

Features

Network Display Unit (NDU) provides annunciation for up to 12,000 ES Net network points:

- The basic NDU is a special purpose master controller that includes an ES Net network interface card.
- Combining a basic NDU with a Voice Command Center (VCC) provides an additional separate Network node within the same cabinet for control of Network level Emergency Voice/Alarm Communications Equipment

Master Controller (top) bay:

- Master controller assembly with operator interface
- Enhanced CPU with dual configuration programs, convenient service port access, and capacity for up to 12,000 points
- System power supply (SPS) and charger (9 A total) with on-board programmable auxiliary output
- Operator interface that is conveniently color coded with raised switches providing high confidence feedback
- Available with InfoAlarm Command Center expanded content user interface (refer to data sheet *S4100-0045*)
- Construction that is optimized for easy installation, upgrade, and maintenance
- Glass door (ordered separately) provides view of available operator controls visible behind locked door

Standard addressable interfaces include:

- Remote annunciator module support via RUI (remote unit interface) communications port

NDU field installed option modules include:

- DACT and City Connection
- Service modems for remote panel status inquiry
- RS-232 ports for printers or maintenance terminals
- Alarm relays and expansion power supplies
- SafeLINC Internet Interface
- Battery brackets for seismic area protection

For NDU with VCC:

- Optional features are similar to a networked fire alarm control panel and an extensive list of modules are available for; initiating, notification, and user interface

Listings information

- UL 864, Fire Detection and Control (UOJZ), Smoke Control Service (UUKL), Releasing Device Service (SYZV)
- UL 1076, Proprietary Alarm Units - Burglar (APOU)
- UL 2017, Process Management Equipment (QVAX), Emergency Alarm System Control Units (FSZI)
- UL 1730, Smoke Detector Monitor (UULH)
- UL 2572, Mass Notification Systems (PGWM)
- CAN/ULC-S527 Control Units for Fire Alarm Systems (UOJZ7), Releasing Device Service (SYZV7)
- ULC/ORD-C1076 Proprietary Burglar Alarm Units and Systems (APOU7)
- ULC/ORD-C100 Smoke Control System Equipment (UUKL7)

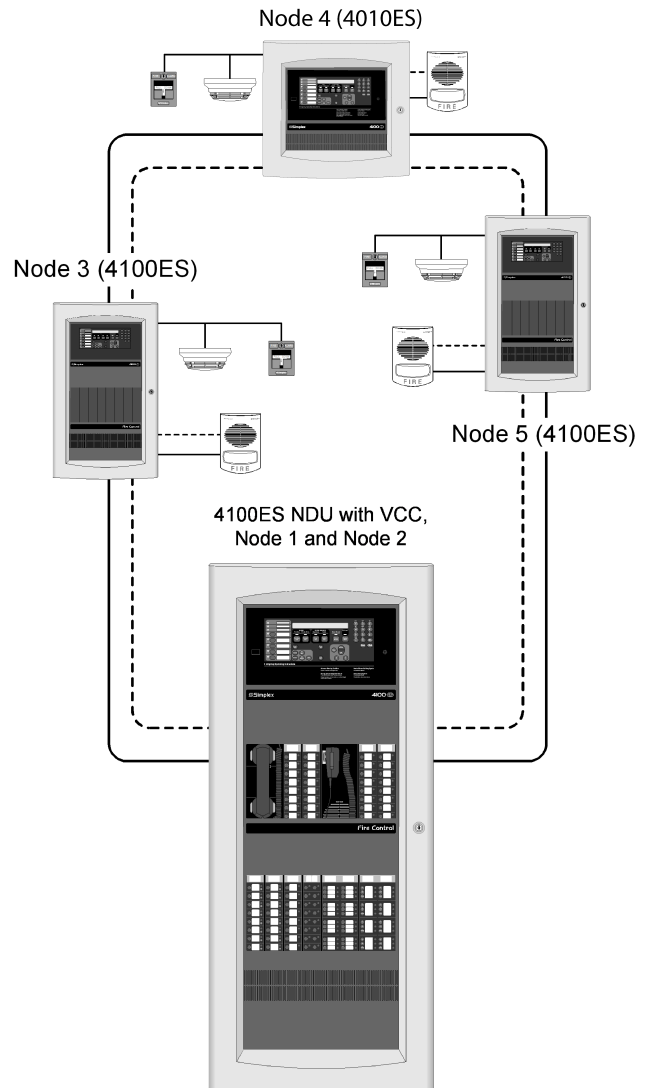


Figure 1: ES Net Network One-Line Diagram Showing an NDU with VCC

Introduction

The 4100ES Network Display Unit for ES Net is a network level annunciator and manual system/point controller. It provides alphanumeric annunciation for up to 12,000 Network points and/or point lists and can be programmed to function as the network master controller for Alarm Silence, Trouble Acknowledge, and System Reset.

ES Net Network Overview

When connected to other ES Net nodes, individual fire alarm control panels become components of a distributed intelligence system. Each panel that directly connects to the network is called a network "node" and is capable of performing individual supervision and control on its locally connected devices but has the ability to inform the 4100ES NDU (as well as other network control panels) of point status and panel condition. This allows system information to reach the proper location for appropriate system response.

* At the time of publication only UL and ULC listings are applicable to ES Net network products. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Refer to Product Selection tables for specific UL and ULC listing details. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.

Multiple 4100ES NDUs (separately packaged) can be connected to a Network to duplicate common information at separate locations, or direct selected information by type such as troubles, alarms, control, etc.

NDU with VCC internal module bay reference

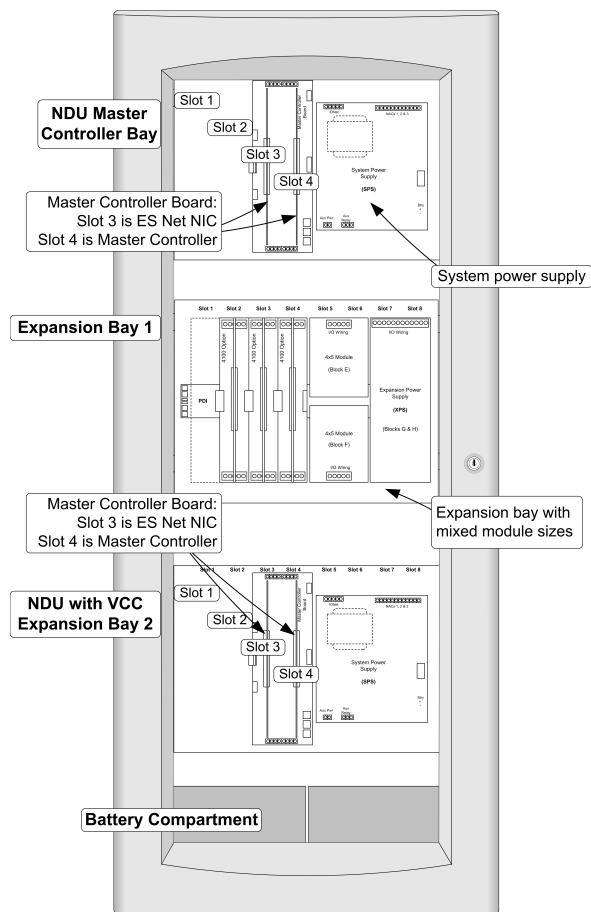


Figure 2: NDU with VCC internal module bay reference (exact layout is determined by specific system requirements)

NDU module bay description

The NDU master controller bay (top) includes a special purpose system power supply with battery charger (SPS), the master controller board, an ES Net network interface card (NIC), and operator interface equipment similar to that used on the standard fire alarm control modules. Slots 1 and 2 are available for single slot panel mounted modules.

The VCC includes an expansion bay with separate: master controller board, ES Net NIC, and a standard SPS power supply. This results in two separate network nodes residing within the same cabinet.

In the VCC bay (typically the second expansion bay), slots 1 and 2 are available for single slot panel mounted modules. Optional LED/switch modules can also be mounted here.

The battery compartment (bottom) accepts two batteries, up to 50 Ah, to be mounted within the cabinet without interfering with module space.

Refer to the NDU with VCC internal module bay reference illustration for typical three bay cabinet module location.

Standard module details

NDU (top bay) master controller & motherboard includes a master controller, master controller motherboard, ES Net NIC, and SPS power supply

- The master controller mounts in slot 4 of a two slot motherboard (slots 3 and 4 of the master controller bay) and provides one RUI+ communications channel (Class B or Class A), available at slot 4. An ES Net network interface card is mounted in slot 3.
- The NDU bay RUI+ communications output (configurable for isolated or un-isolated operation) supports up to 31 devices per master controller at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped. If more distance is required, up to four total RUI channels are supported per master controller (up to three 4100-1291 RUI expansion modules may be added). 4100-1291 provides un-isolated RUI communications. See note below.
- Both the NDU master controller RUI+ output and RUI expansion modules support the following remote LCD annunciators: 4603-9100 series LCD annunciators and 4100-9400 series remote InfoAlarm command centers.
- Optional service modem 4100-6030 mounts onto the master controller board with its own on-board connections
- System power supply (SPS) is rated for 9 A total; includes battery charger, one 2 A aux power output selectable for detector reset, door holder, or coded output operation and expansion slot for one city circuit (4100-6031 or 4100-6032) or alarm/supv/tbl relay (4100-6033) option. See data sheet *S4100-0100* for details.
- Outputs are power-limited, except for the battery charger

Note: SPS IDNet channel, NACs and aux relay are disabled in NDU bay.

VCC (expansion bay) includes a master controller, master controller motherboard, ES Net NIC and SPS power supply with IDNet communications channel

- The master controller mounts in slot 4 of a two slot motherboard (slots 3 and 4 of the master controller bay) and provides one RUI+ communications channel (Class B or Class A), available at slot 4. An ES Net network interface card is mounted in Slot 3.
- The VCC bay RUI+ communications output (configurable for isolated or un-isolated operation) supports up to 31 devices per master controller at up to 2500 ft (762 m) for single run, or 10,000 ft (3048 m) total if wiring is Class B and T-tapped. If more distance is required, up to four total RUI channels are supported per master controller (up to three 4100-1291 RUI expansion modules may be added). 4100-1291 provides un-isolated RUI communications.
- Both the VCC master controller RUI+ output and RUI expansion modules are compatible with the following equipment: miniplex transponders, 4603-9100 series LCD annunciators, 4100-9400 series remote InfoAlarm command centers, 4100 series 24 I/O and LED/switch modules and 4602 series status command units (SCU), remote command units (RCU) and graphic I/O modules (4602 series equipment requires un-isolated output).
- System power supply (SPS) is rated for 9 A total; includes battery charger, auxiliary power, auxiliary relay, on-board IDNet communications channel for 250 points, three on-board NACs, and provisions for either an optional city connect module or an optional alarm relay module (see data sheet *S4100-0031* for details)
- Battery charger is dual rate, temperature compensated, and charges up to 50 Ah sealed lead-acid batteries mounted in the battery compartment (33 Ah for single bay cabinets); also is UL listed for charging up to 110 Ah batteries mounted in an external cabinet (see data sheet *S2081-0012* for details)
- 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, actual system voltage and current, and individual

NAC currents

- Low battery cutout is selectable for each SPS power supply, Canadian models are shipped selected, other models are shipped unselected
- Outputs are power-limited, except for the battery charger
- 2 A auxiliary power output selectable for detector reset, door holder, or coded output operation

Optional SPS modules (select one)

- Optional city connect module (4100-6031, with disc. switches, or 4100-6032, without disc. switches) can be selected for conventional dual circuit city connections
- Optional alarm relay module (4100-6033) provides three C type relays for alarm, trouble, and supervisory, rated 2 A resistive @ 32 VDC

Packaging availability

- Modules are power-limited (unless specifically noted otherwise)
- Enclosure are available for one, two, or three bay sizes or for cabinet rack mounting
- Additional cabinets can be mounted close-nippled for module expansion
- NEMA 1/IP30 boxes, doors with tempered glass inserts, and dress panels are available in platinum or red (ordered separately)
- Refer to data sheet *S4100-0037* for enclosure details

Software feature summary

- Selectable service override allows authorized operators to clear alarm conditions during System Reset even if status has gone to trouble before reset occurred
- Duplicate address error detection
- Convenient PC programming using a Microsoft Windows user interface based program

Expansion bay module loading reference

Exact module locations are provided with shipped product.

Table 1: Expansion Bay Module Loading Reference

Description	Mounting
Terminal Block Module	4" x 5", 1 block
System or Remote Power Supply	Blocks E, F, G & H ONLY
Expansion Power Supply	Blocks G & H ONLY
Audio Controller Modules	Blocks A & B
Flex-35 Amplifiers, 2 max/bay*	Blocks E & F; C & D; or A & B
Flex-50 Amplifiers, 2 max/bay*	Blocks E & F or C & D
100 W Amplifiers, 1 max/bay	Blocks E, F, G & H
100 W Backup Amplifiers, 1 max. per bay with primary amplifier	Blocks A, B, C & D
Master Telephone Module	Blocks A & B
Master Microphone Module (do not mount next to telephone)	Two vertical Blocks, any location
Telephone Module	1 Block
Operator LED/Switch Modules	1 Slot

Note: When mounting dual Flex amplifiers on an expansion bay, special mounting rules apply.

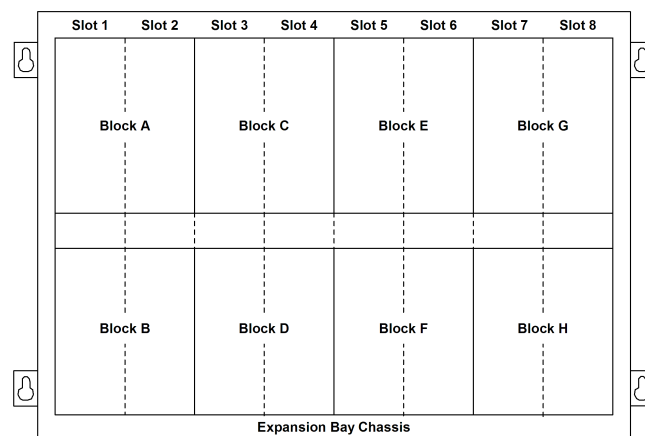


Figure 3: Expansion Bay Module Loading Reference

Size Definitions

- Block = 4" W x 5" H (102 mm x 127 mm) card area
- Slot = 2" W x 8" H (51 mm x 203 mm) motherboard with daughter card

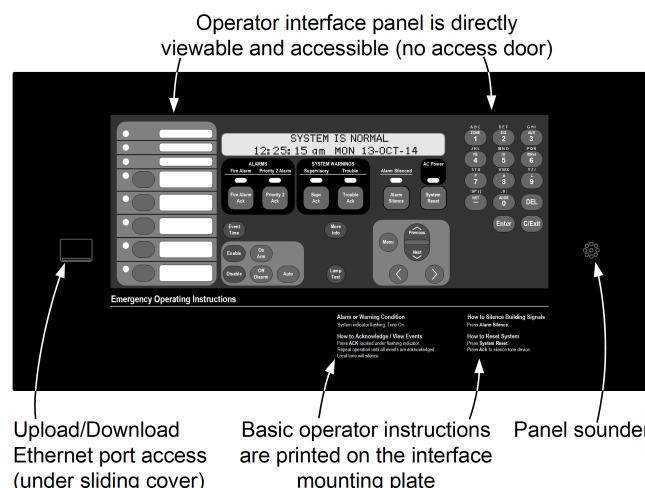
Operator interface

Convenient status information. With the locking door closed, the glass window allows viewing of the display, status LEDs, and available operator switches. Features include a two-line by 40-character, wide viewing angle (super-twist) LCD with status LEDs and switches as shown in the illustration 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 switches and allows further inquiry by scrolling the display for additional detail.

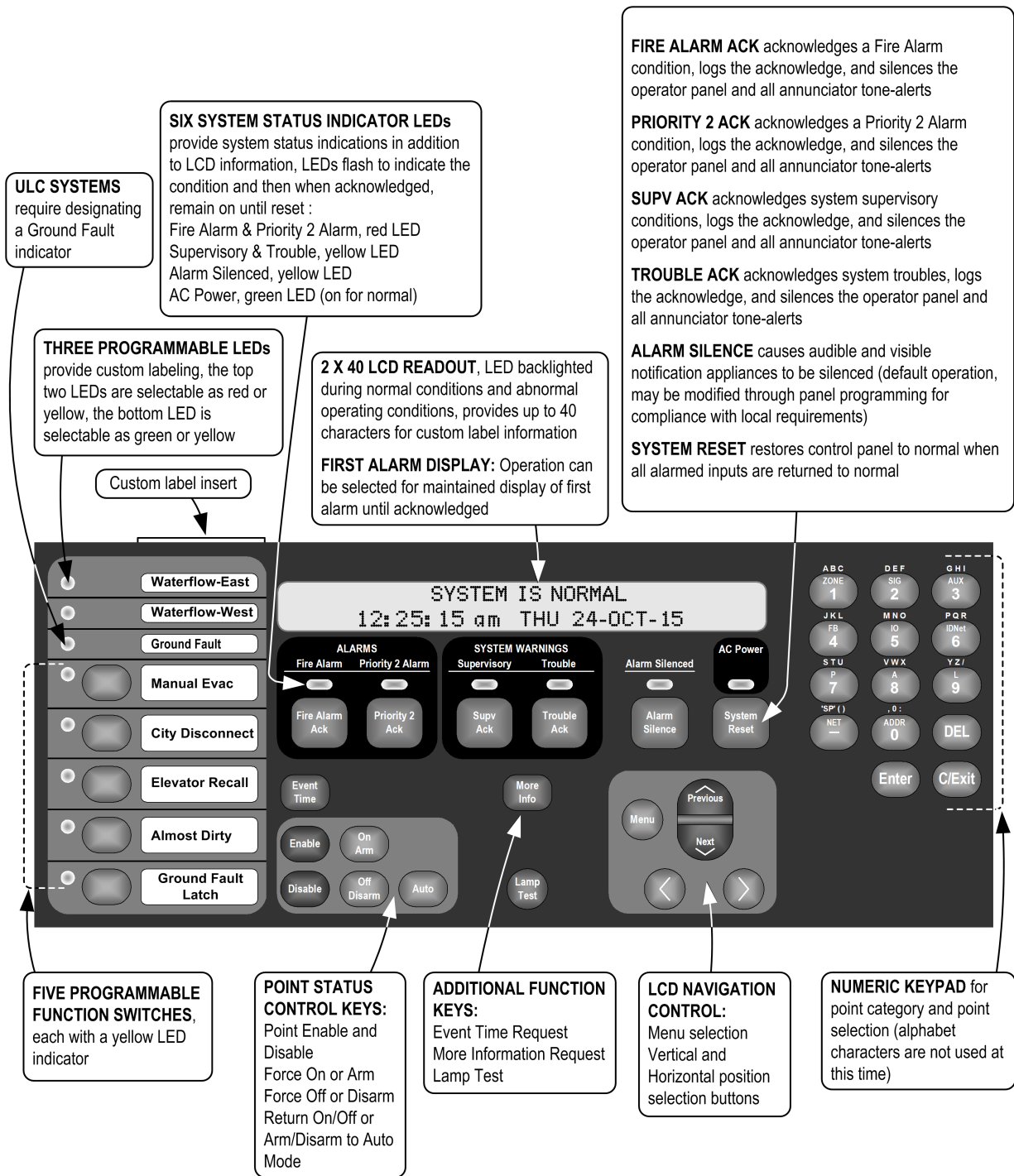
Operator Interface Detail Reference

The following illustration identifies the primary functions of the operator interface.



Operator interface features

- Convenient and extensive operator information is provided using a logical, menu-driven display
- Multiple automatic and manual diagnostics for maintenance reduction
- Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) are available for viewing from the LCD, or capable of being printed to a connected printer, or downloaded to a service computer
- Convenient PC programmer label editing
- Password access control



ES Net 4100ES NDU annunciator panels

4100ES NDU's provide annunciation for up to 99 network nodes in an ES Net network.

Table 2: ES Net NDU, non-voice

Model	Model Type	Description	Listing	Supv.	Alarm
4100-9157	120 VAC Input	Includes a 2x40 LCD operator interface, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card and 9 A system power supply/battery charger.	UL	493 mA	550 mA
4100-9159	120 VAC Input	Includes a 2x40 LCD operator interface, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card and 9 A system power supply/battery charger.	ULC	493 mA	550 mA
4100-9160	120 VAC Input	Same as 4100-9159 except with French language operator interface	ULC	493 mA	550 mA
4100-9163	120 VAC Input	Includes an InfoAlarm LCD operator interface with raised keys, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card, (1) InfoAlarm memory expansion card and 9 A system power supply/battery charger.	UL	565 mA	620 mA
4100-9164	120 VAC Input	Includes an InfoAlarm LCD operator interface with raised keys, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card, (1) InfoAlarm memory expansion card and 9 A system power supply/battery charger.	ULC	565 mA	620 mA
4100-9165	120 VAC Input	Same as 4100-9164 except with French language operator interface	ULC	565 mA	620 mA
4100-9250	220-240 VAC Input	Includes a 2x40 LCD operator interface, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card and 9 A system power supply/battery charger.	UL	493 mA	550 mA
4100-9252	220-240 VAC Input	Includes an InfoAlarm LCD operator interface with flat keys and label inserts, master controller card with RUI+ isolated or un-isolated output, ES Net network interface card, (1) InfoAlarm memory expansion card and 9 A system power supply/battery charger.	UL	565 mA	620 mA
4100-9253	120 VAC Input	Same as 4100-9252 except with French language operator interface	UL	565 mA	620 mA

Table 2 notes:

1. SPS IDNet channel, NACs and aux relay are disabled in NDU bay.
2. See [Standard module details](#) for additional system power supply information.
3. ES Net media card current is listed separately, see relevant media specifications for more details.
4. For additional information on ES Net products and specifications refer to data sheet [S4100-0076](#).
5. For additional information on InfoAlarm Command Center expanded content displays refer to data sheet [S4100-0101](#).

ES Net 4100ES NDU annunciator panels with VCC

4100ES NDU's with VCC provide annunciation for up to 99 network nodes in an ES Net network.

Table 3: ES Net NDU with voice command center (VCC)

Model	Model Type	Description	Listing	Supv.	Alarm
4100-9158	120 VAC Input	Includes a 2x40 LCD operator interface, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface cards and (2) 9 A system power supplies/battery chargers.	UL	967 mA	1.055 A
4100-9161	120 VAC Input	Includes a 2x40 LCD operator interface, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface cards and (2) 9 A system power supplies/battery chargers.	ULC	967 mA	1.055 A
4100-9162	120 VAC Input	Same as 4100-9161 except with French language operator interface	ULC	967 mA	1.055 A
4100-9168	120 VAC Input	Includes an InfoAlarm LCD operator interface with raised keys, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface cards, (1) InfoAlarm memory expansion card and (2) 9 A system power supplies/battery chargers.	UL	1.048 A	1.125 A
4100-9169	120 VAC Input	Includes an InfoAlarm LCD operator interface with raised keys, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface cards, (1) InfoAlarm memory expansion card and (2) 9 A system power supplies/battery chargers.	ULC	1.048 A	1.125 A
4100-9170	120 VAC Input	Same as 4100-9169 except with French language operator interface	ULC	1.048 A	1.125 A
4100-9248	220-240 VAC Input	Includes an InfoAlarm LCD operator interface with flat keys and label inserts, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface	UL	1.048 A	1.125 A

Table 3: ES Net NDU with voice command center (VCC)

Model	Model Type	Description	Listing	Supv.	Alarm
4100-9249	120 VAC Input	cards, (1) InfoAlarm memory expansion card and (2) 9 A system power supplies/battery chargers.	UL	1.048 A	1.125 A
4100-9251	220-240 VAC Input	Includes a 2x40 LCD operator interface, (2) master controller cards with RUI+ isolated or un-isolated output, (2) ES Net network interface cards and (2) 9 A system power supplies/battery chargers.	UL	976 mA	1.055 A

Table 3 notes:

1. SPS IDNet channel, NACs and aux relay are disabled in NDU bay.
2. See [Standard module details](#) for additional system power supply information.
3. ES Net media card current is listed separately, see relevant media specifications for more details.
4. For additional information on ES Net products and specifications refer to data sheet [S4100-0076](#).
5. For additional information on InfoAlarm Command Center expanded content displays refer to data sheet [S4100-0101](#).
6. For panels listed in Table 3, order audio modules separately as required.

ES Net NIC and media cards for 4100ES, TrueSite Workstation, or Incident Commander
Table 4: ES Net NIC cards for 4100ES, TrueSite Workstation, or Incident Commander

Model	Card Type	Description	Size	Alarm/Supv.
4100-6104	Slot	Mounts in 4100ES cabinet. Connects a 4100ES FACU, TrueSite Workstation, or Incident Commander to an ES Net Network. Supports Class B or Class X operation. Includes (4) built in Ethernet ports, install to a single slot in a 4100ES bay. Supports up to (2) additional media cards. Ports A and C can be configured for earth fault detection.	2 vertical blocks	120 mA
4100-6310	Flat		2 vertical blocks	120 mA

Table 5: ES Net dual channel media modules for 4100ES mounted NICs

Model	Description	Supv.	Alarm	
4100-6308	ES Net NIC dual channel single-mode fiber media card	Select per network connection requirements; mounts on the supplied ES Net NIC; up to (2) media cards per slot type and flat type NIC. Dual Channel Media Cards provide 2 ports for input and output connections. Field connections require proper port pairing, refer to 579-1258 ES Net Dual Channel Fiber, Ethernet, and DSL Media Card Installation Instructions for additional information.	135 mA	135 mA
4100-6309	ES Net NIC dual channel multi-mode fiber media card		135 mA	135 mA
4100-6307	ES Net NIC dual channel DSL media card		155 mA	155 mA

Table 4 and Table 5 notes:

1. Each NDU bay and VCC Bay includes one 4100-6104 network interface card with built-in ethernet network communication ports, order optional media cards as required.
2. TrueSite workstation connection is Class B, for Class X networks TSW connection must be 20 ft (6 M) maximum in conduit.
3. For additional information on ES Net products and specifications refer to data sheet [S4100-0076](#).
4. Order fiber media service kits for retrofit jobs where ST connectors are already installed. Refer to [Fiber media card service kits](#) for additional information.

Fiber media card service kits
Table 6: ES Net fiber media card service kits

Model	Fiber type	Description
4100-6412	50/125 μ m multi-mode	For use in retrofit jobs where fiber optic cables with ST connectors are already installed. Includes (1) ST to SC 18 in. (45.7 cm) fiber optic patch cord, (1) ST-ST coupler, (1) wire clamp, and (1) insulating sleeve.
4100-6413	62.5/125 μ m multi-mode	
4100-6414	9/125 μ m single-mode	

Note: Fiber optic media cards must be of the same type on each end of the fiber link. When replacing a media card with a different type, the card on the other end of the link must be replaced with a fiber optic media card of the same type.

NDU with VCC, LED/switch modules

Refer to *S4100-0032* for additional detail.

Table 7: LED/Switch Modules, Special Purpose (LED/switch controller and label kit is ordered separately)

Model	Operation
4100-1286	Eight function HOA (On, Off, Auto) Control Module with labeled switches; ON/OFF/Auto; Green/Red/Green LEDs
4100-1295	Eight function HOA (On, Off, Auto) Control Module, same as 4100-1286 except switches are unlabeled

Table 8: LED/Switch Modules, General Purpose (LED/switch controller and label kit is ordered separately)

Model	LEDs per Switch	LED Color(s)	LED Quantity	Switch Quantity
4100-1276	LEDs only	Red; pluggable	8	LEDs only
4100-1277		Red on top, Yellow on bottom, pluggable	16	
4100-1280	One	Red	8	8
4100-1281	One	Yellow		
4100-1282	Two	Red on top, Yellow on bottom	16	8
4100-1283	Two	Yellow, top and bottom		
4100-1284	Two	Red on top, Green on bottom	16	8
4100-1296	Two	Green on top, Yellow on bottom		
4100-1285	One	Red	16	16
4100-1278	One	8 Red on left, 8 Yellow on right	16	16
4100-1287	One	Red	24	24

Table 9: LED/Switch Controller Modules and Accessories

Model	Description	Note
4100-1288	64 LED/64 Switch Controller Module with mounting plate; controls up to 64 LEDs and interfaces to up to 64 switches; mounts behind the LED/switch modules and has provisions for one 4100-1289 Controller Module	Note: LED/switch controllers and their connected LED/switch modules must be in the same bay; refer to data sheet <i>S4100-0032</i> for additional LED/Switch module details when Flex-35/50 amplifiers are in the same bay
4100-1289	64 LED/64 Switch Controller Module without mounting plate; mounts on extra space of 4100-1288; controls an additional 64 LEDs and 64 switches	
4100-1294	LED/Switch Module Slide-in Labels, required when LED/switch modules are present; order one per cabinet	
4100-9843	Kit of 8 yellow LEDs; order as required for 4100-1276/4100-1277 modules	
4100-9844	Kit of 8 green LEDs; order as required for 4100-1276/4100-1277 modules	
4100-9845	Kit of 8 red LEDs; order as required for 4100-1276/4100-1277 modules	

VCC, emergency voice/alarm communications selection

Refer to document *S4100-0034* for additional voice/alarm module information.

Table 10: Options for either Analog or Digital Systems

Model	Description	Model	Description
4100-1259	Constant Supervision Adapter for 25 VRMS Amplifiers	4100-5116	Expansion Signal Module; three, 1.5 A NACs
4100-1260	Constant Supervision Adapter for 70.7 VRMS Amplifiers	4100-1266	NAC Extender
4100-1240	Auxiliary Audio Input Module; four additional inputs	4100-1267	Class A Adapter
4100-1241	8 Minute Message Expansion Module	4100-1268	Constant Supervision Adapter
4100-1242	32 Minute Message Expansion Module	4081-9018	End-of-line resistor for 70.7 VRMS NACs; 10 kΩ, 1 W
4100-0623	Network Audio Riser Controller Module for control of analog (-0621) or digital (-0622) riser module, see <i>S4100-0034</i> for details		

Table 11: Options for use with either Analog or Digital Amplifiers*

Model	Description	Model	Description
4100-1245	Flex-35/50 NAC Expansion Module; (Adds 3 Class B, 1.5 A NACs)	4100-1248	100W Amplifier NAC Expansion Module; (Adds six Class B, 2 A NACs)
4100-1246	Flex-35/50 Class A Adapter for 3 NACs	4100-1249	100W Amplifier Class A Adapter Module for 6 NACs

Table 12: 100 W Digital Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage	Power Supply Input/Listing		Description	Details	
	25 VRMS	70.7 VRMS			
4100-1328	4100-1329	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1332	4100-1333	220/230/240 VAC, 50/60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1334	4100-1335	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1338	4100-1339	220/230/240 VAC, 50/60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier

Note: ULC models in Table 12 have low battery dropout circuit.

Table 13: Digital Emergency Voice/Alarm Communications Equipment

Model	Description	Details			
4100-9621	Basic Digital Audio Operation with microphone, requires dedicated expansion bay	Includes: Expansion Bay, A100-1311 Digital Controller Board, Microphone Module, and Audio Expansion Bay Kit			
4100-1311	Eight Channel Digital Controller Board only; order expansion bay and audio expansion bay kit separately	Controller board mounts in Blocks A and B			
4100-1363	25VRMS output	Flex-35, 35 W Amplifier, constant supervision compatible	Includes three on-board Class B audio NACs; power is supplied from an XPS, SPS, or RPS	NAC rating = 1.4 A	35W or 100W speakers
4100-1364	70.07VRMS output			NAC rating = 0.5 A	
4100-1326	25VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible	power is supplied from an XPS, SPS, or RPS	NAC rating = 2 A	50W or 100W speakers
4100-1327	70.7VRMS output			NAC rating = 0.707 A	

Table 14: 100 W Analog Amplifiers with Power Supply, Constant Supervision Compatible

Model/Output Voltage		Power Supply Input/Listing		Description	Details
25 VRMS	70.7 VRMS				
4100-1314	4100-1315	120 VAC, 60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1318	4100-1319	220/230/240 VAC, 50/60 Hz	UL	Primary 100 W Amplifier	Includes six, Class B audio NACs; NAC rating = 50 W or 100 speakers maximum; 2 A @ 25 VRMS; 1.4 A @ 70.7 VRMS
4100-1320	4100-1321	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
4100-1324	4100-1325	220/230/240 VAC, 50/60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier

Note: ULC models in Table 14 have low battery dropout circuit.

Table 15: Analog Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible

Model	Description	Details			
4100-9620	Basic Analog Audio Operation with microphone, requires dedicated expansion bay	Includes: Expansion Bay, 4100-1210 Analog Controller Board, Microphone Module, and Audio Expansion Bay Kit			
4100-1210	Analog Controller Board only; order expansion bay and audio expansion bay kit separately	Controller board mounts in Blocks A and B			
4100-1361	25 VRMS output	Flex-35, 35 W Amplifier, constant supervision compatible	Includes three on-board Class B audio NACs; power is supplied from an XPS, RPS, or SPS	NAC rating = 1.4 A	35 W, or 100 speakers
4100-1362	70.07 VRMS output			NAC rating = 0.5 A	
4100-1312	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible	or SPS	NAC rating = 2 A	50 W, or 100 speakers
4100-1313	70.7 VRMS output			NAC rating = 0.707 A	

Table 16: Firefighter Telephone System Products

Model	Description	Details and Mounting Reference
4100-1270	Master Telephone with Telephone Control Module and 3 Class B telephone NACs; for Fire Alarm Control Panels	One max. per audio system; front panel module; space behind for 4100ES flat modules only; telephone control module mounts on bay module mounting plate; use LED/switch modules for circuit control
4100-1272	Telephone Module with 3 phone NACs	Class B NACs, single Block module, mounts to bay mounting plate
4100-1273	Telephone Class A Adapter Module	Mounts to 4100-1272, no additional space required

Table 17: VCC, Emergency Voice/Alarm Communications Products

Model	Description	Details and Mounting Reference
4100-1243	Master Microphone Module; one maximum per audio system; mounts on front panel	Requires 2 Slots (4" [102 mm]), locate on expansion bay only; space behind for 4100ES flat modules only Supv. current = 2.4 mA; Active current = 6 mA
4100-1252	1 Channel (audio or mike)	Single slot modules requiring connection to an LED/switch controller (see data sheet S4100-0032 for LED/Switch Module details); space behind controller accepts 4100ES flat modules only Additional adjacent LED/switch module(s) are required for specific speaker circuit selection
4100-1253	1.5 Channel (audio + mike)	
4100-1254	2 Channel (full audio)	
4100-1255	3-8 Channel	

Additional expansion and remote power supplies and accessories

Table 18: Additional expansion and remote power supplies, and accessories

Model	Voltage/Listing		Description	Size	Supv.	Alarm
4100-5101	120 VAC	UL	Expansion Power Supply (XPS); 9 A output rated same as SPS, 3 built-in 3 A Class A/B NACs that can provide synchronized strobe or SmartSync, two-wire operation	2 Blocks	50 mA	50 mA
4100-5103	120 VAC, Canadian	ULC	Expansion Power Supply (XPS); 9 A output rated same as SPS, 3 built-in 3 A Class A/B NACs that can provide synchronized strobe or SmartSync, two-wire operation	2 Blocks	50 mA	50 mA
4100-5102	220-240 VAC	UL	Expansion Power Supply (XPS); 9 A output rated same as SPS, 3 built-in 3 A Class A/B NACs that can provide synchronized strobe or SmartSync, two-wire operation	2 Blocks	50 mA	50 mA
4100-5115	NAC Expansion Module, 3 NACs, Class A/B, mounts on XPS only			N.A.	25 mA	25 mA
4100-5111	120 VAC	UL	Additional System Power Supply (SPS); 9 A power supply/charger with 250 point IDNet channel; three 3 A Class A/B NACs, one programmable Aux Relay and one 2 A Aux Power output, expansion slot for City Circuit or Alarm/Supv/Tbl Relay option; Canadian model has low battery cutout	4 Blocks	175 mA	185 mA
4100-5113	220-240 VAC	UL	Additional System Power Supply (SPS); 9 A power supply/charger with 250 point IDNet channel; three 3 A Class A/B NACs, one programmable Aux Relay and one 2 A Aux Power output, expansion slot for City Circuit or Alarm/Supv/Tbl Relay option; Canadian model has low battery cutout	4 Blocks	175 mA	185 mA
4100-5125	120 VAC	UL	Remote Power Supply (RPS); 9 A power supply/charger similar to SPS except no IDNet channel or City Circuits; will accept one 4100-6033	4 Blocks	150 mA	185 mA
4100-5127	220/230/240 VAC	UL	Remote Power Supply (RPS); 9 A power supply/charger similar to SPS except no IDNet channel or City Circuits; will accept one 4100-6033	4 Blocks	150 mA	185 mA
4100-5152	12 VDC Power Option, 2 A @ 12 VDC maximum			1 Block	1.5 A maximum	
4100-0634	120 VAC	Power Distribution Module (PDM); select per system voltage; one required per box or cabinet rack				
4100-0635	220/230/240 VAC					

NDU with VCC, additional options

NDUs with VCC support the same options available for 4100ES basic panels. For additional information on available options for NDUs with VCC refer to data sheet [S4100-0031](#).

Note: Additional options are not applicable to NDU only models.

Wall mounted enclosure installation reference

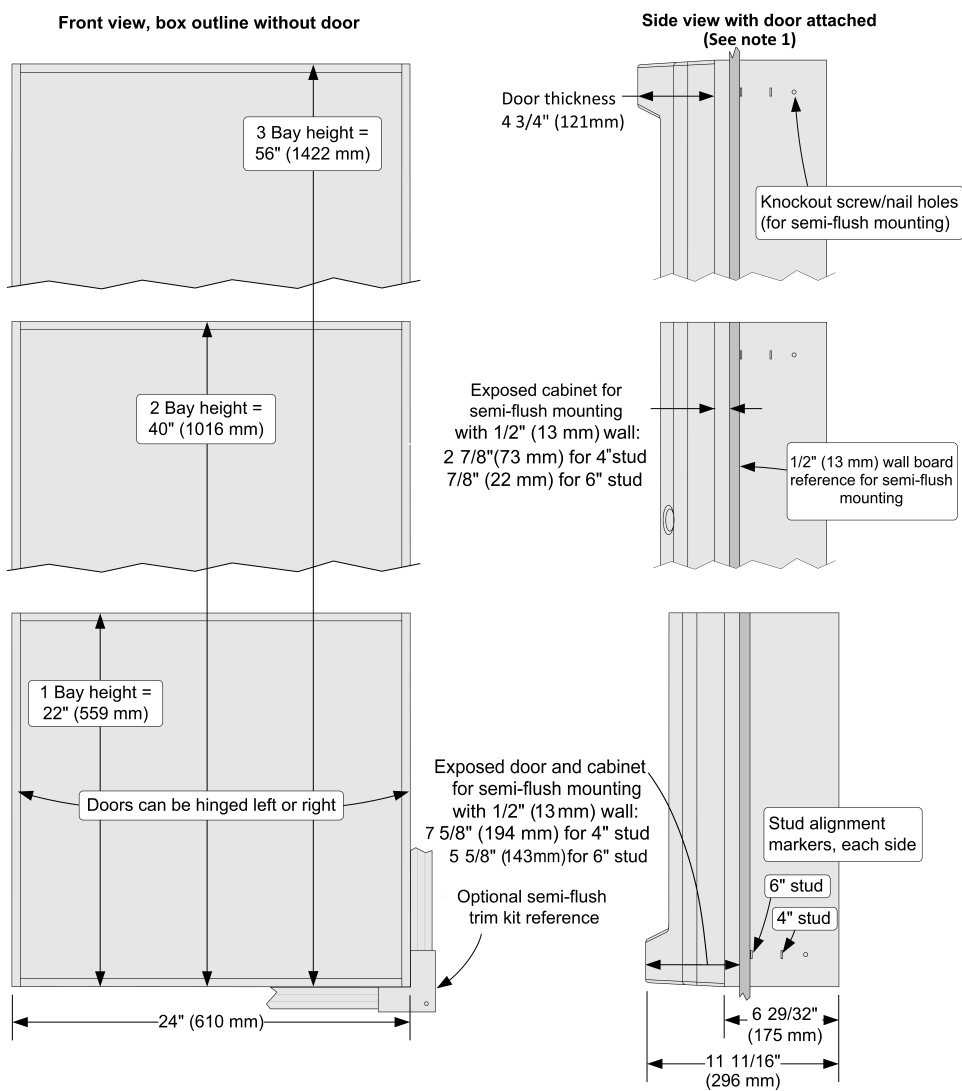


Figure 4: Enclosure Install Reference

Note:

1. Side View dimensions are shown with minimal cabinet and door protrusion from the exterior wall. For 6 inch stud construction with minimum protrusion shown, the door will open 90 degrees. To allow the door to open 180 degrees, the exposed cabinet dimension from the exterior wall must be a minimum of 3 inches (76 mm) for both 4 inch and 6 inch stud construction.

2. 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.

General specifications

Table 19: NDU General Specifications

Specification	Rating		
Input Power [System (SPS); Expansion (XPS); Remote (RPS); and 100 W amplifiers]	120 VAC Models	4 A maximum @ 102 to 132 VAC, 60 Hz	
	220-240 VAC Models	2 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC	
Power Supply Output Ratings for SPS, XPS, and RPS (see data sheet S4100-0031 for more detail)	Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 9 A total for "Special Application" appliances; 4 A total for "Regulated 24 DC" power	
	Auxiliary Power Tap	2 A maximum @ nominal 28 VDC	
	NACs Programmed for Auxiliary Power	2 A maximum per NAC; 5 A maximum total	Rated 19.1 to 31.1 VDC
Battery Charger Ratings for SPS and RPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 110 Ah (batteries larger than 50 Ah require a remote battery cabinet); ULC listed for charging up to 50 Ah batteries	
	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	
Environmental	Operating Temperature Range	32° to 120°F (0° to 49° C)	
	Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	

Table 20: IDNet 2 Communications Wiring Specifications (refer to installation instructions for more information)

Specification	Rating	
Maximum Distance from Control Panel per Device Load	0 to 125	4000 ft (1219 m); 50 ohms
	126-250	2500 feet (762 m); 35 ohms
Total Wire Length Allowed With "T" Taps for Class B Wiring	Up to 12,500 ft (3.8 km); 0.60 µF	
Maximum Capacitance Between IDNet 2 Channels	1 µF	
Wire Type and Connections	Shielded or unshielded, twisted or untwisted wire	Some applications may require shielded wiring. Review your system with your local Simplex product supplier.
Connections	Terminal blocks for 18 to 12 AWG	
Total of initiating SLCs per CPU	30, including VESDA Interface	
Compatibility	IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors	

Additional 4100ES and ES Net Product Reference

Table 21: Additional 4100ES and ES Net Product Reference

Subject	Data Sheet
Serial DACT (SDACT) for 4100ES, 4010ES, 4007ES	S2080-0009
Battery and Battery Cabinet Reference for 4100ES	S2081-0006
110 Ah Batteries and Cabinets for 4100ES	S2081-0012
Seismic Battery Brackets Reference	S2081-0019
External 110 Ah Battery Charger for 4100ES, 4010ES	S4081-0002
4100ES Basic Panels with SPS Power Supplies	S4100-0031
4100ES LED/Switch Modules & Printer	S4100-0032
4100ES Emergency Voice/Alarm Equipment	S4100-0034
4100ES Enclosures	S4100-0037
InfoAlarm Command Center with SPS Power Supplies	S4100-0045
BACpac Ethernet Module	S4100-0051
Building Network Interface Card (BNIC)	S4100-0061
SafeLINC Internet Interface	S4100-0062
TrueInsight Remote Gateway	S4100-0063
ES Net Network Products and Specifications	S4100-0076
4100ES Basic Panels with EPS Power Supplies	S4100-0100
InfoAlarm Command Center with EPS Power Supplies	S4100-0101
NDU with EPS Power Supplies for ES Net	S4100-0104
TrueSite Workstation	S4190-0016
TrueSite Incident Commander	S4190-0020

