

M910/920 quick installation

Installation manual



MEATEST

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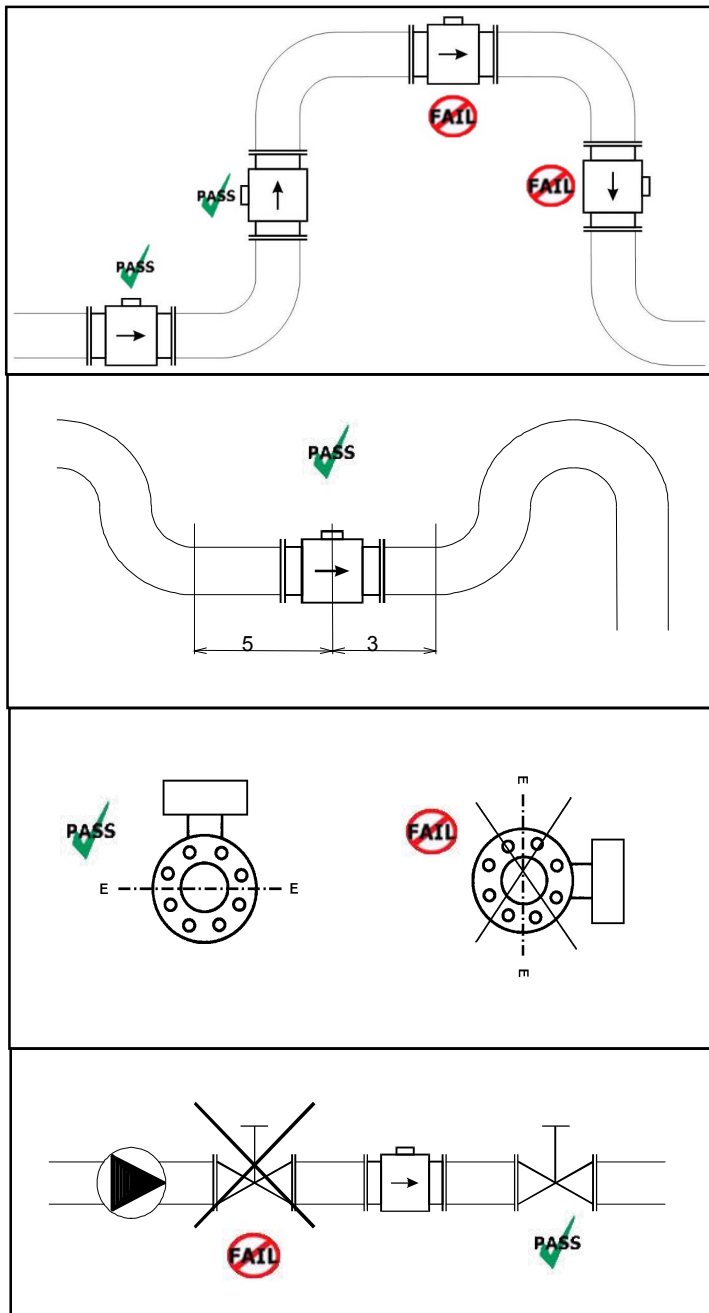
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1 M910/920 quick installation

1.1 Rubber liner wetting

It is recommended for flowmeters with rubber liner to soak the liner 24 hours before the installation. You can insert wet sponge or wet cloth into the sensor. Other possibility is to soak it after installation with the process liquid. However in this case the flowmeter can show small deviation for zero flowrate during the first day after installation.

1.2 Sensor installation



Sensor must always remain full

The sensor tube must always remain full. The best way to achieve this is to locate the sensor in a low section of pipe. When the sensor is mounted on a vertical section of pipe, the flow direction must be upwards.

Inlet and outlet

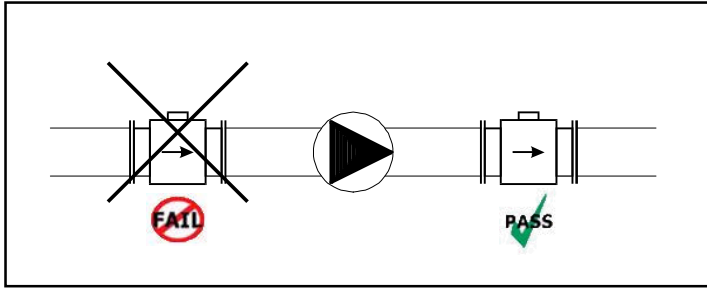
It is recommended to install the sensor in a section of straight pipe with at least 5 times the pipe diameter before sensor and 3 times after sensor.

Mounting position

The axis of measuring electrodes must be approximately horizontal.

Control valve

Suitable location of a shutoff valve is downstream of a sensor.



Pump

Never install the sensor on the suction side of a pump or on a section of pipe where a vacuum is possible.

Vibration

To avoid mechanical damage protect both electronic unit and sensor against mechanical vibrations. When strong vibrations are possible, both the input and output pipe must be mechanically fixed or the remote version with a separate electronic unit should be used.

Overheating

To avoid overheating, the electronic unit should be protected against direct sunlight especially in areas with a warm climate with ambient temperatures over 30 °C. If necessary a sunshade has to be mounted over the electronic unit or a remote version with a separate electronic unit should be used.

1.3 Electrical connection

Only a competent person may connect the flowmeter to the mains power supply.

The flowmeter can be connected to the power supply with either a fixed power cable or with a flying lead cable and plug. Cable entries on the electronic unit can be used for flexible electrical cables. Cables with a diameter between 8 and 10 mm must be used to keep protection IP67. It is not recommended to use rigid metal or plastic conduits.

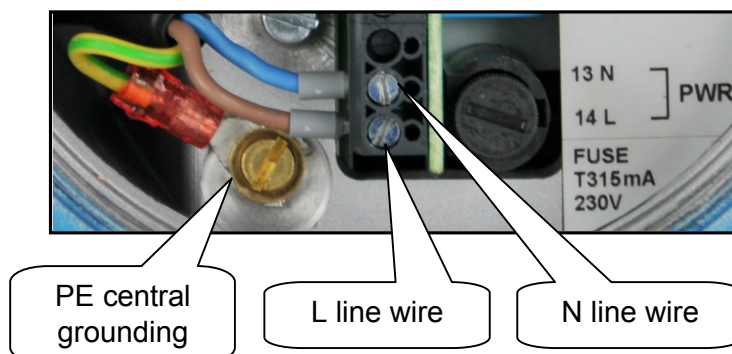
If you use a cable and plug it is recommended that the cable has a cross-section of 3 x 1.5mm² and with a minimum length of 1 m.

In the case of a fixed connection an independent power switch or circuit breaker should be located close to the flowmeter. Cable cross-section as above.

Power supply

To connect the flowmeter to the power supply the following procedure should be used.

- Unscrew the back cover using the special wrench (standard part of delivery).
- Connect the earth wire (yellow-green colour) to the central grounding point inside the case. The end of earth wire must be hooked (app. 3 mm) and fixed to the earth screw.



- Connect Live and Neutral power cables to the power line terminal clamps with labels 14 (L-wire, brown terminal colour) and 13 (N-wire, blue terminal colour).
- Screw on the back cover.
- Switch on the power supply.

Note:

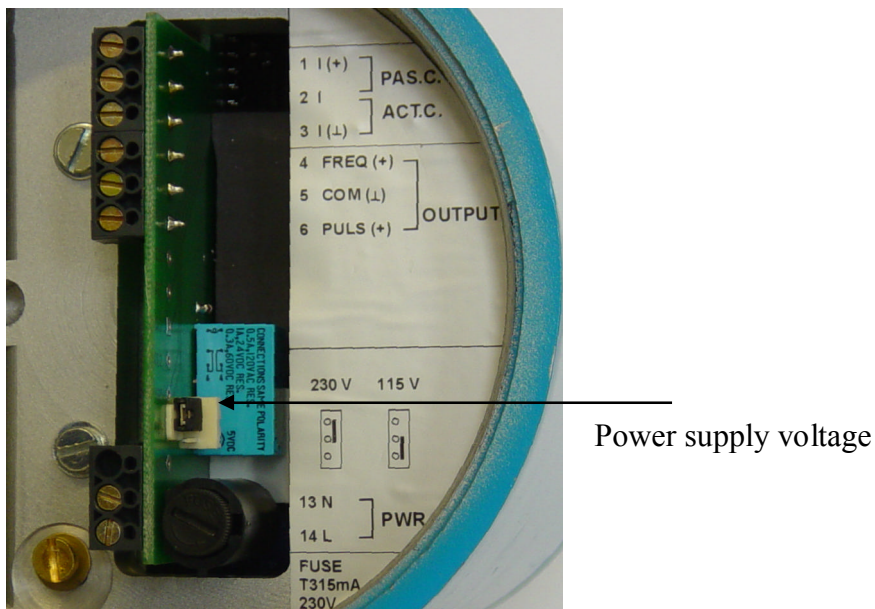
Be careful to avoid following problems during electrical installation:

- Do not cross or loop cables inside electronic unit.
- Use separate cable entries for power supply and signal wires.

1.4 Power supply voltage selection (M910E, 115/230V version only)

M910E is equipped with a power supply voltage selector, which enables the use of both 115VAC and 230VAC supply voltage. The selector is located on the PC board (see below). It is accessible after removing the cover as follows:

- Disconnect the power supply from the flowmeter.
- Unscrew the back cover using the special wrench (standard part of delivery).
- The power supply voltage selector is located behind the back cover. Move the jumper to the required position.
- Screw on the back cover.
- Reconnect the power supply.



Note: M910 and M920 are equipped with automatic power supply selector.

1.5 Electric connection between converter and sensor – Remote version

For remote version converter and flanged sensor are connected with two (2-wire unshielded and 3-wire shielded) cables. Standard length of cables is 6 meter. It is recommended to mount the transmitter not too far from the flanged sensor. Use cables as short as possible.



Five-terminal connector is located in separated box. The same box is used for the converter and also for the sensor. Colours of wires are following:

3-wire shielded cable (shielding is connected to the green wire):

Blue (Brown) : Electrode 1 (EL1)

Green : Ground

Red (White): Electrode 2 (EL2)

2-wire cable:

Brown : Excitation 1 (EXCITATION)

White : Excitation 2 (EXCITATION)

Following procedure should be observed to connect sensor cable to the transmitter or sensor:

- Switch off power supply.
- Dismount top cover of connection box. Four screws must be removed.
- Connect 5 wires to the connector.
- As the basic protection of connection box is IP65 it is important (in case you need better protection) to fill the box (with connected wires) with reenterable insulating and sealing compound. One piece of compound is standard part of delivery. Using this technology will be protection of transmitter IP67 and protection of sensor IP68.
- Mount the cover back.
- Switch on power supply.

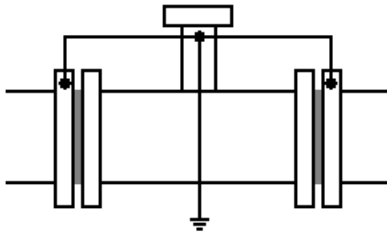


1.6 Sensor grounding

To ensure the correct operation of the flowmeter an earthing connection between the sensor and pipeline must be made. The sensor is equipped with screw connection for an earthing wire. This screw has to be connected to the flange on the pipeline. Use copper wire to connect between the flange and the earth screw on the sensor.

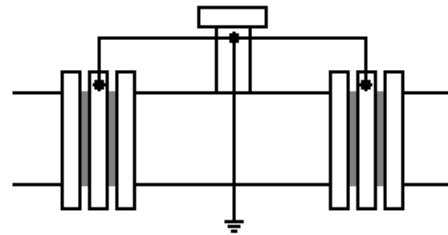
If the pipeline is manufactured from a non-electrically conductive material, or if the pipe is lined with a similar material, special grounding rings must be installed between flanges.

Metal pipeline



Metal pipeline
Grounded to flanges

Plastic pipeline / pipeline with internal coating Only with grounding rings



Plastic pipeline
Grounded to grounding rings

Manufacturer

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