# AG-LC SERIES

## Ground Fault Sensor - Large Solid-Core

AG-LC series ground fault sensors are the latest design innovation from NK Technologies. The 2011 NEC added section 555.3 to require ground fault protection of the main over current device feeding marinas and boat yards. These services are often carrying up to 800 amps; most sensor designs will not allow the conductors to pass through a single sensing ring. By designing a sensor in a large solid-core housing, the conductors will not have to be passed through a separate sensing device like a zero sequence current transformer. This design makes monitoring of larger circuits a breeze, whether to protect boaters or large equipment like amusement park rides or gantry cranes.





### Ground Fault Sensor Applications

**Monitor Large Machines**

- Detect leakage to earth before the problem can cause damage.

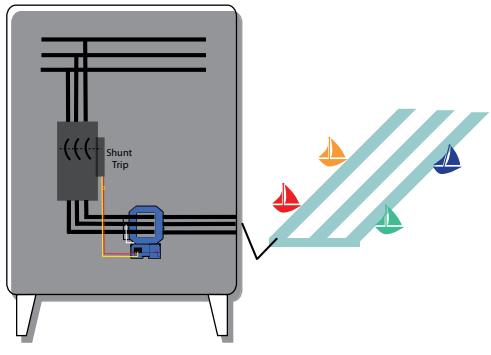
**Water Delivery and Treatment**

- Keep pumping systems safe and in operation.
- Sense faulting stator windings prior to failure.

**Generators**

- Shut down equipment when leakage current exceeds hazardous levels.

Sense Current to Earth in Marinas




Equipment on board a vessel can pass current to earth through water, causing a dangerous condition to swimmers and boaters in fresh water marinas and boat docking facilities. Use a ground fault sensor with a shunt trip breaker to shut off the power when excessive current flows to earth.

### Ground Fault Sensor Features

**Electromechanical Relay Output**

- Provides both normally open and normally closed contacts.
- Compatible with most automation and control systems.

**Externally Powered**

- A choice of fail safe or standard operation.

**Simple Field Setpoint Adjustment**

- Single turn potentiometer with setpoint shown on label.
- Adjustable delay to mask out nuisance fault current.

**Large Solid-Core Case**

- Large sensing window provides ample space for multiple conductors.

**DIN Rail Mount**

- Simple snap onto DIN rail or attach with screws to a panel for secure mounting.

**UL/cUL Approved, CE Pending**

- Accepted around the world.
- Conformally coated circuit boards standard.

Output Contact Action

| Contact Action | No Power Applied | Power Applied | Fault Detected |
|---|---|---|---|
| DEN (Powered) | NO = Open | NO = Open | NO = Closed |
| | NC = Closed | NC = Closed | NC = Open |
| ENE (Fail Safe) | NO = Open | NO = Closed | NO = Open |
| | NC = Closed | NC = Open | NC = Closed |
| LA (Powered) | NO = Open | NO = Open | NO = Closed |
| | NC = Closed | NC = Closed | NC = Open |
| ELA (Fail Safe) | NO = Open | NO = Closed | NO = Open |
| | NC = Closed | NC = Open | NC = Closed |

Addendum 98A

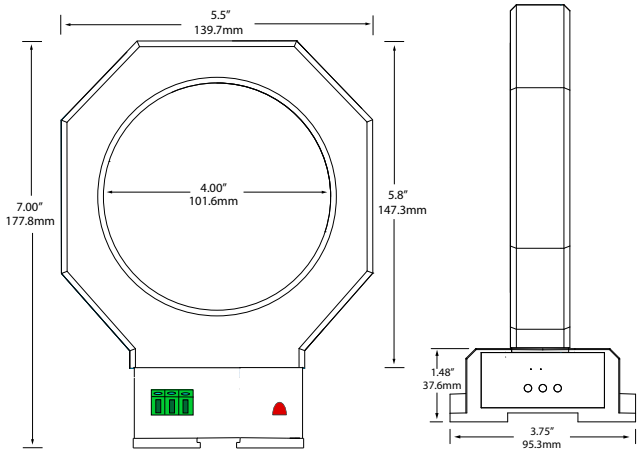
OEMs **Test & Evaluation Units for OEMs**
Free program expedites evaluation process. See page 3 for details.

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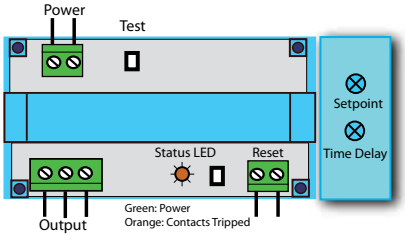
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## Ground Fault Sensor Dimensions




Note: Drawings are not to scale.

## Ground Fault Sensor Connections




## Ground Fault Sensor Specifications

| | | |
|---|---|---|
| **Power Supply** | | 120 VAC or 24 VAC/DC (22 V–28 V) |
| **Consumption** | | <4 VA |
| **Output** | | Electromechanical relay<br>1 A @ 120 VAC, 2 A @ 30 VDC Max. |
| **Indicating Bi-color LED** | | • Green: Power on, fault current below setpoint<br>• Orange: Power on, fault current over setpoint<br>• Off: Power off |
| **Response Time** | | 100 ms (current 90% over setpoint) |
| **Output Operation** | | Normally de-energized, energized or latching |
| **Manual Buttons** | | Auto reset: Test to simulate a fault (hold longer than time delay settings)<br>Latching: Press to unlatch (or add an external button) |
| **Trip Delay** | | 0.1 to 8 seconds |
| **Ranges** | **1** | 30–150 mA |
| | **2** | 80–400 mA |
| | **3** | 300–1500 mA |
| | **4** | 1.0–5.0 A |
| **Isolation Voltage** | | Tested to 5000 VAC |
| **Frequency Range** | | 40–60 Hz |
| **Case** | | UL94 V0 Flammability Rated; DIN rail mounting |
| **Environmental** | | -4 to 122°F (-20 to 50°C)<br>0–95% RH, non-condensing |
| **Listings** | | UL,/cUL, CE pending |

## Ground Fault Sensor Ordering Information

### Sample Model Number: AG3-SDT-24U-DEN-LC

AC ground fault sensor, 300–1500 mA, SPDT relay output, 24 VAC/DC powered, normally de-energized, solid-core case, DIN rail or panel mount.

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| AG - | S D T | - | - | - L C |

(1) Range

| | |
|---|---|
| 1 | 30–150 mA Field Adjustable |
| 2 | 80–400 mA |
| 3 | 300–1500 mA |
| 4 | 1.0–5.0 A |

(2) Output Type

| | |
|---|---|
| SDT | Single pole, double throw relay |

(3) Power Supply

| | |
|---|---|
| 24U | 24 VAC/DC |
| 120 | 120 VAC |

(4) Contact Action

| | |
|---|---|
| DEN | Normally de-energized |
| ENE | Normally energized |
| LA | Latching normally de-energized |
| ELA | Latching normally energized |

(5) Case

| | |
|---|---|
| LC | Large solid-core, panel or DIN Rail mounting |

### Sample Model Number-Factory Set: AGC-SDT-24U-DEN-100-LC

AC ground fault sensor, 100 mA factory set, SPDT relay output, 24 VAC/DC powered, normally de-energized, solid-core case, DIN rail or panel mount.

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| AG - | S D T | - | - | - | - L C |

(1) Model

| | |
|---|---|
| C | 30–150 mA Factory Set |
| D | 80–400 mA |

(2) Output Type

| | |
|---|---|
| SDT | Single pole, double throw relay |

(3) Power Supply

| | |
|---|---|
| 24U | 24 VAC/DC |
| 120 | 120 VAC |

(4) Contact Action

| | |
|---|---|
| DEN | Normally de-energized (Only works with sensor powered) |
| ENE | Normally energized (Loss of sensor power causes output change - Fail safe operation) |
| LA | Latching normally de-energized |
| ELA | Latching normally energized (Fail safe operation) |

(5) Trip Point

| | |
|---|---|
| XXX | 030–400 (30–400 mA) |

(6) Case

| | |
|---|---|
| LC | Large solid-core, panel or DIN Rail mounting |

Addendum
98B

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