

KAK/KALK Füllstandgrenzschalter

for conductive filling level supervision
in electrically conductive liquids

Technical information TI02.26



Application

- Detects up to two limit values
- For filling level resp. limit value detection in liquid container
- As overflow protection in container
- As dry run protection for pumps in pipelines
- For two-position-control in plants
- Wide application range

Main features

- For process temperatures from -40 °C to +100 °C
- For process pressures from -1 bar to +10 bar
- Materials for aggressive filling liquids
- Measuring range adjustable up to 200k Ohm resp. 5µS/cm
- Wide range power supply 20 to 253V AC/DC / Relay output
- DC supply voltage 24V DC / PNP switching output



Description

The filling level limit switch KAK / KALK is used, to evaluate one or two filling levels resp. limit levels in electrically conductive liquids with a conductivity of minimum 5µS/cm resp. a resistance of maximum 200k Ohm.

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 °C to +100 °C, at pressures from -1 bar to +10 bar.

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

The following variants are available:

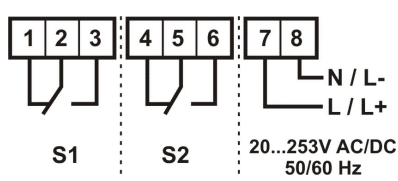
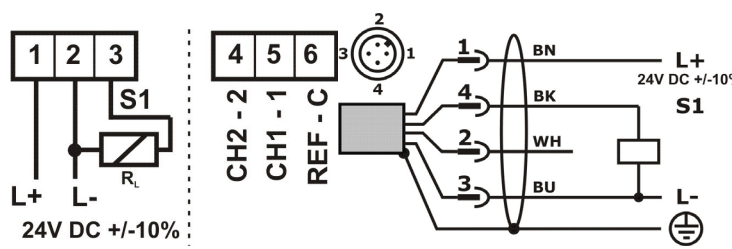
- Relay output version with wide range power supply from 20...253VAC/DC, for two-channel or ds mode with two relay changeover contacts, resp.
- Relay output version with wide range power supply from 20...253VAC/DC, for one-channel or ds mode with two relay changeover contacts, resp.
- Switching output version with direct voltage power supply 24VDC +/-10%, for one-channel or ds mode with one PNP switching output.



Technical Data

Process temperature	- 40°C ...+100°C
Process pressure	- 1bar ... 10bar
Protection level	IP65 (DIN EN 60529)
Electrode rod	CrNi steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti); Hastelloy C22; Titan
Electrode isolation	KAK: PA / ETFE resp. E-CTFE; KLK: ETFE, FDA listed
Process gasket	KAK: FPM; KLK: EPDM, FDA listed
Process connection	CrNi steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti)

Electrical connection

Version UB / UC – relay output	Version GA – PNP switching output
	

[illegible]

3

Order code

Type
KAK Standard
KLK Food applications

Electrical connection

- O Terminal box
- V Plug M12 x 1, A, 4pole; auxiliary power direct voltage 24 V DC

Auxiliary power

- G Direct voltage 24 V DC
- U Wide range power supply 20...253 V AC/DC

Output

- A 1 x PNP switching output; auxiliary power direct voltage 24 V DC
- B 1 x relay output; auxiliary power universal voltage 20...253 V AC/DC
- C 2 x relay output; auxiliary power universal voltage 20...253 V AC/DC

Type measuring system

- 1 1-rod; 1x limit value; Reference electrode REF – process connection
- 2 2- rod; 1x limit value; Reference electrode REF – longest rod
- 3 3- rod; 2x limit value; Reference electrode REF – longest rod
- 4 2- rod; 2x limit value; Reference electrode REF – process connection

Process connection material CrNi steel

- G12 Thread ISO 228-1 – G ½", 1-rod
- G10 Thread ISO 228-1 – G 1", 2-rod
- G15 Thread ISO 228-1 – G 1½", 3-rod
- D25 Dairy coupling DIN 11851 – DN25, 1-rod; only type KLK
- D40 Dairy coupling DIN 11851 – DN40, 2-rod ; only type KLK
- D50 Dairy coupling DIN 11851 – DN50, 3-rod ; only type KLK

Material electrode rod

- A4 CrNi steel, rod diameter 4 mm
- A8 CrNi steel, rod diameter 8 mm
- D Hastelloy C22, rod diameter 3,2 mm
- T4 Titan, rod diameter 4 mm
- T8 Titan, rod diameter 8 mm
- E CrNi steel, tip tantalum 50mm

Material terminal enclosure

- D POM
- P PP
- L PTFE
- V CrNi steel

Material electrode isolation

- R PA; only type KAK
- H4 ETFE (KLK) resp. E-CTFE, rod diameter 4 mm
- H8 ETFE (KLK) resp. E-CTFE, rod diameter 8mm

Diameter electrode rod

- O 4 mm
- W 8 mm

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

KAK / KLK