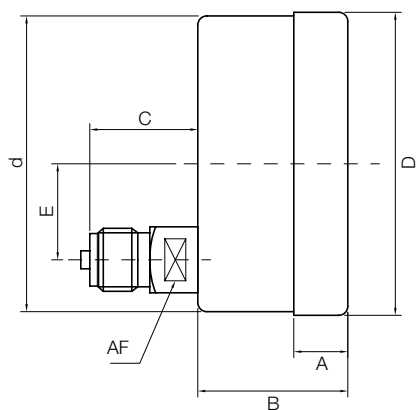
**Bottom connection**

Code	NG	A	B	C	d	D	E	AF
MAN-KE 21(Y)/25	63 mm	6	31	13	62	68	55	14
MAN-KE 22	80 mm	5	43.5	16	80	84	76	22
MAN-KF 22(Y)/26	100 mm	17	48	15	100	101	86,5	22
MAN-KG 22(Y)/26	160 mm	21	50	15	159	162	117	22



**Anschluss hinten**

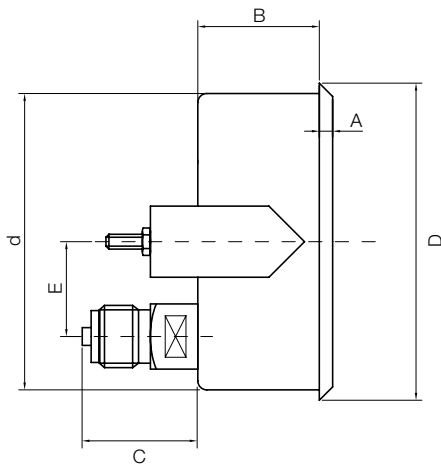
Code	NG	A	B	C	d	D	E	AF
MAN-KD 23(Y)/27	63 mm	6	28	26	63	68	0	14
MAN-KE 24	80 mm	5	43.5	35	80	84	0	22
MAN-KF 24(Y)/28	100 mm	17	49	36	100	101	0	22
MAN-KG 24/28	160 mm	21	50	34	159	162	0	22



**Dimensions [mm] (continued)**

**Triangular front ring**

Code	NG	A	B	C	d	D	E	AF
MAN-KE 23/27K	63 mm	6	26	26	62	68	0	14
MAN-KE 24K	80 mm	5	43.5	35	80	84	0	22
MAN-KF 24/28K	100 mm	5	41	36	101	107	0	22
MAN-KG 24/28K	160 mm	5	45	30	160	162	0	22



**Weight**

NG 63	
Code	Weight
MAN-KD 21(Y)	0.13 kg
MAN-KD 23(Y)	0.14 kg
MAN-KD 23K	0.18 kg
MAN-KD 25	0.16 kg
MAN-KD 27	0.15 kg
MAN-KD 27K	0.19 kg

NG 100	
Code	Weight
MAN-KF 22(Y)	0.6 kg
MAN-KF 24(Y)	0.5 kg
MAN-KF 24K	0.6 kg
MAN-KF 26	0.6 kg
MAN-KF 28	0.5 kg
MAN-KF 28K	0.6 kg

NG 80	
Code	Weight
MAN-KE 22	0.4 kg
MAN-KE 24	0.4 kg
MAN-KE 24K	0.4 kg

NG 160	
Code	Weight
MAN-KG 22(Y)	1.0 kg
MAN-KG 24(Y)	1.0 kg
MAN-KG 24K	1.1 kg
MAN-KG 26	1.0 kg
MAN-KG 28	1.0 kg
MAN-KG 28K	1.1 kg