

# FKE

## Electrode Relay for Conductive Level Switch

- limit value detection
- pump control
- overflow protection
- dry-run protection



### Description:

The electrode relays of the FKE series are used in conjunction with the conductive level switches of the FK01 to FK12 series to measure the level of conductive liquids.

An alternating voltage is applied to an electrode insulated from the vessel. If this electrode is wetted by the medium, a small current flows from the electrode through the medium to the vessel wall (for plastic vessels to a separate ground electrode). This current flow is detected by the electrode relay and output as a switching signal.

### Typical applications:

- for level detection in vessels with conductive liquids
- full and empty signal
- level control between two filling levels
- overflow protection
- dry-run protection

## Models:

- FKE.NS20K:** Electrode relay for pump control or for limit value detection
- FKE.NS43:** Electrode relay for pump control with 2 additional switching points for overflow and dry-run protection

## Order Code:

Order number: **FKE. NS43. 2**

Electrode relay for conductive level switch

### Connection:

NS20K = pump control relay or 1 limit value  
NS43 = pump control relay, 2 additional limit values

### Power supply:

2 = 24-240 V AC/DC

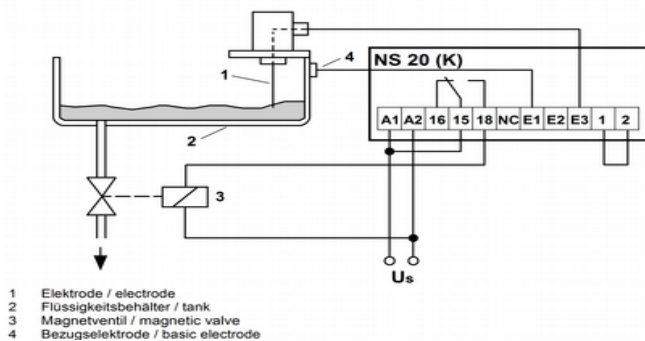
### FKE.NS20K: Electrode relay for pump control or limit value detection

#### Connection of max. 2 electrodes:

The device is used for limit value monitoring, e. g. as overflow or no-load protection.

Switching function: E1 and E3 wetted: relay ON

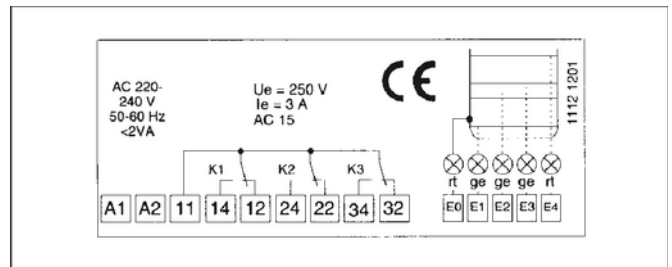
Überwachung Flüssigkeitsstand mit 1 Elektrode (E3 benetzt, Relais an 15-18 geschlossen)  
monitoring of liquid with 1 electrode (E3 dipped, relay on 15-18 closed)



### FKE.NS43: Electrode relay for pump control with 2 limit values

By using this electrode relay, an additional full and empty monitoring can be carried out in addition to the level control between two levels.

A maximum of 5 electrodes can be connected (2 x for level control, 1 x each for full or empty signal, 1 x common ground). Three output relays are used for pump and valve control as well as for the output of the full and empty signal.

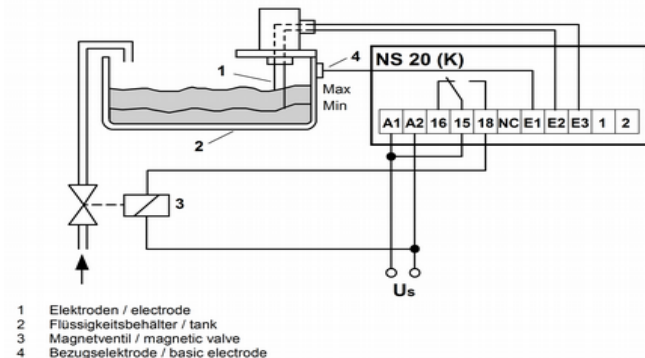


#### Connection of max. 3 electrodes:

The device is used to control a liquid level between a maximum value (E3) and minimum value (E2). The common ground (E1) is connected to the vessel wall (for metal vessels) or a third electrode.

As long as the electrode E3 is not wetted, the output relay switches into on-position. If the liquid reaches level E3, the output relay drops out. Only when the liquid level falls below level E2 again does the output relay energize again and the cycle starts again.

Zulaufsteuerung mit 2 Elektroden (E3 benetzt, Relais aus 15-16 geschlossen)  
filling tank with 2 electrodes (E3 dipped, relay off 15-16 closed)



## Technical Data:

### Electrode relay:

**design:**

snap rail housing  
according to DIN50022

### Supply:

24-240 V AC/DC

### Output relay:

FKE.NS43: SPDT, max 440 VAC,  
max. 8 A, max. 2000 VA  
FKE.NS20K: SPDT, max . 415 VAC  
max. 6 A, max. 2000 VA

### Response

#### sensitivity:

adjustable, 25...250 kOhm

### Protection class:

FKE.NS43: IP30, clamps IP20  
FKE.NS20K: IP40, clamps IP 20

### Environment temp.:

-20...+55 °C