NK Technologies

AG Series

Auto-reset version shown.

Ground Fault Sensors

'AG' Series sensors from NK Technologies protect people, products and processes from ground faults by monitoring all current-carrying wires in grounded single or 3-phase systems.

Operating Principal: Under normal conditions, the current in the hot leg of a two-wire load is equal in strength but opposite in sign to the current in the neutral leg. These two currents create magnetic fields that are also equal but opposite. When the wires are next to each other, the fields cancel, producing a "Zero Sum Current". If any current leaks to ground from one wire (Ground Fault), the two currents become imbalanced and the result is a net magnetic flux or field. AG Series ground fault sensors monitor this field and alarm when leakage rises above setpoint. This concept applies to grounded 3-phase delta and wye systems.

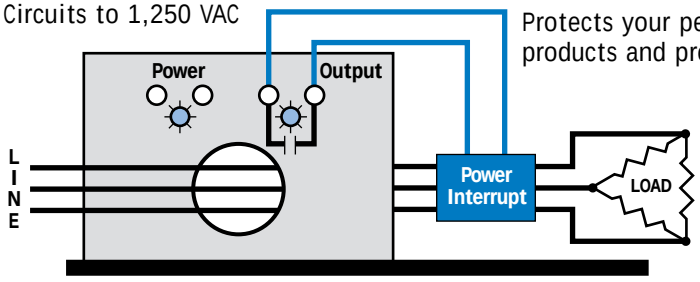
Applications

Personnel Protection (typically 5mA)
Senses low fault currents and alarms to shut power before injury occurs.

Equipment Protection (typically 30mA)
When personal protection is not an issue, select a higher setpoint to protect equipment or product

Regulatory Approval
Meet requirements by industry groups and governments for Ground Fault Protection.

Easy to Apply on 1ϕ or 3ϕ Circuits to 1,250 VAC



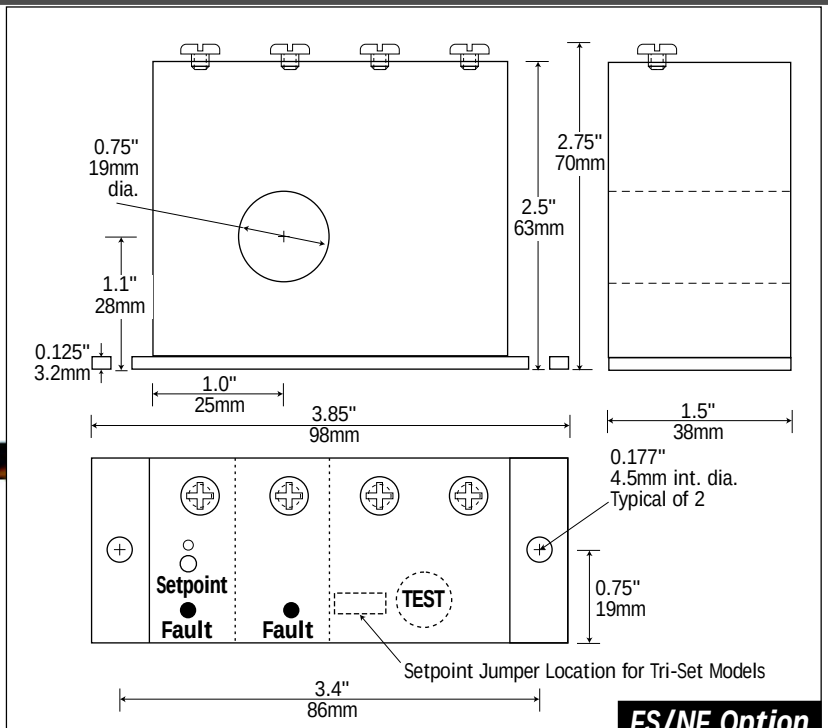
Protects your people, products and processes.

Features

- **Operation to Match Your Application:**
  Latching—For controlling contactors.
  Auto-Reset—For controlling shunt trip breakers.
- **Setpoint Options to Match Your Needs:**
  Tri-Set—Field select 5, 10 or 30mA. Fast and convenient. (AG3 only)
  Single-Set—Factory adjusted setpoint. Specify 5–100mA (AG1) or 80–950mA (AG2) when ordering.
- **Compatible with Standard Equipment**
  Works on 1ϕ or 3ϕ power. Controls standard shunt trip breakers or contactors. Tie into Emergency Circuits (EMO/EPO).
- **Isolated**
  Magnetically isolated from the monitored circuit and control power
- **UL and CE Approval**
  Accepted worldwide.

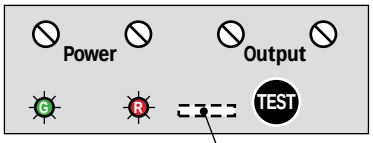
AG Series
continued

Latching version shown.



FS/NF Option

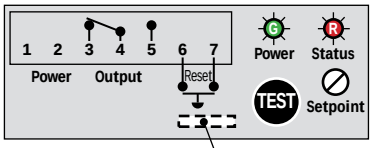
Connections



Typical of Auto-reset Version

Jumper Location for Tri-Set Models

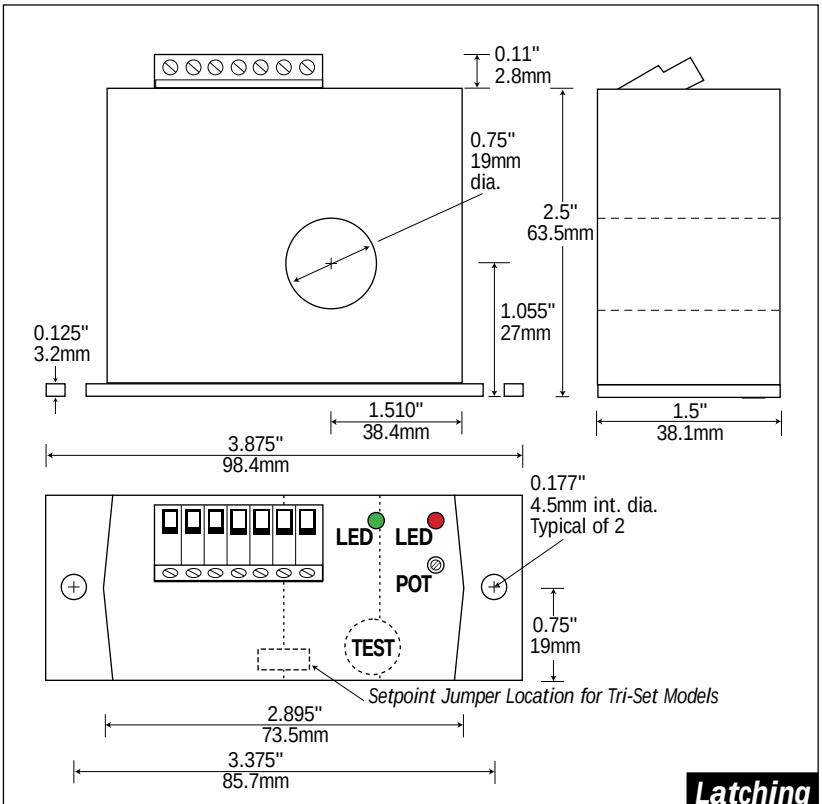
Notes:
- Terminals are #6 screws.
- Connections are polarity sensitive.
- Adjustable Setpoint version has setpoint adjust but no jumper.



Typical of Latching Version

Jumper Location for Tri-Set Models

Notes:
- Dead front terminals.
- Connections are not polarity sensitive.



Latching

Ground Fault Sensors

Know your power…

because with knowledge comes control.

Specifications

Setpoint Range	
■ **"Single-Set" Models**	Factory adjusted and sealed (field adjustment possible) ■ AG1: 5–100mA, specify when ordering ■ AG2: 80–950mA, specify when ordering
■ **"Tri-Set" Models**	5, 10 & 30mA jumper select
Output	Isolated dry contact (solid state or relay, see Ordering Information)
Output Rating	■ Solid State AC Switch: 1A @ 240VAC ■ Solid State DC Switch: 0.15A 30VDC ■ Relay: 0.5A @ 125VAC, 2A @VDC
Off State Leakage	None
Response Time	■ 200mS @ 5% above setpoint ■ 60mS @ 50% above setpoint ■ 15mS @ 500% above setpoint
Isolation Voltage	Up to 1,250VAC (monitored circuit)
Frequency Range	50–400Hz (monitored circuit)
Sensing Aperture	0.75" (19mm) dia., up to 4" (100mm) dia. available, consult factory.
Power Supply	■ 120, 200, 208, 220, 240VAC, 50-400Hz, operates from 55–110% of nominal voltage ■ 24VAC & 24VDC, operates +/–10% ■ Green LED = power (all models)
Case	UL 94V-O Flammability rated
Environmental	5 to 158°F (–15 to 70°C), 0-95% RH, non-condensing
Safety	UL 1053, Class 1 Recognized, CE*

**Most option combinations are UL recognized.*

Output Table

Normally Energized Models (–FS Option)

Protection from faults and loss of control power.

		Control Power Applied	
	No Power	**No Fault**	**Fault**
N.C. Normally Closed	Closed	OPEN	Closed
N.O. Normally Open	Open	CLOSED	Open

Normally Deenergized Models (–NF Option)

Protection from faults only when control power is applied.

		Control Power Applied	
	No Power	**No Fault**	**Fault**
N.C. Normally Closed	Closed	CLOSED	Open
N.O. Normally Open	Open	OPEN	Closed

Latching (–LA Option)

Latching models initially power up in the Reset position. If there is a fault or the test button is pressed, the output switches and is latched. The output will remain latched after the fault is cleared, even if control power is removed. To reset the output, apply a momentary contact across the "Reset" terminals (6–7).

Ordering Information

Example: AG1-NOAC-120-005-FS

Ground fault sensor with normally open solid state output, 120VAC power supply, 5mA setpoint, fail safe version.

AG □ – □□□□ – □□□ – □□ – □□□□

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

Output Type
NCAC Normally Closed 1A @ 240VAC
NOAC Normally Open 1 A @ 240VAC
NCDC Normally Closed 0.15A @ 30VDC
NODC Normally Open 0.15A @ 30VDC
NCR1 Normally Closed Relay, 0.5A @ 125VAC, 2A @ 30VDC
NOR1 Normally Open Relay, 0.5A @ 125VAC, 2A @ 30VDC
CR1 Form C Relay (SPDT) 0.5A @ 125VAC, 2A @ 30VDC (available only with LA Latching Option)

Power Supply
24U 24VAC/DC
120 120VAC
200 200VAC
208 208VAC
240 240VAC

Options
FS Normally Energized
NF Normally Deenergized
LA Latching (available only with CR1 Output Option)

Setpoint
TR3 Tri-Set Models
005 Factory Adjusted Setpoint in mA
950

Ground Fault Sensors