



CLS

Conductivity level switch with cable connection alarm

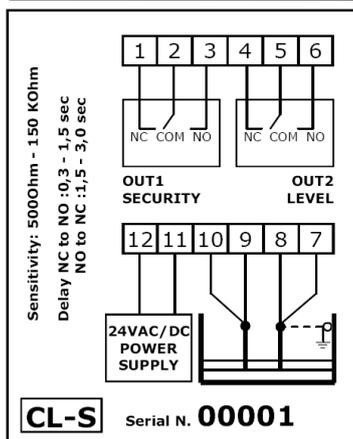


Technical data

Power supply:	24 VAC/DC (CL-SA)
Power consumption:	2VA / 1,8W max
Electrode voltage:	5 VAC max
Electrode current:	0,1 mA max
Sensitivity:	0-500Ω / 0-150 KΩ (Sens trimmer)
Minimum conductivity:	7,7 μS
Storage temperature:	from -30 to +80°C
Working temperature:	from -20 to +60°C
Relative humidity:	from 0 to 85%, no condensate
Output:	2 SPDT relays
Contact rating:	7A @ 250 VAC (resistive load) 3A @ 230 VAC (single-phase motor)
Relay switching delay:	Delay trimmer
Visual signalling:	Green LED → Power supply Yellow LED (OUT1) → Security Red LED (OUT2) → Level threshold
Protection:	IP20
Installation:	35 mm DIN rail
Dimensions:	90(H) x 35(L) x 60(P) mm

CE mark according to *Directive 89/336/CEE*, complies with the following harmonised regulations: *EN50081-1, EN 50082-2, EN55022, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11* and *Low Voltage Directive 73/23/CEE* and subsequent modifications.

Electrical connections and applications



CL-S level switch is capable of checking conductivity between one electrode and a reference electrode.

It also check cable connection between pin (7)/(8) and (9)/(10) to ensure that the instrument is connected to the electrodes.

CL-S level switch needs two metal electrodes for working.

First electrode have to be connected at terminal (9) and (10), while the second electrode have to be connected at terminal (7) and (8). If you are using a metallic tank, it is possible to use only one electrode at terminal (9) and (10), connecting metal structure at terminal (7) and (8).

Operation and calibration

When liquid doesn't touch the electrode, OUT2 relay is energized and so the red LED on front is on. When liquid reaches electrode, relay change state and red LED is turned off.

In case one of the cable connection to electrodes is broken, safety relay OUT1 will de-energize and yellow LED will turn off, causing immediate de-energize of relay OUT2, to avoid any damages to process.

To calibrate sensibility, move SENS trimmer counter-clockwise to minimum and add liquid until it reach the electrode. Then slowly turn the trimmer clockwise until liquid is detected. In order to have a sensibility margin, turn again the trimmer clockwise for 10-15% rotation.

For a correct installation in the cabinet board, the instrument must be about 1cm far from other instruments.

Overview

CL-S sense liquid level detecting conductivity between two electrodes installed in a tank to control. When liquid reaches electrodes, a current flows between them causing instrument intervention. The voltage between electrodes is alternate, to avoid electrolysis phenomenal in liquid and electrodes corrosion.

Include a safety circuit that constantly check the state of electrical connections to electrodes.

Delay adjustment and foam presence

It is possible to adjust switching delay time when fluid level change (OUT2 relay). **Increasing delay avoid unwanted level change detection due to surface waving or foam presence.**

Rotating DELAY trimmer counter-clockwise until you reach lowest point, delay is :

- From N.O. to N.C. : 0,3 sec (level increase)
- From N.C. to N.O. : 1,5 sec (level decrease)

Rotating DELAY trimmer clockwise until you reach highest point, delay is :

- From N.O. to N.C. : 1,5 sec (level increase)
- From N.C. to N.O. : 3,0 sec (level decrease)

Intermediate trimmer position change delay time in linear mode between minimum and maximum. Delay adjustment control only level control and does not influence control of electrical cable connections (OUT1 relay).

Warranty

The warranty is valid for 12 months from purchase, and expires if instrument is improperly used or not correctly installed on system.



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