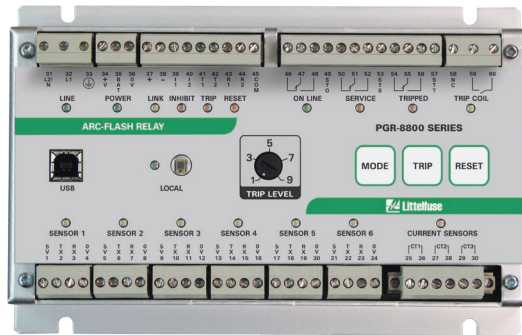
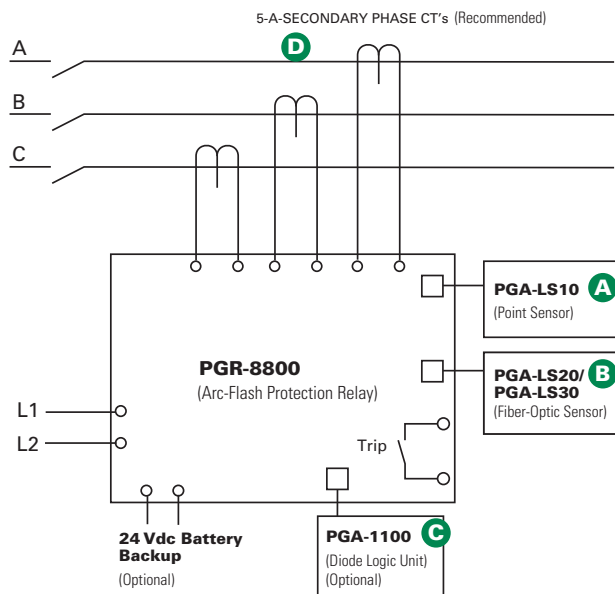


# PGR-8800 SERIES (D1000)

## Arc-Flash Relay



## Simplified Circuit Diagram



For detailed wiring diagram, see adjacent page.

## Ordering Information

| ORDERING NUMBER                   | DESCRIPTION                         |
|-----------------------------------|-------------------------------------|
| PGR-8800-00 (UL, CE, CSA, RCM)    | Arc-Flash Relay                     |
| PGR-8800-00-CC (UL, CE, CSA, RCM) | Arc-Flash Relay, Conformally Coated |
| ACCESSORIES                       | REQUIREMENT                         |
| PGA-LS10                          | Required*                           |
| PGA-LS20, PGA-LS30                | Required*                           |
| PGA-1100                          | Optional                            |
| Current Transformer               | Recommended                         |

\*At least one sensor is required. However, the exact number of sensors for proper coverage depends on the application.

## Description

The PGR-8800 is a microprocessor-based relay that limits arc-fault damage by detecting the light from an arc flash and rapidly tripping. Phase-current-transformer inputs are provided for current-constrained arc-flash protection and, when so equipped, a programmable definite-time overcurrent function can be enabled. An optical sensor on the PGR-8800 and adjustable trip level reduce the chance of nuisance tripping by setting a threshold for ambient light. Sensors, inputs, and connections are monitored to ensure fail-safe operation. A secondary solid-state trip circuit provides a redundant trip path. A USB port is used for configuration and access to event logs and graphs.

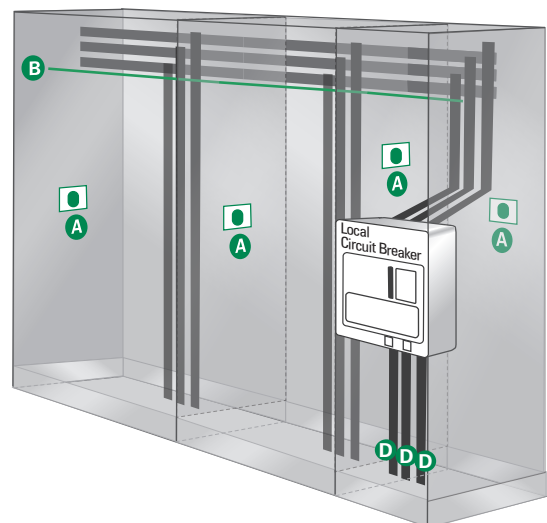
## Optical Sensors

The PGR-8800 accepts both PGA-LS10 and PGA-LS20/PGA-LS30 optical sensors, designed to collect light over a wide angle and with high sensitivity. For fast fault location, front-panel and sensor LED's indicate sensor health and which sensor detected an arc fault.

## Sensor Placement

The PGR-8800 Arc-Flash Relay and sensors are easily installed in retrofit projects and new switchgear with little or no re-configuration. Even elaborate systems with multiple power sources take minutes to configure using the relay's built-in USB interface software.

Generally, it is recommended to mount 1 or 2 sensors per cubicle to cover all horizontal and vertical bus bars, breaker compartments, drawers, and anywhere that there is potential for an arc-fault. Threading a fiber-optic sensor through the cabinets and in areas where point-sensor coverage is uncertain results in complete coverage and an added level of redundancy. Even if policy is to only work on de-energized systems, all maintenance areas should be monitored to prevent potential damage and additional cost. At least one sensor should have visibility of an arc fault if a person blocks the other sensor(s).

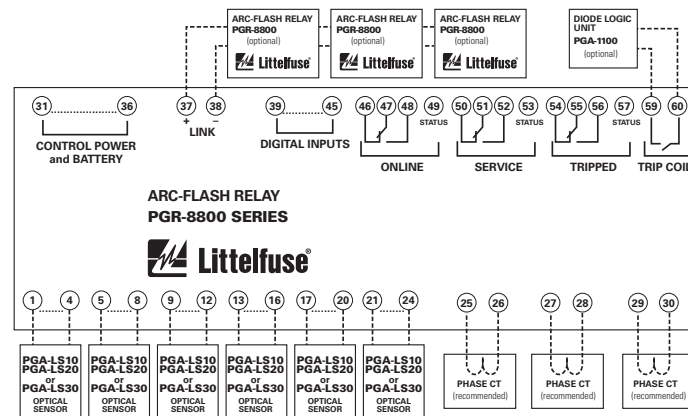


# PGR-8800 SERIES (D1000)

## Features & Benefits

| FEATURES                                        | BENEFITS                                                                                                                         |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Arc-Flash trip time &lt;1 ms</b>             | Limits arc-flash damage and risk of injury                                                                                       |
| <b>Multiple sensors (up to 24)</b>              | Single module can monitor 6 sensors. Up to 4 PGR-8800 units can be linked into one system                                        |
| <b>Fail-safe system</b>                         | Continuous monitoring of optical sensors and inputs ensures protection                                                           |
| <b>Redundant trip circuit</b>                   | Solid-state backup arc-detection circuit adds a second layer of safety                                                           |
| <b>Adjustable light sensitivity</b>             | Allows for operation in bright environments and maximum sensitivity in dark environments                                         |
| <b>LED indication (on unit and each sensor)</b> | 18 LEDs provide at-a-glance status for module and I/O state                                                                      |
| <b>Current detection</b>                        | Phase-CT inputs provide overcurrent protection and prevent nuisance trips                                                        |
| <b>Optical detection</b>                        | Point and fiber-optic sensors provide wide detection area with sensor health trip indication                                     |
| <b>Digital inputs (6)</b>                       | Two each: remote trip, inhibit, and reset inputs                                                                                 |
| <b>Service mode</b>                             | Allows for system test without tripping                                                                                          |
| <b>Trip coil contact</b>                        | Solid-state 24-300 Vdc/24-300 Vac IGBT                                                                                           |
| <b>Indication contacts</b>                      | Form C and status outputs                                                                                                        |
| <b>USB interface</b>                            | Data logging and configuration software uses a USB interface with no drivers or software installation                            |
| <b>Built-in sensor</b>                          | Can be used in single-sensor systems, as a seventh sensor, and for calibration                                                   |
| <b>Universal power supply/Battery backup</b>    | 100-240 Vac, 14-48 Vdc, or 110-250 Vdc supply accepted. Ability to charge and run off an external, user-supplied 24 Vdc battery. |
| <b>Data logging</b>                             | On-board event recorder helps with system diagnostics                                                                            |
| <b>Modbus</b>                                   | Remotely view measured values, event records & reset trips                                                                       |
| <b>Upstream Tripping</b>                        | Ability to trip upstream device if the local breaker fails to clear the fault                                                    |

## Wiring Diagram



## Accessories

- A** **PGA-LS10 Point Sensor**  
Line-of-sight light sensor detects an arc as small as 3 kA within a 2-m half-sphere. Sensor health and trip indication. Dimensions: See PGR-8800 Manual
- B** **PGA-LS20/PGA-LS30 Fiber-Optic Sensor**  
360° light sensor for tricky installations with many shadows or to run along bus bars. Sensor health and trip indication. Dimensions: See PGR-8800 Manual
- C** **PGA-1100 Diode Logic Unit**  
This module allows multiple PGR-8800 relays to trip the same breaker, for example an upstream or a tie-breaker. Dimensions: **H** 80mm (3.15") **W** 20mm (0.79") **D** 70mm (2.76")
- D** **Current Transformers**  
Eliminate nuisance arc-flash trips and use for overcurrent protection.

## Specifications

|                                        |                                                                       |
|----------------------------------------|-----------------------------------------------------------------------|
| <b>IEEE Device Numbers</b>             | Overcurrent (50), Arc Flash (AFD)                                     |
| <b>Input Voltage</b>                   | 100-240 Vac, 14-48 Vdc, and 110-250 Vdc                               |
| <b>Dimensions</b>                      | <b>H</b> 130 mm (5.1"); <b>W</b> 200 mm (7.9"); <b>D</b> 54 mm (2.1") |
| <b>Optical Trip Settings</b>           | 9-25 klux, 800 µs-20 s                                                |
| <b>Current Trip Setting (A)</b>        | Programmable                                                          |
| <b>Indication Contact Mode</b>         | Fail-safe                                                             |
| <b>Trip Coil Voltage<sup>(1)</sup></b> | 24-300 Vdc, 24-300 Vac                                                |
| <b>Trip Coil Contact Mode</b>          | Selectable fail-safe or non-fail-safe                                 |
| <b>Redundant Trip Circuit</b>          | Standard feature                                                      |
| <b>Input Monitoring</b>                | Standard feature                                                      |
| <b>USB Interface</b>                   | Standard feature                                                      |
| <b>Trip, Reset, Service Buttons</b>    | Standard feature                                                      |
| <b>Expandable System</b>               | Link up to 4 PGR-8800 units                                           |
| <b>Warranty</b>                        | 5 years                                                               |
| <b>Mounting</b>                        | Surface, DIN (with D0050 adapter clips)                               |
| <b>Approvals</b>                       | UL, CE, CSA, RCM, FCC, DNV type approval, ABS type approval           |

NOTE (1) - Contact Littelfuse for trip coil voltages higher than 300 Vdc/Vac.

Littelfuse reserves the right to make product changes, without notice. Material in this document is as accurate as known at the time of publication. Visit Littelfuse.com for the most up-to-date information.