S. Simplex

System Accessories, LED Annunciators

4100 Series Graphic Annunciator Modules;
LED/Switch Modules and 24 Point I/O Graphic Module

Features

Interface modules for LED and switch control of custom graphic annunciator panels including:

- **4100-7401**, 24 Point I/O Graphic Modules with points selectable as either switch inputs or LED outputs
- **4100-7402**, 64 Switch and 64 LED Driver Module with 32 on-board LED drivers
- **4100-7403**, 32 Point LED Driver Modules
- **4100-7404**, 32 Point Switch Input Modules

Module compatibility:

- For use with Simplex® 4100ES, 4100U, and 4010ES series fire alarm control panels
- Also compatible with Simplex legacy panel model series 4100, 4120, and 4020; (see 4020 compatibility note on page 2)

Multiple mounting options are available:

- Semi-flush or surface mount cabinets in beige or red, with or without glass door
- Interface modules can be mounted in the same cabinet as graphic panel or mounted nearby
- Plate-mounted for mounting in cabinet by others
- Interface modules are UL listed for use in agency listed custom graphic annunciator panels

Operation and status supervision:

- Supervised RUI (remote unit interface) communications require a single, twisted, wire pair (some applications may require shields) to the fire alarm control panel (power is supplied via a second wire pair)
- Multiple annunciator module types can be connected to same communications wiring
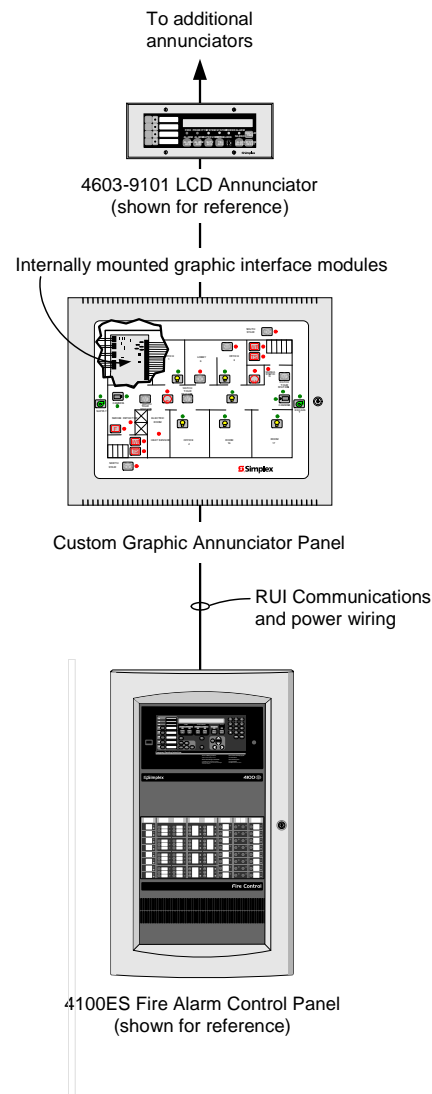- Convenient wiring connections are via pluggable terminal blocks

UL listed to Standard 864 for:

- Fire Detection and Control (UOJZ)
- Smoke Control Service (UUKL)

Introduction

Annunciator Control. These remote annunciator graphic control modules complement Simplex 4100ES, 4100U, 4010ES (and other installed legacy panels) by providing LED/lamp/relay drivers and switch inputs to allow custom graphic displays to be designed for specific facility requirements, such as for smoke control (UUKL) systems. Wiring is minimized by Signaling Line Circuit (SLC) communications that also provides supervision.

In the event of communications loss, a trouble will be displayed at the fire alarm control panel and can also be identified at the remote annunciator if desired.

To additional annunciators

4603-9101 LCD Annunciator
(shown for reference)

Internally mounted graphic interface modules

Custom Graphic Annunciator Panel

RUI Communications
and power wiring

4100ES Fire Alarm Control Panel
(shown for reference)

4100ES Fire Alarm Control Panel Connected to a Remote Graphic Annunciator and a Remote LCD Annunciator

Introduction *(Continued)*

Packaging Flexibility. For packaging flexibility, these modules are plate-mounted, allowing compatibility with vended graphics assemblies. These modules also provide convenient terminal block wiring connections and use compact ribbon cable connectors for multiple module interconnection.

Graphics Control Module Descriptions

4100-7401, 24 Point I/O Graphic Module:

- 24 Points, selectable as either a switch input or a lamp/relay driver output

- Switch monitoring includes: unsupervised, supervision for opens, supervision for opens or shorts, and supervised monitoring of HOA (hand/off/auto) switches

- Switches can be momentary or maintained, 2 position or 3 position, maximum distance is 2500 ft (762 m), or 65 Ω from the module

- Each LED/lamp/relay driver is rated at 150 mA @ 24 VDC per point, inrush is current limited for compatibility with incandescent bulbs (relays need to be diode suppressed at the relay coil) maximum distance is 600 ft (183 m), or 2 Ω from the module

- LED/lamp/relay driver outputs are supervised for open circuits and can be set as on continuous, or pulsed at a slow or fast rate

- Additional inputs are included for communicating a remote power supply trouble and for lamp testing, the module can also be configured to provide local indication of communications loss

- NOTE: 4100-7401 is not compatible with installed Simplex 4020 Series fire alarm control panels

4100-7402, 64/64 LED/Switch Controller Module:

- Support for up to 64 switches *and* 64 LEDs (switches are unsupervised)

- Includes 32 LED driver outputs on-board for direct LED connection

- Full capacity is achieved by using a 4100-7403, 32 Point LED Driver Module, and two 4100-7404, 32 Point Switch Modules

- Multiplexed LED drivers provides 40 mA peak, 5 mA average, 60 Hz rate, 12.5% duty cycle for direct LED drive and can be steady on, or slow or fast pulse

- LEDs are supervised for open circuits, LED and switch module connections are supervised

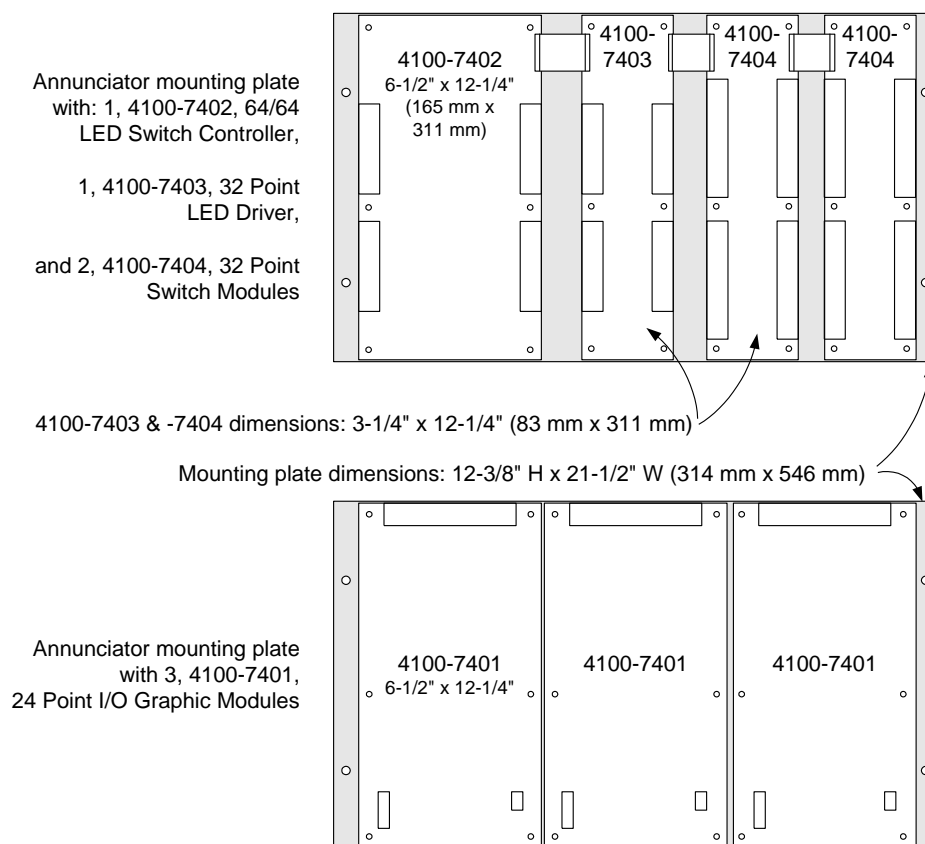- LEDs or switches can be up to 25 ft (7.6 m) or 3 Ω from module

4100-7403, 32 Point LED Driver Module:

- Provides an additional 32 LED drivers for use with the 4100-7402 Controller

- LED output is the same as for the 4100-7402

4100-7404, 32 Point Switch Module:

- Monitors momentary or maintained, 2 or 3 position switches

- Switch position sampling is multiplexed at a 60 Hz rate, 12.5% duty cycle, 40 mA maximum, 5 mA average

Module Mounting Reference

Annunciator mounting plate with: 1, 4100-7402, 64/64 LED Switch Controller,

1, 4100-7403, 32 Point LED Driver,

and 2, 4100-7404, 32 Point Switch Modules

4100-7402 6-1/2" x 12-1/4" (165 mm x 311 mm)

4100-7403

4100-7404

4100-7404

4100-7403 & -7404 dimensions: 3-1/4" x 12-1/4" (83 mm x 311 mm)

Mounting plate dimensions: 12-3/8" H x 21-1/2" W (314 mm x 546 mm)

Annunciator mounting plate with 3, 4100-7401, 24 Point I/O Graphic Modules

4100-7401 6-1/2" x 12-1/4"

4100-7401

4100-7401

Product Selection

System Type (select one)

Model	Description
4100-8401	Cabinet mounted graphic modules
4100-8402	Graphic modules only, plate mounted
4100-8904	Aftermarket addition, modules only

Graphic Modules* (select as required, refer to page 2 for panel mounting dimensions)

Model	Description	Mounting Information
4100-7401	24 Point I/O Graphic Module	Mounting is on dedicated mounting plates, up to 3 per plate
4100-7402	64/64 LED Switch Controller	**Mounting Rules:** One 4100-7402, 64/64 LED Switch Controller mounted per plate; the same plate can mount one 4100-7403, 32 Point LED Driver Module, and two 4100-7404, 32 Point Switch Input Modules
4100-7403	32 Point LED Driver Module	
4100-7404	32 Point Switch Input Module	Each mounting plate requires 2 units of space; 1 plate per 2-unit cabinet, 2 plates per 4-unit cabinet, 3 plates per 6-unit cabinet

* These 4100 series graphic modules are available internally mounted and UL listed in custom graphic annunciator panels and custom graphic smoke control annunciators from Space Age Electronics Inc., website: www.1sae.com

Package Size, Finish and Trim Options (select as required if 4100-8401)

Model	Description	
4100-2401	2-Unit	
4100-2402	4-Unit	Cabinet assembly, box with glass door & retainer
4100-2403	6-Unit	
4100-2404	2-Unit	
4100-2405	4-Unit	Box only, no door
4100-2406	6-Unit	
4100-2201	Red finish option	
2975-9801	Semi-flush trim option, beige, 1-7/16" wide (37 mm)	
2975-9802	Semi-flush trim option, red, 1-7/16" wide (37 mm)	

Aftermarket Solid Door (for cabinet only models)

Model	Description	
4100-8911	Aftermarket addition designation, use if solid door is required, order with cabinet only models	
4100-2031	2-unit	
4100-2032	4-unit	Solid door, beige
4100-2033	6-unit	

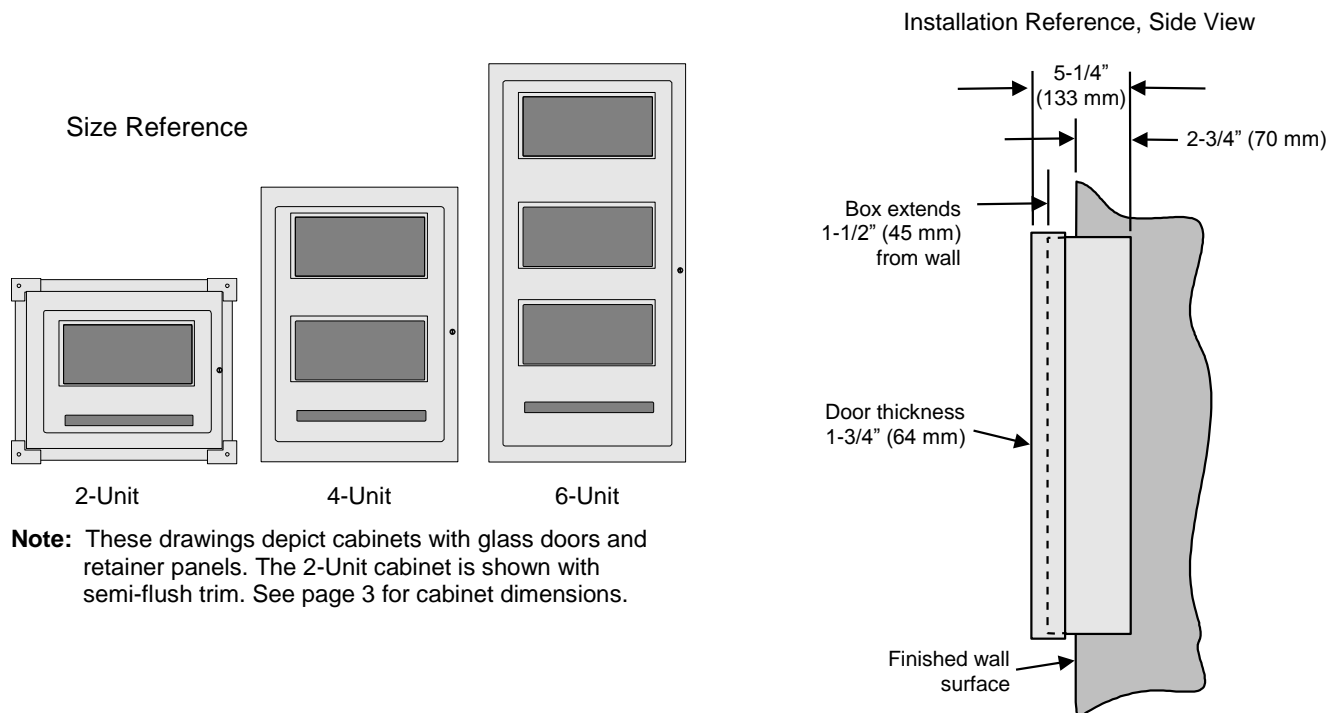## Simplex Cabinet Dimension Reference (see page 4 for additional reference)

Size	Height	Cabinet Width	Cabinet Depth	Door Width
2-Unit	20-3/4" (527 mm)			
4-Unit	36-1/4" (921 mm)	25-3/4 (654 mm)	4-1/4" (108 mm)	26-9/16" (675 mm)
6-Unit	52-1/8" (1324 mm)			

Specifications

Voltage	18.9 to 32 VDC; 24 VDC nominal from fire alarm control panel		
Current	**4100-7401, 24 Point I/O Module**	Standby and Alarm = 78 mA + all connected LED/lamp/relay currents and all switch currents	
		Switch current	Unsupervised mode = 12 mA when closed, per switch
			Supervised for open circuit mode = 5 mA open, 12 mA closed, per switch
			Supervised for open or short mode = 4 mA open, 8 mA closed, per switch
			HOA mode = 12 mA "on", 8 mA "off", 4.5 mA center position
	4100-7402, 64/64 LED Switch Controller	Standby = 67 mA + all switch loads	
		Alarm = 285 mA with 64 total LEDs on + all switch loads	
		Switch current = 5 mA average, "up" position, 2.5 mA average, "down" position	
4100ES, 4100U, Capacity, Per RUI Output	Type	RUI (Remote Unit Interface) external annunciator communications line SLC (signaling line circuit)	
	Capacity	Up to 31 total remote RUI devices	
4010ES Capacity		Up to 20 internal and external card addresses	
Wiring Requirements	Data	Single, twisted, wire pair (some applications may require shields) 18 AWG (0.82 mm^2)	Wiring connections are pluggable terminal blocks
	Power	18 to 12 AWG (0.82 mm^2 to 3.31 mm^2) wires for 24 VDC system power	
	Input/Outputs	18 to 14 AWG (0.82 mm^2 to 2.08 mm^2)	
	Earth	A dedicated earth ground connection to the electrical box is required for proper ESD and EMI protection; wire in accordance with NFPA 70® (*National Electrical Code®*)	
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	
Additional Information		Refer to Field Wiring Diagram 841-802	

Simplex Annunciator Cabinet Reference

Installation Reference, Side View

Size Reference

2-Unit   4-Unit   6-Unit

Note: These drawings depict cabinets with glass doors and retainer panels. The 2-Unit cabinet is shown with semi-flush trim. See page 3 for cabinet dimensions.