ICM492D

Single-Phase Digital Line Voltage Monitor

USA INNOVATION

INSTALLATION, OPERATION & APPLICATION GUIDE

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Constantly monitors and displays line voltage. Protects against Over and Under voltage, and Rapid Short Cycling caused by Transient Faults and Power Interruptions

DESCRIPTION

The **ICM492D** is specifically designed to monitor line voltage and guard single phase equipment against damage caused by under and over line voltage conditions and rapid short cycling. Records the last five faults.

MODE OF OPERATION

The **ICM492D** continuously monitors incoming line voltage for faults and displays RMS voltage on the digital display. When the line voltage is appropriate, the **ICM492D** will close the COM and N.O. relay contacts. When the incoming line voltage is outside of the user selected parameters, the **ICM492D** will close the COM and N.C. relay contacts and indicate a fault condition by flashing FAULT on the display. The SELECT menu has the following user adjustable settings: voltage set point, delay on break, over voltage, under voltage, delay on fault, reset mode, control mode and language. The delay on break prevents short cycling caused by transient faults and rapid power interruptions. The delay on fault time can be adjusted to help reduce nuisance trips from transient faults. When the control mode setting is turned on, the **ICM492D** will close the COM and N.O. relay contacts only when voltage is present at the signal terminals.

INSTALL

DANGER: Disconnect power by removing a fuse or opening a circuit breaker and verifying no voltage is present before making a connection or injury or death can result.

1. Disconnect power.
2. Mount **ICM492D** securely against the metal chassis of the system in an electrical enclosure.
3. Connect L1/L2 to **ICM492D** L1/L2 using female 1/4" spade terminals.
4. If the load is energized by a contactor/relay, please see Fig.1 wiring diagram when using a contactor/relay with line voltage rated coils. If the contactor/relay coil voltage is anything other than line voltage, a separate power source for the coil voltage is required.

VOLTAGE READ CALIBRATION

Hold down both the **up & down** buttons simultaneously to enter calibration mode (Fault and Setup LEDs will flash). Press the **up & down** buttons individually to adjust display voltage. Press **select** to lock in the value and save calibration.

IMPORTANT SAFETY INFORMATION

WARNING! - Electrical Shock Hazard:

- Verify power is disconnected by removing a fuse or opening a circuit breaker before making any connections.
- Requires installation by a professional or qualified person
- Incorrect installation can cause personal injury, property damage and/or death.
- Follow all local & national electrical codes while installing control.

SPECIFICATIONS

USER ADJUSTABLE SETTINGS:

- **Voltage setpoint:** 95-280V
- **Delay on Break (ASC):** 15-720 sec.
- **Over voltage setting:** 5-25%
- **Under voltage setting:** 5-25%
- **Delay on fault:** 0-10 seconds
- **Reset mode:** 0 (auto)-10 attempts
- **Control mode:** OFF-ON
- **Language:** English/Spanish

INPUTS:

- **Line voltage:** 80-300 VAC
- **Control voltage (signal):** 18-240 VAC
- **Frequency:** 50/60 Hz
- **Accuracy:** ±2%
- **Low power consumption:** Max 50 mA @ 120V
  Max 100 mA @ 240V

OUTPUT:

- **Type:** Relay (Dry Contact Form C)
- **Form:** SPDT
- **Relay contact ratings:**
  - **N.C. Contacts:** 2A @ 277V General Purpose
  - **N.O. Contacts:** 1A Pilot Duty @ 240V
- **Connection Terminals:** 0.25" male fast-on

MECHANICAL:

- **Case dimensions:** 6.5"L X 4.75"W X 1.09"D
- **Unit weight:** 0.255 lbs.

ENVIRONMENTAL:

- **Operating temp. range:** -40°C to + 65°C
- **Storage temp. range:** -40°C to + 85°C

FEATURES

- New micro-processor for improved accuracy
- Universal line voltage input
- Improved backlit digital display, easy to read in low light conditions
- Display voltage callibration feature to match the RMS value of a volt meter
- 5-fault memory
- Adjustable voltage set point
- Re-designed buttons for increased durability
- Adjustable response time
- Adjustable anti-short cycle time delay
- Protects against over and under voltage, rapid short cycling caused by transient faults and power interruptions
- Control mode (optional)
- Universal signal (control voltage) input (for integrating a thermostat)
- Heavy duty SPDT relay output
- UL Listed: E53944

SELECT MENU SETUP

Press SELECT to enter menu setup
- LINE VOLTAGE displays (95-280 VAC)
- Adjust this to match the voltage of your system.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- DELAY ON BREAK (ASC) displays (15-720 seconds)
- This is the amount of time your system will be locked out after a fault.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- OVER VOLT PERCENTAGE displays (5-25%)
- This is the percent the actual voltage must be above your Set Voltage for an over fault to occur.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- UNDER VOLT PERCENTAGE displays (5-25%)
- This is the percent the actual voltage must be below your Set Voltage for an under fault to occur.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- DELAY ON FAULT displays (0-10 seconds)
- The amount of time the ICM492D will interrogate a fault before accepting the condition as a fault.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- RESET MODE displays (1-10 trials, 0 indicates auto)
- This is the number of times the unit will reset after a fault has occured before locking out
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- CONTROL MODE displays (OFF-ON)
- When set to ON, the relay contacts close only when line voltage conditions are good and voltage is present at the signal terminal inputs.
- Use **up** or **down** button to adjust.

Press SELECT for next screen
- LANGUAGE displays (English/Spanish)
- Use **up** or **down** button to choose between English or Spanish

Press SELECT for next screen
- FAULTS: displays (1-5)
- Displays the number of faults in history
- Use **up** or **down** button to scroll through fault history

NOTE: *Faults can be cleared by simultaneously pressing the UP, DOWN and SELECT buttons after exiting the SELECT Menu Setup. When faults are cleared you will see the phrase "END FLTS".*

After 15 seconds of button inactivity, the control exits the SELECT Menu Setup screen.

WIRING DIAGRAM

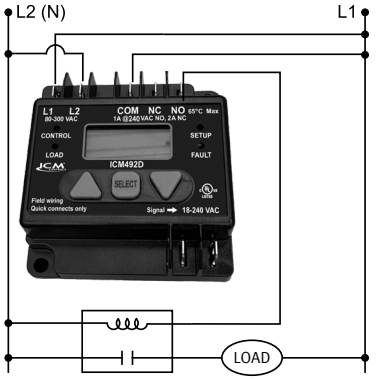

Fig. 1