Capsule pressure gauge with electrical output signal
Stainless steel, safety version, high overpressure safety
Models PGT63HP.100 and PGT63HP.160

Applications

- Pressure measurement at very low pressures
- Acquisition and display of process values for the control room, 4 ... 20 mA
- For gaseous, aggressive media, also in aggressive ambience
- Easy-to-read, local analogue display with Ø 100 mm or Ø 160 mm, no external power supply needed

Special features

- Individual, non-linear characteristic curves (e. g. x^2 or $\sqrt{x}$ for flow measurement etc.)
- "Plug and play" with no configuration necessary
- High overpressure safety up to 50 x full scale value
- Measuring chamber protected against unauthorised intervention
- Minimal influence on function and measuring error from pressure medium contamination

intelliGAUGE model PGT63HP.100

Description

At any point where very low pressures have to be indicated locally, and, at the same time, a signal is wanted to be transmitted to a central controller or remote control room, the model PGT63HP.1x0 intelliGAUGE (patent applied for, among others European Patent No. EP 06113003) can be used.
It combines the advantages of electrical signal transmission with the advantages of a local mechanical display.

Even if the power supply is completely lost, the process pressure can be read securely. The rugged design of the capsule measuring system has an overpressure safety of up to 50 times the full-scale value.

An electronic angle encoder, proven in safety-critical automotive applications, determines the position of the pointer shaft - it is a non-contact sensor and therefore completely free from wear and friction.

From this, the pressure-proportional, 4 ... 20 mA electrical output signal is produced. The electronic zero point can also be set manually.

The electronic WIKA transmitter, integrated into the high-quality mechanical pressure gauge, combines the advantages of electrical signal transmission with the advantages of a local mechanical display.

Standard version

Nominal size in mm
100 and 160

Accuracy class
1.6

Scale ranges
0 … 2.5 to 0 … 100 mbar
or all other equivalent vacuum or combined pressure and vacuum ranges

Process connection (wetted)
Stainless steel 1.4571
Lower mount (LM)
G ½ B (male), 22 mm flats

Pressure element (wetted)
Stainless steel 1.4571

Measuring chamber (wetted)
Stainless steel 1.4571

Sealing (wetted)
PTFE

Movement
Brass

Dial
Aluminium, white, black lettering

Pointer
Adjustable pointer, aluminium, black

Measuring cell
Stainless steel

Zero adjustment
By means of adjustable pointer (adjustment appliance with gauges with switch contacts)
Electronic: see operating instructions

Case
Stainless steel, ingress protection IP 54

Window
Laminated safety glass

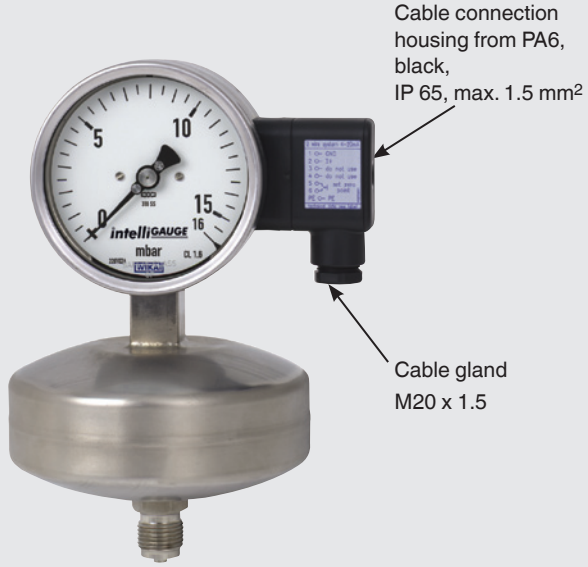
Bezel ring
Cam ring (bayonet type), stainless steel

Options

- Mounting bracket for wall or pipe mounting (data sheet AC 09.07)
- Panel or surface mounting flange (observe measuring chamber!)
- Higher overpressure safety 1)
- Switch contacts (data sheet AC 08.01)
- Output signal 0 ... 20 mA, 0 ... 10 V
- Version per ATEX Ex II 2G Ex ia IIC T4/T5/T6
- Gosstandart approval (Russia)

1) After feasibility test

Cable connection



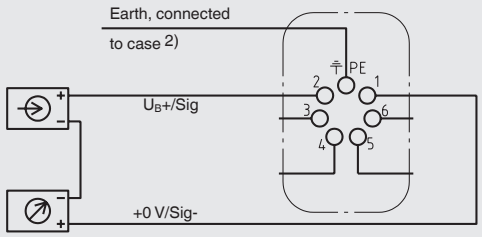
CE conformity

Pressure equipment directive
97/23/EC, PS > 200 bar, module A, pressure accessory

EMC directive
2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

ATEX directive
94/4/EC, II 2 G Ex ia IIC

Electrical data

Power supply U_B	DC V	$12 < U_B \leq 30$ (min. 14 with Ex version)
Influence of power supply	% FS/10 V	< 0.1
Permissible residual ripple	% ss	< 10
Output signal	Variant 1	4 … 20 mA, 2-wire, passive, per NAMUR NE 43
	Variant 2	4 … 20 mA, per ATEX Ex II 2G Ex ia IIC T4/T5/T6
	Variant 3	0 … 20 mA, 3-wire
	Variant 4	0 … 10 V, 3-wire
Permissible max. load R_A for variant 1 - 3		$R_A \leq (U_B - 12\ V)/0.02\ A$ with R_A in Ohm and U_B in Volt, however max. 600 Ω
Effect of load (variant 1 - 3)	% FS	≤ 0.1
Electrical zero point		through a jumper across terminals 5 and 6 (see operating instructions)
■ Long-term stability of electronics	% FS/a	< 0.3
■ Electrical output signal		≤ 1.0 % of the measuring span
Linearity	% of span	≤ 1.0 % (terminal method)
Conformity specifications		Ex version
■ Power supply Ui	DC V	max. 30
■ Short circuit rating Ii	mA	max. 100
■ Power Pi	W	max. 1
■ Internal capacitance Ci	nF	12
■ Internal inductance Li	mH	negligible
Electrical connection		Angular connector, 180 ° rotatable, wire protection, cable gland M20 x 1.5, incl. strain relief, connection cable: Outer diameter 7 - 13 mm, conductor cross-section 0.14 ... 1.5 mm², temperature resistance up to 60 °C
Wiring protection		Angular connector: IP 65 per EN 60529 / IEC 529
Assignment of terminals, 2-wire (variants 1 and 2) [1]		

Terminals 3, 4, 5 and 6: Only for internal use

2) This connection must not be used for equipotential bonding. The instrument must be incorporated in the equipotential bonding via the process connection.

1) For 3-wire connection see operating instructions

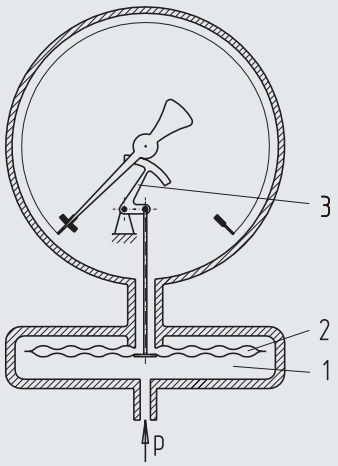
Mechanical data

Display		Nominal size 100 and 160
Scale ranges	mbar	0 ... 2.5 mbar to 0 ... 100 mbar
Process connection		G ½ B (male) (others available as options)
Operating limits		Overload resistance to EN 837-3
Pressure limitation		
■ Steady		full scale value
■ Fluctuating		0.9 x full scale value
■ Short time		50 x full scale value
		The recommendations for the use of mechanical pressure measuring systems in accordance with EN 837-2 must be observed
Accuracy		
■ Mechanical display		≤ 1.6 % of measuring span (class 1.6 per EN 837-3)
Permissible temperature range		
■ Medium	°C	-20... +100
■ Ambient	°C	-20 ... +60
Temperature effect	% / 10 K	max. ±0.6 of full scale value (when the temperature deviates from 20 °C reference temperature)
Case ingress protection		IP 54 per EN 60529 / IEC 529

Design and operating principle

- Pressure-sealed measuring chamber (1) with capsule measuring element
- The capsule element (2) is pressurised from outside and moves in strokes (deflection)
- The deflection is transmitted to the movement (3) and indicated
- The overpressure safety is achieved through the mutually supporting surfaces of both halves of the capsule element

Illustration of the principle



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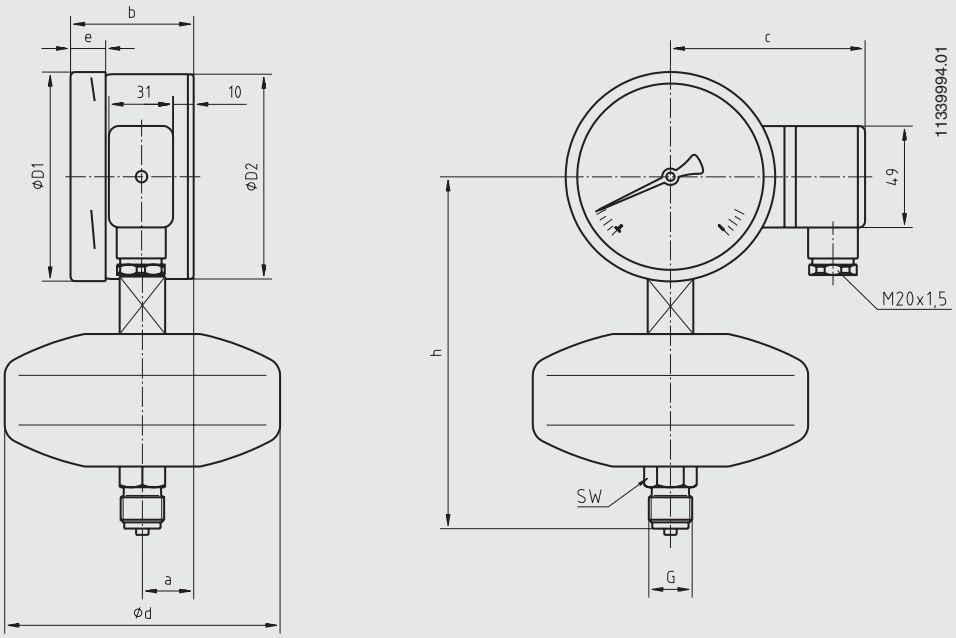
Dimensions in mm

Standard version



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NS	Dimensions in mm										Weight in kg
	a	b	c	d_1	D1	D_2	e	G	h±1	SW	
100	25	59.5	94	133	101	99	17	G ½ B	170	22	1.6
160	25	65	124	133	161	159	17	G ½ B	200	22	2.1

Ordering information

Model / Nominal size / Scale range / Scale layout (linear pressure or e.g. square root incrementation) / Connection location / Options

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