Features

Provides a dedicated Fire Alarm local area network (LAN) for connection of a TrueSite workstation server to remote clients:

- Fire Alarm Ethernet Switches provide up to eight wired Ethernet connections with individual earth fault supervision
- Wired Ethernet cable distance of up to 328 ft (100 m)
- Fire Alarm Ethernet Switches can be interconnected to extend connection capacity and/or distance using either Ethernet wired ports or fiber optic ports
- Fiber optic cable switch connections provides a distance of up to 1.24 miles (2 km) for multimode fiber, and up to 9.3 miles (15 km) for single-mode
- Fire Alarm Ethernet Switches are UL listed to Standard 864 and ULC listed to Standard S527
- Switches are available without earth fault supervision for special applications not requiring fire alarm listings
- For additional TrueSite Workstation server and client information, refer to data sheet *S4190-0016*

Available with three connection options:

- Eight Ethernet wired ports with RJ-45 terminations
- Four wired ports and two single-mode fiber optic ports (SC connectors)
- Four wired ports and two multimode fiber optic ports (SC connectors)

Earth faults are reported three ways:

- An on-board IDNet Supervised IAM is available for connection to a compatible Simplex fire alarm control panel
- An on-board trouble relay provides contact transfer
- On-board LEDs identify fault location per port

Description

Overview

Fire Alarm Ethernet Switches combine an Ethernet switch module with an earth detection circuit (for wired Ethernet connections), housed in a dedicated cabinet. Using Fire Alarm Ethernet Switches allows interconnection of a TrueSite workstation server, and multiple TrueSite workstation clients, into a dedicated Fire Alarm LAN. When networked, the TrueSite workstation clients can monitor and (if authorized) control fire alarm system activity. If additional connections or increased distances are required, Fire Alarm Ethernet Switches can be connected to additional switches.

Switch Details

The Fire Alarm Ethernet Switch uses an Ethernet switching hub to bridge between connected data links. It also has the ability to segment the Ethernet network in separate collision domains for network survivability.

Switch Operation

Data packets are inspected to determine the source and destination address of each packet, then forwarded accordingly. Simultaneous data exchanges are allowed on different data links, resulting in more throughput. Operation is either half-duplex or full-duplex.

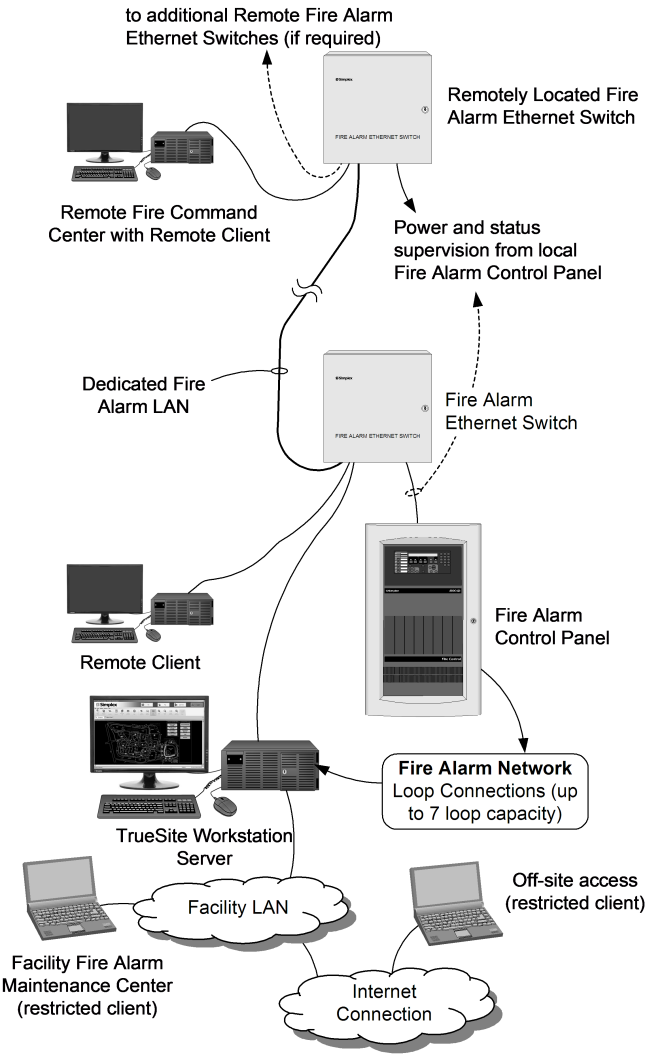

Figure 1: Fire Alarm Ethernet Switch Connection Reference

Switch Communications Support

Wired Ethernet Communication protocols include 10BASE-T or 100BASE-TX, allowing network Ethernet connection speeds of 10 Mbps or 100 Mbps. Models with fiber optic ports allow Fire Alarm Ethernet Switches to be interconnected using the advantages of fiber optics connections. Fiber optics ports operate at 100BASE-FX.

Earth Fault Detection

When an earth fault is detected by the Earth Detection Module, it triggers a general trouble for external monitoring. Monitoring is performed by either communicating with the on-board IDNet IAM or by monitoring the trouble relay contacts.

Detailed Earth fault status is indicated by the on-board status LEDs (see Specifications).

* Refer to Product Selection for listing specifics. 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 7300-0026:336 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. and the product names listed in this material are marks and/or registered marks. Unauthorized use is strictly prohibited. NFPA 72 and National Fire Alarm Code are registered trademarks of the National Fire Protection Association (NFPA).

Product Selection

Note: Ethernet Switch equipment and accessories are ordered as options for use with TrueSite Workstation and Incident Commander upper level product selection model numbers per the System Order Reference section below. For additional product information, refer to data sheet S4190-0016 for TrueSite Workstation and S4190-0020 for TrueSite Incident Commander.

Table 1: System Order Reference (to be selected per order type)

Model	Description
4190-8401	TrueSite Workstation, Standard Operation
4190-8403	TrueSite Workstation Fire Proprietary Supervising Station
4190-8404	TrueSite Incident Commander Annunciator
4190-8405	TrueSite Incident Commander Supervising Station Control Unit
4190-8410	TrueSite Workstation Remote Client
4190-8411	TrueSite Incident Commander Remote Client
4190-8901	Aftermarket Hardware Additions

Table 2: Fire Alarm Ethernet Switches (agency listed for fire alarm)

Model	Connections	Description	Listings
4190-6050	Eight wired Ethernet connections	Fire Alarm Ethernet Switch, 24 VDC, red cabinet; with Earth Detection on wired connections	UL 864 and ULC S527 **NOTE:** Each Server and Client LAN connection requires a 4190-6010 Transient Suppressor, except for server to client connections when both are in the same room; see below for suppressor details; Ethernet Switch power shall be provided by a listed fire alarm power supply
4190-6054	Four wired Ethernet connections and two single-mode fiber optic connections		
4190-6055	Four wired Ethernet connections and two Multimode fiber optic connections		

Table 3: Ethernet Switches (not agency listed for fire alarm)

Model	Connections	Description	Listings
4190-6051	Eight wired Ethernet connections	Ethernet Switch only; 6 W @ 10-36 VDC; 6 VA @ 8-24 VAC; use Power Adapter per below	UL 864 Recognized component, does not include Earth detection module or cabinet Dimensions: 5-11/16 in. x 7-3/8 in. x 1-3/4 in. (145 mm x 187 mm x 44.5 mm)
4190-6056	Four wired Ethernet connections and two single-mode fiber optic connections		
4190-6057	Four wired Ethernet connections and two Multimode fiber optic connections		

Table 4: Ethernet Switch Power Adapters (select one for each 4190-6051, 4190-6056, or 4190-6057; Power Adapters are NOT for use with Fire Alarm Ethernet Switches 4190-6050, 4190-6054, or 4190-6055, they require connection to a fire alarm power supply)

Model	Description	Ratings	Housing Size
4190-6052	Wall Mount Power Adapter with 6 ft (1.8 m) cord	Input: 120 VAC, 60 Hz, 20 W Output: 24 VAC, 650 mA	2-1/4 in. W x 2-15/16 in. H x 1-7/8 in. D (56 mm x 74 mm x 48 mm)
4190-6053		Input: 240 VAC, 50 Hz, 78 mA Output: 24 VAC, 650 mA	2-5/16 in. W x 3-3/16 in. H x 1-15/16 in. D (58 mm x 80 mm x 49 mm)

Table 5: Transient Suppressor for LAN/WAN Connection

Model	Description
4190-6010	Required for agency listing except for server to client connections that are in the same room; mounts on rear of PC frame for desktop or rackmount computers

Interconnection Reference

For additional information, refer to Installation Instructions *579-903*.

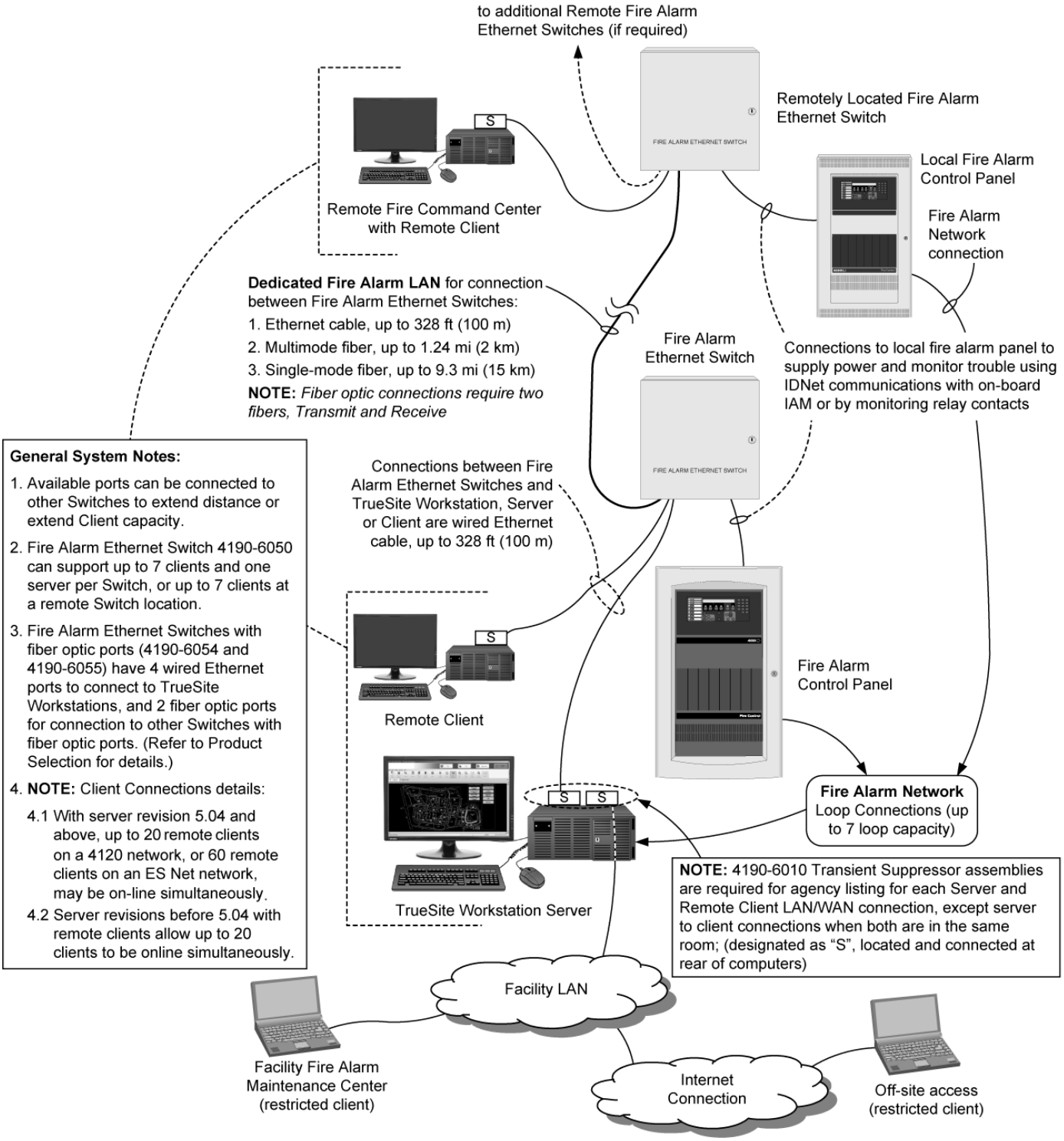

Figure 2: Interconnection Reference

Note: Arrangement shown for reference only. Wiring pairs shown as one-line for typical reference only. The TrueSite Workstation and Incident Commander PCs have 2 Ethernet ports. For ES Network (ES Net) applications, the ES Net NIC connection uses (1) Ethernet port, leaving (1) Ethernet port available for a connection to either an agency listed (dedicated) Fire Alarm LAN or a customer's LAN (not both).

Specifications

Table 6: Electrical

Specification		Details			
Input Power	Input Voltage	24 VDC nominal, from listed fire alarm power supply			
	Input Current	300 mA maximum			
Common Trouble Relay		Form C contact rated 0.3 A @ 125 VAC resistive; 1 A @ 30 VDC resistive			
Wiring Connections for Power, IDNet Communications, and Trouble Relay Contacts		Screw terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)			
Ethernet Cable Connections		RJ-45 jacks			
Ethernet Cable Data Rates		10 Mbps and 100 Mbps			
Ethernet Cable Wiring Distance		Up to 328 ft (100 m) at 10 Mbps with Cat3 cable			
		Up to 328 ft (100 m) at 100 Mbps with Cat5 cable			
Fiber Optic Cable Distance (for connection between Fire Alarm Ethernet Switches)		**Model**	**Fiber and Distance**	**Optical Budget**	**Connection Details**
		4190-6054	Single-mode fiber up to 9.3 miles (15 km)	19 dB	**Note:** Requires two fibers per connection; Transmit and Receive
		4190-6055	Multimode fiber up to 1.24 miles (2 km)	13 dB	
Fiber Optic Cable Connections		Type SC connectors			
Earth Detection Module Diagnostic LEDs		**Color**	**Function**	**Description**	
		Green	Power-on LED	On when power is present	
		Red	IAM LED	Flashes to indicate IDNet communications are being received	
		Yellow	Common Earth Fault LED	On steady when an earth fault is detected on any of the Ethernet ports	
		Yellow	Earth Monitor Disabled LED, one per Ethernet Port	If port has earth detection disabled, LED is on steady	
				If port has earth detection enabled, LED flashes to indicate that port has an earth fault	
Ethernet Switch Module Diagnostic LEDs		**Color**	**Function**	**Description**	
		Green	Power-on LED	On when power is present	
		Green	Link Indicator	One per port, indicates a valid Ethernet link has been established	
		Yellow	Data Rate	One per port, indicates when data is transferring at 100 Mbps	

Table 7: Mechanical

Specification	Details
Cabinet Specifications	13-1/2 in. W x 13-1/2 in. H x 3-5/16 in. D (343 mm x 343 mm x 84 mm), with locking door, lift-off hinge on left side; refer to page 4 for additional information

Table 8: Environmental

Specification	Details
Temperature	32° to 120° F (0° to 49° C) indoor operation only
Humidity Range	Up to 90% RH at 90° F (32° C) non-condensing

Installation Reference

For additional information, refer to installation instructions *579-903*.

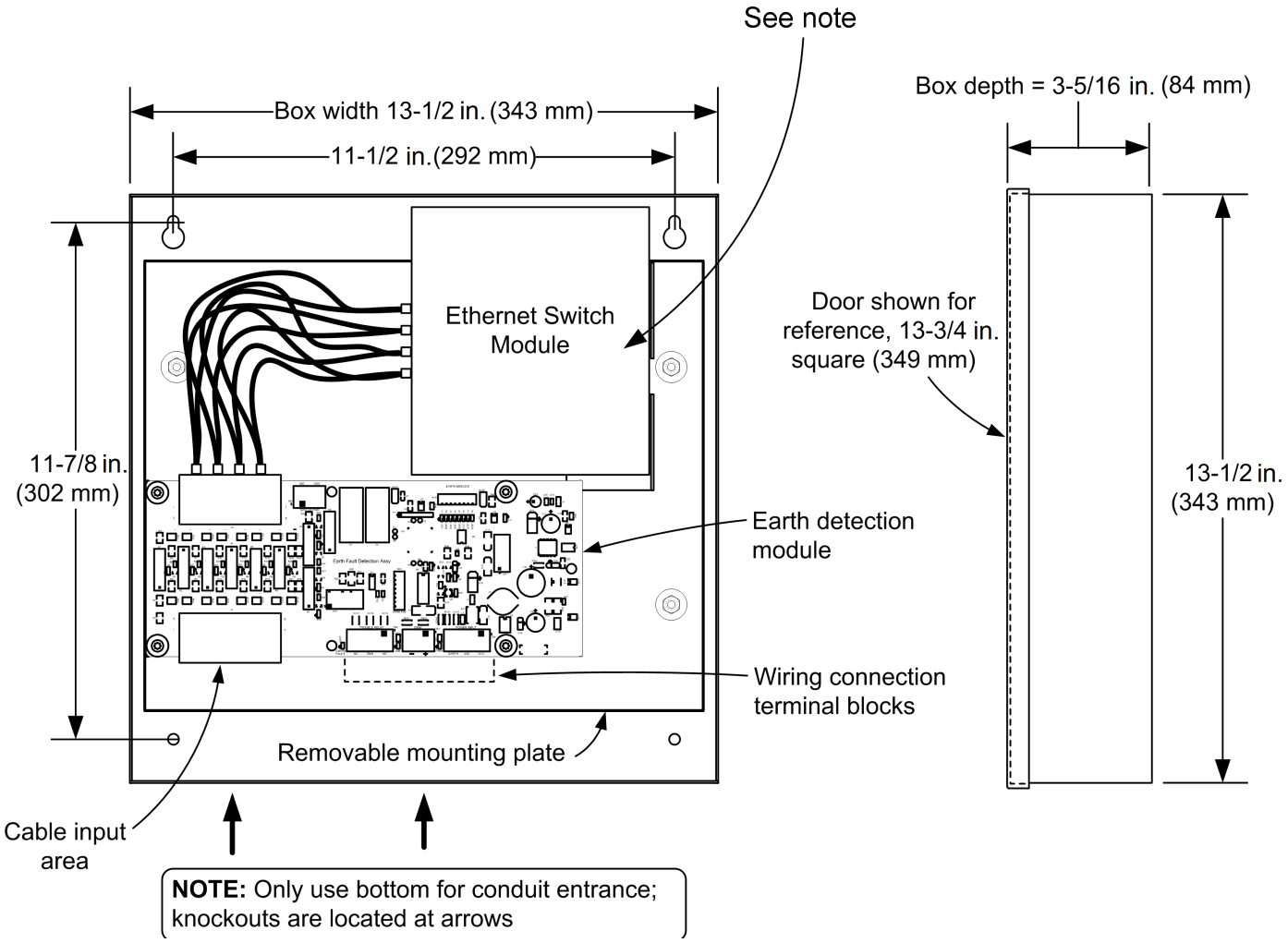

Figure 3: Installation Reference

Note:

Model 4190-6050 (eight wired ports) shown for reference; fiber optic connections for models 4190-6054 and 4190-6055 are made directly to the Ethernet Switch Module.

Additional TrueSite Product Reference

Table 9: Additional product reference

Subject	Data Sheet
TrueSite Incident Commander	S4190-0020
TrueSite Workstation	S4190-0016

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