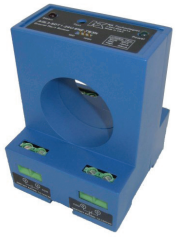
How to Select a Ground Fault Relay

See Additional Resources & Downloads »»

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



Choosing the correct AC ground fault relay is based on whether all current carrying conductors will fit through the relay's aperture window. Configuring the ground fault relay order code is dependent upon the circuit-interrupter type. The Ground Fault Relay Selection Guide provides a table for most common field configurations and also includes shunt trip breaker models from various vendors. To use the Ground Fault Relay Guide table the following details are needed:

1) Branch circuit specifications: (example: 50A, 208 VAC, 3-Phase, Delta (3+1))
   A. Amperage capacity (30A, 40A, 50A, 60A, 80A, 90A, or 100A)
      Defines the required wire gauge
   B. Load configuration (Single Phase, 3-Phase Delta (3+1) or 3-Phase Wye (4+1))
      Defines the number of wires that must run through the aperture

2) Circuit-Interrupter type:
   A. Shunt trip breaker (recommended)
   B. Contactor
   C. Relay

Note: For commercial kitchens, a shunt trip breaker is the most common method for interrupting the branch circuit when a ground fault is detected by the ground fault relay.

Depending on the required aperture size either the AGU or the AGL Series is recommended for commercial kitchens and other wet locations per 2020 & 2023 Edition National Electric Code (NEC) 210.8 (B) through (F)), and 422.5 special appliances. The best relay for a given branch circuit is dependent upon whether the required wire bundle passes through the aperture of the ground fault relay.

Check out our new easy to use guide for Choosing a Ground Fault Relay in Four Easy Steps. The guide walks you through the decision making process of choosing the correct relay for your application.

A more detailed guide is also provided. The Ground Fault Relay Selection Guide is provided to ease the selection process and recommendations are based on using a shunt trip breaker and THHN wire. Given numerous wire and local code variants, the Guide is for reference only.

When using other than THHN wire and/or non-NEC cable correction factors, use application note How to Calculate Bundle Diameter to confirm whether the required wire bundle will pass through aperture of either the AGU or AGL ground fault relay.

After verifying that all current carrying conductors pass through the relay's aperture, Click here for How to Wire a Shunt Trip Connection.

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 & 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 »»

Go to Commercial Kitchen Overview »»

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