



LC 11

Conductivity level switch

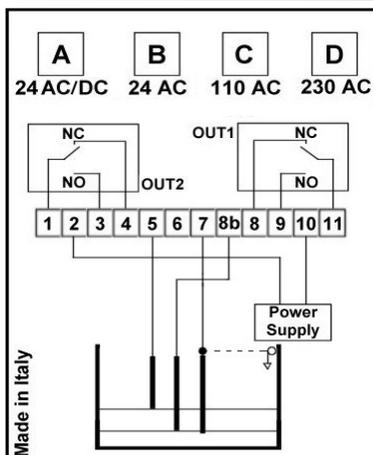


Technical data

Power supply:	24 VAC/DC 110-230 VAC
Programming:	Using dip-switch
Power consumption:	2VA / 1,8W max
Electrode voltage:	5 VAC max
Electrode current:	0,1 mA max
Sensibility:	0 – 70 KΩ (adjustable)
Minimum conductivity:	15 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)
Switching time:	8 msec Max
Release time:	3 msec Max
Visual signalling:	Green LED → Power supply Red LED → 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



LC11 level switch can work with single or double control points.

Used with a single control point it operates as a minimum or maximum level switch, while used as a double control point it can control a pump or valve for maintaining the level between the two control points.

The switch needs two metal electrodes for working, connected at terminal (5) and (7), but if tank is metallic it is possible to use only one electrode (5) connecting metal structure to terminal (7). For a double control point operation, three electrodes are needed for working, connected at terminal (5) for maximum level, (8b) for minimum level and (7) for common reference. Even in this case, using a metal tank, it is possible to connect at terminal (7) the metal structure.

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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Operation and calibration

LC11 sense liquid level detecting conductivity between two or more 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. When electrode is uncovered, relays are energized (or de-energized, based on dip-switch programming) and the red LED on front will be lighted (or unlighted). When liquid reaches electrode, the relays and red LED state will change . If the instrument is used with a double control point, relays are energized (or de-energized) during the filling phase of liquid in the tank and will change the state when liquid reaches the maximum level electrode. Next state change of relays occur when liquid level will be below the minimum level electrode. If you need to calibrate the sensibility, put the sensibility trimmer to minimum and liquid level to reach contact with the electrode. Then turn the trimmer until relays state will change. In order to have a sensibility margin, turn again the trimmer for 10-15% rotation toward maximum. For a correct installation in the cabinet board, the instrument must be about 1cm far from other instruments.

Programming

It is possible to change relays state and switching delay changing the configuration of dip switch present on front side of the instrument:

	Relay normally de-energized N.O. to N.C. : 0,3 sec N.C. to N.O. : 1,5 sec	} LC11 NV
	Relay normally de-energized N.O. to N.C. : 1,5 sec N.C. to N.O. : 3,0 sec	
	Relay normally energized N.C. to N.O. : 0,3 sec N.O. to N.C. : 1,5 sec	} LC11 RV
	Relay normally energized N.O. to N.C. : 1,5 sec N.C. to N.O. : 3,0 sec	

Dip-Switch programming must be done when instrument is disconnected from power supply.