

SF₆- Gas Density Transmitter

Stainless Steel

DIGPTMvSF6

Application

For SF₆- gas density -measurement und -monitoring of leakages in the field of 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 automatic generator trip switches are being collected permanently and the temperature-independent isochoric pressure changing is being compensated on the basis of the gas model.

A normed gas density signal (+20°C / 68 °F) is available permanently. The DIGPTMvSF6 features an extremely robust full metal version, that means high overpressure- and rupture safety, high EMC-stability (in part double norm-levels), high IP-degree of protection.

Construction

- Piezoresistive absolute pressure transmitter welded to diaphragm made of stainless steel
- Construction type as hermetically dense welded absolute pressure transmitter allows a gas density monitoring, independent of air-variations and vertical heights
- An exact temperature signal of the internal PT1000 is additionally available besides the pressure signal. With this results the calculation of the SF₆ gas density at +20 °C (68 °F) on the basis of a regression polynomial of 3rd degree
- CMOS RISC Microcontroller:
 - Calculation of the normed gas density at +20°C (68 °F),
 - Analogue output 4 .. 20mA,
 - Permanent status request and exposition of NAMUR-alarm conditions,
 - Optional functions

Standard Version

Process Connection

G 1/2 B (½" BSP), 1.4571 (316 Ti), welded hermetically dense to internal measuring cell (leakage rate <10⁻⁹ mbar l/s)

Measuring Cell / Sensor

Piezo-resistive measuring cell: 1.4435 (316 L)
Internal diaphragm: 1.4435 (316 L)

Case

1.4571 (316 Ti), welded to process connection

Pressure Ranges

0..60 g/l gas density (\pm 0..8.87 bar abs. gas pressure) SF₆ for +20°C (+68 °F) or 0..10 bar abs. gas pressure (\pm 0..68.9 g/l gas density) SF₆ for +20°C (+68 °F)
Compensation exclusively for gas phase!

Rupture Safety

>100 bar

Electrical Data

Output signal: 4 .. 20 mA (2-wire) proportional gas pressure or gas density SF₆ for +20 °C (+68 °F)
Electrical connection: Miniature- angular plug connector M16x0.75; 4-resp. 6-pin massively metallic screened
Load impedance: RL < (UB-8V)/ 0.023A; max. 680 Ohm at 24VDC
Power supply: +12 to +24VDC (\pm 25%); reverse voltage protected

Accuracy of the measurement

Error: < 0.5% in rated temperature range (including non-linearity, hysteresis and non-repeatability)



Temperature Range

Transport- and storage temperature: -40°C to +85°C (-40 °F to +185 °F)
Rated temperature: -40°C to +60°C (-40 °F to +140 °F)

Reference Temperature

+20°C (+68 °F)

Long Term Stability

<0.3%FS/ a (for reference conditions)

Position of Installation / Position of Connection

any

Protection Type (EN 60529/ IEC 529)

IP 67

CE- Conformity

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

EMC- Stability

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

Options

- Other process connections upon request
- Other pressure ranges upon request
- Other rated temperatures upon request
- Free cable head (IP68) with 1.5m cable
- As combination with SF₆ Gas density monitor, mounting to pressure connection of the gauge
- Software low-pass
- Switching output preset ex works:
 - 2 separate PNP-switches with NC-function; available freely as bottom contact or normally open contact or window or inverted window; for ohmic, capacitive and inductive load each 0.2A; short-circuit proof; fall of voltage (at I_{max}=0.2A) <2V
- Digital communication via RS-485 for administration of the transmitter:
 - Adjustment of switching operations, set points and switching hysteresis,
 - Adjustment of software low-pass, if applicable offset,
 - RS-485-bus address,
 - Output signal-transformation (flow),
 - Indication of the digital value of the measurement

Accessory

- USB / RS-485 junction box for USB- PC- communication with the transmitter via USB
- PC- software



Sales and Export South, West, North

ARMATURENBAU GmbH

Manometerstraße 5 • D-46487 Wesel - Ginderich
Tel.: +49 (0) 28 03 / 91 30-0 • Fax: +49 (0) 28 03 / 10 35
armaturenbau.com • mail@armaturenbau.com

Subsidiary Company, Sales and Export East

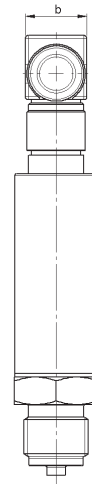
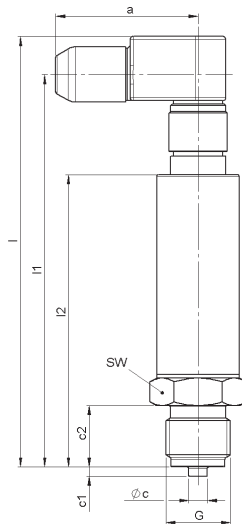
MANOTHERM Beierfeld GmbH

Am Gewerbepark 9 • D-08344 Grünhain-Beierfeld
Tel.: +49 (0) 37 74 / 58-0 • Fax: +49 (0) 37 74 / 58-545
manotherm.com • mail@manotherm.com

9891

04/10

Case Configuration



Dimensional data (mm / inches) and weights (kg / lb)

a	b	c	c1	c2	G	L	L1	L2	SW	weight (approx.)
46 1.81	20 .79	Ø 6 Ø .24	3 .12	20 .79	G ½ ½" BSP	140 5.51	128 5.04	95 3.74	27 1.06	0.300 .66

Technical changes, replacement of materials and errors excepted.