

# 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  $\geq 2.5$  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  
 $\leq 40$  bar (600 psi) c-form  
 $\geq 60$  bar (800 psi) helical form  
1600 bar (20,000 psi) NiFe-alloy  
helical form  
Type – 1: connection: brass  
Bourdon tube:  $\leq 40$  bar (600 psi) bronze, c-form  
 $\geq 60$  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)<sup>1)</sup>  
- 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

<sup>1)</sup> NCS 160 (6") upon request

<sup>2)</sup> special versions and options for NCS 125 (5") upon request



**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 Options<sup>2)</sup>

- 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



Sales and Export South, West, North  
**ARMATURENBau GmbH**  
Manometerstraße 5 • D – 46487 Wesel-Ginderich  
Tel.: +49 2803 9130 – 0 • Fax: +49 2803 1035  
www.armaturenba.com • mail@armaturenba.com

Subsidiary Company, Sales and Export East  
**MANOTHERM Beierfeld GmbH**  
Am Gewerbepark 9 • D – 08344 Grünhain-Beierfeld  
Tel.: +49 3774 58 – 0 • Fax: +49 3774 58 – 545  
www.manotherm.com • mail@manotherm.com

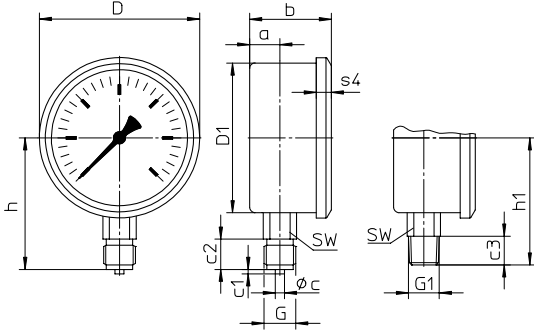
**1202**  
08/17

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

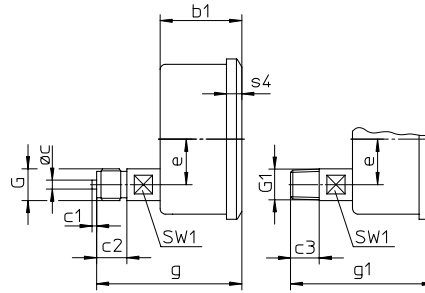
## Bottom Connection Lower Back Connection

without mounting device

(without code letters)

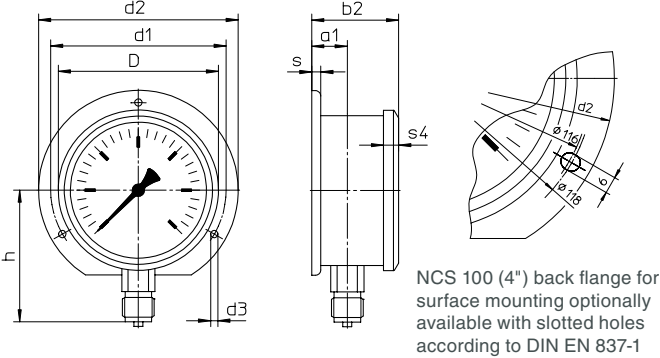


code letter: r

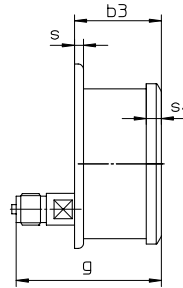


## with back flange for surface mounting

code letters: **Rh**



code letters: **rRh**

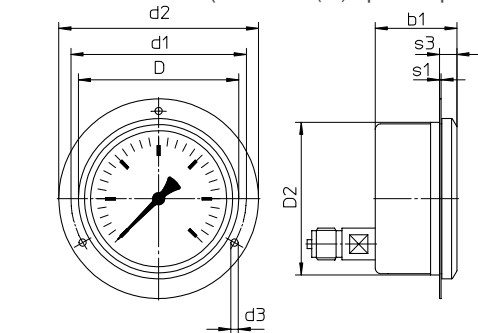


(available upon request, however not recommended according to DIN EN 837-1)

## Lower Back Connection

with front flange for panel mounting

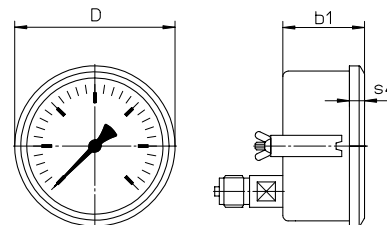
code letters: **rFr** (NCS 160 (4") upon request)



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

with u-clamp for panel mounting

code letters: **rBFr**



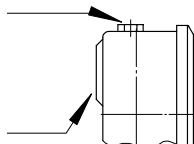
recommended panel cut out for NCS 100 (4")  $\varnothing 102 \pm 0.5 \text{ mm}$  (4.02  $\pm$  0.02")  
NCS 160 (6")  $\varnothing 162 \pm 0.5 \text{ mm}$  (6.38  $\pm$  0.02")

### Dimensional Data (mm/inch) and 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 <sup>±1</sup>
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  $\leq 1.6 \text{ bar}$  blow-out device no.5  
 $\geq 2.5 \text{ bar}$  blow-out device no.3



Blow-out plug

$\varnothing 1"$   
 $\varnothing 40 \text{ mm}$  (1 ½")

for models RChg 100, 160, 250  
for models RChgG 100, 125  
with pressure equalizing membrane

NCS	h1 <sup>±1</sup>	s	s1	s3	s4	SW	SW1	approx. weight <sup>1)</sup> 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

<sup>1)</sup> data for version without mounting device

## Ordering Information with Standard Pressure Ranges, Options

Basic Model:		Bourdon Tube Pressure Gauge with Crimped-on Ring Case		RChg
<b>Case filling:</b>	without glycerin fillable version			without code letters <b>G</b> <b>(G)</b>
<b>Nominal case size:</b>	case Ø 100, 125, 160 mm (4, 5, 6")			<b>100, 125, 160</b>
<b>Wetted parts:</b>	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
<b>Case configuration:</b>	case/connection	screwed welded (only type – 3, not for NCS 125)		without code letters <b>v</b>
	position of the connection	bottom connection lower back connection		without code letters <b>r</b>
	mounting device	without back flange for surface mounting front flange for panel mounting u-clamp for panel mounting		without code letters <b>Rh</b> (NCS 125 upon request) <b>Fr</b> (NCS 160 upon request) <b>BFr</b>
<b>Pressure ranges:</b>	–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
<b>Process connection:</b>	standard thread options	G ½B – 1 and – 6 ½" NPT – 3 M20x1.5 G ¼B – 1 ¼" NPT – 3 and – 6 M12x1.5 high pressure connection female thread (0 – 60 bar onwards) for ¼" tube, with 60° cone	max. 0 – 1000 bar max. 0 – 1600 bar max. 0 – 600 bar max. 0 – 1000 bar M16x1.5 ¾" – 18 UNF	G ½B ½" NPT M20x1.5 G ¼B ¼" NPT M12x1.5 HP connection M16x1.5 HP connection ¾" – 18 UNF
<b>Options:</b>	see page 4			
<b>Example:</b>				<b>RChg 100 – 3 rBFr, 0 – 6 bar, G ½B</b>

