

# 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-resistance) 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; when pressure increases in the case, the entire case back separates, allowing full relief.

### Case Ventilation

Model RSChG without ventilation, but with internal pressure compensation via pressure equalising membrane.

### Case Filling

for model RSChG: glycerine

### Nominal Case Size

100, 160 mm (4", 6")

### Wetted Parts

Type – 3: Connection: 316 L stainless steel  
Bourdon tube: 316 L stainless steel, shielded 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) 316 L stainless steel, helical, silver brazed

### Case Configuration

Connection: screwed  
Position of the connection: bottom, model RSCh 100 – 3 optionally 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 – 2,500<sup>1)</sup> bar (0 – 30,000 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



### Dial

Aluminum, white, black scaling

### Pointer

Aluminum, black

### Safety Category according to EN 837-1

S3, safety pressure gauge with break-proof solid front and blow-out back, tested: pressure ranges up to 1,000 bar (15,000 psi), bottom connection: RSCh and RSChG lower back connection: RSCh 100 – 3 marking (S), 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 male thread (starting with 0 – 60 bar (0 – 800 psi))
- Other pressure ranges and / or special scales, e.g. dual scale bar / psi, coloured fields or ranges, dial inscriptions, negative scale etc.
- Version as refrigeration gauge with temperature scale (NCS 100)
- NCS 100 case parts 316 L stainless steel (1.4404), 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 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 equalising membrane;
  - for filled models without pressure equalising membrane upon request
- GOST-version for Russia, Ukraine, Kazakhstan
- Sour gas resistant version according to NACE

## Accessories:

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

<sup>1)</sup> 0 – 2,500 bar only with high pressure connection



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**1600**

04/15

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

## Bottom connection

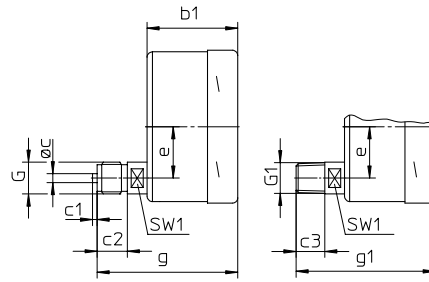
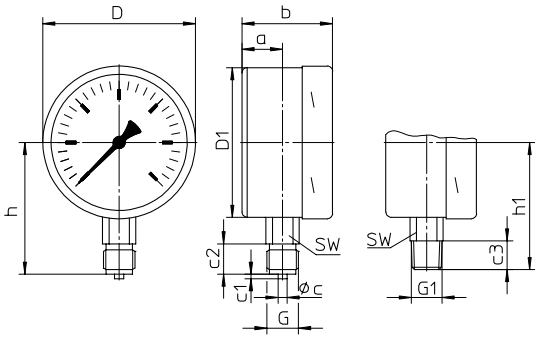
## Lower back connection (only NCS 100)

### No mounting device

(no additional code letter)

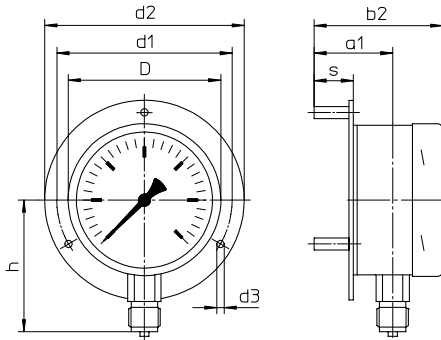
code letter: r

only NCS 100



### Back flange (for surface mounting)

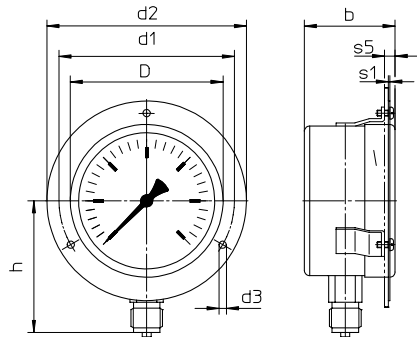
code letters: Rh



version Rh including 3 separate mounting spacers.

### Front flange (for panel mounting)

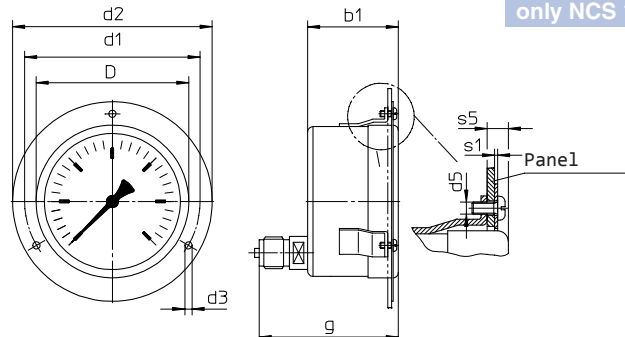
code letters: Fr



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

code letters: rFr

only NCS 100

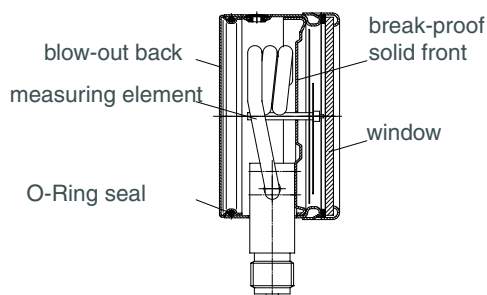


recommended panel cutout for NCS 100  $\varnothing 104 \pm 0.5 (0.02")$

## 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 20x1.5	1/2" NPT	93 3.66	92 3.62	87 3.43	84 3.31
160 (6")	43 1.69	73 2.88	79 3.11	-	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 20x1.5	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 with 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 shielded arc welding, ≤ 40 bar (0 – 600 psi) c-form, ≥ 60 bar (1,000 psi) helical, bottom connection, optional r		<b>- 6</b>	
Case Configuration:	case / connection	screwed	without code letters	
		welded (only type – 3, bottom connection)	<b>v</b>	
	position of the connection: bottom		without code letters	
		lower back (only RSCh 100 – 3)	<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 for type – 3 and high pressure connection	0 – 30,000 psi			
Process Connection:	standard thread	G ½ B (½"BSP)	<b>G ½ B</b>	
	Options:	½" NPT	– 1 and – 6 max. 0 – 1,000 bar;	<b>½" NPT</b>
		M 20x1.5	– 3 max. 0 – 1,600 bar	<b>M 20x1,5</b>
		G ¼ B (¼"BSP)	– 1 max. 0 – 600 bar;	<b>G ¼ B</b>
		¼" NPT	– 3 and – 6 max. 0 – 1,000 bar	<b>¼" NPT</b>
		M 12x1.5		<b>M 12x1,5</b>
		high pressure connection female thread (starting with 0 – 60 bar) for ¼" tube, with 60° cone		
	M 16x1.5		<b>HP-Connection M 16x1,5</b>	
	9/16" - 18 UNF		<b>HP-Connection 9/16" - 18 UNF</b>	
Options:	see page 4			
Example:	<b>RSCh 100 – 3 rFr, 0 – 6 bar, G ½ B</b>			

## Ordering Information, further Options

Basic Model: Bourdon Tube Pressure Gauge, Bayonet Ring Case		RSCh	
Model Code:		see page 3	
Options:	adjustable pointer with aluminum mechanism		
	red mark on the dial		
	plastic clip red or green, on the outside of the bayonet ring		
	stationary on the dial		
	red pointer adjustable on 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 $10^{-9}$ mbar l/s for types – 3 and – 6 of the measuring unit		
	wetted parts, free of grease and oil, up to 0 – 600 bar (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 crossed out oil can	(order at present in cleartext)
	oxygen version up to 0 – 600 bar <sup>2)</sup> (0 – 10,000 psi)	free of grease and oil as above, 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		
flame arrester Adapt FS	version 5 according to DS 11001		

### Special Versions: Please describe your requirements in cleartext

<sup>1)</sup> for pressure ranges  $\leq 10,000$  psi  
<sup>2)</sup> for instruments without case filling