

Bourdon Tube Test Gauges



RFSch 160
RFSchG 160

Safety version

Stainless steel case with bayonet ring

Application

Testing of pressure gauges; pressure measurement with high accuracy (laboratories, material testing machines, etc.) in environments that require sealed, chemically resistant housing (e.g. outdoor installations, wet operation, aggressive atmosphere) and an increased protection for the user is essential.

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 tight bayonet ring, stainless steel 304 (1.4301)

Degree of Protection (DIN EN 60 529/IEC 529)

IP54 for model RFSch

IP65 for model RFSchG

Blow-out Device

Blow-out back; when pressure increases in the case, the entire case back separates, allowing full relief

Case Ventilation

Model RFSchG without ventilation, but with internal pressure compensation via pressure equalising membrane

Case Filling

Model RFSchG: glycerin

Nominal Case Size

160 mm (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 (1 500 psi)	stainless steel 316L (1.4404) helical form silver brazed
	600 bar (10 000 psi)	NiFe-alloy helical form

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
	≥600 bar (10 000 psi) NiFe-alloy helical form

Case Configuration

Connection:	screwed
Position of the connection:	bottom connection
Mounting device:	- without - back flange for surface mounting (Rh) - front flange for panel mounting (Fr)



Pressure Ranges (DIN EN 837-1)

RFSch	0 – 0.6 to 0 – 600 bar (0 – 10 to 0 – 10 000 psi) for type – 1
	0 – 0.6 to 0 – 1600 bar (0 – 10 to 0 – 20 000 psi) for type – 3
RFSchG	0 – 2.5 to 0 – 600 bar (0 – 30 to 0 – 10 000 psi) for type – 1
	0 – 2.5 to 0 – 1600 bar (0 – 30 to 0 – 20 000 psi) for type – 3

Process Connection

G ½ B (½" BSP)

Window

Laminated safety glass

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

S3, safety pressure gauge with break-proof solid front and blow-out back

proved: pressure ranges 0 – 0.6 to 0 – 1000 bar
(0 – 10 to 0 – 15 000 psi)

Marking , see sectional drawing on page 2

Ordering Information, Standard Pressure Ranges, Options

See pages 3 and 4

Further Options

- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock or other than vertical installation (90°) for unfilled instruments
- GOST version for Russia and Kazakhstan

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)
- Increased degree of protection, e.g. IP65 without case filling
- Other case fillings
- Other position of connection

Accessories

Upon request

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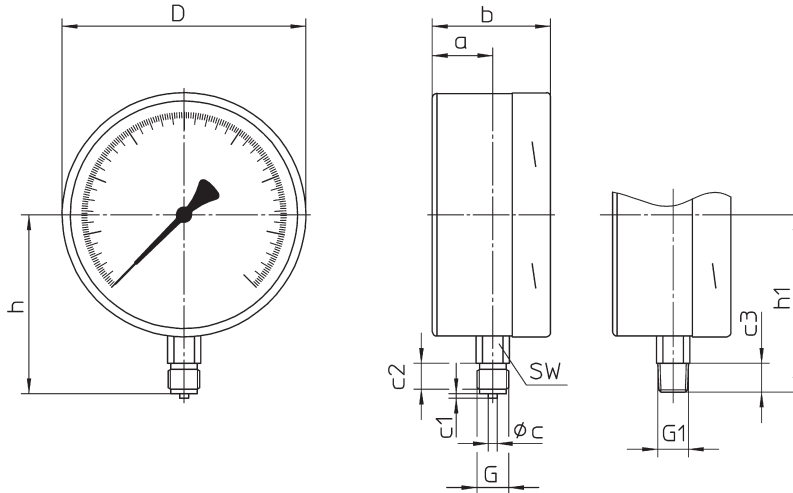
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Case Configurations, Code Letters, Dimensional Data and Weight

Bottom Connection

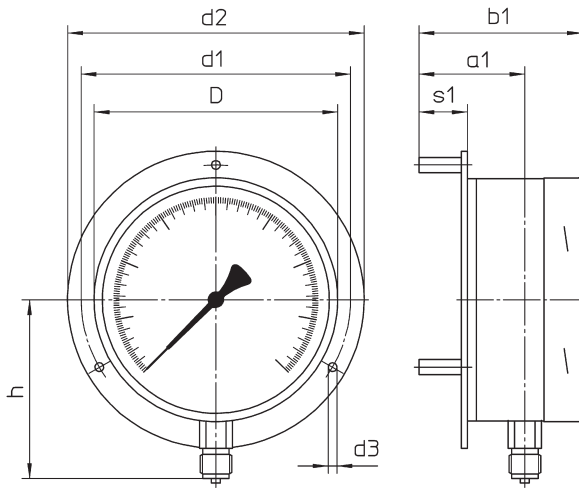
without mounting device

without code letters



with back flange for surface mounting

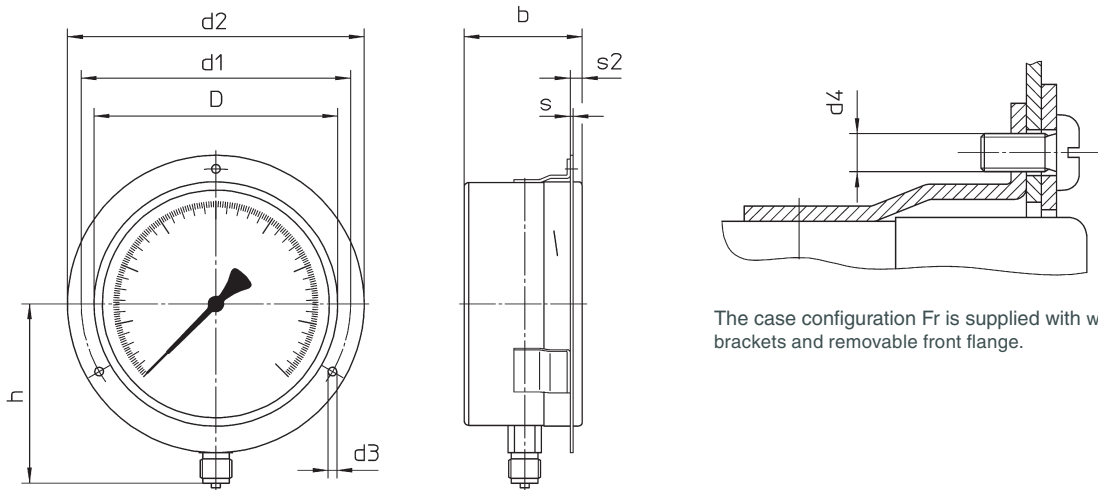
code letters **Rh**



Version Rh including 3 separate mounting spacers.

with front flange for panel mounting

code letters **Fr**



The case configuration Fr is supplied with welded brackets and removable front flange.

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

NCS	a	a1	b	b1	c	c1	c2	c3	D	d1	d2	d3	d4	G	G1	h ^{±1}	h1 ^{±1}	s	s1	s2	SW	approx. weight	
																						RFSch	RFSchG
160	40	70	78	108	6	3	20	19	161	178	196	5.8	M5	G 1/2 B	1/2" NPT	115	114	1.5	32	8	22	1.50	2.95
6"	1.57	2.76	3.07	4.25	0.24	0.12	0.79	0.75	6.34	7.01	7.72	0.23				4.53	4.49	0.06	1.26	0.31	0.87	3.31	6.5

Ordering Information

Basic Model:		Bourdon Tube Test Gauge with Bayonet Ring Case			RFSch	
Case filling:	without				without code letters	
	glycerin				G	
	fillable version				(G)	
Nominal case size:	case Ø 160 mm (6")			160		
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		
	mounting device	without		without code letters		
		back flange for surface mounting		Rh		
		front flange for panel mounting		Fr		
Pressure ranges:	-1200 / 0 mbar	-30" Hg	-	0 psi		
	-0.6 / 0 bar					
	-1 / 0 bar					
	-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	-	1 000 psi	
	0 - 100 bar		0	-	1 500 psi	
	0 - 160 bar		0	-	2 000 psi	
			0	-	3 000 psi	
	0 - 250 bar		0	-	4 000 psi	
			0	-	5 000 psi	
	0 - 400 bar		0	-	6 000 psi	
	0 - 600 bar		0	-	10 000 psi	
0 - 1000 bar	for type - 3	0	-	15 000 psi		
0 - 1600 bar	for type - 3	0	-	20 000 psi		
Process connection:	standard thread	G ½B	- 1	max. 0 - 600 bar	G ½B	
	options	½" NPT	- 3	max. 0 - 1600 bar	½" NPT	
		M20x1.5			M 20x1.5	
		G ¼B	- 1	max. 0 - 600 bar	G ¼B	
		¼" NPT	- 3	max. 0 - 1000 bar	¼" NPT	
		M 12x1.5		M 12x1.5		
Options:	see page 4					
Example:					RFSch 100 - 1, 0 - 6 bar, G ½B	

Ordering Information, Further Options

Basic Model: Bourdon Tube Test Gauge with Bayonet Ring Case	RFSch
Model code:	see page 3
Options:	
red mark	on the dial
plastic clip	red or green, external at the bayonet ring
stationary red pointer	on the dial adjustable with removable ring
parallax-free mirror scale	
Test Gauge Grade 3A (indication accuracy $\pm 0.25\%$), mirror scale	
special adjustment	for liquid media (pressure ranges up to 0 – 25 bar)
	for gaseous media (pressure ranges from 0 – 40 bar to 0 – 400 bar)
movement stainless steel with jewel bearing	
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
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
silicone-free version	
restrictor screw in the pressure inlet port, material: like process connection 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 coverage
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