

HYDROSTATIC LEVEL METER HLM-16N,25N

- For continuous measurement of non-aggressive liquids in non-pressurized tanks, wells, etc.
- Precise customer choice of the measurement range up to 200 m (H₂O)
- Current or Voltage output (by type)
- Inside probe overvoltage protection
- Easy "plug and play" installation without any settings

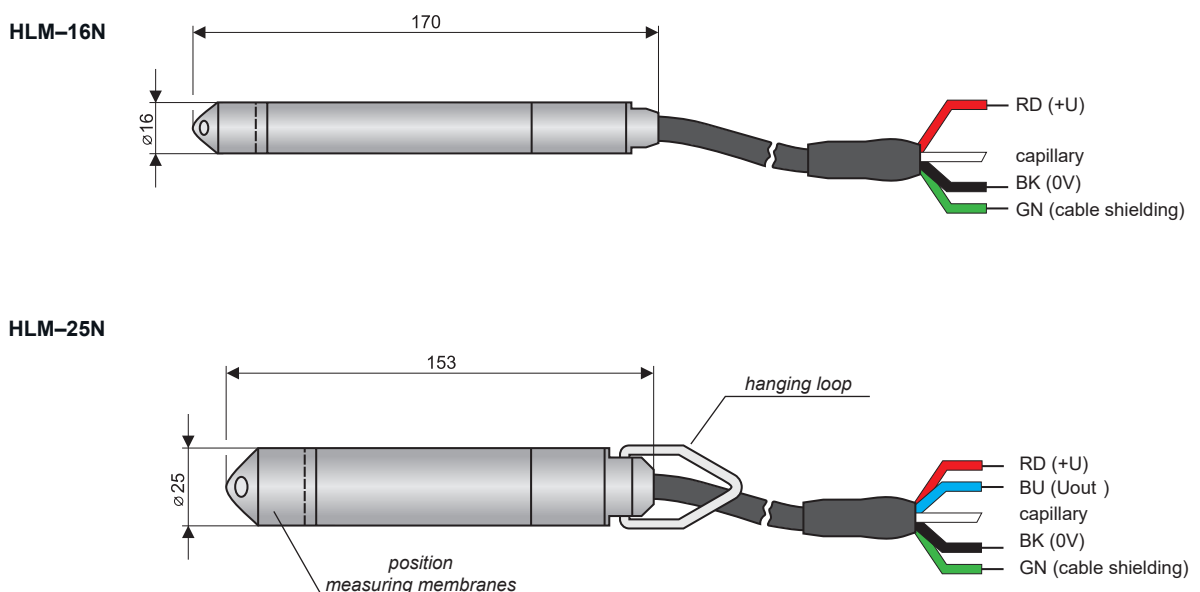


Hydrostatic level meter HLM-25 and HLM-16 is compact measuring device containing ceramic tensometric sensor and evaluation electronics in stainless steel probe. From the probe housing comes out 2-wire cable with capillary (for atmospheric pressure compensation). The opposite end of the probe is equipped with a stainless discharge cap to prevent mechanical damage to the membrane. The HLM-25 type is equipped with a supporting suspension tab for easy mounting at large depths. The level meter has no customer-accessible adjusting elements.

VARIANTS OF SENSORS

- **HLM-16N** **Measuring range max. 100 m**, standard measuring ranges: **10 – 25 – 40 – 60 a 100 m H₂O** (others at an additional cost), current output (4 ... 20mA), basic design for non-hazardous areas.
- **HLM-25N** **Measuring range max. 200 m**, **standard** measuring ranges: **1 – 1,6 – 2,5 – 4 – 6 – 10 – 25 – 40 – 60 a 100 m H₂O** (others at an additional cost), current (4 ... 20mA) or voltage (0... 10V) output, basic design for non-hazardous areas.

DIMENSIONAL DRAWING



TECHNICAL SPECIFICATIONS

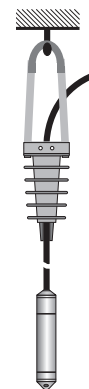
TECHNICAL SPECIFICATION		HLM-16N	HLM-25N
Supply voltage (current/voltage output)		10 ... 30 V DC / –	10 ... 30 V DC / 15 ... 30 V DC
Type output		4 ... 20 mA	4 ... 20 mA or 0 ... 10 V
Pressure permissible overload	range 1 m H ₂ O range 4 m H ₂ O other ranges	10x range	40x range 25x range 10x range
Basic error (of the total range)	range 1 m H ₂ O range 4 m H ₂ O other ranges	0,5 %	0,6 % 0,3 % 0,2 %
Hysteresis, repeatability		0,05 %	
Long-term stability		0,1 % / Year or 1 cm H ₂ O / Year	
Temperature error		max. 0,04 % / K	
Compensated temperature range (standard)		0 ... +25 °C	
Ambient temperature range (medium temperature)	Ranges > 20 m H ₂ O Ranges ≤ 20 m H ₂ O	0 ... +50 °C	-25 ... +75 °C -25 ... +50 °C
Maximal load resistance (for U=24 V)		R _{max} = 675 Ω	
Protection class		IP68	
Used materials	Probe housing Membrane Hanging loop Cable isolation	AISI 316L AISI 316L – polyurethane	AISI 316L hastelloy C-276 stainless steel polyurethane
Weight (without cable)		cca 0,45 kg	cca 0,6 kg

RANGE OF APPLICATION

For continuous measurement of water level even slightly contaminated without coarse impurities in pressureless tanks, boreholes, wells, sumps, reservoirs and swimming pools. The measured water should be chemically neutral (pH 7.2 - 7.6) and should not contain increased amounts of chlorine. If the water is not chemically neutral, foreign bodies made of other metallic materials (especially copper or brass) must not be placed in the measured space. Failure to follow these guidelines may result in corrosive damage to the stainless steel sensor housing. The suitability of using the level meter for measuring liquids other than water must be consulted with the manufacturer.

INSTALLATION INSTRUCTIONS

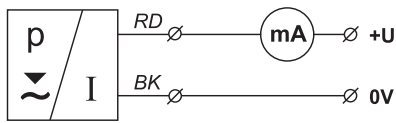
- Installation is done by hanging the probe down into the measured area (tanks, boreholes). The probe is left hanging on the cable, or is placed on the bottom. If the probe is **hung deeper than 100 m**, it is necessary to use a **hanging hanger** (only for type HLM-25N) or **cable hanger KD-60** (see 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
- 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.



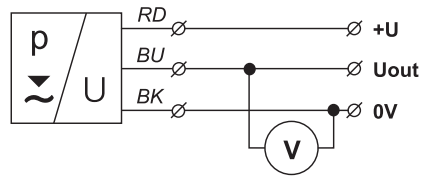
Cable hanger KD-60

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.



Connection scheme
(current output)



Connection scheme
(voltage output)

Wire colour:

RD – Red
BU – Blue
BK – Black



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.

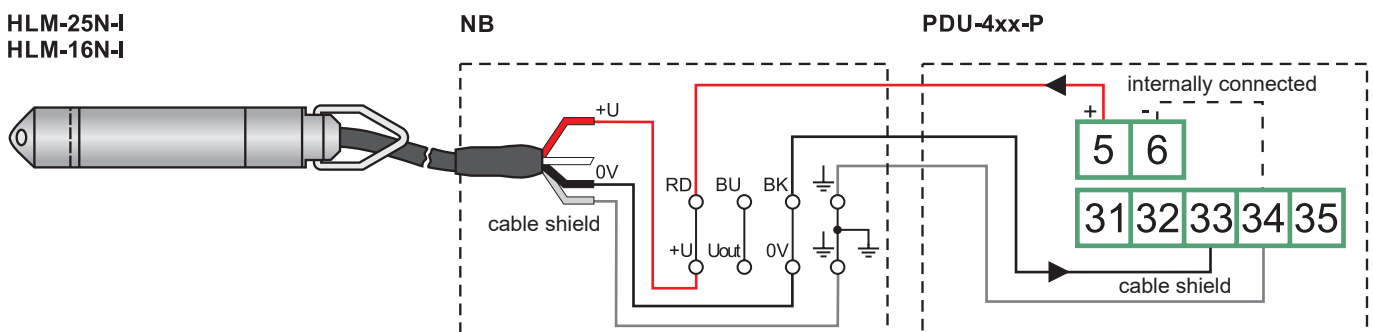
In the event that the level meter is installed in an outdoor environment at a distance greater than 20 m from the outdoor switchboard, or from an enclosed building, it is necessary to supplement the electrical cable leading to the level meter with suitable overvoltage protection.

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 WITH CURRENT OUTPUT TO THE UNIT PDU-4xx-P (OUTPUT 4 ... 20 mA) USING JUNCTION BOX NB

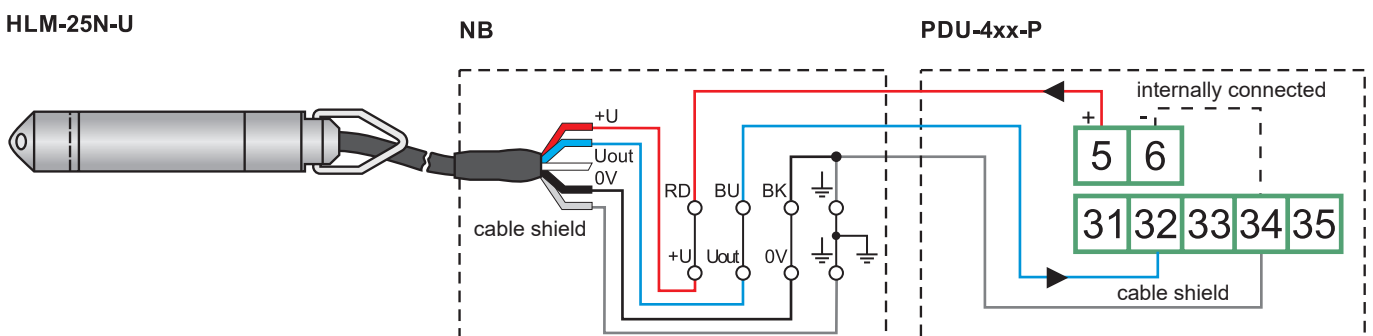
HLM-25N-I
HLM-16N-I



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.

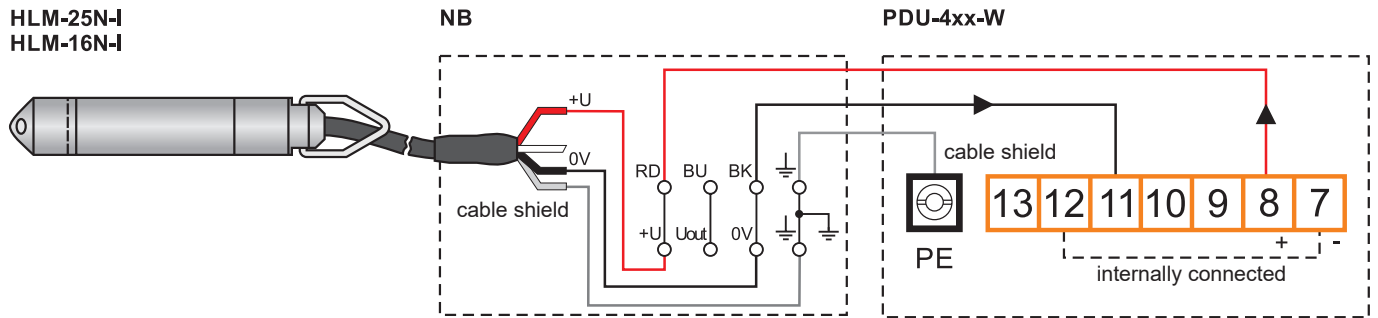
CONNECTION OF LEVEL METER HLM-25-N-U WITH VOLTAGE OUTPUT TO THE UNIT PDU-4xx-P (OUTPUT 0 ... 10 V) USING JUNCTION BOX NB

HLM-25N-U



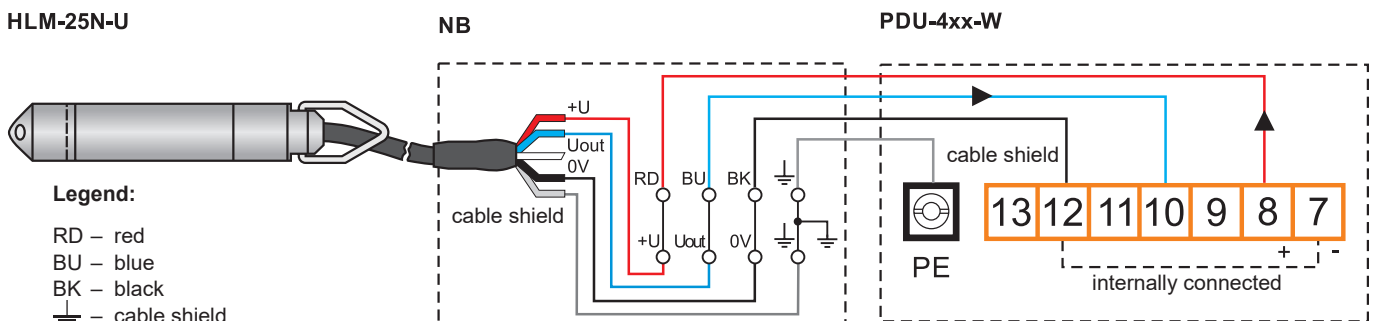
In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

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



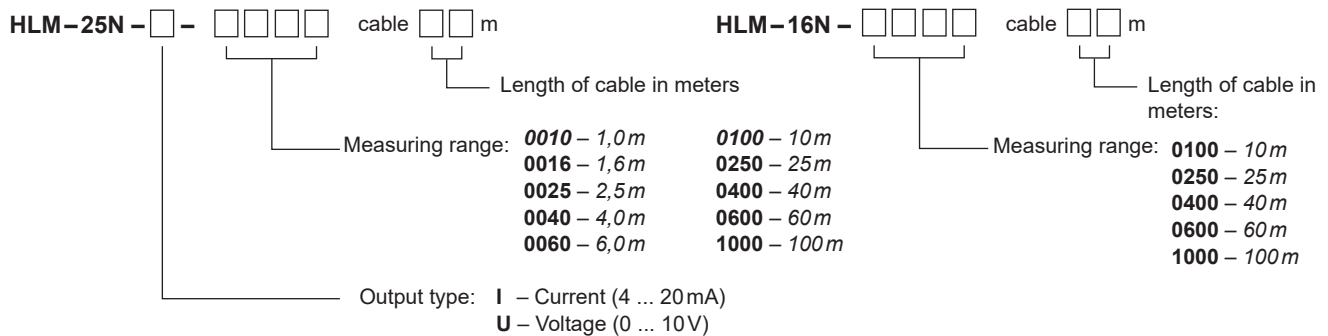
In the case using a connection box with integrated overvoltage protection, the sensor needs to be connected to the bottom series of terminals. This series of contacts is marked by label SENSOR.

CONNECTION OF LEVEL METER HLM-25-N-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-25N-I-0010 cable 3 m
 (I) Current output 4...20 mA. **Measuring range 1 m**, cable 3 m.

HLM-25N-U-0600 cable 60 m
 (U) Voltage output 0...10 V. **Measuring range 60 m**, cable 60 m.

HLM-16N-0250 cable 20 m
Measuring range 25 m, cable 20 m.

HLM-16N-0400 cable 45 m
Measuring range 40 m, cable 45 m.

ACCESSORIES

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

- Cable hanger KD–60
- Nehermetic connection box NB

SAFETY, PROTECTIONS AND COMPATIBILITY

Level meter HLM 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 55022/B, EN 61000-4-2 to 6.

ООО “РусАвтоматизация”

454010 г. Челябинск, ул. Гагарина 5, оф. 507
тел. 8-800-775-09-57 (звонок бесплатный), +7(351)799-54-26, тел./факс +7(351)211-64-57
info@rusautomation.ru; [русавтоматизация.рф](http://rusавтоматизация.рф); www.rusautomation.ru