

Capsule Pressure Gauges with Electrical Output Signal Stainless Steel, Solid-front Case, High Overpressure Safety Type PGT63HP.100 and PGT63HP.160

WIKA Datasheet PGT63HP.100



Applications

- Pressure measurement at very low pressures
- Acquisition and display of process value to the control room, 4 to 20 mA
- For gaseous, corrosive media and corrosive environments
- Easy-to-read, local analog 4" or 6" display that needs no power supply

Special features

- Individual, non-linear characteristic curves (eg 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
- Tamper-proof pressure chamber
- Minimal influence on function and measuring error from pressure medium contamination

Description

In any application with limited space, where very low pressures have to be indicated locally, and, at the same time, a signal is needed to be transmitted to a central controller or remote control room, the intelliGAUGE Model PGT63HP.1x0 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 still be read. The rugged design of the capsule measuring system has an overpressure safety up to the 50 times the full-scale value.

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

intelliGAUGE®



intelliGAUGE Type PGT63HP.100

From this, the pressure-proportional, 4 to 20 mA electrical output signal is generated. 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 Features

Design

ASME B40.100 & EN 837-3

Sizes

4" or 6" (100 or 160 mm)

Accuracy class

± 2/1/2% of span (ASME B40.100 Grade A)

Ranges

0/1 "H₂O up to 0/40 "H₂O
or other equivalent units of pressure or vacuum

Overpressure safety

50 x full scale value

Pressure connection (wetted)

Material: 316L stainless steel
Lower mount (LM)
1/2" NPT male, 22 mm flats

Pressure element (wetted)

316L stainless steel

Measuring chamber (wetted)

316L stainless steel

Sealing ring (wetted)

PTFE

Movement

Copper alloy

Dial

White aluminum with black lettering

Pointer

Black aluminum, adjustable

Measuring cell

Stainless steel

Zero point adjustment

Via adjustable pointer (or adjustment device for gauges with alarm contact)
Electrical zero point - see operating instructions

Case

Stainless steel

Window

Laminated safety glass

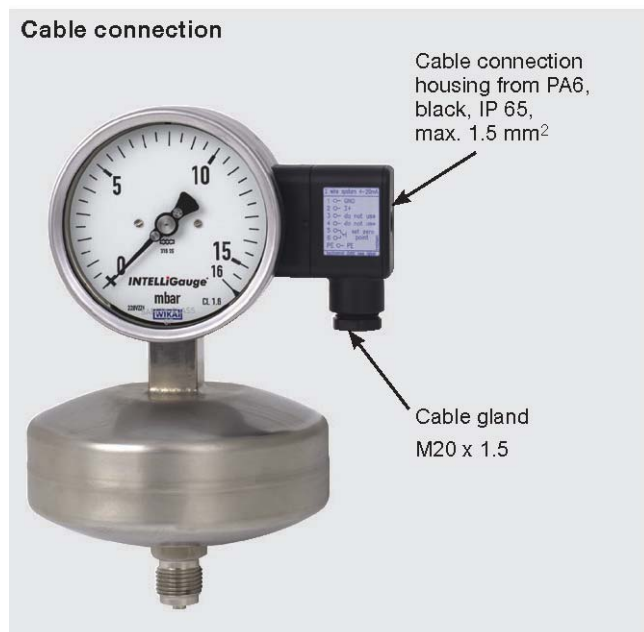
Cover ring

Bayonet ring, stainless steel

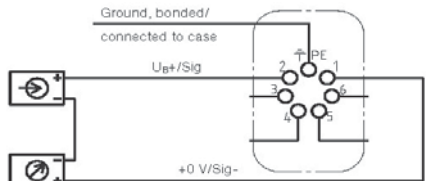
Optional extras

- Pipe or surface mounting bracket
- Front or rear flange (size of pressure chamber must be addressed properly)
- Higher overpressure safety¹
- Alarm contacts (see data sheet AC 08.01)
- Output signal 0 to 20 mA or 0 to 10 V
- Output signal 0 to 20 mA, 0 to 10 V
- Version to ATEX Ex II 2G Ex ia IIC T4 / T5 / T6 or Ex I M2 Ex ia I
- Gost Standard approval
- Custom dial layout
- Other pressure scales available
bar, kPa, MPa, kg/cm² and dual scales

1) After application related testing



Electrical data

Power supply U_B	DC V	$12 < U_B \leq 30$
Supply voltage effect	% v. FS/10 V	≤ 0.1
Permissible residual ripple	% ss	≤ 10
Output signal	Variant 1 Variant 2 Variant 3 Variant 4	4 to 20 mA, 2-wire, passive, per NAMUR NE 43 4 to 20 mA, per ATEX Ex II 2G Ex ia IIC T4 / T5 / T6 or Ex I M2 Ex ia I 0 to 2 mA, 3-wire 0 to 10 V, 3-wire
Permissible max. load R_A for Variant 1 - 3		$R_{A \leq} (U_B - 12 \text{ V})/0.02 \text{ A}$ with R_A in Ohm and U_B in Volt, however max. 600Ω
Electrical zero point		through a jumper across terminals 5 and 6 (see Operating Instructions)
Effect of load (Variant 1 - 3)	% FS	≤ 0.1
■ Long-term stability of electronics	% FS/a	< 0.3
■ Electrical output signal		$\leq 1\%$ of measuring span
■ Linearity	% of span	$\leq 1\%$ (limit point calibration)
Conformity specifications		Ex-Variant
■ Power supply	DC V	14 to 30
■ Short circuit rating	mA	100
■ Rating	mW	1000
■ Internal capacitance	nF	$C_i \leq 12 \text{ nF}$
■ Internal inductance	mH	negligible
EMC Directive		2004/108/EC Interference emission (Limit Class B) and immunity to EN 61 326-1
Wiring		L-plug connector, 180° rotatable, max. 1.5 mm ² , wire protector, Cable gland M20 x 1.5, Ext. cable diameter 7-13 mm, incl strain relief
Wiring protection		NEMA 4X / IP 54 to EN 60 529 / IEC 529, NEMA 6 / IP 65 filled
Connection details 2-wire (Variant 1 and 2)		 <p>Ground, bonded/ connected to case</p> <p>U_B+/Sig</p> <p>+0 V/Sig-</p> <p>PE</p> <p>Terminals 3, 4, 5 and 6: only for internal use</p>

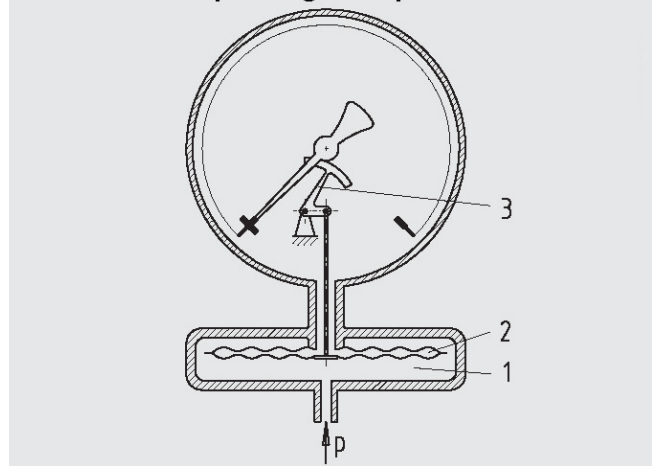
Mechanical data

Display		Nominal size 4" or 6" (100 or 160 mm)
Measuring ranges	in. H2O	0/1 up to 0/40
Process connection		1/2" NPT male (others available as options)
Operating limits		Overload resistance to EN 837-3
Working pressure		full scale value
■ Steady		0.9 x full scale value
■ Fluctuating		The recommendations for the use of mechanical measuring systems in accordance with ASME B40.100 and EN 837-3 must be observed
Accuracy		$\leq 2/1/2\%$ of measuring span (ASME B40.100 Grade A)
■ Mechanical display		
Permissible temperature range of		
■ Medium	°F / (°C)	-4°F to +212°F (-20°C to +100°C)
■ Ambient	°F / (°C)	-4°F to +140°F (-40°C to +60°C)
Weather protection (front)		NEMA 4X / IP 54 per EN 60 529 / IEC 529
■ CE-conformity		ATEX: 94/4
■ Pressure Equipment Directive		97/23/EG

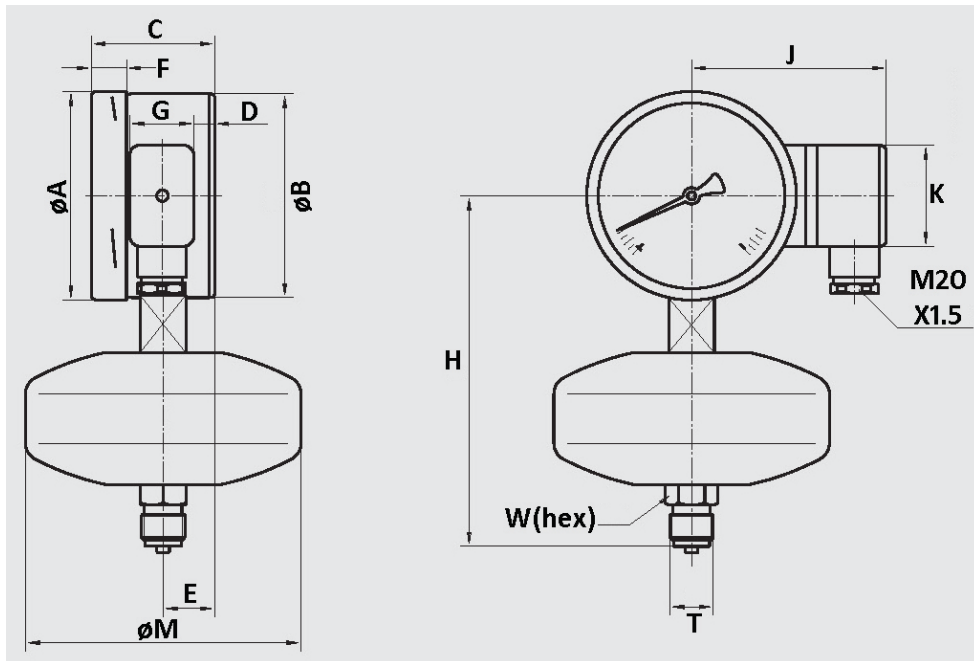
Design and operating principle

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

Illustration of Operating Principle



Dimensions



Dimensions		A	B	C	D	E	F	G	H	J	K	M	T	W	WEIGHT
4"	mm	101	99	59.5	10	25	17	31	170	94	49	133		22	1.6 kg
	in	3.98	3.9	2.34	0.39	0.98	0.67	1.22	6.69	3.7	1.93	5.24	1/2"	0.87	3.5 lb
6"	mm	161	159	65	10	25	17	31	200	124	49	133		22	2.1 kg
		6.34	6.26	2.56	0.39	0.98	0.67	1.22	7.87	4.88	1.93	5.24	1/2"	0.87	4.7 lb

Ordering information

Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required
 Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
 Modifications may take place and materials specified may be replaced by others without prior notice.



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