

MCE10-18/SF6

Pressure gauges for SF₆ gas monitoring DS 4" (100 mm)



Compliance with requirements of LVD 2014/35/EU - PED 2014/68/EU

EAL

Used for electrical operations on hermetically sealed systems containing sulfur hexafluoride (SF6) gas. The indication and electrical operation are calibrated based on the gas density (isocora) in accordance with the pressure-temperature relationship. The MCE10/SF6 model is suitable for indoor installation, while the MCE18/SF6 model is designed for both indoor and outdoor installations. Oil-filled versions are particularly suitable for installations in environments with vibrations.

Accuracy of indication (referred to the instruments range):

 $\pm 1\%$ at +20 °C of ambient temperature; $\pm 2,5\%$ within 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 the set-point is different from pressure of calibration, calculate it according to the instrument range.

Alarm contacts, non adjustable contacts, with anti-tampering sealing: - on air with magnetic block (80%Ag-20%Ni);

- inductive with galvanic exit.

Ambient temperature: -20...+60 °C.

Storage temperature: -40...+60°C

Calibration pressure (PC): refer to specifications described in the order.

Ranges: also vacuum & compound gauges from 1,6 to 25 bar.

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.

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 anti-tampering 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.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.



SO 9001 : 2015 Cert. nr. 0433/09

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A

stem mounting;

lower connection.

MCE10-18/SF6







A + C surface mounting, back flange; lower connection.

Туре	F	a	b (1)	c	d	d ₁	f	h	\mathbf{h}_1	D	Е	М	N	L	ES	Weight (1)(2)
Α	41M G 1/2 A	0.51"	2.87/3.27"	0.63"	4.33"	3.98"		3.50"				3.70"	1.81"	0.79"	0.87"	1.45/1.65 lbs
		(13)	(73/83)	(16)	(110)	(101)		(89)				(94)	(46)	(20)	(22)	(0,66/0,75 kg)
A+C	43M 1/2-14 NPT	0.51"	3.03/3.43"	0.79"	4.33"	3.98"	0.24"	3.50"	2.05"	5.12"	4.65"	3.70"	1.81"	0.79"	0.87"	1.63/1.83 lbs
		(13)	(77/87)	(20)	(110)	(101)	(6)	(89)	(52)	(130)	(118)	(94)	(46)	(20)	(22)	(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 + **Q** flush mounting, front flange 4 holes; back connection.

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

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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.

	E	Ory versions or filled	with azote	Silicon dielectric oil-filled versions					
Volt	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	015							
	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							

G -02/16

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 internal system of the instrument detects the temperature value required for thermal compensation. Therefore, the operating temperature of the device should match the monitored temperature of the SF6 gas. For this reason, the pressure gauge must be installed accordingly. In addition, the PC (Contact Pressure) calibration should be set as close as possible to the PS (Switching Pressure) contact set point. This minimizes any compensation errors that could arise due to different isochores.

HOW TO ORDER

1° - DESCRIPTION & CODE 2° - CALIBRATION FEATURES Model PF - nominal pressure of the circuit filling 1.M5 - MCE 10 SF6, for indoor ambients PC - calibration pressure, which identifies the reference 1.M6 - MCE 18 SF6, for outdoor ambients isochore Version PS1 - setting pressure of the contact PS1, on the temperature 1 - Standard, dry of SF₆ gas of 20°C 3 - Filled with silicon dielectric oil version ...and if the contacts are two 9 - Filled with azote oil version PS2 - setting pressure of the contactPS2, on the temperature Mounting type of SF6 gas of 20°C A - lower connection - stem mounting 3° - DIAL LAYOUT D - back connection - front flange 3 holes 1°: red sector range Technical specification code To be asked to the Technical & Commercial Service 2°: orange sector range Ranges : from 1,6 to 25 bar, also vacuum and compound 3°: green sector range Process connection 41M - 1/2" BSP - G 1/2 A - PF 1/2 43M - 1/2" NPT Electric schemes : 01S...09D - see tables 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

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