

Test Gauges Bourdon Tube Type

Bayonet Ring Case Stainless Steel

Standard (RFCh) or Liquid Filled (RFChG)

NCS: 160 (6")
250 (10")

Accuracy Class
0.6 EN 837-1

Models
RFCh
RFChG

Application

Testing and comparing process instruments, and measuring services where high accuracy is required. Pressure ranges up to 0-25 bar (400 psi) for gaseous media, dial marked with "G", 0-40 bar (600 psi) and up for liquid media (dial marked with "F"). Stainless steel case with high chemical resistance.

Nominal Case Size (NCS)

Model RFCh: 160 mm (6"), 250 mm (10"), model RFChG: 160 (6")

Accuracy

Class 0.6 according to EN 837-1

Pressure Ranges (EN 837-1)

Version -1* = 0-0.6 ... 0- 600 bar or 0-10 psi ... 0-10,000 psi

Version -3* = 0-0.6 ... 0-1,600 bar or 0-10 psi ... 0-30,000 psi

Model RFChG 0-2.5 bar resp. 0-30 psi and up for all versions also vacuum and compound ranges (*see below)

Pressure Limitations

Steady pressure: full scale value

Cyclic pressure: 90% of full scale value

Overpressure: 130% of full scale value

Protection Type (EN 60529 / IEC 529)

Model RFCh: IP 54 / Model RFChG 160: IP 65

Further information about advantages, specifications, temperature limitations and pressure ranges of test gauges can be found in our **model overview 2000**.

Standard Configuration

Connection

G ½ B (½" BSP), optionally ½" NPT, bottom connection (standard) or lower back connection (code letter r)

Wetted Parts

| | | |
|-------------------|--------------------------|---|
| Ordering Code -1: | Socket: | = brass |
| | Bourdon tube: | |
| | ≤ 40 bar (≤600 psi) | = bronze, C-form, soft soldered |
| | 60 bar (≥800 psi) | = copper/beryllium, C-form, silver brazed |
| | ≥ 100 bar (≥1,500 psi) | = 316 stainless steel (1.4571), helical, silver brazed |
| Ordering Code -3: | Socket: | = 316 stainless steel (1.4571) |
| | Bourdon tube: | |
| | ≤ 40 bar (≤600 psi) | = 316 stainless steel (1.4571), C-form, argon arc welded |
| | ≥ 60 bar (≥800 psi) | = 316 stainless steel (1.4571), helical, argon arc welded |
| | ≥ 1000 bar (≥15,000 psi) | = NiFe alloy, helical, argon arc welded |

Movement

Brass/German silver, low friction

Dial

Aluminum alloy, black figures, white background

Pointer

Knife edge pointer aluminum alloy black

Case and Bayonet Ring

304 stainless steel (1.4301)

Case Filling

Model RFChG 160 only: Glycerine

Lens

Version -3: laminated safety glass, version -1 single strength glass



Safety Features

Model RFCh: 1" blow-out in the back of the case

Model RFChG: top blow-out assembly

Optional Special Configurations

- Test gauge Grade 3A ASME ($\pm 0.25\%$), parallax-free mirror scale
- Accuracy class 0.25 EN 837-1, with parallax-free mirror scale, for RFCh 250-1; for -3 and NCS 160 upon request
- Zero adjustment by a turnable dial (± 5 scale graduations), knurled adjustment screw at the right side, for models RFCh 160, 250
- Parallax-free mirror scale
- Case size 100 (4") upon request
- Process connection ¼" NPT or M 20 x 1,5, others upon request
- Inlet port restrictor screw brass or stainless steel
- Movement stainless steel with jewel bearing
- Maximum indicating pointer, external adjustment, acrylic glass lens (pressure ranges ≥ 2.5 bar or 30 psi)
- Acrylic glass lens, or for version -1 laminated safety glass lens
- Special scales, such as dual scales, e.g. bar/psi
- Receiver gauge 0.2-1 bar or 3-15 psi
- Top or side connection or installation not vertical, e.g. 90° to the right side (right side from a viewer's perspective)
- Bleeding port at the tip of the Bourdon tube for models RFCh
- Version -1, pressure ranges ≥ 100 bar with Bourdon tube made of hardened, tempered alloy steel, C-form, screwed together
- Wetted parts monel (ordering code -6) up to range 0-400 bar (6,000 psi)
- Electrical accessories upon request

How to Order:

Model code/nom. size: **RFCh 160 or 250** (dry version)
RFChG 160 (glycerine filled)
RFCh(G) 160 (fillable version)

Wetted parts: ordering code -1 or -3 (compare left)

Case configuration: code letters: **r, Rh, rRh, rFr**
RFCh 160 also: **rBFR**
(standard case = bottom connection = without code letter)

Pressure range: acc. to EN or ASME, e.g. **0-6 bar**

Process connection: **G ½ B (½" BSP)** (= standard) or ½" NPT (others see above)

Special configurations: see above)

Examples for Ordering Information:

- RFChG 160-3, rFr, 0-6 bar, ½" BSP
- RFCh 250-1, -1/+9 bar, ½" NPT



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

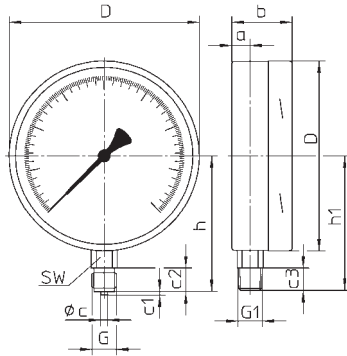
Am Gewerbepark 9 • D-08344 Grünhain-Beierfeld
Phone: (0 37 74) 58-0 • Fax: (0 37 74) 58-545
manotherm.com • mail@manotherm.com

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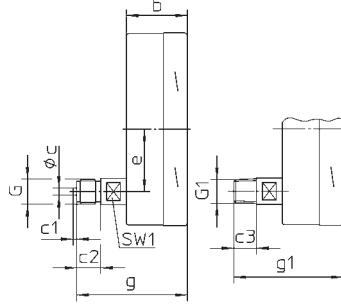
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Case Configurations, Code Letters, Dimensional Data, and Weight

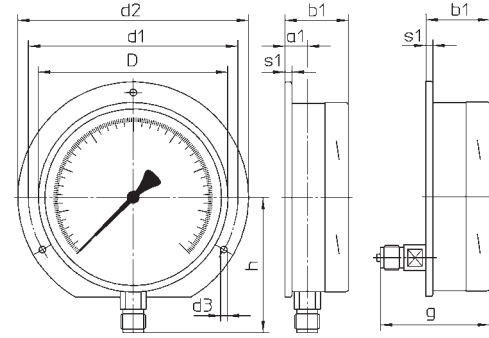
Bottom connection,
without code letter



Lower back connection,
code letter: **r**



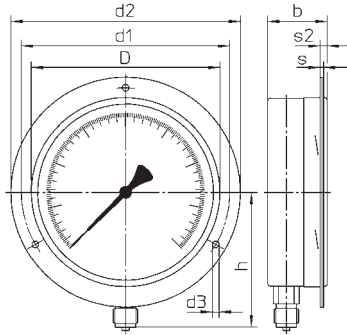
Bottom connection,
rear flange¹⁾,
code letters: **Rh**



Lower back connect.,
rear flange¹⁾,
code letters: **rRh**

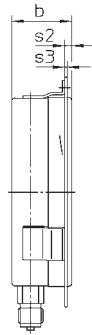
Bottom connection,
front flange,
code letters: **Fr**

Models RFCh 160, RFCh 250:



Front flange, NCS 160 with longholes, attached to the case, and a separate cover front flange

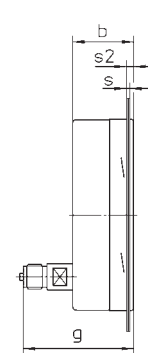
Model RFCh**G** 160:



Mounting brackets welded to the case, and a separate front flange

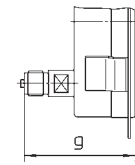
Lower back connection,
front flange,
code letters: **rFr**

Models RFCh 160, RFCh 250:



Front flange, NCS 160 with longholes, attached to the case, and a separate cover front flange

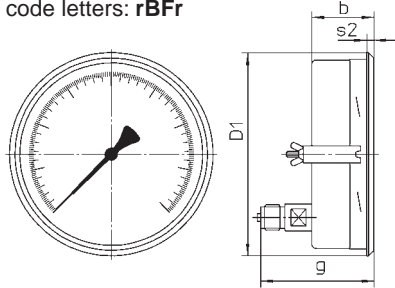
Model RFCh**G** 160:



Mtg. brackets welded to the case, and a separate front flange

Model RFCh 160 only (liquid filled case not available):

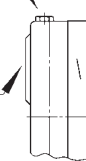
Lower back connection,
U-clamp for panel mounting,
code letters: **rBFr**



Safety Blow-Outs

Top blow-out assembly
RFChG 160

Optionally:
1" Blow-out (25,4 mm)
RFCh 160, RFCh 250



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

| Nominal Case Size | a | a1 | b | b1 | c | c1 | c2 | c3 | D | D1 | d1 | d2 | d3 | e | g | g1 |
|-------------------|------|-----|------|------|-----|-----|-----|-----|------|------|-------|-------|-----|------|------|------|
| 160 6" | 15.5 | .75 | 2.01 | 2.13 | 6 | 3 | 20 | 19 | 6.34 | 6.57 | 7.08 | 7.72 | 5.8 | 52 | 3.64 | 3.60 |
| 250 10" | .61 | .69 | 2.28 | 2.36 | .24 | .12 | .79 | .75 | 251 | — | 270 | 285 | .23 | 2.05 | 97 | 96 |
| | | | | | | | | | 9.88 | | 10.63 | 11.22 | | | 3.82 | 3.78 |

| Nominal Case Size | G | G1 | G2 | h | h1 | s | s1 | s2 | s3 | SW | SW1 | RFCh Weight (approx.) | RFChG Weight (approx.) |
|-------------------|-----------------|--------|------------|------|------|-----|-----|-----|------|-----|-----|-----------------------|------------------------|
| 160 6" | G ½ B ½" BSP | ½" NPT | M 20 x 1,5 | 115 | 114 | 2.5 | 6 | 6 | 1.5 | 22 | 17 | 1.100 | 1.950 |
| 4.53 | | | | 4.49 | .10 | .24 | .24 | .06 | 2.43 | | | 4.30 | |
| 250 10" | | | | 165 | 164 | 2 | 2 | 7 | 2 | .87 | .67 | 2.100 | — |
| | | | | 6.50 | 6.46 | .08 | .08 | .27 | .08 | | | 4.63 | |

¹⁾NCS 250 with mounting brackets welded to the case

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