Simplex

*UL, ULC, and CSFM Approved**

Fire Alarm Network Products

Network System Integrator (NSI)

Features

Compatible with Simplex ES Net Network and 4120 Network

Provides flexible integration of fire alarm control panels into the Simplex ES Net Network and 4120 Network

- Communication between the ES Net Network and 4120 fire alarm network and other fire alarm control panels is via dry contact closure connections
- Typical compatible controls include Simplex fire alarm control panel model series 4005, 4006, 4008, etc., non-Simplex fire alarm control panels or other building system controls including products for Emergency Communication Systems (ECS/MNS), intrusion alarm, etc.
- Standard equipment provides 8 I/O points, each programmable as an input or relay output
- Includes 6 Amp power supply for auxiliary power with integral battery charger for secondary power requirements
- Optional modules support expansion for up to 32 individually programmable I/O points
- Includes 4120 or ES Net Network Interface Card suitable for Class B or Class X operation (media modules ordered separately)
- The Network Sync feature is supported on the 4120 network only

4.3" (109 mm) Diagonal color touchscreen display:

- Convenient and intuitive user interface provides for NSI status reporting, testing, diagnostics, and historical log access
- Supports dual language selection, including unicode character languages
- A custom background display appears when operation is normal

Software Feature Summary:

- Current and previous NSI configuration are both maintained in on-board memory to allow easy selection of desired revision
- An internal Ethernet service port is available for service computer connections to perform configuration updates, downloads and uploads; report downloads, and system software updates
- Internal USB interface allows a memory stick/thumb drive to store job revisions, update revised jobs and panel software, and save detailed system reports from the NSI

Optional modules and connections include:

- 4120 Network media modules for wired, single-mode or multi-mode fiber optic connections
- ES Net Network media modules for Ethernet, single-mode or multi-mode fiber optic, or DSL connections
- Eight Point Zone/Relay Modules individually selectable as IDC or relay rated 2 A @ 30 VDC (resistive)

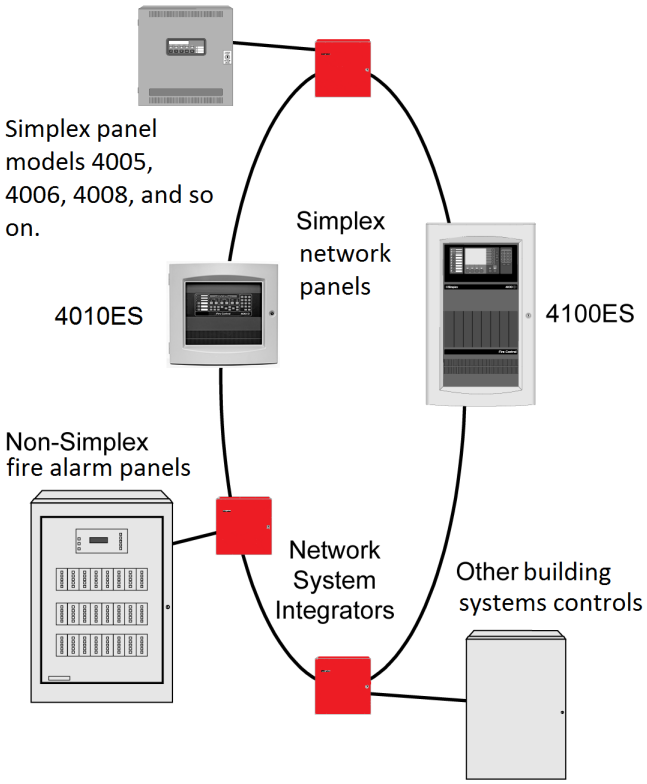
General Mechanical:

- Compact red or platinum cabinet for convenient surface or semi-flush mounting; rated NEMA 1 and IP30

NSI Listings reference:

- UL 864 Control Unit Accessories, System, Fire Alarm (UOXX)
- ULC-S527 Control Unit Accessories, System, Fire Alarm (UOXX7)
- UL 2017 Emergency Alarm System Accessories (FSYE)

Introduction



Network System Integrator

The Network System Integrator provides a gateway between any building control panel into the Simplex 4120 or ES Net fire alarm network. This allows information from other building control panels that are not equipped for direct network communications to be annunciated on the Simplex fire alarm network.

The NSI uses zones to monitor dry contact closures on the building control panel and makes those zones public on the Simplex network, instantly notifying other nodes on the Simplex network of any status change. Dry contact relay outputs from the NSI can also be used to provide status conditions from the NSI or other network nodes to the local building control panel.

Operator Interface

Convenient Status Information. The user interface is a 4.3" diagonal color touchscreen LCD with separate status LEDs as shown below.

LED indicators describe the general category of activity being displayed with the LCD providing more detail. For the authorized user, unlocking the door provides access to the control functions and allows further inquiry by scrolling the display for additional detail.

*Additional listings may be applicable; contact your local Simplex product supplier for the latest status.

Mechanical Description

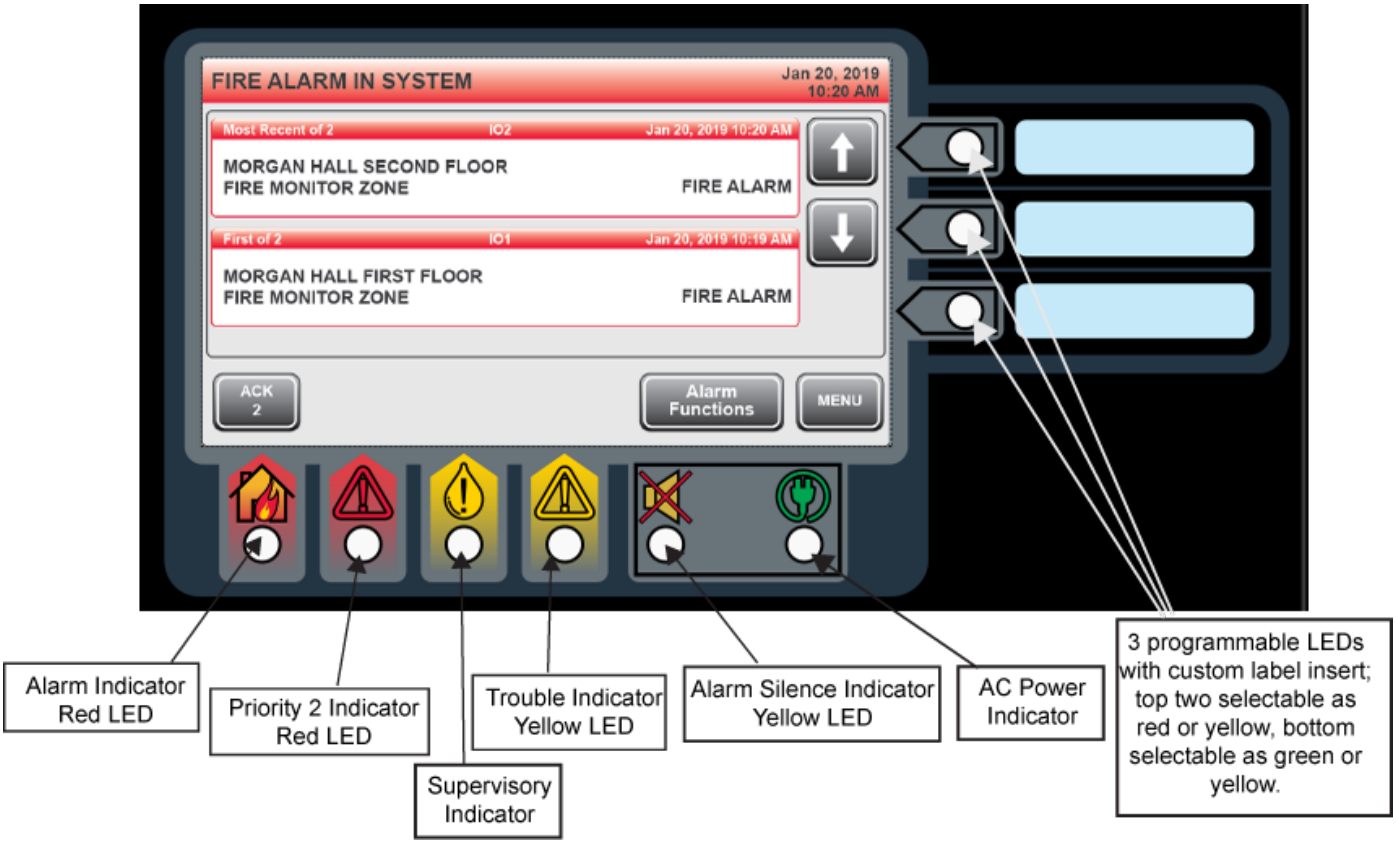
- Locking door
- Latching front panel assembly swings forward for convenient internal access
- Smooth box surfaces are provided for locally cutting conduit entrance holes exactly where required
- Modules are power-limited (except as noted, such as relay modules)
- Battery compartment (bottom) accepts two batteries, up to 18 Ah, to be mounted within the cabinet without interfering with module space; charger capacity is up to 33 Ah; for batteries greater than 18 Ah, refer to Table 6 for external battery cabinet details

Power Supply Output and Zone/Relay Module Details

Power Supply Output Details:

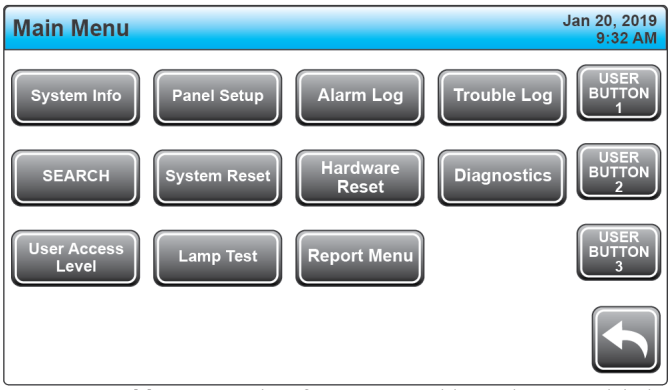
- **6 A Output Rating.** This includes current for: module currents; and auxiliary output current (battery charging, CPU, and power supply current are not subtracted from the 6 A)
- **Low Battery Voltage Cutout** is selectable when required (required for ULC listing applications)
- **Battery and Charger Monitoring** includes battery charger status and low or depleted battery conditions; status information provided to the master controller includes analog values for: battery voltage, charger voltage and current and actual system voltage and current
- **Battery Charger** is dual rate, temperature compensated, and charges up to 18 Ah sealed lead-acid batteries in the battery compartment, and charges up to 33 Ah batteries in an external cabinet

Touchscreen Display with LED Status Indicators (approximately full size)

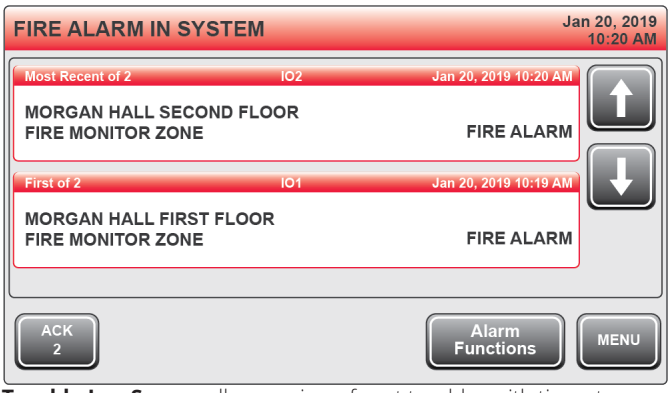


Operator Screen Reference

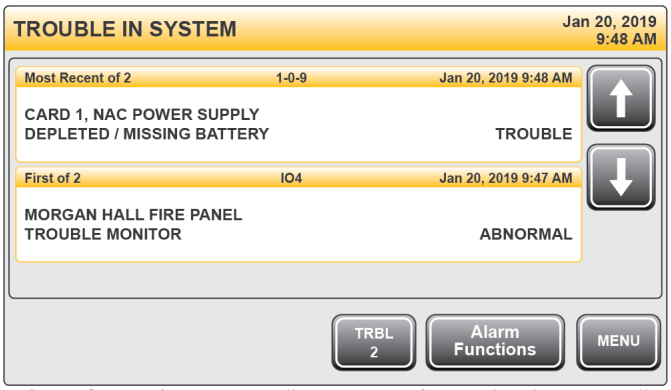
Main Menu Screen provides easy navigation to the function required. Buttons A, B, and C have programmable functions.



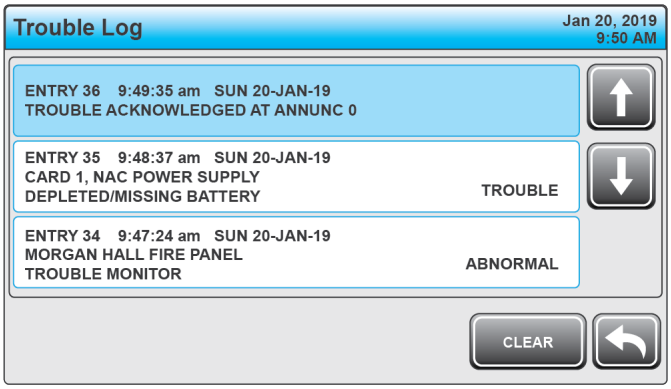
System Alarm Screen identifies active alarms with custom labels displayed, arrows allow navigation through the list.



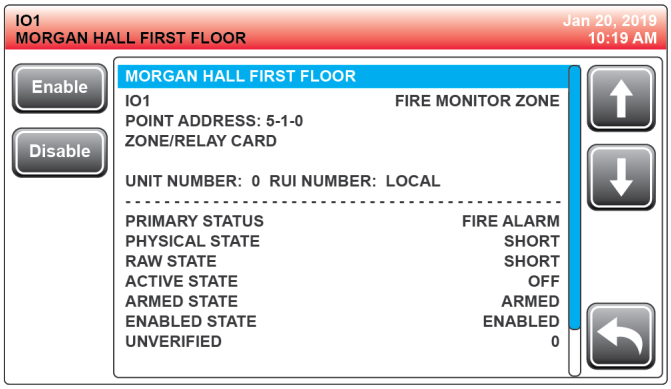
System Trouble Screen identifies active troubles with custom labels displayed, arrows allow navigation through the list.



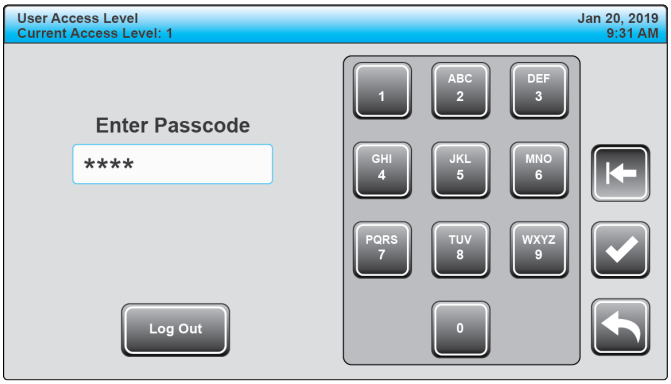
Trouble Log Screen allows review of past troubles with time stamp and point details shown.



Point Information Screen allows review of point details, arrows allow navigation through the information.



User Access Login Screen controls access to panel operations as determined per panel.



Operator Interface and Software Features

- A logical, menu-driven touchscreen display, with password access control, that accesses convenient and detailed operator information.
- Multiple automatic and manual diagnostics for maintenance reduction.
- View Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) on the display.
- Module level ground fault searching assists installation and service by locating and isolating modules with grounded wiring.

NSI Mounting and Module Location Reference

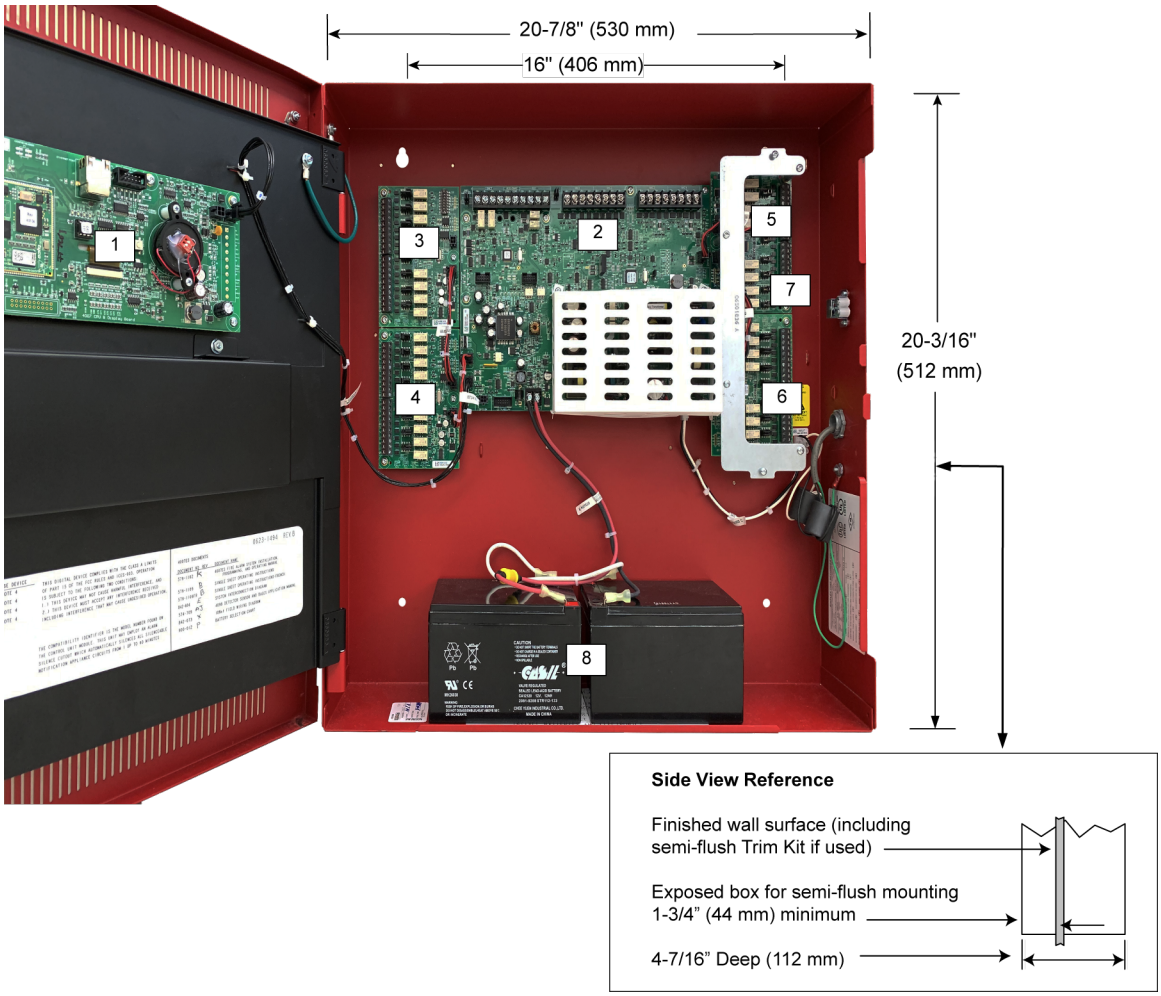


Figure 1: NSI mounting and location reference

Module Locations

1. CPU and User Interface assembly.
2. Power Supply Assembly.
3. Location for additional 4007-9801 Zone/Relay Module.
4. Primary location for 4007-9801 Zone/Relay Module (included).
5. Location for additional 4007-9801 Zone/Relay Module.
6. Location for additional 4007-9801 Zone/Relay Module.
7. Block 7 is an additional block that sits on spacers above Block 5 and 6. The 4007-9810 NIC or 4007-9817 NIC can be mounted in block 7 with or without modules mounted below it in blocks 5 and 6.
8. Battery location for up to 18 Ah batteries. Note: No conduit entry or wiring in this area, 14-7/8" (378 mm) wide.

Note: A system ground must be provided for Earth Detection and transient protection devices. This connection shall be made to an approved, dedicated Earth connection per NFPA 70, Article 250, and NFPA 780.

Product Selection

Table 1: Product Selection

Model	Color	Description	Supv.	Alarm
4190-9836	**Red**	**Simplex NSI for 4120 Network**	**145 mA**	**190 mA**
4190-9837	**Platinum**			
Both models above include		(1) 4007-9801 Zone/Relay Card	83 mA	351 mA
		(1) 4007-9810, 4120 Network Interface Card	30 mA	30 mA
Model	**Color**	**Description**	**Supv.**	**Alarm**
4190-9838	**Red**	**Simplex NSI for ES Net Network**	**145 mA**	**190 mA**
4190-9839	**Platinum**			
Both models above include		(1) 4007-9801 Zone/Relay Card	83 mA	351 mA
		(1) 4007-9817 ES Net Network Interface Card	120 mA	120 mA

Note: The base NSI current (without included modules) does not subtract from the 6 A of power available for optional modules and external loads. For power supply loading calculations include all NSI modules plus all external loads and exclude the NSI current. For battery standby calculations include all NSI modules, all external loads, and the base NSI current.

Module and Accessories Selection Information

Table 2: Field Installed Optional Modules

Model	Description	Supv.	Alarm
4007-9801	Eight Point Zone/Relay Module; each point is selectable as an IDC input or Relay output, Class A IDCs require 2 points (one out and one return); select up to 4 maximum; current shown is for 8 Class B IDCs with 4 in alarm, detector current is added separately (refer to 4007ES Hybrid data sheet ***S4007-0001*** for additional information)	83 mA max	351 mA max

Table 3: Media Modules for NSI with 4120 Network Interface Card

Model	Description		Alarm/Supv.
4007-9813	Wired media card	Select media cards as required; mounts on the supplied 4120 modular network interface card; supports Class B or Class X operation. Maximum of 1 left port and 1 right port duplex fiber media card per modular network interface. 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)	55 mA
4007-6301	Left port, single-mode 4120 duplex fiber media card		55 mA
4007-6302	Right port, single-mode 4120 duplex fiber media card		55 mA
4007-6303	Left port, multi-mode 4120 duplex fiber media card		55 mA
4007-6304	Right port, multi-mode 4120 duplex fiber media card		55 mA

Table 4: Media Modules for NSI with ES Net Network Interface Card

Model	Description		Alarm/ Supv.
4007-6306	ES Net Ethernet Media Card	Select media cards as required; mounts on the supplied ES Net modular network interface card; supports Class B or X operation. Maximum of 1 left port and 1 right port duplex fiber media card per modular ES 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 data sheet S4100-0076 for full fiber media module specifications and retrofit information)	20 mA
4007-6307	ES Net DSL Media Card		155 mA
4007-6308	ES Net SM Fiber Media Card		135 mA
4007-6309	ES Net MM Fiber Media Card		135 mA

Table 5: Batteries

SKU	Capacity	Battery Mounting Details	
2081-9272	6.2 Ah	12 V Batteries for cabinet mounting; select one battery model per system standby requirements; order quantity of two; to be wired in series for 24 VDC	
2081-9274	10 Ah		
2081-9288	12.7 Ah		
2081-9275	18 Ah		
2081-9287	25 Ah	For remote mount in Battery Box 4009-9801	Batteries for remote mounting; see battery cabinet details below
2081-9271	33 Ah	For remote mount in Battery Box 4009-9802	

Table 6: Battery Accessories

Model	Color	Capacity	Dimensions	Description
4009-9801	Beige	For up to 25 Ah batteries	16 ¼" W x 13 ½" H x 5 ¾" D (413 mm x 343 mm x 146 mm)	External battery cabinet without charger, with locking solid door and battery harness; for close-nippled mounting to fire alarm control panel cabinet
4009-9802		For up to 33 Ah batteries	25 ¾" W x 20 ¾" H x 4 ⅛" D (654 mm x 527 mm x 105 mm)	

Table 7: Accessories

Model	Description
2975-9812	Red semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides
2975-9813	Platinum semi-flush box trim; 1 7/16" (37 mm) wide, four corners and trim pieces for top, bottom, and sides

Additional Compatible Equipment and Reference

Table 8: Additional Compatible Equipment

Subject	Data Sheet
4120 Network Products and Specifications	*S4100-0056*
ES Net Network Products and Specifications	*S4100-0076*

Additional Information

Table 9: Manuals

Subject	Document
NSI Installation Manual	*579-1319*
NSI Programmer's Manual	*579-1320*
NSI Operator's Manual	*579-1321*

General Specifications

Table 10: General Specifications

Specification		Rating	
Input Power	120 VAC Input	2 A maximum @ 102 to 132 VAC, 50/60 Hz	
	240 VAC Input	1 A maximum @ 204 to 264 VAC, 50/60 Hz	
	Battery	6 A maximum @ 24 VDC (during battery operation)	
NSI Power Supply Output Ratings	Power Supply Output Rating	6 A	Output switches to battery backup during mains AC failure or brownout conditions
	Auxiliary Power	Five 2 A auxiliary power outputs (not to exceed total power supply output rating of 6 A)	
Battery Charger Ratings (sealed lead-acid batteries)	Battery capacity range	UL and ULC listed for battery charging of 6.2 Ah up to 33 Ah (batteries larger than 18 Ah require a remote battery cabinet)	
	Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours per UL Standard 864; to 70% capacity in 12 hours per ULC Standard S527	
Custom Background Display Details		Supported file types: JPG, BMP, GIF, and PNG Recommended image type is JPG, recommended image size is 480 x 240, and the file size limit is 100 kb	
Environmental	Operating Temperature	32° to 120°F (0° to 49° C)	
	Operating Humidity	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	