Simplex

*UL, ULC, CSFM Listed;
FM Approved; MEA (NYC)
Acceptance**

4100ES Fire Control Panels
4100ES Network Display Units with SPS Power Supplies for 4120 Network

Features

Compatible with 4120 Network.

NDU provides annunciation for up to 12,000 network points:
· The basic Network Display Unit (NDU) is a special purpose master controller for 4120 networks that includes a 4120 modular 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

Listed to:
· 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)
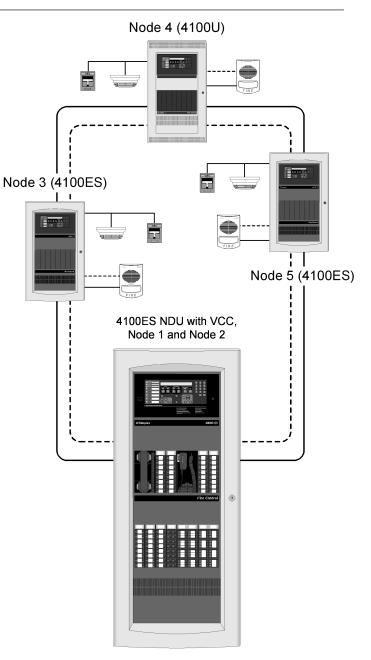· ULC/ORD-C100 Smoke Control System Equipment (UUKL7)

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

Introduction

The 4100ES Network Display Unit

The 4100ES Network Display Unit is a 4120 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.

4100U Series Products Note

The system modules and features listed in this data sheet are both compatible with, and listed for use with 4100U series fire alarm control panels. Contact your local Simplex product supplier for details.

4120 Network Overview

When connected to other 4120 network nodes, individual fire alarm control panels become components of a distributed intelligence system. Each panel that directly connects to the 4120 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. Multiple 4100ES NDUs (separately packaged) can be connected to a 4120 network to duplicate common information at separate locations, or direct selected information by type such as troubles, alarms, control, etc.

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, a 4120 modular network interface card, 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.
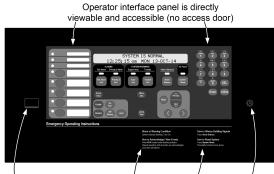
The NDU with VCC includes an expansion bay with separate master controller board, 4120 modular network interface card, and a standard SPS. This results in two separate network nodes residing within the same cabinet.

In this bay (typically the second expansion bay), Slots 1 and 2 are available for single slot panel mounted modules and optional LED/switch modules can also be mounted.

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

Refer to Operator Interface Detail Reference for typical three bay cabinet module location.

Operator Interface Detail Reference

Figure 2: Primary functions of the operator interface
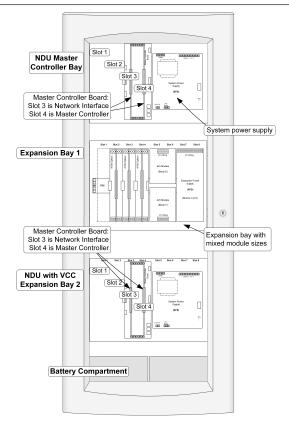

Figure 3: NDU with VCC Internal Module Bay Reference (exact layout is determined by specific system requirements)

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)
· Cabinet assembly design has been seismic tested and is certified to IBC and CBC standards as well as to ASCE 7 categories A through F, requires 4100-7912 option for additional legacy card stabilizer brackets and battery brackets as detailed on data sheet *S2081-0019*
· 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

Standard Module Details

NDU (top bay) master controller & motherboard includes a master controller, master controller motherboard, 4120 Modular 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. A 4120 modular 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.

- 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 S4100-0031 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, 4120 Modular NIC and SPS power supply with IDNet communication 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. A 4120 modular 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, 4603-9100series 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 is selectable for detector reset, door holder, or coded output operation

- 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
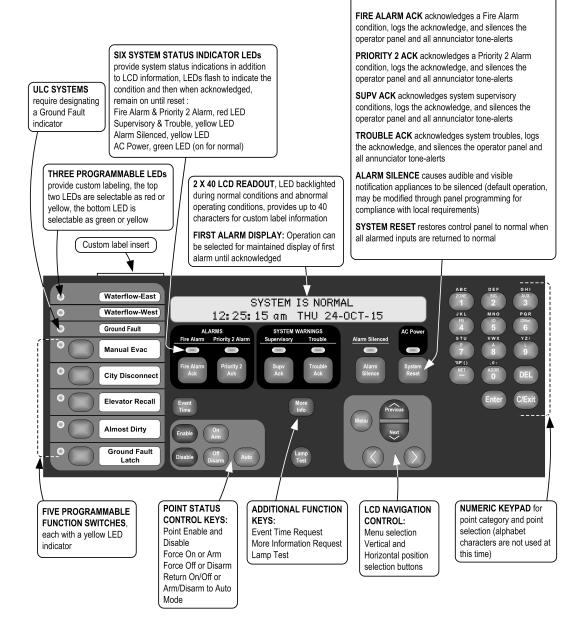
Operator Interface

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 Operator Interface Features.

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 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

FIRE ALARM ACK acknowledges a Fire Alarm condition, logs the acknowledge, and silences the operator panel and all annunciator tone-alerts

PRIORITY 2 ACK acknowledges a Priority 2 Alarm condition, logs the acknowledge, and silences the operator panel and all annunciator tone-alerts

SUPV ACK acknowledges system supervisory conditions, logs the acknowledge, and silences the operator panel and all annunciator tone-alerts

TROUBLE ACK acknowledges system troubles, logs the acknowledge, and silences the operator panel and all annunciator tone-alerts

ALARM SILENCE causes audible and visible notification appliances to be silenced (default operation, may be modified through panel programming for compliance with local requirements)

SYSTEM RESET restores control panel to normal when all alarmed inputs are returned to normal

SIX SYSTEM STATUS INDICATOR LEDs provide system status indications in addition to LCD information, LEDs flash to indicate the condition and then when acknowledged, remain on until reset :
Fire Alarm & Priority 2 Alarm, red LED
Supervisory & Trouble, yellow LED
Alarm Silenced, yellow LED
AC Power, green LED (on for normal)

ULC SYSTEMS require designating a Ground Fault indicator

THREE PROGRAMMABLE LEDs provide custom labeling, the top two LEDs are selectable as red or yellow, the bottom LED is selectable as green or yellow

2 X 40 LCD READOUT, LED backlighted during normal conditions and abnormal operating conditions, provides up to 40 characters for custom label information

FIRST ALARM DISPLAY: Operation can be selected for maintained display of first alarm until acknowledged

Custom label insert

FIVE PROGRAMMABLE FUNCTION SWITCHES, each with a yellow LED indicator

POINT STATUS CONTROL KEYS:
Point Enable and Disable
Force On or Arm
Force Off or Disarm
Return On/Off or Arm/Disarm to Auto Mode

ADDITIONAL FUNCTION KEYS:
Event Time Request
More Information Request
Lamp Test

LCD NAVIGATION CONTROL:
Menu selection
Vertical and Horizontal position selection buttons

NUMERIC KEYPAD for point category and point selection (alphabet characters are not used at this time)

Media Cards for 4120 Modular Network Interface Cards

For additional information on 4120 fire alarm products and specifications, refer to data sheet S4100-0056.

Table 1: Media cards for 4120 Modular Network Interface Cards

Model	Description		Size	Supv	Alarm
4100-6056	Wired network media card	Select per network connection requirements; mounts on the supplied modular network interface card(s); up to two media cards are required per network interface card; supports Class B or X operation	N.A.	55 mA	55 mA
4100-6301	Left port, single-mode 4120 duplex fiber media card	Select per network connection requirements; mounts on the supplied modular network interface card(s); up to two media cards are required per network interface card; supports Class B or X operation. 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 data sheet S4100-0056 for full fiber media module specifications and retrofit information)	N.A.	55 mA	55 mA
4100-6302	Right port, single-mode duplex 4120 fiber media card		N.A.	55 mA	55 mA
4100-6303	Left port, multi-mode 4120 duplex fiber media card		N.A.	55 mA	55 mA
4100-6304	Right port, multi-mode 4120 duplex fiber media card		N.A.	55 mA	55 mA
4100-6055	Network access dial-in service modem, mounts to supplied network interface card, requires telephone line connection		N.A.	60 mA	60 mA

NDU Equipment Selection

Table 2: NDU Equipment Selection

Model	Description			Size	Supv.	Alarm
4100-1291	Remote Unit Interface module (RUI); up to three maximum per control panel			1 Slot	85 mA	85 mA
4100-6030	Service port modem for local panel access only, mounts to master controller module, requires telephone line connection, accesses same information as front panel port			N.A.	70 mA	70 mA
4100-6031	City Circuit, with disconnect switches	For SPS only, maximum 1 per panel	**Maximum 1 per SPS or RPS**	N.A.	20 mA	36 mA
4100-6032	City Circuit, without disconnect switches	For SPS only, maximum 1 per panel	**Maximum 1 per SPS or RPS**	N.A.	20 mA	36 mA
4100-6033	Alarm/Supv/Tbl Relay, 3 Form C relays, 2 A @ 32 VDC		**Maximum 1 per SPS or RPS**	N.A	15 mA	37 mA
4100-6038	Dual RS-232 Interface; 3 maximum; can mount in Slot 3 or Slot 2 of Master Controller			1 Slot	60 mA	60 mA
4100-6046	Dual Port RS-232 standard interface (4 x 5 module)			1 Block	60 mA	60 mA
4100-6052	DACT, Point or Event Reporting; includes 2, 14 ft (4.3 m) DACT cables			1 Slot	30 mA	40 mA
4100-0156	8 VDC Converter, required for multiple Physical Bridge Modules; 3 A @ 8 VDC maximum			1 Block	included with loads	
4100-9816	Master Clock Interface Module with one standard RS-232 port (see S4100-0033)			1 Slot	132 mA	132 mA
4100-6079	Safelinc internet interface module			2 Slots	145 mA	145 mA

Table 3: Network Display Unit, Non-Voice*

SKU	SKU Type/Listing		Description	Supv.	Alarm
4100-9141	120 VAC Input	UL	**4100ES NDU with Master Controller**, LCD display and operator interface; Network Interface Module (select media cards separately), Standard Master Controller CPU Module with RUI output communications interface; 9 A System Power Supply (SPS) with battery charger, one 2 A Auxiliary Power output and expansion slot for City Circuit or Alarm/Supv/Tbl Relay option (NOTE: SPS IDNet channel, NACs and Aux Relay are disabled in NDU bay).	419 mA	476 mA
4100-9143	Canadian, English	ULC		See below for selected Network Media Card current	
4100-9144	Canadian, French	ULC		See below for selected Network Media Card current	
4100-9241	220-240 VAC Input	UL		See NDU, or NDU with VCC Communication Modules (with exceptions as noted) for selected Network Media Card current	

Table 4: Network Display Unit with Voice Command Center (VCC)*

SKU	SKU Type/Listing		Description	Supv.	Alarm
4100-9142	120 VAC Input	UL	4100ES NDU with VCC includes the first bay equipment described for the NDU (above) and a second bay assembly with separate: Network Interface Module (select media cards separately); Standard Master Controller CPU with RUI output communications interface; 9 A System Power Supply (SPS) with battery charger, one 250 Point IDNet SLC, three 3 A Class A/B NACs, one 2 A Auxiliary Power output, one Aux Relay and expansion slot for City Circuit or Alarm/Supv/Tbl Relay option	828 mA	907 mA
4100-9145	Canadian, English	ULC		See NDU, or NDU with VCC Communication Modules (with exceptions as noted) for selected Network Media Card current	
4100-9146	Canadian, French	ULC		See NDU, or NDU with VCC Communication Modules (with exceptions as noted) for selected Network Media Card current	
4100-9242	220-240 VAC Input	UL		See NDU, or NDU with VCC Communication Modules (with exceptions as noted) for selected Network Media Card current	

Table 5: System Option for Seismic Compliance

SKU	Description
4100-7912	System option for Seismic compliance, provides additional stabilizer brackets required for legacy style cards

Note: * For InfoAlarm Command Center expanded content display products, refer to data sheet *S4100-0045* .

VCC, Emergency Voice/Alarm Communications Selection*

SKU	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)	Operator Interface Modules	Single slot modules requiring connection to an LED/switch controller; space behind controller accepts 4100ES flat modules only
4100-1253	1.5 Channel (audio + mike)		
4100-1254	2 Channel (full audio)		Additional adjacent LED/switch module(s) are required for specific speaker circuit selection
4100-1255	3-8 Channel		

Table 6: Firefighter Telephone System Products

SKU	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

Note: Refer to *S4100-0034* for additional detail.

Table 7: Analog Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible*

SKU	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		NAC rating = 2 A	50 W, or 100 speakers
4100-1313	70.7 VRMS output			NAC rating = 0.707 A	

Table 8: 100 W Analog Amplifiers with Power Supply, Constant Supervision Compatible*

SKU/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	ULC models have low battery dropout circuit
4100-1316	4100-1317	120 VAC, 60 Hz	ULC			
4100-1318	4100-1319	220/230/240 VAC, 50/60 Hz	UL			
4100-1320	4100-1321	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier	
4100-1322	4100-1323	120 VAC, 60 Hz	ULC			
4100-1324	4100-1325	220/230/240 VAC, 50/60 Hz	UL			

Note: * Refer to document *S4100-0034* for additional audio module information.

Table 9: Digital Emergency Voice/Alarm Communications Equipment*

SKU	Description		Details		
4100-9621	Basic Digital Audio Operation with microphone, requires dedicated expansion bay		Includes: Expansion Bay, 4100-1311 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	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
4100-1364	70.07 VRMS output			NAC rating = 0.5 A	
4100-1326	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible		NAC rating = 2 A	50 W, or 100 speakers
4100-1327	70.7 VRMS output			NAC rating = 0.707 A	

Table 10: 100 W Digital Amplifiers with Power Supply, Constant Supervision Compatible*

SKU/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	ULC models have low battery dropout circuit
4100-1330	4100-1331	120 VAC, 60 Hz	ULC			
4100-1332	4100-1333	220/230/240 VAC, 50/60 Hz	UL			
4100-1334	4100-1335	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier	
4100-1336	4100-1337	120 VAC, 60 Hz	ULC			
4100-1338	4100-1339	220/230/240 VAC, 50/60 Hz	UL			

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

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

Note: * Refer to document *S4100-0034* for additional audio module information.

Table 12: Options for either Analog or Digital Systems

SKU	Description	SKU	Description
Options for either Analog or Digital Systems (refer to data sheet *S4100-0034* for additional module details)			
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	Options for use with Expansion Signal Module
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 *S4100-0034* for details		

Note: * Refer to document *S4100-0034* for additional audio module information.

NDU with VCC, LED/Switch Modules

Note: Refer to *S4100-0032* for additional detail.

Table 13: 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	
4100-1283	Two	Yellow, top and bottom		
4100-1284	Two	Red on top, Green on bottom		
4100-1285	One	Red	16	16
4100-1278	One	8 Red on left, 8 Yellow on right		
4100-1287	One	Red	24	24

Table 14: 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 15: LED/Switch Controller Modules and Accessories

Model	Description	
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 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	

Table 16: LED kits for 4100-1276 and 4100-1277 modules

Model	Color	Description
4100-9843	Yellow	Kits of 8 LEDs; order as required for 4100-1276 and 4100-1277 modules
4100-9844	Green	
4100-9845	Red	

Additional Expansion and Remote Power Supplies and Accessories

SKU	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
4100-5112	120 VAC, Canadian	ULC	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
4100-5126	120 VAC, Canadian	ULC	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					

VCC – Additional Options

SKU	Description
4100-6034	Door Tamper Switch with built-in addressable IDNet IAM, one per cabinet assembly if required
4100-2320	Audio Bay-to-Bay Interconnection Harness Kit; **order one for each audio bay addition**
4100-0637	Audio Box Interconnection Harness Kit; **order one for each close-nippled audio cabinet**
4100-9835	Termination and Address Label Kit (for module marking); provides additional labels for field installed modules
4100-1290	24 Point I/O Module; I Slot (see data sheet *S4100-0032* for details)

SKU	Description
4100-1293	Panel Mount Thermal Printhead Printer, supplied with one roll of paper; requires 3 Slots; see S4100-0032 for details
4190-9803	Replacement Paper for 4100-1293 Printer, one roll
4100-6045	Coded Manual Station Decoder Module; 3 Slot module; 85 mA supervisory, 163 mA alarm; see *S4100-0018* for details
4100-6048	VESDA Air Aspiration Interface; 1 Slot module; 132 mA supervisory or alarm, see *S4100-0026* for details
4100-5013*	8 Point Zone / Relay Module
4100-3109*	250 Point IDNet 2 Module
4100-3110*	250 Point IDNet 2+2 Module
4100-3102*	127 Point MAPNET II Module
4100-3103*	MAPNET II Quad Isolator
4100-3202*	4 DPDT Relays w/feedback, 10 A
4100-3204*	4 DPDT Relays w/feedback, 2 A
4100-3206*	8 SPDT Relays, 3 A
* See data sheet S4100-0031 for details	

NDU or NDU with VCC Additional Options

Table 17: NDU or NDU with VCC Additional Options

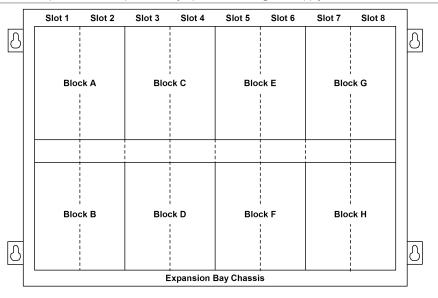| SKU	Description
4100-1279	Single blank 2" display cover; order as required (8 fill a bay front); two max. in a row between LED/switch modules
4100-2210	Appliqué, Canadian French, 4100ES Fire Control
4100-2300	Expansion Bay Hardware, **order for each expansion bay** (unless included with selected option)
4100-0636	Box Interconnection Harness Kit; **order one for each close-nippled cabinet**
4100-0632	Terminal Block Module; 2, 16 position terminal blocks mounted on 4" x 5" single block size, for up to 12 AWG wire (3.31 mm2)
4100-5128	Battery Distribution Terminal Block; mounts to side of box; required for close-nippled cabinets that interconnect battery wiring

General Specifications

Table 18: 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		Output switches to battery during AC failure or brownout
	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		

Expansion Bay Module Loading Reference (exact locations are provided with shipped product)

Description	Mounting
Terminal Block Module	4" x 5", 1 block
Class B Physical Bridge	2", 1 slot
Class X Physical Bridge	4", 2 slots
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.	

Expansion Bay Chassis

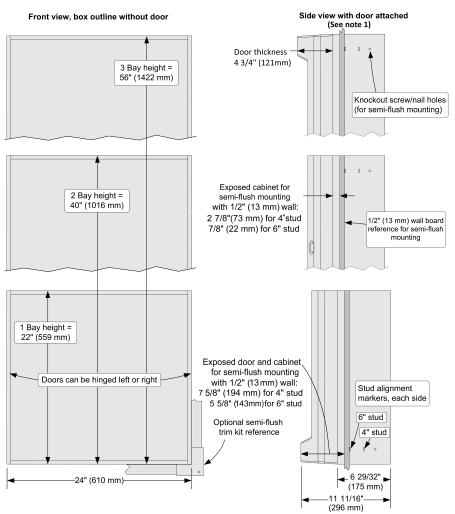**Size Definitions**

· 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

Wall Mounted Enclosure Installation Reference

Front view, box outline without door

Side view with door attached
(See note 1)

3 Bay height = 56" (1422 mm)

Door thickness 4 3/4" (121mm)

Knockout screw/nail holes (for semi-flush mounting)

2 Bay height = 40" (1016 mm)

Exposed cabinet for semi-flush mounting with 1/2" (13 mm) wall:
2 7/8"(73 mm) for 4"stud
7/8" (22 mm) for 6" stud

1/2" (13 mm) wall board reference for semi-flush mounting

1 Bay height = 22" (559 mm)

Doors can be hinged left or right

Exposed door and cabinet for semi-flush mounting with 1/2" (13 mm) wall:
7 5/8" (194 mm) for 4" stud
5 5/8" (143mm)for 6" stud

Stud alignment markers, each side

6" stud

4" stud

Optional semi-flush trim kit reference

24" (610 mm)

6 29/32" (175 mm)

11 11/16" (296 mm)

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.

Additional 4100ES Technical Reference

Table 19: Additional technical documents

Document	Document Number
Installation Instructions	574-848
Operating Instructions	579-197

Additional 4100ES and 4120 Network 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
External 110 Ah Battery Charger for 4100ES, 4010ES	S4081-0002
TCP/IP Physical Bridge Modules for 4120 Networks	S4100-0029
4100ES Basic Panels with SPS Power Supplies	S4100-0031
4100ES LED/Switch Modules & Printer	S4100-0032
4100ES Emergency Voice/Alarm Equipment	S4100-0034

Subject	Data Sheet
4100ES Enclosures	S4100-0037
InfoAlarm Command Center with SPS Power Supplies	S4100-0045
Multiple Signal Fiber Optic Modems for 4120 Networks	S4100-0049
BACpac Ethernet Module	S4100-0051
4120 Network Products and Specifications	S4100-0056
Physical Bridge Modules for 4120 Networks	S4100-0057
Building Network Interface Card (BNIC)	S4100-0061
SafeLINC Internet Interface	S4100-0062
TrueInsight Remote Gateway	S4100-0063
4100ES Basic Panels with EPS Power Supplies	S4100-0100
InfoAlarm Command Center with EPS Power Supplies	S4100-0101
NDU with EPS Power Supplies for 4120 Network	S4100-0102
TrueSite Workstation	S4190-0016
Network System Integrator (NSI) for 4120 Networks	S4190-0017
TrueSite Incident Commander	S4190-0020