

# Pressure gauge for SF6-Gas Density Monitors series MSF6

with magnetic snap contacts  
SF6-Gas Density Monitors

## General features

- SF6 Gas Density Monitoring pressure gauge
- Case and wetted parts from stainless steel
- German movement and sensing element
- Magnetic snap contact

## Application area

- Gas density monitors for SF6 gas are pressure gauges with electrical accessory and applied mainly at switchboard plants of the energy industry.
- The gas density monitors are calibrated for the individual application referring filling pressure, calibration pressure, switching points and ambient temperature.

## General specification

### Size

100 mm

### Pressure range

Vacuum and up to 25 bar

### Accuracy class

±1.0 at ambient temp. 20 °C

±2.5 at ambient temp. -20 °C ... 60 °C

### Type of mounting

Bottom connection

Bottom connection with back flange

Back connection

Back connection with front flange

### Pressure limitation

Steady: 3/4 x full scale value

Fluctuating: 2/3 x full scale value

Short time: full scale value

### Temperature limitations

Medium:

unfilled instruments: -20...+60°C

with glycerine filling: -40...+70°C

Ambient :

unfilled instruments: -20...+60°C

Storage

unfilled instruments: -50...+60°C

### Calibration Pc

Calibration pressure in acc. to reference isochor

### Degree of protection

DIN EN 60 529 / IEC 529, IP65



SF6-Gas Density Monitor, MSF6

### Pressure element

Stainless steel, welded

Gas-tight: leak rate  $\leq 1 \cdot 10^{-8}$  mbar · l / s

Test method: helium mass spectrometry

### Bourdon tube

316L Stainless steel

< 40 bar : C- type Bourdon tube

leak rate  $\leq 10^{-8}$  mbar L/sec

Test method : helium mass spectrometry

### Movement

Stainless steel

Bimetal Link for temperature compensation

### Dial

Aluminium, white background

with green, yellow, red color marking

### Window

Instrument safety glass

### High voltage test

2kV, 50Hz, 1s / wiring vs. case

### Electronical connection

cable gland M20x1.5

protection acc. to IEC 529 IP 65

(when plugged and screwed)

exterior cable diameter 7-13 mm

### Option

Liquid filling or Gas filling

- Glycerine

- Gas filling



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## Ordering information

MODEL CODE

MSF6

• 5

### DIAL SIZE

5 : 100 mm

### MOUNTING

1 : Bottom Connection  
 2 : Bottom connection with Front Flange  
 3 : Back connection  
 4 : Back connection with Front-Flange

### Liquid filling

0 : Dry  
 1 : Glycerin

### Scale unit of measurement

B : bar  
 K : kPa  
 M : MPa  
 P : psi  
 X : others (on request)

### Pressure range code, unit bar

Code	Range
R11	-1...1.5 bar
R10	-1...3 bar
R08	-1...9 bar
R04	-1...24 bar
R40	0...25 bar
YY	Others

### Option

Information to additional specification

### Process connection

G2 : G1/2"  
 R2 : PT1/2"  
 N2 : NPT 1/2"  
 XX : Others on request

### Magnetic contact

Mx : 1 contact  
 - M1: high contact  
 - M2: low contact  
 Mxx : 2 contacts, double contacts  
 - M12: high & low contacts  
 - M21: low & high contacts

### Option code

Code	Description	Code	Description
ND	New dial design	TP	St. stell tag plate, 60 x 20 x 0.5t
NF	New dial face printing cost per pcs	MC	Manufacture calibration certificate
GM	Green marking per pcs	KC	KOLAS Ilac-MRA calibration certificate
CD	New dial face design with company logo	RE	Reed switch
RS	Restrictor screw in socket hole for high pulsation	SN	Snubber
UC	U-calmp for back connection, steel	AD	Adaptor
NO	"USE No OIL" per pcs, at least $\geq 10$ pcs	CC	Certificate of conformance / orign
OF	Oval 3-hole front flange	PM	2" Pipe mounting bracket
MP	Maximum pointer	NC	Ni-Cr Plate
BB	Bayonet bezel ring for MAXK.5xx	AL	Aluminium pointer for MAX3

### How to Order

MSF6.541.BR04.M12.G2.GM

MSF6, 100mm, Back connection with Front-Flange, Gly, -1...24 bar, 2 contacts high/low, G1/2", Green marking.

## Load tables for limit value

- Limit values for contact load under ohmic load and operation in air

	without case filling	with case filling
Normal isolation voltage $U_i$	61 - 300 V	61 - 300 V
Nominal operating voltage $U_{eff}$ max.	250 V	250 V
Nominal operating current		
Making current	1.0 A	1.0 A
Breaking	1.0 A	1.0 A
Permanent current	0.6 A	9.0 mA
Switching capacity	30 W 50 VA	20 W 20 VA

- Minimum values for contact load under ohmic load and operation in air

Snap-action contact	
Nominal operating voltage $U_{eff}$ min.	24 V
Switching capacity	0.4 W

## Switching functions



make contact / High



break contact / Low



1 : break contact  
2 : make contact



1 : make contact  
2 : break contact

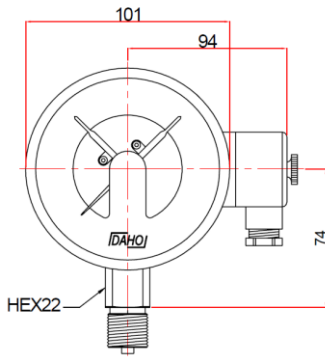


1 : break contact  
2 : break contact

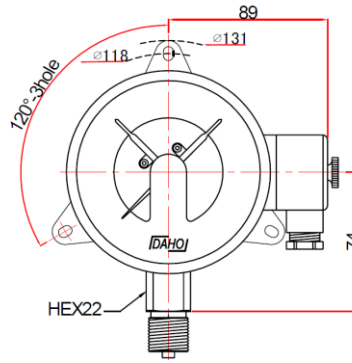
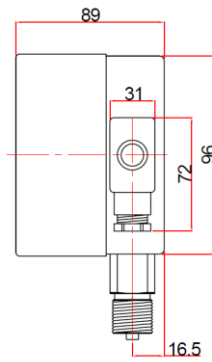


1 : make contact  
2 : make contact

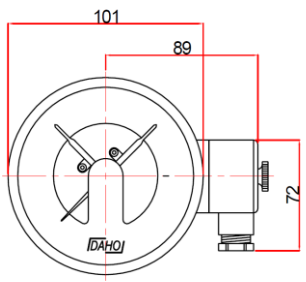
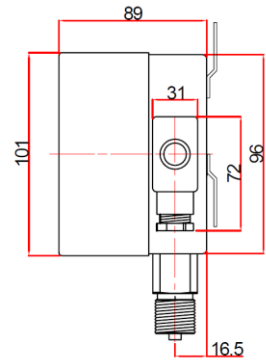
## Outline Drawing



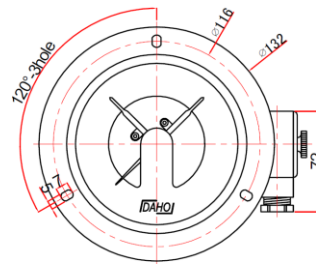
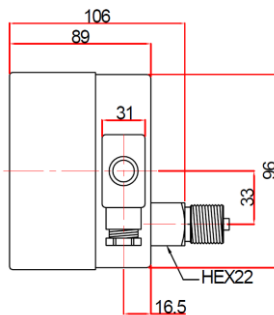
Bottom connection



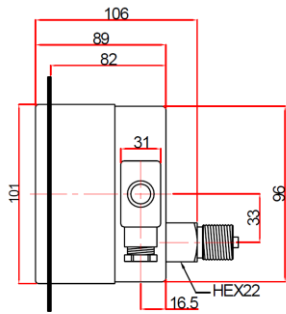
Bottom connection with 3-lug



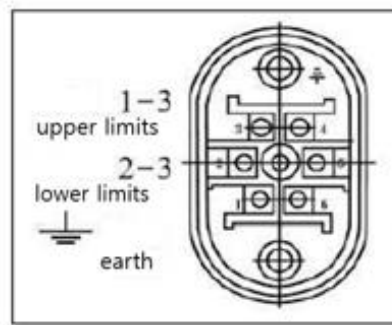
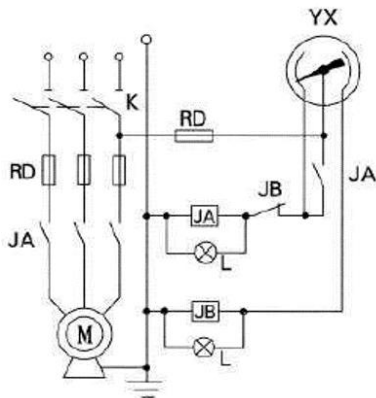
Back connection



Back connection with front-flange



## Wiring scheme



YX	Electric contact pressure gauge
M	Power generator
JA	Contractor and its contracts
JB	Medium relay and its contracts
K	Combination switch
L	Indication camp
RD	Fuse

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