

Bourdon Tube Pressure Gauge

Crimped-on Ring Case Stainless Steel

RChg
RChgG

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

Polished crimped-on ring, 1.4301 (304 stainless steel)

Case Protection Type (EN 60 529 / IEC 529)

IP 54,

IP 65 for model RChG 100 and

model RChG 160 (pressure ranges ≥ 2.5 bar and above)

Blow-out Device

Model RChg Blow-out plug in the back of the case, 1" (\varnothing 25mm)

Model RChgG 100 Blow-out plug in the back of the case, 1½" (\varnothing 40mm)

Model RChgG 160 Blow-out device at the top of the case coverage

Case Ventilation

Model RChgG 100 without ventilation, but with internal pressure compensation by pressure equalizing membrane.

Model RChgG 160 by blow-out device.

Case Filling

for model RChgG: 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, optional lower back connection (r) without, optional back flange for surface mounting (Rh) / front flange for panel mounting (Fr)* or u-clamp for panel mounting (BFr), see page 2

Mounting device:

Pressure Ranges (EN 837-1)

0-0.6 bar (0-10 psi) to 0-1,600 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 for type -3

Instrument glass for type -1

Movement

Stainless steel for type -3

Brass / German silver for type -1

* NCS 160 (6") upon request



Dial

Aluminum, black figures, white background

Pointer

Aluminum, black

Safety Category according to EN 837-1

NCS 100 (4"): S1 pressure gauges with blow-out device

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)
- Case parts 1.4404 (316 L stainless steel) upon request
- Increased case protection type, e. g. IP 65 without case filling, upon request
- Other case fillings upon request
- Models RChgG 100-3 and 160-3 for ambient temperatures down to -40 °C (-40 °F); Models RChg 100-3 and 160-3 for ambient temperatures down to -60 °C (-76 °F)
- 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: mounting upon request

Other accessory: see catalogue-heading 11



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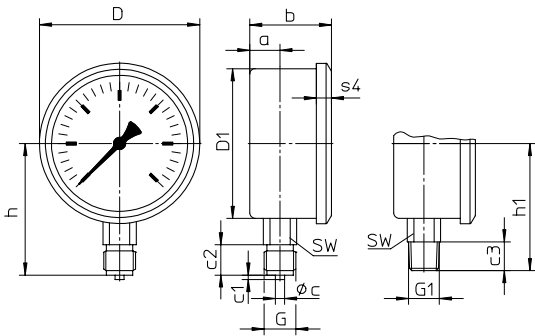
Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

Bottom connection

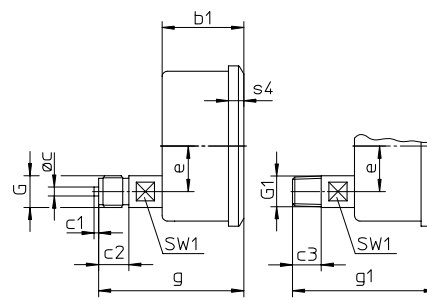
Lower back connection

No mounting device

(no additional code letter)

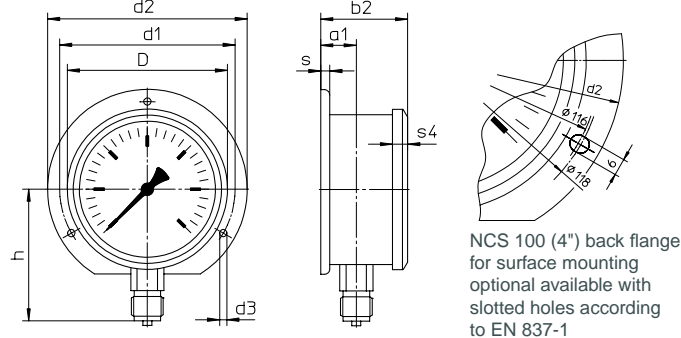


code letter: r

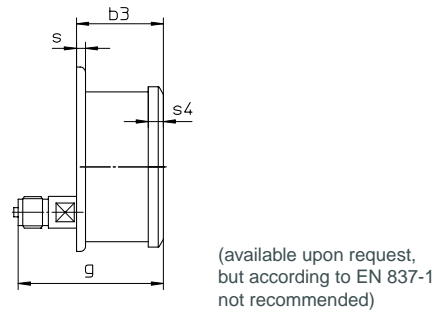


Back flange for surface mounting

code letters: Rh

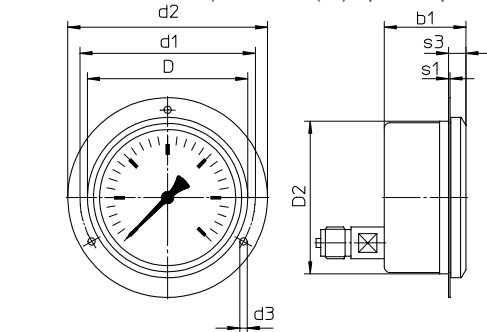


code letters: rRh



Front flange for panel mounting

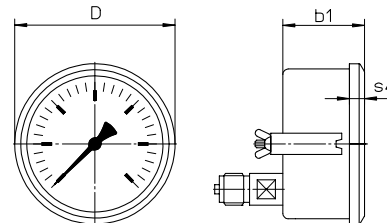
code letters: rFr (NCS 160 (6") upon request)



recommended panel cut out for NCS 100 (4") $\varnothing 102 \pm 0.5 \text{ mm (0.02")}$

U-clamp for panel mounting

code letters: rBFr



recommended panel cut out for NCS 100 (4") $\varnothing 102 \pm 0.5 \text{ mm (0.02")}$
NCS 160 (6") $\varnothing 162 \pm 0.5 \text{ mm (0.02")}$

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

NCS	a	a1	b	b1	b2	b3	c	c1	c2	c3	D	D1	D2	d1	d2	d3	e	G	G1	g	g1	h ⁻¹
100 4"	20 .79	23.5 .93	54 2.13	54 2.13	57.5 2.26	57.5 2.26	6 .24	3 .12	20 .79	19 .75	106 4.17	99 3.9	101 3.98	116 4.57	132 5.2	4.8 .19	30 1.18	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	96 3.78	95 3.74	87 3.43
160 6"	15 .59	18 .71	50 1.97	55 2.17	53 2.09	58 2.28	6 .24	3 .12	20 .79	19 .75	167 6.57	159 6.26	-	178 7.01	196 7.72	5.8 .23	30 1.18	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	97 3.82	96 3.78	115 4.53

Blow-out device

Blow-out device for model RChgG 160

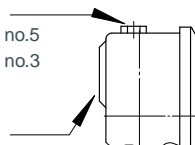
Pressure range $\leq 1.6 \text{ bar (23.20 psi)}$ blow-out device no.5
 $\geq 2.5 \text{ bar (30 psi)}$ blow-out device no.3

Blow-out plug

$\varnothing 1"$ (25 mm) for models RChg 100, 160

$\varnothing 1\frac{1}{2}"$ (40 mm) for model RChgG 100

with pressure equalizing membrane



NCS	h1 ^{±1}	s	s1	s3	s4	SW	SW1	approx. weight ⁽¹⁾ RChg RChgG	
100 4"	84 3.31	6 .24	1 .04	11.5 .45	10 .4	22 .87	17 .67	0.60 1.33	0.90 1.98
160 6"	114 4.49	6 .24	-	-	11 .43	22 .87	17 .67	1.10 2.43	1.70 3.75

⁽¹⁾ Information for versions without mounting device

Ordering Information with Standard Pressure Ranges, Options

Basic Model:		Bourdon Tube Pressure Gauge, Crimped-on Ring	RChg	
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	
Case Configuration:	case connection	screwed	without code letters	
		welded (only type -3)	v	
	position of the connection:	bottom connection	without code letters	
	lower back connection	r		
mounting device:	without		without code letters	
	back flange for surface mounting		Rh	
	front flange for panel mounting		Fr (NCS 160 upon request)	
	u-clamp for panel mounting		BFr	
Pressure Ranges:	-1,200 – 0 mbar	30" Hg vac. – 0 psi		
	-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	30" Hg vac. – 200 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 – 100 bar	0 – 1,500 psi		
	0 – 160 bar	0 – 2,000 psi		
	0 – 250 bar	0 – 3,000 psi		
0 – 400 bar	0 – 5,000 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" BSP)	G ½ B	
	options:	½" NPT	-1 and -6 max. 0-1,000 bar; -3 max. 0-1,600 bar	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 20 x 1.5		
	high pressure connection female thread (0-60 bar and above) for ¼" tube, with 60° cone			
		M 16 x 1.5	HD-Anschluss M 16 x 1,5	
		9/16" - 18 UNF	HD-Anschluss 9/16"-18 UNF	
Options:	see page 4			

Example: RChg 100-3 rBFr, 0-6 bar, G ½ B

Further Options regarding Ordering Information

Basic Model: Bourdon Tube Pressure Gauge, Crimped-on Ring		RChg
Model Code:		see page 3
Options:	<p>red mark on the dial</p> <p>plastic clip red or green external at the crimped-on ring</p> <p>receiver gauge 0.2-1 bar, scale 0-100% linear square</p> <p>indication accuracy grade 2A ($\pm 0.5\%$) according to ASME B 40.1¹⁾</p> <p>special adjustment (reference points = odd values, e. g. 100 KN = 8.735 bar)</p> <p>window laminated safety glass for type -1 acrylic glass (PMMA) polycarbonate (PC)</p> <p>movement stainless steel for type -1 (for -3 and -6 standard) movement silicone damped brass / polyacetal</p> <p>case ventilation no. 22 for outdoor installation</p> <p>case polished</p> <p>density examination with helium leak detection up to of the measuring unit 10^{-9} mbar l/s for types -3 and -6</p> <p>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</p> <p>oxygen version, up to 0-600 bar²⁾ (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 no version according to EN 837-1³⁾</p> <p>silicone-free version version: German Lloyd or Russian Sea Register NCS 100 dial marking: GL-symbol copy of the certificate upon request</p> <p>restrictor screw in orifice $\varnothing 0.8$ mm (0.03") pressure inlet port orifice $\varnothing 0.6$ mm (0.02") (not Monel) material: as process orifice $\varnothing 0.3$ mm (0.01") (not Monel) connection brass, stainless steel or Monel</p> <p>measuring point stainless steel-plate 12 mm x 55 mm (0.47" x 2.17 "), wire mounting marking or sticker on case coverage</p> <p>deflagration volume- protection Adapt FS version 5 according to DS 11001</p>	(order at the moment still as cleartext)

Special Versions: Please describe your requirements clearly

¹⁾ for pressure ranges $\leq 10,000$ psi ³⁾ EN 837-1 in connection with oxygen version requires safety category S₃

²⁾ for instruments without case filling

Technical changes, replacement of materials and errors excepted