

Bourdon Tube Pressure Gauge

Bayonet Ring Case Stainless Steel

with e-Gauge®-lite



RCh / RChG

100/160-1/-3

Application

e-Gauge®-lite is a simplified version of the successful e-Gauge® product from ITIUK (data sheet 1201.93).

e-Gauge®-lite is used to convert pressure gauges or temperature gauges to pressure and temperature transmitters.

Using the same inductive technology as the original e-Gauge®, it reads the position of the pointer on any 100mm or 160mm DIN cased analogue gauge to give a 4/20mA output.

e-Gauge®-lite is a 2-wire, 4/20mA loop powered device. It is a non-contact device that has been designed to be retrofitted. Fitted by changing only the pointer and the window, no programming or software is required.

Key measuring principle

- Non-contact device
- Low moment of inertia, only a slight increased weight of the pointer by the electronic transponder

Robustness and reliability

- There are no mechanical components and therefore no mechanical wear in the e-Gauge®-lite

Technical Data e-Gauge®-lite

Output signal

4...20 mA (2 wire)

Nominal rating

12...24 VDC

Load impedance [Ω]

(UB-8 V) / 0.02 A

Accuracy of the output signal

<0.25% of full scale value

Linearity

<1.0% over full scale

Temperature ranges for e-Gauge with pressure gauge

Storage temperature: -40 °C...+70 °C (-40 °F...+158 °F)
-20 °C...+70 °C (-4 °F...+158 °F)
for glycerine filling

Ambient temperature: -30 °C...+60 °C (-22 °F...+140 °F)
-20 °C...+60 °C (-4 °F...+140 °F)
for glycerine filling

Humidity Range

0...99% RH NC

Nominal Size

To suit 100mm and 160mm DIN cases



Measurement Frequency

>10Hz

Ingress Protection

IP 67 - All electronics covered by Epoxy or plastic housing

Span

270° - Others available on request

Electrical Connection

Electrical connections

2 flying leads, min. 1m long, bare ends, PVC sheathed, one red and one black.
External diameter 1.55mm.
VAC rating 300V.

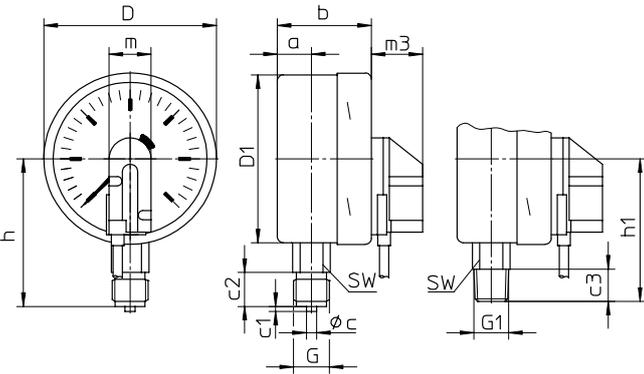
Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

Bottom connection

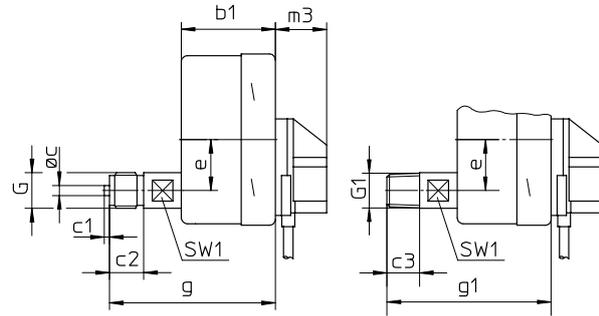
Lower back connection

No mounting device

(no additional code letter)

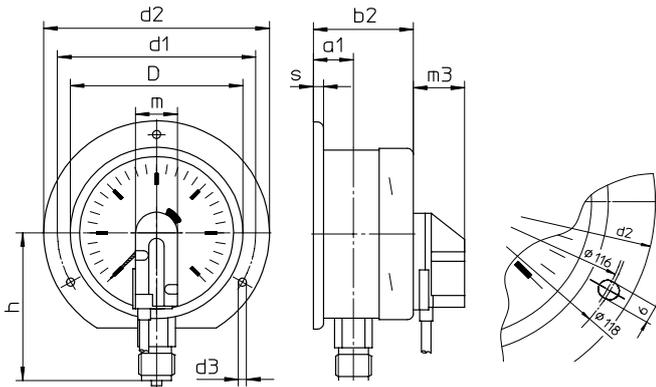


code letters: r



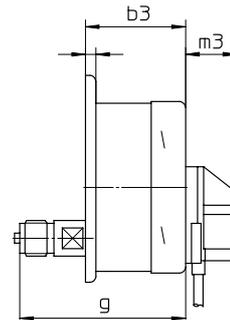
with mounting device

back flange for surface mounting
code letters: **Rh**



back flange for surface mounting
optional available with slotted
holes according to EN 837-1

back flange for surface mounting
code letters: **rRh**



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

Dimensional data (mm / inches) and weights (kg / lb)

NCS	a	a1	b	b1	b2	b3	c	c1	c2	c3	D	D1	d1	d2	d3	e	G	G1	g	g1	h ^{±1}	h1 ^{±1}
100 4"	20 .79	23.5 .93	55 2.17	55 2.17	58.5 2.3	58.5 2.3	6 .24	3 .12	20 .79	19 .75	101 3.98	99 3.9	116 4.57	132 5.2	4.8 .19	30 1.18	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	97 3.82	96 3.78	87 3.43	84 3.31
160 6"	15 .79	18 .71	50 1.97	55 2.17	53 2.09	58 2.28	6 .24	3 .12	20 .79	19 .75	161 6.34	159 6.26	178 7.01	196 7.72	5.8 .23	30 1.18	G 1/2 B 1/2" BSP M 20 x 1.5	1/2" NPT	92.5 3.64	91.5 3.60	115 4.53	114 4.49

m	m3	s	SW	SW1	approx. weight ¹⁾	
					RCh	RChG
24.5 .96	5.5 .22	6 .24	22 .87	17 .67	0.67 1.47	0.95 2.2
24.5 .96	30 1.18	6 .24	22 .87	17 .67	1.17 2.58	2.02 4.45

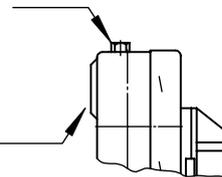
¹⁾ Information for version without mounting device

Blow-out device

Blow-out screw fitting for model RChG 160
pressure range ≤ 1.6 bar Blow-out Verschraubung Nr.5
≥ 2.5 bar Blow-out Verschraubung Nr.3

Blow-out plug

Ø 1" (25 mm) for model RCh 100, 160
Ø 1½" (40 mm) for model RChG 100
with pressure equalizing
membrane



Standard Versions Bourdon Tube Pressure Gauge

Standard Versions Bourdon Tube Pressure Gauge

Information on general and metrological features (load limits, temperature limitations) and standard pressure ranges / scale divisions of bourdon tube model RCh100/160 and RChG 100/160 can be found on general information leaflet 1000. Detailed descriptions can be found on data sheet 1201.

Technical Data Bourdon Tube Pressure Gauge

Accuracy (EN 837-1)

Class 1.0

Case

Bayonet ring, 1.4301 (304 stainless steel)

Case Protection Type (EN 60 529 / IEC 529)

IP 54

IP 55 for model RChG

Blow-out Device

Model RCh	Blow-out plug in the back of the case, 1" (Ø 25mm)
Model RChG 100	Blow-out plug in the back of the case, 1½" (Ø 40mm)
Model RChG 160	Blow-out screw fitting at the top of the case

Case Ventilation

Model RChG 100 without ventilation, but with internal pressure compensation by pressure equalizing membrane. Model RChG 160 by blow-out screw fitting.

Case Filling

for model RChG: glycerine

Nominal Case Size

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

Wetted Parts

Type -3: Connection:	1.4571 (316 stainless steel)
Bourdon tube:	1.4571 (316 stainless steel), argon arc welding, ≤ 40 bar (600 psi) c-form, ≥ 60 bar (800 psi) helical, 1,600 bar (20,000 psi) NiFe-alloy, helical
Type -1: Connection:	brass
Bourdon tube:	≤ 40 bar (600 psi) = bronze, c-form, soft-soldered, ≥ 60 bar (800 psi) = 1.4571 (316 stainless steel), silver brazed, helical

Case Configuration

Connection:	screwed
Position of the connection:	bottom connection, optional lower back connection (r)
Mounting device:	without, optional back flange for surface mounting (Rh), see page 2

Pressure Ranges (EN 837-1)

0-0.6 bar (0-10 psi) to 0-1,600 bar (0-20,000 psi) for type -3
0-0.6 bar (0-10 psi) to 0-1,000 bar (0-15,000 psi) for type -1

Process Connection

G ½ B (½" BSP)

Window

Polycarbonate (PC)

Movement

Stainless steel	for type -3
Brass / German silver	for type -1

Dial

Aluminum, black figures, white background

Pointer

Aluminum, black

Reference Temperature

+ 20°C (68 °F)

If the operating temperatures of the measuring system (measuring unit 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.

Safety Category according to EN 837-1

NCS 100: S1 pressure gauges with blow-out device