

# Capsule Gauge for Low Pressure

Bayonet ring case stainless steel

with e-Gauge®

KPCh  
KPChG

## Application

e-Gauge® is a revolutionary "Worldwide Patent Pending" sensor accessory for analogue dial instruments such as pressure gauges and thermometers.

By using the latest absolute encoding inductance technique, e-Gauge® converts almost every gauge or thermometer into a switch and transmitter.

The e-Gauge® is a non-contact device and converts a "normal" indicating gauge NCS 100/160 with 100 mm stainless steel bayonet ring DIN case into a multifunctional instrument with 2 digital limit switches and an analogue output signal of 4 -20 mA.

## New measuring principle

- non-contact device
- low moment of inertia, only a slight increased weight of the pointer by the electronic transponder
- no mechanical drag as in existing limit switches

## Robustness and reliability

- no mechanical components and therefore no mechanical wear in the e-Gauge®
- tamper proof switch points - factory set

## Technical Data e-Gauge®

### Output Signal

4...20 mA (3 wire)

### Nominal Rating

8...28 VDC, max. 50 mA, reverse polarity protection

### Load Impedance [ $\Omega$ ]

(UB-8 V) / 0.02 A

### Accuracy of the Output Signal

$\pm 1.0$  % of full scale value

### Repeatability

$< \pm 0.2$  % of full scale value

### Resolution

12 bit

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

### Temperature Influence

0.1% of full scale value / 10K  
in rated temperature range: 0...50 °C (32...122°F)

### Switching Outputs

2 NPN-outputs (Open Collector), short-circuit proof

### Switching Function

Opening or closing circuit  
Please quote in order



## Limit Values

coloured marks for limit values on dial

breaking contact: red

making contact: green

Please quote in order

Both limit values of the e-Gauge® can be set at the same point

## Switching Hysteresis

1% of span

## Switching Capacity

max. 28 VDC, max. 50 mA

## Response Time

0.1s default

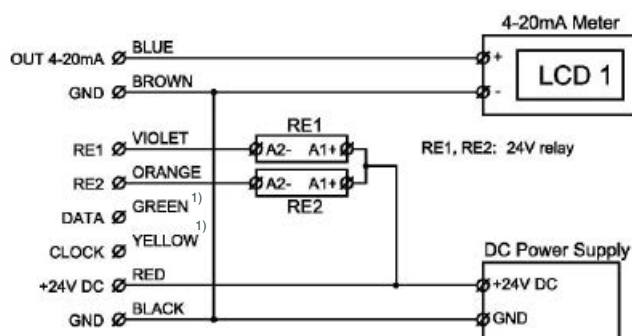
## Electrical Connection

1.5 m cable, not insulated wire ends, 8xAWG24

## EMC

EN 61326:2006

## Electrical Connection



<sup>1)</sup> green / yellow (DATA & CLOCK) do not connect - factory use only.

See page 3 for technical details of the pressure gauge



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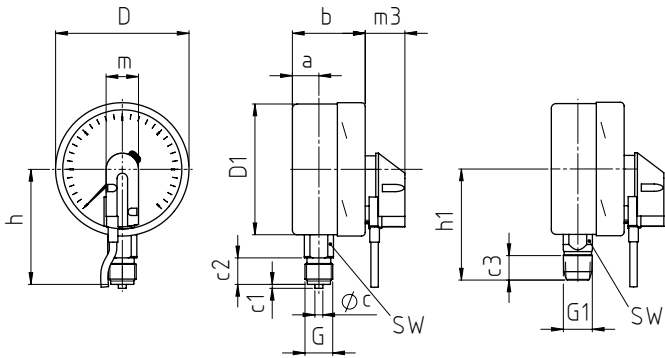
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# Case Configurations, Code Letters, Dimensional Data and Weights, Blow-out Device

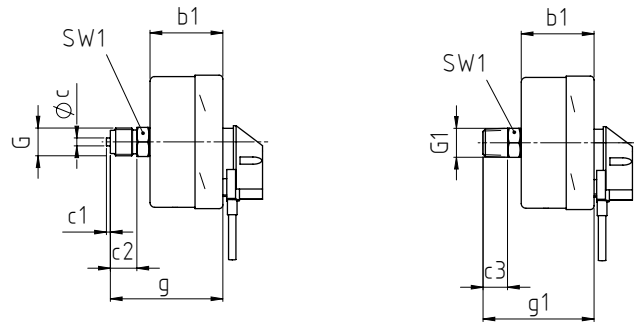
## Bottom Connection Centre Back Connection

### no mounting device

(no additional code letter)

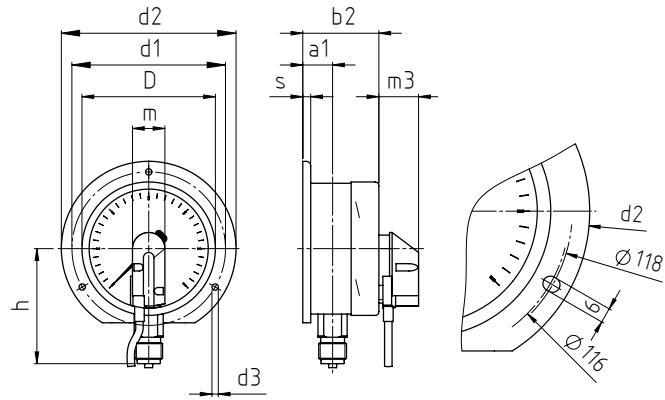


code letters: **rm**



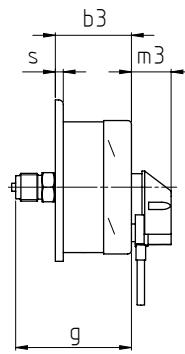
### with back flange for surface mounting

code letters: **Rh**



back flange for surface mounting  
optionally available with slotted  
holes according to EN 837-3

code letters: **rmRh**



(available upon request, but according  
to EN 837-3 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	G	G1	g	g1	h <sup>±1</sup>	h1 <sup>±1</sup>
100 4"	20 .79	23 .91	55 2.17	55 2.17	59 2.32	59 2.32	6 .24	3 .12	20 .79	19 .75	101 3.98	99 3.9	116 4.57	132 5.2	4.8 .19	G ½ B (½" BSP) M 20 x 1.5	½" NPT	85 3.35	84 3.31	87 3.43	84 3.31
160 6"	15 .59	18 .71	51 2.17	51 2.01	54 2.13	54 2.13	6 .24	3 .12	20 .79	19 .75	161 6.34	159 6.26	178 7.01	196 7.72	5.8 .23	G ½ B (½" BSP) M 20 x 1.5	½" NPT	81 3.18	80 3.15	115 4.53	114 4.49

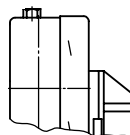
m	m3	s	SW	approx. weight	
				KPCh	KPChG
25	30	6	22	0.60	1.00
<b>.98</b>	<b>1.18</b>	<b>.24</b>	<b>.87</b>	<b>1.32</b>	<b>2.20</b>
25	30	6	22	0.90	1.80
<b>.98</b>	<b>1.18</b>	<b>.24</b>	<b>.87</b>	<b>1.98</b>	<b>3.97</b>

## Blow-out Device

Model KPChG 100  
Case ventilation  
no. 26 closable



Model KPChG 160  
Blow-out device 5



# Standard Version Pressure Gauge

## Standard Versions Pressure Gauge

Information on general and metrological features (load limits, temperature limitations) and standard pressure ranges / scale divisions of capsule gauge models KPCh 100/160 and KPChG 100/160 can be found in model overview 6000. Detailed descriptions can be found in data sheet 6201.

### Technical Data Capsule Gauge for Low Pressure

#### Accuracy (EN 837-3)

Class 1.6

#### Case

Bayonet ring, 1.4301 (304 stainless steel)

#### Case Protection Type for Gauge with eGauge®

(EN 60 529 / IEC 529)

IP 54

#### Case Ventilation

Model KPChG 100	Case ventilation closable Ventilation for internal pressure compensation
Model KPChG 160	Blow-out screw fitting

#### Case Filling

for model KPChG: Glycerin

#### Nominal Case Size

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

#### Wetted Parts

Type -1: Connection:	brass
Diaphragm capsule:	CuBe-alloy
O-ring sealing:	NBR
Type -3: Connection:	stainless steel 316 SS
Diaphragm capsule:	stainless steel 316 SS
O-ring sealing:	FPM

#### Case Configuration

Connection:	screwed
Position of the connection:	bottom connection, optional: centre back connection ( <b>rm</b> )
Mounting device:	without, optional back flange for surface mounting ( <b>Rh</b> ), see page 2

#### Pressure Ranges (EN 837-3)

0 – 100 mbar (0 – 400 "WC) to 0 – 600 mbar (0 – 250 "WC)

#### Process Connection

G ½ B (½" BSP)

#### Window

Polycarbonate (PC)

#### Movement

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

#### Dial

Aluminum white, scaling black

#### 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 can occur. According to EN 837-3 these can be up to 0.6 % of the span per 10 K.

### Options

see page 4

### Accessory

see catalogue heading 11

