

Differential Pressure Gauges

Bayonet ring case stainless steel
with 2 bourdon tubes and a pointer

DiRZCh
DiRZChG

Selection

Differential pressure gauges with two bourdon tubes are competitive instruments for measurement of two different pressures with direct indication of the differential pressure. The static pressure should not be higher than the next higher pressure range according to DIN EN 837-1.

Pressure gauges model DiRZCh/DiRZChG are applied in heating systems (flow and return flow) or in filter systems.

Construction

The instrument is provided with two independently working bourdon tube measuring units. Each system has an own pressure connection. The connections are marked with + (for the higher pressure and the first that has to be connected) and - (for the lower pressure). Both measuring units are connected with a pointer via a subtracting movement, so that the differential pressure can be read immediately.

Application Fields

at steady load: full scale value
at dynamic load: 0.9 x full scale value
max. static pressure: one range higher than the full scale value

Temperature Resistance

Storage temperature: -40 to +70 °C (-40 °F to 158 °F)
-20 to +70 °C model DiRZChG
(-4 °F to 158 °F)
Ambient temperature: -40 to +60 °C (-40 °F to 140 °F)
-20 to +60 °C model DiRZChG
(-4 °F to 140 °F)
Medium temperature: type - 3: + 100 °C (212 °F)
type - 1: + 60 °C (140 °F) soft soldered
+ 100 °C (212 °F) silver brazed

Reference Temperature

+ 20 °C (68 °F)

Temperature Caused Error

If the operating temperatures of the measuring system (resilient element and movement) deviate from the reference temperature, additional deviations of the indication could occur. According to EN 837-1 these can be up to 0.4 % of the span per 10 K.

Standard Versions

Accuracy (EN 837-1)

Class 1.6

Case

with bayonet ring stainless steel 1.4301 (304 stainless steel)

Case Protection Type (EN 60 529 / IEC 529)

IP 54

IP 65 for model DiRZChG

Blow-out Device

Model DiRZCh Blow-out plug in the back of the case 1" (Ø 25 mm)

Model DiRZChG Blow-out device at the top of the case coverage

Case Filling

for model DiRZChG: glycerine

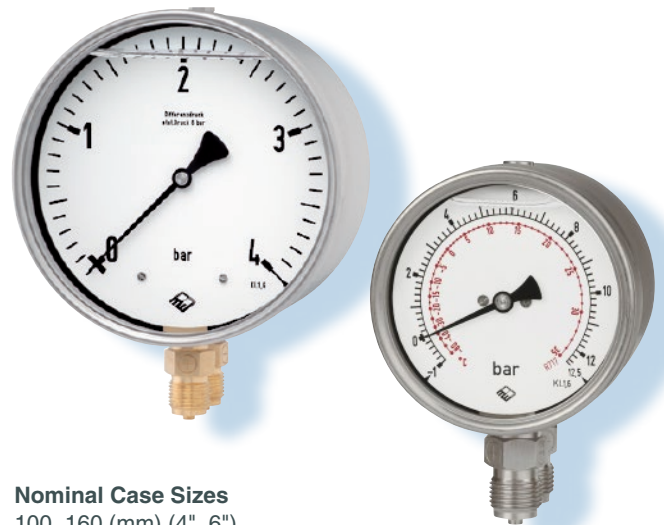


illustration with special scales

Nominal Case Sizes

100, 160 (mm) (4", 6")

Wetted Parts

Type - 3: connections: 1.4404 / 1.4571 (316 stainless steel),
bourdon tubes: 1.4404 / 1.4571 (316 stainless steel)
argon arc welding,
≤ 40 bar c-form,
≥ 60 bar helical
O-ring sealing: Viton
Type - 1: connections: brass
bourdon tubes: ≤ 40 bar bronze, c-form, soft soldered
≥ 60 bar 1.4404 (316 stainless steel),
helical, silver brazed
O-ring sealing: NBR

Case Configuration

Connection: screwed
Position of the connection: bottom connection,
parallelly one behind the other
Mounting device: without, optionally back flange (Rh)/
front flange (Fr), see page 2

Pressure Ranges (EN 837-1)

0 - 1 bar to 0 - 600 bar (0 - 15 psi to 0 - 10000 psi)
static pressure = one range higher than the full scale value
dial inscription "static pressure ...bar"

Process connections

2 x G ½ B (2 x ½" BSP)
marking with + (higher pressure) and - (lower pressure)

Window

Laminated safety glass for type - 3
Instrument glass for type - 1

Movement

Brass/German silver

Dial

Aluminum, black figures, white background

Pointer

Aluminum black

Safety Category according to EN 837-1

NCS 100 (4"): S1 pressure measuring instruments with
blow-out device



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Special Versions and Ordering Information

Special Versions and further Options among others

- Other process connections upon request
- Special scales, e. g. double scale bar/psi, coloured fields or areas, dial inscriptions
- Other case fillings upon request
- Other static pressures upon request
- GOST-version for Russia, Ukraine, Kazakhstan

Ordering Information, Standard Pressure Ranges, Options

See page 3

Accessory

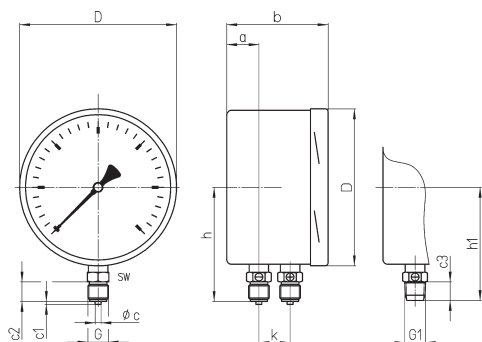
Electrical: limit switch contact assembly data sheet 5119 and catalogue heading 9.1
 Other accessory: see catalogue heading 11

Case Configurations, Code Letters, Dimensional Data, Weights

Bottom process connections, parallelly one behind the other

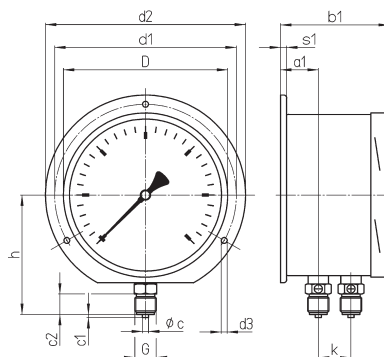
Without mounting device

(without additional code letters)



Back flange

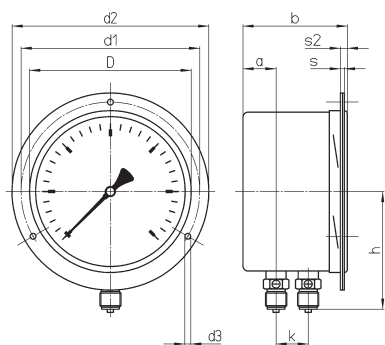
code letters: **Rh**



Front flange

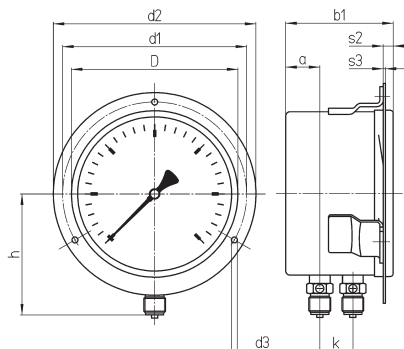
Code letters: **Fr**

unfilled (dry) version, model DiRZCh



fixed front flange with slotted holes and loose cover ring

filled version, model DiRZChG



welded brackets and loose front flange

Dimensional Data (mm / inches) and Weights (kg / lb)

NCS	a	a1	b	b1	c	c1	c2	c3	D	d1	d2	d3	G	G1	h ±1	h1 ±1	k	SW	s	s1	s2	s3
100 (4")	15 0.59	19 0.75	83 3.27	86 3.39	6 0.24	3 0.12	20 0.79	19 0.75	101 3.98	116 4.57	132 5.2	4.8 0.19	G 1/2 B M 20x1.5	1/2" NPT	87 3.43	86 3.39	32 1.26	22 0.87	2 0.08	6 0.24	6 0.24	1.5 0.06
160 (6")	33 1.30	37 1.46	104 4.09	106.5 4.19	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	G 1/2 B M 20x1.5	1/2" NPT	117 4.61	116 4.57	32 1.26	22 0.87	2 0.08	6 0.24	6 0.24	1.5 0.06

NCS	approx. weight ¹⁾	
	DiRZCh	DiRZChG
100 (4")	0.90 1.98	1.50 3.30
160 (6")	1.50 3.30	3.50 7.72

¹⁾ Information for versions without mounting device

Ordering Information with Standard Pressure Ranges, Options

Pressure gauge with two pressure connections Differential pressure measurement			
Basic model:	direct indication of the differential pressure	DiRZ	
Bayonet ring case:	stainless steel	Ch	
Case filling:	without	without code letters	
	glycerine	G	
	fillable version	(G)	
Nominal case size:	case-Ø 100, 160 (mm) (4", 6")	100, 160	
Wetted material:	copper alloy	- 1	
	stainless steel	- 3	
Case configuration/ kind of mounting:	bottom connections, parallelly one behind the other	without code letters	
	mounting device: without	without code letters	
	back flange	Rh	
	front flange	Fr	
Pressure ranges	-1 – 0.6 bar		
	-1 – 1.5 bar		
	-1 – 3 bar		
	-1 – 5 bar		
	-1 – 9 bar		
	-1 – 15 bar		
	0 – 1 bar		
	0 – 1.6 bar		
	0 – 2.5 bar		
	0 – 4 bar		
	0 – 6 bar	e. g. 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		
Process connections:	standard thread G ½ B (½" BSP)	G ½ B	
	options: ½" NPT	½" NPT	
	M 20x1.5	M 20x1,5	
Further options:	red mark on the dial	<i>(order at the moment still as clear text)</i>	
	plastic clip red or green		
	laminated safety glass for type – 1		
	case ventilation no. 22 for outdoor installation		
	restrictor screw in the inlet ports of the connections, for type – 1 made of brass,		orifice Ø 0.8 mm (0.03")
	for type – 3 made of stainless steel		orifice Ø 0.6 mm (0.02")
			orifice Ø 0.3 mm (0.01")
	measuring point marking		stainless steel-plate 12 mm x 55 mm (0.47" x 2.17"), wire mounting or sticker on case coverage
Example:	DiRZCh 100 – 3 Fr, 0 – 6 bar, G ½ B		

