Contact Pressure Gauge
(for heavy measuring conditions)

FISCHER
MESS- UND REGELTECHNIK

Type MS 11

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 the various requirements.



Application Fields

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

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 safe up to 25 bar

Construction and Operation

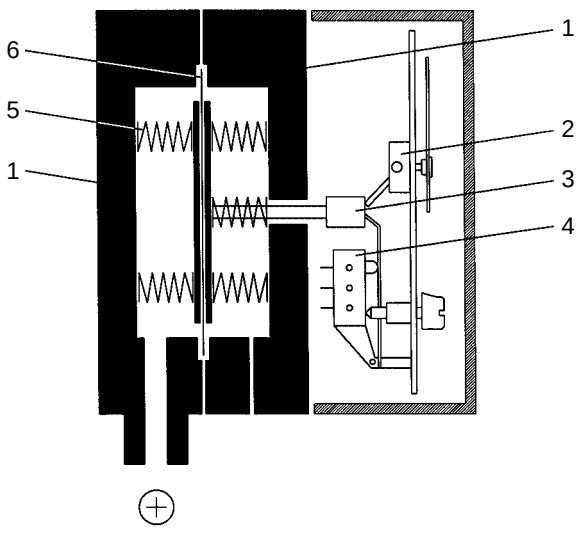
The measuring system is based on a rugged and uncomplicated diaphragm movement, suitable for overpressure and partial vacuum pressure measurements.

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 Diagram

1. Pressure chamber
2. Movement
3. Tappet
4. Initiating elements for microswitches
5. Measuring springs
6. Measuring diaphragm



300 M/2/0900 E

Technical Data

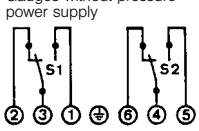
General

Measuring ranges	0…400 mbar to 0…25 bar (acc. to ordering code)
Nominal pressure	25 bar
Max. pressure load	overpressure protected up to nominal pressure of the measuring system (all measuring ranges), vacuum protected
Permissible ambient temperature	-10…+ 70 °C
Permissible medium temperature	70 °C
Protection class	IP 54 acc. to DIN 40 050
Mounting position	as desired
Measuring accuracy	± 1,6 % of full scale range
Zero-adjustment	located in the dial

Switching Elements

Contact output	1 or 2 microswitches, 1-channel change-over contact
Adjustment of switching points	external adjustment by standard value scales smallest adjustable value: approx. 5 % of full scale range
Switching hysteresis	approx. 2,5 %
Load data/contacts	U ~ max. = 250 VAC, I max. = 5 A, P max. = 250 VA U = max. = 30 VDC, I max. = 0,4 A, P max. = 10 W

Gauges without pressure power supply



Connection

Electrical connection	numbered cable, prewired cable terminal box, 7-channel plug
Pressure connection	connection shank BSP 1/2 male, DIN 16 288

Measuring System

Measuring range ≦ 10 bar	measuring spring-diaphragm system
Measuring range ≧ 16 bar	diaphragm measuring system

Material

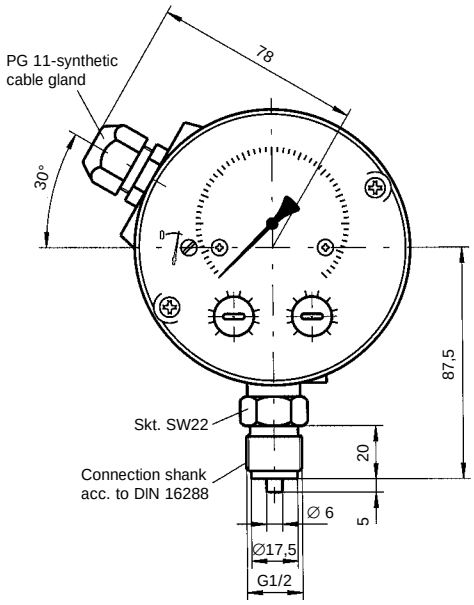
Pressure chamber	aluminium Gk Al Si 12 (Cu), varnished black; aluminium Gk Al Si 12 (Cu) HART COAT; chrome nickel steel 1.4305
Measuring diaphragm	diaphragm and gaskets of NBR or VITON diaphragm element of DURATHERM NiCrCo-alloy
Medium-contacted internal parts	noncorrosive steel 1.4310, 1.4305
Dial cover	macrolon
Weight	pressure chamber Al = 1,2 kg; pressure chamber 1.4305 = 3,5 kg

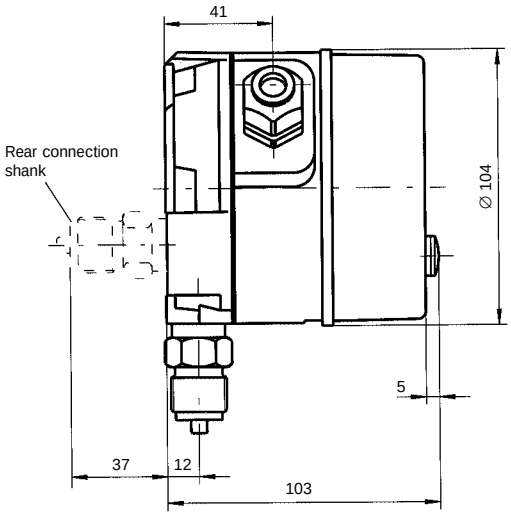
Approval — prototype test acc. to German Lloyd is possible
CE-certification — acc. to valid instructions

Mounting
pipe mounting: connection shank acc. to DIN 16 288
wall mounting: 3 fastening elements, bottom pressure connection
panel mounting: with front-ring, 132 mm diam., bottom or rear pressure connection

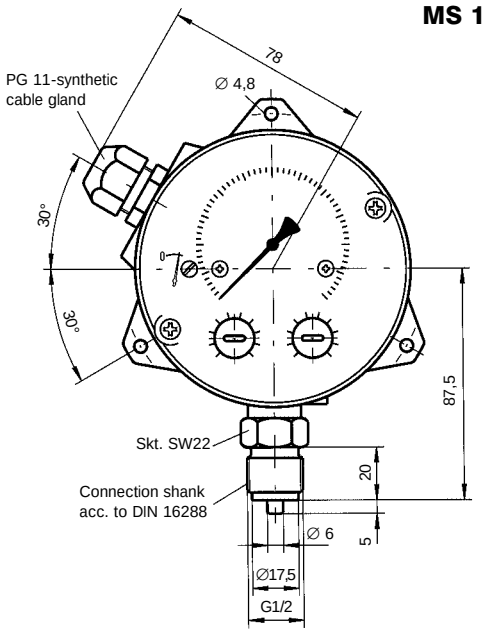
Accessories — manometer accessories acc. to datasheet MZ…
e.g. manometer valves,
wall mounting device acc. to DIN 16 281
several connecting pieces

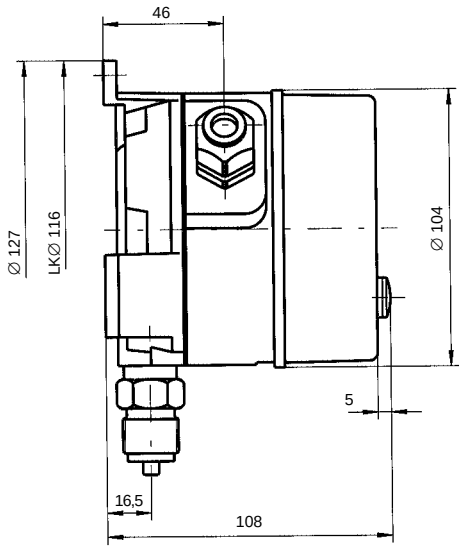
MS 11 Standard Version



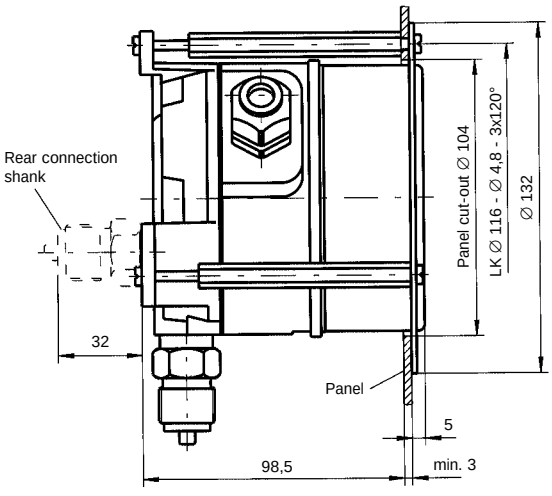


MS 11 Wall Mounting

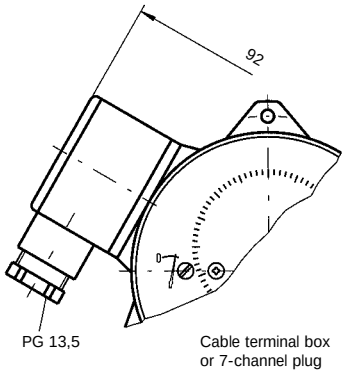




MS 11 Panel Mounting



Variants of Electrical Connections



Ordering Code

Contact Pressure Gauge **Type MS 11** [ ][ ] [ ] [ ] [0] [ ] [ ] [ ]

Measuring Ranges

0 – 400 mbar	83
0 – 0,6 bar	01
0 – 1 bar	02
0 – 1,6 bar	03
0 – 2,5 bar	04
0 – 4 bar	05
0 – 6 bar	06
0 – 10 bar	07
0 – 16 bar	08
0 – 25 bar	09
-0,6 – 0 bar	30
-1 – 0 bar	31
-1 – 0,6 bar	32
-1 – 1,5 bar	33
-1 – 3 bar	34
-1 – 5 bar	35

Measuring Diaphragm/Gaskets

NBR	NBR	N
VITON	VITON	V
DURATHERM®	NBR for measuring range ≧ 16 bar	D
DURATHERM®	VITON for measuring range ≧ 16 bar	E

Pressure Chamber

Aluminium	A
Aluminium HART COAT	D
Chrome nickel steel 1.4305	W

Pressure Connections

Bottom connection shank, BSP 1/2 male	O
Rear connection shank, BSP 1/2 male	H
Wall mounting, pressure connection, BSP 1/2 male	B
Front ring for panel mounting, bottom pressure connection, BSP 1/2 male	G
Front ring for panel mounting, rear pressure connection, BSP 1/2 male	L

Switches

1 adjustable microswitch	A
2 adjustable microswitches	B

Electrical Connection

Numbered cable, 1 m long, prewired	1
Numbered cable, 2,5 m long, prewired	2
Numbered cable, 5 m long, prewired	5
Cable terminal box	K
7-channel plug	W