AGL-MAR SERIES

Large Aperture Ground Fault Relay for Marina Applications

AGL-MAR Series Large Aperture Ground Fault Relays offer one of the largest aperture diameters in the industry while maintaining a compact overall profile. Designed for marina applications, the AGL-MAR Series has two jumper selectable trip points for both 30 mA shore power and 100 mA branch circuit applications. Intended for sensing earth leakage, the AGL-MAR Series offers an SPDT Form C relay with auto-reset. The case features integral DIN rail mounting as standard. The AGL-MAR Series Ground Fault Relay monitors all current carrying wires in single or three-phase systems to detect ground faults. It provides a contact output that can operate breakers (MCB or MCCB) equipped with a 120 VAC shunt trip accessory.

Ground Fault Relay Applications

Marinas

Article 555 of the 2023 National Electrical Code (NEC) provides comprehensive protection for marinas, docks, boatyards, boat hoists, and floating buildings. These requirements ensure safety for both people and equipment.

Article 555.35: Feeder and Branch Circuits

- **Feeder Circuits:** Must have Ground Fault Protection of Equipment (GFPE) rated at no more than 100 mA.
- **Branch Circuits:** Must have GFPE rated at no more than 30 mA, including receptacles providing shore power.

Additionally, circuits other than shore power receptacles require Ground Fault Circuit Interrupter (GFCI) protection for personnel under the following conditions:

- Up to 150 volts to ground, up to 60 amps single-phase.
- Up to 150 volts to ground, up to 100 amps three-phase.
- Outlets providing power to boat hoists, up to 240 volts, must also have GFCI protection for personnel.

Article 555.53: Floating Buildings

Floating Buildings must have ground fault protection not exceeding 100 mA. Ground fault protection for each individual branch or feeder circuit is permitted as an acceptable alternative.



Ground Fault Relay Features

Setpoint Options Maximize Ease-of-Use

- 30 & 100 mA Dual-Set, Jumper Select (defaults to 30 mA when jumper removed) for marina applications.
- Finger-safe terminals for worry-free installation and operation.
- Aperture orientation is perpendicular to DIN rail, allowing for clean and efficient wiring and minimizing space between multiple components.
- Auto-reset SPDT (Form C Relay) electromechanical relay output.
- Uses "Zero Sum" operating principle to reliably sense imbalance in magnetic fields associated with current leakage to ground.
- Typical response times from 50 ms to 150 ms.
- Integral "push-to-test" button with LED indication of contact status.

DIN Rail Mount*

- Snap case onto a DIN rail. Integral DIN rail mount with spring loaded mounting clips.
- Need a DIN Rail? The optional DIN Rail Kit (DINKIT) includes a 175 mm wide DIN rail and two end stops.

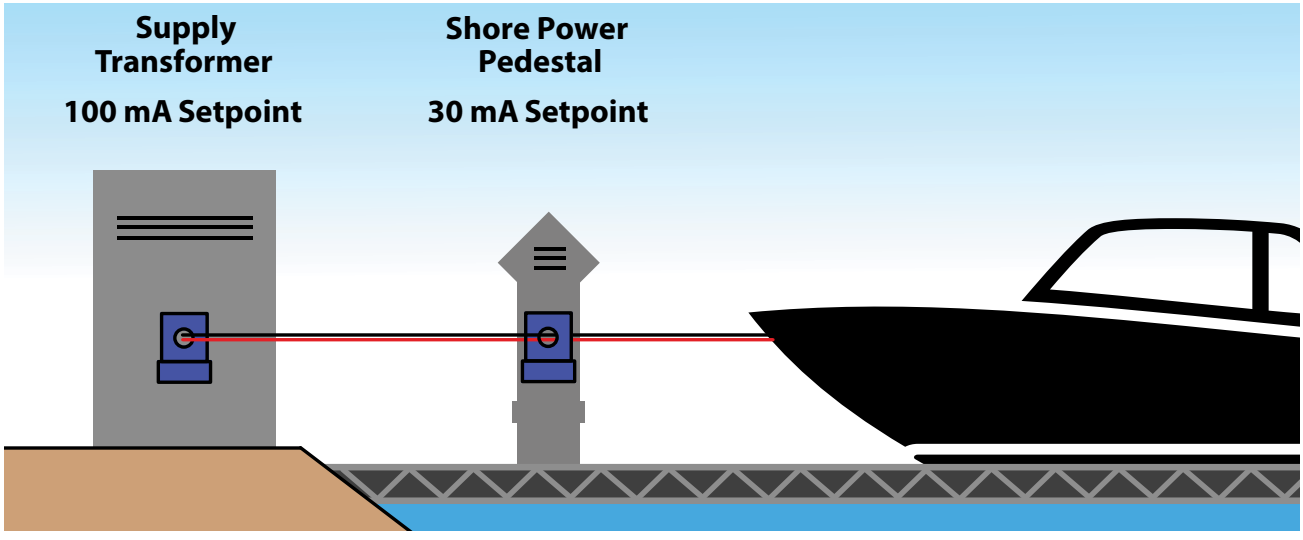
UL/cUL and CE Certified

- Accepted worldwide.

*For information on the DIN rail accessories kit, see page 153.

NK Technologies

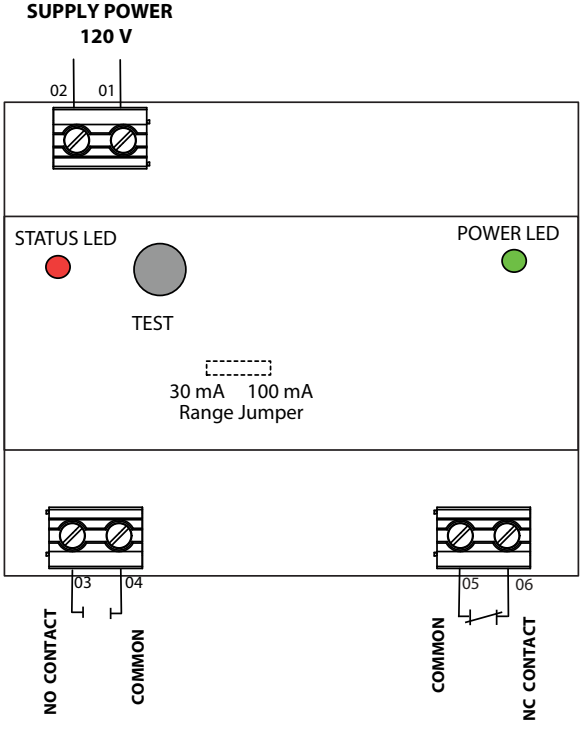
GFPE Protection for Marinas - NEC 555.35

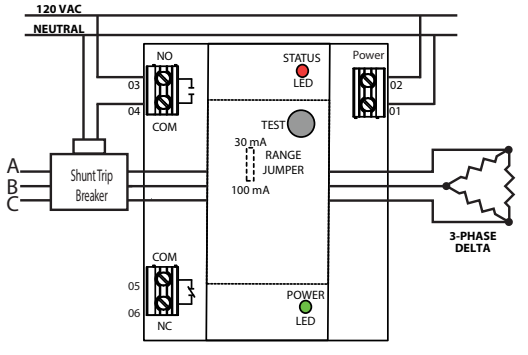


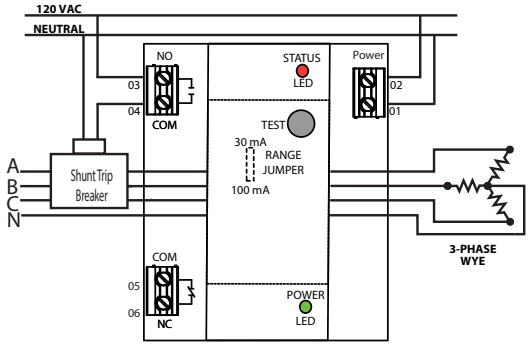
For additional Application Examples,

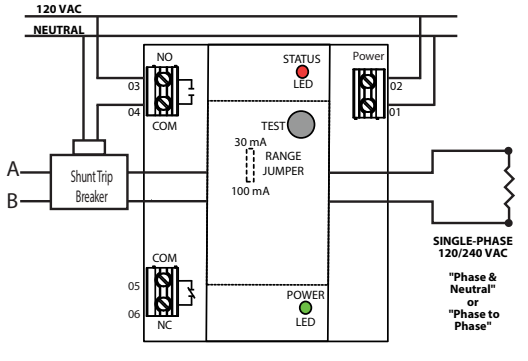
Ground Fault Relay Connections

Auto-Reset

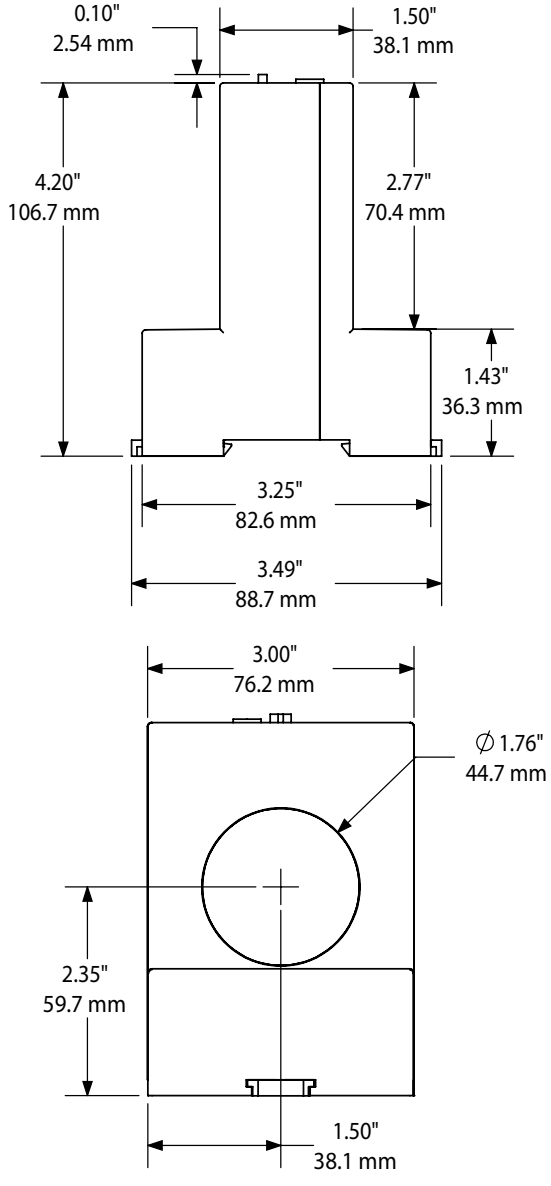








Ground Fault Relay Dimensions



Ground Fault Relay Output Table

Normally De-energized Models (-DEN Option)

Protection from faults only when 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

Ground Fault Relay Specifications

Power Supply	120 VAC (66–132 V)
Power Consumption	2.5 VA
Monitored Circuit	600 VAC max, 50/60 Hz
Setpoint Range	"MAR" models (field jumper select): AGL3: 30 or 100 mA (defaults to lowest setpoint, 30 mA, when jumper is removed)
Output Switch	Electromechanical SPDT relay
Output Rating	1 A @ 120 VAC, 2 A @ 30 VDC resistive
LED Display	• Green LED = Power On indication • Red LED = Tripped Output Relay indication
Response Time	• 150 ms @ 5% over setpoint • 100 ms @ 50% over setpoint • 50 ms @ 500% over setpoint
Time Delay	None
Noise Immunity	Power supply noise filtering
Isolation Voltage	2200 VAC
Case	UL94 V-0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing
Listings	UL Listed to UL 508 (E129625), CE

Ground Fault Relay Ordering Information

Sample Model Number: AGL3-SDT1-120-DEN-MAR
Ground fault relay with SPDT relay output, 120 VAC power supply and 30/100 mA jumper set trip point.

	(1)		(2)				(3)			(4)			(5)		
AGL	**3**	–	**S**	**D**	**T**	**1**	–	**1**	**2**	**0**	–	**D**	**E**	**N**	–	**M**	**A**	**R**

(1) Setpoint Range

3	30/100 mA jumper set

(2) Output Type

SDT1	SPDT Relay (Form C) with auto-reset

(3) Power Supply

120	120 VAC

(4) Option

DEN	Normally de-energized, auto-reset (SDT1 output only)

(5) Setpoint

MAR	30/100 mA jumper set