

TC7-3R

Technical data

TC7-3R

825B010C

Capacitance level switch
with 3 settable threshold

Power supply:	24 Vdc.
Consumption:	3 W max.
Storage temp.:	-30 to +80 °C
Working temp:	-20 to +60 °C
Measure range:	min 100 pF max 10 nF
Accuracy:	±3% of full scale
Range adjust:	trimmers
Empty/full adjust:	trimmers
Display:	red led - L threshold red led - H threshold red led - HH threshold

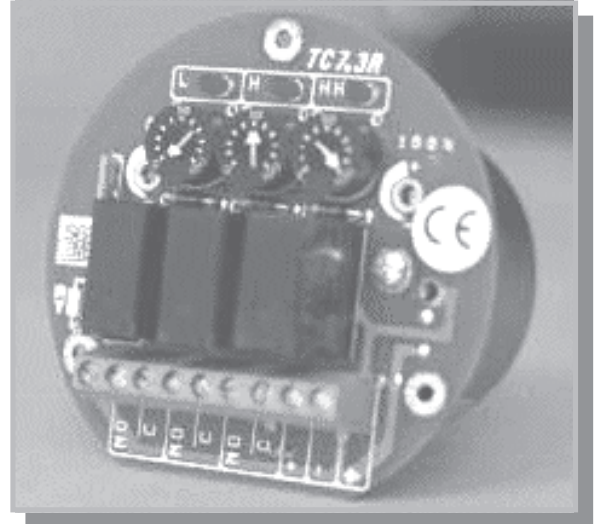


fig.1

TC7-3R General

TC7-3R insert in designed to be lodged into capacitance electrode head connection.

TC7-3R is a multiple level control based on capacitance principle, electrode and the tank wall (if conductive) form a capacitor that has a capacitance function of the product level.

The capacitance is converted into an electrical signal that drives the relays output.

TC7-3R Application

Suited for multiple level controls into one tank it can be used only with conductive liquids (like water).

The three relays can be adjusted singularly and work as minimum threshold (L), maximum threshold (H), over maximum threshold (HH).

Take care about the necessity of the $HH > H > L$ for a correct working of the TC7-3R.

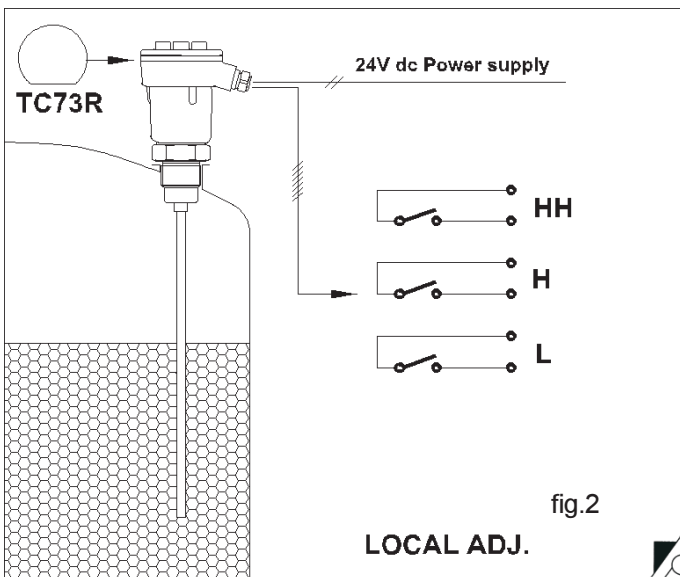


fig.2

TC7-3R Calibration

Verify the electrical connection between TC7-3R ground and tank ground

Supply the insert TC7-3R at 24Vdc.

Put the threshold potentiometer HH at 100%, fill up the tank to the 100% level and with a screw-driver turn the 100% trimmer, up to reach the switch limit point of the LED HH, in other words the point in which you are in the limit on/off of the LED. If you don't reach the switch limit point than look to the LED HH :

- if it is lighted turn reverse clock wise the trimmer RT up to reach the switch limit
- if it is unlighted turn clock wise the trimmer RT up to reach the switch limit.

Put the threshold potentiometer L at 0%, empty the tank up to 0% level and with a screw-driver turn the 0% trimmer, up to reach the switch limit point of the LED L



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TC7-3R Electrical connections

In order to grant a good gland-tight it can be use a multi wires cable (1,5mm² per wire) max 500m.

Supply only with 24Vdc (max 2v ripple)

When installed in a metallic tank, check the electrical connection between tank ground and the electrode ground. When installed in concrete tank, connect the electrode ground to the metallic grill into concrete.

When installed in plastic or fiberglass tank, reference electrode need, and it must be connected to the insert TC7-3R ground. (CLT5 double electrode can be used for compact solution).

A ground connection is important for good readability.

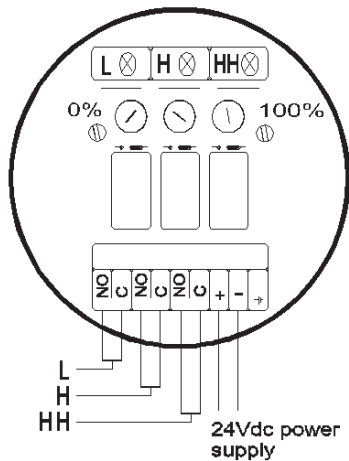


fig.3

TC7-3R Warranty

The warranty expires when damages they have provoked from the use not quite or from not correct installations. The warranty is valid for a period of 12 months from the acquisition behind presentation of the manual present of installation. All the reparations in warranty will have realised beside our establishment in Rodano (MI), the costs of dismounting and reinstalling of the device and the costs of transport will be paid by the customer.

TC7-3R Factory test certificate

In conformity to the production and check procedures I certify the equipment:

TC7-3R serial n.
satisfy technical characteristics as write in TECHNICAL DATA and it is conform to the internal procedures

Quality control Manager

Date of manufacture:



TC7-3R Threshold adjustments

TC7-3R has 3 relays; L, H, HH and their switch-point can be fixed internally at the range previously setted during the CALIBRATION procedure. L = low level alarm, H = high level alarm, HH = very high level alarm

H must not be setted lower to L or greater than HH

The relevant relays are energized in normal condition and de-energized in alarm condition (fail-safe)

L = open if the level is below L threshold, close if the level is above the L threshold

H = close if the level is below H threshold, open if the level is above the H threshold

HH = close if the level is below HH threshold, open if the level is above the HH threshold

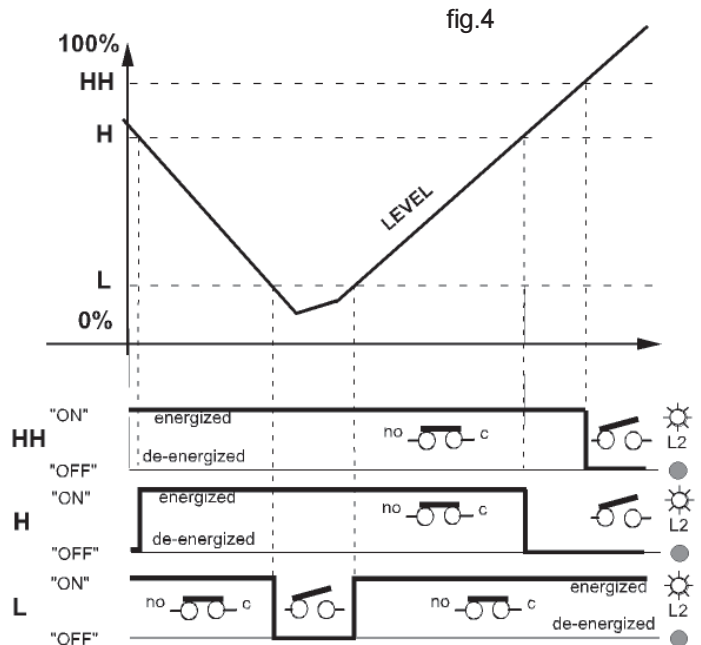


Fig.4 shows the output contacts status referring to the level variation and to the L, H and HH set-points.

The max temperature to the TC7-3R insert is +60°C. Better to lodge the capacitance sensor far from heater source. Strong vibration can damage the electronic part: a separate version is recommended.



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