

Bourdon Tube Pressure Gauges

Bayonet Ring Case Stainless Steel,
Standard (RCh) or Liquid Filled (RChOe)

with Limit-Switch Contact Assemblies

Model

RCh
RChOe

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 RCh and RChOe with limit switch contact assemblies.

Data sheet 1201 contains all important features of model RCh and RChG 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 ³⁾	—	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 ³⁾	—	4.0 (60)
1 x Inductive	1.0 (15)	1.0 (15)
2 x Inductive	1.6 (30)	1.6 (30)
3 x Inductive ⁴⁾	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 ⁴⁾	2.5 (40)	2.5 (40)
1 x Pneumatic	1.0 (15)	1.0 (15)
2 x Pneumatic	—	1.6 (30)

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 RChOe:
Special oil

Lens

Pressure gauges with wetted parts brass/bronze (-1) or alloy steel (-2) are supplied with acrylic glass resp. polycarbonate lens ⁵⁾. Pressure gauges with wetted parts stainless steel (-3) or monel (-6) are supplied with laminated safety glass.

Safety Features

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

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

²⁾ lower pressure ranges upon request

³⁾ 4 contacts for pressure gauges

⁴⁾ 4 contacts upon request

nominal size 100 mm (4") upon request

⁵⁾ details upon request



Electrical Connection

Pressure gauges model RCh 100-1 with standard or magnetic contacts are supplied with 1 m (3 ft) connection cable, passing through the back side of the case. When rear mounting flange is required, our code letters Rh and rRh, the cable passes through the right side of the case ⁶⁾.

A universal plug connector is standard supply for all the other pressure gauges model RCh and RChOe 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 ⁶⁾ side of the case, except all case configurations for front panel mounting, our model codes Fr, rFr, and rBFr. Here the electrical connection is mounted on the back of the case.

Upon request the pressure gauges model RCh 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. When a rear mounting flange is required, our code letters Rh and rRh, the connection cable passes through the right ⁶⁾ 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 1201) 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: RCh 160-3, 40 bar, **M 12**
RChOe 100-3, -1/+9 bar, 1/2" NPT, **I 1**

Dimensional drawings see reverse side.

⁶⁾ "right side" from the viewer's perspective when looking on the dial



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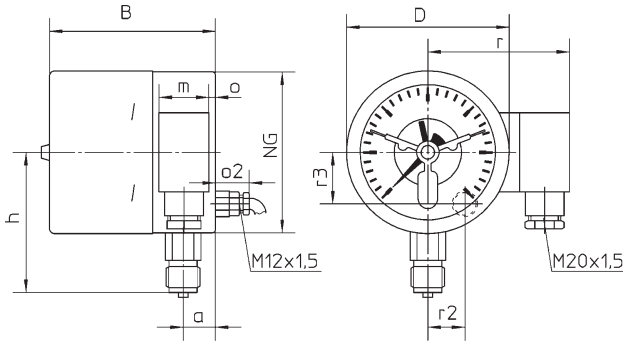
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Case Configurations, Electrical Connections, Dimensional Data and Weights

The dimensions are the same as from the basic model, except the front-to-back sizes, see table below ¹⁾. For the other dimensions, please see data sheet 1201. Dimensional drawings for instruments with pneumatic limit-switch can be received upon request.

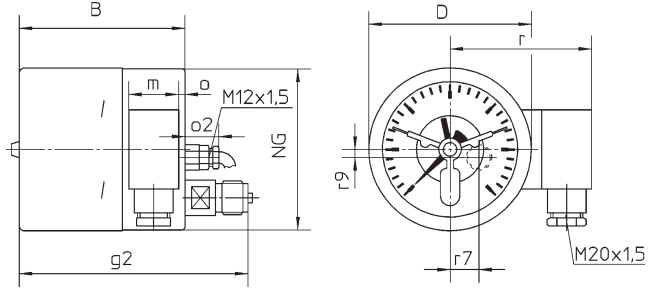
Bottom connection

Connection cable / Universal plug connector or terminal box



Lower back connection (code letter: r)

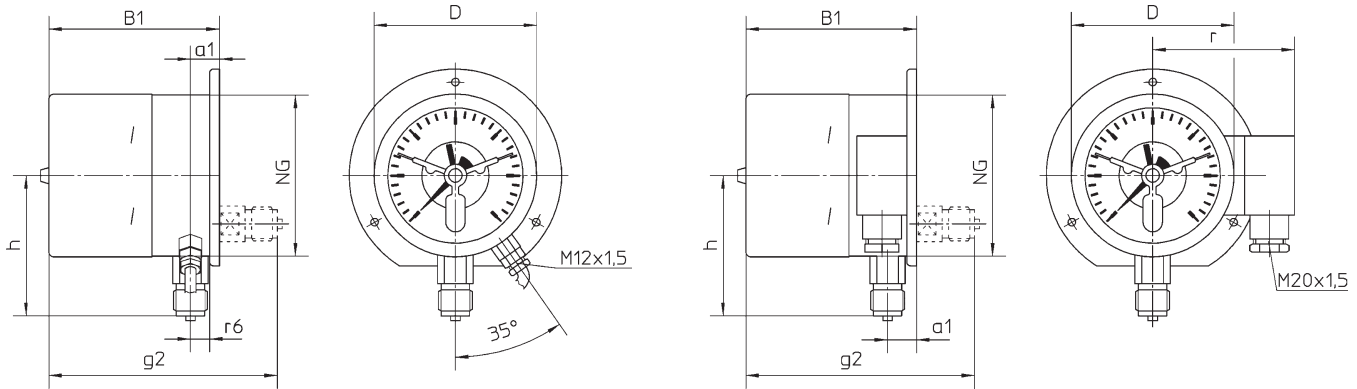
Connection cable / Universal plug connector or terminal box



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

Connection cable

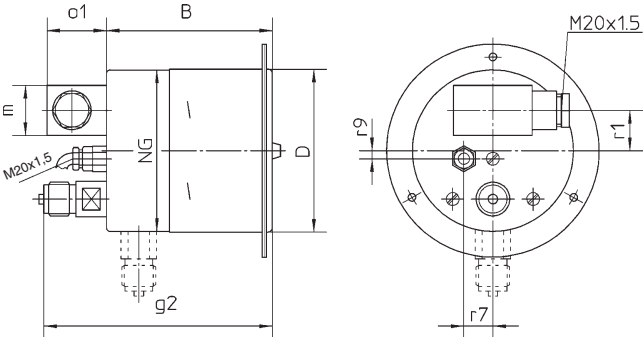
Universal plug connector or terminal box



Bottom connection or lower back connection, front flange (code letter: Fr, rFr)

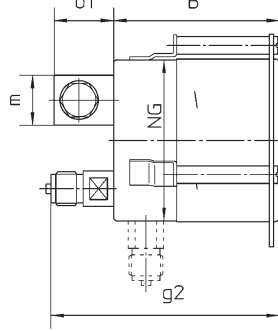
Connection cable / Universal plug connector or terminal box

Standard version ("dry")



Front flange with longholes attached to the case and a separate front flange

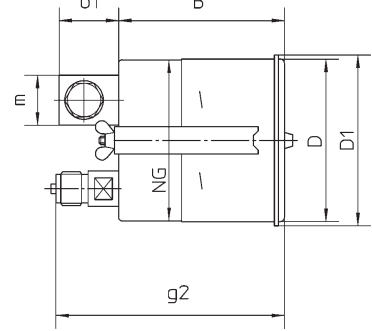
Liquid filled case version



Mounting brackets welded to the case and separate cover front flange

Lower back connection, U-Clamp for Panel Mtg. (rBFr)²⁾

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



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

Nominal Case Size	a	a1	B	B1	D	D1	g2	h ±1	m	o	o1	o2	r	r1	r2	r3	r6	r7	r9	Weight (approx.) ⁵⁾	
																				RCh	RChOe
100 4"	20 .79	18	103 ³⁾ 4.05	106 ³⁾ 4.17	101 3.98	106 4.17	142 5.59	87 3.42	31	.16	37	21	88 3.46	25 .98	23 .90	32 1.26	12	18 .71	0	.75 1.65	1.15 2.53
160 6"	16 .63	.71	105.5 ⁴⁾ 4.15	108 ⁴⁾ 4.25	161 6.34	167 6.57	146 5.75	115 4.53	1.22	2	1.46	.83	117 4.61	27 1.06	36 1.42	50 1.96	.47	36 1.42	50 .197	1.50 3.30	2.90 6.38

¹⁾ Differing from data sheet 1201, the u-clamp version is, if the gauge is provided with electrical accessories, also available in nom. case size 100 (4") with bayonet ring (no crimped-on ring)!

²⁾ Dry version available only; alternative for filled version: see model RChOe 100 and 160 rBFr, data sheet 1290!

³⁾ dimension for 1, 2 resp. 3 contacts

⁴⁾ 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) and for 3 and 4x standard or magnetic contacts please add 10 mm (.39") to length B and B1.

⁵⁾ 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.