

MS11 || Contact Pressure Gauge (for heavy measuring conditions)

Application

Contact pressure gauge, especially suited for heavy measuring conditions, e.g. in case of pressure shocks, vibration, numerous or exacting breaking capacity. The separated drive of the indication and switching function guarantees a high operation safety.

The pressure chamber and the measuring diaphragm are available in different materials to meet various requirements.

Application Fields

- winning of drinking water
- process technology
- terotechnology
- water economy
- pneumatic transporter

Construction and Operation

The measuring system is based on a rugged and uncomplicated diaphragm movement, suitable for overpressure and partial vacuum pressure measurements. In a state of equilibrium, the forces of the springs on both sides of the diaphragm are balanced. The pressure to be measured creates an unbalanced force at the diaphragm. This force moves the diaphragm system against the force of the springs for the measuring range until a new equilibrium is reached.

When subjected to excessive pressure, the diaphragm rests on metal supporting plates. A centre-mounted tappet transfers the motion of the diaphragm system to the indicator movement and to the initiating elements of the microswitches.

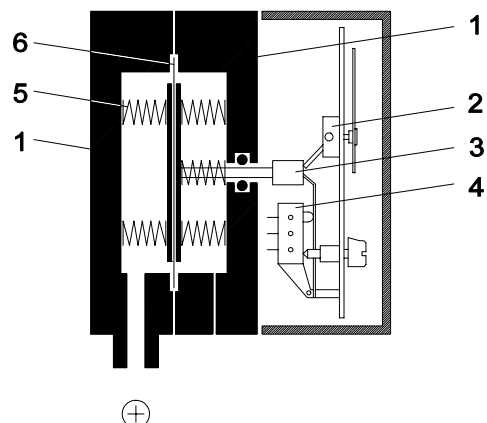
Functional Scheme

1. Pressure chamber
2. Motion work
3. Tappet
4. Micro switches, operating elements
5. Measuring springs
6. Measuring diaphragm

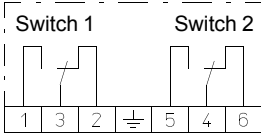


Main Features

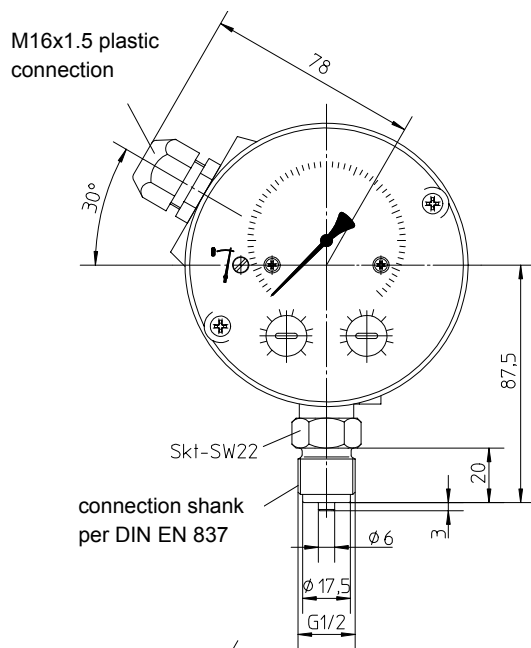
- 2 change-over microswitches
- high repeatability
- switching function independent of the indication
- vibration resistant
- long service life
- rugged diaphragm system
- all measuring ranges overpressure proof to 25 bar



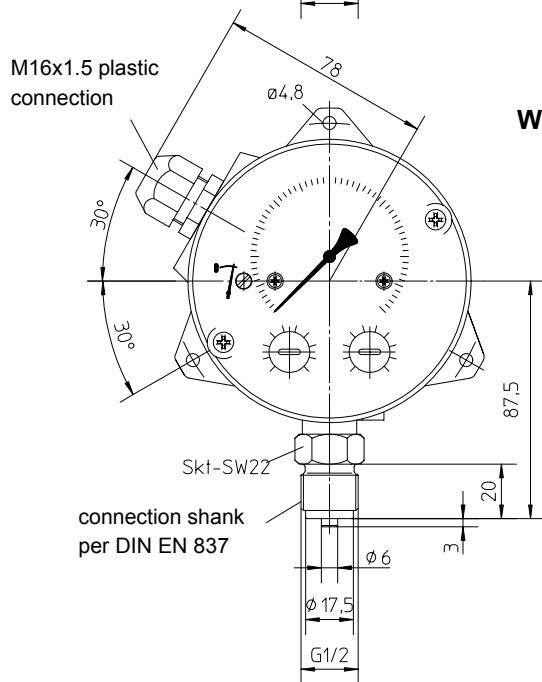
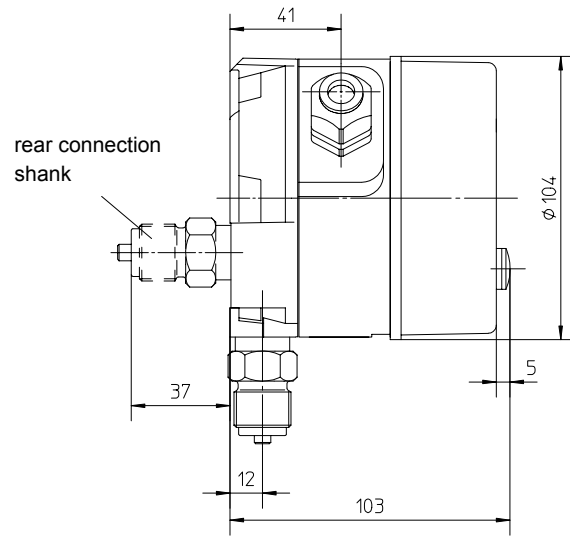
Specifications

General		
Measuring range	0 ... 400 mbar up to 0 ... 25 bar (s. Ordering Code)	
Nominal pressure	25 bar	
Max. pressure	overpressure proof to nominal pressure (all measuring ranges), safe against negative pressure	
Perm. ambient temperature	-10 ... +70°C	
Perm. media temperature	70°C	
Degree of protection	IP54 per DIN EN 60529	
Mounting position	vertical, pressure port downward (rear)	
Accuracy	± 1.6% FS	
Adjustment of zero point	located in the dial	
Measuring System		
Measuring ranges ≤ 16 bar	diaphragm measuring system, diaphragm of reinforced elastomere	
Measuring range 0-25 bar	diaphragm measuring system, diaphragm of DURATHERM [®]	
Switching Points		
Output contacts	1 or 2 micro switches, 1-pole changing contacts	
Setting of switching points	adjustable by reference value scale smallest adjustable value: approx. 5% FS	
Switching hysteresis	approx. 2.5% of FS	
Load / contact	$U_{\sim \max.} = 250 \text{ V AC}$ $I_{\max.} = 5 \text{ A}$ $U_{= \max.} = 30 \text{ V DC}$ $I_{\max.} = 0.4 \text{ A}$	 $P_{\max.} = 250 \text{ VA}$ $P_{\max.} = 10 \text{ W}$
Electrical Connection	prewired numbered cable, cable terminal box, 7-pole plug connection	
Pressure Connection	connection shank G½ B DIN EN 837	
Materials		
Pressure chamber	aluminium GkAlSi10(Mg), varnished black aluminium GkAlSi10(Mg) HART-COAT [®] stainless steel 1.4305	
Measuring diaphragm	diaphragm and gaskets of NBR or Viton [®] diaphragm of DURATHERM [®] Ni Cr Co-alloy	
Materials, media	stainless steel 1.4310, 1.4305	
Materials, housing	macrolon	
Weight	pressure chamber of Al = 1.2 kg, pressure chamber of 1.4305 = 3.5 kg	
Approval	type examination according to the rules of 'Germanischer Lloyd' possible	
CE marking	according to applicable regulations	
Mounting		
pipe mounting:	connection shank per DIN EN 837 bottom or rear pressure connection	
wall mounting:	3 fastening elements, bottom pressure connection	
panel mounting:	with front ring ø 132 mm, bottom or rear pressure connection (accessory DZ11)	

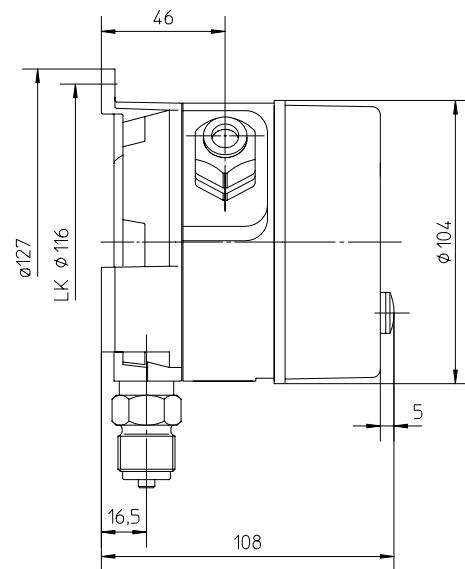
Dimensions (all units in mm unless stated otherwise)



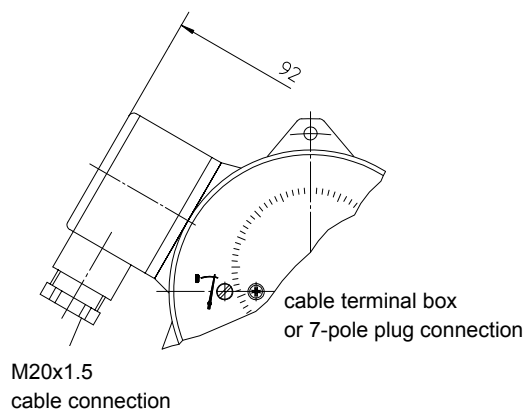
**MS11
Standard**



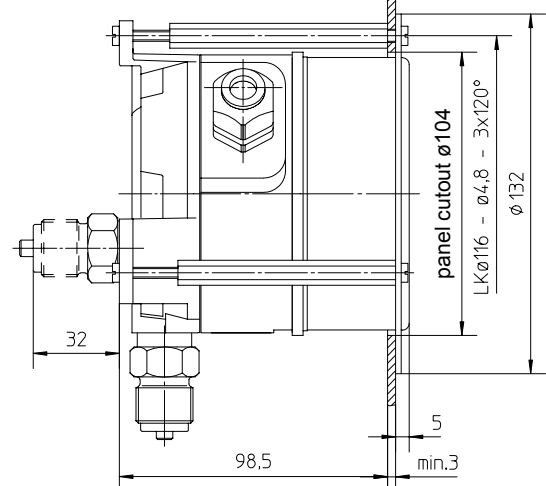
**MS11
Wall mounting**



Electrical connections



MS11 Panel mounting



Ordering Code

Contact Pressure Gauge

MS11

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Measuring Range

0 ... 400 mbar.....>	8	3					
0 ... 0.6 bar.....>	0	1					
0 ... 1 bar.....>	0	2					
0 ... 1.6 bar.....>	0	3					
0 ... 2.5 bar.....>	0	4					
0 ... 4 bar.....>	0	5					
0 ... 6 bar.....>	0	6					
0 ... 10 bar.....>	0	7					
0 ... 16 bar.....>	0	8					
0 ... 25 bar.....>	0	9					
-0.6 ... 0 bar.....>	3	0					
-1 ... 0 bar.....>	3	1					
-1 ... +0.6 bar.....>	3	2					
-1 ... +1.5 bar.....>	3	3					
-1 ... +3 bar.....>	3	4					
-1 ... +5 bar.....>	3	5					
-1 ... +9 bar.....>	3	6					

Membrane /

Gasket

NBR	NBR (all ranges up to 16 bar).....>	N
Viton®	Viton® (all ranges up to 16 bar).....>	V
DURATHERM®	NBR (range 0-25 bar only).....>	D
DURATHERM®	Viton® (range 0-25 bar only).....>	E

Pressure Chamber

Aluminium.....>	A
Aluminium HART-COAT®.....>	D
Chrome-nickel-steel 1.4305.....>	W

Type

Bottom pressure connection G½ B.....>	0
Rear pressure connection G½ B.....>	H
Wall mounting, pressure connection G½ B.....>	B
Front ring for panel mounting, bottom pressure connection G½ B.....>	G
Front ring for panel mounting, rear pressure connection G½ B.....>	L

Switching Elements

1 adjustable micro switch.....>	A
2 adjustable micro switch.....>	B

Electrical Connection

1 m numbered cable, prewired.....>	1
2.5 m numbered cable, prewired.....>	2
5 m numbered cable, prewired.....>	5
Cable terminal box.....>	K
7-pole plug connection.....>	W