Operating Instructions

for

Conductive Level Switches

Model: NEK-...

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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: NEK-...

4. Regulation Use

Any use of the Conductive Level Switch, model: NEK, 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 Kobold Level Switch of model NEK is a complete functional unit which is specially designed for monitoring conductive liquids under extreme conditions. Due to the design without any moving or protruding parts, the switches are very suitable for monitoring critical media with, for example, solid content, negligible density or high viscosity. The double-thread allows a variety of installations. The length of the shaft can be extended by attaching an additional protective tube. The instruments operate on the conductive principle of measurement. The conductive medium touches both electrodes causing a negligible alternating current to flow; the output state changes.

6. Mechanical Connection

6.1. Check service conditions:

- Chemical resistance of materials
- Maximum operating pressures
- Maximum service temperature

6.2. Installation

- Tank installation may be the side or from the top (universal)
- Avoid pressure and tensile/torsional stress
- Check connections for leakage

7. Electrical Connection

7.1. General

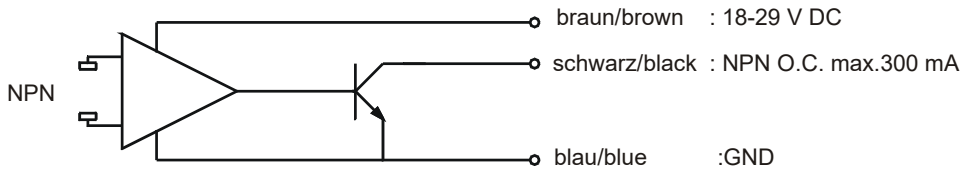
Important! Make sure that the voltages in your plant correspond with the Level Switch voltages

- Make sure that the supply wires are de-energized.
- Wire the connection cable to your supply according to the terminal connection diagrams below.

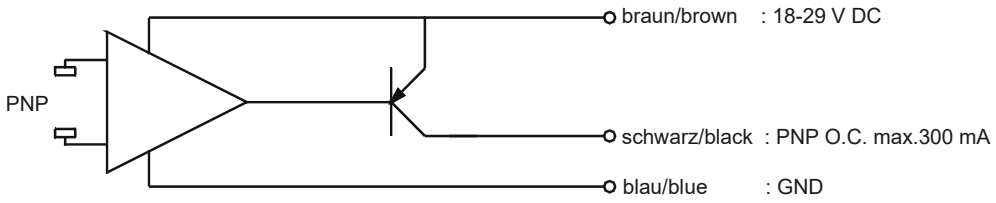
Attention! Incorrect wiring will lead to damage of the unit's electronics.

If the unit is installed in a metallic, conductive container, this container must be connected with the NEK supply potential GND, otherwise it may cause functional problems by potential differences.

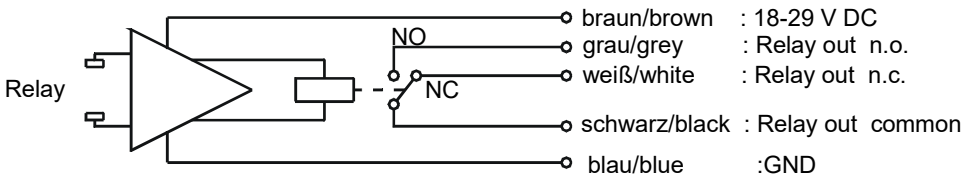
7.2. NPN switching output (NEK-1)



7.3. PNP switching output (NEK-2)



7.4. Relay switching output (NEK-3)



8. Commissioning

The measuring instruments are pre-set and are ready for operation after electrical connection.
The LED signals the switch state of the level switch.

- LED off: no power supply
- LED off with short "ON pulses":
  Power supply on / switch state de-activated (dry)
- LED on: Power supply on / switch state activated (wet)

9. Maintenance

The Conductive Level Switch is maintenance-free.
Should the electrodes be contaminated with a non-conductive coating (oil, grease, etc.), they can be cleaned with a suitable tool (e.g. cloth). Do not use a cleaner that would damage the plastic housing.

10. Technical Information

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

11. Order Codes

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

12. Dimensions

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

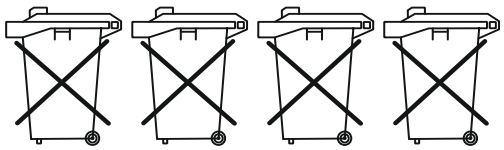
13. Disposal

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:



Cd[1] Hg[2] Pb[3] Li[4]

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

Electrical and electronic equipment

14. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Conductive level switch model: NEK -...

to which this declaration relates is in conformity with the following EU directives stated below:

2014/30/EU	EMC Directive
2011/65/EU	**RoHS** (category 9)
2015/863/EU	Delegated Directive (RoHS III)

Also, the following standards are fulfilled:

EN 61000-4-4:2012
Electromagnetic compatibility (EMC) - Part 4-4:Testing and measurement techniques - Electrical fast transient/burst immunity test, Burst 2 kV

EN 61000-4-2:2009
Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test, ESD 8 kV/4kV

EN 60529:2014
Degrees of protection provided by enclosures (IP Code)

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

Hofheim, 18 Sept 2023

H. Volz
General Manager

J. Burke
Compliance Manager

15. UK Declaration of Conformity

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Conductive level switch model: NEK -...

to which this declaration relates is in conformity with the following UK directives stated below:

S.I. 2016/1091	**Electromagnetic Compatibility Regulations 2016**
S.I. 2012/3032	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Also, the following standards are fulfilled:

BS EN 61000-4-4:2012
Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrical fast transient/burst immunity test, Burst 2 kV

BS EN 61000-4-2:2009
Electromagnetic compatibility (EMC). Testing and measurement techniques. Electrostatic discharge immunity test, ESD 8 kV/4kV

BS EN 60529:1992+A2:2013
Degrees of protection provided by enclosures (IP-Code)

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

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