

Features

Compatible with Simplex 4120 Network

Provides additional Simplex 4120 Network connection flexibility using modem communications:

- 4120 Network topologies include ring (loop), star (hub), and combinations
- Connections can include linking of two 4120 Network loops into one network
- Total Network/System linking can include passing communications through up to three physical bridge links
- Hub nodes in the fire alarm control unit connecting to Star communications wiring assist in expansion and retrofit of existing Simplex 2120 Multiplex systems.

Note: Refer to datasheet *S4190-0016* for details on the Serial Line Interface (SLI) for connection to multiple 2120 systems using a TrueSite workstation.

Available for Simplex 4100ES, 4100U, and 4010ES Series fire alarm control units:

- Standard physical bridge modules include wired media modules for 4120 Network connections and a modem media module for bridge connections
- Models are available for Class B or Class X communications
- Fiber optic media modules can be field installed as required for 4120 Network communications
- Also compatible with legacy 4100/4100+/4020 Series control units

UL Listed to Standard 864

Description

Network Connection Flexibility. Physical bridge modules provide an intelligent network link that increases the flexibility of Simplex 4120 Networks. Communications between the physical bridge modules use a proprietary, full duplex, two-wire modem protocol for efficient information transfer. Additionally, each physical bridge module functions as a "proxy" for its remote node information to maintain overall network performance.

Multiple 4120 Network Loop Connections. Connection options include linking of two 4120 Network loops into one network, branching to single or multiple remote nodes using existing two-wire connections, creating hub nodes to form Star configuration systems, and combinations of these connections, providing convenient networking flexibility.

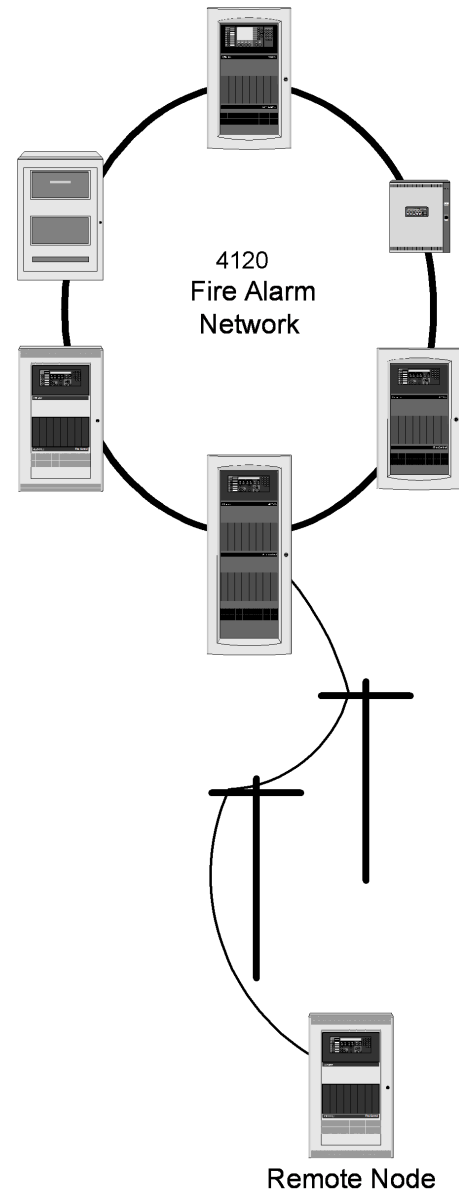


Figure 1: Physical bridge module link connected to a single remote node

Product selection
Table 1: Modules for 4100ES and 4100U

Model	Description	Additional details	Mounting space requirements	Alarm/Supv.
4100-6101	Physical Bridge Class B (Style 4) Module	Includes one modem module and two wired communications modules	Single slot size	210 mA
4100-6102	Physical Bridge Class X (Style 7) Module	Includes two modem modules and two wired communications modules	Two slot size	300 mA
4100-6301	Single-mode, left port 4120 duplex fiber media card	Order separately as needed to replace wired media modules on-site per system requirements	Maximum of 1 left port and 1 right port duplex fiber media card per modular network interface card. 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 datasheet S4100-0056 for full fiber media module specifications and retrofit information.	55 mA
4100-6302	Single-mode, right port 4120 duplex fiber media card			55 mA
4100-6303	Multi-mode, left port 4120 duplex fiber media card			55 mA
4100-6304	Multi-mode, left port 4120 duplex fiber media card			55 mA
4100-0156	8 VDC Converter Module	Required for multiple Physical Bridge Modules, 3 A maximum	Single block module (4 x 5 card) for 4100ES or 4100U only. Not applicable to 4010ES.	N/A

Table 2: Modules for 4010ES

Model	Description	Additional details	Mounting space requirements	Alarm/Supv.
4010-9924	Physical Bridge Class B (Style 4) Module	Includes one modem module and two wired communications modules	Two vertical blocks	210 mA
4010-9925	Physical Bridge Class X (Style 7) Module	Includes two modem modules and two wired communications modules	Two vertical blocks	300 mA
4100-6301	Single-mode, left port 4120 duplex fiber media card	Order separately as needed to replace wired media modules on-site per system requirements	Maximum of one left port and one right port duplex fiber media card per modular network interface card. 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 datasheet S4100-0056 for full fiber media module specifications and retrofit information.	55 mA
4100-6302	Single-mode, right port 4120 duplex fiber media card			55 mA
4100-6303	Multi-mode, left port 4120 duplex fiber media card			55 mA
4100-6304	Multi-mode, left port 4120 duplex fiber media card			55 mA

Hub node connection to star topology

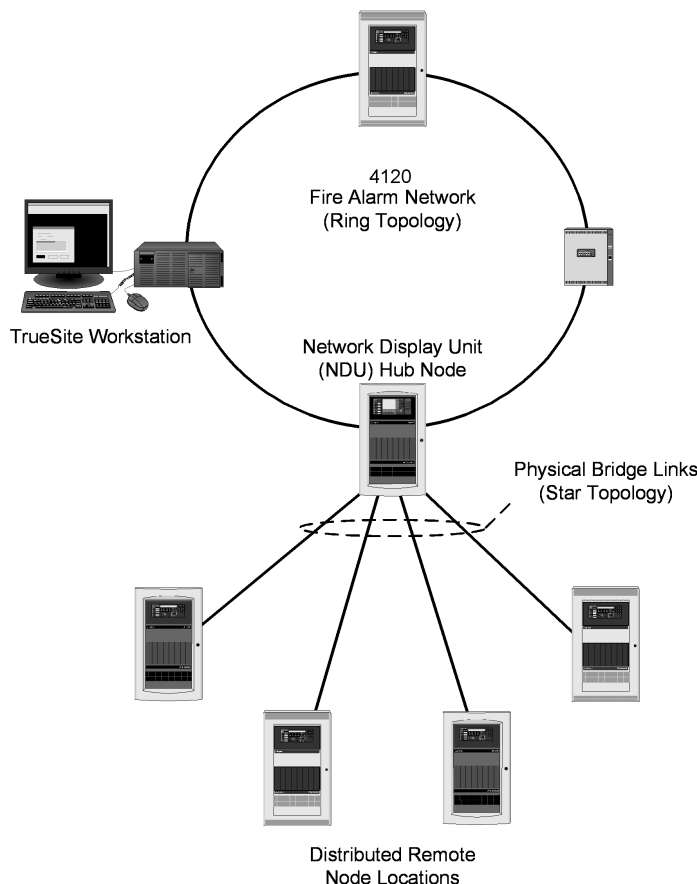


Figure 2: Distibuted remote node locations

Ring to star connections. Figure 2 illustrates the use of multiple physical bridge modules to allow a conventional ring topology 4120 Network to interface into a star topology. Each physical bridge link requires a physical bridge module at each end. A network interface card is required at each node to complete the network communications path (refer to internal block diagrams Figure 3 and Figure 4 for additional information).

Retrofit capability. This example illustrates the flexibility available when retrofitting existing Star connection topology system wiring such as for replacement of Simplex 2120 series Multiplex fire alarm control units.

Additional applications

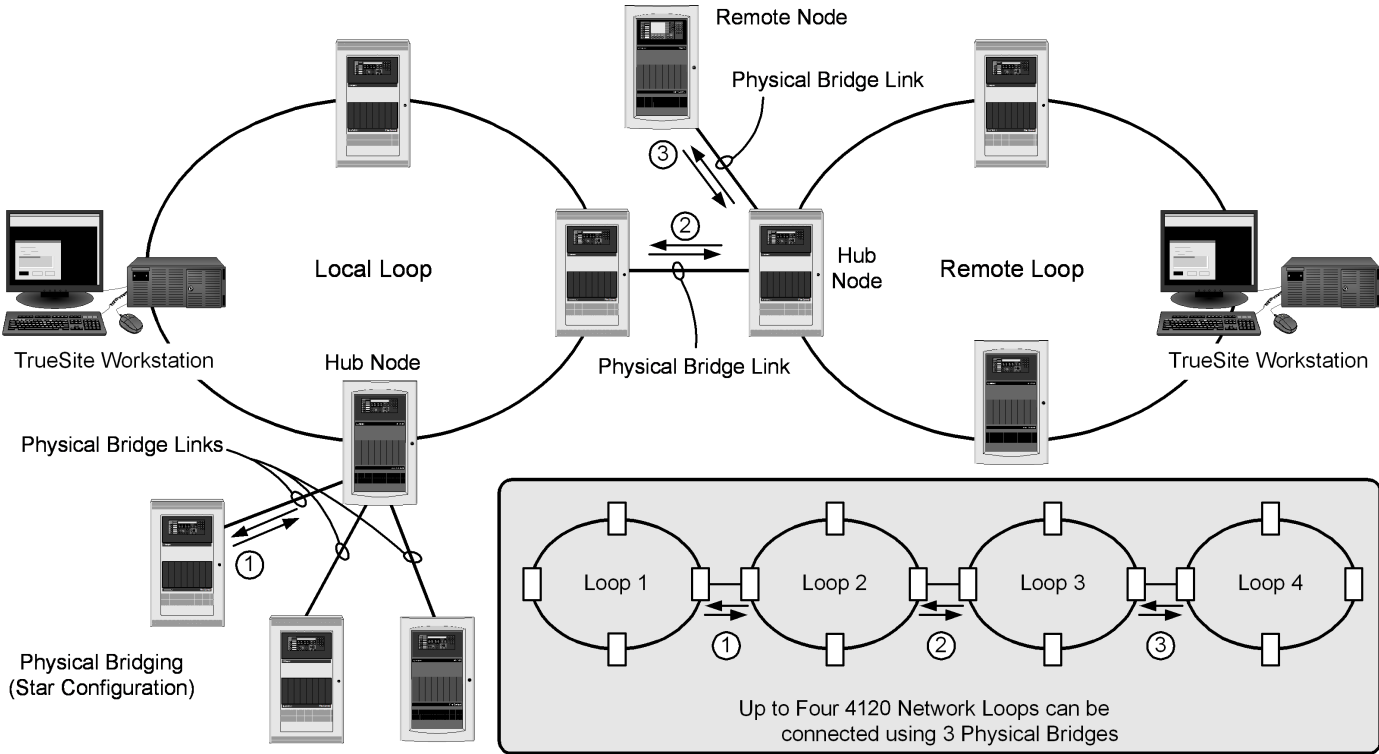


Figure 3: Physical bridges

Figure 3 illustrates network connection flexibility using physical bridges. Network nodes can communicate through up to three physical bridge connections as indicated by the arrows. Star topology bridges each link once back to the hub node and then communicate using standard 4120 Network wired connections.

In the shaded section, with three physical bridge links, up to four separate 4120 Network loops can be connected without star connections.

Basic physical bridge block diagram

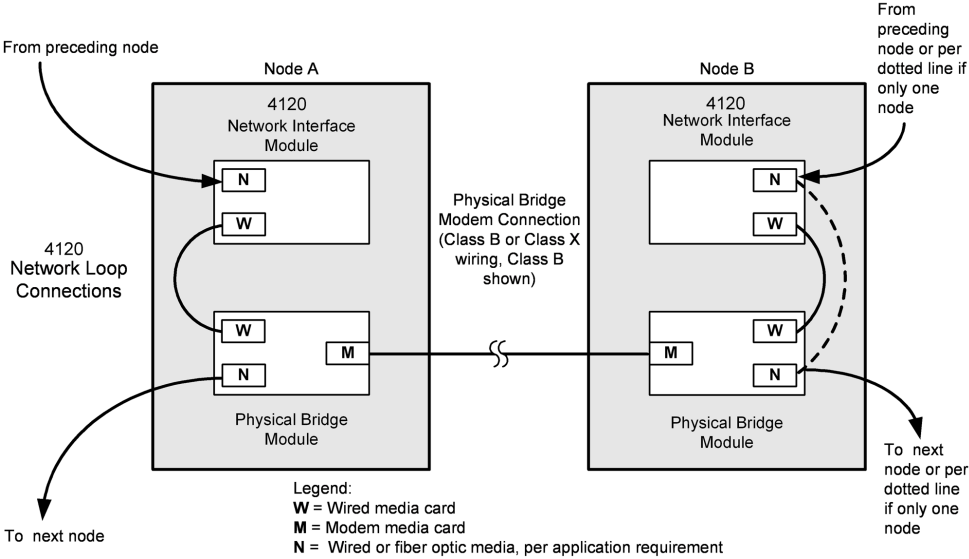


Figure 4: Physical bridge diagram

Specifications

For additional information refer to *Installation Instructions 579-184*.

Table 3: "Short haul" twisted pair lines

Specification	Rating
Maximum distance	26 AWG = 9500 ft (2.85 km)
	24 AWG = 15,000 ft (4.5 km)

Table 4: "Long haul" leased telco lines

Specification	Rating
Maximum distance	Essentially unlimited
Characteristics	Private leased lines for analog data, point-to-point, full duplex, no line conditioning or signaling required, two wire line interface

Table 5: Connections and data information

Specifications	Ratings
Class B (Style 4) Connection	One, 2-wire RJ-11 Interface
Class X (Style 7) Connection	Two, 2-wire RJ-11 Interfaces
Data rate	Up to 14.4 kbps
Throughput	Up to 38.4 kbps using MNP-5 compression and error correction

Table 6: Environmental requirements

Specifications	Ratings
Operating temperature	32°F to 120°F (0°C to 49°C)
Operating humidity	Up to 93% RH, non-condensing at 90°F (32°C) maximum

Physical bridge hub node to multiple star connections block diagram

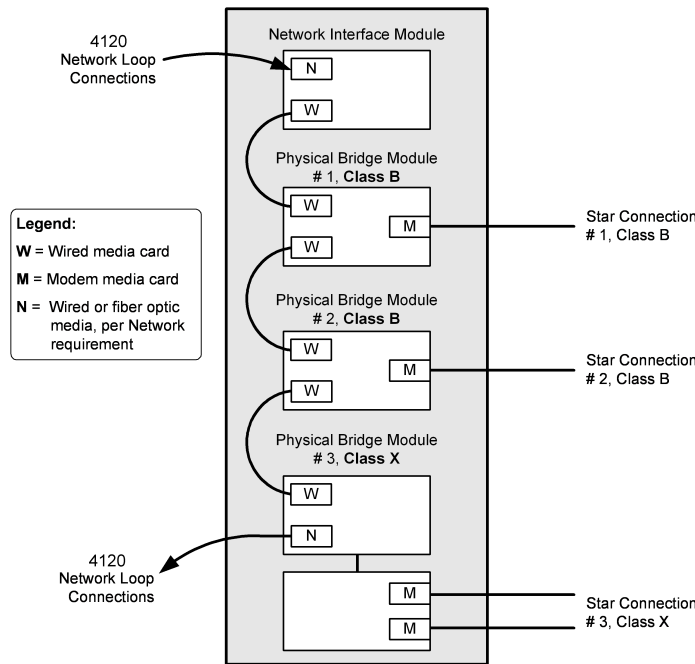


Figure 5: Connections block diagram

Additional 4120 network reference
Table 7: Additional 4120 network reference

Subject	Datasheet
4007ES Hybrid Fire Alarm Control Unit	S4007-0001
4007ES Fire Alarm Control Unit	S4007-0002
4010ES Fire Alarm Control Unit	S4010-0004
4010ES Fire Alarm Control Unit (International)	S4010-0006
4010ES Addressable Basic Control Unit with IDNAC	S4010-0011
4010ES Addressable Basic Control Unit with IDNAC (International)	S4010-0012
TCP/IP Physical Bridge Modules for 4120 Networks	S4100-0029
Multiple Signal Fiber Optic Modems and Accessories for 4120 networks	S4100-0049
Physical Bridge Modules for 4120 Networks	S4100-0057
Building Network Interface Card (BNIC) Models	S4100-0061
4100ES Basic Units with ES-PS Power Supplies	S4100-1031
NDU with ES-PS Power Supplies for 4120 Network	S4100-1036
TrueSite Workstations	S4190-0016
TrueSite Incident Commander	S4190-0020
TrueSite Graphic Annunciator	S4190-0022
TrueSite Graphic Annunciator Incident Commander	S4190-0023
Truesite Mobile Client	S4190-0024
Network Systems Integrator for ES Net and 4120 networks	S4190-0026