

Bourdon Tube Pressure Gauges

Crimped-on ring case stainless steel

RChg
RChgG

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

Degree of Protection (DIN EN 60 529/IEC 529)
IP54
IP65 for model RChgG 100, 125 and
model RChgG 160 (measuring spans ≥ 2.5 bar)

Blow-out Device
Model RChg blow-out plug in the back of the case, $\varnothing 1"$
Model RChgG 100, 125 blow-out plug in the back of the case, $\varnothing 40$ mm (1 1/2")
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 via pressure equalising membrane
Model RChgG 160 via blow-out device

Case Filling
Model RChgG: glycerin

Nominal Case Size
100, 125, 160 mm (4, 5, 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
1600 bar (20000 psi) NiFe-alloy
helical form
Type – 1: connection: brass
Bourdon tube: ≤ 40 bar (600 psi) bronze, c-form
 ≥ 60 bar (800 psi) soft-soldered
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)¹⁾
- u-clamp for panel mounting (BFr)

Pressure Ranges (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" 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

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 Options²⁾

- Version as refrigeration gauge with temperature scale (NCS 100) (see technical information sheet T01-000-015)
- Types – 3v for ambient temperatures down to -60 °C (-76 °F)
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock or other than vertical installation (90°) for unfilled models
- GOST version for Russia and Kazakhstan
- Sour gas resistant version according to NACE

Special Versions Upon Request

- Other process connections, e.g. high pressure connection with male thread (from 0 – 60 bar)
- 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)
- Increased degree of protection, e.g. IP65 without case filling
- Other case fillings
- Other position of connection

Accessory

Chemical seals: mounting upon request
Other accessory: see catalogue heading 11

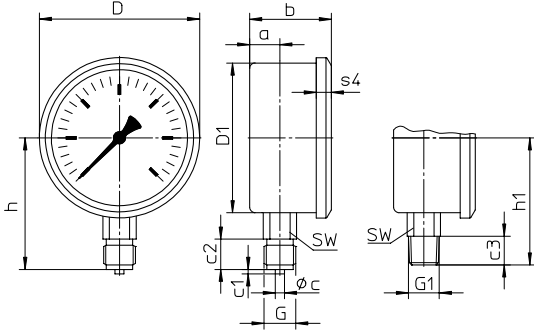
¹⁾ NCS 160 (6") upon request
²⁾ for NCS 125 (5") upon request

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

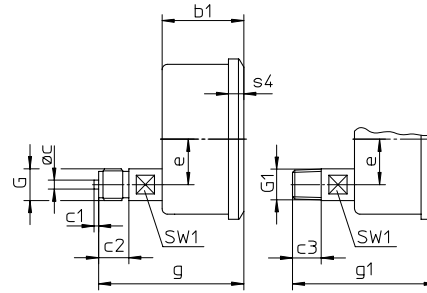
Bottom Connection Lower Back Connection

without mounting device

without code letters

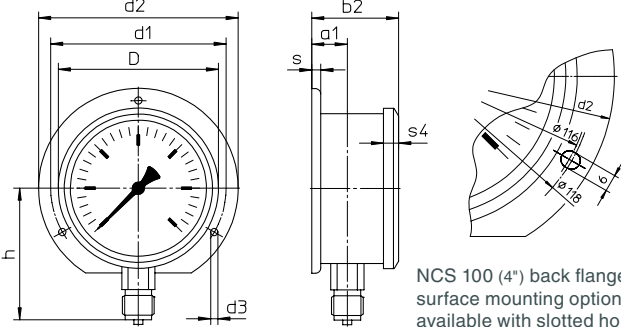


code letter r



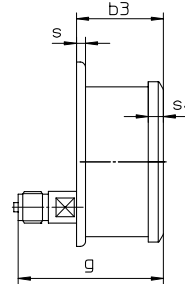
with back flange for surface mounting

code letters Rh



NCS 100 (4") back flange for surface mounting optionally available with slotted holes according to DIN EN 837-1

code letters rRh

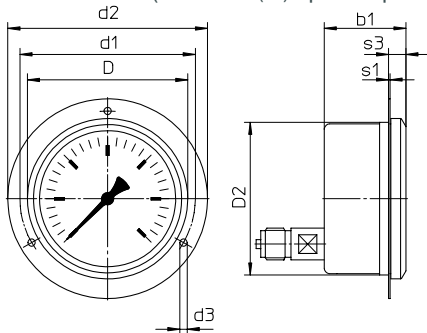


(available upon request, however not recommended according to DIN EN 837-1)

Lower Back Connection

with front flange for panel mounting

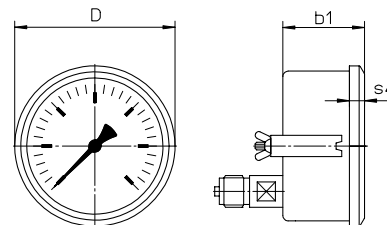
code letters rFr (NCS 160 (4") upon request)



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

with u-clamp for panel mounting

code letters rBFr



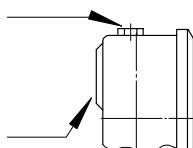
recommended panel cut out for NCS 100 (4") $\varnothing 102 \pm 0.5 \text{ mm}$ (4.02 \pm 0.02")
NCS 160 (6") $\varnothing 162 \pm 0.5 \text{ mm}$ (6.38 \pm 0.02")

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	e	G	G1	g	g1	h ^{±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	106 4.17	99 3.9	101 3.98	116 4.57	132 5.2	4.8 0.19	30 1.18	G 1/2 B M20x1.5	1/2" NPT	97 3.82	96 3.78	87 3.43
125 5"	20 0.79	-	55 2.17	55 2.17	-	-	6 0.24	3 0.12	20 0.79	19 0.75	136 5.35	125 4.92	-	-	-	-	30 1.18	G 1/2 B M20x1.5	1/2" NPT	97 3.82	96 3.78	98 3.86
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	167 6.57	159 6.26	-	178 7.01	196 7.72	5.8 0.23	30 1.18	G 1/2 B M20x1.5	1/2" NPT	97 3.82	96 3.78	115 4.53

Blow-out Device

Blow-out device for model RChgG 160
pressure range $\leq 1.6 \text{ bar}$ blow-out device no. 5
 $\geq 2.5 \text{ bar}$ blow-out device no. 3



Blow-out plug

$\varnothing 1"$ (25 mm)
 $\varnothing 40 \text{ mm}$ (1 1/2")

for models RChg 100, 125, 160
for models RChgG 100, 125
with pressure equalising membrane

NCS	h1 ^{±1}	s	s1	s3	s4	SW	SW1	approx. weight ¹⁾ RChg RChgG	
100 4"	84 3.31	6 0.24	1 0.04	11.5 0.45	10 0.39	22 0.87	17 0.67	0.60 1.32	0.90 1.98
125 5"	97 3.82	-	-	-	11 0.43	22 0.87	17 0.67	0.67 1.48	1.33 2.93
160 6"	114 4.49	6 0.24	-	-	11 0.43	22 0.87	17 0.67	1.10 2.43	1.80 3.97

¹⁾ data for version without mounting device

Ordering Information

Basic Model:		Bourdon Tube Pressure Gauge with Crimped-on Ring Case		RChg
Case filling:	without glycerin fillable version			without code letters G (G)
Nominal case size:	case Ø 100, 125, 160 mm (4, 5, 6")			100, 125, 160
Wetted material:	copper alloy stainless steel Monel, 0 – 0.6 bar to 0 – 1 000 bar, movement stainless steel, laminated safety glass, Bourdon tube Monel gas-shielded arc welding, ≤40 bar c-form, ≥60 bar helical form, bottom connection, optionally r			– 1 – 3 – 6
Case configuration:	case/connection	screwed welded (type – 3 only, not for NCS 125)		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 u-clamp for panel mounting		without code letters Rh (NCS 125 upon request) Fr (NCS 160 upon request) BFr
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 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	30" Hg vac. – 0 psi 30" Hg vac. – 15 psi 30" Hg vac. – 30 psi 30" Hg vac. – 60 psi 30" Hg vac. – 100 psi 30" Hg vac. – 160 psi 30" Hg vac. – 200 psi 30" Hg vac. – 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 options	G ½B – 1 and – 6 max. 0 – 1 000 bar ½" NPT – 3 max. 0 – 1 600 bar M20x1.5 G ¼B – 1 max. 0 – 600 bar ¼" NPT – 3 and – 6 max. 0 – 1 000 bar M12x1.5 high pressure connection female thread (0 – 60 bar onwards) for ¼" tube, with 60° cone	M 16x1.5 ¼" – 18 UNF	G ½B ½" NPT M20x1.5 G ¼B ¼" NPT M12x1.5 HP connection M16x1.5 HP connection ¼" – 18 UNF
Options:	see page 4			
Example:				RChg 100 – 3 rBFr, 0 – 6 bar, G ½B

Ordering Information, Further Options

Basic Model: Bourdon Tube Pressure Gauge with Crimped-on Ring Case		RChg
Model code:		see page 3
Options: (for NCS 125 upon request)	red mark	on the dial
	plastic clip	red or green, external at the crimped-on ring
	receiver gauge 0.2 – 1 bar (3 – 15 psi), scale 0 – 100 %	linear square
	indication accuracy grade 2A (± 0.5 %) according to ASME B 40.1 ¹⁾	
	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	
	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 – 10 000 psi)	adjustment ≤ 250 bar (3 000 psi) with dry air, ≥ 400 bar (5 000 psi) with distilled water, dial marking: symbol crossed out oil can
	oxygen version up to 0 – 600 bar (0 – 10 000 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	
	version: DNV GL or Russian Sea Register NCS 100	dial marking: symbol copy of the certificate upon request
	restrictor screw in the pressure inlet port, material: like process connection 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 $\leq 10\,000$ psi

²⁾ for instruments without case filling

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