

## Features

- Dual port, bi-directional power isolator
- Compatible with 4007ES, 4010ES, and 4100ES, and 4100U Series fire alarm control units (FACUs)
- You can use either port as an input or output. Ports are automatically separated when a power wiring short circuit or a low voltage condition occurs
- You can activate isolation from the FACU for system diagnostics
- Use with FACU system power, rated for up to 2 A at 32 VDC
- Isolators communicate their location specific address and status, and accept control through IDNet communications
- Fits into 4 in. square electrical box for convenient mounting where protection is required
- A visible LED flashes to indicate communications. Optional covers are available that do not hinder LED visibility

## Earth fault isolation

The built-in FACU diagnostics can activate the addressable power isolator. You can use this to help locate earth fault conditions, the most common installation wiring problem, and reduce time spent on wiring problems.

## Class B or Class A power wiring

- Power is monitored from either port
- You can connect two Isolators to produce Class A power wiring. This 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 FACU, 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 FACU. If the output wiring is acceptable, the isolator connects to the rest of the circuit. If the output wiring is shorted, the isolator remains isolated.

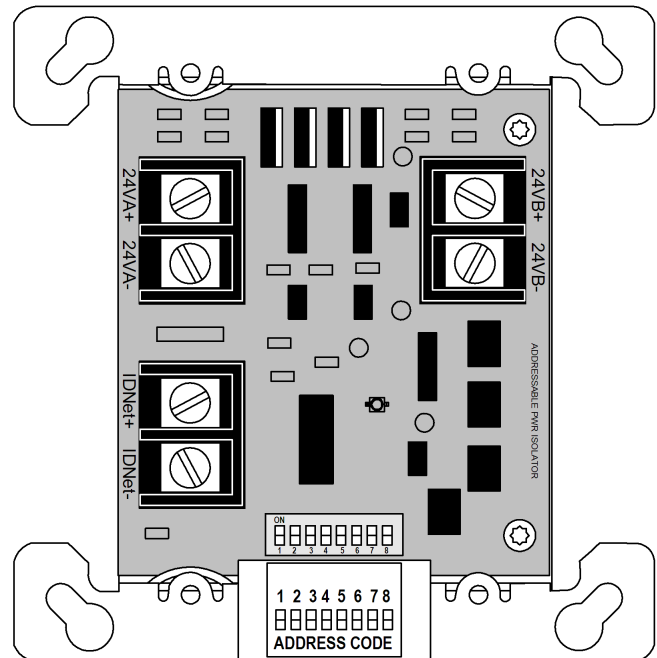
### Status Tracking

The isolator reports to the FACU when it is in isolation mode and the extent of shorted wiring is available at the FACU 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 and extensive wiring disconnection is often required to find them. With the Addressable Power Isolator, you can quickly locate earth faults on fire alarm system power wiring to expedite repair.

Figure 1: 4090-9117 Addressable Power Isolator with IDNet Communications Control



## Product selection

**Table 1: Product selection**

Model	Description	
4090-9117	Addressable Power Isolator	
4090-9801	For semi-flush mounted box	Optional trim plate with LED viewing window, includes mounting screws; galvanized steel
4090-9802	For surface mounted box	

## Specifications

**Table 2: Electrical**

Specification	Rating
Current rating	2 A maximum at 32 VDC maximum
Input power	10 mA maximum at 24 VDC, system power
Communications	IDNet communications, 1 address, one unit load
Wire connections	Screw terminals for input and output wiring, 18 to 14 AWG (0.82 mm <sup>2</sup> to 2.08 mm <sup>2</sup> ), two wires/terminal; up to 12 AWG (3.31 mm <sup>2</sup> ), one wire/terminal

**Table 3: Wiring reference**

Specification	Rating
Power wiring	Refer to individual devices for wiring distances
	Compatible with 2081-9028 circuit protector
IDNet communications wiring reference	Up to 2500 ft ( 762 m) from fire alarm control
	Up to 10,000 ft ( 3048 m) total wiring distance (including T-Taps)
	Compatible with 2081-9044 overvoltage protectors

**Table 4: Mechanical**

Specification	Rating
Dimensions	4 1/8 in. H x 4 1/8 in. W x 1 3/8 in. D (105 mm x 105 mm x 35 mm)
Temperature	32° to 120° F (0° to 49° C) indoor operation only
Humidity range	10 to 90% RH at 90° F (32° C)

## Power Isolator multi-floor example 1

**Short Circuit Isolation.** Figure 2 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 is 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, you can use FACU diagnostics to individually isolate each floor's power wiring. This disconnects the isolated wiring section to narrow the search area, and can decrease the time required to locate and correct the earth fault.

Figure 2: Power Isolator multi-floor example 1

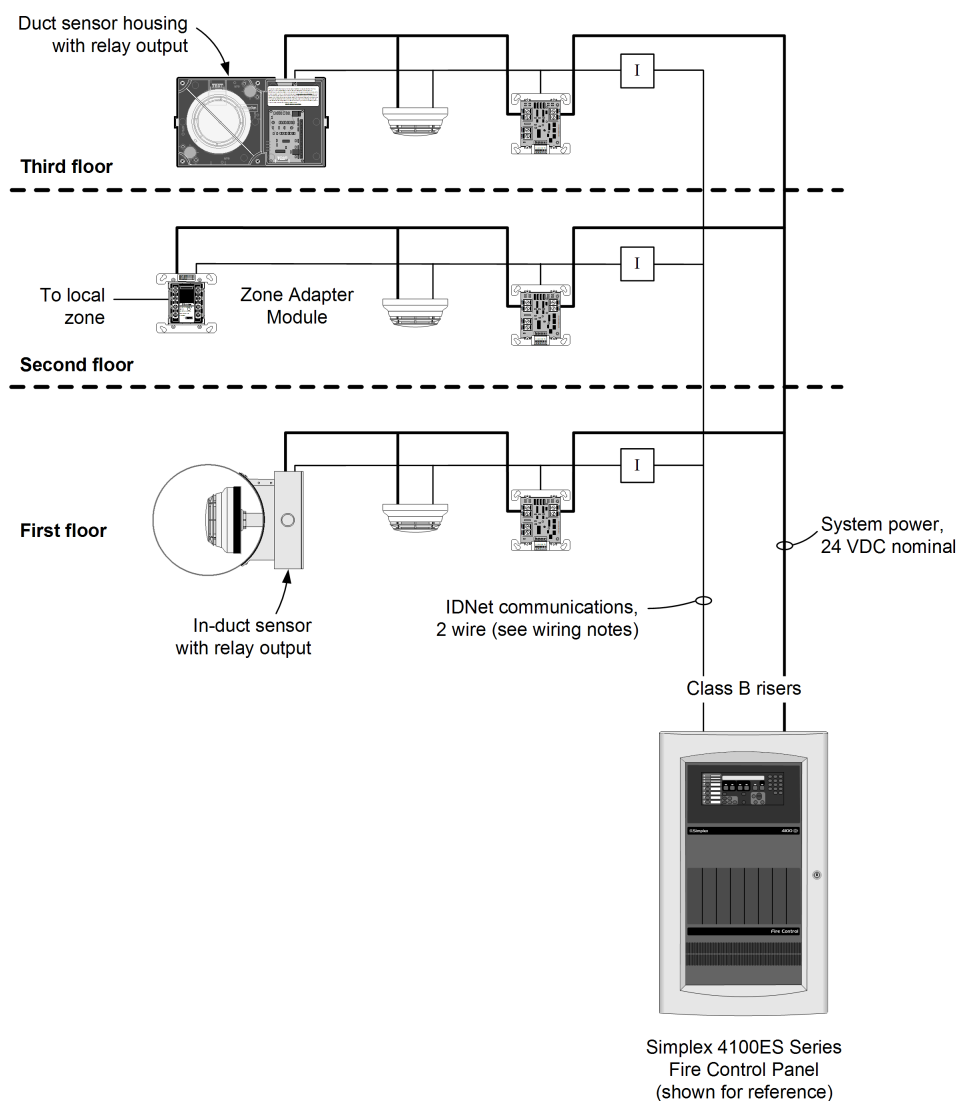


Table 5: Figure key

Icon	Product
	4090-9117 IDNet Addressable Power Isolator.
	TrueAlarm sensor with relay base.
	4090-9116 IDNet Addressable Isolator or 4090-9122 IDNet Isolator2. IDNet isolators are shown for typical reference but are not required.

### Note:

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.

## Power Isolator multi-floor example 2

**Class A Wiring.** Figure 3 is a modification of [Power Isolator multi-floor 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 FACU and forms a secondary path that the FACU monitors. Class A power wiring is available from a 4100ES, 4010ES, 4007ES, or 4100U FACU programmed for this application using two 4090-9117 Power Isolators mounted close-nippled at the FACU.

**Diagnostic Assistance.** To easily locate earth wiring faults, for Class A wiring, locate isolators as the first and last devices in the loop, see Figure 3.

Figure 3: Power Isolator multi-floor example 2

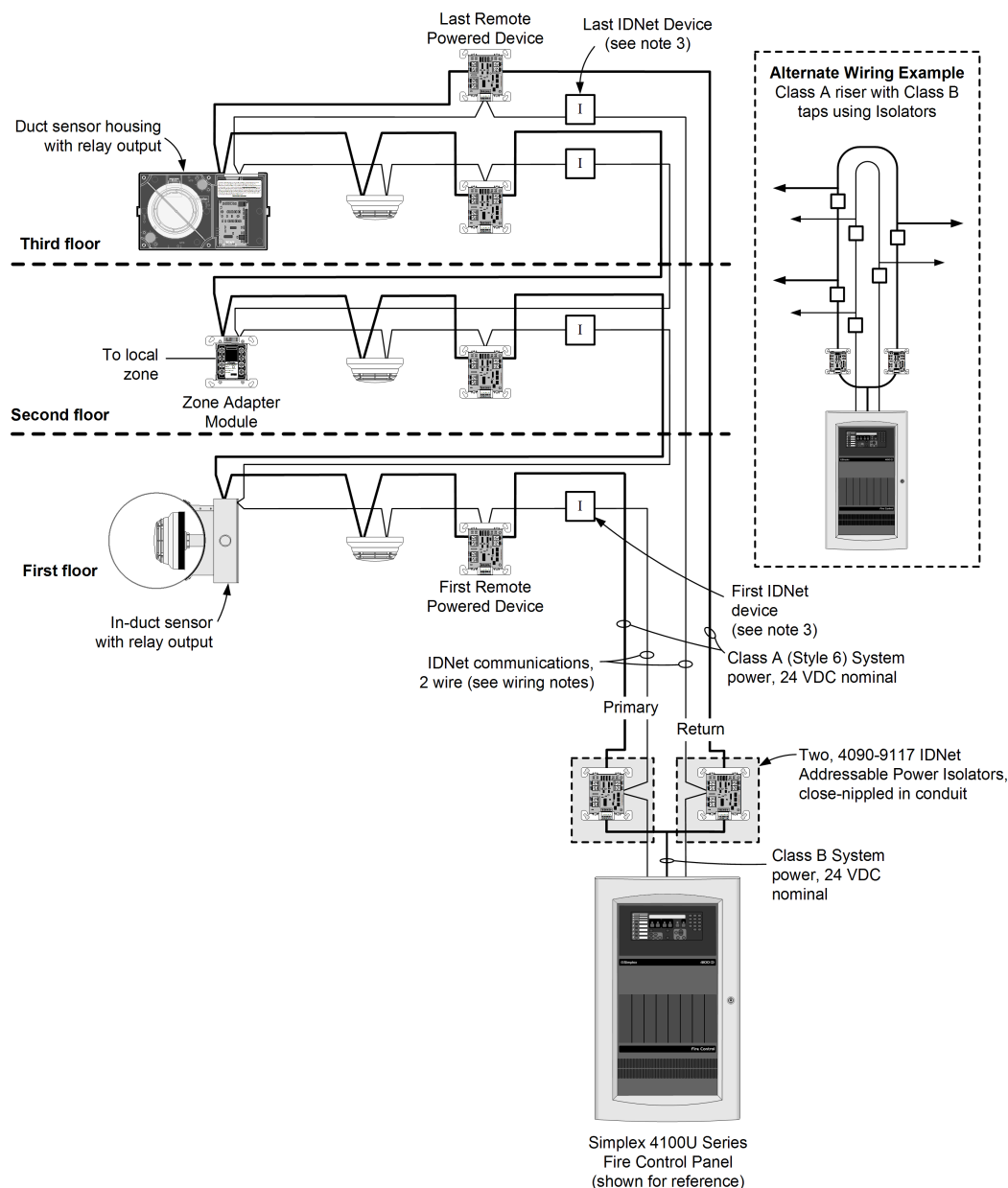


Table 6: Figure key

Icon	Product
	4090-9117 IDNet Addressable Power Isolator.
	TrueAlarm sensor with relay base.
	4090-9116 IDNet Addressable Isolator or 4090-9122 IDNet Isolator2. IDNet isolators are shown for typical reference but are not required.

### Note:

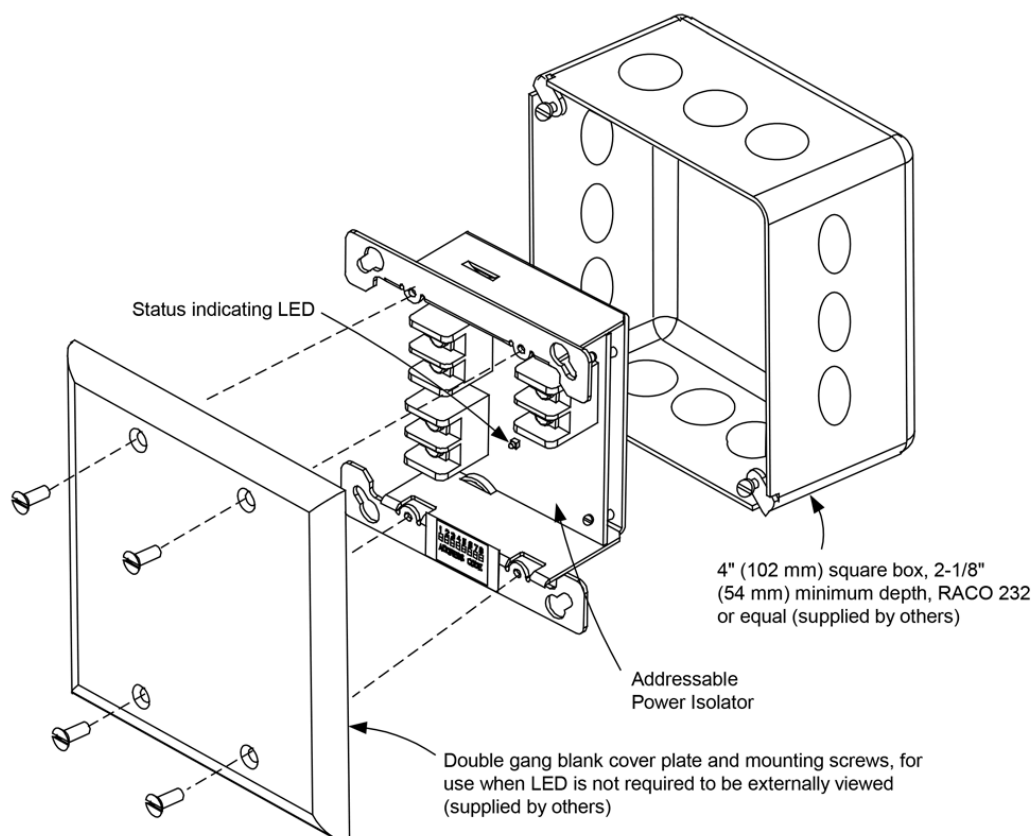
- Figure 3 is a one-line drawing that only shows power wiring and IDNet communications. Class A power requires using two 4090-9117 Power

Isolators located close-nipped at the FACU with Class A operation performed by FACU 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.

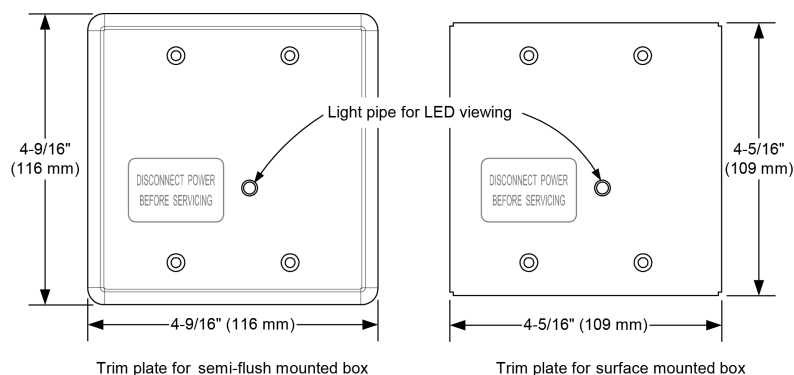
## Mounting information

Figure 4: Mounting reference, double gang blank cover plate



**Note:** The 4090-9117 Addressable Power Isolator is shown in Figure 4.

Figure 5: Optional trim plates for visible LED



**Note:** The 4090-9801, trim plate for semi-flush mounted box, and the 4090-9802 trim plate for surface mounted box are shown in Figure 5.

