

### Features

#### Isolator+ modules provide short circuit isolation for TrueAlert addressable notification appliance wiring:\*\*

- Power and communications are supplied by Simplex 4100ES, 4010ES, and 4007ES fire alarm control panels equipped with power supplies that provide advanced addressable notification from IDNAC Signaling Line Circuits (SLCs), and from 4009 IDNAC Repeaters\*\*
- Operation is also compatible with legacy TrueAlert SLCs from 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
- Mounts in standard 4" (102 mm) square electrical box, 2 1/8" (54 mm) deep
- UL listed to Standard 864

#### 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:

- Simplex control panels providing IDNAC SLCs will be advised of *individual* appliances disabled due to activated isolators; (also true of legacy panels with TPS or when connected to TrueAlert Addressable Controller using RUI communications)
- Other control panels controlling TrueAlert Addressable Controllers do not recognize appliance addresses but will receive a report of an open circuit channel trouble due to activated isolators

#### Class B (Style 4) IDNAC SLC wiring:

- Up to 12 Isolator+ modules can be connected per IDNAC SLC and up to 6 Isolator+ modules can be connected directly together in series on the same branch

#### Class A (Style 6) IDNAC SLC wiring:

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

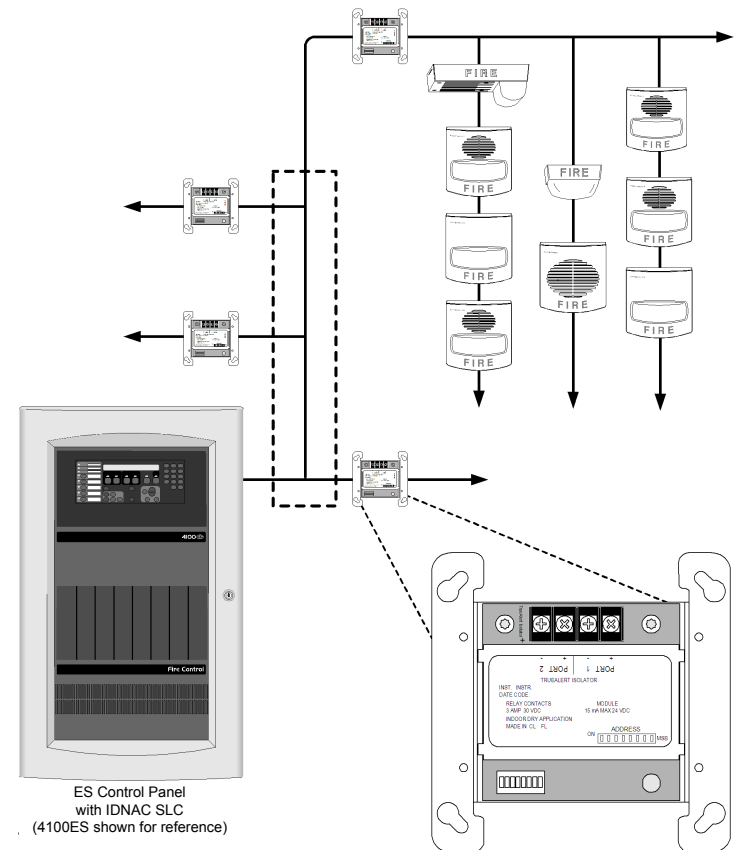


Figure 1: Typical TrueAlert Isolator+ Module Application One-Line Drawing Including Module Detail

### Introduction

**IDNAC Addressable Notification SLCs** (and legacy TrueAlert SLCs) 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 an IDNAC channel, the use of 4905-9929 TrueAlert Isolator+ Modules can provide additional isolation that can reduce the quantity of TrueAlert addressable 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 IDNAC SLC channel where the local wiring could most benefit.

\*\* Use of "TrueAlert" in this document refers to both TrueAlert and TrueAlert ES notification appliances. Use of IDNAC SLCs also refers to operation of TrueAlert SLCs

## TrueAlert Isolator+ Example 1

**Branch Protection.** The diagram below illustrates the addition of 4905-9929 Isolator+ Modules to IDNAC SLC 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.

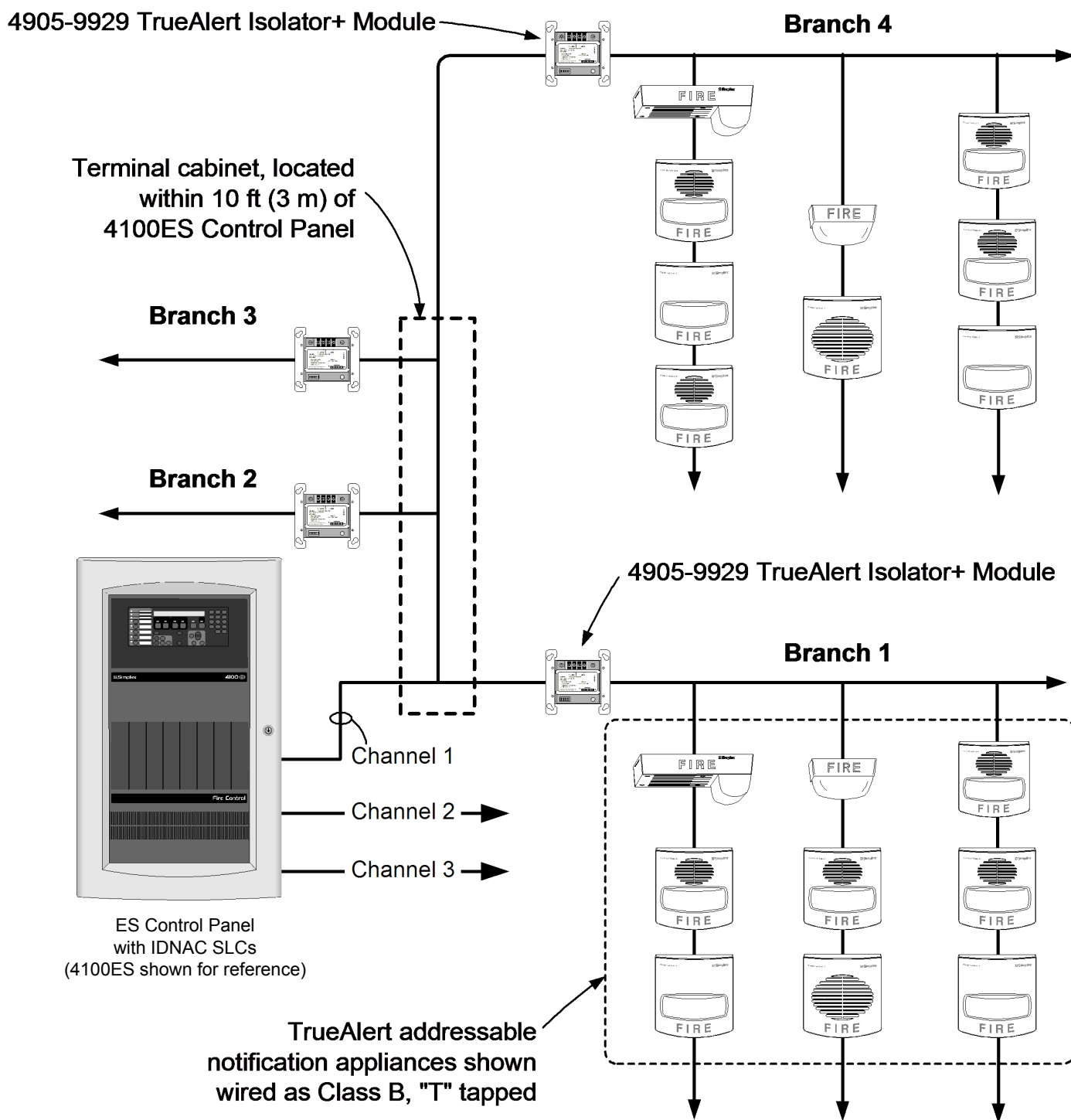
**Branch Short Circuits.** Without Isolator+ modules, if a short circuit occurred on a branch connection, the entire channel would be inoperative, the same as occurs with conventional Notification Appliance Circuit (NAC) operation. With the addition of Isolator+ modules, short circuits would only disable 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 4100ES control panel. There are also 4 Isolator+ modules, each requiring an address. The total addresses count on this IDNAC SLC would be  $18 + 4 = 22$  addresses.

**SLC Loading.** Isolator+ modules are powered from the IDNAC SLC 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  $18 \text{ appliances} + 4 \text{ Isolator+ modules (4 unit loads each)} = 18 + 16 = 34$  unit loads.

**Channel Capacity.** Capacity may vary with IDNAC SLC control, but typically is up to 127 addresses and up to 139 unit loads. This example is not fully loaded and could probably accommodate additional appliances. However, the appliance currents also need to be considered. (IDNAC SLCs and legacy TPS SLCs are rated 3 A full load. TrueAlert Addressable Controller channels are rated 2.5 A full load.)

**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 IDNAC SLC, all wired Class B (Style 4). With this approach, each tap is isolated from short circuits that may occur out on the other taps.

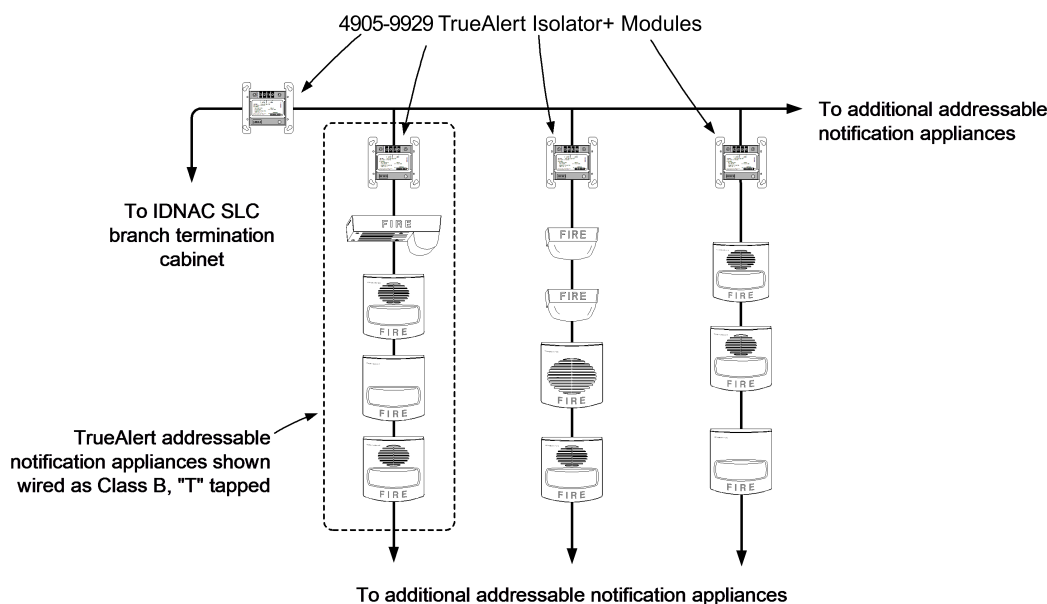
**Channel Loading.** Total addresses: 15. Total unit loads: 11 appliances + 4 Isolator+ modules (4 unit loads each) = 11 + 16 = 27 unit loads.

## TrueAlert Isolator+ Example 3

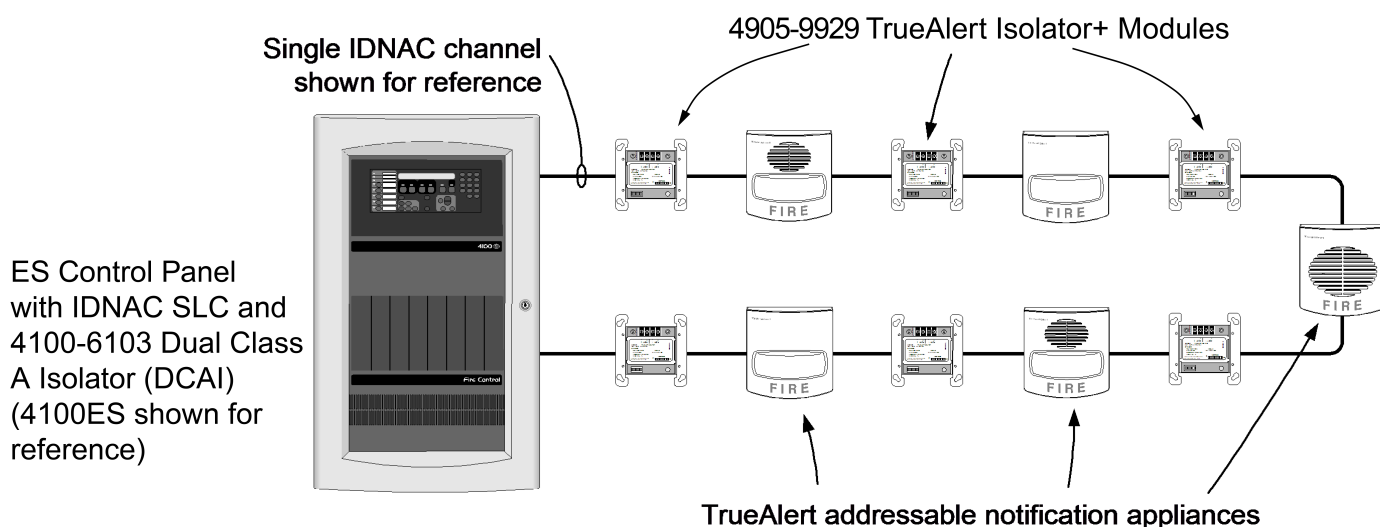
**Class A Wiring Isolation.** Example 3 (at the bottom of this page) illustrates an "optimized" Class A (Style 6) IDNAC SLC with each notification appliance connected between an Isolator+ module. With this connection, a single short circuit between Isolator+ modules would only disable one TrueAlert notification 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.

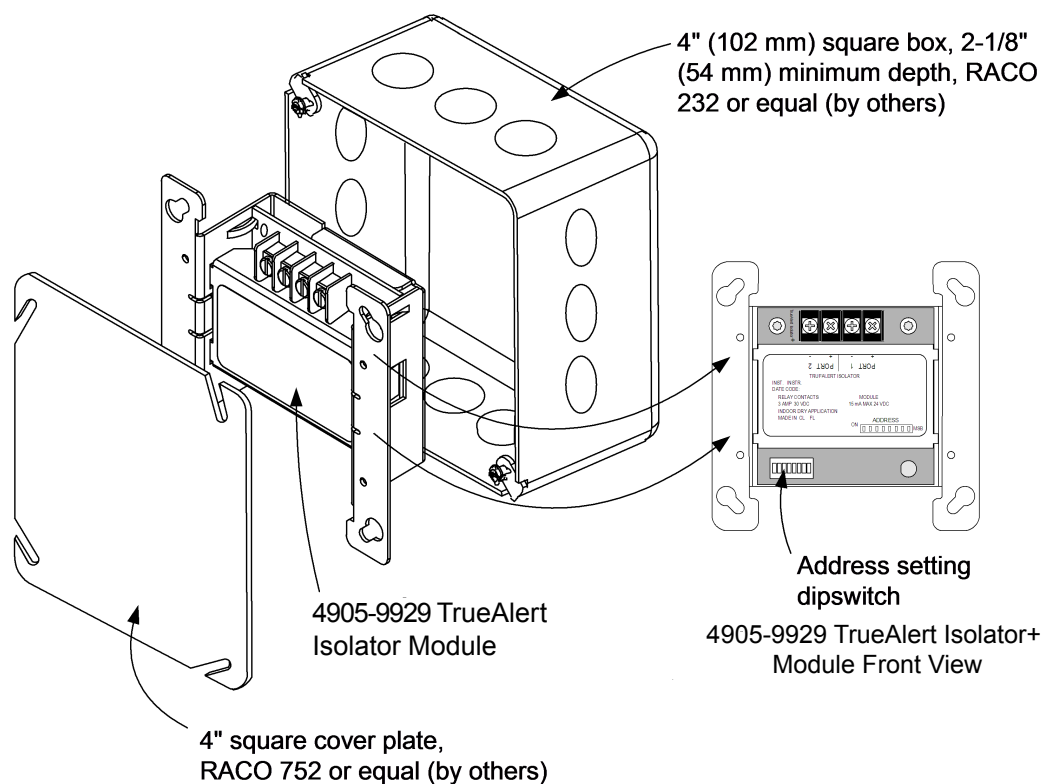
## TrueAlert Isolator+ Example 2, One-Line Diagram Showing Individual "T" Tap Protection



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



## TrueAlert Isolator+ Mounting Information



## Specifications

**Table 1: Electrical**

<b>Isolated Circuit Wire Resistance</b>	1.5 $\Omega$ maximum, measured from any Isolator+ port to the farthest appliance in the protected segment
<b>Voltage Range</b>	18 to 32 VDC, provided from TrueAlert channel
<b>Current, Isolated Mode</b>	10 mA @ 24 VDC
<b>Address Requirements</b>	1 Address per Isolator+ Module
<b>Unit Load Requirements</b>	4 Unit loads per Isolator+ Module (1 unit load = 0.8 mA control panel current)

**Table 2: IDNAC SLC Loading**

<b>Class B</b>	Up to 12 Isolator+ modules total with up to 6 being connected directly together in series on the same branch
<b>Class A</b>	Up to 6 Isolator+ modules total on the loop

**Table 3: Mechanical**

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

**Table 4: Reference**

Installation Instructions		574-769
Panel Data Sheets	4007ES with IDNAC SLCs	S4007-0002
	4009 IDNAC Repeater	S4009-0004
	4010ES with ESS	S4010-0011
	4100ES with EPS	S4100-0100
	4100ES with ES-PS	S4100-1031