

Bourdon Tube Test Gauges

Safety version

Stainless steel case with bayonet ring



RFSch 160

RFSchG 160

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 operations, aggressive atmospheres) and where increased safety standards are necessary.

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 60529 / IEC 60529)

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 Range (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 - 1 600 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 - 1 600 bar (0 - 30 to 0 - 20 000 psi) for type - 3

Process Connection

G ½ B, ½" NPT or M20x1.5

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 - 1 000 bar
(0 - 10 to 0 - 15 000 psi)

marking (S), see schematic 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 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)
- Increased degree of protection, e.g. IP65 without case filling
- Other case fillings
- Other position of connection
- Certificates and approvals, e.g. GOST (see also website)

Accessories

Upon request

www.armano-messtechnik.com

ARMANO

ARMANO Messtechnik GmbH

Location Beierfeld

Am Gewerbeplatz 9 • 08344 Grünhain-Beierfeld
Tel.: +49 3774 58 - 0 • Fax: +49 3774 58 - 545
mail@armano-beierfeld.com

Location Wesel

Manometerstraße 5 • 46487 Wesel-Ginderich
Tel.: +49 2803 9130 - 0 • Fax: +49 2803 1035
mail@armano-wesel.com

2600

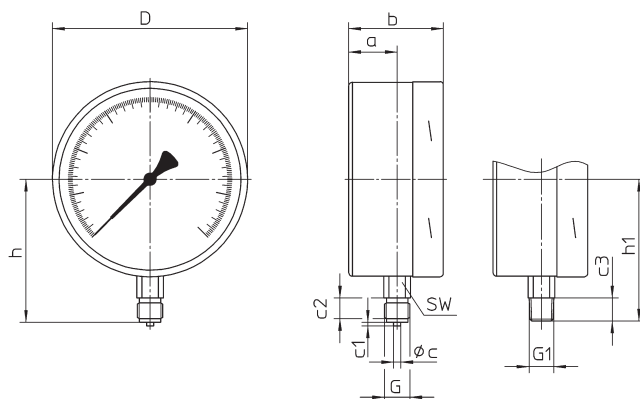
07/22

Case Configurations, Code Letters, Dimensional Data and Weight, Schematic Drawing

Bottom Connection

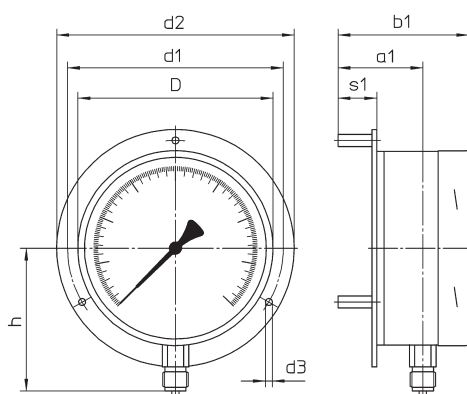
without mounting device

without code letters



with back flange for surface mounting

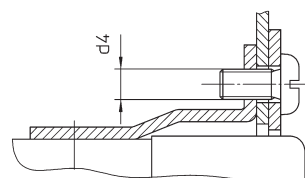
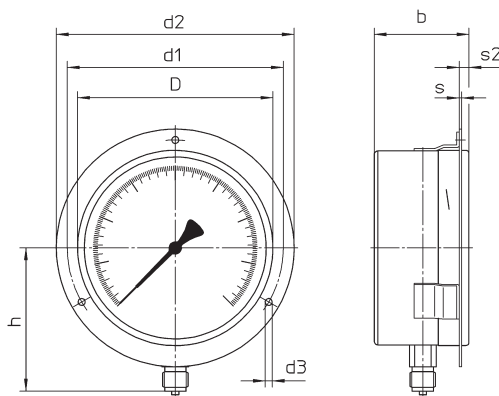
code letters **Rh**



version Rh including 3 separate mounting spacers

with front flange for panel mounting

code letters **Fr**

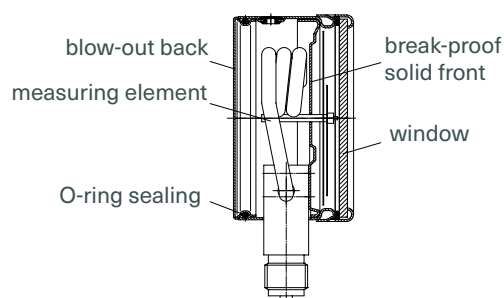


case configuration Fr is supplied with welded brackets and removable front flange

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
160 6"	40 1.57	70 2.76	78 3.07	108 4.25	6 0.24	3 0.12	20 0.79	19 0.75	161 6.34	178 7.01	196 7.72	5.8 0.23	M5	G 1/2 B M 20x1.5	1/2" NPT	115 4.53	114 4.49	1.5 0.06	32 1.26	8 0.31	22 0.87

Schematic Drawing



approx. weight	
RFCh	RFChG
1.50	2.95
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	-1 200 / 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 - 1 000 bar for type - 3	0	- 15 000 psi		
0 - 1 600 bar for type - 3	0	- 20 000 psi		
Process connection	standard thread	G ½ B		G ½ B
		½" NPT		½" NPT
		M 20x1.5		M 20x1.5
	options	¼" NPT ¹⁾		¼" NPT
Options	see page 4			
Example				RFSch 100 - 1, 0 - 6 bar, G ½ B

³⁾ type - 1 max. 0 - 600 bar (0 - 10 000 psi), type - 3 max. 0 - 1 000 bar (0 - 15 000 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
Stationary red pointer	on the dial adjustable with removable ring
Mirror scale	for parallax-free reading
Test gauge	Grade 3A (indication accuracy $\pm 0.25\%$), mirror scale
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
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
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 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