

Electrical mounting of pressure sensors and electronic pressure switches

WIKA data sheet IN 00.50

Description

WIKA offers measuring instruments with a variety of electrical outputs in order to meet diverse customer-specific application requirements.

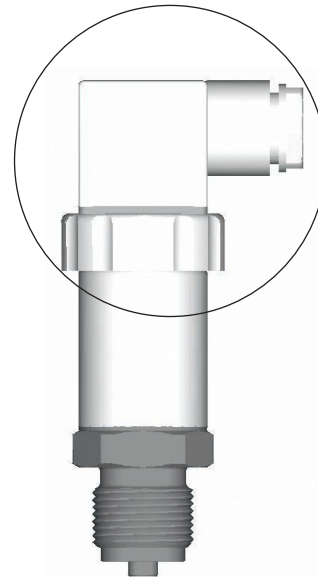
Basically, electrical connections are divided into two categories: electrical connection using connectors and electrical connection using cables with open stranded wires. Two variants are possible for the latter - cable connected directly to the pressure sensor or cable connected to the pressure sensor using a connector.

In addition, for the electrical connections of pressure sensors, a basic distinction is made between the two characteristics of 2-wire and 3-wire connections. Electrical pressure switches are available in versions with one or two switch contacts.

In the case of pressure sensors with a digital output signal, it is also possible to duplicate the signal output and to separate the signal output and the voltage supply.

Depending on the characteristics and detailed design of the category of electrical connection, there are different assignments of the stranded wires or the contacts of the respective connector.

This document describes the basic steps and requirements for electrical installation. Individual product information can be found in the respective operating instructions.



Requirements for the mounting point

The mounting point must meet the following conditions:

- Air humidity $\leq 80\%$ r. h. (non-condensing).
- Protected from weather influences.
- Sufficient space for a safe electrical installation.
- Permissible ambient temperatures remain within the performance limits of the measuring instrument. Consider possible restrictions on the ambient temperature range caused by mating connectors used.

Making the electrical connection

Preparation:

- Only use original accessories.
 - To connect the instrument, the mating connector or cable outlet must be assembled in advance.
 - Only use cables with suitable characteristics for the particular operating conditions.
 - Select a cable diameter that matches the cable bushing of the connector.
- For accessories, see data sheet of the respective pressure sensors or electronic pressure switches.

Electrical mounting:

Mating connector

Make the connection to the mating connector, see „Fitting a DIN 175301-803 angular connector“ on page Seite 3.

1. Make sure that the cable gland of the mounted plug has a tight fit.
2. Check existing seals for damage.
3. Establish the plug connection. Tighten any cable glands and check the correct seating of the seal, if present, to ensure the ingress protection.



Only the correct combination of connector and mating connector will ensure the desired IP ingress protection.

Cable outlet

1. Select mounting option.
2. Cable with ventilation tubes must be vented to atmosphere.
3. If specified, with cable versions, attach strain relief.
4. For cable outlets, make sure that no moisture enters at the cable ends.

Fitting a DIN 175301-803 angular connector

1. Loosen the screw (1).
2. Loosen the cable gland (2).
3. Pull the angular connector (5) + (6) away from the instrument.
- 4.



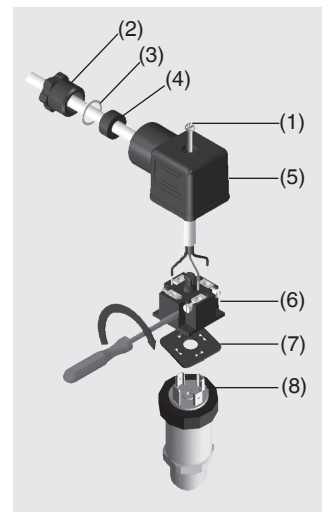
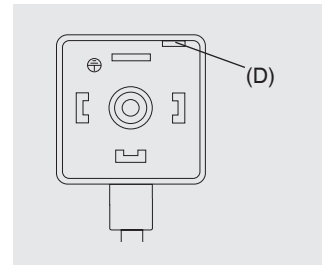
CAUTION! Improper mounting

The seal of the angle housing will be damaged.

- ▶ Do not try to push the terminal block (6) out of the angle housing (5) using the screw hole (1) or the cable gland (2).

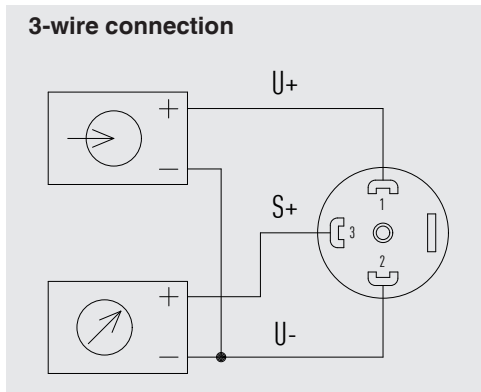
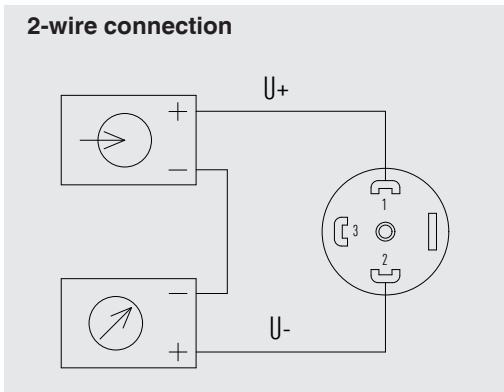
Via the mounting hole (D), lever the terminal block (6) out of the angle housing (5).

5. Slide the cable through the cable gland (2), the ring (3), the seal (4) and the angle housing (5).
6. Connect the cable ends to the terminal block (6) in accordance with the connection diagram.
7. Press the angle housing (5) onto the terminal block (6).
8. Make sure that the seals are not damaged and that the cable gland and seals are correctly seated in order to ensure ingress protection.
9. Tighten the cable gland (2) around the cable.
10. Place the flat gasket (7) over the instrument's connection pins.
11. Push the angular connector (5) + (6) onto the instrument.
12. Tighten the screw (1).

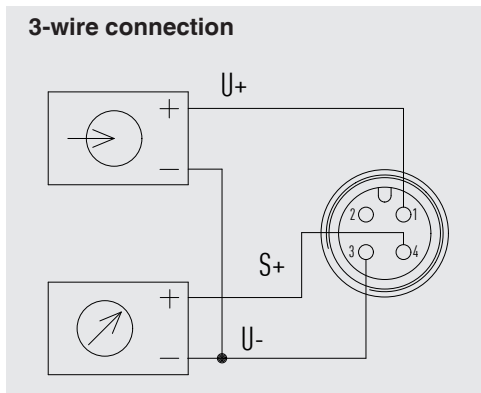
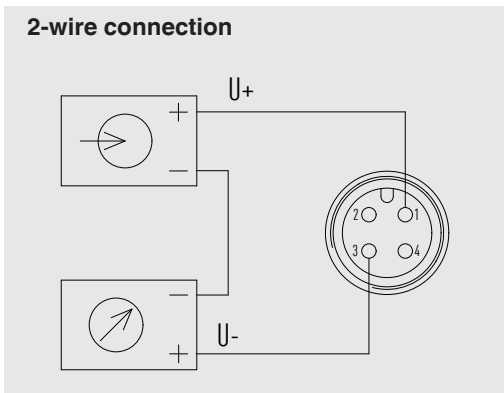


Connection types: Example of M12 and DIN-A connector



Angled socket, DIN 175301-803 A



Circular connector, M 12x1, 4-polig



Legend

- U₊ Positive power supply terminal
- U₋ Negative power supply terminal
- S₊ Analogue output
-  Voltage output
-  Load

→ The pin assignment must be taken from the respective product label.

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WIKAL Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.de
www.wika.de