

# Bourdon Tube Safety Pressure Gauges

Bayonet ring case stainless steel

Safety category S3 according to DIN EN 837-1 up to 1 600 bar



RSCh

RSChG

## Standard Versions

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

### Accuracy (DIN EN 837-1)

Class 1.0

### Case

With bayonet ring, stainless steel 304 (1.4301)

### Degree of Protection (DIN EN 60529 / IEC 60529)

IP54

IP65 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

Model RSChG                      glycerin

### Nominal Case Size

100, 160 mm (4, 6")

### Wetted Parts

Type – 3	connection	stainless steel 316L (1.4404)
	Bourdon tube	stainless steel 316L (1.4404)
		gas-shielded arc welding
		≤ 40 bar (600 psi)    c-form
		≥ 60 bar (800 psi)    helical form
		1 600 bar (20 000 psi) NiFe-alloy
		helical form
Type – 1	connection	brass
	Bourdon tube	≤ 40 bar (600 psi)    bronze, c-form
		soft-soldered
		≥ 60 bar (800 psi)    stainless steel
		316L (1.4404)
		helical form
		silver brazed

### Case Configuration

Connection                      screwed

Position of the connection

- bottom connection
- lower back connection (r) (for model RSCh 100 – 3)

Mounting device

- without
- back flange for surface mounting (Rh)
- front flange for panel mounting (Fr)

### Pressure Range (DIN EN 837-1)

0 – 0.6 bar to 0 – 1 600 bar (0 – 10 psi to 0 – 20 000 psi) for type – 3<sup>1)</sup>  
0 – 0.6 bar to 0 – 1 000 bar (0 – 10 psi to 0 – 15 000 psi) for type – 1

### Process Connection

G ½ B, ½" NPT or M20x1.5

### Window

Laminated safety glass



### Movement

Stainless steel


### Dial

Aluminum white, scale black

### Pointer

Aluminum black

### Safety Category According to DIN EN 837-1

S3, safety pressure gauge with break-proof solid front and blow-out back marking , see schematic drawing on page 2

## Ordering Information, Standard Pressure Ranges, Options

See pages 3 and 4

## Further Options

- Version as refrigeration gauge with temperature scale (NCS 100) (see technical information sheet T01-000-015)
- Case parts 316L (1.4404), NCS 100
- Model RSChG for ambient temperatures down to –40 °C (–40 °F)
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock or other than vertical installation (90°) for unfilled models
- Sour gas resistant version according to NACE

## Special Versions Upon Request

- Other process connections
- Other pressure ranges and / or special scales, e.g. dual scale bar / psi, coloured fields or ranges, dial inscriptions, negative scale
- Case parts 316L (1.4404), NCS 160
- Increased degree of protection, e.g. IP65 without case filling
- Other case fillings
- Other position of connection
- Certificates and approvals, e.g. GOST, DNV (see also website)

## Accessories

Chemical seals	see catalogue heading 7
Electrical	see catalogue heading 9.1
	see data sheet 1600.90
Other accessory	see catalogue heading 11

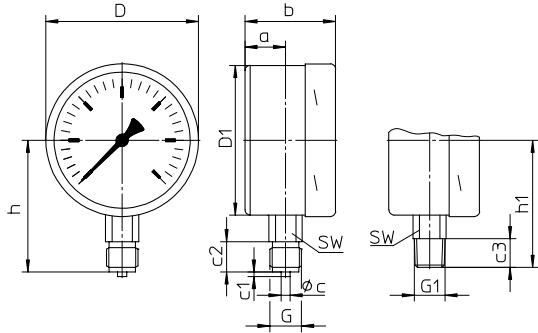
<sup>1)</sup> pressure ranges > 1 600 bar (> 20 000 psi) according to DIN 16001 see data sheet 1640

# Case Configurations, Code Letters, Dimensional Data and Weight, Schematic Drawing

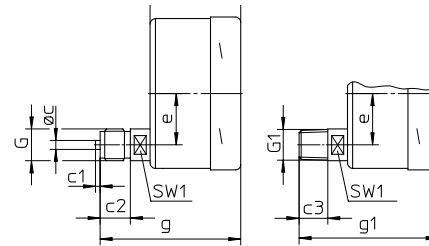
## Bottom Connection Lower Back Connection (for NCS 100 (4") only)

without mounting device

without code letters

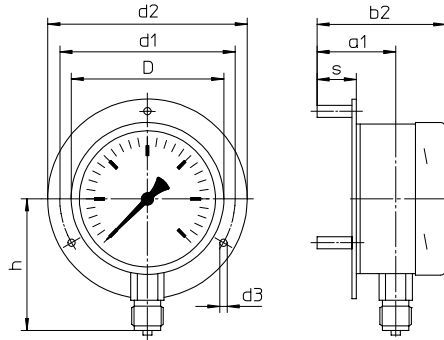


code letter r



### with back flange for surface mounting

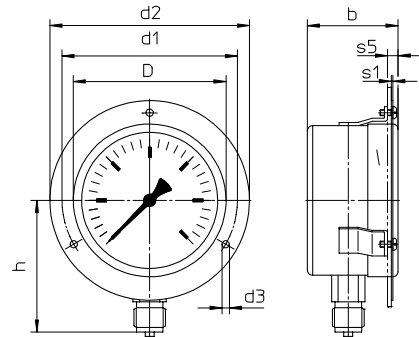
code letters Rh



version Rh including 3 separate mounting spacers

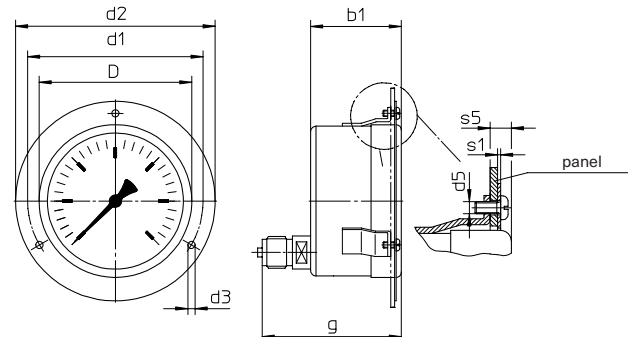
### with front flange for panel mounting

code letters Fr



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

code letters rFr

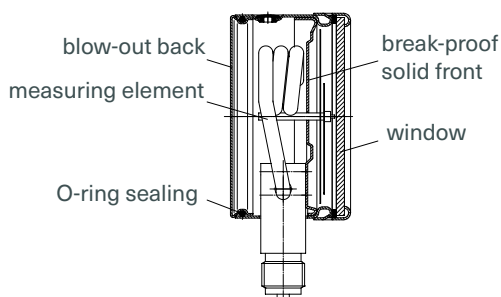


recommended panel cut out NCS 100 (4")  $\varnothing$  104  $\pm$  0.5 mm (4.09  $\pm$  0.02")

## Dimensional Data (mm / inch) and Weight (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 0.24	3 0.12	20 0.79	19 0.75	101 3.98	99 3.9	116 4.57	132 5.2	4.8 0.19	M4	34 1.34	G ½ B M20x1.5	½" NPT	93 3.66	92 3.62	87 3.43	84 3.31
160 6"	43 1.69	73 2.87	79 3.11	-	108 4.25	6 0.24	3 0.12	20 0.79	19 0.75	161 6.34	159 6.26	178 7.01	196 7.72	5.8 0.23	M5	-	G ½ B M20x1.5	½" NPT	-	-	115 4.53	114 4.49

## Schematic Drawing



s	s1	s5	SW	SW1	approx. weight <sup>2)</sup>	
					RSCh	RSChG
26 1.02	1 0.04	7 0.28	22 0.87	17 0.67	0.65 1.43	1.00 2.2
31.5 1.24	1.5 0.06	9 0.35	22 0.87	-	1.50 3.31	2.95 6.5

<sup>1)</sup> recommended panel cut out for NCS 100 (4")  $\varnothing$  104  $\pm$  0.5 mm (4.09  $\pm$  0.02")  
NCS 160 (6")  $\varnothing$  164  $\pm$  0.5 mm (6.46  $\pm$  0.02")

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

## Ordering Information

Basic Model	Bourdon Tube Safety Pressure Gauge with Bayonet Ring Case		RSCh
Case filling	without		without code letters
	glycerin		<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		- 1
	stainless steel		- 3
	Monel, 0 – 0.6 to 0 – 1 000 bar (0 – 10 to 0 – 15 000 psi), movement stainless steel, laminated safety glass, Bourdon tube Monel gas-shielded arc welding, ≤ 40 bar (≤ 600 psi) c-form, ≥ 60 bar (≤ 800 psi) helical form, bottom connection, optional r		- 6
Case configuration	case / connection	screwed welded (for RSCh 100 – 3, bottom connection)	without code letters <b>v</b>
	position of the connection	bottom connection lower back connection (for RSCh 100)	without code letters <b>r</b>
	mounting device	without back flange for surface mounting front flange for panel mounting	without code letters <b>Rh</b> <b>Fr</b>
Pressure ranges	-1 200 / 0 mbar	-30" Hg - 0 psi	
	-0.6 / 0 bar		
	-1 / 0 bar		
	-1 / +0.6 bar	-30" Hg - 15 psi	
	-1 / +1.5 bar	-30" Hg - 30 psi	
	-1 / +3 bar	-30" Hg - 60 psi	
	-1 / +5 bar	-30" Hg - 100 psi	
	-1 / +9 bar	-30" Hg - 160 psi	
	-1 / +15 bar	-30" Hg - 200 psi	
		-30" Hg - 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	<b>e.g. 0 – 6 bar</b>
	0 - 10 bar	0 - 160 psi	
	0 - 16 bar	0 - 200 psi	
		0 - 300 psi	
	0 - 25 bar	0 - 400 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 - 3 000 psi	
0 - 250 bar	0 - 4 000 psi		
	0 - 5 000 psi		
0 - 400 bar	0 - 6 000 psi		
0 - 600 bar	0 - 10 000 psi		
0 - 1 000 bar	0 - 15 000 psi		
0 - 1 600 bar for type - 3	0 - 20 000 psi		
Process connection	standard thread	G ½ B ½" NPT M 20x1.5	<b>G ½ B</b> <b>½" NPT</b> <b>M 20x1.5</b>
	options	G ¼ B <sup>1)3)</sup> ¼" NPT <sup>2)3)</sup>	<b>G ¼ B</b> <b>¼" NPT</b>
		high pressure connection, female M 16x1.5 thread (≥ 0 – 60 bar (≥ 0 – 800 psi)) ¼" – 18 UNF for ¼" tube, with 60° cone	<b>HP connection M 16x1.5</b> <b>HP connection ¼" – 18 UNF</b>
Options	see page 4		
Example	<b>RSCh 100 – 3 rFr, 0 – 6 bar, G ½ B</b>		

<sup>1)</sup> NCS 100 (4")  
<sup>2)</sup> NCS 100, 160 (4, 6")

<sup>3)</sup> type - 1 max. 0 – 600 bar (0 – 10 000 psi), types - 3 and - 6 max. 0 – 1 000 bar (0 – 15 000 psi)

## Ordering Information, Further Options

These options are to be ordered in written form. Please contact us to ensure compatibility when combining options.

<b>Adjustable pointer</b>	with aluminum mechanism
<b>Red mark</b>	on the dial
<b>Plastic clip</b>	red or green, external at the bayonet ring
<b>Stationary red pointer</b>	on the dial adjustable with removable ring
<b>Receiver gauge</b> 0.2 – 1 bar (3 – 15 psi) scale 0 – 100 %	linear or square
<b>Indication accuracy</b> acc. to ASME B 40.1 <sup>1)</sup>	Grade 2A ( $\pm 0.5$ %)
<b>Special adjustment</b>	reference points = odd values, e.g. 100 KN = 8.735 bar
<b>Window</b>	polycarbonate (PC)
<b>Movement</b>	stainless steel for type – 1 (standard for – 3 and – 6)
<b>Case ventilation no. 22</b>	for outdoor installation
<b>Case polished</b>	
<b>Bayonet ring polished</b>	
<b>Leak test of the measuring unit</b>	with helium leak detection up to $10^{-9}$ mbar l/s for types – 3 and – 6
<b>Wetted parts free of grease and oil</b> up to 0 – 600 bar (0 – 10000 psi)	adjustment $\leq 250$ bar (3000 psi) with dry air, $> 250$ bar (3000 psi) with distilled water dial marking: symbol crossed out oil can
<b>Oxygen version</b> up to 0 – 600 bar (0 – 10000 psi) <sup>2)</sup>	free of grease and oil as above, additional restrictor screw in the inlet port, orifice $\varnothing 0.3$ mm (0.01"), dial inscription: oxygen
<b>Silicone-free version</b>	
<b>Restrictor screw</b> in the pressure inlet port material: brass, stainless steel or Monel	orifice $\varnothing 0.8$ mm (0.03") orifice $\varnothing 0.6$ mm (0.02") (not for Monel) orifice $\varnothing 0.3$ mm (0.01") (not for Monel)
<b>Instrument tag</b>	stainless steel plate 12 x 55 mm (0.47 x 2.17"), wire mounting sticker on the case coverage
<b>Flame arrester Adapt FS</b>	variant 5 according to data sheet 11001

**Special Versions:** Please describe your requirements in cleartext!

<sup>1)</sup> for pressure ranges  $\leq 10000$  psi

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