

Features

Compatible with Simplex 4120 Network Provides flexible integration of fire alarm control panels into Simplex® 4120 fire alarm networks:

- Communication between the 4120 fire alarm network and other fire alarm control panels is via isolated contact closure connections
- Typical compatible controls include Simplex fire alarm control panel model series 4005, 4006, 4008, etc., and non-Simplex fire alarm control panels
- Operating power is provided by the host node control panel using low voltage wiring connections
- A wide input voltage range of 10 to 33 VDC allows compatibility with either 24 or 12 VDC systems
- 4120 Network media modules are ordered separately as wired or fiber optic connections, suitable for Class B (Style 4) or Class X (Style 7) operation

Network System Integrator (NSI) inputs:

- The host node control panel provides input to the Network System Integrator (NSI) via eight (8) polarized, optically coupled and isolated connections
- Input voltage range is 10 VDC to 33 VDC

Network System Integrator (NSI) outputs:

- The host node control panel receives network information from the NSI via relay contact closures
- Eight (8) contact closure outputs are available, one is dedicated as the trouble contact (Output 2), the other seven are system programmable per application
- Output 1 has dual contacts, Outputs 2-8 are single contacts, each selectable as N.O. or N.C.
- Contacts are rated 1 A @ 24VDC/25 VAC and 0.5 A @ 70 VAC

Mechanical packaging:

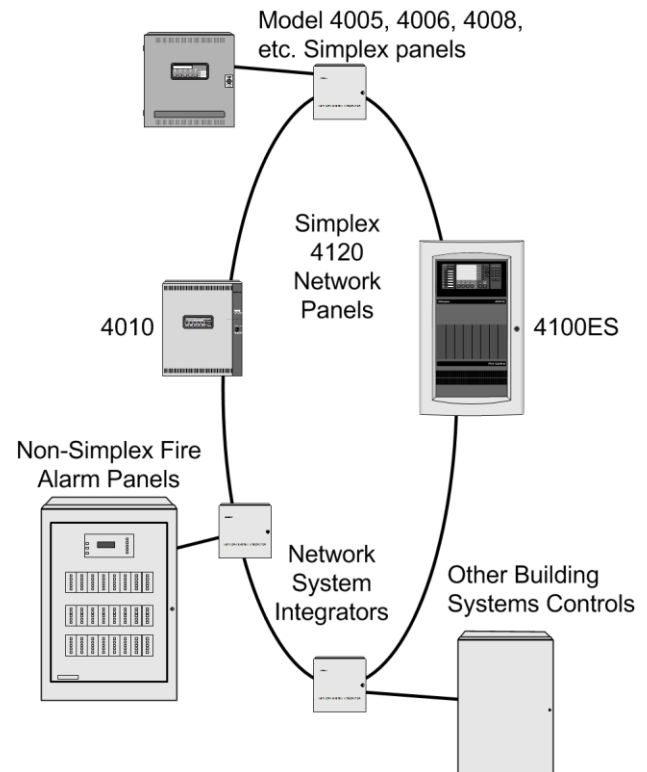
- Small 13 1/2" square (343 mm) cabinet size allows convenient mounting;
- Available with beige or red cabinet

Service mode:

- A technician activated network bypass mode is available with temporary battery connection to allow unpowered service of the host node control with the NSI remaining on-line to maintain network communications

Listing information:

- FM tested and approved to UL Standard 864, 9th edition, and NFPA 72, the *National Fire Alarm and Signaling Code* for connection to agency listed/approved fire alarm control panel
- Due to the NSI input and output design, the NSI is also capable of compatibility with other building system controls including products used for Emergency Communications Systems (ECS/Mass Notification); subject to local authority having jurisdiction (AHJ)



Network System Integrator Application Sample

Description

Network System Integrators (NSI) provide a gateway between a fire alarm control panel and a Simplex 4120 fire alarm network. This allows the network to monitor voltage inputs from, and provide contact closure information to, host node control panels not equipped for direct network communications. The integrated control panel with NSI resides as a unique node on the 4120 fire alarm network.

Connections. NSI power, input voltages, contact closure voltages, and battery backup are supplied by the host node control. NSI network connections are similar to other 4120 network products using a “left” and “right” port provided by plug-in media cards, either wired or fiber optic, Class B or Class X operation.

Information to the NSI. Information is received by the NSI from the host node panel via eight optically isolated inputs capable of receiving 10 to 33 VDC from the host panel. Since each input is optically isolated, the source of the control can be either relay contact or transistor controlled circuits. Inputs can be from different sources.

* This product was tested and approved by FM Approvals against standard FM testing referenced to NFPA 72, ANSI/UL Standard 864, 9th Edition, and CAN/ULC S527. 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 7300-0026:329 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. are the property of Tyco Fire Protection Products.

Description (Continued)

Information from the NSI. Information is transferred from the NSI to the host node panel using eight relay circuits. Relay 2 is dedicated to advise the host node control of an NSI trouble and is held normally energized. Loss of power to the NSI, or other onboard NSI trouble will transfer the trouble contact. The remaining seven relay functions are programmable at the NSI.

Wiring connections between the NSI and the host node control panel are not supervised by the NSI.

Synchronization of Notification Appliances.

The 4120 network can support synchronization of notification appliances across all nodes on the network. When an NSI is part of the network, synchronization of notification appliances over the network is not supported. However, there is synchronization of notification appliances at the individual node level.

Mounting Considerations. Supervision of wiring connections, if provided, is supplied by the host node control panel. For applications where connections are not supervised, the connections must be in conduit with a distance no greater than 20 ft (6 M).

Service Mode. For authorized service operation, the NSI is provided with an optional battery input allowing the network loop to remain intact when the host node panel is unpowered for servicing. The NSI does not provide charging to this service battery connection. Normal battery backup is provided by the host node control panel.

Additional Information. For additional information, refer to Installation Instructions 579-876.

Product Selection

Model	Description	
4190-9830	Red Cabinet	Network System Integrator cabinet assembly; up to 2 media cards required, order separately (see below)
4190-9831	Beige Cabinet	
4100-6056	Wired network media card	For direct mounting onto the NSI (up to 2 media cards required).
4100-6301	Left port, single-mode 4120 duplex fiber media card	For direct mounting onto the NSI (up to 2 media cards required). Maximum of 1 left port and 1 right port duplex fiber media card per NSI. Field connections require left port to right port pairing. Order fiber media service kits for retrofit jobs where ST connectors are already installed (refer to data sheet S4100-0056 for full fiber media module specifications and retrofit information)
4100-6302	Right port, single-mode 4120 duplex fiber media card	
4100-6303	Left port, multi-mode 4120 duplex fiber media card	
4100-6304	Right port, multi-mode duplex 4120 fiber media card	

Specifications

Electrical					
Input Power	Input Voltage Range	10 VDC to 33 VDC, 3.5 W maximum			
	with 12 VDC input	300 mA maximum input current @ 10 VDC			
	with 24 VDC input	175 mA maximum input current @ 20 VDC			
Input to NSI from Host Node Control	Input type	8 optically isolated inputs			
	Input voltage range	10 to 33 VDC, voltage supplied by host node control panel or other compatible voltage source			
	Input requirements	1 mA minimum required for activation; input resistance = 9.5 kΩ			
Output from NSI to Host Node Control	Contact Details	Eight (8) contact closure outputs: Contact 1 provides dual connections, Contacts 2-8 provide single connections; Contact 2 is dedicated as Trouble Indication; each contact output is jumper selectable as N.O. or N.C.			
	Contact Ratings	1 A @ 24 VDC or 25 VAC; 0.5 A @ 70.7 VAC, resistive; supply current protection externally using listed in-line fuse and fuseholder or equivalent current limiting to contact ratings			
Wiring Connections Between Host Node Control Panel and NSI		Screw terminals 18 to 14 AWG (0.82 mm ² to 2.08 mm ²)			
Network Connection Wiring		Fiber optics or wired; wired connection terminals for 24 AWG to 18 AWG (0.205 mm ² to 0.82 mm ²)			
Network Connection Reference (refer to Installation Instructions 579-876 for additional information)	Wired Network Connections	Wiring Parameter			
		with 18 AWG, TSP*	with 24 AWG, TP*		
		Maximum line-to-line capacitance	58 pF/ft (190 pF/m)	22 pF/ft (72 pF/m)	
		Maximum distance @ 57,600 bps	10,000 ft (3 km)	7000 ft (2.13 km)	
	Maximum distance @ 9600 bps	17,000 ft (5.18 km)	12,000 ft (3.65 km)		
* TSP = twisted, shielded pair; TP = twisted pair	Duplex Fiber Optic Network Connections	Fiber type	Compatible fiber	Maximum total attenuation	Maximum Distance
		Single-mode	Nominal 9/125 μm	22 dB	82,000 ft (25 km)
		Multi-mode	50/125 μm or 62.5/125 μm graded index	18 dB	16,400 ft (5 km)

Specifications (Continued)

Mechanical

Cabinet Specifications	13 1/2" W x 13 1/2" H x 3 5/16" D (343 mm x 343 mm x 84 mm), with locking door, lift-off hinge on left side; knockouts on left side, top, and bottom; refer to page 3 for additional information
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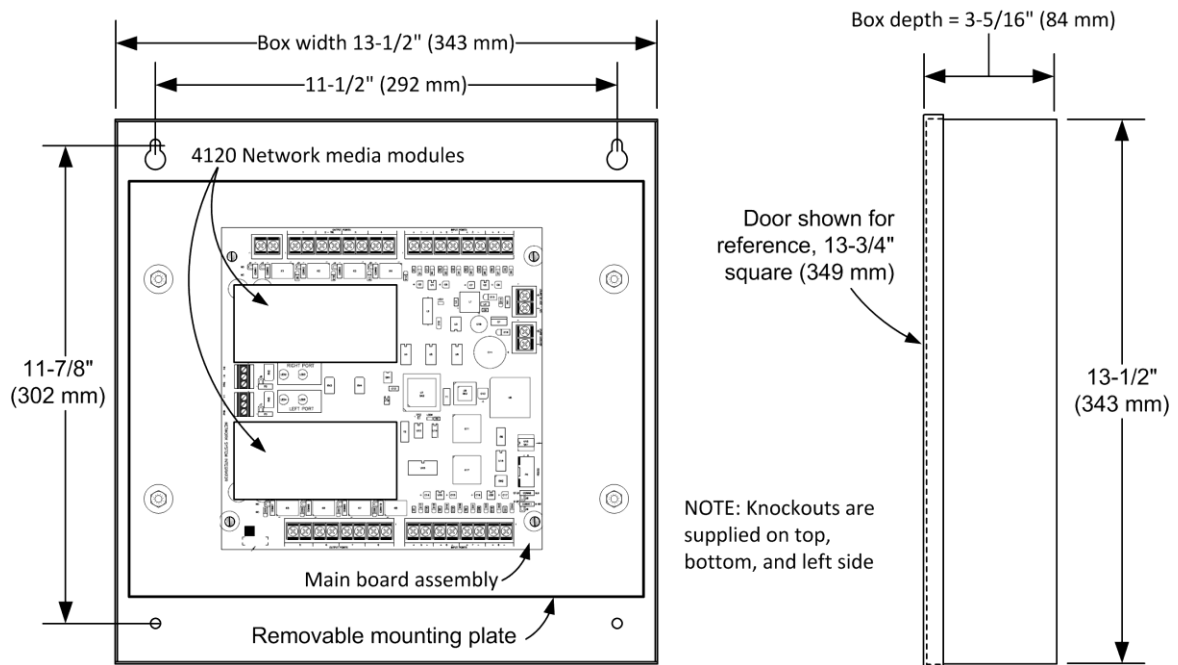
Environmental

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

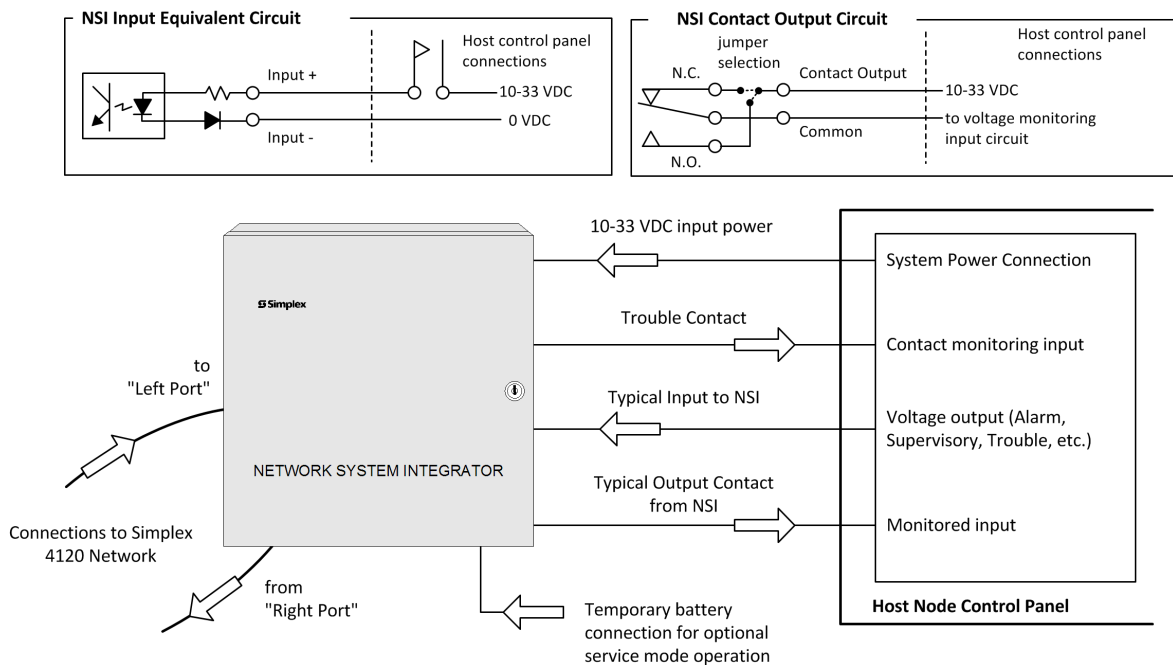
Additional 4120 Network Product Reference

Subject	Data Sheet
4120 Network Products and Specifications	S4100-0056

Installation Reference



Interconnection Reference



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