Bourdon Tube Pressure Gauges

Bayonet Ring Case Stainless Steel, Safety Category S3 according to EN-837-1

RSCh
RSChG

Standard Versions

Information on general and metrological features (load limits / temperature limitations) and standard pressure ranges / scale divisions can be found in model overview 1000.

Accuracy (EN 837-1)
Class 1.0

Case
Bayonet ring, 1.4301 (304 stainless steel)

Case Protection Type (EN 60 529 / IEC 529)
IP 54,
IP 65 for model RSChG

Blow-out Device
Blow-out back; should the bourdon tube rupture, the entire case back separates, allowing full relief.

Case Ventilation
Model RSChG 100 without ventilation, but with internal pressure compensation by pressure equalizing membrane.
Model RSChG 160 by screw with ventilation bore.

Case Filling
for model RSCh**G**: glycerine

Nominal Case Size
100, 160 (mm) (4", 6")

Wetted Parts

Type –3:	Connection:	1.4571 (316 stainless steel)	
	Bourdon tube:	1.4571 (316 stainless steel), argon arc welding,	
		≤ 40 bar (600 psi)	c-form
		≥ 60 bar (800 psi)	helical
		1,600 bar (20,000 psi)	NiFe-alloy, helical
Type –1:	Connection:	brass	
	Bourdon tube:	≤ 40 bar (600 psi)	bronze, c-form soft-soldered
		≥ 60 bar (800 psi)	1.4571 (316 stainless steel), helical silver brazed

Case Configuration

Connection:	screwed
Position of the connection:	bottom connection, model RSCh 100 optional lower back connection **(r)**
Mounting device:	without, optional back flange for surface mounting **(Rh)** / front flange for panel mounting **(Fr)**, see page 2

Pressure Ranges (EN 837-1)
0-0.6 bar (0-10 psi) to 0-1,600[1)] bar (0-20,000 psi) for type –3
0-0.6 bar (0-10 psi) to 0-1,000 bar (0-15,000 psi) for type –1

Process Connection
G ½ B (½" BSP)

Window
Laminated safety glass

Movement

Stainless steel	for type –3
Brass/German silver	for type –1

[1)] 0-2500 bar with high pressure connection

Dial
Aluminum, black figures, white background

Pointer
Aluminum, black

Safety Category according to EN 837-1
S3, safety pressure gauge with break-proof solid front and blow-out back,
proved: pressure ranges up to 1,000 bar (15,000 psi),
bottom connection: RSCh and RSChG
lower back connection: RSCh 100
marking Ⓢ, see also sectional drawing overleaf.

Ordering Information, Standard Pressure Ranges, Options:

see pages 3 and 4

Special Versions and further options among others

- Other process connections upon request, e.g. high pressure connection with external male thread (0-60 bar / 0-800 psi and above)
- Other pressure ranges and / or special scales, e.g. double scale bar/psi, coloured fields or areas, dial inscriptions, negative scale etc.
- Version as refrigeration gauge with temperature scale (NCS 100)
- NCS 100, case parts 1.4404 (316 L stainless steel), NCS 160 upon request
- Increased case protection type, e. g. IP 65 without case filling, upon request
- Other case fillings upon request
- Model RSChG for ambient temperatures down to -40 °C (-40 °F) upon request. Our recommendation for ambient temperatures below -20 °C (-4 °F); models RChg resp. RChgG
- Position of connection radial at 3 o´clock, 9 o´clock or 12 o´clock (others upon request) or other than vertical installation (90°):
  - for models without case filling and for filled models with pressure equalizing membrane;
  - for filled models without pressure equalizing membrane upon request
- GOST-version for Russia, Ukraine, Kazakhstan
- Sour gas-resistant version according to NACE

Accessory:

Chemical seals:	see catalogue-heading 7
Electrical:	limit switch contact assembly DS 1690 and catalogue-heading 9.1
Other accessory:	see catalogue-heading 11

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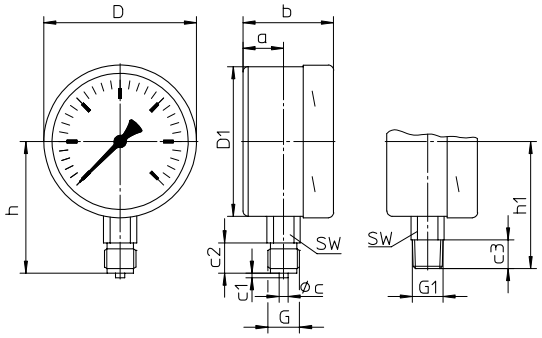
Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

Bottom connection

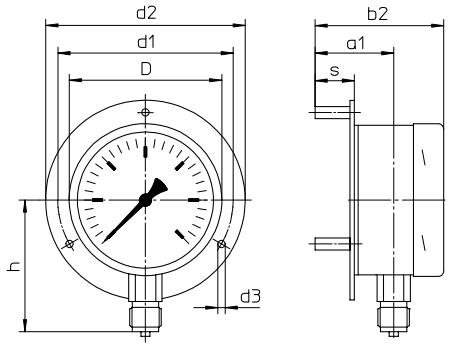
No mounting device

(no additional code letter)



Back flange for surface mounting

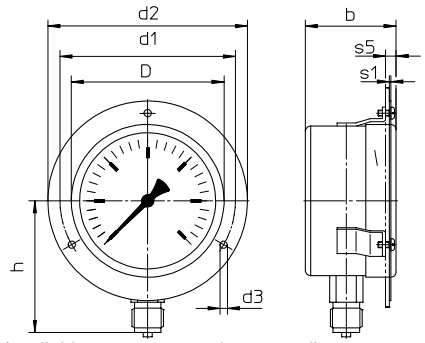
code letters: **Rh**



Version Rh including 3 separate mounting spacers.

Front flange for panel mounting

code letters: **Fr**

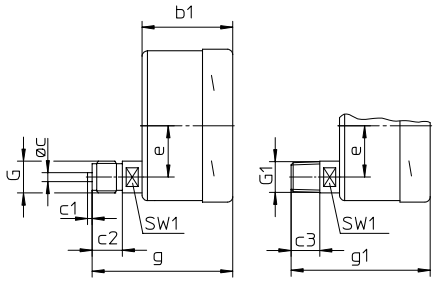


(available upon request, but according to EN 837-1 not recommended) [1]

Lower back connection (only NCS 100)

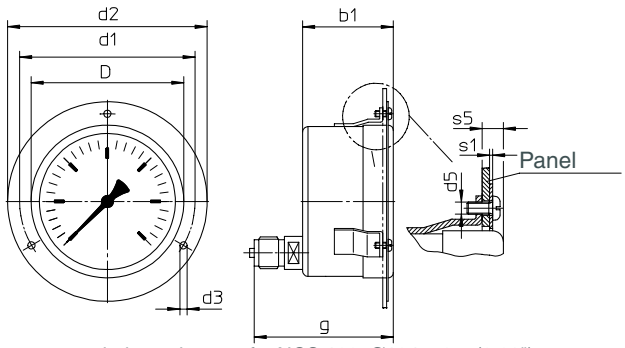
No mounting device

code letter: **r**



Front flange for panel mounting

code letters: **rFr**

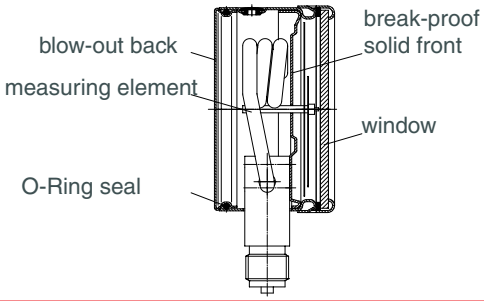


recommended panel cutout for NCS 100 Ø104 ±0.5 (0.02")

Dimensional data (mm / inches) and weights (kg / lb)

NCS	a	a1	b	b1	b2	c	c1	c2	c3	D	D1	d1	d2	d3	d5	e	G	G1	g	g1	h±1	h1±1
100	27	52	60	60	85	6	3	20	19	101	99	116	132	4.8	M4	34	G ½ B ½" **BSP** M 20 x 1.5	½" NPT	93	92	87	84
(4")	**1.06**	**2.05**	**2.36**	**2.36**	**3.35**	**.24**	**.12**	**.79**	**.75**	**3.98**	**3.9**	**4.57**	**5.2**	**.19**		**1.34**			**3.66**	**3.62**	**3.43**	**3.31**
160	40	70	78	78	108	6	3	20	19	161	159	178	196	5.8	M5	–	G ½ B ½" **BSP** M 20 x 1.5	½" NPT	–	–	115	114
(6")	**1.57**	**2.76**	**3.07**	**3.07**	**4.25**	**.24**	**.12**	**.79**	**.75**	**6.34**	**6.26**	**7.01**	**7.72**	**.23**							**4.53**	**4.49**

Schematic drawing



s	s1	s5	SW	SW1	approx. weight [2] RSCh	approx. weight [2] RSChG
26	1	7	22	17	0.65	1.00
1.02	**.04**	**.28**	**.87**	**.67**	**1.40**	**2.20**
31.5	1.5	9	22	–	1.50	2.95
1.24	**.06**	**.35**	**.87**		**3.30**	**6.5**

[2] Information for version without mounting device

[1] recommended panel cut-out for NCS 100 Ø104 ±0.5 (0.02")
NCS 160 Ø164 ±0.5 (0.02")

Ordering Information, Standard Pressure Ranges, Options

Basic Model:	Bourdon Tube Pressure Gauge, Bayonet Ring Case			RSCh
Case Filling	without			without code letters
	glycerine			**G**
	fillable version			**(G)**
Nominal Case Size:	case- Ø 100, 160 (mm) (4", 6")			**100, 160**
Wetted Material:	copper alloy			**–1**
	stainless steel			**–3**
	Monel, 0-0.6 bar (10 psi) to 0-1,000 bar (15,000 psi), movement stainless steel, laminated safety glass, bourdon tube Monel argon arc welding, ≤ 40 bar (0-600 psi) c-form, ≥ 60 bar (1,000 psi) helical, bottom connection, optional r			**–6**
Gehäusebauform:	case / connection	screwed		without code letters
		welded (only type –3, bottom connection, NCS 100)		**v**
	position of the connection:	bottom connection		without code letters
		rückseitig ausmittig (nur RSCh 100)		**r**
	mounting device:	without		without code letters
		back flange for surface mounting		**Rh**
		front flange for panel mounting		**Fr**
Pressure Ranges:	-1,200 – 0 mbar		30" Hg vac. – 0	
	-0.6 – 0 bar			
	-1 – 0 bar			
	-1 – 0.6 bar		30" Hg vac. – 15 psi	
	-1 – 1.5 bar		30" Hg vac. – 30 psi	
	-1 – 3 bar		30" Hg vac. – 60 psi	
	-1 – 5 bar		30" Hg vac. – 100 psi	
	-1 – 9 bar		30" Hg vac. – 160 psi	
	-1 – 15 bar		0 – 200 psi	
			0 – 300 psi	
	0 – 0.6 bar		0 – 10 psi	
	0 – 1 bar		0 – 15 psi	
	0 – 1.6 bar			
	0 – 2.5 bar		0 – 30 psi	
	0 – 4 bar		0 – 60 psi	
	0 – 6 bar		0 – 100 psi	e. g. **0-6 bar**
	0 – 10 bar		0 – 160 psi	
	0 – 16 bar		0 – 200 psi	
	0 – 25 bar		0 – 300 psi	
	0 – 40 bar		0 – 600 psi	
	0 – 60 bar		0 – 800 psi	
			0 – 1,000 psi	
	0 – 100 bar		0 – 1,500 psi	
	0 – 160 bar		0 – 2,000 psi	
	0 – 250 bar		0 – 3,000 psi	
			0 – 4,000 psi	
	0 – 400 bar		0 – 5,000 psi	
			0 – 6,000 psi	
	0 – 600 bar		0 – 10,000 psi	
	0 – 1,000 bar		0 – 15,000 psi	
	0 – 1,600 bar		0 – 20,000 psi	
	0 – 2,500 bar	for type –3 and high pressure process-connection	0 – 30,000 psi	
Process Connection:	standard thread	G ½ B (½"BSP)	–1 and –6 max. 0-1,000 bar; –3 max. 0-1,600 bar	**G ½ B**
	Optionen:	½" NPT		**½" NPT**
		M 20 x 1.5		**M 20 x 1,5**
		G ¼ B (¼"BSP)	–1 max. 0- 600 bar; –3 and –6 max. 0-1,000 bar	**G ¼ B**
		¼" NPT		**¼" NPT**
		M 12 x 1.5		**M 12 x 1,5**
		high pressure connection female thread (0-60 bar and above)		
		for ¼" tube, with 60° cone		
			M16 x 1.5	**HD-Anschluss M 16x1,5**
			9/16" - 18 UNF	**HD-Anschluss 9/16" - 18 UNF**
Options:	see page 4			
Example:				**RSCh 100-3 rFr, 0-6 bar, G ½ B**

Ordering Information, Standard Pressure Ranges, Options

Basic Model:	Bourdon Tube Pressure Gauge, Bayonet Ring Case		RSCh
Model Code:			see page 3
Options:	adjustable pointer, aluminum mechanism		
	red mark	on the dial	
	plastic clip	red or green external at the crimped-on ring	
	stationary red pointer	on the dial, adjustable when removable ring	
	receiver gauge 0.2-1 bar, scale 0-100%	linear	
		square	
	indication accuracy grade 2A (± 0.5%) according to ASME B 40.1[1]		
	special adjustment (reference points = odd values, e. g. 100 KN = 8.735 bar)		
	window	polycarbonate (PC)	
	movement	stainless steel for type –1 (for –3 and –6 standard)	
	case ventilation no. 22 for outdoor installation		
	case polished		
	bayonet ring polished		
	density examination of the measuring unit	with helium leak detection up to 10^{-9} mbar l/s for types –3 and –6	
	wetted parts, free of grease and oil, up to 0-600bar (0-10,000 psi)	adjustment ≤ 250 bar (3,000 psi) with dry air, ≥ 400 bar (5,000 psi) with distilled water, dial marking: symbol cancelled oil can	*(order at the moment still as cleartext)*
	oxygen version up to 0-600 bar[2] (0-10,000 psi)	free of grease and oil, additional restrictor screw in the inlet port, orifice Ø 0.3 mm (0.01"), dial inscription: oxygen	
	silicone-free version		
	German Lloyd-version, **for Model RSChG**	dial marking: GL-symbol	
		copy of the certificate upon request	
	restrictor screw in pressure inlet port material: as process connection brass, stainless steel or Monel	orifice Ø 0.8 mm (0.03")	
		orifice Ø 0.6 mm (0.02") (not Monel)	
		orifice Ø 0.3 mm (0.01") (not Monel)	
	measuring point marking	stainless steel-plate12 mm x 55 mm (0.47" x 2.17"), wire mounting	
		or sticker on case coverage	
	deflagration volume protection Adapt FS	version 5 according DS 11001	

Special Versions: Please describe your requirements clearly

[1] for pressure ranges ≤ 10,000 psi [2] for instruments without case filling