

EPT-301 pressure transmitter user manual

Document VI-EPT-250709 | English translation

Product overview

The EPT-301 combines a stainless-steel isolation diaphragm and a piezoresistive silicon sensor with a dedicated digital circuit. Amplification, linear correction, interference suppression and surge protection condition the pressure signal into a standard industrial output. Applications include petrochemical equipment, environmental protection and water treatment, measurement and control, hydraulics and pneumatics.

Product features

Short-circuit and reverse-polarity protection; interference and surge protection; multiple analog output choices; 316L stainless-steel isolation diaphragm.

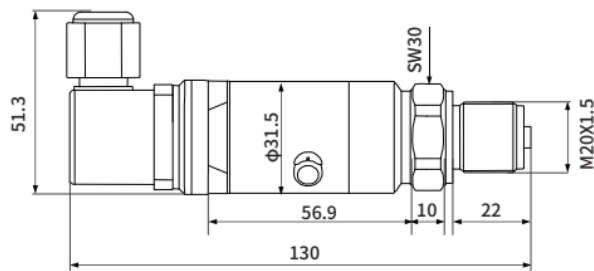
Technical specifications

Parameter	Specification
Measuring range	−100kPa to 100MPa; gauge or absolute pressure, customizable
Overload pressure	2× full scale or 110MPa, whichever is smaller
Accuracy class	0.25 (±0.25%FS) or 0.5 (±0.5%FS)
Operating temperature	Plug-in type: −30°C to 80°C; cable type: −10°C to 70°C
Outputs	Two-wire 4–20mA; three-wire 0–5V; three-wire 0–10V; four-wire RS485
Supply	10–28VDC; selected models support 5V ±0.1V
Protection	IP65 for B1, B3 and B4; IP68 for the standard B2 cable type; the separately illustrated flameproof B2 version is IP66
Medium compatibility	Fluids that do not corrode stainless steel or fluororubber (FKM)
Process connection	M20×1.5 as standard; other threads can be customized
Electrical connection	Hirschmann connector, aviation-style plug or cable leads

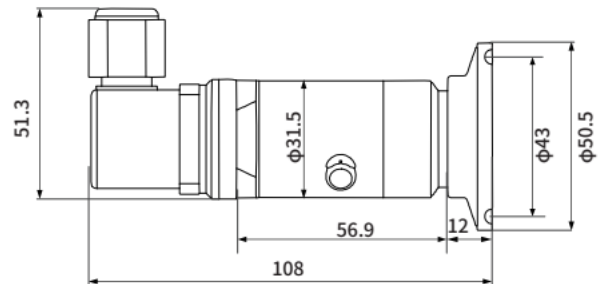
Product design and specifications may change without prior notice. Select the electrical, process and protection configuration for the actual application.

Outline dimensions

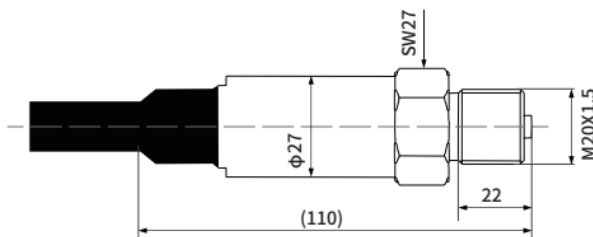
Dimensions in mm. Parentheses indicate reference dimensions.



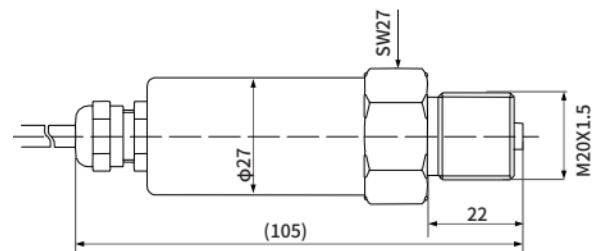
B1 four-pin plug / IP65



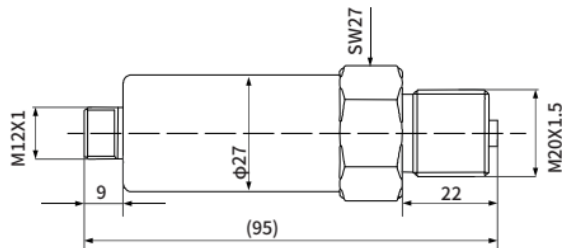
B1 four-pin plug / IP65, P1 flush diaphragm



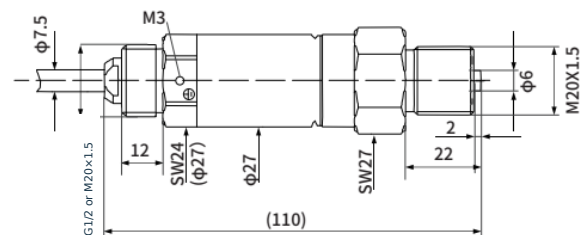
B2 cable outlet / IP68



B3 cable outlet / IP65



B4 M12x1 four-pin plug / IP65



B2 flameproof cable outlet / IP66

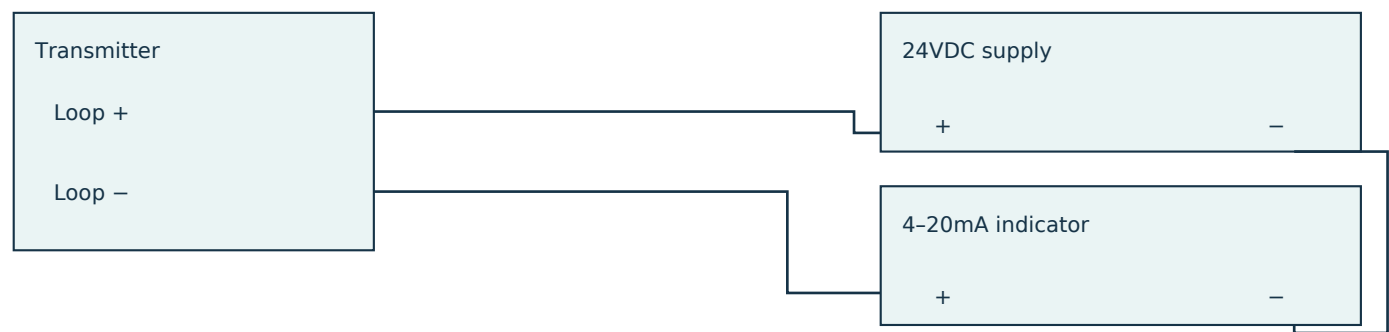
B2 flameproof cable entry: G1/2 or M20x1.5. Additional detail labels are M3, Ø7.5, Ø6, 12mm, 22mm and 2mm; the entry hex is SW24 (Ø27 reference), with SW27 at the process fitting.

Version	Length	Body / hex	Connection details
B1 threaded	130	Ø31.5; SW30	M20x1.5; thread length 22; shoulder 10; main body 56.9; connector height 51.3
B1 P1 flush diaphragm	108	Ø31.5	Ø50.5 ferrule, Ø43 inner reference; neck 12; main body 56.9; connector height 51.3
B2 IP68 cable	(110)	Ø27; SW27	M20x1.5; thread length 22
B3 IP65 cable	(105)	Ø27; SW27	M20x1.5; thread length 22
B4 IP65 M12	(95)	Ø27; SW27	M12x1 connector, 9mm projection; M20x1.5 process thread, length 22
B2 IP66 flameproof	(110)	Ø27; SW27	M20x1.5 process connection; cable-entry options above

Electrical connection circuits

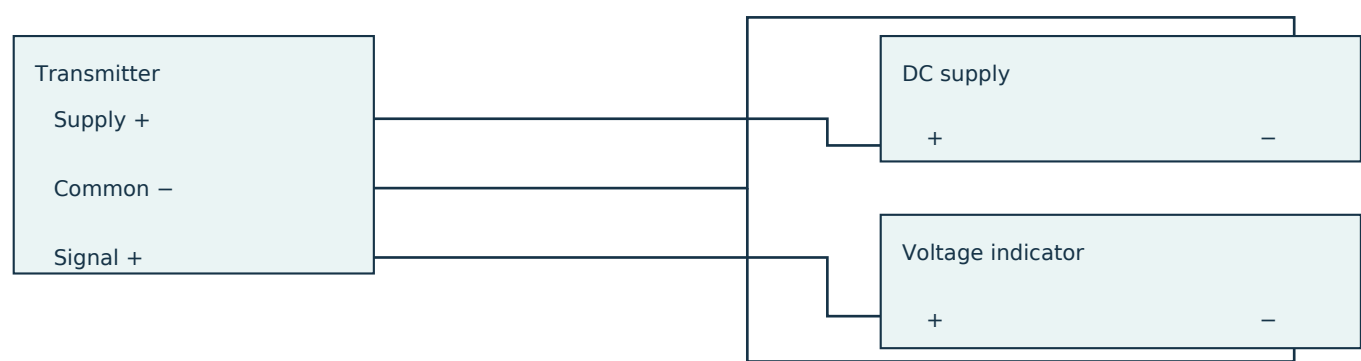
Observe polarity. Reverse connection may activate internal protection and prevent a signal output.

Two-wire current output



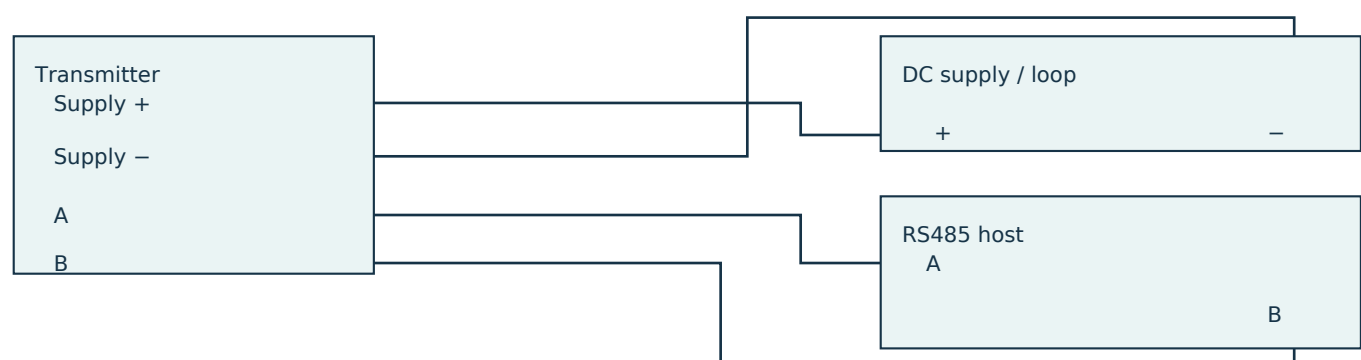
Supply + → transmitter +; transmitter return → current input +; current input - → supply -.

Three-wire voltage output



Join supply -, transmitter common and voltage-input -. Connect transmitter signal + to voltage-input +.

Four-wire RS485 output



Connect power to the specified supply pair and the RS485 host to A / B. Use the connector-specific assignments on the following page; the Hirschmann and M12 / cable arrangements are different.

Connector and cable assignments

Hirschmann / B1 connector

Output	Pin 1	Pin 2	Pin 3	Earth-symbol contact
Two-wire 4-20mA	Supply +	Loop return	Unused	Not used in signal circuit
Three-wire voltage	Supply +	Supply – / common	Voltage output	Not used in signal circuit
Four-wire RS485	V+	RS485 A	RS485 B	GND

B2 cable leads

Colour	Two-wire	Three-wire	Four-wire
Red	V+	V+	V+
Blue	0V / OUT+	0V / OUT+	RS485 A
Yellow	Unused	GND	GND
Green	Unused	Unused	RS485 B

B4 M12×1 four-pin connector

Pin / colour	Two-wire	Three-wire	Four-wire
1 / red	V+	V+	V+
2 / blue	0V / OUT+	0V / OUT+	RS485 A
3 / yellow	Unused	GND	GND
4 / green	Unused	Unused	RS485 B

In the two-wire arrangement, blue is the loop return. In the three-wire arrangement, blue is signal output and yellow is the supply / signal common. B4 pin numbers follow the coloured connector view in the source; do not transfer the Hirschmann pin assignments to M12.

Installation and power-on

Personnel: Installation, commissioning and maintenance should be performed by qualified engineers or technicians. Read and follow the manual before installation. In hazardous locations, also follow the relevant national installation, operation and maintenance requirements.

1. Location: Choose a measurement point with stable temperature, without vibration or impact, and away from strong electromagnetic interference.

2. Wiring: Wire the instrument according to its model and the appropriate connection table and circuit.

3. Before power-on: Verify that the process connection is securely sealed. Check polarity, firmly connected terminals, and the absence of loose connections or short circuits before applying power.

4. Operation: The transmitter starts working after power is applied. Allow approximately 30 minutes for the internal components and output to stabilize.

Precautions

- 1. Operating limits:** Do not exceed the transmitter's measuring range or temperature limits.
- 2. Cable routing:** Do not run signal wires in the same conduit as power wiring. Keep them away from high-power equipment to reduce interference from magnetic and electric fields.
- 3. Impulse lines:** Prevent strongly corrosive or overheated media from contacting the sensor directly. Keep the impulse line as short as practicable and prevent solid particles from accumulating, which can cause blockage or measurement error. When measuring steam or another hot medium, keep the transmitter within its permitted temperature range. For steam, fill the impulse line with water to isolate the sensor from direct steam contact.
- 4. Handling:** Avoid collisions during handling and installation, as impact can affect the circuit.
- 5. Diaphragm:** Do not touch the isolation diaphragm inside the pressure inlet with a foreign object; this can damage the diaphragm or sensing element.
- 6. Faults:** If a problem or abnormal condition occurs during installation or operation, do not open or repair the product yourself. Contact the manufacturer for assistance.

Manufacturer information

Trademark owner and manufacturer: Yueqing ELECALL Electric Co., Ltd.

Address: No. 246 Weishi Road, Yueqing Economic Development Zone, Zhejiang, China.

Telephone: 4006-111-323.

Website: www.elecall.cn.

Brand statement: ELECALL, dedicated to high-quality products. Do better for ever.

Configuration notes

The standard B2 cable version is IP68, while a separate B2 flameproof drawing specifies IP66; both versions remain distinct. This document does not supply a full explosion-protection designation or a certificate number.

The Hirschmann RS485 diagram assigns pin 1 to V+, pin 2 to A, pin 3 to B and the earth-symbol contact to GND. The B4 connector view maps pin 1 to red, pin 2 to blue, pin 3 to yellow and pin 4 to green. These assignments are reproduced specifically for this EPT-301 manual.