

Features

Real time data gathering and diagnostics for fire alarm control panel systems:

- An internally mounted interface module securely connects the panel computer port protocol interface to an Ethernet connection allowing information about trouble (or potential trouble) conditions to be sent to the remote service via an Internet connection
- At the remote service center, receipt of trouble information triggers an email to an experienced technician who reviews the information and can further query the panel for more information as the condition is investigated; (**NOTE:** Alarm information is only logged by this service; Alarm information must be sent separately to the designated monitoring/response location.)
- Technicians can connect to the panel from a remote location via secured internet communications and interrogate the system status
- After details of the panel status are analyzed, the service personnel dispatched to the site can be selected for their specific experience and equipped with the needed replacement parts and tools before visiting the site
- TrueInsight Remote Service logs panel activity (troubles and alarms) and maintains it for one year allowing detailed activity historical review or forensic review if required

For use with Simplex® 4100ES, 4010ES, and 4100U Fire Alarm Control panels:

- **Model 4100-6049** is for use with 4100ES and 4100U control panels
- **Model 4010-9919** is for use with 4010ES control panels
- Modules connect without need for panel programming

Secure Communications:

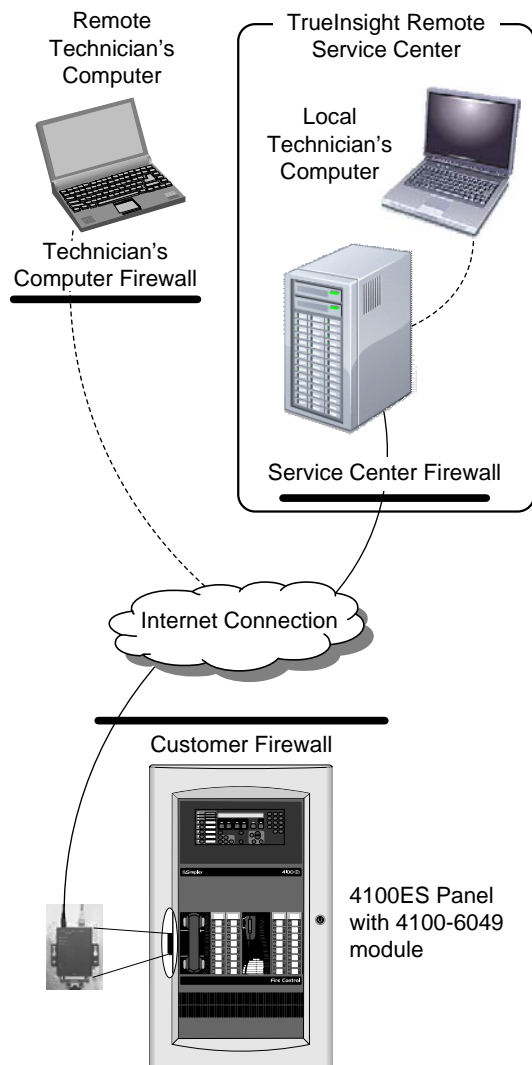
- Control panel interface module is connected behind customer's firewall
- Receiving equipment resides under the Remote Service Center firewall or under the individual technician's computer firewall
- Customer to provide network access/connectivity

Additional Information:

- Contact your local Simplex product representative for specific details on how to connect your panel to TrueInsight Remote Services

Introduction

Connecting to Control Panel Intelligence. 4100ES, 4010ES, and 4100U addressable fire alarm control panels provide intelligent monitoring of internal modules, incoming power, battery connections, and of connected remote devices and appliances such as TrueAlarm analog sensors, TrueAlert addressable notification, devices controlled by IDNet communications, and the connected wiring. TrueInsight Remote Service monitors this information and takes action when trouble conditions are reported.



TrueInsight Remote Services Reference Diagram
(4100ES shown for reference)

Trouble Condition Sources

Modules and remote devices of a fire alarm control panel are interconnected with internal wiring harnesses and with external wiring. Over time, or even during initial installation, those connections may become loose or otherwise compromised. Due to module and wiring supervision, these trouble conditions are discovered and their locations are identified by the panel.

(continued next page)

* This product has been listed by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listings 7165-0026:0251 and 7165-0026:0369 for allowable values and/or conditions concerning material presented in this document. It is subject to re-examination, revision, and possible cancellation. This product was not FM approved or accepted by the NYC FD as of document revision date. 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.

Trouble Condition Sources (Continued)

Devices and their wiring are subject to motion.

Mechanical wiring disturbances can be due to a variety of subtle or significant activity such as earthquakes (even seemingly minor earthquakes may shake buildings more than expected), forklift activity coming closer than planned, large fire doors or outside shipping dock doors slamming shut closer to fire alarm devices than realized, and other human intervention can unintentionally cause fire alarm wiring connections to become loose or broken. When the panel discovers this type of condition, it declares a trouble, the circuit and specific condition is logged and identified with a local sound and flashing yellow light, however the exact details are not normally available other than by querying the individual panel for more information on-site. Accessing this information remotely allows TrueInsight Remote Service personnel to determine the source of the trouble including which devices by specific model number may be involved.

Smoke sensors get dirty. TrueAlarm smoke sensors are open to the environment in order to sample for the presence of smoke particles. This also allows a collection of dirt or other debris, sometimes a lot of it, and in a short period of time. TrueAlarm technology compensates very well up to the point where a device is identified as dirty and needs to be inspected and cleaned. Knowing that a sensor is in need of service before it actually gets out of compensation allows a system to provide essentially uninterrupted service.

TrueAlarm Sensor Monitoring. TrueAlarm smoke sensing tracks the Peak Analog Value associated with each sensor's environment.

TrueAlarm Sensor Monitoring (Continued).

Should a difficult environment experience nuisance alarms, this diagnostic tool can be accessed remotely as a means of analyzing the stability of the sensor's environment. This allows the sensor sensitivity to be properly selected for its actual environment ensuring optimal response time and protection from nuisance alarm sources.

Batteries wear out. Fire alarm control panels typically rely upon internally mounted, or perhaps remotely mounted batteries with battery chargers to provide power during local AC mains failure. Rechargeable batteries are complex chemical/mechanical/electrical designs and after repeated charge and discharge cycles, will begin to lose total capacity. By monitoring battery capacity at the panel, battery condition can be tracked, but to better understand battery charging status, detailed charger operation needs to be queried. Using TrueInsight Remote Service allows that extra information to be investigated to diagnose specific panel conditions and then to determine whether it is time to replace batteries, inspect battery connections, or to test the battery charger, allowing the anticipated equipment to be available at the time of a service call.

Monitoring includes communicating devices and devices they monitor. With IDNet communications, these panels monitor and control a wide variety of remotely connected devices. If communications fail to properly operate, the device(s) not communicating are identified. If the devices are in turn monitoring connections local to their location, such as relay coils, conventional IDCs or NACs, problems with those connections are communicated back to the control panel.

TrueInsight Module Specifications (refer to Installation Instructions 579-953 for additional information)

Module mounting	4100ES or 4100U	Left side of expansion bay bracket, preferred location is bay 2			NOTE: Module locations do not require bay space
	4010ES	On back side of dress panel			
Voltage		24 VDC, system supplied			
Current	62 mA in standby				
	73 mA maximum when active				
Environmental		10 to 93% RH from 32° to 120°F (0° to 49° C)			
Connection Requirements	System Power; RS-232 Communications Port to panel; Ethernet RJ45 connection				
	NOTE: When possible, terminate the Ethernet drop in the panel enclosure. If not possible, and the panel is in a secure area, locate an external drop within 6 ft (1.8 m) of the panel enclosure.				
Module LED Diagnostics (5 LEDs)	Power/Ready: Steady Green = system ready; Flashing Green or Flashing Yellow = system is booting up (details are described in Installation Instructions); Red = Error condition				
	Link/10/100: Green = 10 Mbit connection; Yellow = 100 Mbit connection; Dark = no connection				
	Activity: Steady Green = heavy traffic; Flashing Green = some traffic; Dark = no traffic, possibly no connection				
	Transmit (Tx): Flashing or Steady Green = sending data				
	Receiver (Rx): Flashing or Steady Green = receiving data				
Simplex Product Reference	Product	4100ES	4010ES	TrueAlarm Sensors	TrueAlarm Addressable Notification
	Data Sheet	S4100-0031	S4010-0004	S4098-0019	S4009-0003

Ethernet Connection Guidelines

Determine Connection Location Type:

1. **Panel Location requiring internal connection.** If the panel is located in a lobby or other public area, or is semi-flush with the box essentially fully mounted in the wall, an internal connection is recommended, and most likely required.
2. **Panel Location allowing external connection.** If the panel is in a utility or telecom closet, or other controlled access location, and is surface mounted with the box fully exposed, an external jack connection is acceptable if desired.

Wiring Alternatives:

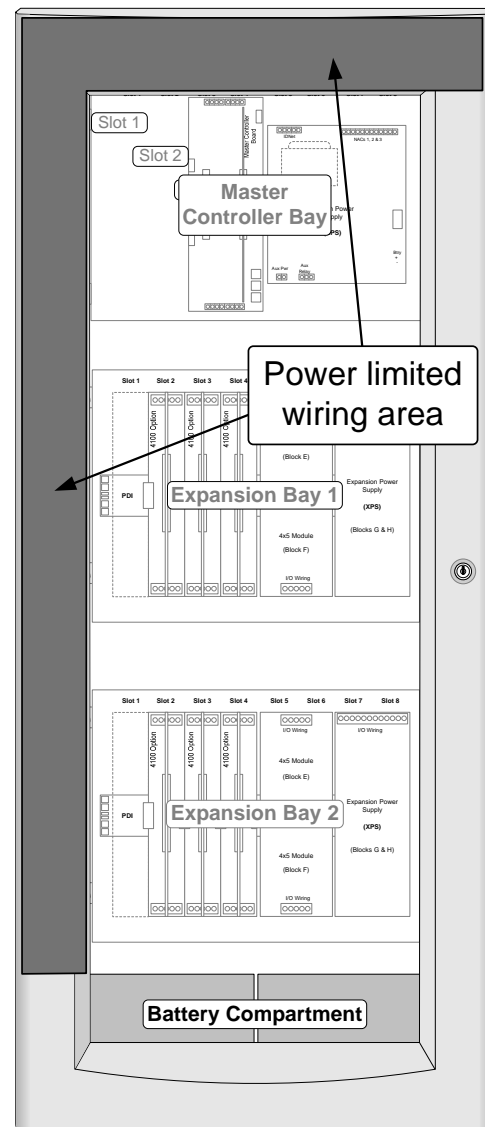
1. **Internal Connections.** Run Ethernet cable through existing conduit if the conduit is not beyond capacity (as defined per local codes and standards) and contains **only power-limited signal wiring**. Ethernet cable should not be run in the same conduit as AC power as this will interfere with signal integrity and it may not meet local code. Terminate the cable with an RJ-45 Male connector or install an RJ-45 Female jack (preferred). Attach the female jack to the internal sides of the back box, in the power-limited area of the cabinet (see illustration to the right). Use an adhesive style mount and follow the manufacturer's instructions such as to use a cleaning solvent like alcohol on the box surface before you mount it.
2. **External Connections.** If the Ethernet cable cannot be run into the cabinet directly, locate the termination within 6 ft (1.8 m) of the panel, on the power limited sides, and preferably terminated with an RJ-45 Female jack. If you have local IT requirements for specific color wire, provide the desired color patch cable to extend from the jack to the panel. To allow for internal wiring requirements, the patch cable length needs to be 8 to 10 ft (2.4 m to 3 m) longer than the distance from the jack to the panel. (If the connection is to be provided as a cable terminated with a RJ-45 Male connector instead of a Female jack, the distance requirement remains, adequate cable for a clean connection to the panel plus 8 to 10 ft additional for internal cable routing.)

Panel Access Precautions:

1. If you do not have conduit available or are unsure about where to route the cable, do not drill into the panel box. Leave a spool of cable in the ceiling or the vicinity of the panel (long enough to be routed into the panel) and coordinate with your Simplex technical representative as to how to proceed.

Acceptable Cable Types:

1. Use EIA/TIA-568a CAT-5-Compliant Cable or better.
2. Either Unshielded (UTP) or Shielded (STP) Cable is Acceptable.



Three-Bay 4100ES Showing Power Limited Wiring Area (in dark gray)

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