

- For continuous level measurement of non-aggressive liquids in non-pressure reservoirs, boreholes, tanks etc.
- Precise customer choice of the measurement range up to 100 m (H<sub>2</sub>O)
- Current or Voltage output
- Easy "plug and play" installation without any settings

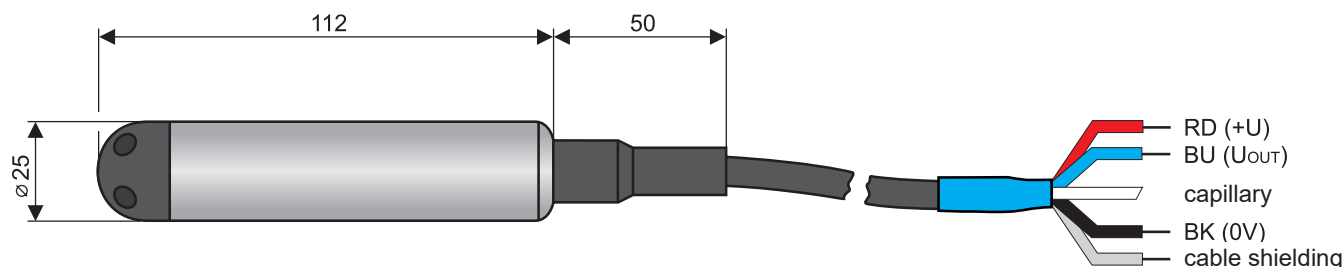


**Hydrostatic level meter HLM-25S** is compact measuring device containing silicon strain gauge sensor and evaluation electronics in stainless steel probe. From the probe housing comes out 2-wire cable with capillary (for atmospheric pressure compensation). The front side of the sensor is equipped with plastic removable cap (to avoid membrane damage). The level meter has no customer-accessible adjusting elements.

### VARIANTS OF SENSORS

- **HLM-25C**      **Measuring range 1 ... 100 m H<sub>2</sub>O**, arbitrary measurement ranges (customer configurable in 10 cm step). Current (4 ... 20 mA) or voltage (0 ... 10 V) output, performance for non-explosive areas.

### DIMENSIONAL DRAWING



## TECHNICAL SPECIFICATIONS

| TECHNICAL SPECIFICATION   |  |   |
|---|--|---|
| Supply voltage  | HLM-25S-____-I<br>HLM-25S-____-U   | 12 ... 36 V DC<br>16 ... 36 V DC  |
| Current output  | HLM-25S-____-I   | 4 ... 20 mA   |
| Voltage output  | HLM-25S-____-U   | 0 ... 10 V  |
| Power consumption (off-load)                                      | HLM-25S-____-U   | Max. 8 mA   |
| Pressure permissible overload                                     |  | 1.5x range  |
| Basic error – accuracy (hysteresis, repeatability, non-linearity) |  | Typ. 0.5% of range<br>Max. 0.7% of range  |
| Long-term stability   |  | 0.3% / Year   |
| Temperature error<br>(for 0 ... +50°C)                            | Range 1 ... 5 m H <sub>2</sub> O<br>Range 5 ... 10 m H <sub>2</sub> O<br>Range 10 ... 100 m H <sub>2</sub> O | Max. 0.04% / K<br>Max. 0.03% / K<br>Max. 0.02% / K  |
| Compensated temperature range                                     |  | 0 ... +50°C   |
| Ambient temperature range (medium temperature)                    |  | -20 ... +70 °C  |
| Maximal load resistance for current output (U = 24 V DC)          |  | R <sub>max</sub> = 600 Ω  |
| Minimal load resistance for voltage output                        |  | R <sub>min</sub> = 1 kΩ   |
| Protection class  |  | IP68  |
| Used materials  | Probe housing<br>Membrane<br>Pressure transducer cap<br>Cable sheath<br>Cable gland                          | St. steel W.Nr. 1.4305 (AISI 303)<br>St. steel W.Nr. 1.4435 (AISI 316L)<br>Plastic HDPE<br>Plastic PE<br>silicone |
| Weight  | Sensor<br>Cable (1 m)  | 190 g<br>60 g   |

## RANGE OF APPLICATION

For continuous level measurement of non-aggressive liquids without gross (solid) impurities in non-pressure tanks, boreholes, wells, reservoirs and swimming pools. Suitability for other than water liquids are advised to consult with the manufacturer.

## INSTALLATION INSTRUCTIONS

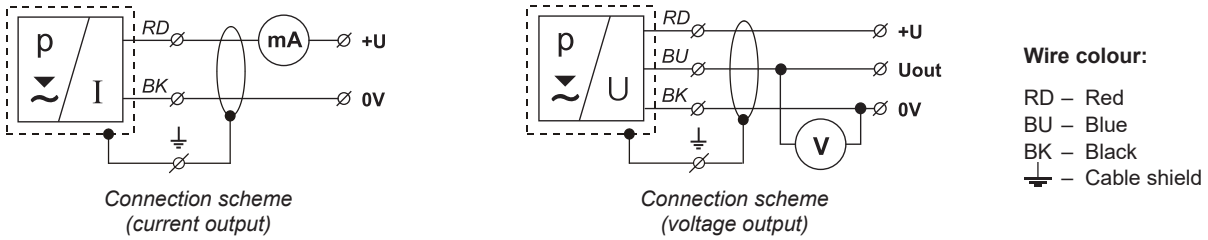
- Installation is done by hanging the probe down into the measured area (tanks, boreholes). The probe is left hanging on the cable, or is placed on the bottom. If the probe is **hung deeper than 50 m**, it is necessary to use a **cable hanger KD-60** (see picture)
- The cable includes an air compensation tubing (capillary), so the connection must be done in **non-hermetic junction box**.
- When wounding up the cable in the bundle it must have minimum diameter of 30 cm. The cable is not recommended to be **shortened** or otherwise **mechanically modified**.
- In tanks where there are **strong turbulences or waves**, the probe should be placed in the stilling tube, behind the wall, or at least at the maximum possible distance from the source of turbulence.
- When using **other liquid than water** it is needed to make the output correction with respect to the density of the liquid, eventually **consult the application** with the manufacturer.



Cable hanger KD-60

## ELECTRICAL CONNECTION

The sensor is connected to the evaluation (control, display) units through the connecting cables. Connection scheme is shown on pictures. Electrical connections must be always done in voltage-free state! The power supply unit must be a source of safe voltage which can be a part of the evaluation or display device.



Electrical connection can only be made in a voltage-free state!

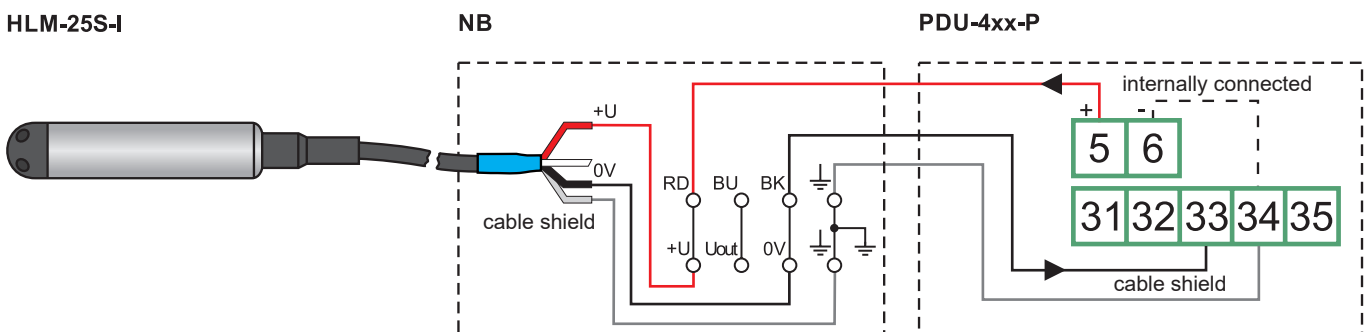
In the event that the level meter is fitted with a shielded cable, it is necessary to ground the cable on the side of the power source for the event of a possible lightning electrical discharge in the vicinity of the sensor.

In the event that the level meter is installed in an outdoor environment at a distance greater than 20 m from the outdoor switchboard, or from an enclosed building, it is necessary to supplement the electrical cable leading to the level meter with suitable overvoltage protection.

In case of strong ambient electromagnetic interference, paralleling of conductors with power distribution, or for distribution to distances over 30m, we recommend using a shielded cable and its grounding on the side of the power source.

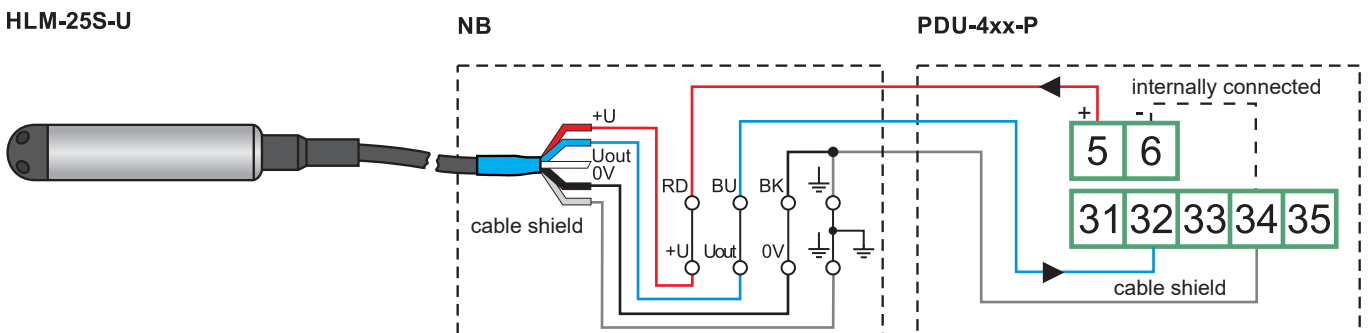
## CONNECTION EXAMPLES

### CONNECTION OF LEVEL METER HLM-25-S-I WITH CURRENT OUTPUT TO THE UNIT PDU-4xx-P (OUTPUT 4 ... 20 mA) USING JUNCTION BOX NB



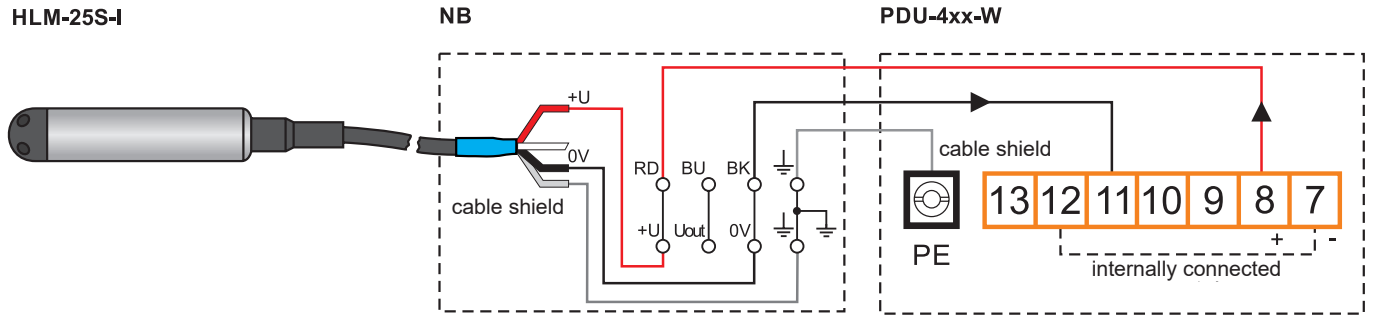
In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

### CONNECTION OF LEVEL METER HLM-25-S-U WITH VOLTAGE OUTPUT TO THE UNIT PDU-4xx-P (OUTPUT 0 ... 10 V) USING JUNCTION BOX NB



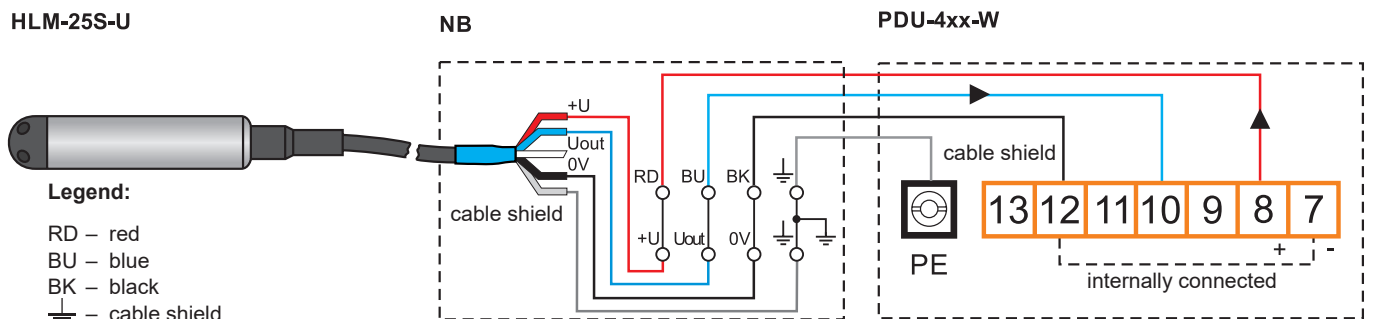
In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

**CONNECTION OF LEVEL METER HLM-25-S-I WITH CURRENT OUTPUT TO THE UNIT PDU-4xx-W (OUTPUT 4 ... 20 mA) USING JUNCTION BOX NB**



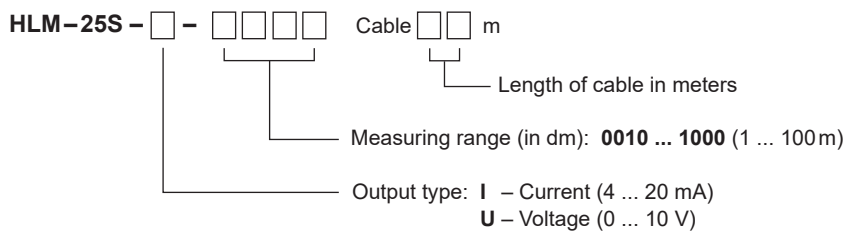
In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

**CONNECTION OF LEVEL METER HLM-25-S-U WITH VOLTAGE OUTPUT TO THE UNIT PDU-4xx-W (OUTPUT 0 ... 10 V) USING JUNCTION BOX NB**



In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

**ORDER CODE**



**CORRECT SPECIFICATION EXAMPLES**

HLM-25S-I-0010 cable 3 m

(I) Current output 4...20 mA. **Measuring range 1 m**, cable 3 m.

HLM-25S-I-0200 cable 25 m

(I) Current output 4...20 mA. **Measuring range 20 m**, cable 25 m.

HLM-25S-U-0500 cable 52 m

(U) Current output 0...10 V. **Measuring range 50 m**, cable 52 m.

## ACCESSORIES

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**optional** – for a surcharge (see catalogue sheet of accessories)

- Cable hanger KD-60
- Nehermetic connection box NB

## SAFETY, PROTECTION AND COMPATIBILITY

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Level meter HLM-25S is equipped with protection against voltage polarity reversal, protection against current overload and protection against short term overvoltage.

Protection against dangerous contact is provided by low safety voltage according to 33 2000-4-41.

Electromagnetic compatibility is provided by conformity with standards EN 55011/B, EN 61326-1, EN 61000-4-2 (8 kV), -4-3 (10 V/m), -4-4 (2 kV), -4-5 (1 kV) and -4-6 (10 V).

## PACKAGING, SHIPPING AND STORAGE

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The HLM-25S device is supplied packaged in a cardboard box that protects it against mechanical damage.

When handling and during transport, it is necessary to prevent impacts and falls.

The HLM-25S electrical device must be stored in dry enclosed areas with humidity up to 85%, free of aggressive vapours at temperatures between -25°C and 70°C, and must be protected against the effects of weather.

