5 mA Ground Fault Protection — Frequently Asked Questions

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What is the difference between the AG and the AGL Series?

The main difference between to the two ground fault relays is the aperture diameter. All current carrying conductors to load must be able to pass through aperture.

- AG aperture diameter is 0.75"
- AGL aperture diameter is 1.82"

Which devices do I need to purchase?

The 5 mA ground fault circuit interrupter solution has two readily available devices.

- Quantity 1, AC ground fault relay; recommend AG or AGL series
- Quantity 1, Circuit-Interrupter; choose MCB with shunt trip option suitable for branch circuit amperage capacity. NK's AG and AGL ground fault relays have user selectable options to ensure compatibility across all OEM's shunt trip breaker, contactor, or relay.

What is "established period of time" and does AG and AGL comply?

"Established period of time" is a NEC undefined term. "Established period of time" is found in a NEC's defined term "GFCI". This definition refers to de-energizing the branch circuit within an "established period of time". NEC provides an informal note to clarify "established period of time" by referring to UL943.

Yes, both AG and AGL series response time is within the response time requirement defined by UL943. To learn more review application note 5 mA Ground Fault Circuit Interrupter Solution.

Does AG or AGL trip within ground fault current range 4 mA to 6 mA, per NEC defined term GFCI?

Yes, both AG's or AGL's have two set point options. The first option is a fixed 5 mA setpoint from the factory, refer to AG1 or AGL1. The second option is called a tri-state setpoint, refer to either AG3 or AGL3.

Does AG or AGL trip have manual push to test feature and visual indicators?

Yes, both AG or AGL have user accessible manual push-to-test button to verify operation of the relay and two visual indicators for power and ground fault trip status.

How to resolve incidence when local building inspector has objection to AG3, or AGL3, having an adjustable setpoint? (Similar objection, AG3 or AGL3 must have fixed setpoint)

NK Technologies has come across this objection and successfully resolved all incidences. Based on NK Technologies experience the local building inspector is concerned a non-authorized employee may move the ground fault setpoint jumper thereby adjusting the ground fault current trip point above 5 mA.

Resolution is to remove and discard the jumper. When jumper is not installed the ground fault relay will default to lowest fault current setpoint. Where 5 mA is the lowest fault current setpoint for both AG3 and AGL3 ground fault relays.

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APPLICATION NOTE

5 mA Ground Fault Circuit Interrupter Solutions for Single or Three Phase Circuits up to 100 Amps

Cost Effective, Readily Available, Designed and Assembled in the USA

NK Technologies 5 mA Ground Fault Circuit Interrupter Solution Benefits

- Meets intent of 2020 NEC 210.8 defined term ground fault circuit interrupter.
- Compact relay size allows for multiple mounting opportunities anywhere from the breaker to the appliance.
- Inventory and unrivaled in-house expertise within the USA.
- When you call, chat or email our application support team will answer promptly.
- Industry leading 5-year warranty.

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