



Level Module (Head Mounted Transmitter) for Conductive Level Probes



measuring
•
monitoring
•
analysing

LNR



- Mounting inside the level probe
- Direct connection to the PLC
- No level device required in the control cabinet
- Completely assembled encapsulated module
- PNP switch output, short-circuit-proof
- Adjustable sensitivity
- Electrode supply: AC voltage
- Power supply 24 V_{DC}



Level

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Description

The KOBOLD level module LNR evaluates levels in conductive level probes. The module can be mounted in the sensor housing.

A 3-wire connection is used and the conductive connection between probe stem and ground is converted to a 24 V_{DC} switching signal. The sensitivity is adjustable in 4 steps. The output signal can be evaluated and processed by a PLC. The switching state of the output is inverted by reversing the polarity of power supply. In addition, a LED shows when the level is reached.

Direct mounting to the measuring point means that no additional level device is required in the control cabinet. This means lower installation costs, minimum wiring and a high degree of noise immunity. Due to the 24 V_{DC} supply and the active output the transducer for top mounting is specially designed for level measurement with a PLC.

Setting the full /empty Signal Function

The jumper must always be plugged in for one function. The output function (full / empty signal) is switchable via the polarity of the supply voltage.

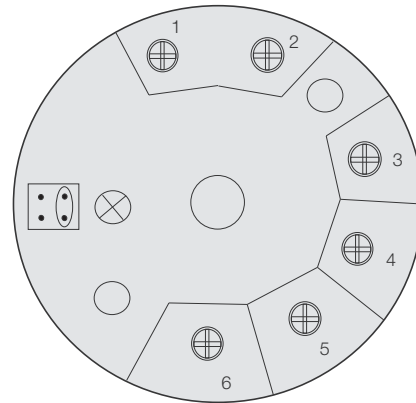
Power supply		Sonde	Output Connection 3	LED
Connection 1	Connection 2			
0 V	+ Vs	immersed	U _{aus}	on
		dry	0 V	off
+ Vs	0 V	immersed	0 V	on
		dry	U _{aus}	off

Setting the Sensitivity

- Cover probe with the medium to be measured.
- Insert sensitivity jumper on position 0.1 kΩ.
- If the probe LED does not light up, try positions 1 kΩ, 10 kΩ and 100 kΩ in succession (see drawings), until the probe LED is illuminated.

Step	Sensitivity	Connection 4	Jumper position
1	100 Ω	+Vs	inside
2	1 kΩ	+Vs	outside
3	10 kΩ	open	outside
4	100 kΩ	GND	outside

Wiring Diagram



- Power supply: +Vs / GND
- Power supply: GND / +Vs
- Output: transistor PNP ($U_{off} = +Vs - 1 V$)
- Sensitivity: +Vs / GND / open
- Electrode 1: Ground electrode or wall of vessel
- Electrode 2: Measuring sensor electrode

Technical Details

- Power supply: 15...36 V_{DC} / 15 mA
- Output: PNP transistor output (open coll.), $U_{off} = +Vs - 1 V$ max. 50 mA, short-circuit-proof
- Function: full / empty signal (switchable by jumper)
- Switching delay: approx. 1 s
- LED-display: signalling in case of medium contact
- Sensitivity: approx. 0.1 / 1 / 10 / 100 kΩ, setting via input control and jumper
- Electrode voltage: approx. 2 V_{AC} / 600 Hz
- Operating temperature: -20...+80°C
- Humidity: 0...90%, non-condensing
- Housing: Makrolon
- Dimensions: Ø 44.5 x 21 mm
- Weight: approx. 40 g

Order Detail: LNR-K 1