

# 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 RSChG: 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)  
without, optional back flange for  
surface mounting (Rh) / front flange  
for panel mounting (Fr), see page 2

Mounting device:

### Pressure Ranges (EN 837-1)

0-0.6 bar (0-10 psi) to 0-1,600<sup>1)</sup> 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 1/2 B (1/2" BSP)

### Window

Laminated safety glass

### Movement

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

<sup>1)</sup> 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
- 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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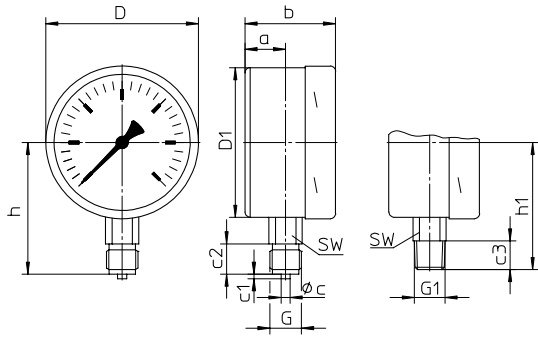
# Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

## Bottom connection

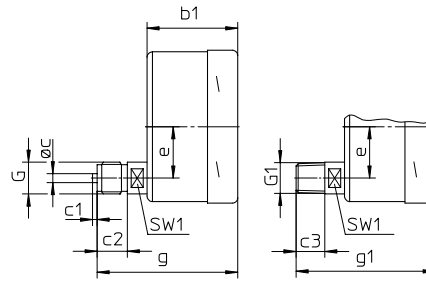
## Lower back connection (only NCS 100)

### No mounting device

(no additional code letter)

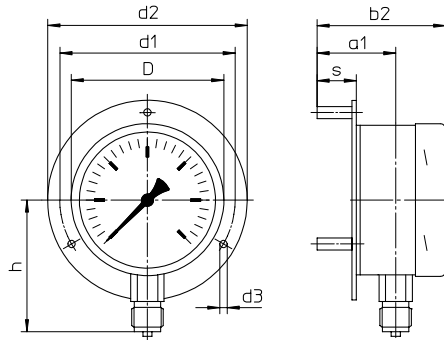


code letter: r



### Back flange for surface mounting

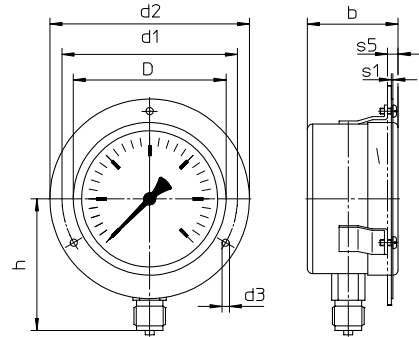
code letters: Rh



Version Rh including 3 separate mounting spacers.

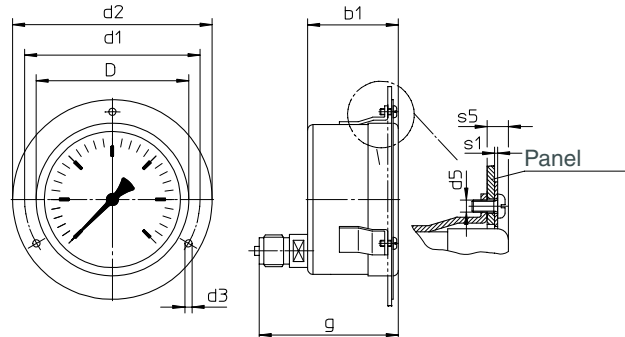
### Front flange for panel mounting

code letters: Fr



(available upon request, but according to EN 837-1 not recommended)<sup>1)</sup>

code letters: rFr

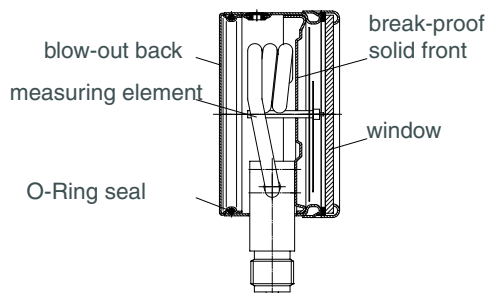


recommended panel cutout for NCS 100  $\varnothing 104 \pm 0.5 (0.02")$

## 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 <sup>±1</sup>	h1 <sup>±1</sup>
100 (4")	27 1.06	52 2.05	60 2.36	60 2.36	85 3.35	6 .24	3 .12	20 .79	19 .75	101 3.98	99 3.9	116 4.57	132 5.2	4.8 .19	M4	34 1.34	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	93 3.66	92 3.62	87 3.43	84 3.31
160 (6")	40 1.57	70 2.76	78 3.07	78 3.07	108 4.25	6 .24	3 .12	20 .79	19 .75	161 6.34	159 6.26	178 7.01	196 7.72	5.8 .23	M5	-	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	-	-	115 4.53	114 4.49

## Schematic drawing



s	s1	s5	SW	SW1	approx. weight <sup>2)</sup>	
					RSCh	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

<sup>2)</sup> Information for version without mounting device

<sup>1)</sup> recommended panel cut-out for NCS 100  $\varnothing 104 \pm 0.5 (0.02")$   
NCS 160  $\varnothing 164 \pm 0.5 (0.02")$

## Ordering Information, Standard Pressure Ranges, Options

Basic Model:	Bourdon Tube Pressure Gauge, Bayonet Ring Case		RSCh	
Case Filling	without		without code letters	
	glycerine		<b>G</b>	
	fillable version		<b>(G)</b>	
Nominal Case Size:	case- Ø 100, 160 (mm) (4", 6")		<b>100, 160</b>	
Wetted Material:	copper alloy		<b>-1</b>	
	stainless steel		<b>-3</b>	
	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		<b>-6</b>	
Gehäusebauform:	case / connection	screwed	without code letters	
		welded (only type -3, bottom connection, NCS 100)	<b>v</b>	
	position of the connection:	bottom connection	without code letters	
	rückseitig ausmittig (nur RSCh 100)	<b>r</b>		
mounting device:	without		without code letters	
	back flange for surface mounting		<b>Rh</b>	
	front flange for panel mounting		<b>Fr</b>	
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. <b>0-6 bar</b>	
	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	0 – 30,000 psi			
Process Connection:	standard thread	G ½ B (½"BSP)	<b>G ½ B</b>	
	Optionen:	½" NPT	-1 and -6 max. 0-1,000 bar; -3 max. 0-1,600 bar	<b>½" NPT</b>
		M 20 x 1.5		<b>M 20 x 1,5</b>
		G ¼ B (¼"BSP)		<b>G ¼ B</b>
		¼" NPT	-1 max. 0- 600 bar; -3 and -6 max. 0-1,000 bar	<b>¼" NPT</b>
		M 12 x 1.5		<b>M 12 x 1,5</b>
		high pressure connection female thread (0-60 bar and above) for ¼" tube, with 60° cone		
		M16 x 1.5		<b>HD-Anschluss M 16x1,5</b>
		9/16" - 18 UNF		<b>HD-Anschluss 9/16" - 18 UNF</b>
	Options:	see page 4		
Example:	<b>RSCh 100-3 rFr, 0-6 bar, G ½ B</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	<i>(order at the moment still as cleartext)</i>	
	red mark on the dial		
	plastic clip red or green external at the crimped-on ring		
	stationary on the dial,		
	red pointer adjustable when removable ring		
	receiver gauge 0.2-1 bar, scale 0-100%		linear square
	indication accuracy grade 2A ( $\pm 0.5\%$ ) according to ASME B 40.1 <sup>1)</sup>		
	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 with helium leak detection up to of the measuring unit $10^{-9}$ mbar l/s for types -3 and -6		
	wetted parts, free of grease and oil, up to 0-600bar (0-10,000 psi)		adjustment $\leq 250$ bar (3,000 psi) with dry air, $\geq 400$ bar (5,000 psi) with distilled water, dial marking: symbol cancelled oil can
	oxygen version up to 0-600 bar <sup>2)</sup> (0-10,000 psi)		free of grease and oil, additional restrictor screw in the inlet port, orifice $\varnothing 0.3$ mm (0.01"), dial inscription: oxygen
	silicone-free version		
	German dial marking: GL-symbol		
	Lloyd-version, for Model RSChG		copy of the certificate upon request
	restrictor screw in pressure inlet port material: as process connection brass, stainless steel or Monel		orifice $\varnothing 0.8$ mm (0.03") orifice $\varnothing 0.6$ mm (0.02") (not Monel) orifice $\varnothing 0.3$ mm (0.01") (not Monel)
measuring point marking	stainless steel-plate 12 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

<sup>1)</sup> for pressure ranges  $\leq 10,000$  psi

<sup>2)</sup> for instruments without case filling

Technical changes, replacement of materials and errors excepted.