



# Fill level measurement



Conductive compact probes  
KAK / KLK

Limit switch or two-position controller  
KAK for standard application  
KLK for food application

## Description

The filling level limit switch KAK resp. KLK is used, to evaluate one or two filling levels resp. limit levels in electrically conductive liquids with a conductivity of minimum  $5\mu\text{S}/\text{cm}$  resp. a resistance of maximum  $200\text{k}\Omega$ .

The device is also useable as overflow protection in container with liquids, for the realization of a two-position-control e.g. for pump control or also as dry run protection.

The conductivity also of aggressive filling liquids can be detected, at process temperatures from  $-40^\circ\text{C}$  to  $+100^\circ\text{C}$ , at pressures from  $-1\text{ bar}$  to  $+10\text{ bar}$ .

The version KAK is the standard type for general applications, whereas the version KLK is especially conceived for food applications.



## Application

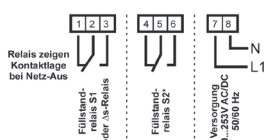
- Various hygienic applications
- Level detection in conductive liquids
- Full resp. empty signal
- Overflow safety and dry-run protection

## Your benefits

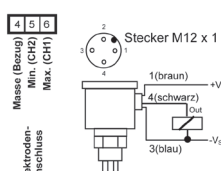
- Min / Max control or up to two limit levels
- Compact devices: no separate evaluation devices are required
- Easy commissioning
- Measuring range adjustable up to  $200\text{k}\Omega$  resp.  $5\mu\text{S}/\text{cm}$
- Wide range power supply from 20 to 253V AC and DC
- Relay output or PNP switching output

## Connection

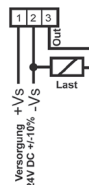
with relay output  
terminal assignment



PNP-switch output  
Plug M12x1



PNP-switch output  
terminal assignment

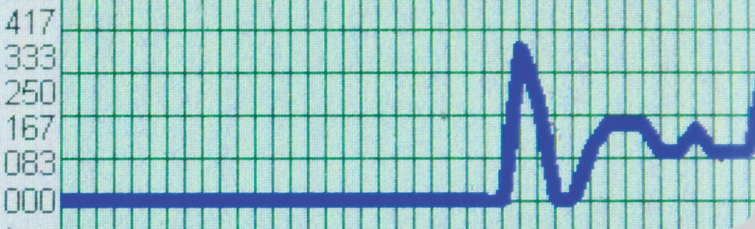


## Technical data

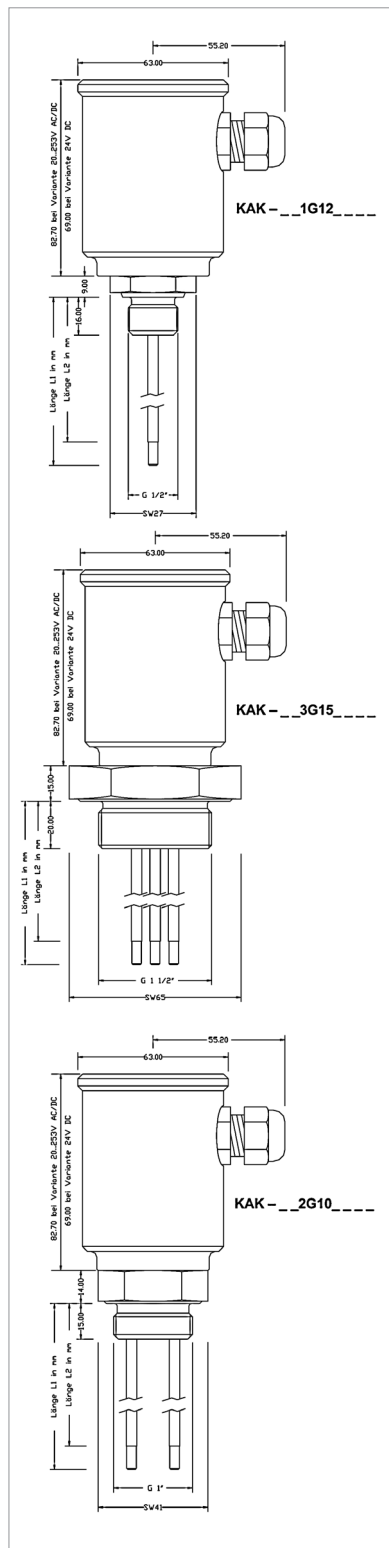
Technical data	
Process pressure max:	-1...+10bar
Medium temperature:	-40°C...100°C
Protection:	IP65 DIN EN 60529
Material Gaskets:	KAK: FPM / KLK: EPDM, FDA-listed
Material Process connection:	Steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti)
Material probe rod:	Steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti) / Hastelloy B4, C22 / Titan
Isolation probe rod:	KAK: PA / ETFE bzw. E-CTFE / KLK: ETFE, FDA-listed

## Specials





# Bestellschlüssel



## KAK - Standard application

## CLK - Food resp. hygienic application

### Electrical connection

- 0 Terminal box
- V Plug M12x1 only at auxiliary power direct voltage 24 V DC

### Auxiliary power

- G DC voltage 24 V DC (only with output „A“ - PNP)
- U Wide range power supply 20...253 V AC/DC

### Output

- A 1 x PNP-switch output, only at auxiliary power DC voltage 24 V DC
- B 1 x relay output, only at auxiliary power universal voltage 20...253 V AC/DC
- C 2 x relay output, only at auxiliary power universal voltage 20...253 V AC/DC

### Model measurement system

- 1 1-rod, 1x limit, reference electrode over process connection
- 2 2-rod, 1x limit, reference electrode over longest rod - number 2
- 3 3-rod, 2x limit, reference electrode over longest rod - number 3
- 4 2-rod, 2x limit, reference electrode over process connection

### Process connection material stainless steel 1.4404 (medium contact)

- D25 Milk tube connection according to DIN 11851 (only at CLK) (only for 1-rod)
- D40 Milk tube connection according to DIN 11851 (only at CLK) (only for 2-rod)
- D50 Milk tube connection according to DIN 11851 (only at CLK) (only for 3-rod)
- G12 G $\frac{1}{2}$ " connecting thread(only for 1-rod)
- G10 G1" connecting thread(only for 2-rod)
- G15 G1 $\frac{1}{2}$ " connecting thread(only for 3-rod)
- YYY Others

### Material electrode rod

(price per 100mm)

- A4 Steel 1.4404, 4 mm
- A8 Steel 1.4404, 8 mm
- C Hastelloy® B, rod diameter 4 mm
- D Hastelloy® C22, rod diameter 4 mm
- T4 Titan not for Ex-version, rod diameter 4 mm
- T8 Titan not for Ex-version, rod diameter 8 mm
- E CrNi-steel, tip tantalum 50mm, on request
- Y Others

### Material housing

- D POM – polyoxymethylene Delrin®, (standard)
- PP – polypropylene
- L PTFE – Polytetrafluoroethylene Teflon®
- V CrNi-steel

### Material probe insulation

(price per 100mm)

- R PA-Polyamid (standard) (not at CLK)
- H4 ETFE (CLK) resp. E-CTFE, rod diameter 4 mm
- H8 ETFE (CLK) resp. E-CTFE, rod diameter 8mm
- \* at lengthn over 1 m

### Diameter probe rod

- 0 4 mm
- W 8 mm

### Length L1/L2/L3 electrode rod in mm, max. 2500 mm

Order code

**KAK | CLK**

mm

Please name every length if you order different probe lengths!  
eg. rod 1: L1/L2, rod 2: L1/L2