FK14

Conductive Level Switch with Integrated Electrode Relay

- **simple mounting**
- **compact design**
- **max. length: 2500 mm**
- **suitable for food applications**
- **relay output or PNP switch output**
- **minimum maximum protection reversible**
- **adjustable sensitivity**
- **max pressure: 10 bar, max. temperature: 100 °C**

Description:

The conductive level switches of the model series FK14 are suitable for the direct activation of pumps, contactor and signalling devices.
In case of an empty tank a low AC voltage (about 10 V) between the electrodes is applied. As soon as the medium touches the electrodes, a low AC voltage flows. The electrodes are available with a 1 point or 2 point control function. The level switch relays are equipped with a time delay. So a fluttering of the transistor output can be avoided. The sensitivity of the electrodes are adjustable through a potentiometer (10 gears).
For realisation of minimum- and maximum switches the PNP-switch output can be inverted by changing the position of the jumper.

Typical applications:

- For level detection in tanks with conductive liquids
- Full- and empty-signal
- Level control between two levels
- Overflow protection
- Dry run protection

Advantages:

- No moving parts
- Independent from the specific weight of the medium

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Models:

FK14.1: conductive compact probe with plastic- or stainless steel housing for standard applications
G connection thread
20...253 V AC/DC, 1 / 2 relay outputs or
24 V DC ± 10 %, 1 PNP switching output

Fk14.2: conductive compact probe with plastic- or stainless steel housing for food applications
G thread in combination with matching welding socket
20...253 V AC/DC, 1 / 2 relay outputs or
24 V DC ± 10 %, 1 PNP switching output

Technical Data:

Operating pressure: -1...+10 bar
Process temperature: -40...+100 °C
Ambient temp..: -40 °C… +85 °C

Electr. connection: terminal block
(max. 1 x 2,5 mm² per terminal)
plug M12 x 1, 4-pole
(for 24 V DC version only)

Materials:

Connection housing: POM, polypropylene, PTFE, stainless steel with encapsulated electronics
Process connection: stainless steel 1.4404
Probe rod: stainless steel 1.4404, Hastelloy C22, Titan
Electrode isolation: polyamide, E-CTFE, ETFE
Gaskets: FPM (standard version), EPDM (food version)

other materials on request

Integrated Switching Outputs:

Relay output: 1 / 2 potential-free changeover contacts
Contact details: 250 V AC, 220 V DC
2 A, 62,5 VA, 60 W (with ohmic load)
≥100 µV
Power supply: 20...253 V AC/DC
Power input: ≤ 1,75 VA / 1 W
Switch. range: 0...200 kOhm, adjustable via 10-turn potentiometers
Meas. signal: 9 V_{SS} ± 1 V / ≤90 Hz ±15 Hz / ≤ 1,5 mA
Delay: 1 seconds

PNP Switch. output: 1 PNP switching to +Vs
Output voltage: V_{OUT} ≥ +V_s-2 V,
Output current: ≤ 500 mA
Power supply: 24 V DC ± 10 %
Switch. range: 0...100 kOhm, adjustable via 10-turn potentiometers
Meas. signal: 9 V_{SS} ± 1 V / ≤90 Hz ±15 Hz / ≤ 1,5 mA
Delay: 1 seconds

Operating modes: normal or inverse, changeable via plug-in jumper
Protection class: IP65

Order Code:

Order number:	FK14.	1.	1.	1.	2.	1.	15.	1.	1.	1.	LA.	0.

Conductive level switch with integrated electrode relay

Models:
1 = standard version
2 = food version
welding socket required, see table „Options“

Electrical connection:
1 = terminal housing
2 = plug connection M12 x 1, 4-pole (for 24 V DC-version only)

Supply voltage:
1 = 20...253 V AC/DC
2 = 24 V DC ± 10 %

Electrical output:
1 = PNP switching output for 1 switch. point (for 24 V DC-version only)
2 = relay output (only 20...253 V AC/DC) for 1 or 2 switching points

Material connection housing:
1 = POM
2 = polypropylene (standard for FK14.2)
3 = PTFE big
4 = stainless steel 1.4404

Process connection (stainless steel):
15 = G 1/2 (1 rod, mass via tank wall, 1 switching point)
20 = G 1 (2 rods, ground electrode, 1 switch. point)
25 = G 1 (2 rods, mass via tank wall, 2 switching points)
40 = G 1 1/2 (3 rods, 2 switching points, ground electrode)

Electrode material:
1 = stainless steel 1.4404
3 = Hastelloy C22 (Ø 4 mm only)
4 = Titan

Diameter of electrodes:
1 = 4 mm (Standard)
3 = 8 mm

Electrode isolation:
1 = polyamide (standard)
2 = E-CTFE
3 = ETFE (always for food version)

Electrode length (from sealing edge):
LA = length 500 mm
LB = length 1000 mm
LS = customer-specifically (max. length: 2500 mm)
example of data: $L_1$300 / $L_2$400 / $L_3$500 etc.

Options:
0 = without
1 = weld-in socket for G 1/2
2 = weld-in socket for G 1
3 = weld-in socket for G 1 ½
9 = please specify in plain text

Accessory:

SM12.4:
M12 plug connector with PVC cable, 4-pole (2, 5, 10 m cable length, straight or angled form)

Level

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