**Arc-Flash Detection Relays**  
**AF0100 Series**

**Description**

The AF0100 series arc-flash relay is a cost-effective, microprocessor-based protection relay that limits arc-flash damage by using light sensors to rapidly detect an arc and then trip a circuit breaker. Any combination of point and fiber-optic sensors can be connected to the relay to provide maximum protection. The AF0100 accepts PGA-LS10 point sensors and PGA-LS20/PXA-LS30 fiber-optic sensors. These sensors are designed with a wide detection angle and provide the correct sensitivity for an arc flash. LEDs on the relay and on the sensors indicate sensor health and which sensor(s) detected an arc fault. Sensors, inputs, and trip-coil voltage are monitored to ensure fail-safe operation. A solid-state redundant trip circuit provides an internal fail-safe mechanism and fast arc-flash response during power up.

The AF0100 unit comes with two isolated Form-C contacts for use in applications where multiple devices require tripping. This is especially useful for generator applications where the generator and breaker need to be tripped in case of an arc flash. The relay’s compact size and DIN-rail or surface-mountable features make it ideal for equipment manufacturers.

**Features & Benefits**

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>BENEFITS</th>
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<tbody>
<tr>
<td><strong>Compact size</strong></td>
<td>Fits into a broad range of arc-flash applications</td>
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<td><strong>Works with two different optical sensor types</strong></td>
<td>Point sensors or fiber-optic sensors can be used in any combination for maximum flexibility</td>
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<td><strong>Dual sensor inputs</strong></td>
<td>One relay can monitor two arc-flash sensors</td>
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<td><strong>Adjustable light sensitivity</strong></td>
<td>Allows for operation in bright environments and maximum sensitivity in dark environments</td>
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<td><strong>Discrete wire networking</strong></td>
<td>Multiple AF0100 or AF0500 units can be interconnected to form a system</td>
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<td><strong>Fail-safe system</strong></td>
<td>Continuous monitoring of optical sensors and inputs ensure maximum protection</td>
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<td><strong>USB interface</strong></td>
<td>Configuration software is easy to use with no drivers or software installation</td>
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<td><strong>Unit health indication</strong></td>
<td>Continuous protection with self-diagnostic and remote unit-health indication</td>
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<td><strong>LED indication</strong></td>
<td>Trip and sensor status indication on the relay and sensors</td>
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**Applications**

- Switchgear cubicle
- Transformer compartment
- Generator control panel
- Motor control center bucket
Specifications

Input Voltage
- AF0100-00: 100–240 V ac/dc, 24–48 V dc
- AF0100-10: 24–48 V dc

Dimensions
- H 90 mm (3.5”);
- W 128 mm (5.0”);
- D 60 mm (2.4”)

Trip, Error Relays
- Form C, 250 V ac/30 V dc, 6 A resistive

Trip Time
- 5 ms (typical)

Sensitivity
- 10–25 klux programmable

Mounting
- Surface, DIN rail

Operating Temperature
- -40 °C to +70 °C (-40 °F to 158 °F)

Shipping Weight
- 1.0 kg (2.2 lb)

Applicable Standards
- UL Listed (UL 508), CE, RCM, FCC

Warranty
- 5 years

Certification & Compliance

<table>
<thead>
<tr>
<th>UL</th>
<th>UL508 Industrial Control Equipment</th>
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<tr>
<td>RCM</td>
<td>Australia, Regulatory Compliance Mark (RCM)</td>
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<tr>
<td>FCC</td>
<td>FCC Part 15, Subpart B, Class A – Unintentional Radiators</td>
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Accessories

- PGA-LS10 Point Sensor
  - Line-of-sight light sensor detects an arc as small as 3 kA within a 2 m half-sphere. Includes sensor health and trip indication.

- PGA-LS20/PGA-LS30 Fiber-Optic Sensor
  - 360° light sensor to run along bus bars. Includes sensor health and trip indication.

Ordering Information

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<thead>
<tr>
<th>ORDERING NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>AF0100-00</td>
<td>Arc-Flash Relay, Universal Supply</td>
</tr>
<tr>
<td>AF0100-10</td>
<td>Arc-Flash Relay, 24–48 V dc</td>
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</table>
**Arc-Flash Detection Relays**

**AF0100 Series**

**Dimensions Inches (mm)**

![Diagram of AF0100 Series dimensions]

**Simplified Circuit Diagram**

Digital I/O Connection to other AF0100 or AF0500

24-48 Vdc Supply

+  
-  

or  

L1  
L2  

100-240 Vac/Vdc Supply

AF0100 (Arc-Flash Protection Relay)

Unit Healthy

Trip 1  
Trip 2

PGA-LS10 (Point Sensor)  
PGA-LS20/PGA-LS30 (Fiber-Optic Sensor)

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