

Bourdon Tube Pressure Gauges

Bayonet Ring Case Stainl. Steel, Wide Ring (American Type)

Standard (RCha) or Liquid Filled (RChaOe)

with Limit-Switch Contact Assemblies

Model

RCha

RChaOe

Nom. Sizes 100 (4")
160 (6")

This data sheet contains ordering information, minimum pressure ranges, information about electrical connections and dimensional drawings of Bourdon tube pressure gauges models RCha and RChaOe with limit switch contact assemblies.

Data sheet 1200 contains all important features of model RCha and RChaG without electrical accessories. These technical details are also valid for gauges assembled with limit-switch contacts, as far as you do not find a deviating description below ¹⁾.

For detailed information about use and operation of mechanical, inductive, electronic and pneumatic limit-switch contact assemblies please note our **general information leaflet 9000**, and for further information, especially about the available make/break operations, see the data sheets for the individual models of limit-switch contact assemblies:

| | |
|--|------------------------|
| Mechanical (standard- and magnetic contacts) | Data sheet 9100 |
| Inductive | Data sheet 9200 |
| Electronic | Data sheet 9201 |
| Pneumatic | Data sheet 9300 |

Minimum Pressure Ranges

Every pressure gauge needs a sufficient amount of torque to operate the limit-switch contact assemblies with minimized error. For this reason the following minimum pressure ranges are to consider ²⁾:

| Limit-Switch Type: | Pressure Ranges bar (psi) ²⁾ | |
|--------------------|---|----------|
| | Case Sizes | |
| | 100 (4") | 160 (6") |
| 1 x Standard | 1.0 (15) | 1.0 (15) |
| 2 x Standard | 1.6 (30) | 1.6 (30) |
| 3 x Standard | 2.5 (40) | 2.5 (40) |
| 4 x Standard | — | 2.5 (40) |
| 1 x Magnetic | 1.6 (30) | 1.6 (30) |
| 2 x Magnetic | 2.5 (40) | 2.5 (40) |
| 3 x Magnetic | 4.0 (60) | 4.0 (60) |
| 4 x Magnetic | — | 4.0 (60) |
| 1 x Inductive | 1.0 (15) | 1.0 (15) |
| 2 x Inductive | 1.6 (30) | 1.6 (30) |
| 3 x Inductive | 2.5 (40) | 2.5 (40) |
| 1 x Electronic | 1.0 (15) | 1.0 (15) |
| 2 x Electronic | 1.6 (30) | 1.6 (30) |
| 3 x Electronic | 2.5 (40) | 2.5 (40) |
| 1 x Pneumatic | 1.0 (15) | 1.0 (15) |
| 2 x Pneumatic | — | 1.6 (30) |

4x limit-switch contact assemblies are only available with case size 160 (6") for this model. Pneumatic limit-switch contacts for case size 100 mm (4") are only available as single contacts.

For pressure gauges with 3 or 4 contacts it is not always possible to set all set pointers one above the other. You should therefore always state, for which contacts resp. set pointers the opportunity to set one above the other is required. Or simply point out when ordering where your set points are.

Liquid Filling, Model RChaOe:

Special oil

Lens

Acrylic glass resp. polycarbonate lens ³⁾

Safety Features

Model RChaOe with vent assembly at the top (no blow-out)

¹⁾ Note: the model code for filled version with electrical accessories = RChaOe !

²⁾ lower pressure ranges upon request

³⁾ details upon request



Electrical Connection

A universal plug connector is standard supply for pressure gauges model RCha and RChaOe with standard or magnetic contacts, and a terminal box for those with inductive or electronic limit-switches.

The universal plug connector resp. the terminal box is usually mounted on the right ⁴⁾ side of the case, except the versions for front panel mounting, our model codes rFr and rBFr. Here the electrical connection is mounted on the back of the case.

Upon request the pressure gauges model RCha with 1, 2 or 3 standard- or magnetic contacts can be supplied with 1 m (3 ft) connection cable passing through the back of the case, except versions with rear mounting flange, our code letters Rh and rRh; here the connection cable passes through the right ⁴⁾ side of the case.

Pressure gauges with pneumatic limit-switch contact assembly are available in case size 100 (4") with bottom process connection only, others upon request. Case size 160 mm (6") is available in all standard case configurations, except our model rBFr (lower back connection and u-clamp fixing). Dimensional drawings upon request. One PP or PE converter for each pneumatic limit-switch is mounted on the back of the case.

When a universal plug connector, a terminal box or a PP/PE-converter is mounted on the back of a case nominal size 100 mm (4"), the gauge cannot be supplied with a blow-out in the back.

The precise locations of the electrical connections are shown in the dimensional drawings on the reverse side of this data sheet. Others than standard locations are only available upon request at additional charges.

The universal plug connector has 6 terminals and a ground terminal. The terminal box has 6 terminals only.

Ordering Information

The ordering code of the individual gauge model (compare data sheet 1200) is extended

by the CODE LETTER for the contact type :

S, M, I, E or P

and the CODE NUMBER for the make/break operation,

e.g. **1, 11, 12, 2, 22, 21**

(Please compare the data sheet for the limit-switch contact assembly!)

Examples: RCha 160-3, 40 bar, **M12**
RChaOe 100-3, -1/+9 bar, 1/2" NPT, **I1**

Dimensional drawings see reverse side.

⁴⁾ "right side" from the viewer's perspective when looking on the dial



ARMATURENBAU GmbH

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



MANOTHERM Beierfeld GmbH

Am Gewerbepark 9 • D-08340 Beierfeld
Phone: (0 37 74) 58 - 0 • Fax: (0 37 74) 58 - 545
manotherm.com • mail@manotherm.com

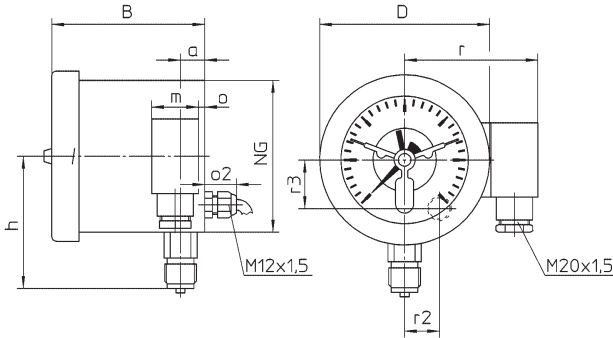
1290
8/02

Case Configurations, Electrical Connections, Dimensional Data and Weight

The dimensions are the same as from the basic model, except the front-to-back sizes, see table below. For the other dimensions please see data sheet 1200. Dimensional drawings for versions with PP/PE converter are available upon request.

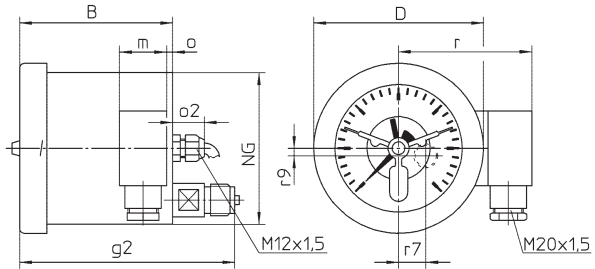
Bottom connection

Connection cable / Universal plug connector or terminal box



Lower back connection (code letter: r)

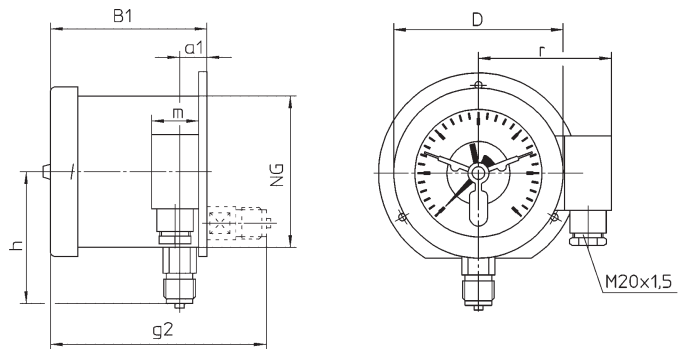
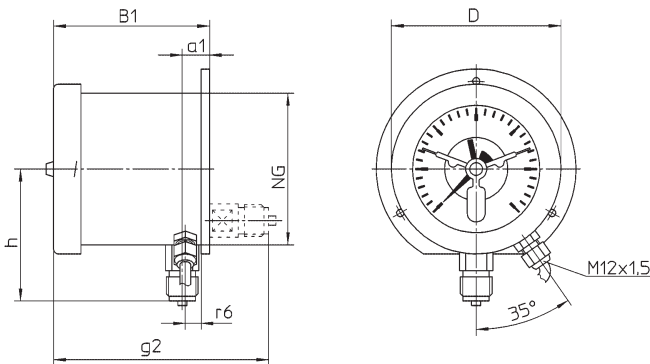
Connection cable / Universal plug connector or terminal box



Bottom connection or lower back connection, rear mounting flange (code letters: Rh, rRh)

Connection cable

Universal plug connector or terminal box

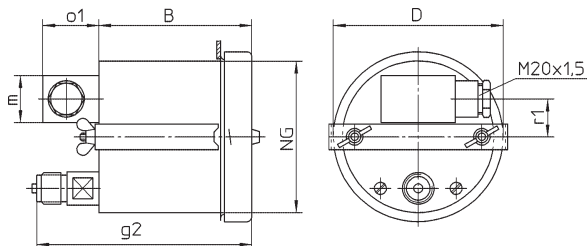
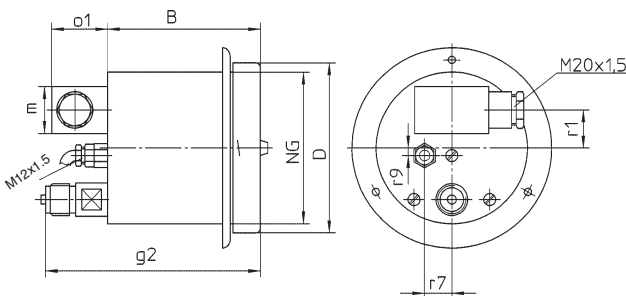


Lower back connection, front flange (code letters: rFr)

Connection cable / Universal plug connector or terminal box

Lower back connection, u-clamp for panel mtg. (rBFr)

Connection cable (drawing upon request) / Universal plug connector or terminal box



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

| Nominal Case Size | a | a1 | B | B1 | D | g2 | h ±1 | m | o | o1 | o2 | r | r1 | r2 | r3 | r6 | r7 | r9 | Weight (approx.) ²⁾ | |
|-------------------|------------|------------|-------------------|-------------------|-------------|-------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|--------------------------------|-------------|
| | | | | | | | | | | | | | | | | | | | RCha | RChaOe |
| 100 | | | 101 | 103 | 112 | 142 | 87 | | 4 | | | 88 | 25 | 23 | 32 | | 18 | 0 | .75 | 1.15 |
| 4" | .16 | .18 | 3.98 | 4.06 | 4.41 | 5.59 | 3.42 | 31 | .16 | 37 | 21 | 3.46 | .98 | .90 | 1.26 | 12 | .71 | 0 | 1.65 | 2.53 |
| 160 | | | 105 ¹⁾ | 107 ¹⁾ | 173 | 146 | 115 | 1.22 | 2 | 1.46 | .83 | 117 | 27 | 36 | 50 | .47 | 36 | 50 | 1.50 | 2.90 |
| 6" | .63 | .71 | 4.13 | 4.21 | 6.81 | 5.75 | 4.53 | | .08 | | | 4.61 | 1.06 | 1.42 | 1.96 | | 1.42 | .197 | 3.30 | 6.38 |

¹⁾ For inductive or electronic limit switches with 2 similar make/break operations (i.e. I 11 or E 22, also as part of 3x inductive resp. electronic contact assemblies, e.g. I122, or E 112) and for 3 and 4x standard or magnetic contacts please add 10 mm (.39") to length B and B1.

²⁾ appr. weights for case with bottom connection and with 2 contacts

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