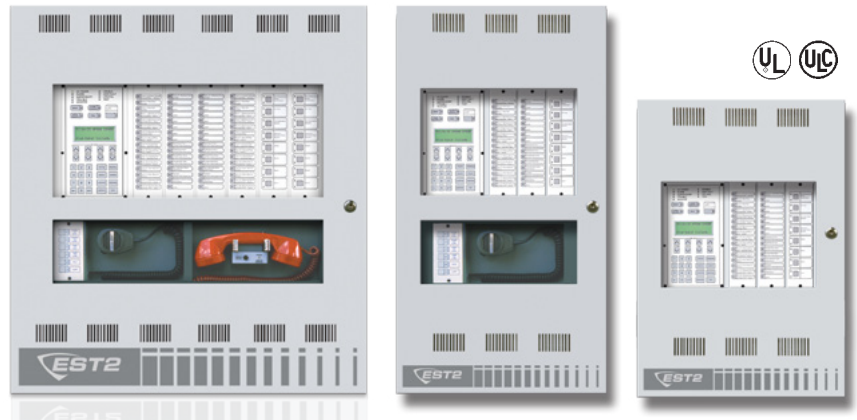


# EST2 Network

## Control Panels



### Overview

The EST2 Network has a comprehensive offering of modular components designed to meet a wide range of building applications. Multiple nodes with configurable routing combined with distributed architecture allow several operational configurations.

The EST2 Network supports up to five control panel nodes and five network annunciators. Each control panel will support up to 192 intelligent Signature Series detectors and 188 intelligent Signature modules. The distributed intelligence network architecture communicating via the RS-485 Peer to Peer network provides global or local control and annunciation at any node. Each node also provides separate RS-485 data line to support local annunciation using 2-LSRA, SAN and 2-SMDN series annunciators.

Networking EST2 easily integrates audio control as well offering both distributed and banked amplifier configurations. Adding firefighter's telephone and/or paging microphone operating into one or two channel audio systems gives project design flexibility with ease of configuration. Several independent audio systems can be configured in a network through simple programming.

### Standard Features

- **Network**
  - Peer-to-peer network communications
  - Up to five Control Panel Nodes
  - Up to five Network Annunciators
  - Full System Operation from any Node
  - Class B(style 4) or Class A(style 6) wiring configuration
  - Three-second network response time
- **Control Panels**
  - Up to 192 intelligent detectors
  - Up to 188 intelligent modules
  - Up to four built in NACs
  - Fully integrated Audio Options
  - Integrated Digital voice messages
  - Display optional on remote nodes

## Application

EST2 Network configurations provide application flexibility and installation options that allow site-specific customization to satisfy local and national requirements. EST2's adaptability lends itself to projects ranging from small to medium size with network support of up to ten Signature data circuits (SDCs), each capable of supporting 96 intelligent detectors and 94 intelligent Signature modules. Each panel configures using standard EST2 audio and control components communicating on a peer to peer two wire RS-485 circuit. Network communications and/or annunciator communications can be configured for class B or class A. Unique programming flexibility allows the network panels to configure to meet most building operations. As an example, EST2 can be configured for independent panel operation typical of campus style building arrangements or can be configured to meet high rise applications requiring single or multiple control interfaces. EST2 Networks provide a wide range of configuration and programming possibilities giving great application flexibility.

The EST2 Network annunciator series provides customized network annunciation for global and local events over the network serial line. Each node provides a separate RS-485 line to support a full complement of local LCD, printers, graphic and LED annunciators. Having the extreme flexibility of networked global annunciation and independent local annunciation means zero compromise in message and control distribution. Another industry first in small to mid range system design.

## Engineering Specification

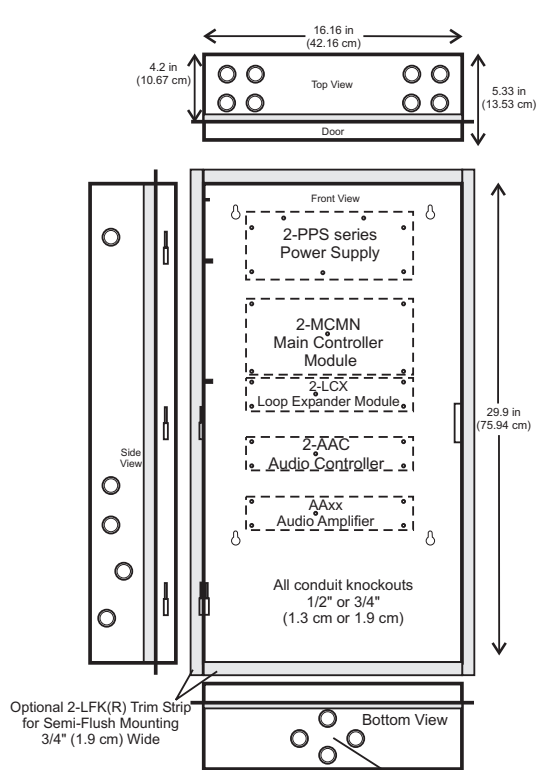
It shall be possible to support a single stand-alone node or network up to five control panel nodes and five network annunciators on a peer-to-peer network. It shall be required to operate the system from multiple system user interfaces where provided. Network alarm response must be under 3 seconds. Status LEDs shall be provided for communications of network, RS-232, audio and internal communications. An ISO 9001 standards listed company must manufacture the control panel and system components.

The communication format between the control panel and analog devices shall be digital. Loop alarm recognition must be within 750 milliseconds of a device reporting an alarm state. It must be possible to wire the analog device Loop as Class A or Class B with non-shielded, non-twisted wire. It must be possible to wire branches (T-taps) with Class B wiring. The system shall provide a user interface that displays system events in a text format, and supports basic common control LEDs and switches. The Common Control Switches and LEDs provided as minimum will be; Reset switch and LED, Alarm Silence switch and LED, Panel Silence switch and LED, Drill switch and LED. It must be possible to add additional common controls as required through the use of modular display units. The user interface must provide an LCD that will allow display of custom event messages. Events shall be automatically placed in easy to access queues. It shall be possible to view specific queue event types separately. Having to scroll through a mixed list of event types is not acceptable. The total number of active events by type must be displayed. Visual indication must be provided for any event type that has not been acknowledged or viewed. The Life Safety system shall incorporate annunciation of Alarm, Supervisory, Trouble and Monitor operations. Annunciation must be through the use of LED display strips complete with a means to custom label each LED as to its function. Where applicable control of remote smoke control devices must be made available at the control center. Switches with LEDs must provide positive feed back to the operator of remote equipment status.

Where voice audio is required it must be possible to selectively page by Microphone or Firefighters telephone. It must be possible to page to the alert or evacuation channel by selecting a single switch. It must be possible for the emergency operator to put specific zones into evacuation manually. The audio system amplifiers must be able to operate 25Vrms or 70.4Vrms speakers. The system shall provide simultaneous page and evacuation signaling. Systems that cause signaling devices to go silent while performing any signaling functions will not be accepted. The System must be able to support both distributed-zoned type and centrally banked configurations. Notification circuits must have a minimum rating of 3.5 Amps for operating 24 Vdc signals. The system must provide as a minimum the following paging common controls and indicators single switch function for paging to all - Alert zones, and Evacuation zones. The system must provide modular pre-recorded message capability.

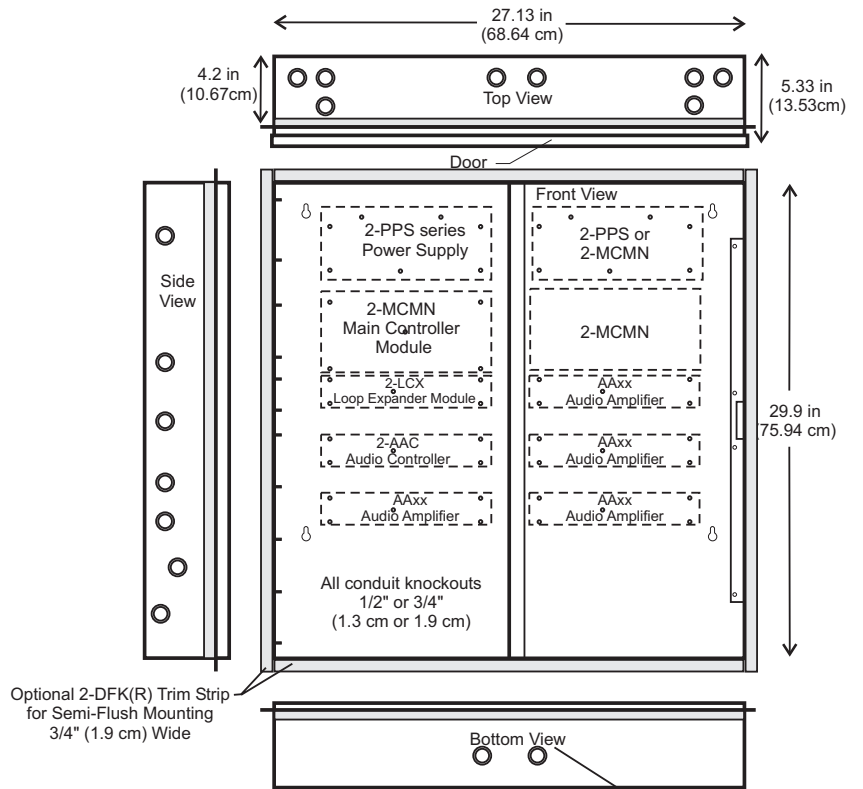
The fire panel shall be capable of supporting a variety of conventional smoke detectors with a single module. It must be possible to support polarized bells, horns or strobes. It shall be possible to provide hardwired supervisory and monitor functions with latching or non-latching operations. It shall be possible to display any circuit on an LCD or LED annunciator located anywhere on the network or on a separate RS-485 annunciator circuit.

# Installation and Mounting



Do NOT install conduit here if batteries are to be installed in this cabinet.

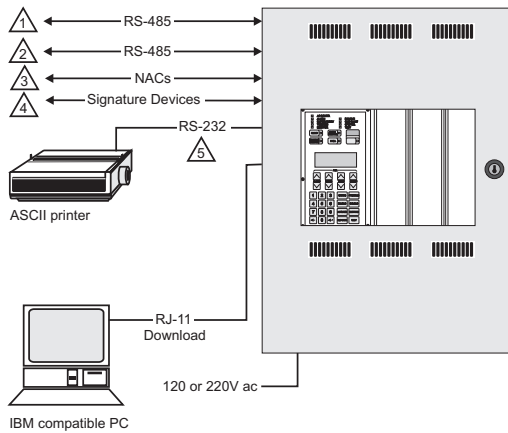
**2-WB3**



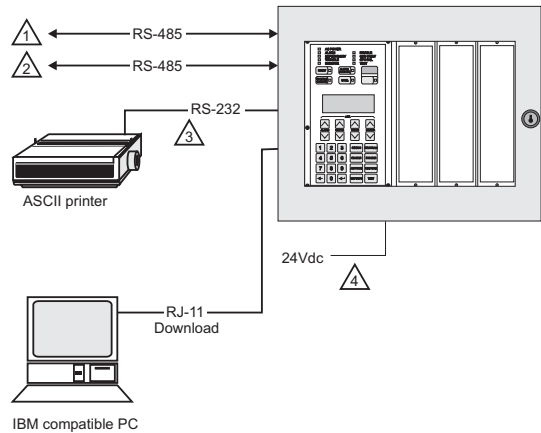
Do NOT install conduit here if batteries are to be installed in this cabinet.

**2-WB7**

# Typical Network Panel Wiring



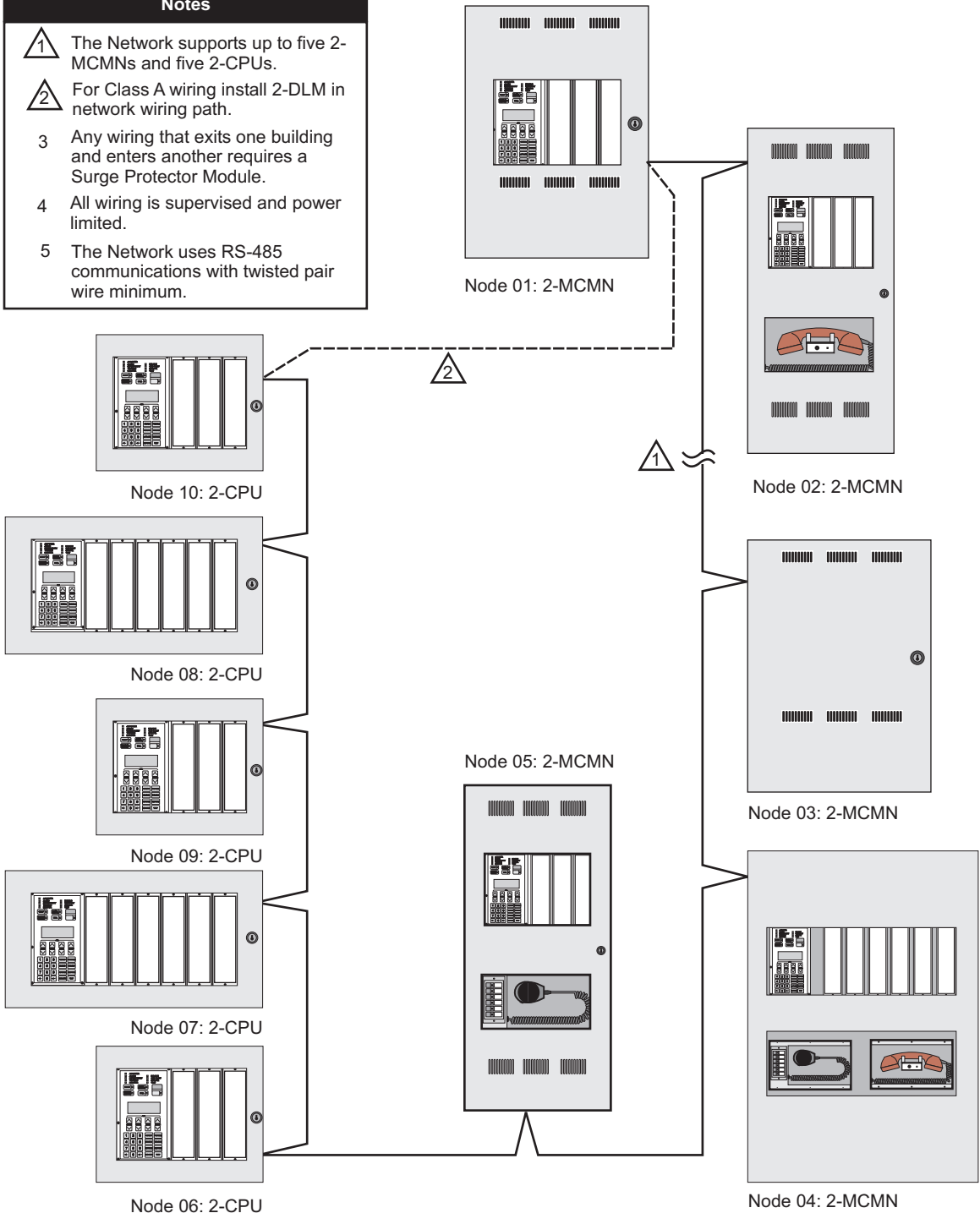
- Notes**
- 1 RS-485 line supports the Network. Twisted pair 18-14 AWG wire.
  - 2 RS-485 line supports conventional panel hardware: SAN annunciators, 2-LSRAs, and 2-SMDNs or 2-AAC audio connection. Twisted pair 18 - 14 AWG wire
  - 3 Conventional Notification Appliance Circuits. Two standard four available with optional 2-LCX. Each circuit uses a wire pair 18 - 12 AWG wire
  - 4 Signature Device Loop. One standard two available with optional 2-LCX. Each loop uses a wire pair 18 - 14 AWG wire.
  - 5 RS-232 port supports peripheral devices: ASCII printer etc. Requires twisted wire 18 - 14 AWG.
  - 6 All wiring but Utility supply is supervised and power limited.
  - 7 Any wiring that exits one building and enters another requires a Surge Protector Module.



- Notes**
- 1 RS-485 line supports the Network Twisted pair 18 - 14 AWG wire
  - 2 RS-485 line supports conventional Panel hardware: SAN annunciators, 2-LSRAs, and 2-SMDNs. Twisted pair 18 - 14 AWG wire
  - 3 RS-232 line supports local printer.
  - 4 24Vdc pair of wires.
  - 5 All wiring is supervised and power limited.
  - 6 Any wiring that exits one building and enters another requires a Surge Protector Module.

# Typical Network Wiring

- Notes**
- 1 The Network supports up to five 2-MCMNs and five 2-CPU.
  - 2 For Class A wiring install 2-DLM in network wiring path.
  - 3 Any wiring that exits one building and enters another requires a Surge Protector Module.
  - 4 All wiring is supervised and power limited.
  - 5 The Network uses RS-485 communications with twisted pair wire minimum.



# Specifications

## Power Supplies

Catalog Number	2-PPS	2-PPS/6A	2-PPS/220	2-PPS/6A-220
Agency Listings	UL			
Line Power	120 Vac 300 Watts Max. 50/60Hz		220-240 Vac 300 Watts Max. 50/60Hz	
Auxiliary Output Power	500mA Max.	N/A	500mA Max.	N/A
Notification Appliance Power	3.5 Amps @ 24 Vdc nominal	Two 3.2 Amp Taps @ 24 Vdc nominal	3.5 Amps @ 24 Vdc nominal	Two 3.2 Amp Taps @ 24 Vdc nominal
Maximum Battery Size	2 of 12V10A 10 Amp hour in 2-WB 2 of 12V17A 17 Amp Hour in 2-WBS, 2-WB3 and RACCR 2 of 12V10A 10 Amp Hour in 2-WB7 (see note 1)			

**Note: 1.** For battery application over 17 Amp hour, and up to 24 Amp hours use BC-1 battery cabinet.

## Main Controller/Network Communications (2-MCMN)

Agency Listings	UL, ULC
Network Communication Protocol	Peer-to-Peer RS-485 network Up to five 2-MCMN and five 2-CPU on a single network
Non Network Communications	One RS-485 port with up to 30 annunciators One RS-232 port
Notification Appliance Circuits	Two standard rated at 3.5 Amps each with separate riser connections
Terminal Wire Gauge	Notification Appliances 18-12 AWG (0.75-2.5 mm <sup>2</sup> ) All other terminals 18-14 AWG (0.75-1.5 mm <sup>2</sup> )
Signature Data Circuits	One Standard. Expandable to two with optional 2-LCX
Display	Optional 2-LCD and EST2 Panel Annunciator Modules
Devices per SDC	96 Detectors, 94 Modules Maximum - 96 Isolator or relay Bases
Relative Humidity	10-93% non condensing
Temperature Rating	0°-49°C (32° - 120°F)
Network Wiring Styles	Class A (Style 6) or Class B (Style 4)
Standard Auxiliary Contacts	One Alarm Contact - 24 Vdc 1 Amp One Trouble Contact - 24 Vdc 1 Amp One Supervisory Contract - 24 Vdc 1 Amp
Network Wire Specification	100 Ohms Max.; 0.44µF Max.

## Related Equipment

2-CPU	EST2 Network Annunciator CPU
2-AAC	Audio Controller (add "-CC" for City of Chicago)
2-MIC	Master Paging Microphone (add "-CC" for City of Chicago)
2-TEL	Firefighter's Master Telephone
2-LSRA	LCD annunciator
2-LSRA-C	LCD annunciator w/ common control
2-SMDN	LCD annunciator SAN mounting
2-SMDN-C	LCD annunciator SAN mounting w/ common controls
Envoy	Graphic Annunciators
PT-1S	Serial desk mount printer
SAN-CPU	CPU for SAN annunciators
SIGA series	Signature series intelligent devices
APS6A	6.5 Amp Auxiliary Power Supply
APS6A/230	6.5 Amp Auxiliary Power Supply (220V)
APS10A	10 Amp Auxiliary Power Supply
APS10A/230	10 Amp Auxiliary Power Supply (220V)
BC-1	Battery Cabinet



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## Ordering Information

Catalog Number	Description	Ship Wt. lb (kg)
<b>Fire Alarm Electronics</b>		
2-LCD	Network LCD Annunciator	
2-MCMN	Network Main Controller module ( <i>specify 2-MCMN-CC for City of Chicago</i> )	1 (.45)
2-LCX	Expander Signature Data Circuit with two Notification Circuits	
2-DACT	Two Line Dialer	1 (.45)
2-PPS	4.5 Amp power supply 120 Vac	
2-PPS/220	4.5 Amp power supply 220 Vac	
2-PPS/6A	6.4 Amp power supply 120 Vac	2.5 (1.1)
2-PPS/6A-220	6.4 Amp power supply 220 Vac	
2-DLM	Class A Network Data Line Monitor	1 (.45)
<b>Panel Mounted Annunciator Modules</b>		
2-16R	16 Red LEDs	
2-16Y	16 Yellow LEDs	
2-16G	16 Green LEDs	
2-8RY	8 Red and 8 Yellow LEDs	
2-12R4Y	12 Red LEDs and 4 Yellow LEDs	1 (.45)
2-16R8S	16 Red LEDs and 8 Two Position Switches	
2-16Y8S	16 Yellow LEDs and 8 Two Position Switches	
2-8RYS	8 Red LEDs, 8 Yellow LEDs and 8 two Position Switches	
<b>Wall Boxes and Doors</b>		
2-WB	Semi-Flush Wallbox - Gray finish. See Note 1	
2-WBD	Inner and Outer doors for 2-WB Wall Box. See Note 1	
2-WBS	Surface Wallbox - Gray finish. See Note 1	8 (3.6)
2-WBDS	Inner and Outer doors for 2-WBS Wall Box. See Note 1	
2-WB3	Long Surface Wall box - Gray finish. For Semi Flush mounting order trim kit separately. See Note 1.	20 (9)
2-WB3D	Inner and Outer doors for 2-WB3 Wall Box. See Note 1	18 (8.2)
2-WB7	Double wide Surface Wallbox - Gray finish. For Semi Flush mounting order trim kit separately. See Note 1.	39 (17.7)
2-WB7D	Inner and Outer doors for 2-WB7 Wall Box. See Note 1	36 (16)
<b>Trim Kits</b>		
2-LFK	Long Semi-Flush Trim Kit for 2-WB3 wall box. See Note 1	4 (1.8)
2-DFK	DoubleWide Semi-Flush Trim Kit for 2-WB7 box. See Note 1	5 (2.3)

**Note 1:** Standard finish is gray, red versions are available by adding suffix R to the catalog number e.g. 2-WB3R