

# 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 [ $\Omega$ ]

(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.

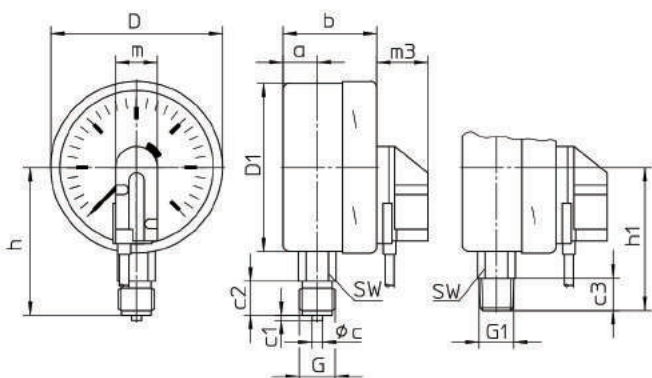
# Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

## Bottom connection

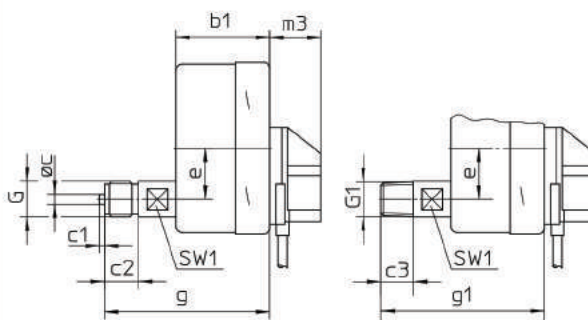
## Lower back connection

### No mounting device

(no additional code letter)

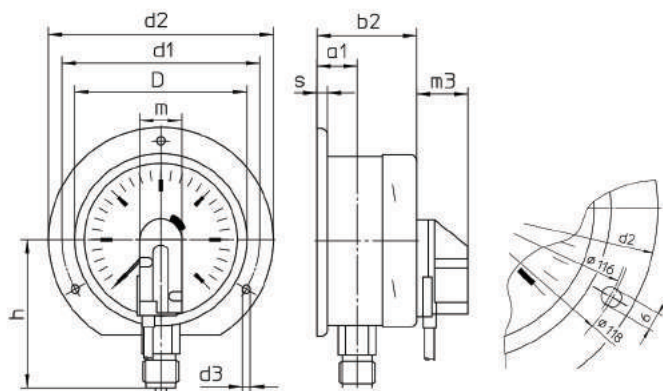


code letters: r



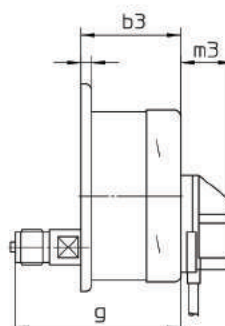
### with mounting device

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 <sup>-1</sup>	h1 <sup>-1</sup>
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 <sup>1)</sup>	
					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

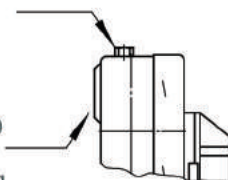
<sup>1)</sup> Information for version without mounting device

### 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 1 1/2" (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

In line with our policy of continuous development, we reserve the right to change specifications without prior notice.