

Bourdon Tube Pressure Gauges

Bayonet ring case stainless steel

RCh
RChG

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 RChG 100 and
model RChG 160 (measuring spans ≥ 2.5 bar (30 psi))

Blow-out Device

Model RCh	blow-out plug in the back of the case, $\varnothing 1''$ (25 mm)
Model RChG 100	blow-out plug in the back of the case, $\varnothing 40$ mm (1 1/2")
Model RChG 160	blow-out device at the top of the case coverage

Case Ventilation

Model RChG 100	without ventilation, but with internal pressure compensation via pressure equalising membrane
Model RChG 160	via blow-out device

Case Filling

Model RChG	glycerin
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Nominal Case Size

Model RCh	100, 160, 250 mm	(4, 6, 10")
Model RChG	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)
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
0 - 0.6 bar to 0 - 1 000 bar (0 - 10 psi to 0 - 15 000 psi)	for type - 1



Process Connection

G 1/2 B, 1/2" NPT or M20x1.5

Window

Laminated safety glass	for type - 3
Instrument glass	for type - 1

Movement

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

Dial

Aluminum white, scale black

Pointer

Aluminum black

Safety Category According to DIN EN 837-1

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

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)
- Models RChG 100 - 3v and 160 - 3v for ambient temperatures down to -40 °C (-40 °F) For ambient temperatures below -20 °C (-4 °F) we recommend: pressure gauges with crimped-on ring case models RChg or RChgG
- 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
- Stationary pointer or drag indicator with window made of polycarbonate or laminated safety glass (not for NCS 250)
- Case parts 316L (1.4404)
- Increased degree of protection, e.g. IP65 without case filling
- Other case fillings
- Versions for medium temperatures up to $+300$ °C ($+572$ °F), without case filling only (not for NCS 250)
- 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
Other accessory	see catalogue heading 11

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

Bottom Connection	Lower Back Connection
without mounting device	
without code letters 	code letter r

with back flange for surface mounting	
code letters Rh <p>for NCS 250 (10") with 3 brackets</p>	code letters rRh <p>available upon request, however not recommended according to DIN EN 837-1</p> <p>for NCS 250 (10") with 3 brackets</p>

with front flange for panel mounting	
code letters Fr <p>available upon request, however not recommended according to DIN EN 837-1</p> <p>model RChG welded brackets and removable front flange</p>	code letters rFr <p>recommended panel cut out for NCS 100 (4") Ø 104 ±0.5 mm (4.09 ±0.02") NCS 160 (6") Ø 164 ±0.5 mm (6.46 ±0.02") NCS 250 (10") Ø 254 ±0.5 mm (10 ±0.02")</p> <p>model RChG welded brackets and removable front flange</p>

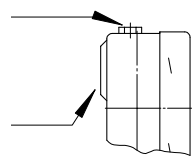
Dimensional Data (mm / inch) and Weight (kg / lb)

NCS	a	a1	b	b1	b2	b3	c	c1	c2	c3	D	D1	D2	d1	d2	d3	d5	e	G	G1	g	g1	h ^{±1}	h1 ^{±1}
100 4"	20 0.79	23.5 0.93	55 2.17	55 2.17	58 2.28	58 2.28	6 0.24	3 0.12	20 0.79	19 0.75	101 3.98	99 3.9	103 4.06	116 4.57	132 5.2	4.8 0.19	M4	30 1.18	G½B M20x1.5	½" NPT	97 3.82	96 3.78	87 3.43	84 3.31
160 6"	15 0.59	18 0.71	50 1.97	55 2.17	53 2.09	58 2.28	6 0.24	3 0.12	20 0.79	19 0.75	161 6.34	159 6.26	163 6.42	178 7.01	196 7.72	5.8 0.23	M5	30 1.18	G½B M20x1.5	½" NPT	92.5 3.64	91.5 3.6	115 4.53	114 4.49
250 10"	15.5 0.61	17.5 0.69	58 2.28	58 2.28	60 2.36	60 2.36	6 0.24	3 0.12	20 0.79	19 0.75	251 9.88	249 9.8	-	270 10.63	285 11.22	5.8 0.23	-	52 2.05	G½B M20x1.5	½" NPT	99 3.9	98 3.86	165 6.5	164 6.46

Blow-out Device

Blow-out device for model RChG 160
 pressure range ≤ 1.6 bar blow-out device no. 5
 ≥ 2.5 bar blow-out device no. 3

Blow-out plug
 Ø 1" (25 mm) for models RCh 100, 160, 250
 Ø 40 mm (1 ½") for model RChG 100
 with pressure equalising membrane



s	s1	s2	s3	s5	SW	SW1	approx. weight ¹⁾	
							RCh	RChG
6 0.24	1 0.04	2 0.08	6 0.24	7 0.28	22 0.87	17 0.67	0.60 1.32	0.95 2.09
6 0.24	1.5 0.06	2.5 0.1	6 0.24	8 0.31	22 0.87	17 0.67	1.10 2.43	1.95 4.3
2 0.08	-	2 0.08	8.5 0.33	-	22 0.87	17 0.67	2.10 4.63	-

¹⁾ data for version without mounting device

Ordering Information

Basic Model	Bourdon Tube Pressure Gauge with Bayonet Ring Case		RCh
Case filling	without glycerin fillable version		without code letters G (G)
Nominal case size	case Ø 100, 160, 250 mm (4, 6, 10")		100, 160, 250
Wetted material	copper alloy stainless steel 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 (not for NCS 250)		– 1 – 3 – 6
Case configuration	case / connection	screwed welded (for type – 3, not for NCS 250)	without code letters v
	position of the connection	bottom connection lower back connection	without code letters r
	mounting device	without back flange for surface mounting front flange for panel mounting	without code letters Rh Fr
Pressure ranges	–1 200 / 0 mbar –0.6 / 0 bar –1 / 0 bar –1 / +0.6 bar –1 / +1.5 bar –1 / +3 bar –1 / +5 bar –1 / +9 bar –1 / +15 bar –30" Hg – 0 psi –30" Hg – 15 psi –30" Hg – 30 psi –30" Hg – 60 psi –30" Hg – 100 psi –30" Hg – 160 psi –30" Hg – 200 psi –30" Hg – 300 psi 0 – 0.6 bar 0 – 1 bar 0 – 1.6 bar 0 – 2.5 bar 0 – 4 bar 0 – 6 bar 0 – 10 bar 0 – 16 bar 0 – 25 bar 0 – 40 bar 0 – 60 bar 0 – 100 bar 0 – 160 bar 0 – 250 bar 0 – 400 bar 0 – 600 bar 0 – 1 000 bar 0 – 1 600 bar for type – 3	–30" Hg – 0 psi –30" Hg – 15 psi –30" Hg – 30 psi –30" Hg – 60 psi –30" Hg – 100 psi –30" Hg – 160 psi –30" Hg – 200 psi –30" Hg – 300 psi 0 – 10 psi 0 – 15 psi 0 – 30 psi 0 – 60 psi 0 – 100 psi 0 – 160 psi 0 – 200 psi 0 – 300 psi 0 – 400 psi 0 – 600 psi 0 – 800 psi 0 – 1 000 psi 0 – 1 500 psi 0 – 2 000 psi 0 – 3 000 psi 0 – 4 000 psi 0 – 5 000 psi 0 – 6 000 psi 0 – 10 000 psi 0 – 15 000 psi 0 – 20 000 psi	e.g. 0 – 6 bar
Process connection	standard thread	G ½ B ½" NPT M 20x1.5	G ½ B ½" NPT M 20x1.5
	options	G ¼ B ¹⁾³⁾ ¼" NPT ²⁾³⁾ high pressure connection, female thread (≥ 0 – 60 bar (≥ 0 – 800 psi)) M 16x1.5 ¼" – 18 UNF for ¼" tube, with 60° cone	G ¼ B ¼" NPT HP connection M 16x1.5 HP connection ¼" – 18 UNF
Options	see page 4		
Example			RCh 100 – 3 rFr, 0 – 6 bar, G ½ B

¹⁾ NCS 100 (4")
²⁾ NCS 100, 160 (4, 6")

³⁾ 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.

Adjustable pointer	with aluminum mechanism
Red mark	on the dial
Plastic clip	red or green, external at the bayonet ring (not for NCS 250)
Stationary red pointer	on the dial adjustable with removable ring adjusting mechanism stainless steel with window made of polycarbonate, screwed adjustable externally removable key non-removable key
Min. / max. drag indicator measuring spans ≥ 2.5 bar (30 psi)	adjusting mechanism stainless steel with window made of polycarbonate, screwed adjustable externally removable key non-removable key
Receiver gauge 0.2 – 1 bar (3 – 15 psi) scale 0 – 100 %	linear or square
Indication accuracy acc. to ASME B 40.1 ¹⁾	Grade 2A (± 0.5 %)
Special adjustment	reference points = odd values, e.g. 100 KN = 8.735 bar
Window	laminated safety glass for type – 1 acrylic glass (PMMA) polycarbonate (PC)
Movement	stainless steel for type – 1 (standard for – 3 and – 6) silicone damped axle brass / polyacetal
Case ventilation no. 22	for outdoor installation
Case polished	
Bayonet ring polished	
Leak test 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 – 600 bar (0 – 10000 psi)	adjustment ≤ 250 bar (3000 psi) with dry air, > 250 bar (3000 psi) with distilled water dial marking: symbol crossed out oil can
Oxygen version up to 0 – 600 bar (0 – 10000 psi) ²⁾	free of grease and oil as above, additional restrictor screw in the inlet port, orifice $\varnothing 0.3$ mm (0.01"), dial inscription: oxygen no version according to DIN EN 837-1 ³⁾
Silicone-free version	
Restrictor screw 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)
Instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17"), wire mounting sticker on the case coverage
Flame arrester Adapt FS	variant 5 according to data sheet 11001

Special Versions Please describe your requirements in cleartext!

¹⁾ for pressure ranges ≤ 10000 psi

²⁾ for instruments without case filling

³⁾ DIN EN 837-1 in connection with oxygen version requires safety category S2 or S3