

Technical Data

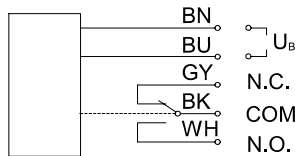
Capacitive Proximity Switch

Series M32

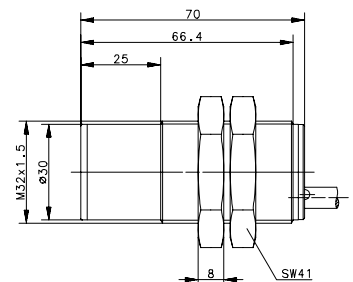
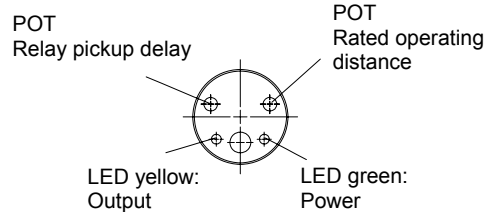
Description **KCN-T32RU/030-LP2**

Article number **6508613001**

Wiring Diagram



View end cap



Identifying characteristics in accordance with EN 60947-5-2

Electrical data

Rated operating distance	S_n	6mm
Mounting		non flush
Standard target		90x90x1mm, material: steel; connected to earth
Effective operating distance	S_r	6 - 30mm => S_r adjustable with potentiometer (POT); turn right = high sensitivity, turn left = low sensitivity
Assured operating distance	S_a	$0 \leq S_a \leq 0,8 \times S_r$
Switching element function		N.C.; Relay with change over contact
Repeat accuracy	R	$\leq 0,1 \times S_r$
Differential travel (hysteresis)	H	$\leq 0,2 \times S_r$
Rated operational voltage	U_e	230V AC
Operational voltage range	U_b	180 – 250V AC
Rated insulation voltage	U_i	250V AC
Rated impulse withstand voltage	U_{imp}	1500V
Utilization category		DC 13
Rated current	I	$\leq 8A @ 250V AC$
No-load supply current	I_o	< 35mA
Switching element		Relay
Rated supply frequency		50Hz
Relay pickup delay	t	$\approx 2 - 600s$ => adjustable with potentiometer (POT); turn right = long delay, turn left = short delay

Electromagnetic compatibility (EMC)

Electromagnetic field test	IEC 61000-4-3	3V/m, 80...1000MHz
Electrostatic discharge test	IEC 61000-4-2	8kV AD
Electrical fast transient immunity test (Burst)	IEC 61000-4-4	1kV / coupling clamp
Impulse voltage withstand ability (Surge)	IEC 61000-4-5	2kV, 1,2/50 μ s @ $R_i = 42\Omega$
Radiated disturbance field strength	EN 55011	$\leq 40dB (\mu V/m)$

Mechanical Data

Enclosure	PBT, black
End cap	PA 6, black
Ambient air temperature	-25°C ... +70°C
Type of protection	IP65 (NEMA 12)
Pollution degree	3 (Pollution of the active zone can cause impairments of the operating distances.)
Indication	power ON = LED green output ON = LED, yellow (Flashes while set delay time is elapsing)
Termination type	Cable 5 x 0,5mm ² x 2m; PVC - Outer jacket, black
For attachment	Hexagon nut, PA 6.6 black

EU Conformity



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Technical Data

Capacitive Proximity Switch

Description:

The proximity switch consists of a capacitive sensor with switching amplifier with break contact function, a timer stage that functions as a pickup delay as well as a load relay with floating changeover contact.

Initial operation:

The operating voltage $U_e = 230 \text{ V AC}$ is connected to the brown and blue connection pigtails.

The green LED is permanently on.

The integrated relay will remain permanently in dropout state if the **proximity switch is energized** when placed into operation.

The integrated relay will initially remain in dropout state if the **proximity switch is unenergized** when placed into operation.

The set pickup delay time now begins to run through once. This is indicated by the yellow LED flashing.

The relay picks up after the delay time has elapsed. The yellow LED is permanently on.

Function:

The relay drops out immediately after the proximity switch has been **energized** and the yellow LED goes out.

The integrated relay initially remains in dropout state after the proximity switch has been **de-energized**.

The set pickup delay time begins to elapse. This state is indicated by the yellow LED flashing.

The flash rate depends on the set pickup delay time.

The longer the set delay time, the shorter the flash rate.

The relay picks up after the set delay time has elapsed. The yellow LED is permanently on.

Function table:

Capacitive sensor	Integrated relay	Load switched by means of make contact of relay (black and white connection pigtails) (e.g. contactor, pump, solenoid valve)
Unenergized	Picked up (after delay time)	ON
Energized	Drops out immediately	OFF
De-energized	Picks up after delay	Switches "ON" with delay

Application example for a simple level control system:

System prerequisites: a tank, filled product, a pump to fill the tank and the capacitive proximity switch, Part No. 650.8613.001.

The make contact of the integrated relay, brought out by means of the black and white connection pigtails, is used to switch the pump.

The capacitive proximity switch is positioned such that the required maximum fill level is registered.

Initial situation: Tank empty, the sensor is therefore unenergized.

The set delay time runs through once after applying the operating voltage.

During this time, the integrated relay remains in dropout state, the yellow LED flashes.

Once the set delay time has elapsed, the integrated relay picks up, the LED lights permanently and the pump fills the tank until the sensor is energized by the filled product.

Consequently, the integrated relay switches off immediately (LED goes out), the pump stops.

When product is taken from the tank, the level drops so that the sensor is de-energized again.

The pickup delay time starts again in response to de-energization (yellow LED begins to flash).

The pump does not begin to fill the tank again before the relay has picked up after the delay time has elapsed.

A simple fill level control system can be realised in this way, made possible by the use of capacitive proximity switch Part No. 650.8613.001.

In the case of a conventional level control system of this type, a second proximity switch will be required for the purpose of registering the minimum level and for the holding circuit.

The use of one single proximity switch with no integrated dropout delay is not recommended as it would cause rapid wear of the pump, caused by the pump continually switching on and off in the short term as it is controlled only by the relatively small switching hysteresis of the proximity switch.

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