Simplex®

Addressable Peripherals

UL, ULC, CSFM Listed; FM Approved;
*MEA (NYC) Acceptance**

4090-9116 Addressable
IDNet Communications Isolator

Features

Dual port, bi-directional communications short circuit isolator:

- Compatible with Simplex® 4007ES, 4008, 4010ES, 4100ES, or 4100U Series fire alarm control panel IDNet Signaling Line Circuits (SLCs) providing: IDNet, IDNet+, IDNet 1+, IDNet 2, or IDNet 2+2 output loops (see additional information on pages 2 and 3)
- Either port can serve as an input or output, ports are automatically separated when a communications short circuit occurs
- Isolation can also be activated from the control panel for system diagnostics
- Mounts in standard 4" (102 mm) square electrical box, optional adapter plate is available to mount in a 4 $^{11}/_{16}$" (119 mm) square electrical box
- LED flashes to indicate communications; optional covers are available to view LED after installation
- TrueAlarm sensor base IDNet Isolators are also available, refer to data sheet S4098-0025 for details
- UL listed to Standard 864

Earth fault isolation reduces time to fix wiring problems:

- Built-in control panel diagnostics assist in locating earth fault conditions – the most common installation wiring problem

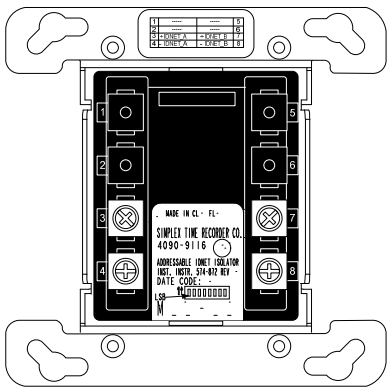
For Class B or Class A wiring:

- Communications are monitored from either port
- Class A wired SLCs can optimize operation by maintaining communications with devices outside of the isolated wiring section

Description

4090-9116 Addressable IDNet Communications Isolators provide IDNet communications isolation to improve installation convenience and increase system integrity. Isolation is automatically activated when an output short circuit is detected and isolation can also be selected manually from the control panel to assist with troubleshooting wiring problems.

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.



4090-9116 Addressable IDNet Isolator
(shown approximately 1/2 size)

Description *(Continued)*

Status Tracking. The isolator reports back to the panel when it is in isolation mode and the extent of shorted wiring is reported back to the panel by identifying device addresses that are not communicating. [Isolators are assigned sequentially to low number addresses to expedite SLC power-up.]

Earth Faults. During installation, earth faults frequently occur. Finding these faults normally requires extensive wiring disconnection. With the 4090-9116 Addressable IDNet Isolator, earth faults on the IDNet communications lines can be quickly located to assist in their repair and to restore the system wiring to normal.

Product Selection

Model	Description	
4090-9116	Addressable IDNet Communications Isolator	
4090-9813	Adapter plate to fit 4 $^{11}/_{16}$" (119 mm) square electrical box	
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	

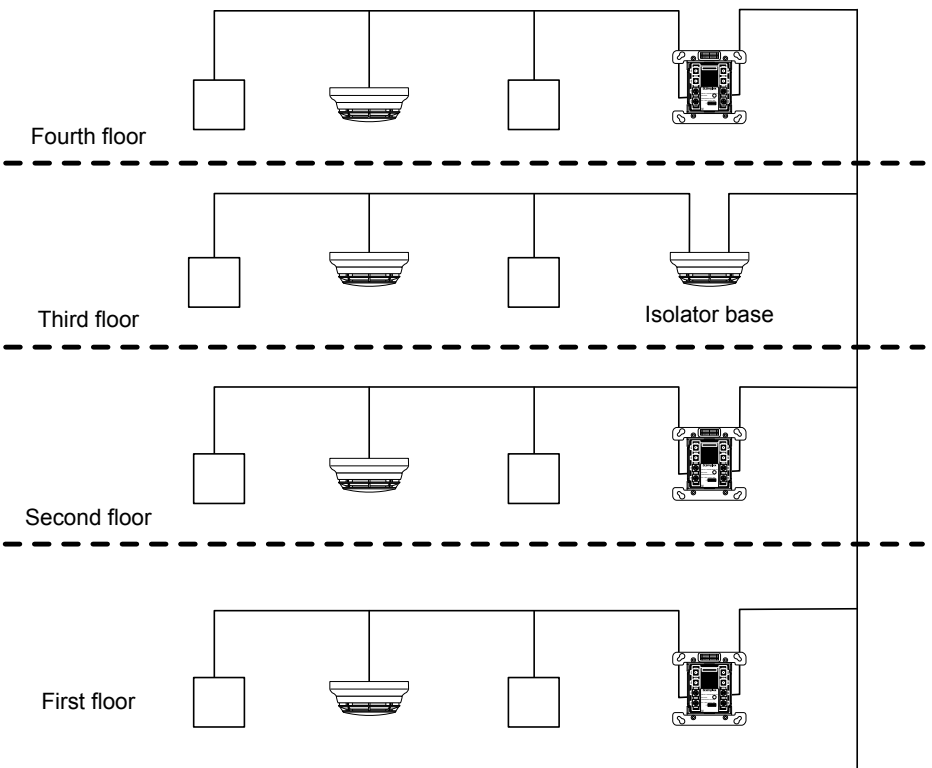
* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7300-0026:252 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

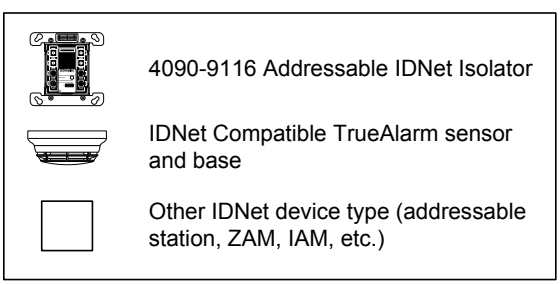
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Multi-Floor Isolator Example 1

Short Circuit Isolation. The one-line diagram on this page shows a multiple floor example with Class B IDNet communications for each floor starting at an isolator. (A sensor in the 4098-9793 Isolator Base is shown for reference as an alternate isolating device.) If floor wiring beyond the isolator should experience a short circuit, each floor is automatically separated from the next, preventing the short circuit from disabling the entire IDNet communications wiring.

Earth Fault Isolation. In the event of an earth fault, each floor can be individually isolated using built-in control panel diagnostics. With individual floor control, the earth fault can be isolated to the floor level to narrow the search area. By adding more isolators, the section required to be isolated can be reduced, allowing more devices to remain active.







Simplex 4100ES Series Fire Control Panel (shown for reference)

Wiring Notes:

1. Operation of the 4090-9116 Addressable IDNet Isolator requires connection to a compatible 4007ES, 4008, 4010ES, 4100ES, or 4100U IDNet communications channel.
2. **NOTE:** The 4100-3103 Panel Mounted Quad Isolator is compatible only with MAPNET II Remote Isolators.
3. Maximum line resistance between the panel and an isolator, and between two isolators, is 10 Ω or 780 ft (238 m) with 18 AWG wire.
4. This is a one-line drawing showing only IDNet communications wiring.
5. Some IDNet devices require additional wiring for power. Refer to specific devices for details.

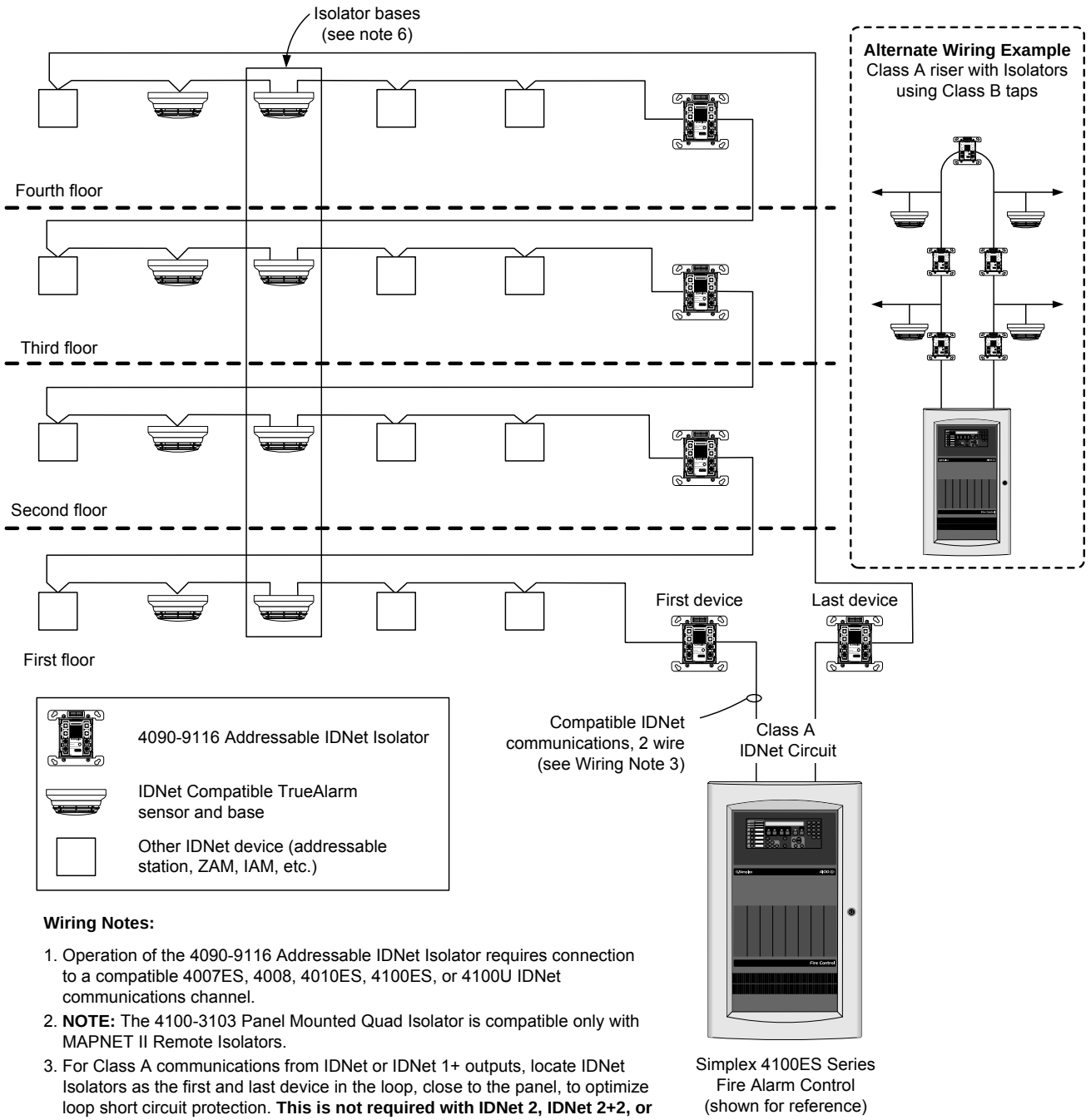
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Multi-Floor Isolator Example 2

Class A Wiring. The illustration below is a modification of Example 1. Each floor is wired as a Class A connection, and a sensor mounted in a 4098-9793 Isolator Base has been added for reference. This illustrates that with additional isolators (either the 4090-9116 or the Isolator Base), there is a reduction in the number of isolated devices in the event of a short circuit.

Diagnostic Assistance. Communications from an IDNet 2, IDNet 2+2, or IDNet+ output provide individual short circuit isolation and allow individual output control to provide assistance in locating wiring faults.

Note: When wiring Class A IDNet communications provided by IDNet or IDNet 1+ outputs, locate isolators as the first and last devices in the loop, close to the panel, to provide loop short circuit isolation operation (as shown below).

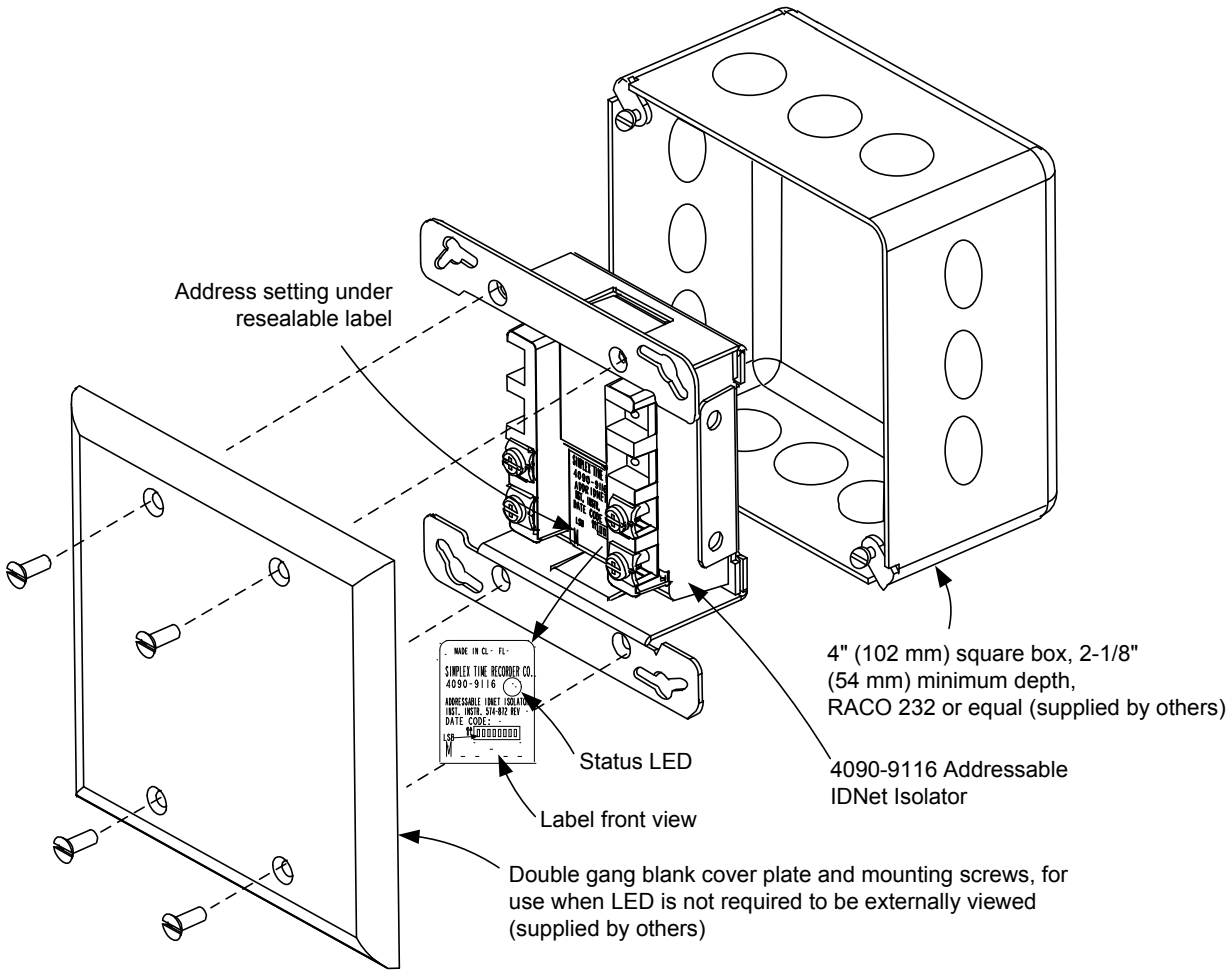


Wiring Notes:

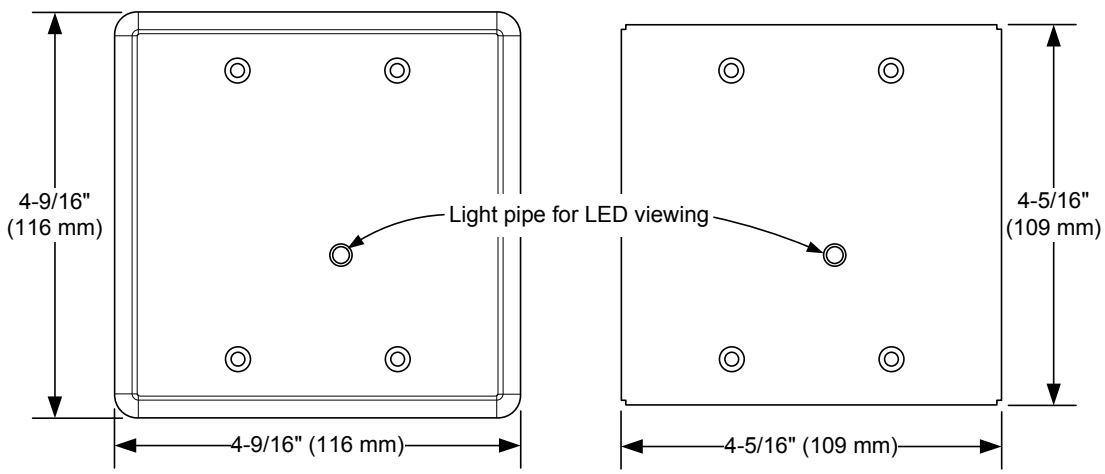
1. Operation of the 4090-9116 Addressable IDNet Isolator requires connection to a compatible 4007ES, 4008, 4010ES, 4100ES, or 4100U IDNet communications channel.
2. **NOTE:** The 4100-3103 Panel Mounted Quad Isolator is compatible only with MAPNET II Remote Isolators.
3. For Class A communications from IDNet or IDNet 1+ outputs, locate IDNet Isolators as the first and last device in the loop, close to the panel, to optimize loop short circuit protection. **This is not required with IDNet 2, IDNet 2+2, or IDNet+ outputs.**
4. Maximum line resistance between the panel and an isolator, and between two isolators, is 10 Ω or 780 ft (238 m) with 18 AWG wire.
5. This is a one-line drawing showing only IDNet communications wiring.
6. Some IDNet devices require additional wiring for power. Refer to specific devices for details.

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Mounting Information



Mounting Reference, Double Gang Blank Cover Plate



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

4090-9802, Trim plate for surface mounted box

Optional Trim Plates for Visible LED

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Specifications

Electrical

Communications	IDNet communications, 1 address per device
Compatibility	4007ES, 4008, 4010ES, 4100ES, and 4100U providing: IDNet, IDNet+, IDNet 1+, IDNet 2, or IDNet 2+2 communications output; (not compatible with 4100-3103 Panel Mounted Quad Isolator)
Power	Consumes one unit load, power is supplied from IDNet SLC
Wire Connections	Screw terminals for input and output wiring, 18 to 14 AWG wire (0.82 mm^2 to 2.08 mm^2)

Wiring Distances

IDNet Wiring Reference	Up to 2500 ft (762 m) from fire alarm control panel
	Up to 10,000 ft (3048 m) total wiring distance (including T-Taps)
	Maximum line resistance between panel and isolator, or between isolators is 10 ohms; [18 AWG (0.82 mm^2) = 780 ft (238 m)]
	Compatible with Simplex 2081-9044 Overvoltage Protectors

Mechanical

Dimensions	4 ⅛” H x 4 ⅛” W x 1 ⅜” D (105 mm x 105 mm x 35 mm)
Package	Black thermoplastic housing on metal mounting plate
Temperature	32° to 120° F (0° to 49° C) indoor operation only
Humidity Range	10 to 90% RH at 90° F (32° C)
Installation Instructions	574-872

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