

Bourdon Tube Test Gauges

Bayonet ring case stainless steel

RFCh
RFChG

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 2000.

Accuracy (DIN EN 837-1)
Class 0.6

Case
With bayonet ring, stainless steel 304 (1.4301)

Degree of Protection (DIN EN 60529 / IEC 60529)
IP54
IP65 for model RFChG 100

Blow-out Device
Model RFCh blow-out plug in the back of the case, Ø 1" (25 mm)
Model RFChG 100 blow-out plug in the back of the case, Ø 40 mm (1 1/2")
Model RFChG 160 blow-out device at the top of the case coverage

Case Ventilation
Model RFChG 160 via blow-out device

Case Filling
Model RFChG glycerin

Nominal Case Size
Model RFCh 100, 160, 250 mm (4, 6, 10")
Model RFChG 100, 160 mm (4, 6")

Wetted Parts
Type – 1 connection brass
Bourdon tube ≤ 40 bar (600 psi) bronze, c-form soft-soldered
60 bar (800 psi) CuBe, c-form silver brazed
≥ 100 bar (1500 psi) stainless steel 316L (1.4404) helical form silver brazed
600 bar (10000 psi) NiFe-alloy helical form silver brazed

Type – 3 connection stainless steel 316L (1.4404)
Bourdon tube stainless steel 316L (1.4404) gas-shielded arc welding
< 100 bar (1500 psi) c-form
≥ 100 bar (1500 psi) helical form
≥ 600 bar (10000 psi) NiFe-alloy helical form

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)
- u-clamp for panel mounting (BFr)



Pressure Ranges (DIN EN 837-1)
RFCh 0 – 0.6 to 0 – 600 bar (0 – 10 to 0 – 10000 psi) for type – 1
0 – 0.6 to 0 – 1600 bar (0 – 10 to 0 – 20000 psi) for type – 3

RFChG 0 – 2.5 to 0 – 600 bar (0 – 30 to 0 – 10000 psi) for type – 1
0 – 2.5 to 0 – 1600 bar (0 – 30 to 0 – 20000 psi) for type – 3

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

Window
Instrument glass for type – 1
Laminated safety glass for type – 3

Movement
Brass / German silver, low friction

Dial
Aluminum white, scale black

Pointer
Knife edge pointer, aluminum black

Safety Category According to DIN EN 837-1
S1 pressure gauges with blow-out device

Ordering Information, Standard Pressure Ranges, Options

See pages 3 and 4

Further Options

- Bleeding port at the Bourdon tube tip (unfilled instruments only)
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock or other than vertical installation (90°) for unfilled models

Special Versions Upon Request

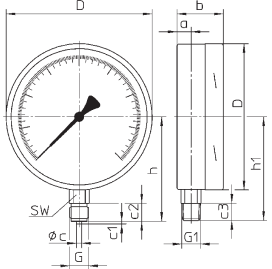
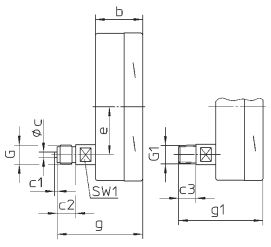
- Other process connections
- Other pressure ranges and / or special scales, e.g. dual scale bar / psi, coloured fields or ranges, dial inscriptions, negative scale
- Case parts 316L (1.4404)
- Certificates and approvals, e.g. GOST (see also website)
- Sealable

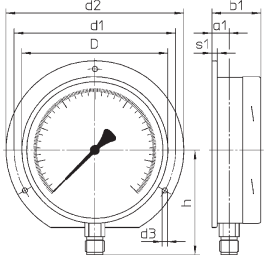
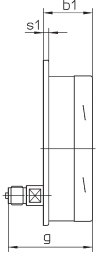
Accessories

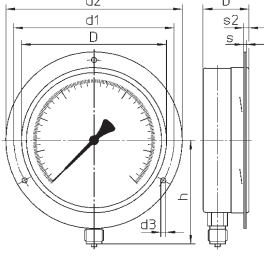
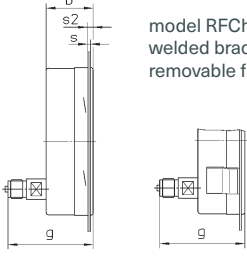
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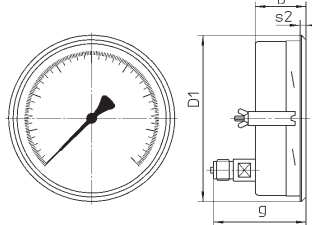
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Case Configurations, Code Letters, Dimensional Data and Weight, Blow-out Device

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

with back flange for surface mounting	
code letters Rh 	code letters rRh 
for NCS 250 (10") with 3 brackets NCS 100 (4") back flange for surface mounting optionally available with slotted holes according to DIN EN 837-1	for NCS 250 (10") with 3 brackets available upon request, however not recommended according to DIN EN 837-1

with front flange for panel mounting	
code letters Fr 	code letters rFr 
model RFChG welded brackets and removable front flange	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") model RFChG welded brackets and removable front flange
available upon request, however not recommended according to DIN EN 837-1	

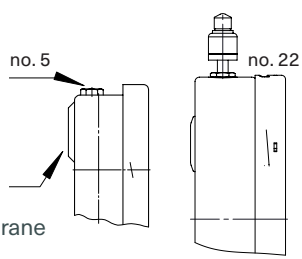
with u-clamp for panel mounting	
code letters rBFr 	RFCh 160 (not available with case filling)

Dimensional Data (mm / inch) and Weight (kg / lb)																				
NCS	a	a1	b	b1	c	c1	c2	c3	D	D1	d1	d2	d3	e	g	g1	G	G1	h±1	h1±1
100 4"	20 0.79	23.5 0.93	55 2.17	55 2.17	6 0.24	3 0.12	20 0.79	19 0.75	101 3.98	99 3.9	116 4.57	132 5.2	4.8 0.19	30 1.18	97 3.82	96 3.78	G½B M20x1.5	½" NPT	87 3.43	84 3.31
160 6"	15.5 0.61	19 0.75	51 2.01	54 2.13	6 0.24	3 0.12	20 0.79	19 0.75	161 6.34	167 6.57	178 7.01	196 7.72	5.8 0.23	52 2.05	92.5 3.64	91.5 3.6	G½B M20x1.5	½" NPT	115 4.53	114 4.49
250 10"	15.5 0.61	17.5 0.69	58 2.28	60 2.36	6 0.24	3 0.12	20 0.79	19 0.75	251 9.88	-	270 10.63	285 11.22	5.8 0.23	52 2.05	97 3.82	96 3.78	G½B M20x1.5	½" NPT	165 6.5	164 6.46

Blow-out Device

Blow-out device for model RFChG 160
IP54 no. 5
IP65 no. 22 (optional)

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



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

¹⁾ data for version without mounting device

Ordering Information

Basic Model		Bourdon Tube Test Gauge with Bayonet Ring Case		RFCh
Case filling	without			without code letters
	glycerin			G
Nominal case size	case Ø 100, 160, 250 mm (4, 6, 10")			100, 160, 250
Wetted material	copper alloy			- 1
	stainless steel			- 3
Case configuration	case / connection	screwed		without code letters
	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		
u-clamp for panel mounting		BFr		
Pressure ranges	-0.6 / 0 bar			
	-1 / 0 bar	-30" Hg	0 psi	
	-1 / +0.6 bar	-30" Hg	15 psi	
	-1 / +1.5 bar	-30" Hg	30 psi	
	-1 / +3 bar	-30" Hg	60 psi	
	-1 / +5 bar	-30" Hg	100 psi	
	-1 / +9 bar	-30" Hg	160 psi	
	-1 / +15 bar	-30" Hg	200 psi	
		-30" Hg	300 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	300 psi	
	0 - 25 bar	0	400 psi	
	0 - 40 bar	0	600 psi	
	0 - 60 bar	0	800 psi	
		0	1000 psi	
	0 - 100 bar	0	1500 psi	
	0 - 160 bar	0	2000 psi	
		0	3000 psi	
	0 - 250 bar	0	4000 psi	
		0	5000 psi	
	0 - 400 bar	0	6000 psi	
	0 - 600 bar	0	10000 psi	
	0 - 1000 bar	for type - 3	0	15000 psi
0 - 1600 bar	for type - 3	0	20000 psi	
Process connection	standard thread	G ½ B		G ½ B
		½" NPT		½" NPT
		M20x1.5		M20x1.5
	options	G ¼ B ¹⁾³⁾		G ¼ B
		¼" NPT ²⁾³⁾		¼" NPT
Options	see page 4			
Example				RFCh 100 - 1, 0 - 6 bar, G ½ B

¹⁾ NCS 100 (4")

²⁾ NCS 100, 160 (4, 6")

³⁾ type - 1 max. 0 - 600 bar (0 - 10000 psi), type - 3 max. 0 - 1000 bar (0 - 15000 psi)

Ordering Information, Further Options

These options are to be ordered in written form. Please contact us to ensure compatibility when combining options.

Red mark	on the dial
Plastic clip	red or green, external at the bayonet ring (NCS 100, 160)
Stationary red pointer	on the dial adjustable with removable ring adjusting mechanism stainless steel (NCS 160) with window made of polycarbonate, screwed adjustable externally removable key non-removable key
Min. / max. drag indicator measuring spans ≥ 2.5 bar (30 psi) (NCS 160)	adjusting mechanism stainless steel with window made of polycarbonate, screwed adjustable externally removable key non-removable key
Mirror scale	for parallax-free reading (from NCS 160)
Test gauge	Grade 3A (indication accuracy ± 0.25 %), mirror scale
Indication accuracy	cl. 0.25 according to DIN EN 837-1 mirror scale for model RFCh 250 – 1
Zero adjustment	via turnable dial ± 5 scale graduation marks adjusting mechanism on the front side for model RFCh (NCS 160, 250)
Special adjustment	for liquid media (pressure ranges up to 0 – 25 bar (0 – 400 psi)) for gaseous media (pressure ranges from 0 – 40 to 0 – 400 bar (0 – 600 to 0 – 6000 psi))
Movement	stainless steel with jewel bearing
Case ventilation no. 22	for outdoor installation (NCS 100, 160), IP65
Case polished	
Bayonet ring polished	
Leak test of the measuring unit	with helium leak detection up to 10^{-9} mbar l/s for type – 3
Wetted parts free of grease and oil up to 0 – 400 bar (0 – 6000 psi)	adjustment ≤ 40 bar (600 psi) with dry air, ≥ 60 bar (800 psi) with distilled water dial marking: symbol crossed out oil can
Oxygen version up to 0 – 400 bar (0 – 6000 psi) ¹⁾	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 ²⁾
Silicone-free version	
Restrictor screw in the pressure inlet port material: brass or stainless steel	orifice $\varnothing 0.8$ mm (0.03") orifice $\varnothing 0.6$ mm (0.02") orifice $\varnothing 0.3$ mm (0.01")
Instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17"), wire mounting sticker on the case
Flame arrester Adapt FS	variant 5 according to data sheet 11001

Special Versions: Please describe your requirements in cleartext!

¹⁾ for instruments without case filling

²⁾ DIN EN 837-1 in connection with oxygen version requires safety category S2 or S3