
4...20 mA level transmitter



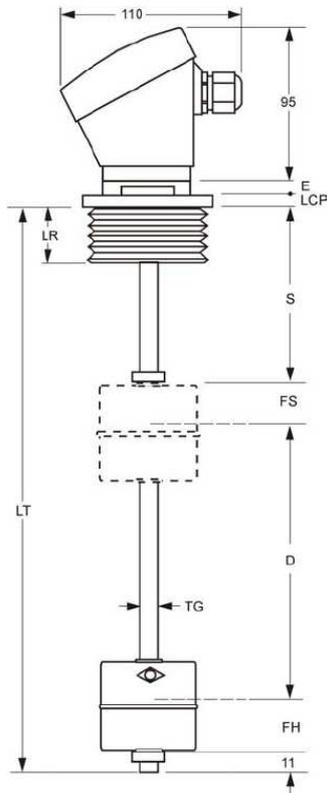
Principle of operation

The operation principle is based on the action of a serie of Reed micro-switches located inside de guide tube, generating an output signal proportionally direct to the position of the float and therefore of the liquid.

Technical data:

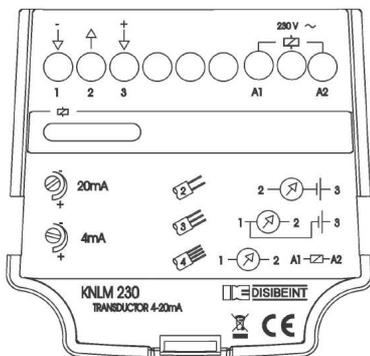
Process connection:	Thread 1", 1 ½" or 2" BSP-Male. Also available with flanges according to DIN DN50 and clamp flange 2 ½".
Float:	Cylindrical, Ø 52 mm. Stainless steel AISI 316.
Wiring connection:	PTB connection box (64x95x110 mm). ATEX version upon request.
Protection degree:	IP67.
Tube length:	150 ... 2000 mm. Ø tube 12 mm.
Output signal:	4-20 mA.
Power supply:	10 ... 35 Vdc.
Pressure service:	15 bar.
Temperature service:	-20°C ... +50°C.
Sensibility:	10 mm. Optional 5 mm.

Dimensions:



E – Distance to process
S – Blind zone
LR – Thread length
LT – Full length
D – Measuring length
TG – Guide tube
FS – Dry float zone
FH – Wet float zone
LCP – Process connection height

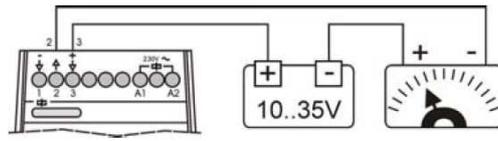
Connection and adjustment



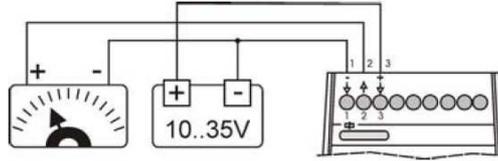
The sensor is factory preset for a reading of 4...20 mA between the margins (D). If you desire to calibrate again, connect it as shown in the diagram. Place the float on the bottom and set 4 mA in the instrument by the multiturn potentiometer (4 mA). Do the same operation with the potentiometer (20 mA) placing the float on top.

- 1 Negative
- 2 Output mA
- 3 Positive
- A1-A2 Power supply CA

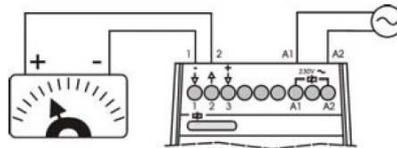
2 Wires: Connect them to the terminals 2 and 3 taking into account the polarity. A voltage source is required for supplying voltage to the current loop.



3 Wires: Connect them to the terminals 1, 2 and 3 taking into account the polarity. A voltage source is required for supplying voltage to the current loop.



4 Wires: The loop is connected to the terminals 1 and 2 taking into account the polarity. The CA voltage is connected to the terminals A1 and A2.



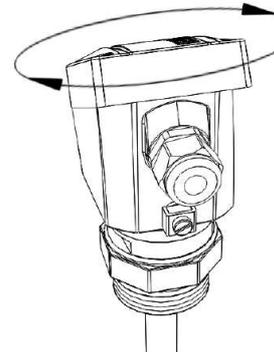
Handling and installation

Handling

Do not use the housing to transport or to install the sensor in the tank. Once it is properly installed, you can rotate 350 degrees the head with the hand to place it in the appropriate position.

Mounting

The sensor must be mounted vertically. It should leave enough space on the Wessel wall to prevent the float from touching it and avoid the proximity of magnetic or ferrous materials. We suggest to install the sensor away from shaking elements, if any.



Recommendations and ordering example

Determine the resolution you desire in your application by choosing the appropriate step between readings. The smaller distance between readings, the better resolution you get.

The resulting measures are a function of the density of the liquid and the float. Unless specified otherwise, the calculations are made base on the density of water (1 gr/cm³).

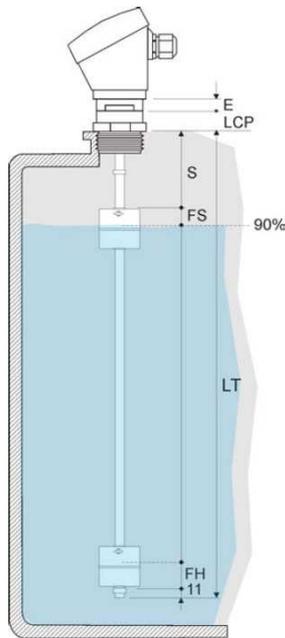
Note that the measurement can never be done from the bottom of the tank because there are some unavoidable levels resulting from the construction of the sensor itself, corresponding to the end of the guide tube and the height where it housed the bouyant level (see chart).

It is mostly recommended to manufacture the sensor to the maximum internal height of the tank as it can put the measurement distance where it suits you, taking into account the above space. In any case, is recommended that the total length of the sensor is somewhat lower than the maximum height inside the tank to prevent curving the tube and impede the movement of the float.

You can determine a bound (S) to establish ana rea where there is no reading at all. In case you want to remove the head of the connection process (for reasons of high temperature, for example) may be specified a dimension € exceeding the standard.

To order is necessary the following information:

- Transition between readings (10 or 5 mm).
- Length of the zone without measurement (S).
- Full length (LT).
- Power supply, if any.
- Density of the fluid.



Example:

In a tank of 1500 mm. high (LT) containing water to be measured up to 90% capacity. The distance from the bottom of the nipple to the maximum fill elevation is 75 mm. (S). Reading pass desired 10 mm. Eléctrically connects to a link existing 4...20 mA (2 wires).

The data required for its manufacture:

- Step = 10 mm.
- S = 75 mm.
- Full length LT = 1500 mm.
- Without external supply
- Liquid density, if other than 1 gr/cm³.