Specifications

Setpoint Range	AG1 Series: 5-100mA Field Adjustable AG2 Series: 80-950mA Field Adjustable AG3 Series: Tri-Set, 5, 10 & 30 mA, Jumper Select
Voltage Range	Up to 1,500 VAC (Monitored Circuit)
Frequency Range	50-400Hz (Monitored Circuit)
Output Options	(See Product Label)
Relay Output	1.0A @ 120 VAC, 2A @ 30 VDC
Solid State AC Switch	NOT COVERED
Solid State DC Switch	NOT COVERED
Response Time	150 mS @ 5% above setpoint. 100 mS @ 50% above setpoint.
Power Supply	Operates from 55-110% of nominal voltage
Nominal Voltages	120 VAC (50-400 Hz) Green LED=Power
Optional Power	24VAC +/-15% or 24 VDC Operates +/- 20%
Power Consumption	2.5 Watts
Dimensions	2.5"H x 2.8"W x 1.5"D, (64x71x38mm), aperture 0.75" (19mm) dia.
Case	UL 94V-O Flammability Rated
Environmental	5 to158 DegF (-15 to 70 DegC), 0-95% RH, Non Condensing
Listings	UL 1053, Class 1 Recognized, CSA Approved, CE Certified

Power Supply Notes

All low-current Ground-Fault Sensors 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 sensor power isolated from noisy circuits.
2. Do not power the sensor with the same circuit that switches contactors or other high current, inductive loads.

System Grounding

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

Model Number Key

AG 1-SDT1 -120-ENE -005

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

Options
ENE Normally Energized
DEN Normally De-energized

Power Supply
24U 24 VAC/DC
120 120 VAC

Output Type
SDT1 SPDT Relay (Form C)
1A @ 120 VAC, 2A @ 30 VDC

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

AG Series Ground Fault Sensor

Know Your Power

Other NK Technologies Products Include:
AC & DC Current Transducers
AC & DC Current Operated Switches
1ϕ & 3ϕPower Transducers
Current & Potential Transformers (CTs&PTs)

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NK Technologies

INSTRUCTIONS

AG1, 2 & 3 SERIES

Ground Fault Sensors with Relay Outputs, Auto-Reset

Quick "How To" Guide

1. **Run all current carrying conductors through sensor window**
   A. Use an auxiliary CT if conductors do not fit. Consult Factory for CT selection.
2. **Mount the sensor to a surface if needed.**
3. **Connect output & power wiring.**
   A. Use up to 14 AWG copper wires.
   B. Make sure power and load matches those shown on the senors' label.
4. **Test**
   A. Pressing the "TEST" button tests the sensors internal circuits. CAUTION: The output and any connected loads will switch!

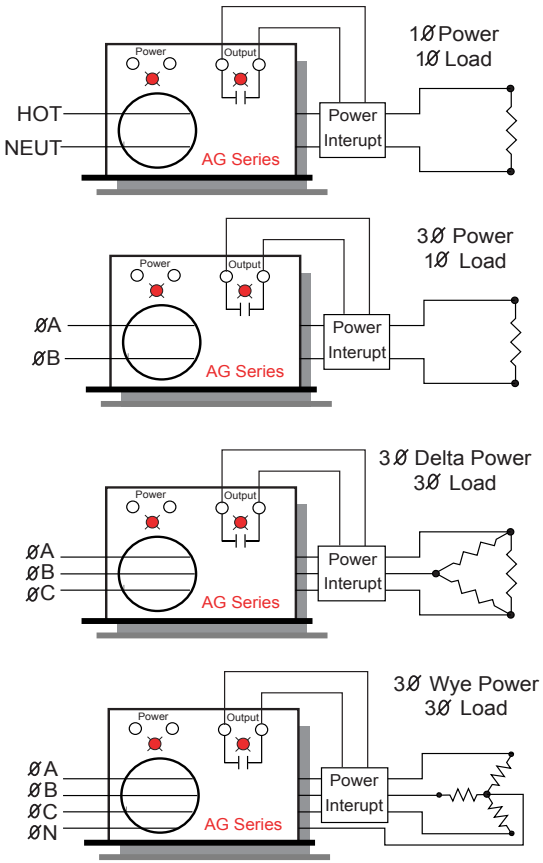
AG-Relay Inst. Rev 4- 10/10, P/N 49-010-0001

Description

AG Series sensors 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 sensor 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.



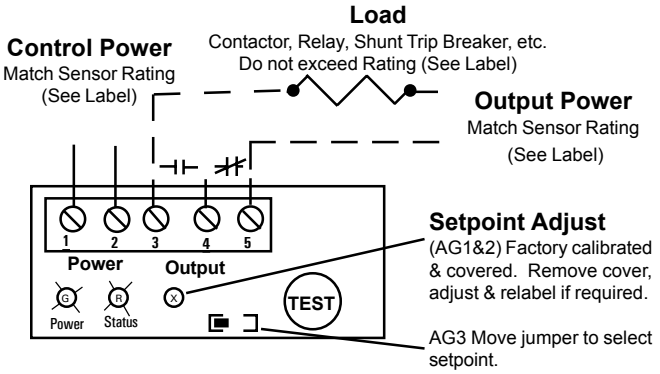
Installation & Wiring

AG Series sensors 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 sensor and other magnetic devices.

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

Connect power wiring to the sensor. Be sure that the power supply matches the power rating on the sensor label. Use up to 14 AWG copper wire and tighten terminals to 7 inch-pounds torque.

Connect output wiring to the sensor. Be sure that the output load is less than or equal to than the output rating on the sensor label. Use up to 14 AWG copper wire and tighten terminals to 7 inch-pounds torque.



Operation

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

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

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

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

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

	NO POWER		CONTROL POWER APPLIED			
			No Fault		Fault Detected	
Output	**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 sensors 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 5 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 sensor is now adjusted to trip at the current that is passing through the aperture. Reset the sensor.

D. Relabel Sensor

Relabel the sensor 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.