

Specification

Supply In:	110V/230V ac 50/60 Hz.
Supply Out:	14V ac Isolated.
Operating Range:	Full = <300K Ohm. Empty = 2x Full reading or greater.
Operating Temperature	-10°C to +50°C .
Output:	SPCO rated 5A 240V ac maximum.
Output Mode:	Standard module supplied as fail-to-safe HIGH. Relay de-energised when material shorting probe to earth. For fail-to-safe LOW. Relay energised when material shorting probe to earth. Low level mode to be specified at time of ordering.
Indication:	LED. On with output energised.
Time Delay:	RLM48T version. Adjustable to 15 seconds. Selectable for delay on make or break.
Enclosure Material	Moulded Noryl (modified PPO) & acrylic.

Fault Diagnosis

Should the equipment fail to operate, the following points should be carefully checked.

- Re-check all the connections, in particular the Earth connection.
- Check the probe resistance (probe to earth) for both empty and full conditions. The full condition should be less than 300K Ohms and the empty condition at least twice the full condition reading for reliable operation.
- Check the module operation by removing the probe connections and shorting the terminals together on the module to simulate the probe switching. (Pins 3 and 4 for single level operation, Pins 1 and 3 and also Pins 2 and 3 for two level sequenced operation).

Guarantee

The equipment is covered by a 12 months guarantee from the date of shipment. Any faults arising due to faulty materials or workmanship, within the guarantee period, will be corrected free of charge providing the equipment is returned to us carriage paid.

Certificate of Conformity

The equipment covered by these instructions has been manufactured and tested in accordance with our quality assurance procedures and conforms fully with our published specification.

Health and Safety

Provided that the equipment covered by these instructions is installed and operated as directed, it presents no hazard and conforms fully to health and safety regulations.



THIS PRODUCT CONFORMS TO THE REQUIREMENTS FOR CE MARKING

When this product is incorporated into other machinery or apparatus, that apparatus must not then be put into service (in the E.C) until it has been declared in conformity with the appropriate E.C Directive/s.



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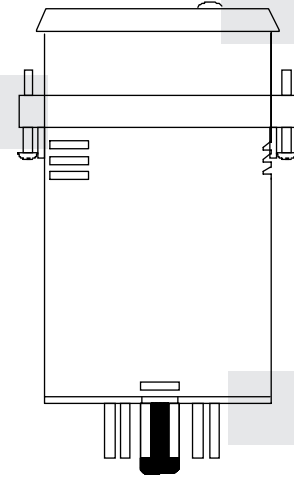


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MODUMHO - RLM48 & RLM48T 48mm DIN Standard Resistance Level Module

**OPERATING
INSTRUCTIONS**



Introduction

The MODUMHO range is designed to provide a simple and reliable means of detecting and controlling the level of conductive liquids in tanks, sumps or other storage containers. A version with inbuilt adjustable time delay is available (RLM48T), which can be used to prevent spurious tripping due to liquid splashing etc. The MODUMHO operates on the principle of measuring the resistance change between a probe and earth, when liquids either make or break contact with the probe. The probes used with the MODUMHO are energised by an isolated 14Volt ac supply, and in most applications, the wall of the container provides the earth return. Where this is not practicable, a twin probe head or two separate probes may be used, the second probe providing the earth return.

The MODUMHO can be used to provide either single high/low level control or sequenced two level control with optional fail-safe high or low level modes, as required.

Various mechanical configurations of probes are available to suit differing applications and mounting arrangements.

Installation

The MODUMHO should be wired as shown in the connections diagram. Cable lengths can be extended to virtually any distance required. Screened cable is unnecessary, however if long runs are used in very noisy environments, the cabling should be segregated from high current conductors.

Commissioning

- Mount the probe(s) in the container at the required level(s). Where the probe(s) are mounted vertically in the container, the tip(s) should be at the detection level required. NOTE: Where using a second probe as the earth return, this probe should be the same length or longer, but not shorter, than the level sensing probe.
- Mount the control module in the desired Location/panel. This can be virtually any distance from the probe(s) providing the resistance of the cable does not exceed 200 ohms. (1.0mm cable or similar is ideal).
- Check that connections are correct and apply power to the units.

Operation

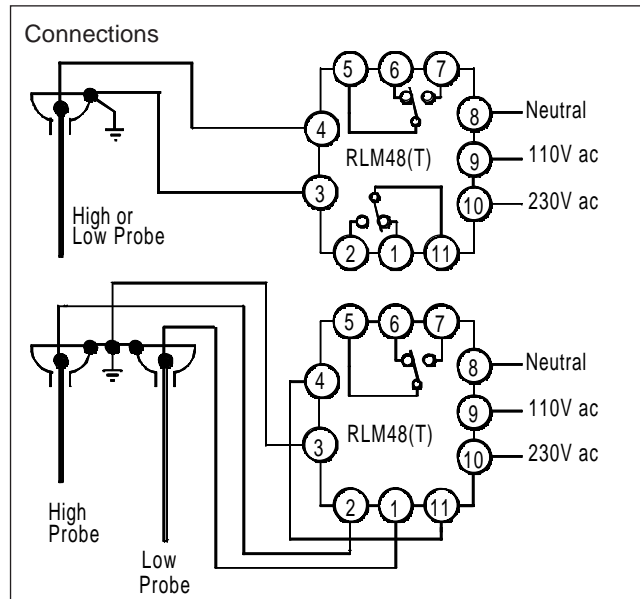
MODUMHO are normally despatched for operation fail-to-safe in the HIGH level mode, unless specifically ordered otherwise. Fail-to-safe in the HIGH mode provides the following operation:-

Single Level:

Where only one probe is being used to indicate or control a single level, the output relay will be de-energised when the liquid is in contact with the probe.

Two Level:

Where two probes are being used to indicate or control two levels, the relay will be de-energised when the liquid is in contact with the HIGH level probe. As the level of the liquid falls, the relay will remain de-energised until the liquid breaks contact with the LOW level probe. The relay is now energised. As the level of the liquid rises, the relay will remain energised until liquid makes contact with the HIGH level probe, at this point the relay will de-energise and the cycle will repeat.



Fail Safe Mode. (Reversal):

If required, the fail-to-safe mode of the module can be reversed. I.E. fail-to-safe in the LOW mode (relay operation reversed). This should be specified at time of ordering.

Final Setting Up

- Ensure that the container is empty and there is no liquid in contact with the probe(s).
- The relay will now be energised (fail-to-safe HIGH) and the LED indicator on the top of the module will be illuminated.
- Turn the sensitivity control, on the top of the module, fully anti-clockwise.
- Fill the container until the liquid makes contact with the HIGH level probe. The relay will now de-energise and the LED indicator will go out.
- If the relay does not de-energise (due to the liquid having a low conductivity) slowly turn the Trip control clockwise until it just de-energises.
- Rotate the trip control a further 20° to 30° clockwise and the equipment is now set up for normal operation.

(Note: For LOW level fail-to-safe mode, relay and LED operation will be reversed).

Timer Option (RLM48T)

MODUMHO RLM48T has an inbuilt adjustable time delay, (adjustment is via the control on the top of the module, standard time delay is 15 seconds maximum). Rotate clockwise to increase time period. Delay mode is switch selectable for timing when making or breaking of material with probe.

