# Operating Instructions

# for

# Bypass Level Switch

# Model: NBA-2/NBE-2


# 1. Contents



**Manufactured and sold by:**

Kobold Messring GmbH
Nordring 22-24
D-65719 Hofheim
Tel.: +49(0)6192-2990
Fax: +49(0)6192-23398
E-Mail: info.de@kobold.com
Internet: www.kobold.com

## 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.

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:
- Bypass Level Switch model: NBA-2/NBE-2

## 4. Regulation Use

Any use of the Bypass Level Switch, model: NBA-2/NBE-2, 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 instrument comprises a metal housing with internally mounted magnetic level switch and operates on the principle of communicating tubes.
As soon as the housing of the bypass level switch is filled about half way with liquid, the float moves to the top and operates with the internal ring magnet a changeover contact fitted in the measuring tube. Solenoid valves, signal lamps or pumps are switched by the changeover contact by means of suitable electrical auxiliaries (relay, contactor relay).

The following may have a negative impact on assured functioning:

- Considerable accumulation of dirt
- Large solid parts
- Crystallization
- Ferrite particles

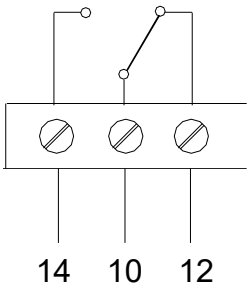
# 6. Mechanical Connection

Use the process connection and suitable sealants to respectively bolt and seal the NBA or NBE instrument to the tank to be monitored. The two process connections are, as a rule, adequate for mechanically fastening the instrument. Should there, however, be continuous shocks or pronounced vibrations, then it is recommended additionally using rubber-absorbent pipe clamps to mechanically fasten the bypass level switch. But no welding at all is to be done at the bypass pipe.

# 7. Electrical Connection

**Notice is to be taken of the safe electrical limiting data of the level switch.**

Connect the float switch fitted in the NBA/NBE instrument according to the connection diagram below and link up to the electrical control system.




At all events it must be ensured when actuating loads such as contactors, relays etc. that the electrical limiting values are not exceeded – and not even briefly due, for instance, to voltage peaks. A contact protection relay is recommended to stop any contact overloading.

## 8. Operation

Fill tank and switch on the electrical control system, if present. Given stop valves between bypass process connection and tank, then slowly open the upper valve (air balance) before the lower valve (liquid-side). Any venting and drain valves are to be closed before filling starts. The liquid now entering the bypass pipe raises the float until the level between tank and bypass pipe is evened out. The fact of the liquid level in the tank already being above the operating point results in the applied operating signal either being relayed or disconnected - depending on the electrical connection wiring.

## 9. Hysteresis

Hysteresis refers to the difference between the cut-in and tripping points of the contact. Adaptation undertaken at the factory of float magnet and contact strength has produced a 7 mm float lift hysteresis.

## 10. Maintenance

Only when the liquid to be monitored has particles of dirt which might settle in the bypass tank is the drain plug now and again to be undone to flush out any deposits.
If incrustations or crystallization are present, then the tank must be emptied or sealed off. This is to be followed by slowly removing the tank lid plus slider tube and float from the bypass tank. The bypass tank can now be mechanically cleaned.

## 11. Technical Information

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

## 12. Order Codes

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

## 13. Dimensions

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

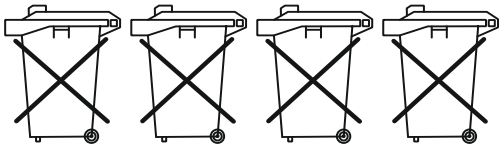
# 14. Disposal

**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**

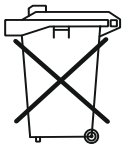
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



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**



# 15. EU Declaration of Conformance

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

**Bypass Level Switch** **Model: NBA-2/NBE-2**

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

| | |
|---|---|
| **2014/35/EU** | **Low Voltage Directive** |
| **2011/65/EU** | **RoHS** (category 9) |
| **2015/863/EU** | Delegated Directive (RoHS III) |

Also, the following standards are fulfilled:

**EN 61010-1:2011**
Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

**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, 10 October 2023

H. Volz
General Manager

J. Burke
Compliance Manager

# 16. UK Declaration of Conformity

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

**Bypass Level Switch** **Model: NBA-2/NBE-2**

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

| | |
|---|---|
| **S.I. 2016/1101** | **Electrical Equipment (Safety) 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 61010-1:2010**
Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements

**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.

Hofheim, 10 October 2023

H. Volz
General Manager

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