Made in USA

ICM450
Three-Phase Voltage Monitor

Stop Motor Burnouts!

Programmable 3-phase line voltage monitor with 25-fault memory, high temperature LCD display, easy setup & clear, diagnostic readout of system faults, 190 to 630 VAC operation...

The ICM450 was specifically designed to protect motors and other 3-phase loads from premature failure and damage due to common voltage faults such as voltage unbalance, over/under voltage, phase loss, reversal, incorrect sequencing and rapid short cycling.

Mode of Operation

At power up, the **ICM450** evaluates the incoming power for proper phase sequence, amplitude, and symmetry (voltage unbalance). If the three phase input at the line side connections is within user-set parameters, the load energize LED is turned on and the internal relay is energized. Continuity will be across terminals 4 and 6. If connections are made to the load side terminals, the **ICM450** will transfer monitoring over to the load side only.

When a critical fault condition (phase loss or phase reversal) is present, the relay will immediately de-energize, the load-energized LED will turn off, the fault LED will flash, and the fault is written to memory. Continuity will be across terminals 4 and 5.

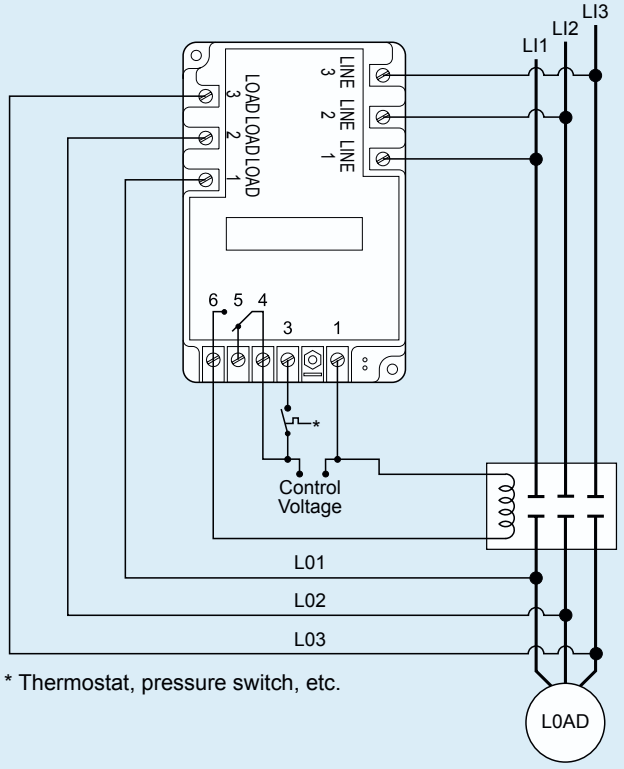
If a non-critical fault condition (unbalance, high or low voltage) is present, the **ICM450** will ignore it during the interro-gation delay time. If it is still present following the interrogation delay time, the relay will de-energize, the load-energized LED will turn off, the fault LED will flash, and the fault is written to memory. Continuity will be across terminals 4 and 5.

The **ICM450** will store the last 25 faults in memory. The relay will not energize if any fault conditions exist. The integral adjustable delay on break timer will prevent short cycling.

Features

- **Reliable, high temperature LCD display**
  - **Simplifies system setup and diagnostics. Indicates condition of incoming line voltage, fault conditions, system set-points and other user adjustments.**
  - **Temperature: -20°C to +75°C (-4°F to + 167°F)**
- **Simultaneous voltage display (an ICM exclusive)**
  - **View all 3 phases, no need to scroll through readouts.**
- **Fully adjustable variables**
  - **User may easily set and adjust variables in SETUP mode:**
    - **Line voltage: 190 to 600 VAC**
    - **Voltage unbalance: 2 to 20%**
    - **Delay on break period: 0 to 10 minutes**
    - **Fault interrogation: 0 to 15 seconds**
    - **Over/under voltage: 2 to 25%**
    - **Reset modes: AUTO or 0 to 10 retries**
    - **Control mode: ON or OFF**
- **25-fault memory and storage**
  - **Clearly displayed on LCD**
- **Ultra bright LED indicators**
  - **Shows current mode:**
    - **Setup LED**
    - **Load energized LED**
    - **Control voltage LED**
    - **Fault LED**
- **Easy to install and configure**
  - **Simple 7-step push-button setup**
  - **Wiring diagram on unit**
  - **Installation and application guide included**

Wiring Diagram



* Thermostat, pressure switch, etc.

LIS39-2

All features and specifications subject to change without notice.

Phone 315.233.5266

Application Assistance 800.365.5525 visit us at: www.icmcontrols.com

Fax 315.233.5276

ICM CONTROLS

Made in USA

Specifications

Input
- **Line Voltage:** Universal (190-630 VAC)
- **Frequency:** 50/60 Hz

Output
- **Type:** Relay
- **Form:** SPDT
- **Voltage Range:** Up to 240 VAC (maximum: 10 amps)
- **Frequency:** 50/60 Hz

Control Operating Temperature
- **Operating Temperature:** -40ºC to +75ºC (-40ºF to +167ºF)
- **Storage Temperature:** -40ºC to +85ºC (-40ºF to +185ºF)

LCD Operating Temperature
- **Operating Temperature:** -20ºC to +75ºC (-4ºF to +167ºF)

Phase Unbalance Protection
- **Voltage Unbalance:** 2-25% adjustable

Over/Under Protection
- **Under Voltage:** 2-25% adjustable
- **Over Voltage:** 2-25% adjustable

Phase Loss Protection
- Phase Loss condition = <25% of nominal for any given phase. System will shut down and a fault will be recorded should this condition occur

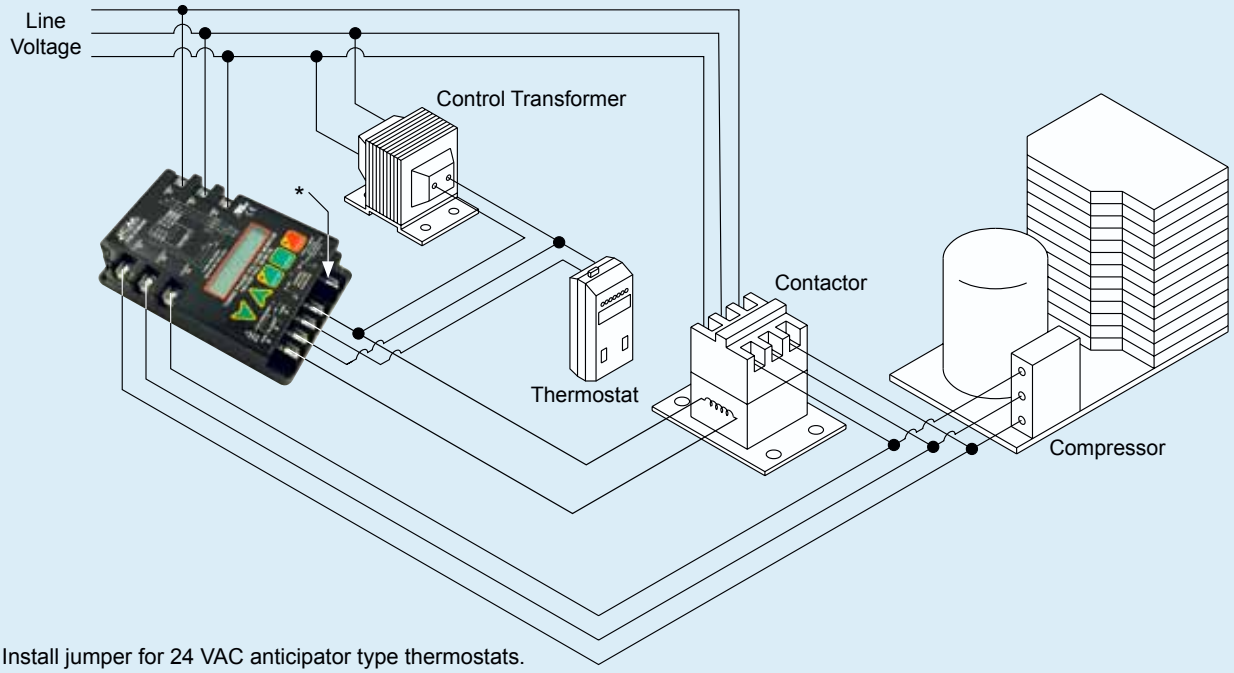
Delay on Break Timer
- **Control Voltage:** 18-240 VAC
- **Time Delay:** 0-10 minutes adjustable

Fault Interrogation Delay
- **Time Delay:** 0-15 seconds adjustable
- Provides a delay between fault detection and system shutdown, eliminating nuisance trips/unnecessary shutdowns

Mechanical
- **Mounting:** Surface mount using (2) #8 screws
- **Termination:** Screw terminals
- **Weight:** 12 ounces (341 grams)
- **Dimensions:** 6.5” x 4.25” x 1.4” (16.5 x 10.8 x 3.5 cm)

Installation and Setup
- Application Guide included with unit

System Diagram



* Install jumper for 24 VAC anticipator type thermostats.