

UL, ULC Listed  
FM Approved  
MEA Approved\*

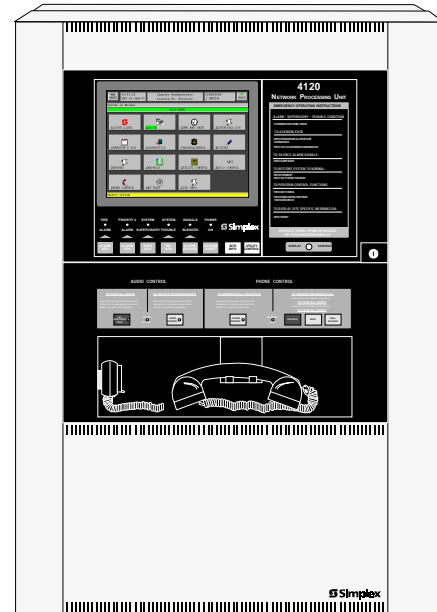
Network Controls  
4120 Network  
Network Processing Unit (NPU)

## FEATURES

- **UL Listed to:**
  - UL Standard 864 for fire alarm
  - UL Standard 1076 for security
- **4120 Network annunciation and control:**
  - Annunciation and control for up to 50,000 network points or point groups
  - High resolution color touchscreen optimizes operator access
  - Custom action messages and screen selection switches assist operator response
  - Multiple operator levels with password control
- **4120 Network interface:**
  - Multiple loop interface for up to four, 4120 network loops
- **2120 Multiplex system interface**
  - Up to eight, 2120 multiplex systems
- **Graphical diagnostic tools identify status of 4120 network nodes**
- **Extensive historical logging**
- **Set-host service functions**
- **Locking glass door for primary access**
- **Full function battery back-up**
- **Selectable packaging:**
  - Wall mount, surface or semi-flush, beige or red finish
  - 19" vertical console mount
- **Available with optional:**
  - Microphone
  - Firefighter's telephone
  - Serial Digital Alarm Communicator Transmitter (SDACT)
  - Additional RS232 ports for connection to printers or paging systems
  - Graphic screens to provide facility reference information

\* Accepted for use – City of New York Department of Buildings– MEA 35-93E.

\*\* TrueAlarm analog detection is protected by US Patent Nos. 5,155,468, and 5,173,683.



NPU with Microphone and Firefighter's Phone Control

## INTRODUCTION

The 4120 series Network Processing Unit (NPU) provides annunciation, status display, and control for network functions using a Windows based graphical interface with a built-in high resolution, color, touchscreen display. NPU performance is fully integrated into the battery supported operation of the self-contained fire alarm control panel.

Touchscreen buttons use realistic icons to provide control switches specific to the operation being performed. Panel mounted, high integrity membrane switches and LEDs are used for network-wide functions such as acknowledge, silence, and reset.

Point capacity is capable of up to 50,000 network points or point lists, allowing for significant future expansion without hardware additions.

A network microphone and a firefighter's network telephone may be packaged in the same cabinet. Multiple NPUs can be installed for redundancy or to accommodate vectored point type annunciation where points are routed to the appropriate NPU depending on type, location, or other criteria.

(Refer to Simplex data sheet S4120-0001 for additional 4120 Network information).

## SCREEN AND SYSTEM INTERFACE

The NPU screen is a high integrity, high resolution color LCD with touchscreen that uses the natural instinct of the pointed finger. The screen pointer follows the finger touch and can be quickly learned since it is similar to a mouse or track-ball pointer control, but is built into the display screen. In addition to the touchscreen display, the separate function membrane switches and LEDs are active. This provides an alternate network control for use, when preferred, or in the unlikely event that the main display should be

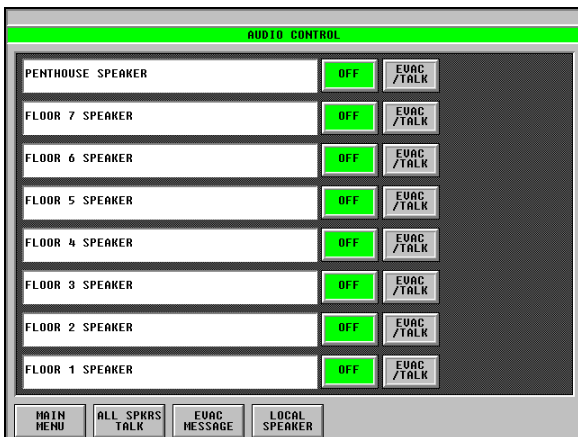
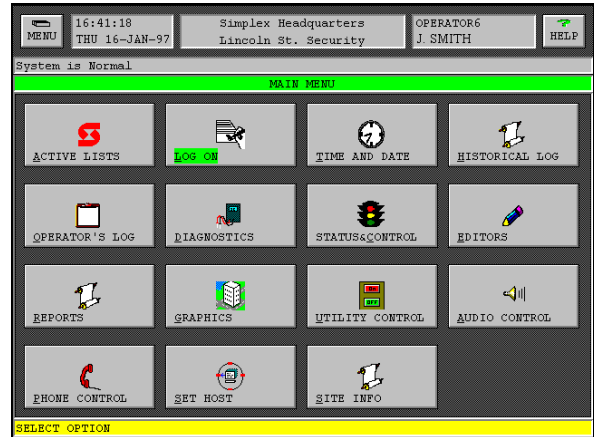
damaged or otherwise unavailable. The switch and LED interface operation is the same as that found in the Simplex 4020, 4100, and 4120 node fire alarm control panels.

For system setup, reprogramming, and service level diagnostics (set-host operation), an internal port will accept a standard keyboard. However, with the standard touch-screen display, a keyboard is not necessary for normal and emergency operations.

### Main Menu

The main menu displays the NPU functions authorized for the current operator. Selections are depicted with both written descriptions and icons. Functions can include: audio control, firefighter's telephone control, point information selection, point status control, and network diagnostic tools. From this main menu, the occurrence of network alarms or troubles is annunciated on the top row. The operator can perform the desired response by selecting the touch sensitive area at the top. Further investigation can be performed as required.

Screens can be accessed in sequence or switches can be assigned to directly travel (zoom) to or from another menu function.

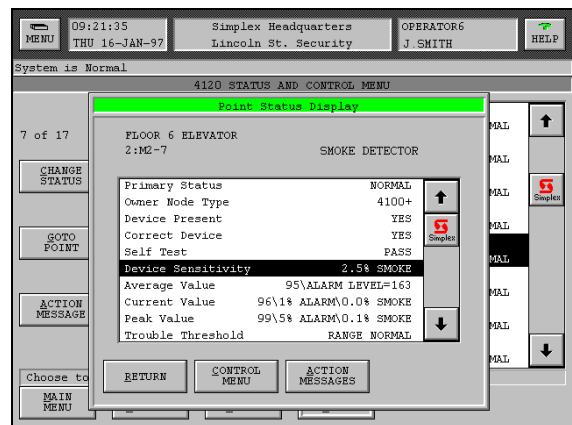


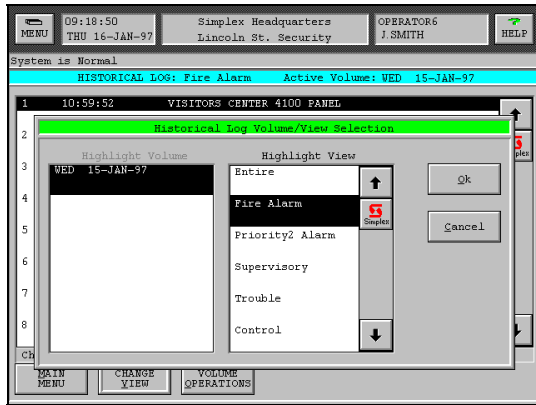
### Audio/Voice Control Operation

When network voice control is required, the NPU can be optionally equipped with a microphone and/or firefighter's telephone. Each includes an all-call membrane control switch and LED indicator. During a fire emergency (or drill conditions) the NPU display provides touch control for emergency fire-fighting and evacuation functions. When used in a voice system, selecting the audio control switch on the main menu converts the screen to a voice/tone control or a telephone control panel. Instead of requiring external hardwired switches and LED indicators for each zone needing control, the NPU provides the switches and indicators on the display. Touchscreen selection (switch) areas are large and easily operated even if an operator is wearing gloves.

### Individual Point Service Access

The NPU operator's interface provides service level access to network information that is not normally "public". Network "private" point information can be accessed by connecting a keyboard, using the Set-Host feature, and logging into the data base of the node of interest (with network password protection). With this operation, individual point information such as TrueAlarm analog sensor data can be accessed and reprogrammed as required. (This function is also available through other network node products).





## Historical Log Information

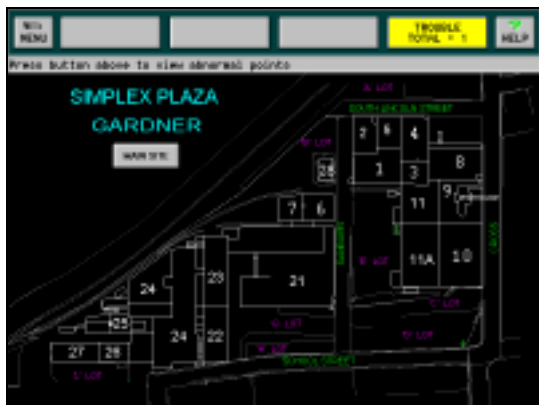
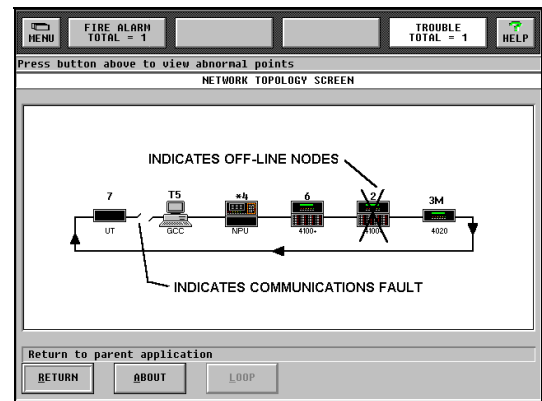
When details are required for network point information, the historical log screens can easily and accurately focus on the data required. By selecting all types of information or the specific types required, data is selected as it is needed. Data can then be reviewed on the screen, printed at a local or remote system printer, or can be written to a 3.5" floppy disk for use in other locations.

This information can be formatted to be compatible with standard spreadsheet and word-processing programs. With this feature, complete records of the system history can be kept by adding information such as problem investigation details.

## Network Diagnostics

Automatic, built-in diagnostics provide graphical views of network topology and status. Wiring breaks or inactive nodes are indicated clearly to guide in returning the system to normal.

Information screens provide detail about the specific network nodes. The parent node that is being used for the diagnostic is always identified for accurate location reference.



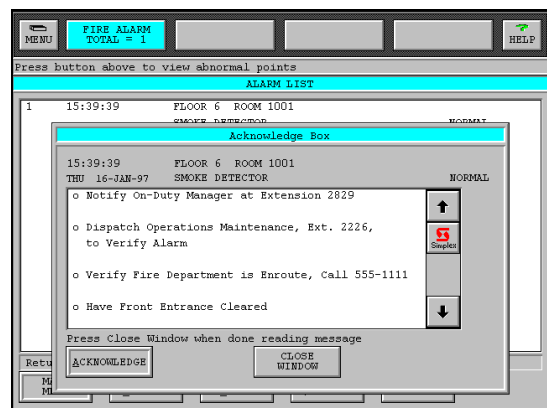
## Graphics Screens

The primary operation of the NPU screen is to provide text based instructions and prompting for operator assistance. However, when the information density is appropriate, custom graphics screens can be optionally added to assist with facility layout references. Detail can be added to identify point locations and graphic symbols can display device types.

## Flexible Customized Programming

Each 4120 Network fire alarm system is different from the next and facility requirements must be accurately satisfied by the control panel. With the NPU, custom action messages are programmed to directly access pertinent data upon receipt of various types of input. Operators can be categorized as to ability and responsibility, and passwords can be assigned for access to features consistent with those responsibilities.

Custom response messages can be generated to accurately guide the needed actions. Telephone numbers can be displayed along with names of people to contact. Warning such as locations of hazardous materials can be displayed with significant detail.



## INTERFACING OF MULTIPLE 4120 NETWORK LOOPS:

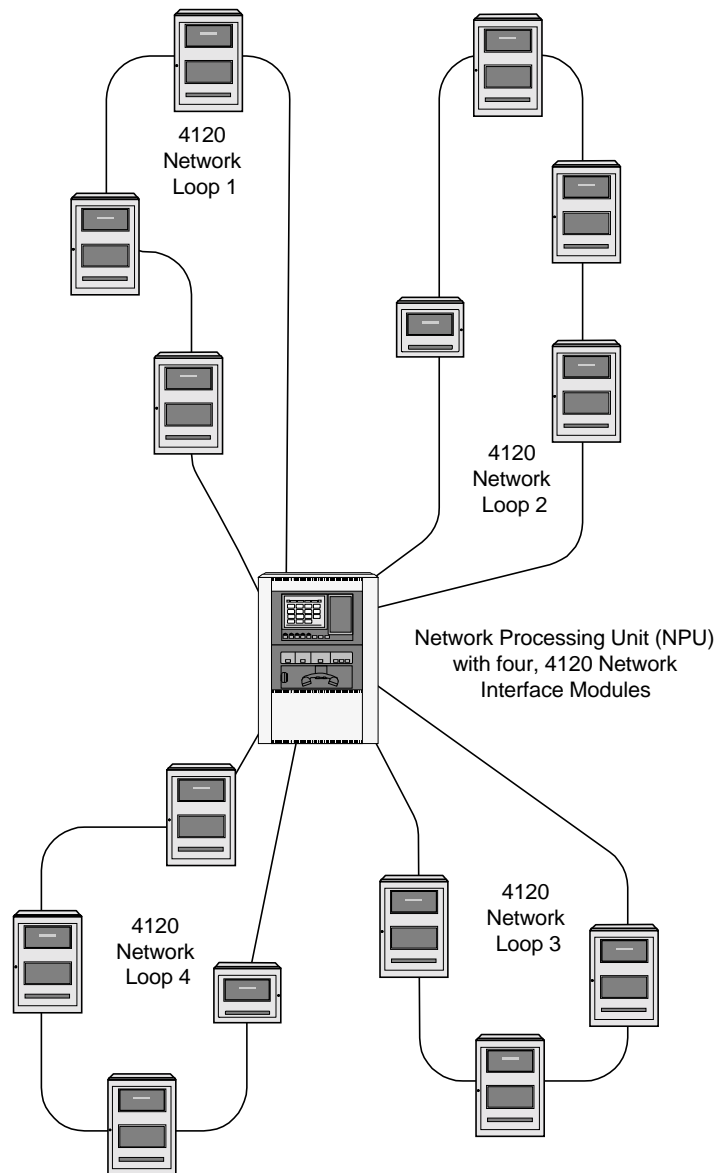
When extensive network expansion or interconnection of existing, separate networks is required, up to four, 4120 Network loops may be interfaced using the NPU. Each network loop is connected to its own network interface module allowing the NPU to appear as a node in each individual loop.

NPU software allows information from one loop to be passed along to another loop as required.

The NPU is a node member of each network loop, allowing up to 98 additional nodes per loop. This allows up to 392 total nodes and the NPU (393 total) to be interconnected.

### MULTI-LOOP OPERATION FEATURES

- **Improved survivability:**
  - Individual network loops operate independently
  - In the event of loss of one or more loops, remaining loops continue to operate
- **Loop independence:**
  - Loops can operate at different data rates to satisfy individual conditions
  - New loops can be added without impacting existing loops
  - If point data information is required to be exchanged between loops, it can be conveniently programmed one loop at a time
- **Assists with phased-in system expansion:**
  - Each loop can be installed as a stand-alone network allowing local node programming to evolve as required
  - When construction or renovation reaches completion, loops can be combined for coordinated facility protection
  - Information can be processed using point groups allowing each loop to know the others' status without needing to process data that only concerns the local loop



Typical Interface of Multiple 4120 Network Loops Using an NPU

## SERIAL LINE INTERFACE (SLI)

### DESCRIPTION

The Simplex Serial Line Interface (SLI) capability of the NPU allows existing 2120 Multiplex systems to be easily interfaced with 4120 Network products. With this interface, the operator conveniences of the Network Processing Unit are available for monitoring the status of the 2120 Multiplex systems as well as allowing system expansion to 4120 Network fire alarm control panels.

With central annunciation via the SLI connections, required operator actions are simplified and programming can be easily accomplished to allow activity from the individual systems to be mapped for control in another system, fully interfacing each sub-system into an integrated fire alarm system.

### POINT LEVEL CONTROL

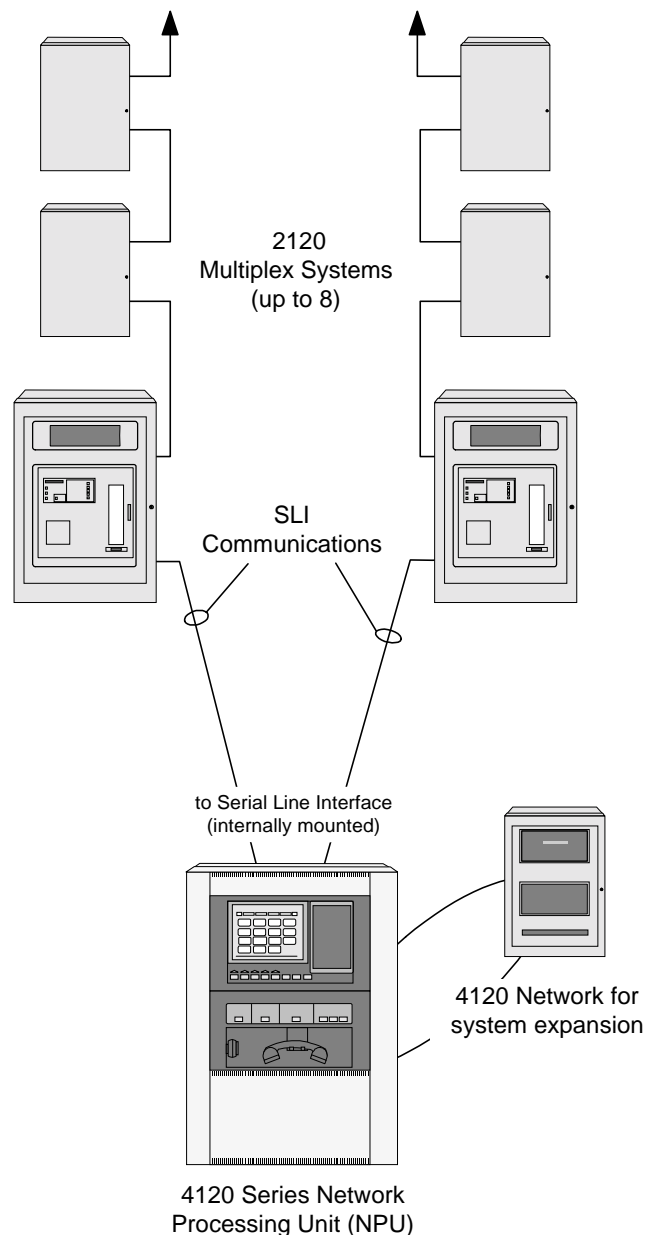
Individual points and point groups within the 2120 Multiplex systems consider the NPU to be their "owner node". With this designation, points can be selectively declared "public" and made available for 4120 Network communications.

As required by the specific facility, individual 4120 fire alarm control panel nodes can be programmed to respond to the 2120 point activity and implement required system actions.

When 2120 Multiplex systems are connected without 4120 fire alarm control panel nodes, each 2120 provides its own internal response to its off-normal conditions while reporting status changes to the NPU annunciator.

### REQUIREMENTS

1. A single 2120 Multiplex system may be connected to a standard NPU, RS232 port (if available).
2. Each 2120 requires a dedicated RS232 port in its CPU.
3. For SLI connections exceeding one, up to eight 2120 Multiplex Systems can be connected using the expanded SLI Interface module 4190-6017. (Refer to page 6 of this document and to data sheet S4190-0009 for additional information.
4. Existing 2120 point data should be downloaded using Simplex service software to ensure accurate system point descriptions.



Serial Line Interface Connections

## 4120 NPU FEATURE SELECTION CHART

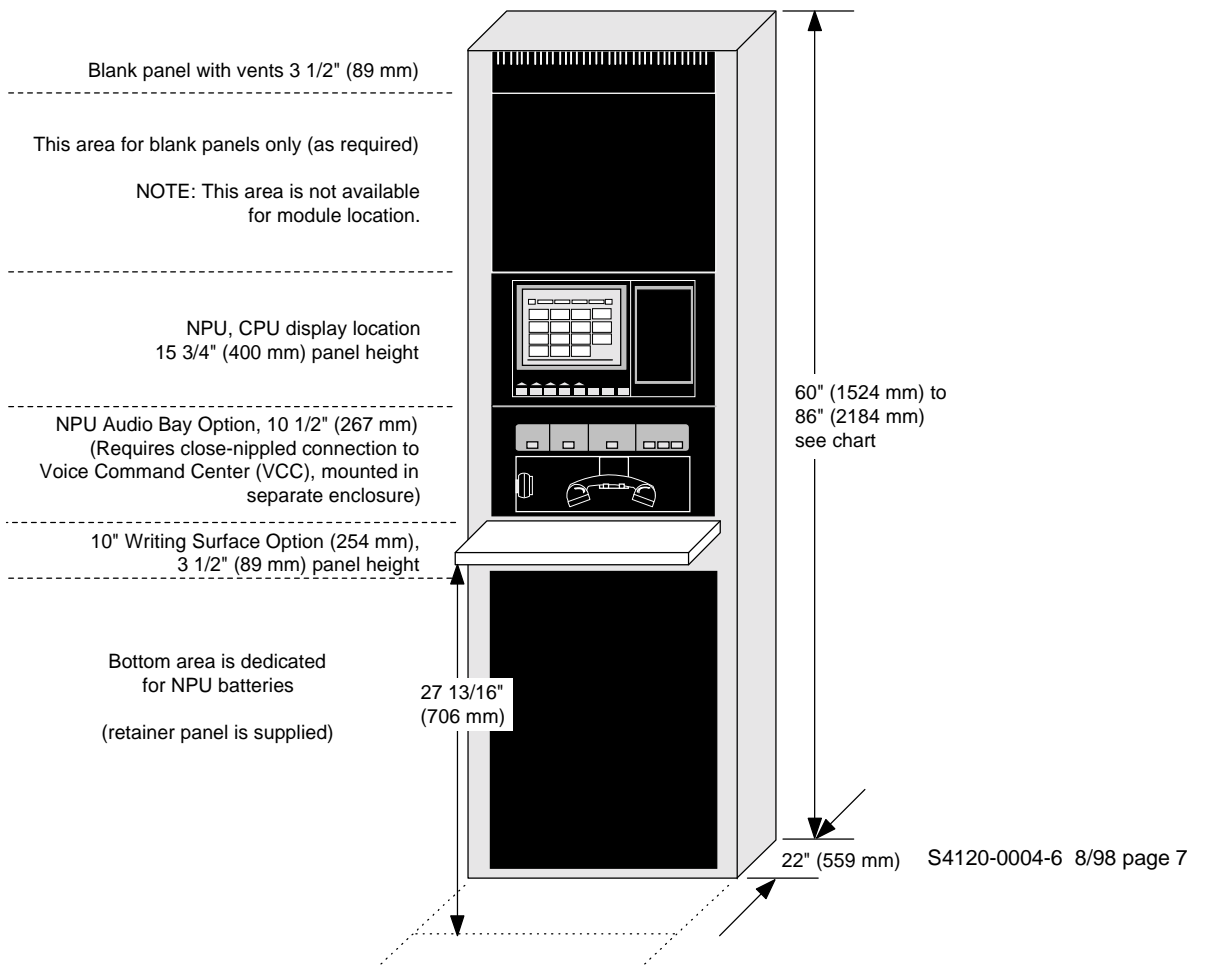
Category	Model	Description	Current
<b>System Type*</b> (select one)	4120-8301	Network Processing Unit (NPU)	
	4120-8321	NPU with voice*	
	4120-8703	Console mounted NPU, 19"W x 15 3/4"H, for 22" deep console	
	4120-8723	Console mounted NPU with voice, 19"W x 26 1/4"H, for 22" deep console*	
	4120-8903	Aftermarket addition	
	4120-8709	Aftermarket addition for console mount	
<b>NPU Type</b>	4120-7005	NPU master controller with color touch screen display (required)	1.7 A supv.
<b>Network Interface</b> (4 maximum)	4120-6030	Network interface module for fixed, wired in/out connections	50 mA supv.
	4120-6031	Network interface modular card (requires 1 media card for style 4 and 2 media cards for style 7)	15 mA supv. each
<b>Media Modules</b> (as required)	4120-0142	Wired Media Module (requires 4120-6031)	35 mA supv. each
	4120-0143	Fiber Optic Media Module (requires 4120-6031)	22 mA supv. each
	4120-0144	Modem Media Module, maximum of 4 per network (requires 4120-6031)	50 mA supv. each
<b>Voice Options</b>	4120-0225	Microphone and Firefighter's Telephone	
	4120-0226	Microphone	
	4120-0227	Firefighter's Telephone	
<b>Optional Features</b> (select as required)	4120-0155	Serial Digital Alarm Communicating Transmitter (SDACT)	30 mA supv. 40 mA alarm
	4120-6001	240 VAC Input	
	4120-6003	French Display	
	4120-6010	Chinese Display	
	4120-6017	Eight Port Serial Line Interface Communications Module and Eight Port Interface Box (Mounts Internally)	300 mA supv.
	4120-6101	Single Port RS232 Module for Printer or Paging System (2 max.)	43 mA supv. each
<b>Cabinet Trim</b> (select one)	4120-2004	4 Unit Beige with Door	
	4120-2006	6 Unit Beige with Door	
<b>Back Box</b> (select one)	2975-9203	4 Unit Red Back Box	
	2975-9202	4 Unit Beige Back Box	
	2975-9204	6 Unit Beige Back Box	
	2975-9205	6 Unit Red Back Box	
<b>Trim Options</b> (select as required)	4120-2201	Red Cabinet Trim Option	
	2975-9801	Beige Semi-Flush Box Trim	
	2975-9802	Red Semi-Flush Box Trim	
<b>Graphic Screen Programming</b> (select one)	4120-8331	NPU Graphic Screen Programming (requires 4120-4xxx series as required, see below)	
	4120-8931	Aftermarket NPU Graphic Screen Programming (requires 4120-4xxx series as required, see below)	
<b>Graphic Screen Type</b> (select as required)	4120-4401	One Screen, DXF Type	
	4120-4403	25 Status Icons	
	4120-4404	25 Control Functions; On/Off, Bypass, etc.	
	4120-4405	25 Travel Screen Keys (selective zooming)	
	4120-4451	Convert Existing Color Graphics + Screens to NPU Screens	

\* Additional information on audio/voice products can be found on Simplex data sheets S4100-0013 and S4100-0014.

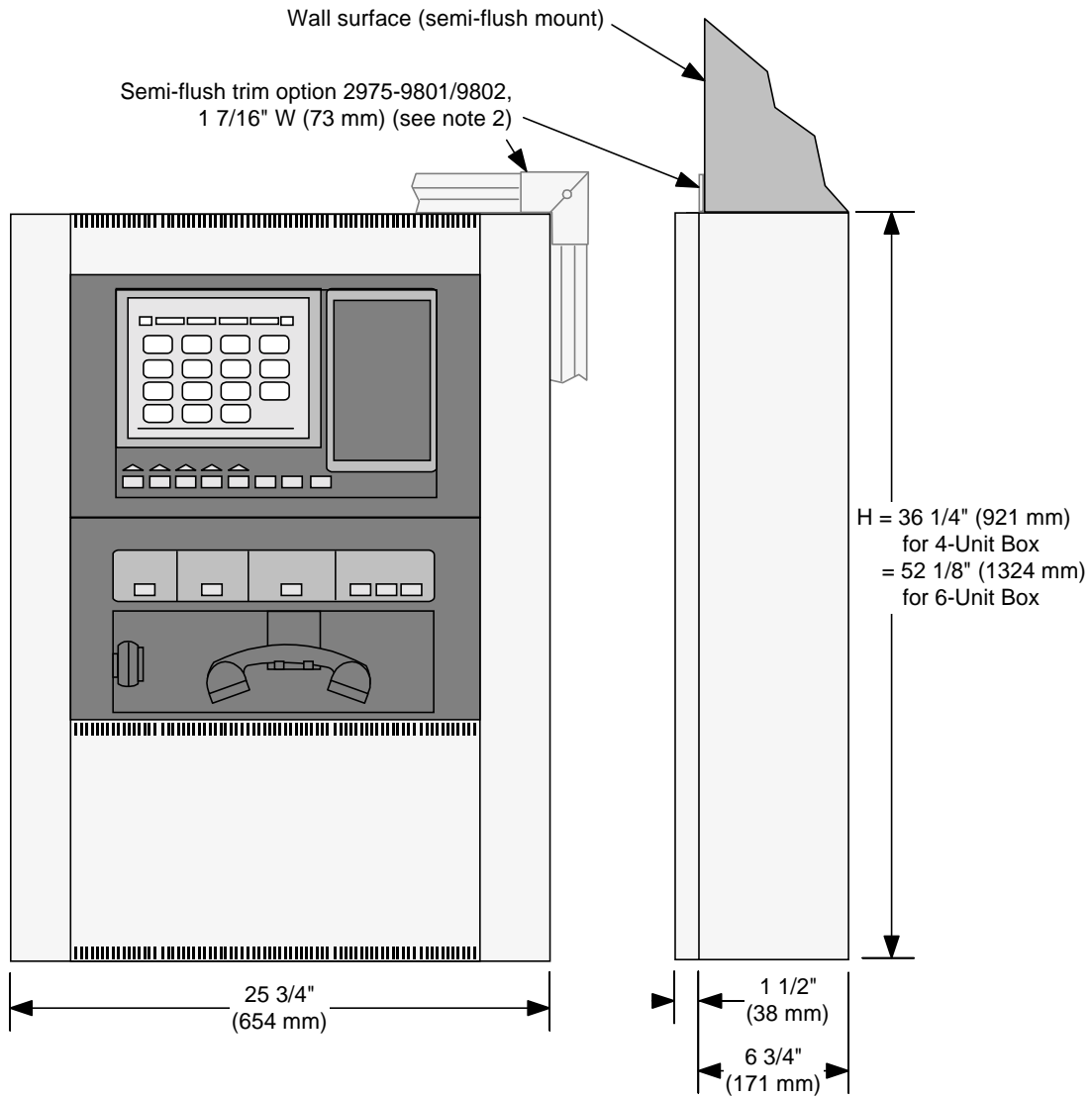
**4120 NPU CONSOLE FEATURE SELECTION CHART**  
**NOTE:** Console must be dedicated for single NPU application only

Model	Description
<b>Required Model Numbers</b>	
2120-8702	Free-Standing Custom Console
2120-7707	4120 Module Mounted in 2120 Console
2120-0841	NPU Top Filler Panel, 3 1/2" Vented (89 mm)
<b>Console Height, Select One</b> (minimum console height is 60")	
2120-0813	Vertical Console Height Extension to 60" (1524 mm)
2120-0814	Vertical Console Height Extension to 69" (1753 mm)
2120-0815	Vertical Console Height Extension to 78" (1981 mm)
2120-0816	Vertical Console Height Extension to 86" (2184 mm)
<b>Console Options, Select as Required</b>	
2120-0845	NPU Filler Panel 8 7/8" (225 mm), use (1) for 60" (1524 mm) and 69" (1753 mm) console, use (2) for 78" (1981 mm) console, use (3) for 86" (2184 mm) console
2120-0846	NPU Audio Section Filler Panel (required for NPU without audio)
2120-0817	Writing Surface Option
2120-0842	NPU Filler Panel 3 1/2" (89 mm), use when writing surface is not selected
2120-0802	Pie Section, 30° (For angled linking to other consoles)
2120-0803	Pie Section, 45° (For angled linking to other consoles)
2120-0801	Additional Single Console Bay

**4120 NPU MOUNTING**



**4120 NPU WALL MOUNTING INFORMATION**



**NOTES**

1. 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 78.
2. Cabinet may be surface or semi-flush mount. For semi-flush mounting, cabinet may be installed flush to wall (not recessed). Extend cabinet a minimum of 3/8" (9.5 mm) if semi-flush trim 2975-9801 (beige) or 2975-9802 (red) is used.

**OPERATING SPECIFICATIONS:**

Input Power:  
 120 VAC ..... 6 A @ 102-132 VAC, 60 Hz  
 240 VAC ..... 3 A @ 204-264 VAC, 50/60 Hz  
 Battery Backup ..... Internal

Operating Temperature ..... 32° F to 120° F  
 (0° C to 49° C)  
 Operating Humidity Range ..... 10% to 90% RH  
 from 32° F to 104° F (0° C to 40° C)

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S4120-0004-6 8/98



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