



Features

Isolator+ modules provide improved short circuit isolation for TrueAlert addressable notification appliance wiring:

- Power and communications are supplied by the TrueAlert addressable Signaling Line Circuits (SLC) of 4100U TrueAlert Power Supplies (TPS) or TrueAlert Addressable Controllers (4009T)
- Dual port design accepts communications and power from either port and automatically isolates one port from the other when a short circuit occurs
- Isolator+ provides a more sensitive short circuit/low resistance sensing for faster isolation (requires all isolators on a channel to be the Isolator+ version)
- Mounts in standard 4" (102 mm) square electrical box, 2-1/8" (54 mm) deep
- UL listed to Standard 864
- For additional TrueAlert addressable operation reference, refer to data sheet S4009-0003

Status diagnostics:

- On-board yellow LED provides module status, can indicate communications poll or be activated from panel
- Isolators report faults to the host control panel (method varies with system connection type)

Information received at the control panel allows identification of the short circuit location:

- Control panels that recognize appliance addresses will be advised of *individual* appliances disabled due to activated isolators
- Control panels that do not recognize appliance addresses will report an open circuit channel trouble due to activated isolators
- Control panels that recognize individual addresses: 4100U TrueAlert Power Supplies; 4100, 4100U, 4120, and 4020 Series fire alarm control panels connected to TrueAlert Addressable Controllers using RUI (remote unit interface) communications

Class B (Style 4) TrueAlert channel wiring:

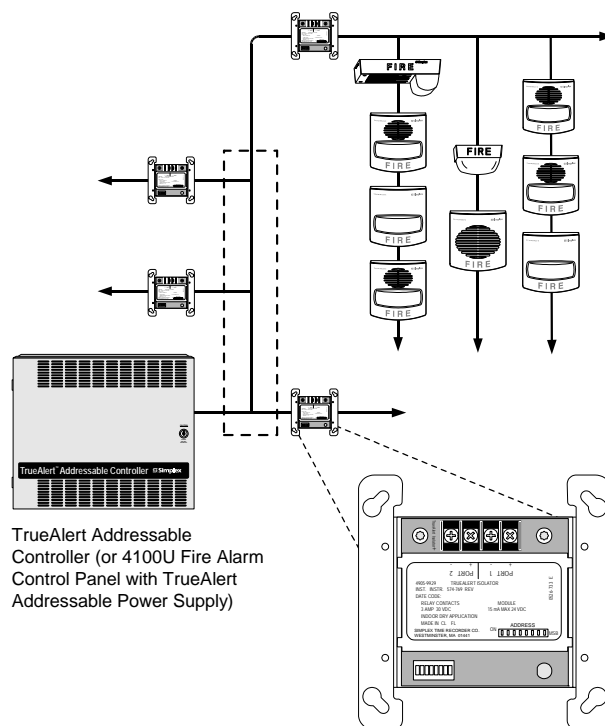
- Up to 12 Isolator+ modules can be connected per TrueAlert channel (Signaling Line Circuit, SLC) and up to 6 Isolator+ modules can be connected directly together in series on the same branch

Class A (Style 6) TrueAlert channel wiring:

- For Class A operation, up to 6 Isolator+ modules can be connected per TrueAlert channel loop

General channel loading rules:

- Isolator+ modules require one address and are rated as 4 unit loads
- TrueAlert addressable notification appliances are a single unit load
- Each channel can support up to 63 appliances with up to 75 unit loads



Typical TrueAlert Isolator+ Module Application
One-Line Drawing Including Module Detail

Introduction

TrueAlert Addressable Controller SLC channels are internally isolated from each other. In the event of a channel wiring short circuit, the channel will safely shut down and then monitor the wiring for restoration to normal when the short is repaired. However, within the branch and "T" tap wiring of a TrueAlert channel, the use of 4905-9929 TrueAlert Isolator+ Modules can provide additional isolation that can reduce the quantity of TrueAlert appliances impacted by a short circuit.

Short Circuit Isolation. An internal isolation relay allows the Isolator+ module to separate shorted and/or disabled wiring from functioning wiring to optimize the available appliances. Isolator+ module status is communicated to the control panel providing assistance in identifying the shorted wiring location.

Convenient Location. The 4905-9929 Isolator+ Module mounts in a standard 4" square, 2-1/8" deep electrical box, allowing isolators to be conveniently located on the TrueAlert SLC channel where the local wiring could most benefit.

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TrueAlert Isolator+ Example 1

Branch Protection. The diagram below illustrates the addition of 4905-9929 Isolator+ Modules to TrueAlert channel wiring located at the start of each branch. With Isolator+ modules added in these locations, there will be an increase in overall system operation in the event of a short circuit.

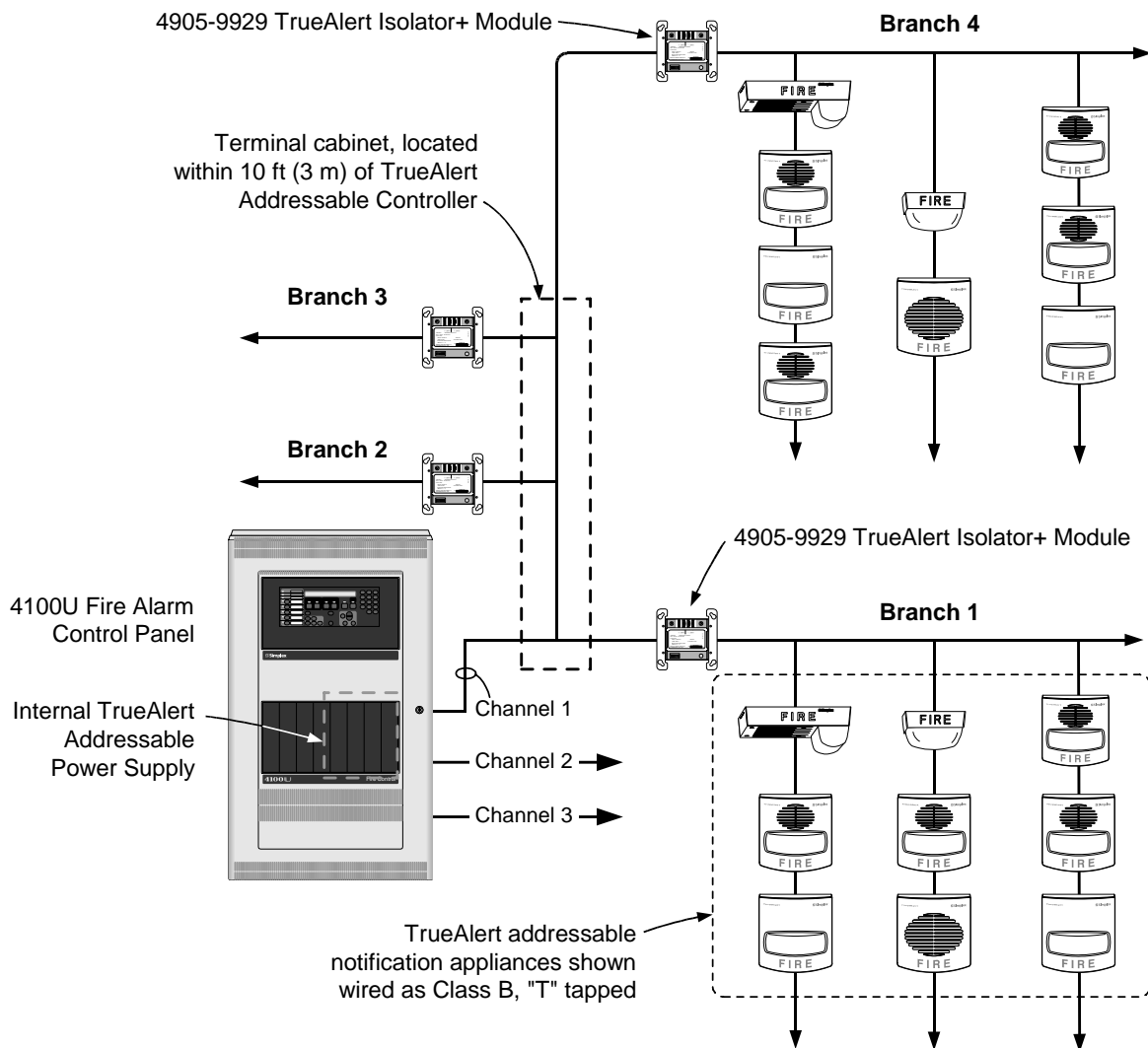
Branch Short Circuits. Without Isolator+ modules, if a short circuit occurred on a branch connection, the entire channel would be inoperative, the same as occurs with conventional Notification Appliance Circuit (NAC) operation. With the addition of Isolator+ modules, short circuits would only disable those appliances connected electrically beyond the Isolator+ module. Since short circuits are sometimes encountered during initial wiring installations, the use of Isolator+ modules can also assist in finding those wiring faults, allowing a decrease in the total installation and checkout time.

Address Allocation. For the example shown below, there are 18 notification appliances which would occupy a total of 18 addresses at the TrueAlert Addressable Controller. There are also 4 Isolator+ modules, each requiring an address. The total addresses count on this TrueAlert channel would be $18 + 4 = \underline{22 \text{ addresses}}$.

Channel Loading. Isolator+ modules are powered from the TrueAlert channel and they require an additional loading factor with each Isolator+ designated as four unit loads. Each TrueAlert addressable appliance, whether strobe, horn, or combination unit, is only one address and only one unit load. The total unit loads for this example is $18 \text{ appliances} + 4 \text{ Isolator+ modules (4 unit loads each)} = 18 + 16 = \underline{34 \text{ unit loads}}$.

Channel Capacity. Up to 63 addresses and up to 75 unit loads are allowed per TrueAlert channel. This example is not fully loaded and could probably accommodate additional appliances. However, the appliance currents also need to be considered. TrueAlert Addressable Controller channels are rated 2.5 A, 4100U TrueAlert Addressable Power Supplies are rated 3 A.

TrueAlert Isolator+ Example 1, One-Line Diagram Showing Individual Branch Protection



TrueAlert Isolator+ Example 2

“T” Tap Level Isolation. The one-line diagram directly below shows Isolator+ modules located at the start of each “T” tap on a single branch of a single TrueAlert channel, all wired Class B (Style 4). With this approach, each tap is isolated from short circuits that may occur out on the other taps.

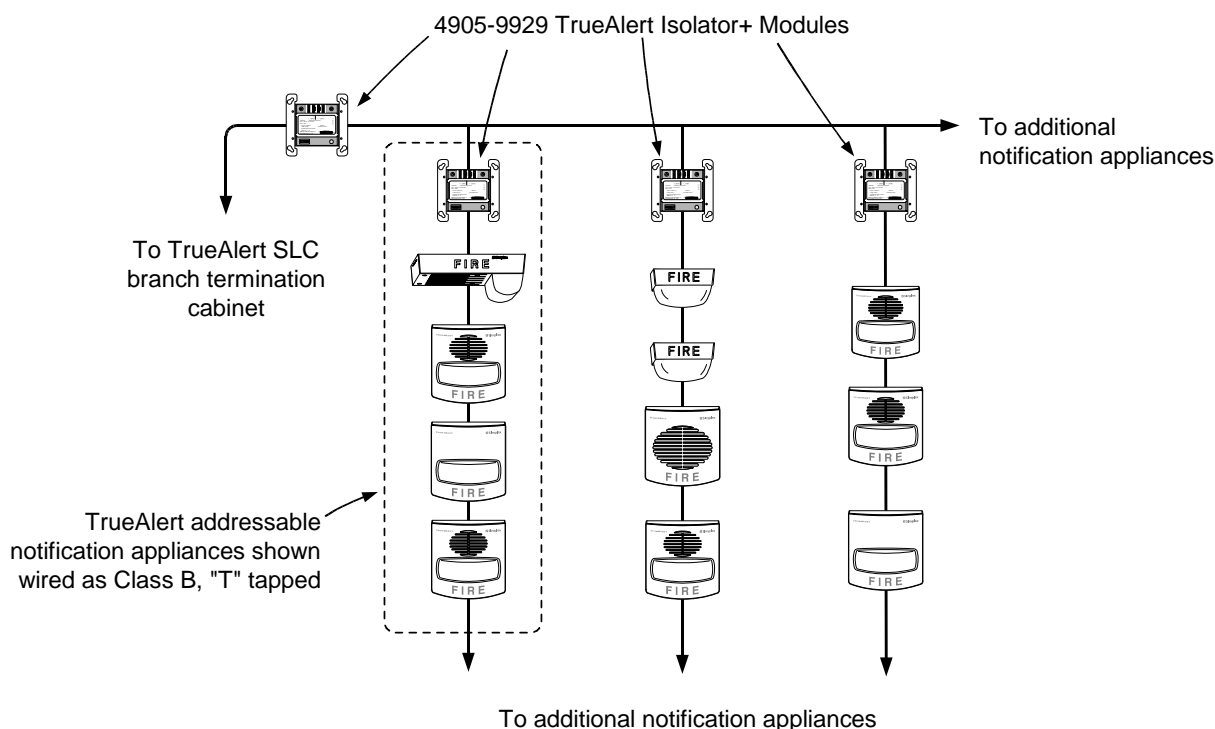
Channel Loading. Total addresses: 15. Total unit loads: 11 appliances + 4 Isolator+ modules (4 unit loads each) = 11 + 16 = 27 unit loads.

TrueAlert Isolator+ Example 3

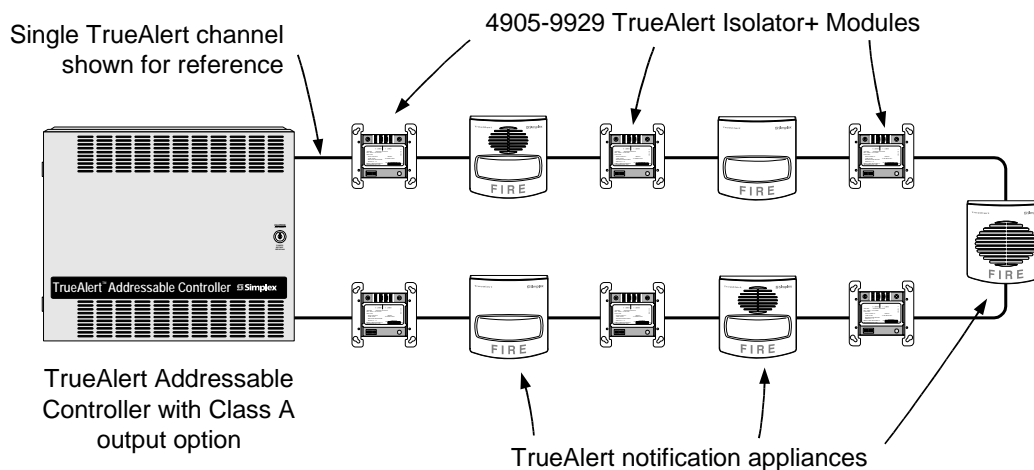
Class A Wiring Isolation. Example 3 (at the bottom of this page) illustrates an “optimized” Class A (Style 6) TrueAlert channel with each notification appliance connected between an Isolator+ module. With this connection, a single short circuit between Isolator+ modules would only disable one TrueAlert notification appliance. (Please note that Isolator+ modules can be applied as desired, the configuration shown is to illustrate operation and is not required.)

Channel Loading. Total addresses = 11. Total unit loads = 5 appliances + 6 Isolator+ modules (4 units loads each) = 5 + 24 = 29 unit loads.

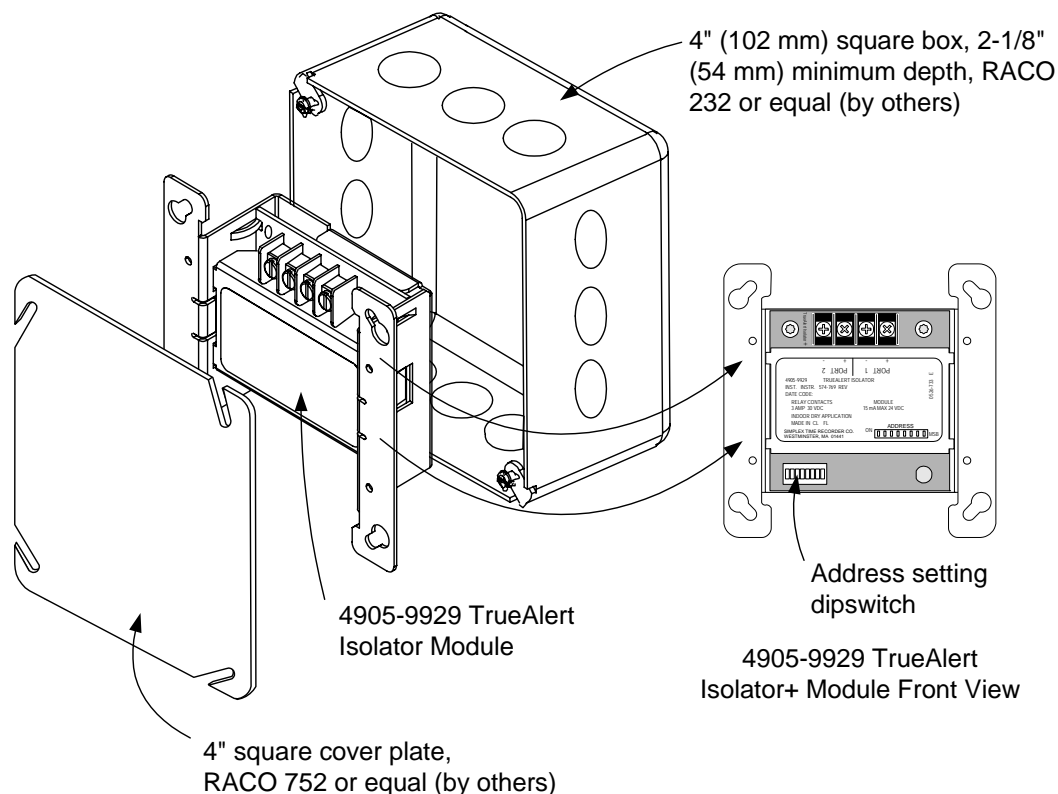
TrueAlert Isolator+ Example 2, One-Line Diagram Showing Individual “T” Tap Protection



TrueAlert Isolator+ Example 3, One-Line Diagram Showing Class A/Style 6 with Isolators



TrueAlert Isolator+ Mounting Information



Specifications

Electrical

Isolated Circuit Wire Resistance	1.5 Ω maximum, measured from any Isolator+ port to the farthest appliance in the protected segment
Voltage Range	18 to 32 VDC, provided from TrueAlert channel
Current, Isolated Mode	10 mA @ 24 VDC
Address Requirements	1 Address per Isolator+ Module
Unit Load Requirements	4 Unit loads per Isolator+ Module

TrueAlert Channel Loading

Class B (Style 4) TrueAlert Channel	Up to 12 Isolator+ modules total with up to 6 being connected directly together in series on the same branch
Class A (Style 6) TrueAlert Channel	Up to 6 Isolator+ modules total on the loop

Mechanical

Dimensions	4-1/8" H x 4-1/8" W x 1-3/8" D (105 mm x 105 mm x 35 mm)
Housing Material	Black thermoplastic
Mounting Plate Material	Sheet metal, galvanized
Temperature Range	32° to 120° F (0° to 49° C) intended for indoor operation
Humidity Range	Up to 93% RH at 100° F (38° C)
Wiring Connections	Screw terminals for 18 to 12 AWG (0.82 mm ² to 3.31 mm ²)

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