

SF₆-Gas Density Monitors

**Bourdon Tube Pressure Gauges,
Case Stainless Steel, Crimped-on Ring
Standard (RChg), Liquid Filled (RChgOe), or Gas Filled (RChgN),
With Magnetic Limit Switch Contact Assembly**

Models

RChg 100-3 SF₆

RChgOe 100-3 SF₆

RChgN 100-3 SF₆

Accuracy Class 1.0

Application

Gas density monitors for SF₆ gas are pressure gauges with electrical accessory and applied mainly at switchboard plants of the energy industry. They combine pressure measurement and limit switching in one single instrument. The influences of the ambient pressure are compensated by a special compensating system. The gas density monitors are calibrated for the individual application referring filling pressure, calibration pressure, switching points and ambient temperature. Versions for indoor use are available, as well as gas or liquid filled versions for outdoor use. The measuring system is welded to the case which allows to achieve a tightness of 10⁻⁵ mbar/l/s or even better.

Nominal Case Size (NCS)

100 mm (4")

Accuracy Class (EN 837-1)

1.0 at operating temperature +20 °C (+68 °F)

2.5 at operating temperatures -20 °C ... +60 °C (-4 °F ... +140 °F)

Pressure Range (EN 837-1)

-0.1/+0.9 MPa

Temperature Limitations

-40 to +70 °C (-40 to +158 °F)

Compensation of Temperature Influence

Pressure changes of the medium SF₆ caused by temperatures are compensated for -20 °C to +60 °C (-4 °F to +140 °F)

Calibration Pressure P_c

To choose between 0.3 to 0.55 MPa

The temperature compensation is valid for this pressure value.

Filling Pressure P_f

To choose between 0.4 to 0.6 MPa

Protection Type (EN 60529 / IEC 529)

Model RChg: IP 54 (for indoor application)

Models RChgOe, RChgN: IP 65 (for outdoor application)

Standard Configuration

Connection

G ½ B (½" BSP) bottom connection stainless steel 316 Ti (1.4571), optionally lower back connection (r)

Bourdon Tube

Stainless steel 316 Ti (1.4571), C-form, argon arc welded, leak rate ≤ 10⁻⁹ mbar l/s

Movement

Stainless steel

Dial

Aluminum alloy, black figures, white background, coloured areas according to switching points

Pointer

Aluminum black

Case and Ring

304 stainless steel (1.4301), crimped-on ring

Window

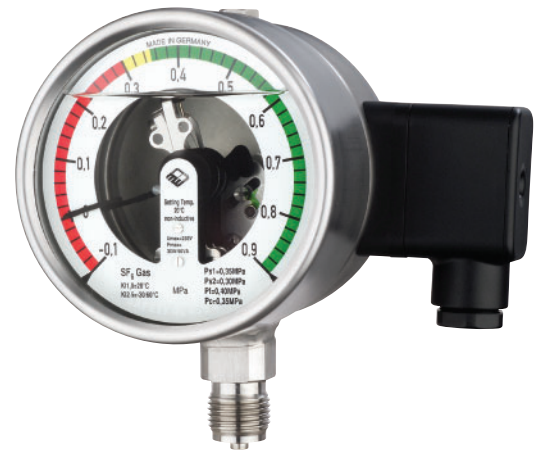
Laminated safety glass

Case Filling

Model RChg: without

Model RChgOe: special oil

Model RChgN: nitrogen



Safety Features

RChg: 1" Blow-out in the back of the case

RChgOe and RChgN: hermetically sealed

Limit Switch Contact Assembly (GSG)

2-fold magnetic contact M22 (data sheets 9000/9100) with separate current circuits, adjustment fixed and secured, universal plug connector at the right side of the case resp. for case configuration rFr on the backside, switching accuracy ± 1.0% at +20 °C (+68 °F), ± 2.5% within the compensated temperature range -20 °C to +60 °C (-4 °F to +140 °F)

Special Options et. al.

- Process connection G ¾ B (¾" BSP) or M 20 x 1.5 (others upon request)
- Other position of the process connection upon request
- Other position of the Universal plug connector upon request
- other pressure units, e.g. bar; other pressure ranges upon request
- other or additional switching functions, e.g. change-over contact
- Cable gland upon request
- Temperature compensation for other temperature ranges upon request

How to Order:

Gas density monitors are manufactured and calibrated individually adjusted for each single application. Therefore detailed ordering information are required. Please use our check list for SF₆-gas density monitors that is available as technical information sheet number **T01-000-027**.

The ordering code for the basis type is to combine as follows:

Model: **RChg 100-3 SF₆**
RChgOe 100-3 SF₆
RChgN 100-3 SF₆

Ordering code for case configuration: **r, Rh, rRh, rFr**
(see overleaf) (standard case with bottom connection = without additional code letter)

Pressure range: **-0.1/+0.9 MPa**, others see above

Process connection: **G ½ B (½" BSP, standard)**
others see above

Limit switch contact: **M22** (separate circuits)

Further information are required about the temperature compensation range, the filling pressure, the calibration pressure, the switching points, the dial design and special options.



ARMATURENBAU GmbH

Manometerstraße 5 D-46487 Wesel - Ginderich
Phone: (0 28 03) 91 30-0 Fax: (0 28 03) 10 35
armaturenbau.com mail@armaturenbau.com



Subsidiary Company and Sales East Germany and Eastern Europe

MANOTHERM Beierfeld GmbH
Am Gewerbepark 9 • D-08344 Grünhain-Beierfeld
Phone: (0 37 74) 58-0 Fax: (0 37 74) 58-545
manotherm.com mail@manotherm.com

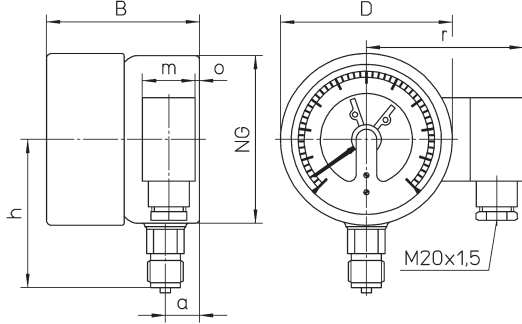
1902

4/06

Case Configurations, Location of the Plug Connector, Dimensional Data, Weights

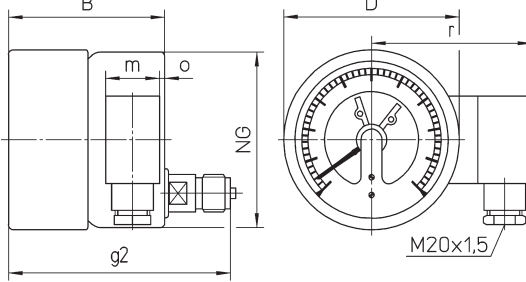
Bottom connection
(Standard, without code letter)

Universal plug connector at the right side (standard)



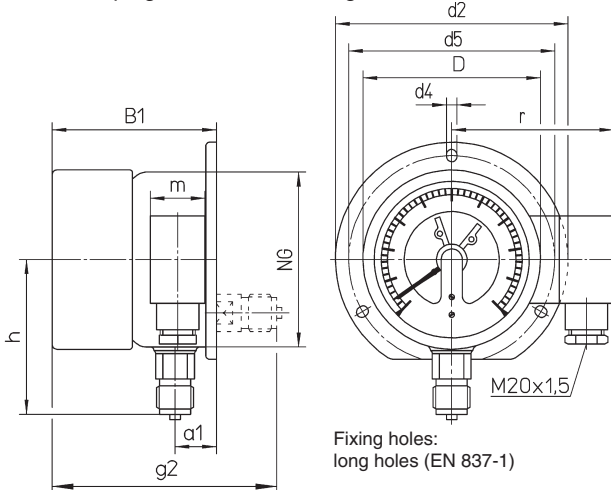
Lower back connection,
ordering code letter: r

Universal plug connector at the right side



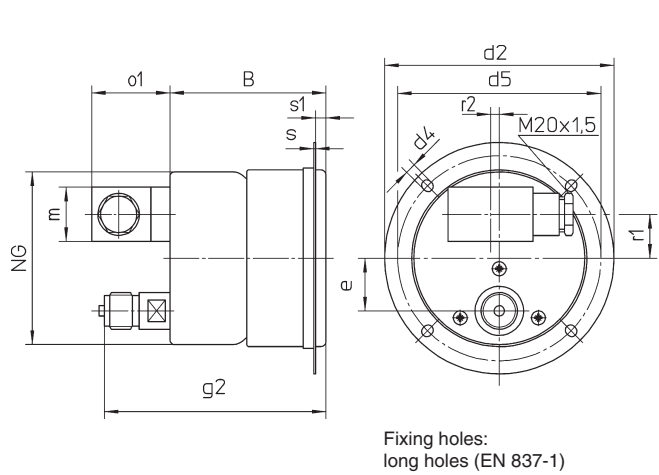
Bottom connection, rear mounting flange,
ordering code letters: **Rh**
Lower back connection, rear mounting flange,
ordering code letters: **rRh**

Universal plug connector at the right side



Lower back connection, front mounting flange,
ordering code letters: **rFr**

Universal plug connector on the backside



Dimensions (mm / inches) and Weight (kg / lb)

NCS	GSG	a	a1	B	B1	D	d2	d4	d5	e	g2	h ⁺¹	m	NG	o ⁺¹	01	r	r1	r2	s	s1	Weight (approx.)	
																						RChg	RChgN
100 4"	2-fold	20	24	3.54	3.66	101	132	6	116-118	30	5.04	87	31	100	3	45	92	25	5	1	6	0.85	1.15
	3-fold	.79	.94	96	99	3.98	5.2	.24	4.57-4.65	1.18	134	3.43	1.22	3.94	.12	1.77	3.62	.98	.2	.04	.24	0.95	1.25
				3.78	3.90						5.28											2.09	2.76

Further information about advantages, applications, specifications, temperature limitations and pressure ranges of Bourdon tube pressure gauges accuracy classes 1.0 and 1.6 according to EN are to find in our **model overview 1000**.

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.