



Operating Instruction for Conductive Level Switch

Model: LNK



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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Conductive Level Switch model: LNK

4. Regulation Use

Any use of the Conductive Level Switch, model: LNK, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

The conductive KOBOLD level probes LNK are used in connection with the external evaluating electronic for level detecting. This method is based on the evaluation of the electrical conductivity of the medium. In combination with the KOBOLD LZE or LZE-R weld-in sleeves, the probe provides a measuring point that has no dead space and meets hygiene standards (EHEDG approval certificate). This level switch is therefore ideally suited for CIP/SIP cleaning.

The level switch is available with 1 or 2 - 4 electrodes. As an option, they can be delivered with an E-CTFE coating. This allows foaming media to be detected reliably.

The output signal from the probes with head mounted transmitter can be connected directly to a PLC for evaluation. This means lower installation costs, minimum wiring requirements and a high degree of noise immunity.

The device is available with an optional M12x1 plug connector.

5.1. Head transmitter LNR (Option LNK-...NPK, LNK-...NPS)

A usage of the head transmitter LNR is only possible, when the LNK as a 2-stem probe, contains an earth stem and a monitoring stem.

The transmitter integrated in the electrode head provides a control voltage between the detecting electrode and the earth electrode. When the electrodes dip into a conductive liquid, a small alternating current starts flowing. An integrated switching amplifier detects this alternating current and switches the 24 V_{DC} active output accurately, as soon as an adjusted trigger threshold is crossed. When the liquid drops below the limit value electrodes, the output becomes inactive again.

5.2. External electrode relay (e.g. NE-104, 304)

When the LNK is used as a 3-stem or 4-stem probe (2 or 3 switching points), the evaluation takes place with an external electrode relay (see instruction manual and technical details of the external electrode relay).

In order to get an additional switching point, the electrically conductive and grounded vessel wall can be used as ground terminal. Therefore, the ground electrode can be used as an additional switching electrode.

6. Mechanical Connection

- Please note the maximum torque while mounting the instrument: 10 – 20 Nm (measuring instrument connection G ½) and 25 – 30 Nm (measuring instrument connection G 1).
- The electrodes must be mounted in a vertical position in the lid or the ground of the vessel which must be detected.
- The mounting must be done in a way that there is no short circuit of the electrodes neither to the walls of the vessel nor to itself.
- Note during mounting that the electrodes do not bend and the medium can drain off easily when they are not longer touched by the fluid.
- The ground electrode must be at least as long as the longest switching electrode.
- If not using the weld-in sleeves type LZE one must note there is a conducting connection to the wall of the vessel. An additional grounding to the pipework or the wall of the vessel is necessary when using an isolating sealing.

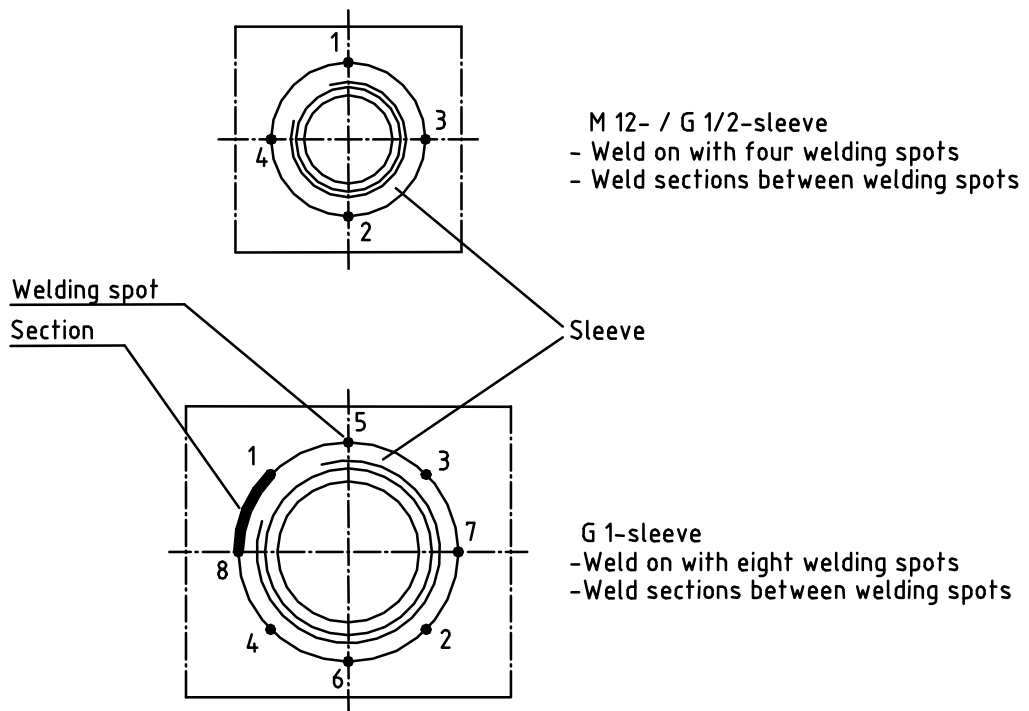
Shortening the electrodes:

- The tip of the electrodes is equal to the switching point and can be shortened if necessary.
- Note, that the bracing of the electrode in the thread-piece is not too heavily loaded during shortening.
- Do not harm the isolation of the electrode.
- After shortening, make sure that the E-CTFE isolation is removed of about a length of 5 mm from the tip of the electrode.

6.1. Welding details for sleeves LZE

Welding in tanks and pipes:

1. Drill a hole with a diameter equivalent to outer diameter of the sleeve; max. tolerance +0,2 mm
2. Weld the sleeve at 4 points
3. Screw in the blind socket
4. Weld the sleeve segments crosswise between already welded 4 points.
4 sleeve segments for M12 and G 1/2"; 8 sleeve parts for G1"



Attention! In order to avoid deforming or red-hot turning of the sleeve, pauses between individual sleeve segments should be sufficient enough to allow cooling down of the sleeve.

7. Electrical Connection



Attention! Make sure that the voltage values of your system accord to the voltage values of the monitoring unit.

- Make sure that the supply wires are de-energised.
- Connect the supply wires and the output signal **to the shown pins**.
- We recommend the use of wires with cross sectional area of min. 0,25 mm²



Attention! A wrong connection of the plug pins can damage the units electronic!

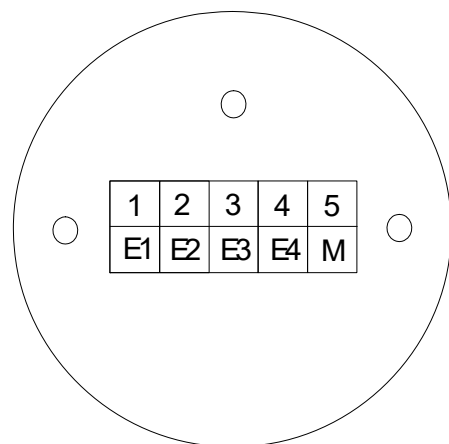
7.1. Connection Model LNK-...00K

Reference: wall of vessel
(only possible with an electrical conductive connection to the metal tank)

- 1 Electrode 1
- 2 Electrode 2
- 3 Electrode 3
- 4 Electrode 4
- 5 ⚡ earthing of housing (Reference)

Reference: longest electrode

- 1 Reference electrode
- 2 Electrode 2
- 3 Electrode 3
- 4 Electrode 4
- 5 ⚡ earthing of housing

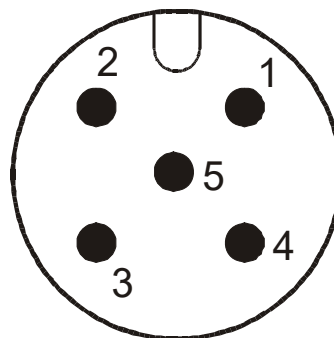


7.2. Plug assignment of M12-plug Model LNK-...00S

Reference: wall of vessel

(only possible with an electrical conductive connection to the metal tank)

- 1 Electrode 1
- 2 Electrode 2
- 3 Earthing of housing (Reference)
- 4 Electrode 3
- 5 Electrode 4



Reference: longest electrode

- 1 Reference electrode
- 2 Electrode 2
- 3 Earthing of housing
- 4 Electrode 3
- 5 Electrode 4

8. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

9. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

10. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

11. Maintenance

The conductive level electrodes work completely maintenance free. Occasionally, the electrode tips should be checked for deposits or corrosion and cleaned accordingly. Insulated layers can result in false alarms.

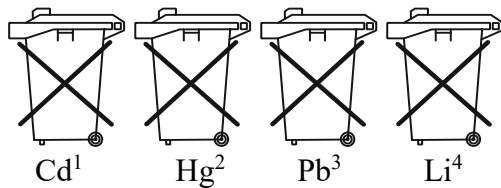
12. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

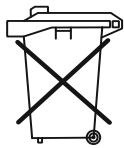
Batteries

Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



13. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Conductive Level Switch Model: LNK-...

to which this declaration relates is in conformity with the standards noted below:

EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Also, the following EEC guidelines are fulfilled:

2011/65/EU **RoHS** (category 9)
2015/863/EU Delegated Directive (RoHS III)

We confirm that the materials used are fully suitable for direct contact with food and comply with **EC Regulation 1935/2004 10/2011**, and **(FDA) CFR21**.

Hofheim, 21 Nov. 2022



H. Volz
General Manager



M. Wenzel
Proxy Holder

14. UK Declaration of Conformity

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Conductive Level Switch Model: LNK-...

to which this declaration relates is in conformity with the standards noted below:

BS EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Also, the following UK guidelines are fulfilled:

S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

We confirm that the materials used comply with FDA, CFR21.

Hofheim, 21 Nov. 2022



H. Volz
General Manager



M. Wenzel
Proxy Holder