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 and RUI+) formats

Initiating functions include:

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

Notification functions include:

- Addressable strobe and horn notification using enhanced power delivery **IDNAC SLCs**
- Conventional DC notification appliance circuits including TrueAlert strobe and horn appliances
- Emergency voice/alarm communications

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 conventional Initiating Device Circuits (IDC's), conventional Notification Appliance Circuits (NAC's), addressable IDNet devices, addressable IDNAC 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), Smoke Control Service (UUKL), Releasing Device Service (SYZV), Emergency Communication and Relocation Equipment (UOQY)
- 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)
- CAN/ULC-S559 Central Station Fire Alarm System Units (DAYR7)
- ULC/ORD-C1076 Proprietary Burglar Alarm Units and Systems (APOU7)
- ULC/ORD-C100 Smoke Control System Equipment (UUKL7)

Introduction

4100ES MINIPLEX transponders connect to a host 4100ES Fire Alarm Control Panel using Simplex 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).

Please refer to document *S4100-1031* and the other documents listed in Additional 4100ES Product Reference for additional information concerning the extensive initiating and notification features of the 4100ES fire alarm control panels.

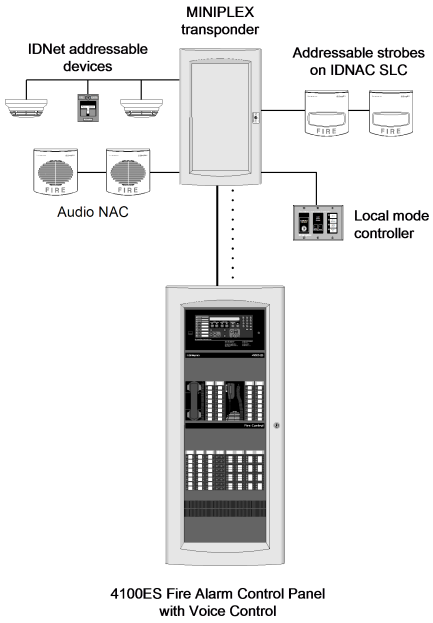


Figure 1: Typical 4100ES MINIPLEX System One-Line Drawing

Module Bay Description

Transponder model 4100-9600 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 Class B or Class X communications.

Transponder model 4100-9601 substitutes a Local Mode Transponder Module for the Basic Transponder Module.

Optional Expansion Bays each include a PDI and accept a variety of optional modules (refer to tables from MINIPLEX Transponder Product Selection onwards).

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.

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

Packaging Availability

- Modules are power-limited (except as noted, such as battery chargers, city circuits and 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 *S4100-0037* for enclosure details.

Local Mode Control Operation

Default Stand-Alone Operation. In the event of a communications loss with the host fire alarm control panel, model 4100-9601 MINIPLEX Local Mode Transponders provide fire alarm response default operation for its connected devices and appliances per the following:

Input Operation. During local mode operation, conventional initiating devices and addressable IDNet initiating devices shall be capable of reporting an alarm condition to the MINIPLEX transponder. TrueAlarm sensors will cause an alarm at their least sensitive alarm threshold:

- Photoelectric sensors will alarm at 3.7%/ft smoke obscuration
- Heat sensors will alarm at a fixed temperature of 135 °F (57 °C)
- TrueAlarm device LEDs will be activated to indicate a device in alarm

Notification Operation. Fire alarm conditions reported against a fire alarm point type within a transponder in local mode will cause all notification appliance circuits in that transponder to:

- Sound a general alarm temporal pattern horn tone
- Activate visible notification appliance circuits

Local Mode Module Support. Local mode operation provides support for the following MINIPLEX transponder circuits:

- Conventional NAC and addressable IDNAC notification appliance circuits, operated at a temporal pattern,
- IDNet, IDNet 2 and IDNet 2+2 addressable device circuits
- 4100ES amplifiers will provide their on-board horn tones (500 Hz) at a temporal pattern through their on-board amplifier NACs
- Firefighter Telephone control modules in local mode

Local Mode Operation Module Exclusion. Modules and circuits not listed above but that are listed as compatible with MINIPLEX transponders per this document, do not interfere with local mode operation but **are not supported** during local mode operation.

Local Mode Controller

Operation. During local mode operation, an optional Local Mode Controller will indicate status (see Figure 2) and can be enabled using a keyswitch to perform local alarm silence or reset. If alarms occurring during local mode are reset using a Local Mode Controller, upon restoration of communications, **those alarms will not be sent to the master controller**. If alarms are still present upon restoration of communications, then the alarm condition will be reported and host fire alarm control panel programmed alarm functions will occur. When communications are re-established, the local mode transponder restores automatically.

Mounting. Local Mode Controllers are mounted on three-gang plates, are available in beige or red, and for either flush or semi-flush mounting. (See Local Mode Controller and 579-343 operating instructions for details).

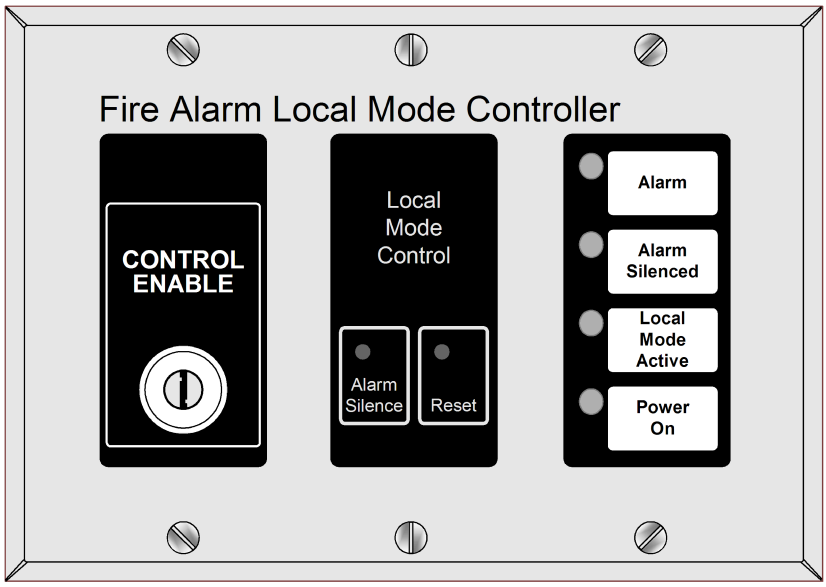
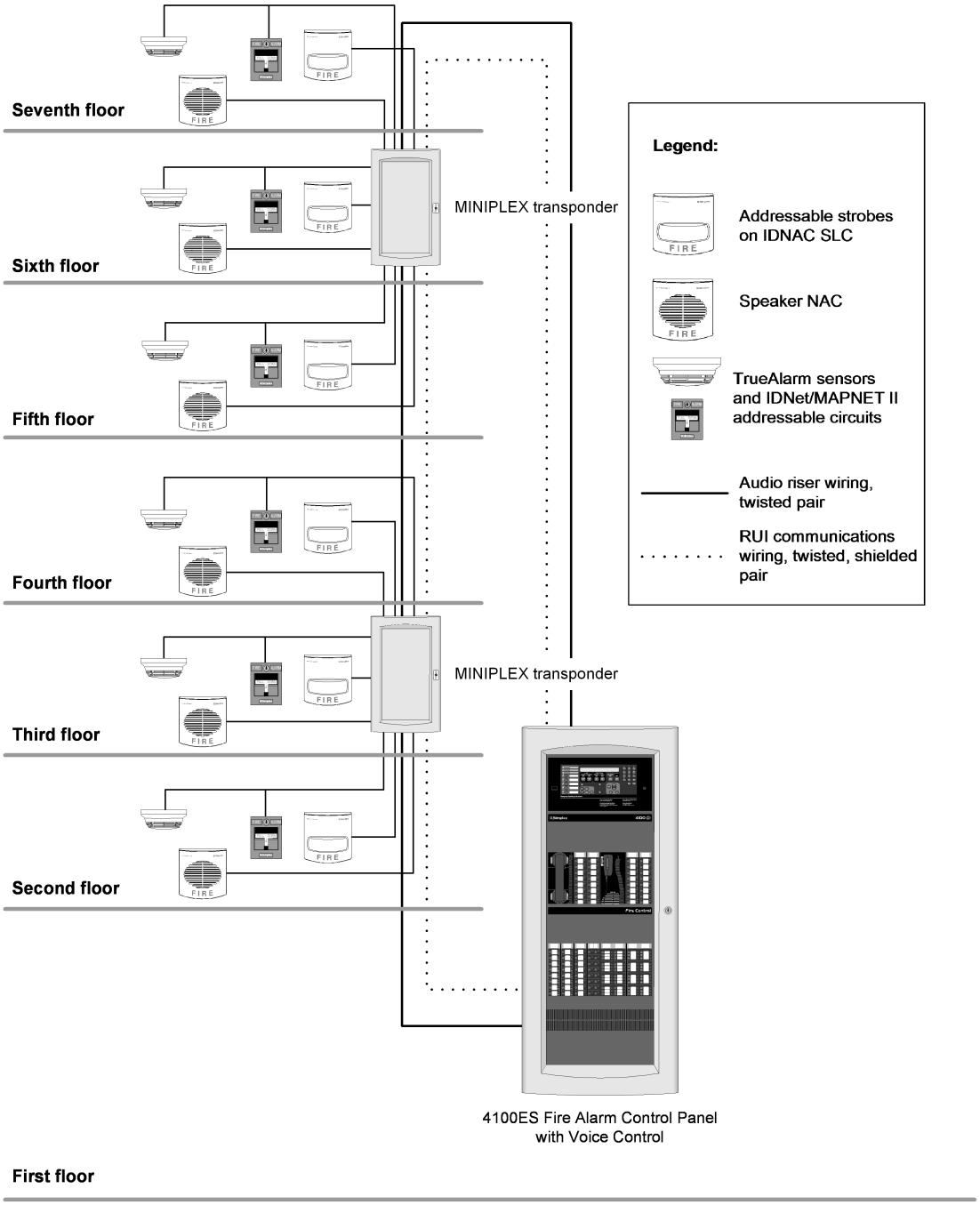
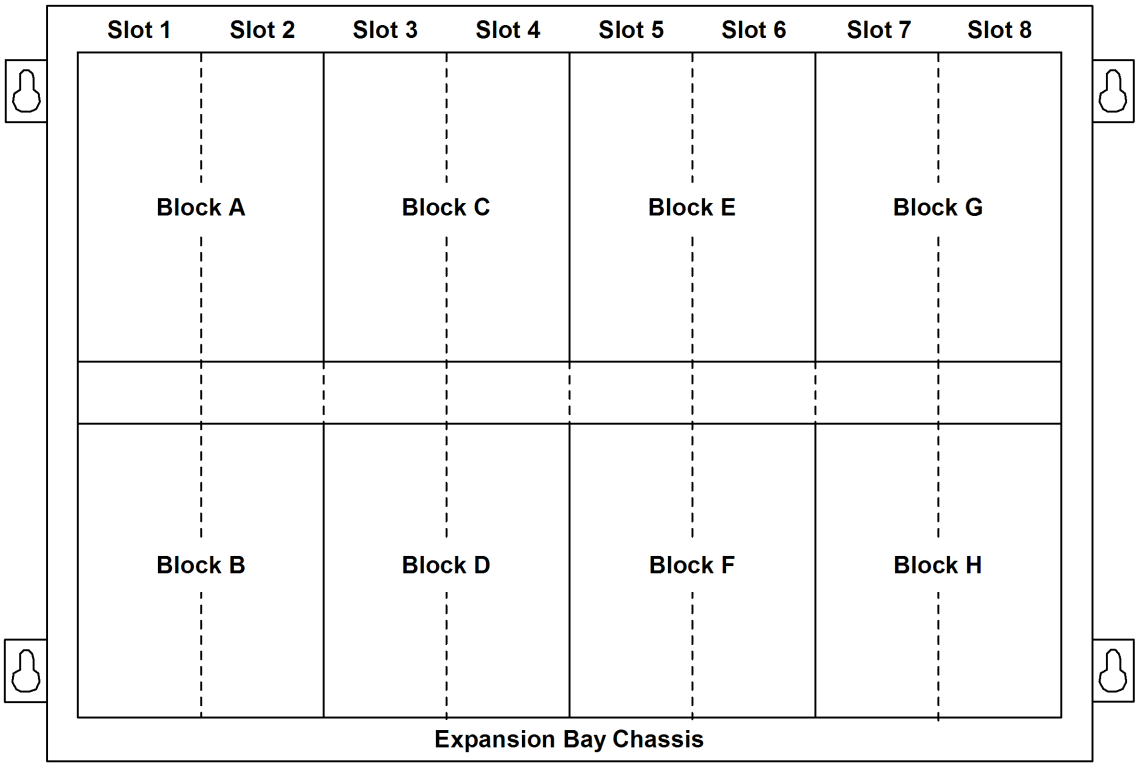


Figure 2: Local Mode Controller Module

Typical Multi-Floor MINIPLEX Audio System



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

Description		Mounting
Transponder Interface Modules		Block A
Audio Riser Modules		Block B
Terminal Block Module		1 Block
IDNet 2 and IDNet 2+2 Modules		1 Block
4, 2 A Relays	**NON Power-limited**	1 Block
4, 10 A Relays		4", 2 Slots
8, 3 A Relays		1 Block
VESDA Interface		2", 1 Slot
8 Point Zone/Relay Card		1 Block
Class B IDC		2", 1 Slot
Class A IDC		2", 1 Slot
MAPNET II Module		4", 2 Slots
MAPNET II Isolator		2", 1 Slot
Decoder Module		6", 3 Slots
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
Telephone Expansion Module		1 Block
Expansion Signal Module		1 Block
NAC Card		1 Block
IDNAC Card		2 Blocks (on ES Power Supply only)
ES-PS		Blocks G & H ONLY
ES-PS Configured as backup		Blocks E & F ONLY
ES-XPS		2 Blocks

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

General Specifications

Table 1: ES Power Supply Specifications (ES-PS and ES-XPS)

Specifications	Rating
AC Input Power	120-240 VAC
120 VAC	3.72 A
220 - 240 VAC	1.82 A
Total DC Output Power Capacity	
Without Fan	9.5 A
With 4100-5131 Fan and 4100-5451 IDNAC Module(s)	9.7 A
With 4100-5131 Fan (without 4100-5451 IDNAC Module)	12.7 A
With Regulated 24V Appliance Loads (with or without 4100-5131 Fan)	5.0 A
Special Application Appliance Loads: supports full total DC output power capacity ratings above	Simplex horns, strobes, and combination horn/strobes and speaker/strobes (contact your Simplex product representative for compatible appliances)
Regulated 24V Appliances: reduces total DC output power capacity to 5.0 A	Power for other UL listed appliances; use associated external synchronization modules where required
Auxiliary Power Tap	2 A maximum (taken from total output power capacity)
NACs Programmed for Auxiliary Power	3 A maximum per NAC, 5 A maximum total (taken from total output power capacity)
Battery Charger (ES-PS only)	Sealed Lead-Acid Batteries
Battery Ah Capacity	UL/ULC listed for battery charging of up to 110 Ah (batteries larger than 50 Ah require a remote battery cabinet)
Charger characteristics and performance	Temperature compensated, dual rate, recharges depleted batteries within 48 hours
Environmental	
Operating Temperature	32 °F to 120 °F (0 °C to 49 °C)
Operating Humidity	Up to 93% RH, non-condensing @ 90 °F (32 °C) maximum
Option Card Mounting	2 vertical blocks are available for compatible modules (refer to 579-1288 installation instructions for additional details)

Note:

1. Battery charger is only available on the ES-PS power supply.
2. When an ES-PS is used to power Flex-35 or Flex-50 Amplifiers the ES-PS battery charger is not available.

Table 2: IDNet, MAPNET II, IDNet 2, and IDNet 2+2 SLC Wiring Common Specifications

Specification		Description
Maximum Distance from Control Panel per Device Load	1 to 125	4000 ft (1219 m); 50 ohms
	126 to 250	2500 ft (762 m); 35 ohms
Connections		Terminals for 18 to 12 AWG (0.82 mm^2 to 3.31 mm^2)

Table 3: IDNet and MAPNET II Specifications

Specification		Description
Wire Type	New Installation	Shielded twisted pair (STP)
	Retrofit Only	Unshielded twisted pair (UTP)
Total Wire Length Allowed With "T" Taps for Class B Wiring		Up to 10,000 ft (3 km); 0.58 µF

Note: For retrofit installations consult with your local Simplex product supplier, restrictions may apply.

Table 4: IDNet 2 and IDNet 2+2 Wiring Specifications

Specification		Description
Wire Type	New Installation	Unshielded twisted pair (UTP)
	Retrofit Only	Shielded or unshielded, twisted or untwisted wire
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
IDNet 2 and IDNet 2+2 Module Compatibility: IDNet communicating devices and TrueAlarm sensors including QuickConnect and QuickConnect2 sensors		

MINIPLEX Transponder Product Selection

Table 5: Transponder Type

SKU	Description		Supv.	Alarm
4100-9600	Basic Transponder, includes bay equipment with power distribution interface, and 4100-0620 Basic Transponder Interface Module mounted in Block A		36 mA	36 mA
4100-9601	Local Mode Transponder, includes bay equipment with power distribution interface, and 4100-0625 Local Mode Transponder Interface Module mounted in Block A	normal	38 mA	38 mA
		in local mode	23 mA	23 mA

Table 6: ES Power Supplies

Model	Voltage	Description	Includes	Provides Power to Bay	Size	Supv.	Alarm
4100-5401	120-240 V 50/60 Hz	ES-PS	24 V Aux. Relay, 24 V Aux. Power 2 A Tap/ Simple NAC, 110 Ah Battery Charger, 2 PDI Blocks for compatible option cards.	Yes	2 Blocks	68 mA	77 mA
4100-5402	120-240 V 50/60 Hz	ES-XPS	Same as ES-PS above except without battery charger	No			

Table 7: Power supply accessories

Model	Description	Size	Current
4100-5152	12 VDC Power Option, 2 A maximum	1 Block	1.5 A maximum
4100-0156	8 VDC Converter, required for multiple Physical Bridge Modules, 3 A maximum	1 Block	included w/loads
4100-5130	Voltage Regulator Module, 22.8 to 26.4 VDC (25VDC nominal); isolated and resettable output; includes earth detection circuit and trouble relay for status monitoring.	1 Block	3 A maximum with 2.5 A load, 4.9 A maximum with 4 A load
4100-5131	ES-PS Fan Module, allows more than one power supply to be installed in a single bay and may increase total DC output power capacity per power supply. See Table 1 for specifications.	N/A	0 mA Supv. 200 mA Alarm
4100-0636	Box Interconnection Harness Kit (non-audio); order one for each close-nippled cabinet		
4100-0638	4100 Slot Module Additional 24 VDC Harness; needed when 4100 Slot module requirements exceed 2 A from ES-PS		
4100-5403	Harness for ES-PS Backup Power Supply		
4100-0644	120 VAC PDM Harness	1 PDM harness is required per power supply, select as required for appropriate input voltage	
4100-0645	220 VAC PDM Harness		
4100-0646	230 VAC PDM Harness		
4100-0647	240 VAC PDM Harness		

Table 8: Conventional and Addressable Notification Appliance Modules

Model	Description	Outputs	Size	Max Load - Special Application*		Max Load - Regulated 24 V		Current Draw	
				On ES-PS / ES-XPS	In Bay	On ES-PS / ES-XPS	In Bay	Supv.	Alarm
4100-5450**	Conventional NAC Module	Three 3 A NACs	1 Block	3.0 A / NAC 9.0 A / Card	3.0 A / NAC 6.0 A / Card	2.0 A / NAC 5.0 A / Card	2.0 A / NAC 2.0 A / Card	66 mA	66 mA
4100-5451**	IDNAC Addressable Notification SLC Module	Three 3 A SLCs	2 Blocks (on ES Power Supply only)	3.0 A / NAC 9.0 A / Card	N/A	N/A		124 mA	230 mA

*****Special Application specifications apply to both Special Application and Steady Aux Power loads during alarm operation. Available power during non-alarm operation is 5.0 A maximum.

******The 4100-5450 and 4100-5451 can only be powered from a 4100-5401 and 4100-5402 power supply.

Table 9: Dual Class A Isolator for IDNAC

Model	Description	Size	Supv.	Alarm
4100-6103	**Dual Class A IDNAC Isolator (DCAI)**, converts a single Class B IDNAC SLC input to two Class A SLC outputs; provides short circuit isolation between each Class A output circuit; connect up to two DCAI Modules per IDNAC SLC input up to a maximum of 6 DCAI Modules per IDNAC SLC; 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; each isolated loop supports up to 30 device addresses **Note:** Up to 30 additional device addresses may be installed between each 4905-9929 TrueAlert Addressable Isolator+ Module, not to exceed the maximum address and unit loading specifications for the IDNAC channel)	1 Block	8.3 mA	18.5 mA

Table 10: Addressable Interface Modules

Model	Description	Devices	Supv.	Alarm
4100-3109*	**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	no devices	50 mA	60 mA
		50 devices	90 mA	150 mA
		125 devices	150 mA	225 mA
		250 devices	250 mA	350 mA
4100-3110*	**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	no devices	50 mA	60 mA
		50 devices	90 mA	150 mA
		125 devices	150 mA	225 mA
		250 devices	250 mA	350 mA
4100-3111*	**IDNet Short Circuit Isolating Loop Output Module; for Aftermarket Field Installation Only**; mount up to two on a 4100-3109 module; for use with 4100-3109 modules only			
4100-3102	MAPNET II Module, 127 point capacity, add devices separately; Module size = 2 Slots; Loading per MAPNET II device = 1.7 mA	Module without devices	255 mA	275 mA
4100-3103	Isolator Module for MAPNET II communications; converts a single connected SLC into four isolated outputs selectable as Class A or Class B; up to two Isolator Modules can be connected to one SLC; Module size = 1 Slot; **Note:** Compatible with MAPNET II Remote Isolators only		50 mA	50 mA
*__Note__: See Table for current draw for each IDNet device				

Table 11: Current draw for each IDNet device

Condition	Current
Standby	0.8 mA
Alarm, with LED off	1.0 mA
Alarm, with LED on	3.0 mA
Note: A maximum of 20 devices with LED on is supported for each channel. Additional device LEDs do not turn on.	

Table 12: 8-Point Zone/Relay Card

Model	Description	Size	Supv.	Alarm
4100-5013	8 point zone/relay 4x5" flat module. Mounts in any open block in a master controller or expansion bay. Alarm current shown is for 8 Class B IDCs using 3.3K end-of-line-resistors with 4 in alarm and 4 in standby. Standby current shown is for all 8 IDCs in standby. Refer to 579-1236 Zone/Relay Module Installation Instructions for additional information.	1 block	83 mA	351 mA
4100-6305	25V regulator harness for 8 point zone/relay module. One required for each 8 point zone/relay module to be powered by the 4100-5130 25V regulator module. A maximum of (5) 8 point zone/relay modules may be powered from the 4100-5130 per bay.	N/A	N/A	N/A

Note: Modules in Table 12 requires 4100ES Version 3.06 or later.

Table 13: Relay Modules; Non-power-limited

Model	Description	Resistive Ratings		Inductive Ratings		Size	Supv.	Alarm
4100-3202	4 DPDT w/ feedback	10 A	250 VAC	10 A	250 VAC	2 Slots	15 mA	175 mA
4100-3204	4 DPDT w/ feedback	2 A	30 VDC/VAC	½ A	30 VDC/120 VAC	1 Block	15 mA	60 mA
4100-3206	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 **and** add all external loads panel-powered loads.

2. For total alarm current, add panel module currents to base system alarm current **and** add all panel NAC loads **and** all external loads powered from panel power supplies.

Table 14: Communication Modules

SKU	Description			Size	Supv.	Alarm
4100-1291	Remote Unit Interface Module (RUI, unisolated), up to 3 maximum per control panel; for use with 4100-9600 only			1 Slot	85 mA	85 mA
4100-6031	**Select one per ES Power Supply (non power-limited)**	City Circuit, with disconnect switches	For use with ES-PS only (not for backup ES-PS or ES-XPS)	1 Block	20 mA	36 mA
4100-6032		City Circuit, without disconnect switches			20 mA	36 mA
4100-6033		Alarm Relay, 3 Form C relays, 2 A @ 32 VDC; for ES-PS			15 mA	37 mA
4100-6038	Dual RS-232 Interface			1 Slot	132 mA	132 mA
4100-6045	Decoder Module			3 Slots	85 mA	163 mA

Table 14: Communication Modules

SKU	Description	Size	Supv.	Alarm
4100-6048	VESDA Aspiration System Interface	1 Slot	132 mA	132 mA
4100-9816	Master Clock Interface Module with one standard RS-232 port (see *S4100-0033*)	1 Slot	132 mA	132 mA

Table 15: Miscellaneous Options and Accessories

Model	Description	
4100-1290	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 *S4100-0032* for additional information)	
4100-0632	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)	
4100-0633	Door Tamper Switch, connects into Transponder Interface Module, one per cabinet assembly if required	
4100-0634	120 VAC	Power Distribution Module (PDM) select per system voltage; one required per box
4100-0635	220/230/240 VAC	Power Distribution Module (PDM) select per system voltage; one required per box
4100-9837	Green LED Power-on Indicator Kit, required for ULC listing of MINIPLEX transponder; mounts on solid door knockout	
2081-9031	Series resistor for WSO, IDCs (N.O. water flow and tamper on same circuit, wires after water flow and before tamper) 470 Ω, 1 W, encapsulated, two 18 AWG leads (0.82 mm^2), 2 ½" L x 1 ⅜" W x 1" H (64 mm x 35 mm x 25 mm)	

Table 16: Audio Riser Modules

SKU	Description	Size	Supv.	Alarm
4100-0621	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
4100-0622	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 17: Analog Emergency Voice/Alarm Communications Equipment, Constant Supervision Compatible*

SKU	Description		Details		
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 ES-PS	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	
* Refer to document S4100-1034 for additional audio information.					

Table 18: 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
4100-1316	4100-1317	120 VAC, 60 Hz	ULC	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
4100-1318	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
4100-1322	4100-1323	120 VAC, 60 Hz	ULC	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier ULC models have low battery dropout circuit
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

Table 19: Digital Emergency Voice/Alarm Communications Equipment*

Model	Description		Details		
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 ES-PS	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	
* Refer to document S4100-1034 for additional audio information.					

Table 20: 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
4100-1330	4100-1331	120 VAC, 60 Hz	ULC	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
4100-1332	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
4100-1336	4100-1337	120 VAC, 60 Hz	ULC	Backup 100 W Amplifier	Uses the six Class B NACs of primary amplifier ULC models have low battery dropout circuit
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

Table 21: Options for use with either Analog or Digital Amplifiers

Model	Description		Details and Mounting Reference	
4100-1245	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; ***Supv = 8 mA, Alarm = 60 mA***	
4100-1246	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; ***Supv =10 mA, Alarm = 30 mA***	
4100-1248	100 W Amplifier Expansion NAC Module; NAC ratings = 1.5 A, 50 W, or 100 speakers max.		Provides six additional Class B audio NACs, mounts on 100 W amplifier assembly; ***Supv = 17 mA, Alarm = 60 mA***	
4100-1249	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; Supv = 1 mA, Alarm = 60 mA	
4100-1259	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	***Supv = 10 mA on batteries;*** ***Alarm = 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
4100-1260	70.7 VRMS Output; NAC rating = 0.707 A, 50 W, or 100 speakers max.		***Supv = 38 mA on batteries;*** ***Alarm = 70 mA***	

Table 22: Audio Expansion Signal Module and Options

Model	Description	Details and Mounting Reference	
4100-5116	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; ***Supv = 20 mA; Alarm = 80 mA***	
4100-1266	Expansion Signal Module NAC Expander; NAC rating = 1.5 A, 50 W, or 100 speakers max.	Expands module capacity to six, Class B NACs; ***Supv = 0.84 mA; Alarm = 60 mA***	These modules mount on the 4100-5116; select one max. per 4100-5116 as required
4100-1267	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; ***Supv = 0 mA; Alarm = 30 mA***	
4100-1268	Expansion Signal Module Constant Supervision Adapter; Converts 3 Class B NACs to Constant Supervision Class B or Class A NACs; for 25 VRMS or 70.7 VRMS audio	NAC rating = 1.4 A, 50 W, or 100 speakers max.; ***Supv = 38 mA on batteries (constant supervision deactivated); Alarm = 70 mA***	

Table 23: Firefighters Telephone Options

SKU	Description	Size	Supv.	In Use
4100-1272	Expansion Telephone Control Module with three Class B telephone NACS; required when telephone circuits are mounted in transponder;	1 Block	80 mA	130 mA
4100-1273	Telephone Class A Adapter Module; mounts on 4100-1272; no additional current required			

Table 24: General Audio Options

Model	Description
4081-9018	End-of-line resistor harness for 70.7 VRMS NACs; 10 kΩ, 1 W
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**

Table 25: Local Mode Controller Selection

SKU	Description				Supv.	Alarm
4601-9108	Flush mount	Red with white lettering	Local Mode Controller, 3-gang plate mounted; flush mount requires a 1 ½" (38 mm) deep 3-gang box; surface mount controllers include a matching mounting box; see Local Mode Controller Detail	normal	44 mA	44 mA
4601-9109	Surface mount					
4601-9110	Flush mount	Beige with black lettering		in local mode	44 mA	58 mA
4601-9111	Surface mount					

Local Mode Controller Detail

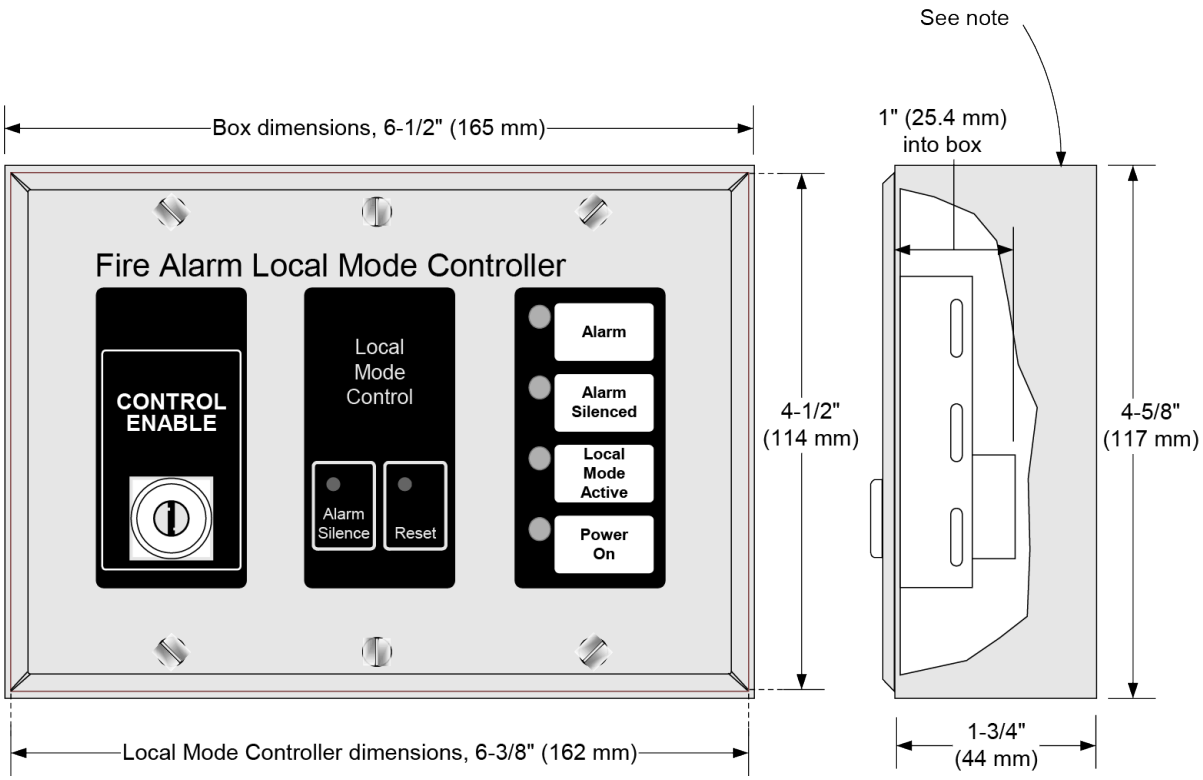


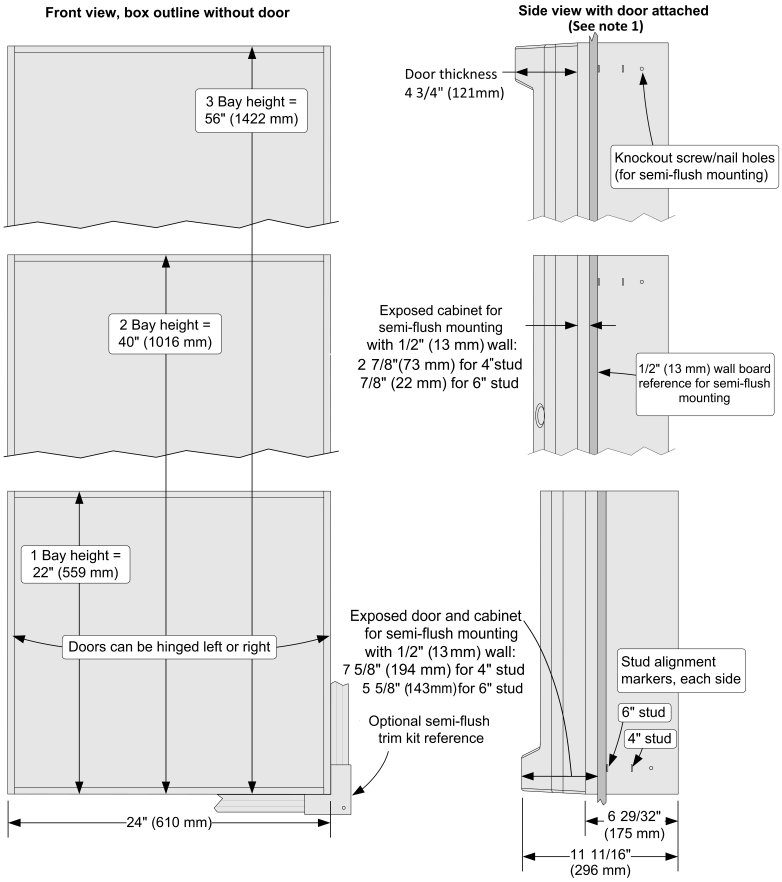
Figure 3: Local Mode Controller Detail

Note: Matching box is supplied with surface mount models 4601-9109 (red) and 4601-9111 (beige); for semi-flush models 4601-9108 (red) and 4601-9110 (beige), use a 1-1/2" (38 mm) minimum depth, 3-gang box.

Local Mode Controller to Transponder Wiring:

1. Wire close-nippled to transponder, maximum distance = 20 ft (6.1 m).
2. Nine wires required: 24 VDC (2), one per LED indicator (4), and one per switch (3).
3. Wire size, 18 AWG (0.82 mm²).

Enclosure Installation 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.

Additional 4100ES Product Reference

Table 26: Additional 4100ES Product Reference

Subject	Datasheet
Battery and Battery Cabinet Reference for 4100ES	S2081-0006
110 Ah Batteries and Cabinets for 4100ES	S2081-0012
Seismic Battery Brackets Reference	S2081-0019
4100ES LED/Switch Modules & Printer	S4100-0032
4100ES Enclosures	S4100-0037
4100ES Basic Panels with ES-PS Power Supplies	S4100-1031
NDU with ES-PS Power Supplies for 4120 Network	S4100-1036
NDU with ES-PS Power Supplies for ES Net	S4100-1077