Specifications

Power Supply	120 VAC (66-132 volts, 50-60 Hz) 2.5 VA consumption 240 VAC (200-240 volts, 50-60 Hz) 2.9 VA consumption 24 VAC or VDC (19-29 volts) 2.5 VA consumption Green LED = Power supply energized
Setpoint Range	AG1 Series: 5-100 mA field adjustable AG2 Series: 80-950 mA field adjustable AG3 Series: Tri-Set, 5, 10 & 30 mA, jumper select
Isolation Voltage	Up to 1500 VAC
Frequency Range	50-60 Hz (monitored circuit)
Output Rating	Solid state AC switch: 1.0 A @ 120 VAC, 2 A @ 30 VDC Solid state DC switch: 0.15 A @ 30 VDC
Response Time	150 ms @ 5% over setpoint 100 ms @ 50% over setpoint 50 ms @ 500% over setpoint
Dimensions	2.60"H x 3.86"W x 1.45"D (66 x 98 x 37 mm) Case aperture 0.75" (19 mm) diameter
Case	UL94 V-0 Flammability rated
Environmental	-4 to 122°F (-20 to 50°C) 0-95% RH, Non-condensing Pollution Degree 2 Altitude to 6561 ft (2000 meters)
Listings	UR/cUR, CE (Not all option combinations are recognized. See product label.)

For products intended for the EU market, the following is applicable to the CE compliance of the product:

The sensor may comply with EN 61010-1 CAT III 600 V max line-to-neutral measurement category. If insulated cable is used for the primary circuit, the voltage rating of the measurement category can be improved according to the characteristics given by the cable manufacturer. A fuse rated 5 A max shall be placed in series with the main input power terminal.



Warning! Risk of Danger
Safe operation can only be guaranteed if the sensor is used for the purpose it was designed for and within limits of the technical specifications. When this symbol is used, it means you must consult all documentation to understand the nature of potential hazards and the action required to avoid them.



Warning! Risk of Shock
When operating the senor certain parts may carry hazardous live voltage (e.g. primary conductors, power supply). The sensor should not be put into operation if the installation is not complete.

System Grounding

Good design practice and code require that all AC power systems be grounded. AG Series detectors are designed to work on grounded AC power systems. They may not operate properly on ungrounded systems.

Model Number Key

AG1-NCAC-120 -FS - 005

Setpoint:
005 to 950 - Factory Adjusted Setpoint in mA (specify when ordering)
TR3 - Tri-Set, 5, 10 & 30 mA, Jumper Select

Options:
FS - Normally Energized
NF - Normally De-energized

Power Supply:
24U - 24 VAC/DC
120 - 120 VAC
240 - 200-240 VAC

Output Type:
NCAC - Normally Closed 1 A @ 240 VAC
NOAC - Normally Open 1 A @ 240 VAC
NCDC - Normally Closed 0.15 A @ 30 VDC
NODC - Normally Open 0.15 A @ 30 VDC

Setpoint Range:
1 - 5-100 mA, Adjustable
2 - 80-950 mA, Adjustable
3 - Tri-Set, 5, 10 & 30 mA, Jumper Select

AG Series Ground Fault Detector

Power Supply Notes

All low-current Ground-Fault Detectors are sensitive devices that require reasonable care in system design to avoid false trips caused by high electrical noise levels. Keep in mind that the best way to reduce noise in a system is to suppress it at its source.

1. Keep the detector power isolated from noisy circuits.
2. Do not power the detector with the same circuit which powers contactors or other high current, inductive loads.

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INSTRUCTIONS



AG 1, 2 & 3 SERIES

Ground Fault Detectors
Solid State Auto-Reset

Quick "How To" Guide

1. **Run all current carrying conductors through detector window.**
   A. Use an auxiliary CT if conductors do not fit. Consult Factory for CT selection.

2. **Mount the detector to a surface if needed.**

3. **Connect output & power wiring.**
   A. Use 22-14 AWG copper conductors rated 75°C minimum. Tighten to 9 inch-pounds.
   B. Make sure load matches the output shown on the detectors' label.
      - Detectors labeled "xxAC" will only switch AC load.
      - Detectors labeled "xxDC" will only switch DC load.
   C. Make sure power supply matches the power input shown on the label.

4. **Test.**
   A. Pressing the "TEST" button tests the detectors internal circuits. CAUTION: The output and any connected loads will switch!

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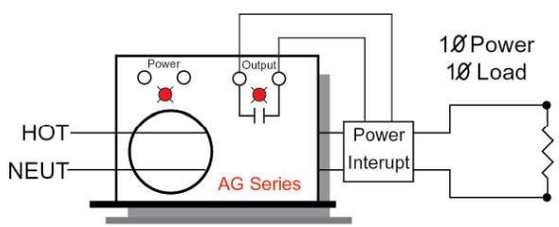
Mod-Tronic Instruments Limited
www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

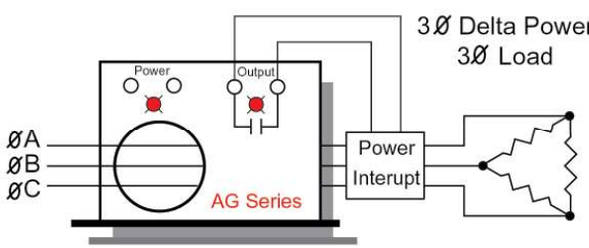
Description

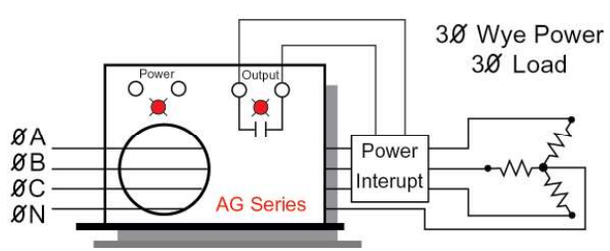
AG Series ground fault detectors monitor all current carrying wires in single or three phase systems to detect ground faults. They provide a contact output that can operate relays, contactors or signal automation systems.

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 detector detects this minute field and changes the output state. This concept extends to three phase systems such as 3 wire Delta and to 4 wire Wye.







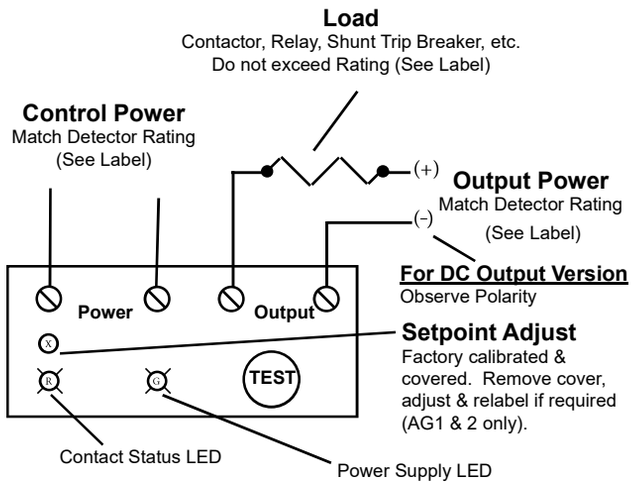
Installation & Wiring

AG Series ground fault detectors 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 detector and other magnetic devices.

Run all current carrying conductors through the detector aperture in the same direction. (See "Principal of Operation)

Connect power wiring to the detector. Be sure that the power supply matches the power rating on the detector label. Use 22-14 AWG copper conductors and tighten terminals to 9 inch-pounds torque.

Connect controlled load to terminals. Be certain the output current draw is lower or equal to the output rating on the detector label.



Operation

To test operation, gently press the TEST button. This simulates a fault and tests the internal sensing circuits. You should observe the following operation.

CAUTION: Any circuit connected to the detector will be operated.

Normally Energized Models (-FS) Detects Ground Faults and loss of control power

Output Style	NO POWER		CONTROL POWER APPLIED			
			No Fault		Fault Detected	
	Output	LED	Output	LED	Output	LED
N.C. Normally Closed	CLOSED	Off	OPEN	ON	CLOSED	OFF
N.O. Normally Open	OPEN	Off	CLOSED	ON	OPEN	OFF

Normally De-Energized Models (-NF) Detects Ground Faults only.

Output Style	NO POWER		CONTROL POWER APPLIED			
			No Fault		Fault Detected	
	Output	LED	Output	LED	Output	LED
N.C. Normally Closed	CLOSED	Off	CLOSED	OFF	OPEN	ON
N.O. Normally Open	OPEN	Off	OPEN	OFF	CLOSED	ON

Setpoint Adjustment

AG1 & AG2 Series detectors are factory calibrated to trip at the setpoint specified at the time order. We highly recommend leaving this factory calibrated setpoint alone. If you must change the factory setpoint, follow these steps:

A. Setup

Connect control power and output circuits. Run a conductor through the aperture with current equal to your desired set point.

B. Adjust Setpoint to Maximum

Remove the Setpoint Cover. Turn the adjustment pot 4 revolutions CCW (Counter Clockwise) to the maximum (least sensitive) setpoint. The Status LED should be OFF. The adjustment pot has a slip clutch so you cannot feel or damage the end point.

C. Dial in new Setpoint

Turn the pot slowly CW (Clockwise) until the LED turns ON. The detector is now adjusted to trip at the current that is passing through the aperture. Reset the detector.

D. Relabel Detector

Relabel the detector with the new setpoint. Use a label maker or tape with a permanent marker.

AG3 Move the jumper to the desired setpoint as shown on the label. No other adjustment can be made.

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