

What is a 5 mA Ground Fault Protection System

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Two base models are offered:

AGU Ground Fault Relay
for wire bundle diameter sizes up to 0.75" diameter



AGL Ground Fault Relay
for wire bundle diameter sizes up to 1.76" diameter



A ground fault relay, combined with a shunt trip circuit breaker provides a ground fault circuit interrupter (GFCI) solution that meets the intent of **2020 & 2023 National Electric Code (NEC)** Article 210.8 (B) through (F), ground fault protection for branch circuits within wet locations. The system includes an AC ground fault relay that trips at 5 mA and separate circuit interrupter device.

A shunt trip breaker combined with a ground fault relay is a common configuration widely adopted across multiple market segments with decades of reliable operation. The GFCI solution is suitable for single or three-phase, 15 A to 100 A branch circuits and will protect against both overload current and ground fault currents greater than 5 mA.

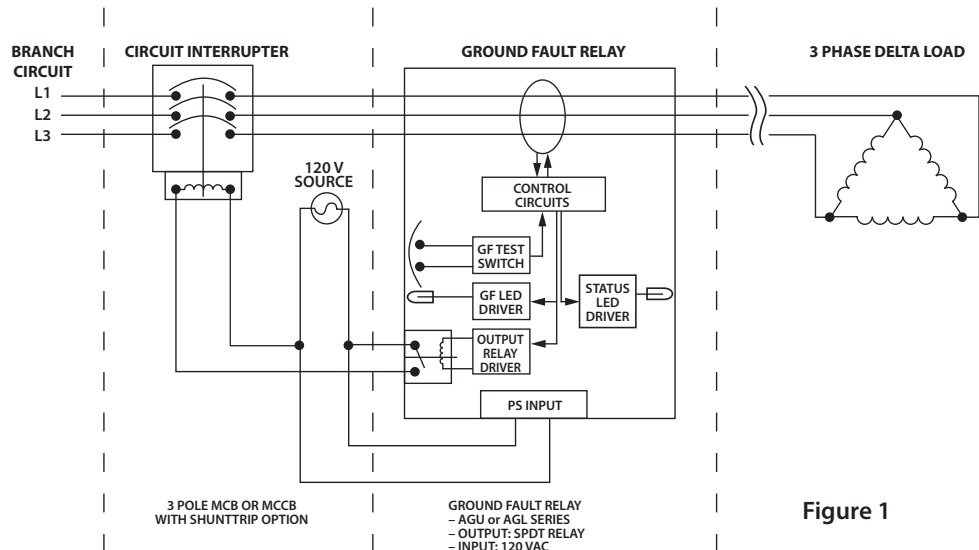


Figure 1

A cost effective, compact ground fault circuit interrupter solution can be installed in, or adjacent to the existing panelboard. Depending on the relay used, the relay can be either panel mounted or DIN Rail mounted with easy installation and setup and is compatible across all OEM panel boards. The GFCI solution can service the NEC GFCI requirements for branch circuits, including:

Single phase 120 VAC to 240 VAC (30 A to 50 A)

3-Phase 208 VAC to 240 VAC (15 A to 100 A)

Our [Ground Fault Relay Selection Guide](#) provides additional guidance.

When a ground fault current exceeds 5 mA, the NK Technologies AGU or AGL ground fault relay will respond “within an established period of time” (refer to Figure 2). When the circuit interrupter (CI) receives a fault signal from the relay, it will de-energize the branch circuit or portion thereof.

When a shunt trip breaker is manually reset and the ground fault current incidence has not been cleared, then the ground fault relay will command the CI to again de-energize the branch circuit.

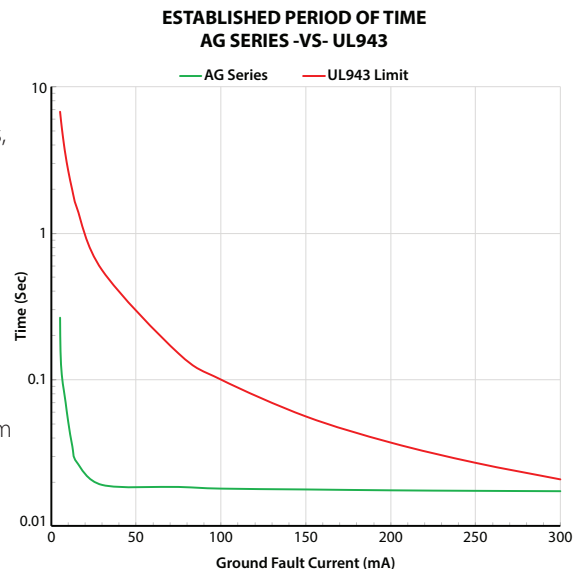


Figure 2

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 & 2023 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.

Resources & Downloads

[How to Select a Ground Fault Relay >>>](#)

[Choose a Ground Fault in 4 Easy Steps >>>](#)

[Ground Fault Relay Part Number Selection >>>](#)

[Shunt Trip Breaker Selection >>>](#)

[2020 & 2023 NEC Impact to the Market >>>](#)

[What is a 5 mA Ground Fault Interrupter Solution? >>>](#)

[Calculating a Wire Size Bundle >>>](#)

[How to Wire a Shunt Trip >>>](#)

[Frequently Asked Questions >>>](#)

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