

Features

4100ES Series MINIPLEX transponders allow remotely located initiating and notification functions:

- Transponder operation is available as standard or with local mode operation
- Communications with the host fire alarm control panel use the Remote Unit Interface (RUI/RUI+) format

Initiating functions include:

- Addressable device support including TrueAlarm analog sensor compatibility
- Conventional initiating device circuit (IDC) support

Notification functions include:

- Addressable strobe and horn notification using *enhanced power delivery IDNAC SLCs*
- Emergency voice/alarm communications
- Conventional DC notification appliance circuits (NACs)

Local mode operation provides:

- Default local initiating and notification operation in the event of a communications loss with the host control panel
- Enabling of an optional Local Mode Controller with a local alarm sounder, LED status indicators, and keyswitch enabled control switches
- Support for IDNet addressable devices, addressable and conventional notification appliances, and default output tones from local amplifiers

Optional modules include:

- Digital or Analog audio riser modules for connection to system audio signals
- Digital or analog input audio amplifiers with integral on-board NACs
- Power supplies with or without battery chargers
- City Connect modules and RS-232 ports for printers or maintenance terminals
- Alarm relays, auxiliary relays, additional IDC modules, and NAC expansion modules

NEMA 1/IP30 cabinets are equipped with solid doors (platinum or red) and in one, two, or three bay sizes

Listed to:

- UL 864, Fire Detection and Control (UOJZ), and Smoke Control Service (UUKL)
- UL 2017, Process Management Equipment (QVAX)
- UL 1076, Proprietary Alarm Units-Burglar (APOU)
- UL 1730, Smoke Detector Monitor (UULH)
- UL 2572, Mass Notification Systems (PGWM)
- ULC S527, Control Units for Fire Alarm Systems

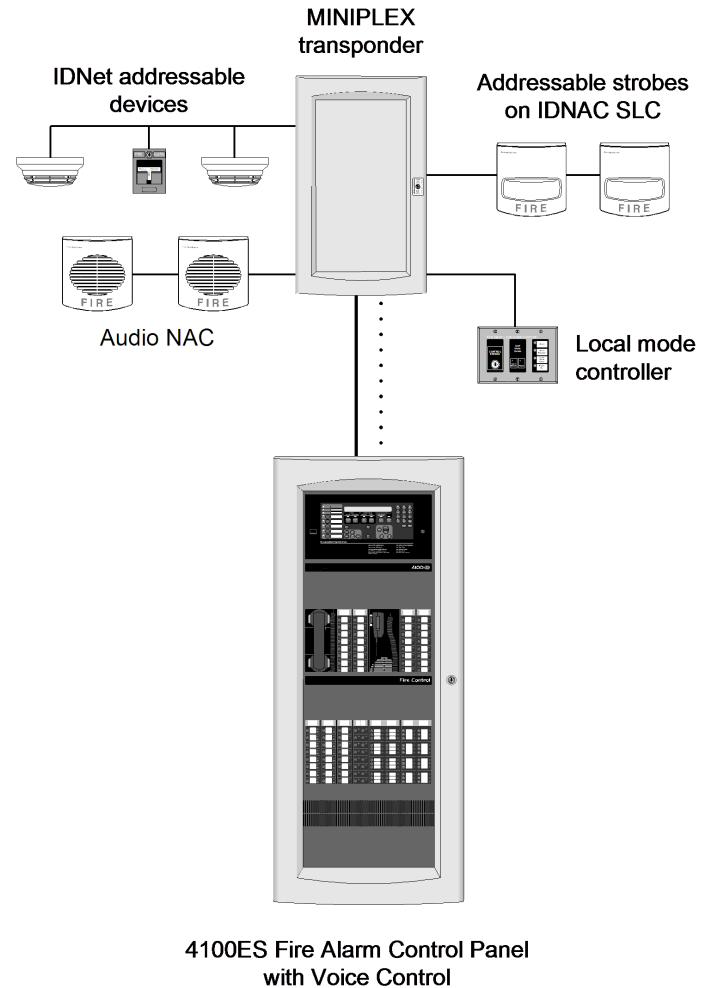


Figure 1: Typical 4100ES MINIPLEX System One-Line Drawing

Introduction

4100ES MINIPLEX transponders connect to a host 4100ES Fire Alarm Control Panel using Autocall remote unit interface (RUI) communications. At the transponder, RUI communications are received by the transponder interface module and translated into the same internal communications format that is used in the host control panel.

Remotely located modules. With RUI communications, the transponder can remotely provide the same initiating and notification functions that occur at the host control panel without requiring multiple long distance wiring runs. Connections to the host panel are low current communications and audio wiring with distances up to 2500 ft (762 m).

Additional Reference. Refer to document **AC4100-0100** and the other documents listed in Table 1 for additional information concerning the extensive initiating and notification features of the 4100ES fire alarm control panels.

Module Bay Description

Transponder model A100-9600 includes a bay assembly, a power distribution interface module (PDI), a Basic Transponder Interface Module, and an interconnect harness. Communications with the host fire alarm control panel are via a Remote Unit Interface (RUI) connection that allows for up to 2500 ft (762 m) distance. RUI can communicate with up to a total of 31 remote devices and can be either Style 4 or Style 7 communications.

Transponder model A100-9601 substitutes a Local Mode Transponder Module for the Basic Transponder Module.

RUI and RUI+. RUI+ provides isolated Remote Unit Interface communications for improved noise immunity. For additional information including detailed module compatibility, refer to data sheet [AC4100-0100](#).

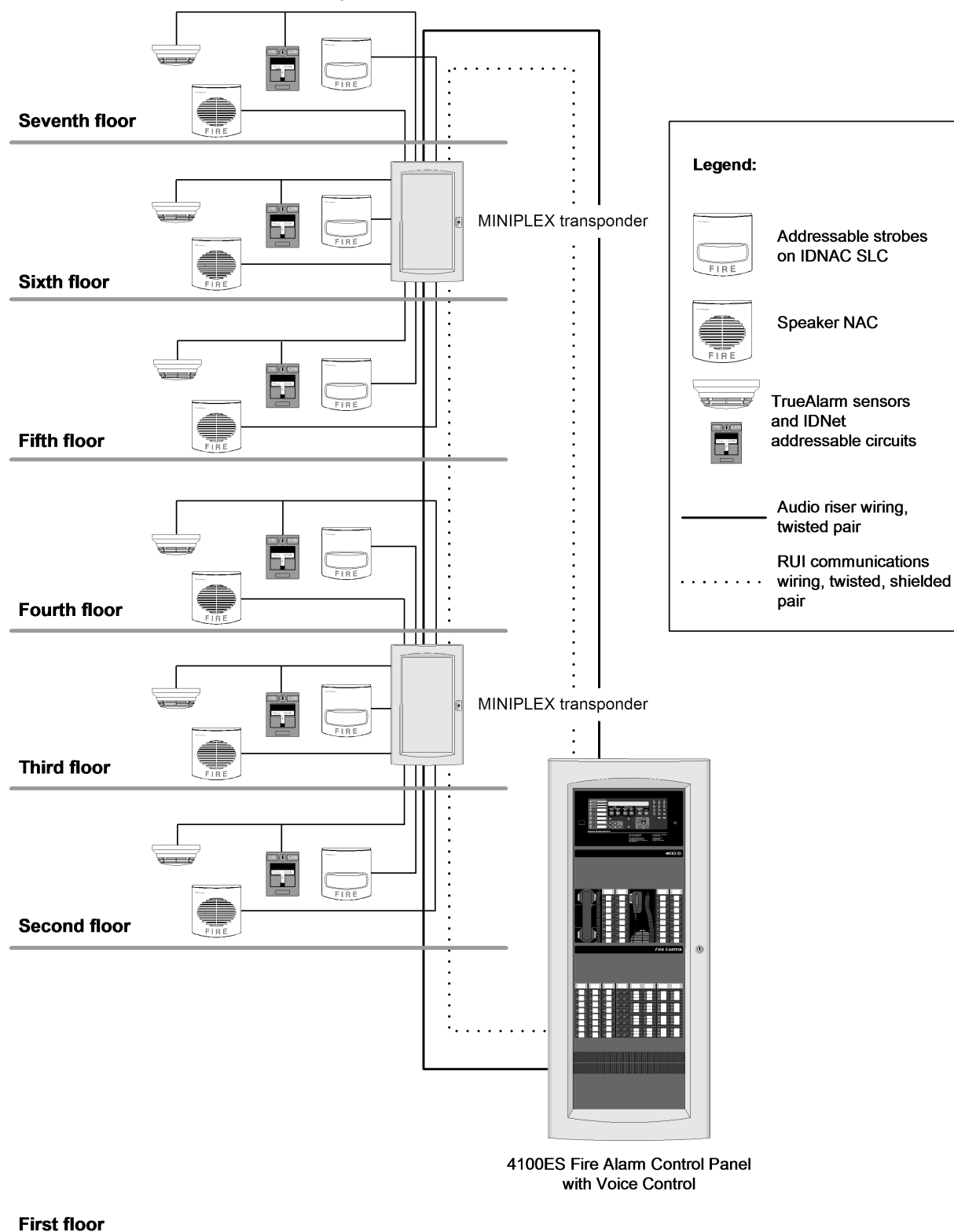
Optional Expansion Bays each include a PDI and accept a variety of optional modules (refer to [MINIPLEX Transponder Product Selection](#)).

The Battery Compartment (bottom) accepts two batteries, up to 50 Ah, that can be mounted within the cabinet. Battery mounting does not interfere with available module space. A power supply with battery charger is required for each battery set.

Packaging Availability

- Modules are power-limited (except as noted, such as relay modules)
- Enclosure are available for one, two, or three bay sizes or for cabinet rack mounting
- NEMA 1/IP30 boxes and solid doors are available in platinum or red (ordered separately)
- Up to eight close-nippled cabinets can be connected at one transponder location (close-nippled is mounted within 20 ft (6 m) and with interconnecting wiring enclosed in conduit)
- Refer to document [AC4100-0037](#) for enclosure details

Typical Multi-Floor MINIPLEX Audio System



Additional 4100ES Data Sheet Reference

Table 1: Data Sheet Reference

Subject	Data Sheet
MINIPLEX Transponders for conventional (non-addressable) notification applications	AC4100-0035
4100ES Audio/Phone Modules	AC4100-0034
Basic Panel Modules and Accessories	AC4100-0100
Network Display Unit (NDU)	AC4100-0102
Remote Annunciators	AC4100-0038
Remote Battery Charger	AC4081-0002
Enclosures	AC4100-0037
LED/Switch Modules	AC4100-0032

MINIPLEX Transponder Product Selection

Table 2: Transponder Type

SKU	Description		Supv.	Alarm
A100-9600	Basic Transponder, includes bay equipment with power distribution interface, and A100-0620 Basic Transponder Interface Module mounted in Block A		87 mA	87 mA
A100-9601	Local Mode Transponder, includes bay equipment with power distribution interface, and A100-0625 Local Mode Transponder Interface Module mounted in Block A	normal	87 mA	87 mA
		in local mode	112 mA	112 mA

Table 3: Communication Modules

SKU	Description			Size	Supv.	Alarm
A100-1291	Remote Unit Interface Module (RUI, unisolated); up to 3 maximum per control panel; for use with A100-9600 only			1 Slot	85 mA	85 mA
A100-6031	Select one per EPS or RPS	City Circuit, with disconnect switches	For use with EPS only, not RPS (Note: one per panel maximum)	N.A.	20 mA	36 mA
A100-6032		City Circuit, without disconnect switches		N.A.	20 mA	36 mA
A100-6033		Alarm/Supv/Tbl Relay, 3 Form C relays, 2 A @ 32 VDC; for EPS or RPS		N.A.	15 mA	37 mA
A100-6038	Dual RS-232 Interface			1 Slot	132 mA	132 mA
A100-6048	VESDA Aspiration System Interface (refer to data sheet AC4100-0026 for details)			1 Slot	132 mA	132 mA
A100-9816	Master Clock Interface Module with one standard RS-232 port (see AC4100-0033)			1 Slot	132 mA	132 mA

Table 4: Enhanced, Expansion, and Remote Power Supplies and Accessories

SKU	Voltage/Listing		Description	Size	Supv.	Alarm
A100-5311	120 VAC	UL & ULC	Expansion EPS with IDNet 2 Module; 9 A Enhanced Power Supply (EPS) with battery charger, electrically isolated 250 Point IDNet 2 Module, three Class B IDNAC SLCs, one 2 A output configurable for Auxiliary Power or Simple NAC operation and expansion slot for City Circuit or Alarm/Supv/Tbl Relay option, 120 VAC model has selectable low battery cutout	4 Blocks Right Side	225 mA	490 mA
A100-5313	220-240 VAC	UL			add IDNet device currents separately	
A100-5325	120 VAC	UL & ULC	Enhanced Power Supply (EPS); 9 A EPS, functionally identical to the Expansion EPS except without the IDNet 2 Module	4 Blocks Right Side	125 mA	220 mA
A100-5327	220-240 VAC	UL				
A100-6103	Dual Class A IDNAC Isolator (DCAI) , converts a single Class B IDNAC SLC input to two Class A or two Class B SLC outputs; provides short circuit isolation between each Class A or B output circuit; connect up to two DCAI modules per IDNAC SLC input up to a maximum of 6 DCAI modules per EPS; each isolated output SLC used requires one IDNAC address; the total current remains controlled by the Class B input source SLC at 3 A maximum			1 Block	8.3 mA	18.5 mA
A100-5101	120 VAC	UL	Expansion Power Supply (XPS); 9 A output, 3 built-in Class A/B NACs, rated 3 A for Special Application appliances (2 A for Regulated DC); NACs can be selected as auxiliary power outputs, derated to 2 A for continuous duty, total per XPS is 5 A*	2 Blocks	50 mA	50 mA
A100-5102	220-240 VAC	UL	Expansion Power Supply (XPS); 9 A output, 3 built-in Class A/B NACs, rated 3 A for Special Application appliances (2 A for Regulated DC); NACs can be selected as auxiliary power outputs, derated to 2 A for continuous duty, total per XPS is 5 A*	2 Blocks	50 mA	50 mA
A100-5115	NAC Expansion Module, 3 NACs, Class A/B, mounts on XPS only			N.A.	25 mA	25 mA
A100-5125	120 VAC	UL	Remote Power Supply (RPS); 9 A power supply/charger similar to XPS except with battery charger; will accept one A100-6033*	4 Blocks	150 mA	185 mA

Addressable Fire Detection and Control MINIPLEX Transponders

Table 4: Enhanced, Expansion, and Remote Power Supplies and Accessories

SKU	Voltage/Listing		Description	Size	Supv.	Alarm
A100-5127	220-240 VAC	UL	Remote Power Supply (RPS); 9 A power supply/charger similar to XPS except with battery charger; will accept one A100-6033*	4 Blocks	150 mA	185 mA
A100-5152	12 VDC Power Option, 2 A maximum			1 Block	1.5 A maximum	
A100-0636	Box Interconnection Harness Kit (non-audio); order one for each close-nipped cabinet					
* RPS and XPS power supply NACs can provide synchronized strobe or SmartSync, two-wire non-addressable operation only.						

Table 5: Miscellaneous Options and Accessories

SKU	Description
A100-1290	24 Point I/O Module for external connections, select each point as either a switch input (momentary or maintained) or an output (for lamp/LED/relay); requires 1 Slot (refer to data sheet AC4100-0032 for additional information)
A100-0632	Terminal Block Utility Module with 2, 16 position terminal blocks on 4" x 5" single block, for of up to 12 AWG wire (3.31 mm ²)
A100-0633	Door Tamper Switch, connects into Transponder Interface Module, one per cabinet assembly if required
A100-0634	120 VAC
A100-0635	220/230/240 VAC
Power Distribution Module (PDM) select per system voltage; one required per box	

Table 6: Audio Riser Modules

SKU	Description	Size	Supv.	Alarm
A100-0621	Dual Channel Analog Audio Riser Module; accepts one or two separate audio signals from host control panel; mounts in Block B, is controlled by Transponder Interface Module	1 Block	0 mA	15 mA
A100-0622	3-8 Channel Digital Audio Riser Module; similar to analog module, except receives and decodes a digital input signal with up to eight audio channels; with Non-Alarm Audio input	1 Block	70 mA	70 mA

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

SKU	Description		Details		
A100-1361	25 VRMS output	Flex-35, 35 W Amplifier, constant supervision compatible	Includes three on-board Class B audio NACs; power is supplied from an RPS or XPS	NAC rating = 1.4 A	35 W, or 100 speakers
A100-1362	70.07 VRMS output			NAC rating = 0.5 A	
A100-1312	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible		NAC rating = 2 A	50 W, or 100 speakers
A100-1313	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				
A100-1314	A100-1315	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
A100-1318	A100-1319	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
A100-1320	A100-1321	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
A100-1324	A100-1325	220/230/240 VAC, 50/60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier

Table 9: Digital Emergency Voice/Alarm Communications Equipment*

SKU	Description		Details		
A100-1363	25 VRMS output	Flex-35, 35 W Amplifier, constant supervision compatible	Includes three on-board Class B audio NACs; power is supplied from an RPS or XPS	NAC rating = 1.4 A	35 W, or 100 speakers
A100-1364	70.07 VRMS output			NAC rating = 0.5 A	
A100-1326	25 VRMS output	Flex-50, 50 W Amplifier, constant supervision compatible		NAC rating = 2 A	50 W, or 100 speakers
A100-1327	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				
A100-1328	A100-1329	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

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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				
A100-1332	A100-1333	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
A100-1334	A100-1335	120 VAC, 60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier
A100-1338	A100-1339	220/230/240 VAC, 50/60 Hz	UL	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier

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

SKU	Description	Details and Mounting Reference		
A100-1245	Flex-35/50 Expansion NAC Module; adds three Class B audio NACs	Choose one per amplifier	Mounts on Flex-35/50 assembly; NAC ratings = 1.5 A, 35/50 W, or 100 speakers maximum; <i>Supv</i> = 8 mA, <i>Alarm</i> = 60 mA	
A100-1246	Flex-35/50 Class A Adapter Module; converts three on-board NACs to Class A operation		Mounts on Flex-35/50 assembly; NAC ratings = 2 A, 50 W, or 100 speakers maximum; <i>Supv</i> = 10 mA, <i>Alarm</i> = 30 mA	
A100-1248	100 W Amplifier Expansion NAC Module; NAC ratings = 1.5 A, 50 W, or 100 speakers max.	Choose one per amplifier	Provides six additional Class B audio NACs, mounts on 100 W amplifier assembly; <i>Supv</i> = 17 mA, <i>Alarm</i> = 60 mA	
A100-1249	100 W Class A Adapter Module; NAC ratings = 2 A, 50 W, or 100 speakers max.		Converts six on-board NACs to Class A operation, mounts on 100 W amplifier assembly; <i>Supv</i> = 1 mA, <i>Alarm</i> = 60 mA	
A100-1259	25 VRMS Output; NAC rating = 2 A, 50 W, or 100 speakers max.	Constant Supervision Adapter for three NACs; select per amplifier output; not compatible with amplifier NAC expansion modules; deactivated when on batteries	<i>Supv</i> = 10 mA on batteries; <i>Alarm</i> = 35 mA	Converts three Class B audio NACs to Class A or Class B Constant Supervision NACs; mounts on Flex-35/50 or 100 W amplifier assembly; use two for the six NACs on 100 W amplifiers
A100-1260	70.7 VRMS Output; NAC rating = 0.707 A, 50 W, or 100 speakers max.		<i>Supv</i> = 38 mA on batteries; <i>Alarm</i> = 70 mA	

Table 12: Firefighters Telephone Options*

SKU	Description	Size	Supv.	In Use
A100-1272	Expansion Telephone Control Module with three Class B telephone NACs; required when telephone circuits are mounted in transponder;	1 Block	80 mA	130 mA
A100-1273	Telephone Class A Adapter Module; mounts on A100-1272; no additional current required			

* Refer to document **AC4100-0034** for additional audio information.

Table 13: Audio Expansion Signal Module and Options

SKU	Description	Details and Mounting Reference	
A100-5116	Expansion Signal Module; three, 1.5 A Class B NACs for Audio applications; up to five maximum per amplifier; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts one NAC input to three NAC outputs; selects between two inputs; for Flex-35/50 amplifiers only, two input NACs are required; Single Block module mounts in expansion bay; <i>Supv</i> = 20 mA; <i>Alarm</i> = 80 mA	
A100-1266	Expansion Signal Module NAC Expander; NAC rating = 1.5 A, 50 W, or 100 speakers max.	Expands module capacity to six, Class B NACs; <i>Supv</i> = 0.84 mA; <i>Alarm</i> = 60 mA	These modules mount on the A100-5116; select one max. per A100-5116 as required
A100-1267	Expansion Signal Module Class A Adapter; NAC rating = 1.5 A, 50 W, or 100 speakers maximum	Converts 3 Class B, NACs to Class A; <i>Supv</i> = 0 mA; <i>Alarm</i> = 30 mA	
A100-1268	Expansion Signal Module Constant Supervision Adapter; Converts 3 Class B NACs to Constant Supervision Class B or Class A NACs; for 25 or 70.7 VRMS audio	NAC rating = 1.4 A, 50 W, or 100 speakers max.; <i>Supv</i> = 38 mA on batteries (constant supervision deactivated); <i>Alarm</i> = 70 mA	

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Table 14: General Audio Options

SKU	Description
A4081-9018	End-of-line resistor harness for 70.7 VRMS NACs; 10 kΩ, 1 W
A100-2320	Audio Bay-to-Bay Interconnection Harness Kit; order one for each audio bay addition
A100-0637	Audio Box Interconnection Harness Kit; order one for each close-nipped audio cabinet

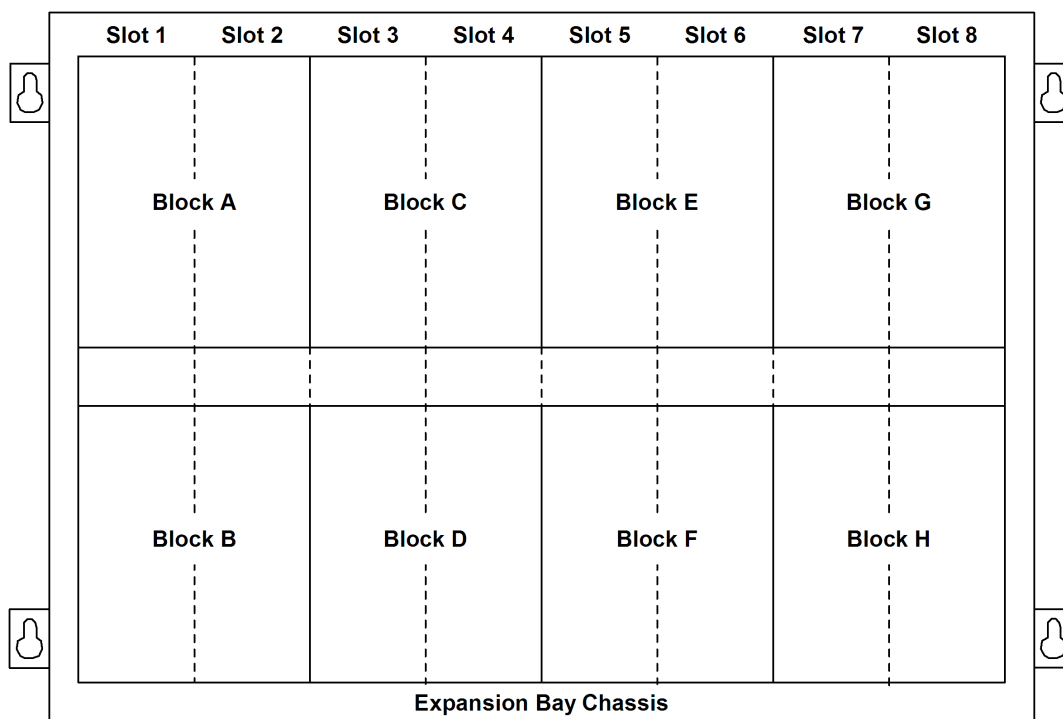
Table 15: Addressable Interface Modules (Note: Total of initiating SLCs per CPU, including VESDA Interface, is 30)

SKU	Description		Supv.	Alarm
A100-3109 †	IDNet 2 Module , 250 point capacity; electrically isolated output with two short circuit isolating Class B or Class A output loops, 1 block; standard on EPS with IDNet 2 Module; alarm currents for 50 and above devices includes 20 device LEDs in alarm	no devices	50 mA	60 mA
		50 devices	90 mA	150 mA
		125 devices	150 mA	225 mA
		250 devices	250 mA	350 mA
A100-3110 †	IDNet 2+2 Module , 250 point capacity; electrically isolated output with four short circuit isolating Class B or Class A output loops, 1 block; mounts in expansion bay or available master controller bay module locations only, not applicable for EPS mounting; alarm currents for 50 and above devices includes 20 device LEDs in alarm	no devices	50 mA	60 mA
		50 devices	90 mA	150 mA
		125 devices	150 mA	225 mA
		250 devices	250 mA	350 mA
A100-3111 †	IDNet Short Circuit Isolating Loop Output Module; for Aftermarket Field Installation Only ; mount up to two on a A100-3109 module; for use with A100-3109 modules in expansion bays or available master controller bay module locations only; not applicable for mounting on a A100-3109 mounted on an EPS			
† Note: Loading per IDNet device (no LEDs on) = 0.8 mA supervisory and 1 m A alarm. Each IDNet 2 and IDNet 2+2 Short Circuit Isolating Loop Output can be individually controlled for system diagnostics and can be assigned a public point for Fire Alarm Network annunciation.				

Table 16: Relay Modules; Nonpower-Limited

SKU	Description	Resistive Ratings		Inductive Ratings		Size	Supv.	Alarm
A100-3202	4 DPDT w/feedback	10 A	250 VAC	10 A	250 VAC	2 Slots	15 mA	175 mA
A100-3204	4 DPDT w/feedback	2 A	30 VDC/VAC	½ A	30 VDC/120 VAC	1 Block	15 mA	60 mA
A100-3206	8 SPDT	3 A	30 VDC/120 VAC	1 ½ A	30 VDC/120 VAC	1 Block	15 mA	190 mA
Current Calculation Notes: 1. For total supervisory current, add panel module currents to base system value and add all external panel-powered loads. 2. For total alarm current, add panel module currents to base system alarm current and add all panel SLC/NAC loads and all external loads powered from panel power supplies.								

Expansion Bay Module Loading Reference

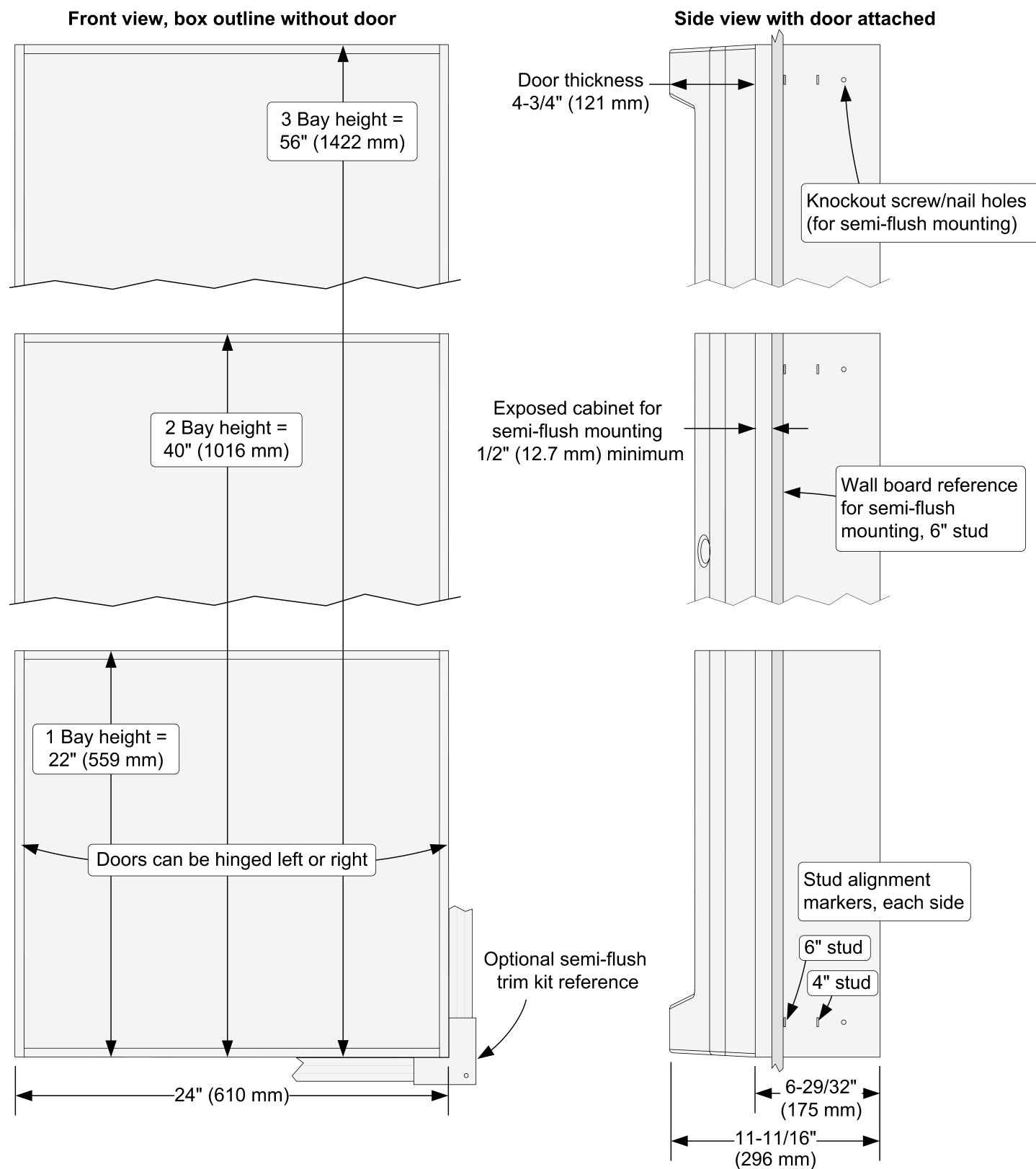


Size Definitions

1 Block = 4" W x 5.65" H (102 mm x 144 mm); (often called 4 x 5 modules)

1 Slot = 2" W x 11.3" H (51 mm x 287 mm), typically a motherboard with daughter card

Enclosure Installation Reference



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.

General Specifications

Table 17: Input Power

Specification	Rating	
Enhanced Power Supplies (EPS)	120 VAC Models	4.6 A maximum @ 102 to 132 VAC, 50/60 Hz
	220-240 VAC Models	2.3 A maximum @ 204 to 264 VAC, 50/60 Hz; separate taps for 220/230/240 VAC
Expansion Power Supply (XPS), Remote Power Supply (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

Table 18: Power Supply Output Ratings for EPS

Specification	Rating	
Total Power Supply Output Rating	Including module currents and auxiliary power outputs; 9 A total for "Special Application" appliances	
IDNAC Output Voltage	Regulated 29 VRMS	
Auxiliary Power Tap	2 A maximum	
		Output switches to battery backup during mains AC failure or brownout conditions

Table 19: Power Supply Output Ratings for XPS and RPS (nominal 28 VDC on AC; 24 VDC on battery backup)

Specification	Rating		
Total Power Supply Output Rating	9 A total including module currents and auxiliary power outputs		Output switches to battery backup during mains AC failure or brownout conditions
Auxiliary Power Tap	2 A maximum	Rated 19.1 to 31.1 VDC	
NACs Programmed for Auxiliary Power	2 A maximum per NAC; 5 A maximum total		

Table 20: Power Supply Output Ratings for EPS

Specification		Rating	
Power Supply Output Ratings for XPS and RPS (nominal 28 VDC on AC; 24 VDC on battery backup)	Total Power Supply Output Rating	9 A total including module currents and auxiliary power outputs	
	Auxiliary Power Tap	2 A maximum	Rated 19.1 to 31.1 VDC
	NACs Programmed for Auxiliary Power	2 A maximum per NAC; 5 A maximum total	
Compatible Special Application Appliances		Autocall TrueAlert ES and TrueAlert addressable notification appliances; contact your Autocall product representative for compatible appliances	
Battery Charger Ratings for EPS and RPS (sealed lead-acid batteries)	Battery capacity range	UL listed for battery charging of 6.2 Ah up to 115 Ah with EPS, 110 Ah with RPS (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 Temp. Range	32° to 120°F (0° to 49° C)	
	Operating Humidity Range	Up to 93% RH, non-condensing @ 90° F (32° C) maximum	
Installation Instruction Reference		574-844AC, Transponder Interface Cards	