Model 110 & 112 - Liquid Level Controller
User Manual

The model 110 is a liquid level controller which works by sensing the conductivity of a liquid.

Three electrodes are normally used, high, low, and common. The common electrode can be the tank if it is metal or an electrically conducting plastic. The electrodes can be made of any electrically conducting material to suit the liquid. Graphite or stainless steel are usually preferred for water.

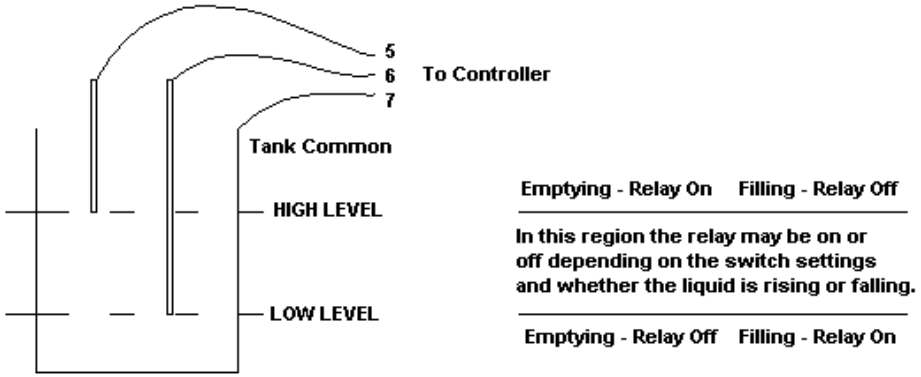
The high and low electrodes are mounted at the maximum and minimum levels required and the common electrode must be below the level of the low electrode. The electrodes can be mounted from the top or side of the tank provided they are insulated from each other.

Switch Settings

Switch	OFF	ON
1 - Function	Emptying	Filling
2 - Sensitivity	High	Normal

	Fast	Normal	Slow	Slow
3 - Time Delay	ON	OFF	ON	OFF
4 - Time Delay	ON	ON	OFF	OFF

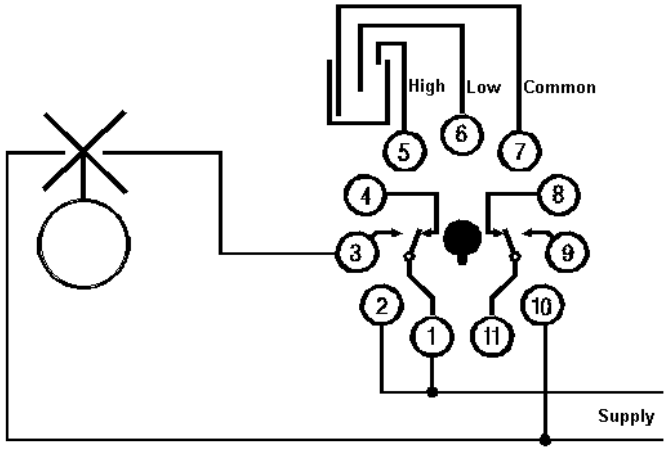
Operation.



The controller maintains the level of the liquid between the high and the low electrodes. If the level falls below the low electrode the relay will change state but will not change back again until the level reaches the high electrode. The relay can be programmed to energize at either the low point or the high point for either filling or emptying applications.

We recommend that the pump or valve which is being controlled is wired to pin 3, so that the relay has to be energized to start it. This will ensure that in the event of a failure the pump or valve will be shut down.

Typical Connection



Sensitivity.

The conductivity of water tends to increase with the amount of impurities. Distilled or de-ionized water is almost non-conductive.

The sensitivity of the controller can be adjusted by a knob on the front. Clockwise increases the sensitivity (cleaner water). A switch on the front of the controller can be used to set a normal or high sensitivity range.

For normal tap water and effluent use the normal setting. For very pure water use the high setting.

In most applications the sensitivity setting is not critical as the difference in signal between the electrode being in or out of the liquid is enormous. Setting the knob to its centre position is usually perfect.

Where adjustment may be needed is when the change is less apparent, for example when condensation can build up between the electrodes which might cause the controller to show that liquid is present when it should not. In a case like this, just reduce the sensitivity because condensate has a low conductivity.

Two Electrode Operation.

This module may be used with only two electrodes for detecting a single level without hysteresis. Just link the high and low terminals together to one electrode and the common terminal to the other electrode.

Time Delay Settings.

The response time of this module can be changed using the switches on the front. There are three settings, fast (0.1secs.), normal (1 sec.) and slow (5secs.). The slow setting can be useful in preventing relay chatter when using the two electrode mode in choppy water conditions.

Specifications

SENSITIVITY	NORMAL: 10K - 100Kohms HIGH: 10K - 1Mohm.
RESPONSE TIME	SLOW 5secs. NORMAL 1sec. FAST 0.1sec.
POWER SUPPLY Options	24V 50/60Hz. 115V 50/60Hz. 230V 50/60Hz. 400V 50/60Hz. 12V DC 24V DC
POWER CONSUMPTION	AC supplies: 3VA approx. DC supplies: 1.5W approx.
TEMPERATURE LIMITS	-5/+60°C
HUMIDITY LIMITS	0-90% RH non condensing
RELAY RATING Model 110 SPDT	10A 380VAC 2500VA 10A 30VDC
RELAY RATING Model 112 DPDT	5A 250VAC 1250VA 5A 30VDC

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