Features

Dual port, bi-directional power isolator for use with Simplex® 4007ES, 4010ES, 4100ES, and 4100U Series fire alarm control panels:

- Either port can serve as an input or output, ports are automatically separated when a power wiring short circuit or a low voltage condition occurs
- Isolation can also be activated from the control panel for system diagnostics
- For use with fire alarm control panel system power, rated for up to 2 A @ 32 VDC
- Isolators communicate their location specific address and status, and accept control via IDNet communications
- Small size fits into 4” square electrical box and allows convenient mounting where protection is required
- Visible LED flashes to indicate communications; optional covers are available to view LED after installation

Earth fault isolation reduces time to fix wiring problems:

- Built-in control panel diagnostics can activate the addressable power isolator, assisting in locating earth fault conditions – the most common installation wiring problem

For Class B or Class A power wiring:

- Power is monitored from either port
- Two Isolators can be connected to produce Class A power wiring that can optimize operation by maintaining connection with devices outside of the isolated wiring section

UL listed to Standard 864

Description

Short Circuit Isolation. Under normal conditions, the 4090-9117 Addressable Power Isolator provides continuity between ports. In the event of a short circuit, or if requested from the control panel, the isolator opens a two-pole electronic switch, isolating both power circuit conductors.

Operation. Isolators power-up in isolation mode and are directed to connect by the control panel. If the output wiring is acceptable, the isolator will connect to the rest of the circuit. If the output wiring is shorted, the isolator remains isolated.

Status Tracking. The isolator reports to the panel when it is in isolation mode and the extent of shorted wiring is available at the panel by identifying non-communicating device addresses. [Isolators are assigned sequentially to low number addresses to expedite Signaling Line Circuit (SLC) power-up. Refer to Installation Instructions 574-873 for additional information.]

Earth Faults. During system installation, earth faults frequently occur. Finding these faults normally requires extensive wiring disconnection. With the Addressable Power Isolator, earth faults on fire alarm system power wiring can be more quickly located to expedite repair.
**Short Circuit Isolation.** The one-line diagram on this page shows a multiple floor example with Class B IDNet communications and conventional Class B power wiring. Each floor’s wiring starts at an isolator. If any floor wiring beyond the isolator experiences a short circuit, each floor will be individually separated from the next, preventing the short circuit from disabling the entire wiring run.

**Earth Fault Isolation.** In the event of an earth wiring fault, each floor’s power wiring can be individually isolated using control panel diagnostics. This narrows the search area by disconnecting the isolated wiring section and can result in decreasing the time required to locate and correct the earth fault.

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**Wiring Notes:**
1. This is a one-line drawing showing only IDNet communications and power wiring.
2. Operation of the 4090-9117 Addressable IDNet Power Isolator requires connection to a 4100ES, 4010ES, 4007ES, or 4100U IDNet communications channel.
3. IDNet isolators are shown for typical reference but are not required.
Power Isolator Multi-Floor Example 2

Class A Wiring. The illustration below is a modification of Example 1. Each floor wiring loop connects to the next floor in a Class A connection. From the last device, the wiring returns to the panel providing a secondary path that is monitored for loop integrity. Class A power wiring is available from a 4100ES, 4010ES, 4007ES, or 4100U Fire Control Panel programmed for this application using two 4090-9117 Power Isolators mounted close-nippled at the panel.

Diagnostic Assistance. It is recommended that for Class A wiring, isolators be located as the first and last devices in the loop (as shown below). With the resulting wiring isolation flexibility, locating earth wiring faults can be made easier.

![Diagram of Power Isolator Multi-Floor Example 2](image)

Wiring Notes:
1. This is a one-line drawing showing power wiring and IDNet communications only. Class A power requires using two 4090-9117 Power Isolators located close-nippled at the panel with Class A operation performed by panel control of the Isolators.
2. Operation of the 4090-9117 Addressable IDNet Power Isolator requires connection to a 4100ES, 4010ES, 4007ES, or 4100U IDNet communications channel.
3. IDNet isolators are shown for typical reference but are not required. For Class A IDNet SLCs, locate isolators as first and last device on the SLC for service convenience.
Status indicating LED

4" (102 mm) square box, 2-1/8" (54 mm) minimum depth, RACO 232 or equal (supplied by others)

4090-9117 Addressable Power Isolator

Double gang blank cover plate and mounting screws, for use when LED is not required to be externally viewed (supplied by others)

Mounting Reference, Double Gang Blank Cover Plate

Light pipe for LED viewing

4090-9801, Trim plate for semi-flush mounted box

4090-9802, Trim plate for surface mounted box

Optional Trim Plates for Visible LED