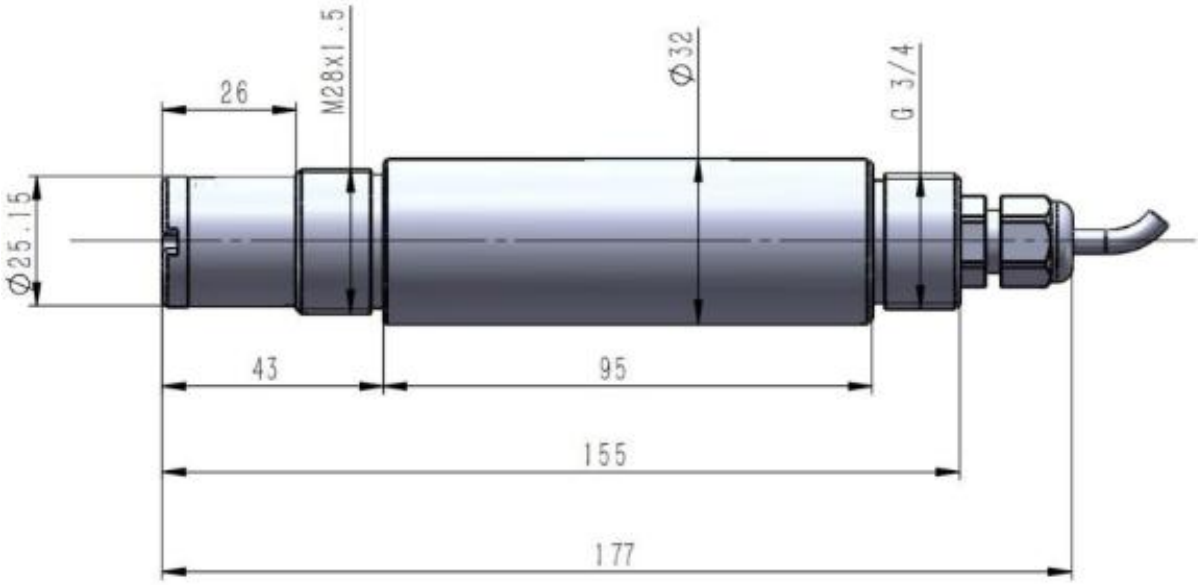
Turbidity sensor

The turbidity sensor can be used to measure the turbidity in water.

It has an IP68 waterproof rating, and its cable is seawater-resistant. The sensor can be immersed directly in the water without the need for a protective tube, ensuring long-term stability, reliability and accuracy. The sensor probe uses a scattered-light measurement method to measure turbidity.



The turbidity in the water sample causes the light to scatter. The sensor measures the intensity of the scattered light in a direction perpendicular to the incident light and compares it with the internal calibration value in order to calculate the turbidity of the water sample.

By using infrared light and filters, interference from ambient light is eliminated. After linearity processing, the output signal remains stable and accurate.

Feldfühler GmbH
Kortscher Str. 97,
39028 Schlanders
Italy

+39 0473 711108
support@feldfühler.app
https://feldfühler.app

1. Features

- RS485 temperature, humidity, illumination and pressure sensor
- Uses an internal axial capacitor filter, and a 100 MΩ resistor increases the impedance, which improves stability.
- Compact design, low power consumption and easy to transport.
- High integration, long service life and high reliability.
- Supports up to four isolations to withstand complex interference on site, with a waterproof rating of IP68.
- Equipped with a high-quality, low-noise cable that extends the signal output length to over 20 meters.

2. Technical specifications

- Measuring range: 0.1–1000.0 NTU
- Accuracy: ±5 %
- Resolution: 0.1 NTU
- Stability: ≤3 mV/24 hours
- Output signal:
  - A: 4–20 mA (current loop)
  - B: RS485 (standard Modbus-RTU protocol, default device address: 15)
- Power supply:
  - 5–24 V DC (for RS485 output signal)
  - 12–24 V DC (for 4–20 mA output signal)
- Operating environment:
  - Temperature: 0–60 °C
  - Air humidity: ≤95 % RH
  - Water pressure: 0 to 6 bar
- Power consumption: ≤0.5 W

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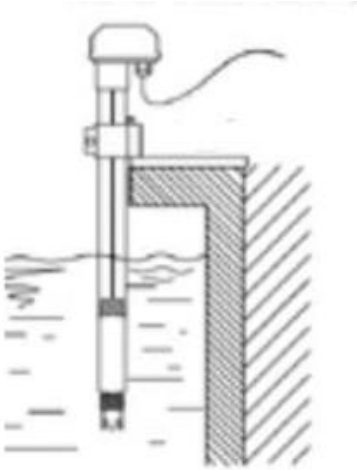
3. Operating and installation instructions

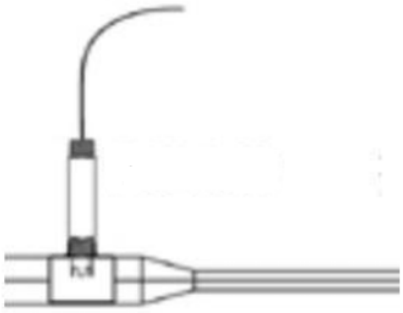
The sensor can be immersed directly in the water without needing a protective tube, which ensures long-term stability, reliability and accuracy.

In complex water conditions and when precise data is required, the sensor probe should be cleaned regularly.

Underwater installation:

The device's connection cable is routed through a pipe, with the 3/4-inch thread at the upper end of the device being connected to the 3/4-inch internal thread of the pipe using sealing tape (thread tape). Make sure that both the top of the device and the device cable remain dry and are not submerged.





Pipeline installation:

Connect the device to the pipeline via the M28x1.5 thread.

4. Calibration

To calibrate the turbidity, only a calibration solution is required. Select a solution with a value of 0 NTU, 200 NTU, 400 NTU, 600 NTU, 800 NTU or 1000 NTU and enter the corresponding calibration command:

- "AT+CALNTU=0": 0 NTU turbidity solution (command: 0xFE 00)
- "AT+CALNTU=2": 200 NTU turbidity solution (command: 0xFE 02)
- "AT+CALNTU=4": 400 NTU turbidity solution (command: 0xFE 04)

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•"AT+CALNTU=6": 600 NTU turbidity solution (command: 0xFE 06)

•"AT+CALNTU=8": 800 NTU turbidity solution (command: 0xFE 08)

•"AT+CALNTU=10": 1000 NTU turbidity solution (command: 0xFE 0A)

5. Precautions

- To ensure a correct measurement on pipelines, avoid air bubbles between the measuring units, as these can lead to measurement deviations.
- Check that the packaging is undamaged and that the product model matches the model you selected.
- Do not connect the cables while the power supply is switched on. Only switch on the power supply after the wiring has been completed and checked.
- Do not modify any factory-soldered components or cables during use.
- The sensor is a precision device. Do not disassemble it and avoid letting the sensor surface come into contact with sharp objects or corrosive liquids, in order to prevent damage.
- Only switch on the power supply after the wiring has been double-checked.

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