MCE10-18/SF6

Pressure gauges for SF_6 gas monitoring DS 4" (100 mm)

CE

These instruments are manufactured to monitor the electrical operations on hermetically sealed systems containing Sulphur Hexafluoride gas (SF_6). The indication and the electrical operations are calibrated to the gas density (isochore) according to the relation pressure-temperature. The M5 model is suitable for indoor installation while the M6 model has been designed for the outdoor installation as well. The oil filled executions are particularly suitable for installation when vibrations are apparent.

Accuracy of indication (referred to the instruments range):
±1% at +20 °C of ambient temperature; ±2,5% within the temperature range -20...+60°C related to the calibration pressure of the reference isochore.
Accuracy of intervention:
- see accuracy of indication for set-point equal to pressure of calibration;
- when set-point is different from pressure of calibration, calculate it according to the instrument range.

Alarm contacts, non adjustable contacts, with antitampering sealing:
- on air with magnetic block (80%Ag-20%Ni);
- inductive with galvanic exit.

Ambient temperature: -20...+60 °C.
Storage temperature: -50...+80°C
Calibration pressure (PC): refer to order specifications.
Ranges: also vacuum & compound gauges from 1,6 to 25 bar.
Electrical connection: junction box with cable gland M20 x 1,5.

Nominal diameter: DN100.
Gas seal: leakage rate ≤ $1x10^{-6}$ mbar x l/s^{-1} (helium test with mass spectrometer).
Case: AISI 304.
Ring: bayonet lock, AISI 304 with antitampering sealing.
Window: glass.
Movement: stainless steel with bimetallic temperature compensator.
Dial: white aluminium with black markings and coloured sectors as per customer's specification.
Pointer: black anodised aluminium.

1.M5 - MCE10/SF6 : copper alloy wetted parts , suitable for indoor ambients

1 - Standard dry version

Process connection: OT58.
Sensing element: phosphor bronze.
Protection degree: IP 54 as per IEC 529, UNI 8896.

3 - Silicon oil filled version

Process connection: OT58.
Sensing element: phosphor bronze.
Protection degree: IP65 as per IEC 529, UNI 8896.
Window: safety glass.

1.M6 - MCE18/SF6 : AISI 316L wetted parts, suitable for outdoor ambients

1 - Standard dry version

Process connection and sensing element: AISI 316L.
Protection degree: IP 54 as per IEC 529, UNI 8896.

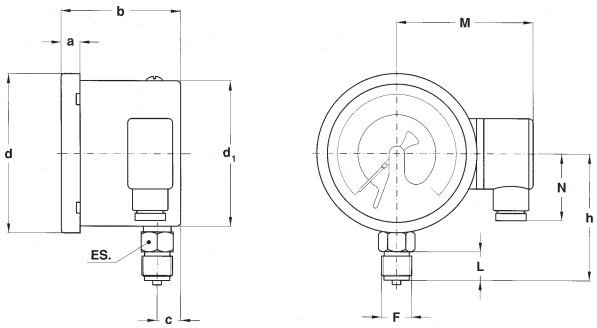
3 - Silicon oil filled version

Process connection and sensing element: AISI 316L.
Protection degree: IP 65 as per IEC 529, UNI 8896.
Window: safety glass.

9 - Nitrogen filled version

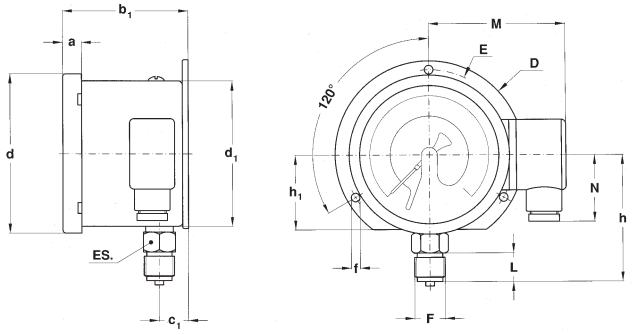
Process connection and sensing element: AISI 316L.
Protection degree: IP 65 as per IEC 529, UNI 8896.
Window: safety glass.

ISO 9001 : 2008
Cert. nr. 0433/5 ICIM



A

stem mounting;
lower connection.



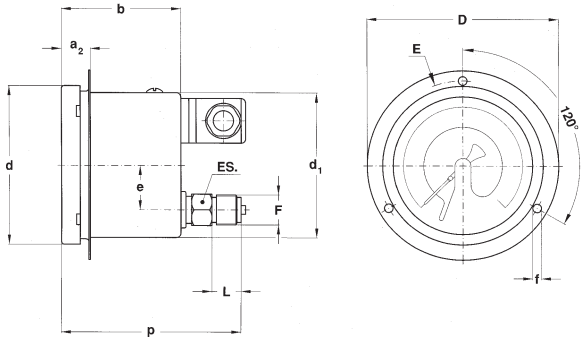
A + C

surface mounting, back flange;
lower connection.

Type	F	a	b (1)	c	d	d_1	f	h	h_1	D	E	M	N	L	ES	Weight (1)(2)
A	**41M** G 1/2 A	*0.51"* (13)	*2.87/3.27"* (73/83)	*0.63"* (16)	*4.33"* (110)	*3.98"* (101)		*3.50"* (89)				*3.70"* (94)	*1.81"* (46)	*0.79"* (20)	*0.87"* (22)	*1.45/1.65 lbs* (0,66/0,75 kg)
A+C	**43M** 1/2-14 NPT	*0.51"* (13)	*3.03/3.43"* (77/87)	*0.79"* (20)	*4.33"* (110)	*3.98"* (101)	*0.24"* (6)	*3.50"* (89)	*2.05"* (52)	*5.12"* (130)	*4.65"* (118)	*3.70"* (94)	*1.81"* (46)	*0.79"* (20)	*0.87"* (22)	*1.63/1.83 lbs* (0,74/0,83 kg)

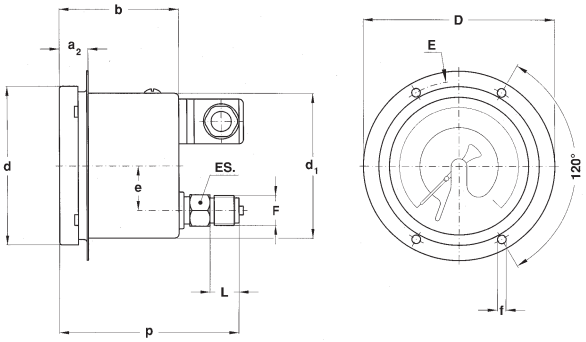
dimensions : *inches* (mm)

(1) dimensions for single or double contacts; (2) add 0.88 lbs (0,4 kg), when glycerine filled



D + E

flush mounting, front flange 3 holes;
back connection.



D + Q

flush mounting, front flange 4 holes;
back connection.

Type	F	a_2	b (1)	d	d_1	e	f	p (1)	D	E	L	ES	Weight (1)(2)
D+E	**41M** G 1/2 A	*0.79"* (20)	*2.87/3.27"* (73/83)	*4.33"* (110)	*3.98"* (101)	*1.22"* (31)	*0.24"* (6)	*4.49/4.88"* (114/124)	*5.20"* (132)	*4.65"* (118)	*0.79"* (20)	*0.87"* (22)	*1.41/1.61 lbs* (0,64/0,73 kg)
D+Q	**43M** 1/2-14 NPT	*0.79"* (20)	*2.87/3.27"* (73/83)	*4.33"* (110)	*3.98"* (101)	*1.22"* (31)	*0.24"* (6)	*4.49/4.88"* (114/124)	*5.20"* (132)	*4.65"* (118)	*0.79"* (20)	*0.87"* (22)	*1.41/1.61 lbs* (0,64/0,73 kg)

dimensions : *inches* (mm)

(1) dimensions for single or double contacts; (2) add 0.88 lbs (0,4 kg), when glycerine filled

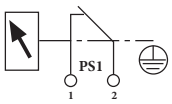
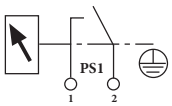
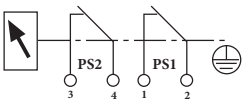
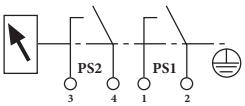
Magnetic snap action contacts

Set-point hysteresys: 2...5% f.s.v.
Break rating: 30W/50VA (20W/20VA if filled).
Maximum rating: 250Vca/1A (ohmic load).

Minimum rating: 24 Vcc/20 mA (ohmic rating).
Contact material: Silver-Nickel 80/20%.
Electrical wiring: with junction box as per VDE, see table page 4.

LOAD RATINGS, as per DIN 16085.

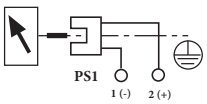
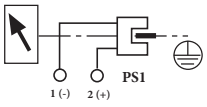
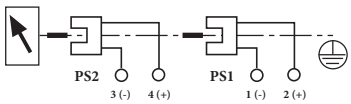
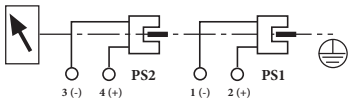
Volt	Dry versions or filled with azote			Silicon dielectric oil filled versions		
	CC	CA	Inductive load	CC	CA	Inductive load
220	100 mA	120 mA	65 mA	65 mA	90 mA	40 mA
110	200 mA	240 mA	130 mA	130 mA	180 mA	85 mA
48	300 mA	450 mA	200 mA	190 mA	330 mA	130 mA
24	400 mA	600 mA	250 mA	250 mA	450 mA	150 mA

WIRING SCHEME (The numbers shown are the same as those are indicated on the junction box)	THE PRESSURE RAISING MEANS...	CONTACT CODE
...FOR SINGLE CONTACTS		
	**Opening PS1**	01S
	**Closing PS1**	02S
... FOR DOUBLE CONTACTS		
	**Opening PS1** **Opening PS2** (each contact must not exceed the next one)	06D
	**Closing PS1** **Closing PS2** (each contact must not exceed the next one)	09D

Inductive electric contacts

Electric wiring: with junction box as per VDE , see table page 4.

Set-point hysteresys: 0,3...1% f.s.v.

WIRING SCHEME (The numbers shown are the same as those are indicated on the junction box)	THE PRESSURE RAISING MEANS...	CONTACT CODE
FOR SINGLE CONTACTS...		
	**Opening PS1**	B1
	**Closing PS1**	B2
FOR DOUBLE CONTACTS...		
	**Opening PS1** **Opening PS2** (each contact must not exceed the next one)	B11
	**Closing PS1** **Closing PS2** (each contact must not exceed the next one)	B22

RANGES

bar	-1...+0,6	-1...+1,5	-1...+3	-1...+5	-1...+9	-1...+15	-1...+24
MPa	-0,1...+0,06	-0,1...+0,15	-0,1...+0,3	-0,1...+0,5	-0,1...+0,9	-0,1...+1,5	-0,1...+2,4

RECOMMENDATION

The measuring of the temperature necessary to the termic compensation it is detected inside the instrument. This means that these instruments should be installed so that their operating temperature corresponds to the one of the monitored SF_6 gas.

In order to avoid any compensating error due to the different isochores, the **PC** calibration must be as nearest as possible to the **PS** contacts setting pressure.

HOW TO ORDER

1° - DESCRIPTION & CODE

Model
1.M5 - MCE 10 SF6, for indoor ambients
1.M6 - MCE 18 SF6, for outdoor ambients

Version
1 - Standard, dry
3 - Filled with silicon dielectric oil version
9 - Filled with azote oil version

Mounting type
A - lower connection - stem mounting
D - back connection - front flange 3 holes

Technical specification code
To be asked to the Technical & Commercial Service

Ranges : from 1,6 to 25 bar, also vacuum and compound

Process connection
41M - 1/2" BSP - G 1/2 A - PF 1/2
43M - 1/2" NPT

Electric schemes : 01S...B22 - see tabels on page 3

Mounting accessories
C - Back flange, for lower connection pressure gauge
E - 3 holes front flange, for back connection pressure gauge
Q - 4 holes front flange, for back connection pressure gauge

2° - CALIBRATION FEATURES

PF - nominal pressure of the circuit filling

PC - calibration pressure, which identifies the reference isochore

PS1 - setting pressure of the contact PS1, on the temperature of SF_6 gas of 20°C

...and if the contacts are two

PS2 - setting pressure of the contactPS2, on the temperature of SF_6 gas of 20°C

3° - DIAL LAYOUT

1° : red sector range

2° : orange sector range

3° : green sector range