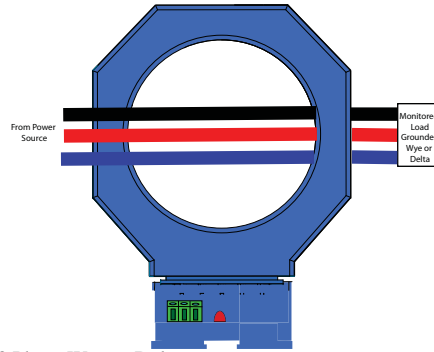
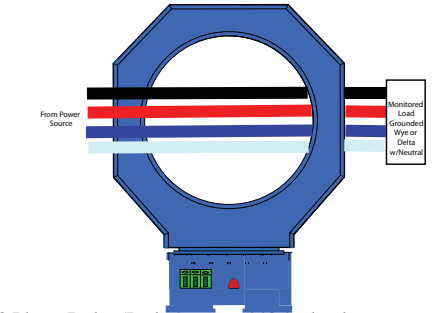


Single Phase (Phase & Neutral or Phase to Phase)



3 Phase Wye or Delta System must be grounded



3 Phase Delta (Include neutral if the load uses neutral)

## Installation & Wiring

AG-LC Series relays work in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures. They can be mounted in any position or hung directly on wires with a wire tie. Just leave at least one inch distance between relay and other magnetic devices. Run all current carrying conductors through the opening in the relay. (See “Principal of Operation”) Be Sure all wires are oriented so current flows to and from the load. Tie wrap the wire bundle to the top of the sensing ring with the distance from the sensor base as great as possible.

### Wiring

Use 22-14 AWG copper wire and tighten terminals to 5-7 inch-pounds torque. See Diagrams.

### Power

Connect power wiring to Terminals 1-2. Be sure that the power supply matches the power rating on the relay label. Green LED will light with power applied. The power supply input is not polarity sensitive.

### Output

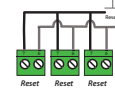
Connect output wiring to Terminals 3-4 (NO) or 4-5 (NC) DEN and LA contacts change **ONLY** when current is detected over the setpoint.

ENE and ELA contacts change state when power is applied and revert when current is detected over the setpoint or power is removed.

### Latching reset

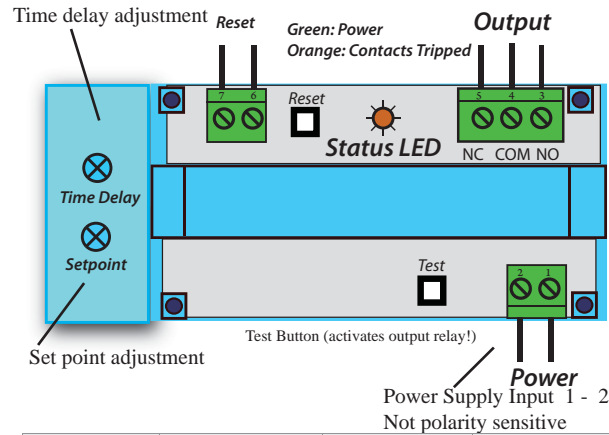
Use the reset button on the sensor circuit board to unlatch the tripped sensor contact, or attach a remote, voltage free button between terminals 6-7 to allow resetting the sensor without opening the cabinet.

Multiple sensors can be reset with one button by connecting in parallel.



Connect all terminal 6's and all terminal 7's in parallel to one button.

## Operation



Contact Action	No Power Applied	Power Applied	Fault Detected
DEN	NO = Open	NO = Open	NO = Closed
	NC = Closed	NC = Closed	NC = Open
ENE	NO = Open	NO = Closed	NO = Open
	NC = Closed	NC = Open	NC = Closed
LA	NO = Open	NO = Open	NO = Closed
	NC = Closed	NC = Closed	NC = Open
ELA	NO = Open	NO = Closed	NO = Open
	NC = Closed	NC = Open	NC = Closed

**AG-LC Series** Ground fault relays operate in one of two states: Normally de-energized (DEN or LA) or Normally energized (ENE or ELA). **Normally de-energized** sensors produce a change in the relay contacts **ONLY** when there is a fault over the trip point and unit is powered. **Normally energized** sensors provide contact action when the sensor is powered, so the contact state will return to the original condition with fault detected or with a loss of power to the sensor (auto-reset). Latching Normally energized model contacts change state when power is applied to the sensor, latching in the original condition when a fault is detected.

### Testing

To test operation, gently press the TEST button. This simulates a fault and tests the internal switching circuits. The TEST button must be pressed for a period of time longer than the delay setting.

**CAUTION:** Any circuit connected to the relay will be operated. The open contact closes on sensed fault current over the set point (or test), and the closed contact opens on detected fault.

Upon detecting a fault or when the TEST switch is pressed, the output will switch.

The output will reset to the original (energized) state after the TEST button has been released. With the latching models, the RESET button (external or on the sensor) must be used to unlatch the contacts.

To indicate that the sensor has sensed a fault, the LED will show orange rather than green.

### Field Setpoint Adjustment

The AG-LC sensors provide an easy method to set the amount of fault current which will cause the output to change state. There is a pale blue slotted adjustment knob on the side of the sensor base. This is a linear, half turn potentiometer allowing the trip point to be set at a minimum of the sensor range by turning counterclockwise, and the maximum of the range by turning clockwise. Use the markings on the label.

### Factory Setpoint

The AGC and AGD models trip points are factory set, no adjustment.

### Time Delay Adjustment

The delay adjustment is located on the same side of the sensor base. Turning the slotted knob fully counterclockwise to set the delay to the minimum (100 ms to activate the output contacts) and delay can be set up to 8 seconds. Use the markings on the label.

### Monitored Circuit Size Information

The AG-LC sensor provides a window with ID of 4.00 inches (102 mm).

Measure the OD of one wire. Use this measurement multiplied by 2.15 to obtain the OD of a bundle of three, and by 2.41 for the OD of bundle of four wires. **Please contact the factory for more information.**

As an example, 500 MCM THHN has an OD of 1.00 inches. A bundle of three will have a minimum OD of 2.15 inches, and a bundle of four wires will have a minimum OD of 2.41 inches.

## Principal of Operation

Under normal conditions, the current in one wire of a two wire load is equal in strength but opposite in sign to the current in the other wire. The two wires create magnetic fields that cancel, a condition known as “Zero Sum Current”. If any current leaks to ground (Ground Fault), the two currents become unbalanced and there is a net resulting magnetic field. The AG-LC relay detects this minute field and changes the output state. This concept extends to three phase circuits such as 3 or 4 wire Delta and 3 or 4 wire Wye. The sensor is not designed for use on ungrounded systems.