

Pressure transmitter with explosion proof enclosure

For applications in hazardous areas

Model E-10 ECO

WIKA data sheet PE 81.03



Applications

- Drilling platforms and pipelines
- Gas compressors
- Casing and tubing pressure
- Plunger lift controls

Special features

- CSA and FM approved as “explosion proof” for class I, div. 1 hazardous areas
- Current or voltage output
- Designed for harsh ambient conditions
- Low-power version available



Pressure transmitter, model E-10 ECO

Description

The model E-10 ECO explosion proof pressure transmitter has been designed specifically for the high demands of industrial oil and gas applications.

This pressure transmitter can be delivered with various analogue signals from 4 ... 20 mA to a low-power version with DC 1 ... 5 V.

It features an exceptionally high resistance to vibration, pressure spikes and moisture ingress. Furthermore, this pressure transmitter fulfils IP 67 (NEMA 4x) ingress protection.

On each individual instrument a comprehensive quality control and calibration is performed, so that an accuracy of $\leq 0.5\%$ can be ensured. Temperature compensation guarantees accuracy and long-term stability, even with strong fluctuations in the ambient temperature.

This pressure transmitter is approved as “explosion proof” for class I, II, III Div. 1 hazardous areas according to FM and CSA.

Measuring ranges

Relative pressure							
psi	Measuring range	0 ... 5	0 ... 10	0 ... 15	0 ... 25	0 ... 30	0 ... 60
	Overpressure limit	45	45	45	89	89	203
	Measuring range	0 ... 100	0 .. 160	0 ... 200	0 ... 250	0 ... 300	0 ... 500
	Overpressure limit	449	899	899	899	899	1,160
	Measuring range	0 ... 600	0 ... 750	0 ... 1,000	0 ... 1,500	0 ... 2,000	0 ... 3,000
	Overpressure limit	1,160	1,740	1,740	2,900	4,600	7,200
	Measuring range	0 ... 5,000	0 ... 8,000	0 ... 10,000			
	Overpressure limit	11,600	17,400	17,400			

Vacuum tightness

Yes

Output signals

Selectable output signals	
Signal type	Signal
Current output (2-wire)	4 ... 20 mA
Voltage output (3-wire)	DC 1 ... 5 V (low power)

Permissible load in Ω

- 4 ... 20 mA: \leq (power supply - 10 V) / 0.02 A
- DC 1 ... 5 V: $>$ 100k

Voltage supply

Power supply

The power supply depends on the selected output signal

- 4 ... 20 mA: DC 10 ... 30 V
- DC 1 ... 5 V: DC 6 ... 30 V

Reference conditions (per IEC 61298-1)

Temperature

15 ... 25 °C (59 ... 77 °F)

Atmospheric pressure

860 ... 1,060 mbar (12.5 ... 15.4 psi)

Humidity

45 ... 75 % r. h.

Power supply

DC 24 V

Mounting position

Calibrated in vertical mounting position with pressure connection facing downwards.

Accuracy data

Accuracy at reference conditions

0.5 % of span

Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

Non-linearity (per IEC 61298-2)

\leq 0.2 % of span (BFSL)

Non-repeatability

\leq 0.1 % of span

Temperature error in range 0 ... 80 °C (32 ... 176 °F)

Mean temperature coefficient of zero point:

\leq 0.2 % of span/10 K

Mean temperature coefficient of span:

\leq 0.2 % of span/10 K

Settling time

- \leq 2 ms
- \leq 10 ms (at medium temperature $<$ -30 °C)

Long-term stability

\leq 0.2 % of span/year

Operating conditions

Ingress protection (per IEC 60529)

IP 67 (NEMA 4x)

Vibration resistance (per IEC 60068-2-6)

20 g

Shock resistance (per IEC 60068-2-27)

1,000 g (mechanical shock)

Permissible temperature ranges

Medium: T6: -40 ... +55 °C T6: -40 ... +131 °F
T4: -40 ... +100 °C T4: -40 ... +212 °F

Ambient: T6: -40 ... +60 °C T6: -40 ... +140 °F
T4: -40 ... +105 °C T4: -40 ... +221 °F

Storage: -40 ... +105 °C -40 ... +221 °F

Explosion protection

FM

- XP / I / 1ABCD / T6, T4
- DIP / II, III / 1 EFG / T6, T4 type 4

CSA

- Class I, Division 1, Groups A, B, C and D
- Class II, Division 1, Groups E, F and G
- Class III, Division 1
- Type 4X

Process connections

Selectable process connections	
Process connection per	Thread size
ANSI/ASME B1.20.1	¼ NPT
	½ NPT

Electrical connections

Connection

½ NPT conduit male, with cable outlet (FM and CSA approval)

- Wire cross-section: 3 x 0.00087 in² (3 x 0.56 mm²)
- Cable diameter: 0.2 in (5.4 mm)
- Cable lengths: 6 ft (1.8 m)
- Material: PVC

Short-circuit resistance

Signal vs. V- (S+ vs. U-)

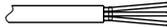
Reverse polarity protection

V+ vs. V- (U+ vs. U-)

Insulation voltage

DC 500 V

Connection diagrams

½ NPT conduit male, with cable outlet (FM and CSA approval)		
	2-wire	3-wire
	V+ (U+) red	red
	V- (U-) black	black
	Signal -	brown
	Shield	Shield connected to case

Materials

Wetted parts

Stainless steel

Non-wetted parts

- Case from stainless steel
- Cable see "Electrical connections"

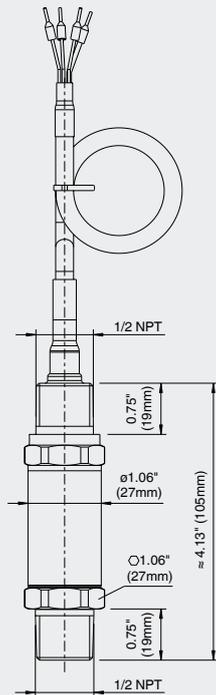
Internal pressure transmission medium

Synthetic oil (no pressure transmission media with measuring range > 0 ... 580 psi) (bar 0 ... 40 bar)

For other materials see WIKA diaphragm seals programme

Dimensions in mm

½ NPT conduit male, with cable outlet
(FM and CSA approval)

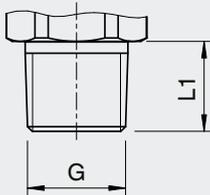


Approvals

- **FM**, explosionproof class 3600, class 3615, class 3810, NEMA-250, USA
- **CSA**, class 2258 02, class 2258 82, Canada

For further approvals, see website

Process connections



G	L1
¼ NPT	0.51" (13mm)
½ NPT	0.75" (19mm)

Ordering information

Model / Measuring range / Output signal / Process connection

© 2016 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.



WIKAL Instrument, LP
1000 Wiegand Boulevard
Lawrenceville, GA 30043
1-888-WIKA-USA / 770-513-8200
Fax 770-338-5118
info@wika.com www.wika.com