

Pressure Transmitter

SF₆ gas density transmitter
Stainless steel

DIGPTM_v
SF6

Application

For measuring the SF₆ gas density and monitoring leakages in high and medium voltage switchgears (GIS) at closed SF₆ tanks for indoor and outdoor applications.

The process variables temperature and pressure of gas-filled converters and generator circuit breakers are measured permanently and the temperature-dependent isochoric pressure change is compensated based on the gas model. Therefore, a standardised gas density signal (+20 °C) is permanently available.

The DIGPTM_vSF6 stands out due to its particularly robust all-metal version, i.e. high overrange and burst protection, high EMC stability (in part with double test levels), high degree of protection.

Construction

- Piezoresistive absolute pressure transducer with welded stainless steel membrane
- Construction type as hermetically sealed absolute pressure transmitter allows for gas density monitoring regardless of air pressure fluctuations and differences in altitude
- In addition to the pressure signal, a precise temperature signal is available from the internal PT1000. With this, the calculation of the SF₆ gas density at +20 °C is based on a 3rd degree polynomial regression
- CMOS RISC microprocessor:
 - calculation of the standardised gas density at +20 °C
 - analogue output 4...20 mA
 - permanent status request and indication of NAMUR alarms
 - optional functions

Standard Versions

Process Connection

G ½B, stainless steel 316Ti (1.4571), hermetically sealed with measuring cell placed inside (leakage rate <10⁻⁹ mbar l/s)

Measuring Cell/Sensor

Piezoresistive measuring cell: stainless steel 316L
Membrane placed inside: stainless steel 316L welded

Case

Stainless steel 316Ti (1.4571), degree of protection IP67 according to DIN EN 60 529

Pressure Ranges/Overload Capability

0..60 g/l gas density (±0...8.87 bar abs. gas pressure) SF₆ at +20 °C or 0...10 bar abs. gas pressure (±0...68.9 g/l gas density) SF₆ at +20 °C
Compensation exclusively for gas phase!

Output Signal

Output Signal	Supply Voltage	Load Impedance
4...20 mA 2-wire	12...24 V DC (±25 %)	(U _B - 8 V) / 0.023 A max. 680 Ohm at 24 V DC

Burst Protection

>100 bar

Measurement Accuracy

≤±0.5 % in the rated temperature range (including non-linearity, hysteresis and non-repeatability)

Temperature Ranges

Storage temperature: -40 / +85 °C (-40 / +185 °F)
Rated temperature: -20 / +60 °C (-4 / +140 °F)

Reference Temperature

+20 °C (+68 °F)

Long-term Stability

±0.3 % FS/a
(at reference conditions)

Reverse Voltage Protection

Available

Electrical Connection

Miniature angular plug connector M 16x0.75;
6-pin massive metal shielded

Position of Installation/Position of Connection

Any

CE Conformity

IEC 61 326-1: 2006
EN 61 326-2-3: 2006

EMC

RL2004/108/EG/2004/108/EC IEC 61000-4-5: ±1kV
IEC 61000-4-2: 8kV IEC 61000-4-6: 10V
IEC 61000-4-3: 10V/m NE 21: 2007
IEC 61000-4-4: ±4kV GL VI part 7, chapter 2: 2003

Options

- Free cable end (IP68) with 1.5 m cable
- As combination with SF₆ gas density monitor, installation to pressure connection of the pressure gauge
- Software low-pass
- Switching output adjusted ex works:
 - 2 separate PNP switches with NC function;
 - breaking contact, making contact, window or inverted window (see page 2)
 - for ohmic, capacitive and inductive load each 0.2 A
 - short-circuit proof
 - voltage drop (at I_{max} = 0.2 A) ≤ 2 V

Special Versions Upon Request

- Other process connections
- Other pressure ranges
- Other rated temperature ranges

Accessory

USB/RS-485 connection box for USB-PC communication with the transmitter and PC software for the administration of the transmitter:

- Setting of switching functions, switching points and switching hysteresis
- Setting of the software low-pass, offset if applicable
- RS-485 bus address
- Output signal transformation (current)
- Indication of the digital value of the measurand

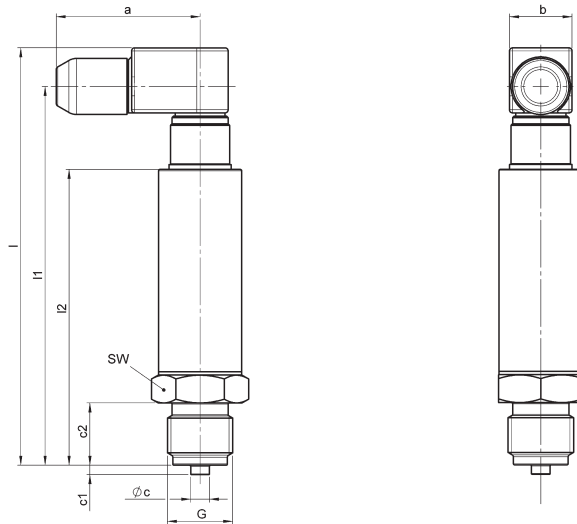
Ordering Information

Please specify in your order:

- Switching function
- Switching points
- Switching hysteresis



Case Configuration, Dimensional Data and Weight



Dimensional Data (mm/inch) and Weight (kg/lb)

a	b	c	c1	c2	G	L	L1	L2	SW	approx. weight
46	20	Ø 6	3	20	G $\frac{1}{2}$	140	128	95	27	0.3
1.81	0.79	0.24	0.12	0.79		5.51	5.04	3.74	1.06	0.66