

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 onwards)

Blow-out Device
Model RChg blow-out plug at the back of the case, $\varnothing 1"$
Model RChgG 100, 125 blow-out plug at 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 equalizing membrane
Model RChgG 160 via blow-out device

Case Filling
For 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 (20,000 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 – 1600 bar (0 – 10 psi to 0 – 20,000 psi) for type – 3
0 – 0.6 bar to 0 – 1000 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

Special Versions and Further Options²⁾

- Other process connections upon request, e.g. high pressure connection with male thread (from 0 – 60 bar onwards)
- Other pressure ranges and/or special scales, e.g. dual scale bar/psi, coloured fields or ranges, dial inscriptions, negative scale
- Version as refrigeration gauge with temperature scale (NCS 100)
- Case parts 316L (1.4404) upon request
- Increased degree of protection, e.g. IP65 without case filling, upon request
- Other case fillings upon request
- Models – 3v for ambient temperatures to -60 °C (-76 °F)
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock (others upon request) or other than vertical installation (90°):
- for models without case filling and filled models with pressure equalizing membrane
- for filled models without pressure equalizing membrane upon request
- GOST version for Russia, Ukraine, Kazakhstan, Belarus
- Sour gas resistant version according to NACE

Accessories

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

¹⁾ NCS 160 (6") upon request

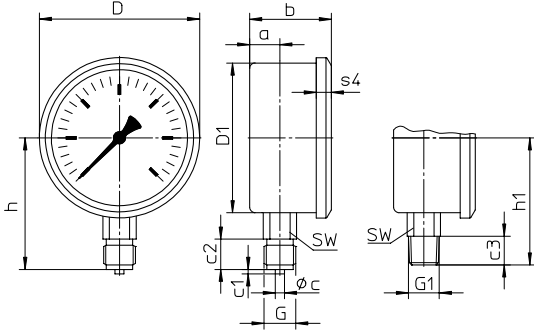
²⁾ special versions and options for NCS 125 (5") upon request

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

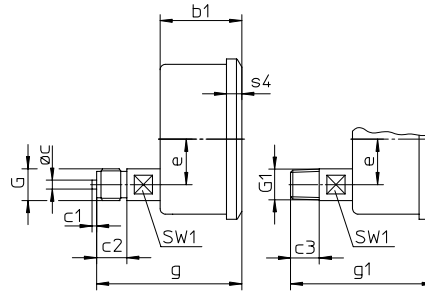
Bottom Connection Lower Back Connection

without mounting device

(without code letters)

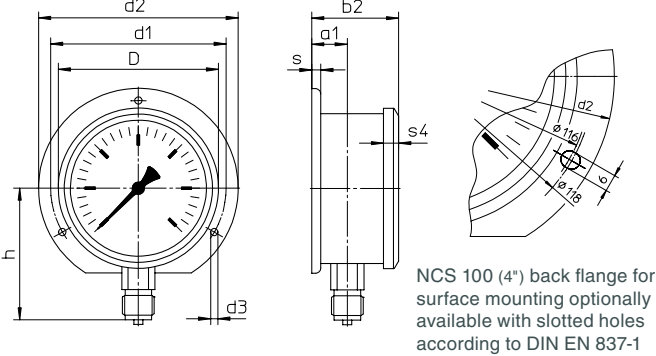


code letter: r

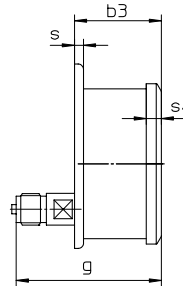


with back flange for surface mounting

code letters: **Rh**



code letters: **rRh**

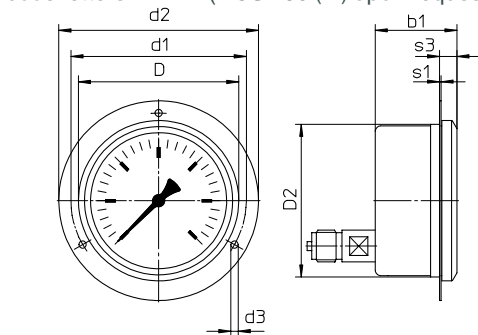


(available upon request, however not recommended according to DIN EN 837-1)

Lower Back Connection

with front flange for panel mounting

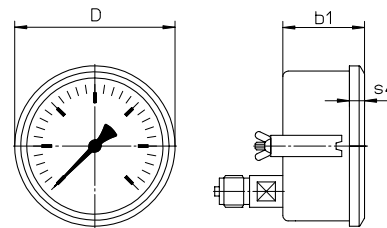
code letters: **rFr** (NCS 160 (4") upon request)



recommended panel cut out for NCS 100 (4") $\varnothing 102 \pm 0.5$ mm (4.02 \pm 0.02")

with u-clamp for panel mounting

code letters: **rBFr**



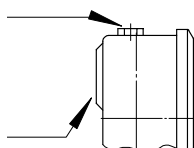
recommended panel cut out for NCS 100 (4") $\varnothing 102 \pm 0.5$ mm (4.02 \pm 0.02")
NCS 160 (6") $\varnothing 162 \pm 0.5$ mm (6.38 \pm 0.02")

Dimensional Data (mm/inch) 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 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 ½B M20x1.5	½" 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 ½B M20x1.5	½" 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 ½B M20x1.5	½" NPT	97 3.82	96 3.78	115 4.53

Blow-out Device

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



Blow-out plug
 $\varnothing 1"$
 $\varnothing 40$ mm (1 ½")

for models RChg 100, 125, 160
for models RChgG 100, 125
with pressure equalizing 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

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 – 1000 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 (only type – 3, 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:	–1200 / 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 – 1000 bar 0 – 1600 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 – 1000 bar ½" NPT – 3 max. 0 – 1600 bar M20x1.5 G ¼B – 1 max. 0 – 600 bar ¼" NPT – 3 and – 6 max. 0 – 1000 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 PVN ENGINEERING CO.,LTD. / www.pvn.co.th

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)	<table border="0"> <tr> <td>red mark</td> <td>on the dial</td> </tr> <tr> <td>plastic clip</td> <td>red or green, external at the crimped-on ring</td> </tr> <tr> <td>receiver gauge 0.2 – 1 bar (3 – 15 psi), scale 0 – 100 %</td> <td>linear square</td> </tr> <tr> <td colspan="2">indication accuracy grade 2A ($\pm 0.5\%$) according to ASME B 40.1¹⁾</td> </tr> <tr> <td colspan="2">special adjustment (reference points = odd values, e.g. 100 KN = 8.735 bar)</td> </tr> <tr> <td>window</td> <td>laminated safety glass for type – 1 acrylic glass (PMMA) polycarbonate (PC)</td> </tr> <tr> <td>movement</td> <td>stainless steel for type – 1 (for – 3 and – 6 standard) silicone damped brass/polyacetal</td> </tr> <tr> <td colspan="2">case ventilation no. 22 for outdoor installation</td> </tr> <tr> <td colspan="2">case polished</td> </tr> <tr> <td>leak test of the measuring unit</td> <td>with helium leak detection up to 10^{-9} mbar l/s for types – 3 and – 6</td> </tr> <tr> <td>wetted parts free of grease and oil up to 0 – 600 bar (0 – 10,000 psi)</td> <td>adjustment ≤ 250 bar (3,000 psi) with dry air, ≥ 400 bar (5,000 psi) with distilled water, dial marking: symbol crossed out oil can</td> </tr> <tr> <td>oxygen version up to 0 – 600 bar (0 – 10,000 psi)²⁾</td> <td>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 837-1³⁾</td> </tr> <tr> <td colspan="2">silicone-free version</td> </tr> <tr> <td>version: DNV GL or Russian Sea Register NCS 100</td> <td>dial marking: symbol copy of the certificate upon request</td> </tr> <tr> <td>restrictor screw in the pressure inlet port, material: like process connection brass, stainless steel or Monel</td> <td>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)</td> </tr> <tr> <td>instrument tag</td> <td>stainless steel plate 12 x 55 mm (0.47 x 2.17"), wire mounting sticker on the case coverage</td> </tr> <tr> <td>flame arrester Adapt FS</td> <td>variant 5 according to data sheet 11001</td> </tr> </table>	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 ($\pm 0.5\%$) 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 (for – 3 and – 6 standard) silicone damped 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
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 ($\pm 0.5\%$) 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 (for – 3 and – 6 standard) silicone damped 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