

Bourdon Tube Pressure Gauges NCS 100 (4") 160 (6")

Models

Bayonet Ring Case Stainless Steel Case, Solid Front, Blow-out Back
Standard (RSCh) or Liquid Filled (RSChOe)

RSCh
RSChOe

with Limit-Switch Contact Assemblies

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

Standard Configuration

Data Sheet **1600** contains all important features of these models without electrical accessories. These technical details are valid also for gauges assembled with limit-switch contacts, as far as you do not find a deviating description below.

The ordering code for the liquid-filled version with limit-switch contact assembly is different (RSChOe).

The **filling liquid** is a special oil

For detailed information about use and operation 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:

Mechanical Data sheet **9100**

(Standard and magnetic contacts)

Inductive Data sheet **9200**

Electronic Data sheet **9201**

Minimum Pressure Ranges

Every pressure gauge needs a sufficient amount of torque to operate a limit-switch contact assembly with minimized error.

The following minimum pressure ranges are to consider¹⁾:

Limit-Switch Type:	Minimum Pressure Ranges ¹⁾	
	NCS 100 (4") bar (psi)	NCS 160 (6") bar (psi)
1 x Standard	1.0 (15)	1,0 (15)
2 x Standard	1.6 (30)	1,6 (30)
3 x Standard	2.5 (60)	2,5 (60)
4 x Standard ²⁾	—	2,5 (60)
1 x Magnetic	1.6 (30)	1,6 (30)
2 x Magnetic	2.5 (60)	2,5 (60)
3 x Magnetic	4.0 (60)	4,0 (60)
4 x Magnetic ²⁾	—	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 (60)	2,5 (60)
1 x Electronic	1.0 (15)	1,0 (15)
2 x Electronic	1.6 (30)	1,6 (30)
3 x Electronic	2.5 (60)	2,5 (60)

¹⁾ lower pressure ranges upon request

²⁾ Limit-switches with 4 contacts available for RSCh/RSChOe 160 only

For pressure gauges with 3 or 4 contacts it is not always possible to set all set pointers one above the other. Therefore you should state when ordering 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.

Window

Laminated safety glass

Case Ventilation

Model RSChOe with ventilation device at the top



Safety Features

- Solid front stainless steel between measuring system and dial
- Full blow-out safety back

Should the Bourdon tube rupture, the entire case back separates, allowing full relief.

Instruments with pressure ranges 0-0.6 bar up to 0-1,000 bar are tested according to EN 837-1, S3. The dial is marked accordingly with EN 837-1.

Electrical Connection

- Mechanical contacts (standard [S] or magnetic [M]):

Universal plug connector mounted on the right side of the case

- Inductive / electronic limit-switch assemblies (I, E):

Terminal box mounted on the right side of the case

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

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 available upon request at extra charges only.

Special Versions

- Case ventilation for outdoor use, No. 22: with pressure equalizing membrane, IP 65
- Other electrical connections, e.g. plug connector DIN EN 175 301-803

Ordering Information

The ordering code of the individual gauge model RSCh 160 resp. RSChOe 160 (compare data sheet 1600) is extended by the

- Code letter for the limit-switch contact assembly:
S, M, I, E or **P** and the
- Code number for the make/break operation, e.g.
1, 11, 12, 2, 22, 21

Examples:

RSCh 160-3, 0-40 bar, G ½ B (½" BSP), **M 12**
RSChOe 100-3, -1/+9 bar, ½"NPT, **I 1**

Case Configurations, Electrical Connection, Dimensional Data and Weight

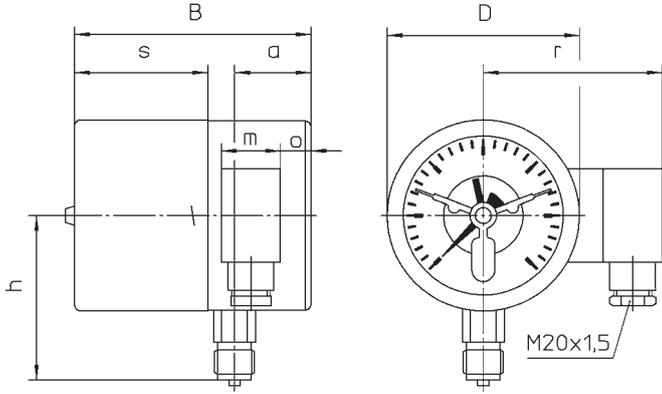
The dimensions are the same as from the basic model, except the front-to-back sizes, **dimensions B and B1**, see table below. For the other dimensions, please see data sheet 1600.

Others than standard locations are available only upon request at extra charges.

The locations of the electrical connections are shown in the dimensional drawings below.

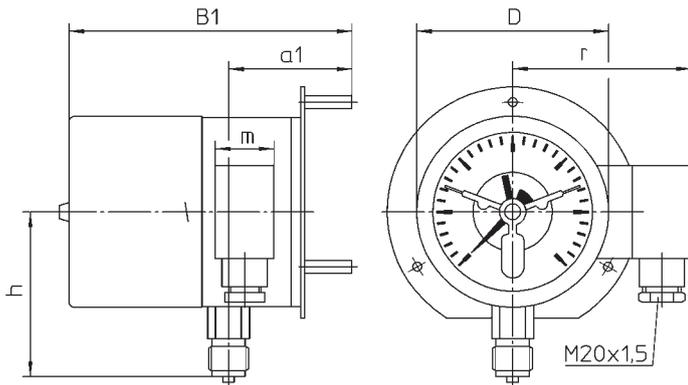
Bottom connection

Universal plug connector / terminal box



Bottom connection, rear mounting flange (Rh)

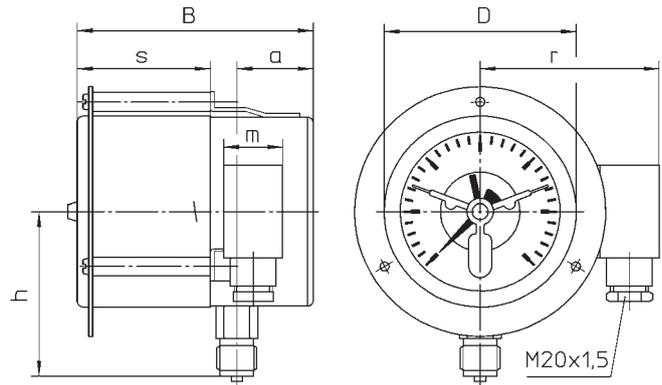
Universal plug connector / terminal box



Case configuration Rh includes 3 separate mounting spacers.

Bottom connection, front mounting flange (Fr)

Universal plug connector / terminal box



Case configurations "Fr" and "rFr" will be supplied with a separate front mounting flange and mounting brackets welded to the case.

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

NCS	a	a1	B	B1	D	h ±1	m	o	r	s	Weight (approx.) ²⁾	
											RSCh	RSChOe
100	40	65	124	149	101	87	31	16	94	74	1.25	1.65
4"		2.56	4.88	5.87	3.98	3.43		.63	3.7	2.91	2.76	3.64
160	1.57	70	130 ¹⁾	160 ¹⁾	161	115	1.22	14	121	95	2.45	3.85
6"		2.76	5.12	6.3	6.34	4.53		.55	4.76	3.74	5.40	8.49

¹⁾ For inductive and electronic limit switches with 2 similar make/break operations (i.e. I 11 or E 22, also as part of 3x inductive or electronic limit-switch assemblies) and for 4x standard or magnetic contacts please add 12 mm (.47") to length B and B1.

²⁾ approx. weights for case configuration "bottom connection" with 2 contacts