

MODEL 448

Output Relay Board

- Use with Models 404 & 408
- 5 Electromechanical Relay Contacts

DESCRIPTION

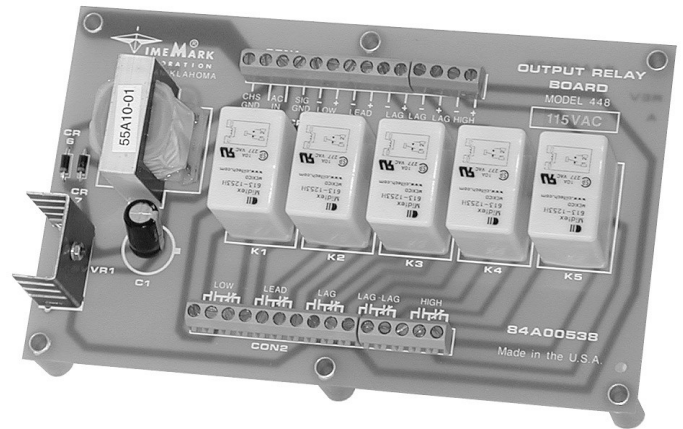
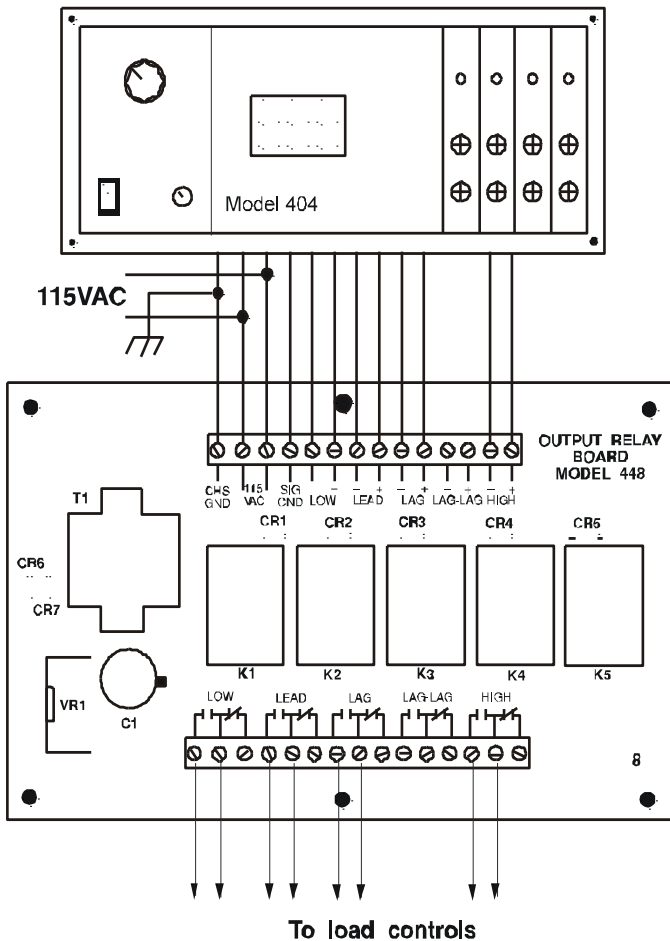
The **Model 448 Output Relay Board** provides electromechanical relay contacts for the Model 404 or 408 Liquid Level Sensors, allowing those models to be used as a control device.

The Model 448 consists of a power supply and five relays on the surface-mounted printed circuit board. Four of the five relays are used with the Model 404. All five relays are used on the Model 408, refer to the typical application.

Some liquid level control applications may not require the alternating control, HOA switches, or run-time meters (see the *Model 403 or Model 407 data sheets*).

The Model 404 and Model 408 Liquid Level Sensors uses the Model 448 to meet the needs of direct relay control applications.

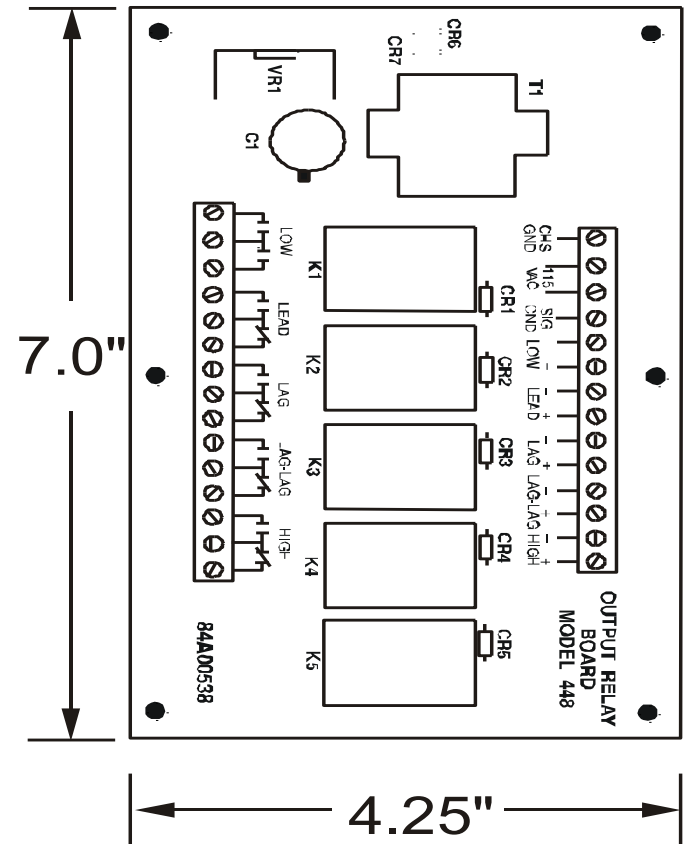
TYPICAL APPLICATION - Model 404



SPECIFICATIONS

Model	448
Input Voltage	105 to 130VAC
Input Frequency	47 to 65Hz
Power Consumption	1.5W
Inputs	Solid-state from Models 404 or 408 or any contact closure
Outputs	5 SPDT
Output Rating	10 Amps at 240VAC resistive
Dimensions	7" x 4.25" x 2"
Mounting Dimensions	6.625" x 3.875"
Weight	12.5 oz.

DIMENSIONS




Telephone: Main - (918) 438-1220
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MODEL 448 Output Relay Board

READ ALL INSTRUCTIONS BEFORE INSTALLING, OPERATING OR SERVICING THIS DEVICE.
KEEP THIS DATA SHEET FOR FUTURE REFERENCE.

GENERAL SAFETY

POTENTIALLY HAZARDOUS VOLTAGES ARE PRESENT AT THE TERMINALS OF THE MODEL 448.

ALL ELECTRICAL POWER SHOULD BE REMOVED WHEN CONNECTING OR DISCONNECTING WIRING.
THIS DEVICE SHOULD BE INSTALLED AND SERVICED BY QUALIFIED PERSONNEL.

Installation Instructions

INSTALLATION

Mount the sensor Model 404/408 Liquid Level Sensor in a suitable enclosure.

Mount the Model 448 relay module in a suitable enclosure, near the Sensor assembly.

The terminals marked LIQUID LEVEL on the sensor assembly are the 4-20mA output.

If used, connect these terminals to the appropriate control circuitry. They are not connected to the relay module. **Observe Polarity.**

Connect a 3/16" I.D. tubing to the air supply fitting on the back of the Model 404/408. Connect the other end of the tubing to the air compressor and the tank air tubes.

Apply operating power and proceed to the ADJUSTMENT procedure.

ADJUSTMENT

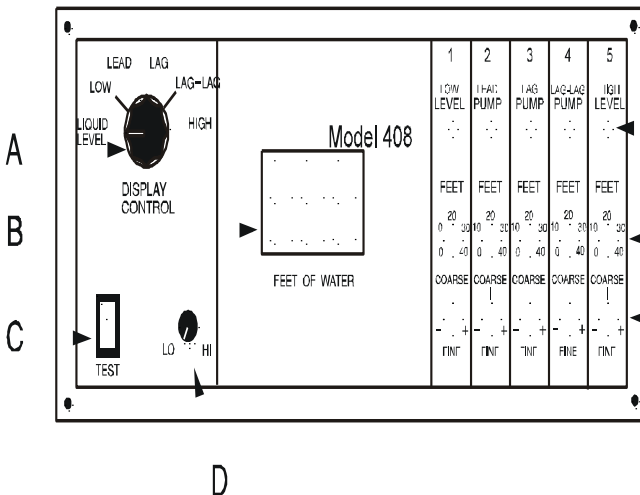
The trip points are set using COARSE and FINE adjustment pots; the results are shown on the LED display.

To adjust the device, set the DISPLAY CONTROL knob (A) to LOW and adjust the LOW LEVEL-COARSE adjustment (F) to the approximate desired level.

The FINE adjustment (G) is located below the COARSE adjustment. The trip level will be shown on the digital display (B).

Repeat these adjustments for the LEAD, LAG, LAG-LAG (Model 408 only) and the HIGH LEVEL adjustments.

Set the DISPLAY CONTROL knob to the LIQUID LEVEL position. The Sensor is now ready to operate.



TROUBLESHOOTING

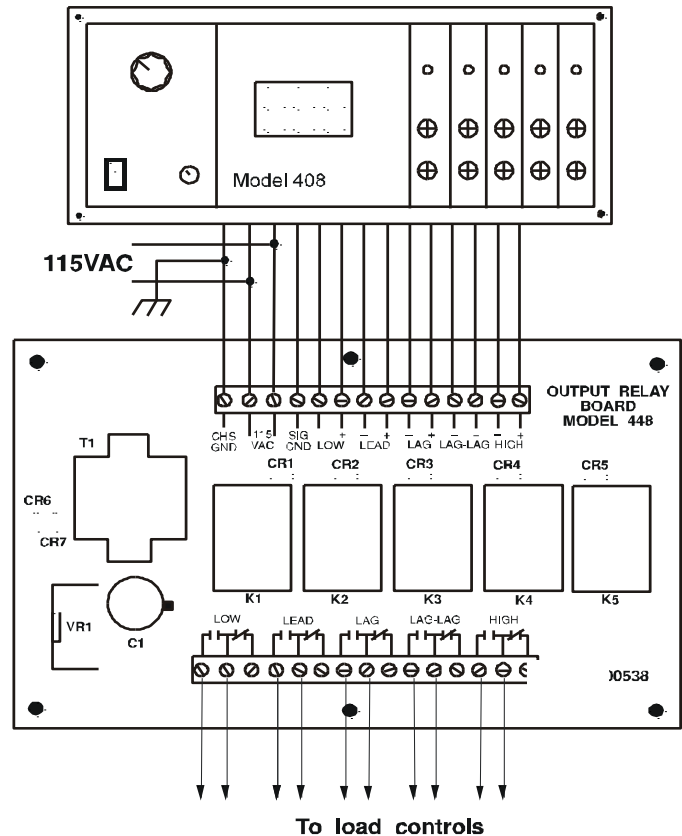
This device is not a field repairable unit. Should the unit not operate properly during adjustment or testing procedure, insure that all electrical connections and the air pressure are correct.

Verify that the proper voltage is applied and check all fuses. Contact the factory should the unit fail during use.

WARRANTY

This product is warranted to be free from defects in materials and workmanship for one year. Should this device fail to operate, we will repair it for one year from the date of manufacture. For complete warranty details, see the *Terms and Conditions of Sales* page in the front section of the Time Mark catalog or contact Time Mark at 1-800-862-2875.

TYPICAL APPLICATION - Model 408



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