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N16 Series Listing Document

PN LS10239-051NF-E:G 5/17/2022 ECN: 16475

For additional documentation on this product, go to http://notifiermanuals.com. This additional documentation for the N16 may be used as a reference only.

NOTE: In this manual, the term N16 is used to refer to the N16E, CPU-N16LD, and CPU-N16LND, and the term FAAST is used to refer to the FAAST XS, FAAST XM, FAAST XT, and the FAAST XT PRO, unless otherwise noted.

1 Agency Standards

The N16 has been designed to comply with standards set forth by the following regulatory agencies:

- Underwriters Laboratories Standard UL 864
- UL 2017 for General-Purpose Signaling Devices and Systems
- UL 2610 for Commercial Premises Security Alarm Units and Systems

The contents of this manual are important and must be kept in close proximity of the hardware. If building ownership is changed, this manual and all other testing and maintenance information must also be passed to the current owner of the facility. A copy of this manual was shipped with the equipment and is also available from the manufacturer.

This product is intended to be installed in accordance with the following standards:

- NFPA 70 - National Electrical Code/Article 300 Wiring Methods
- NFPA 72 - Central Station Fire Alarm Systems (Automatic, Manual, and Waterflow) Protected Premises Unit (requires CGW-MB)
- NFPA 72 - Local (Automatic, Manual, Waterflow and Sprinkler Supervisory) Fire Alarm Systems
- NFPA 72 - Remote Station (Automatic, Manual, and Waterflow) Fire Alarm Systems
- NFPA 72 - Proprietary (Automatic, Manual and Waterflow) Fire Alarm Systems (Protected Premises Unit)
- NFPA 72 - Initiating Devices for Fire Alarm Systems
- NFPA 72 - Inspection, Testing and Maintenance for Fire Alarm Systems
- NFPA 72 - Notification Appliances for Fire Alarm Systems
- UL 38 Manually Actuated Signaling Boxes
- UL 217 Smoke Detector, Single and Multiple Station
- UL 228 Door Closers - Holders for Fire Protective Signaling Systems
- UL 268 Smoke Detectors for Fire Protective Signaling Systems
- UL 268A Smoke Detectors for Duct Applications
- UL 346 Waterflow Indicators for Fire Protective Signaling Systems
- UL 464 Audible Signaling Appliances
- UL 521 Heat Detectors for Fire Protective Signaling Systems
- UL 1481 Power Supplies for Fire Protective Signaling Systems
- UL 1971 Visual Signaling Appliances
- UL 2017 Standard for General-Purpose Signaling Devices and Systems
- UL 2610 Commercial Premises Security Alarm Units and Systems
- UL681 Wiring methods used shall be in accordance with “Standard for Installation and Classification of Burglar and Holdup Alarm Systems”
- UL 827 "Wiring methods used shall be in accordance with Standard for Central Station Alarm Services”

1.1 UL 864 Tenth Edition Compliance

This product has been certified to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864 10th Edition. Software version must be 3.0 or higher to comply with UL864 10th edition.

Operation of the N16 with products not tested for UL 864 9th Edition has not been evaluated and may not comply with NFPA 72 and/or the latest edition of UL 864. These applications will require the approval of the local Authority Having Jurisdiction (AHJ).

2 Equipment Installation and Layout

WARNING: SYSTEM MALFUNCTION
IMPROPER INSTALLATION, MAINTENANCE, OR LACK OF ROUTINE TESTING COULD RESULT IN SYSTEM MALFUNCTION.

2.1 Guidelines for Equipment Installation

Follow these guidelines when mounting the product's backbox and equipment.

- The backbox should be installed in a dry, indoor location.
- Recommended temperature for installation of fire panel hardware is between 15-27°C/60-80°F.
- System operation requirements are 15-27°C/60-80°F and at a relative humidity of 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F).
- Locate the backbox so the top edge is 66 inches (1.6764 m) above the surface of the finished floor.
- Access to the cabinet shall be in accordance with NFPA 90, article 110.33.
- Allow sufficient clearance around cabinet for door to swing freely.

2.2 N16 Layout

The following graphic depicts the layout for the CPU-N16LD circuit boards (Core/PMB/SLM-318 mounted on chassis).

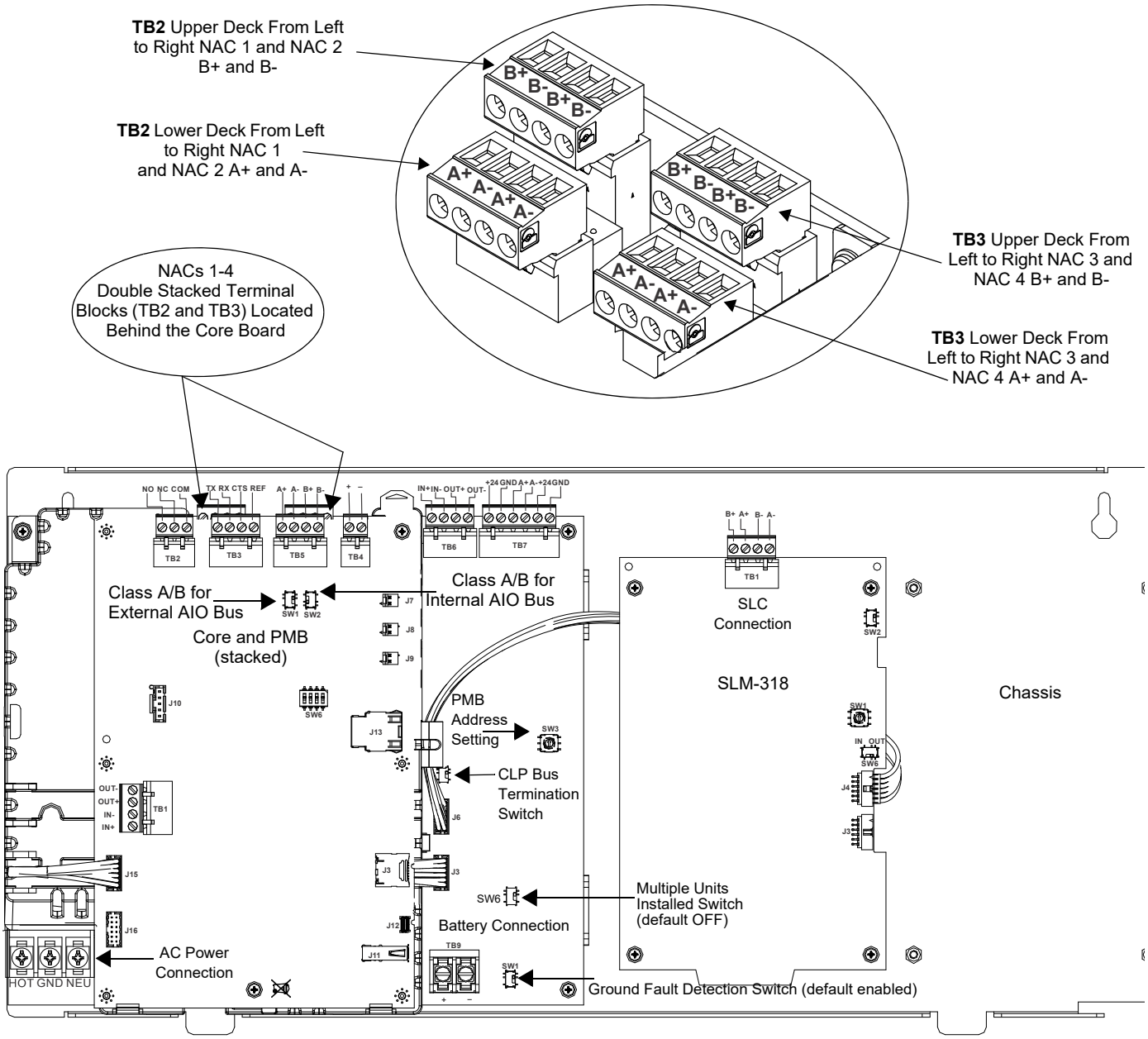

Figure 1 N16 Main Layout (shown with Core, PMB, and SLM-318 on Mounting Chassis)

NOTE: Refer to the *SLM-318 Installation Document* (LS10243-000GE-E) and the *PMB-AUX Installation Document* (LS10242-000GE-E) for more information on wiring connections and switch settings on these boards

NOTE: The N16FACP only supports USB Memory Drives formatted in FAT32 and must be 32GB or less.

Terminal Block/ Connector on Core Board	Description	Specifications
TB1	Future Use	• Future Use
TB2	Trouble Relay	• 30 VDC • 2A, 0.35 PF • Non-power-limited • Form C dry contact
TB3*	Printer Connection (for supplemental use only)	• Power-limited (Class 2) • Supervision of end to end communication • Isolated printer connection (left side) • Equipment must be located in the same room within 20 feet of the panel with cables in conduit
TB4	Internal AIO-Bus	• Characteristic impedance: 120 ohms • Supervised • Power-limited (Class 2) • A maximum of 80 annunciator devices can be connected to the system. Up to 10 annunciators can be configured as routers, each supporting 15 additional annunciators • Must be within 20ft of panel • Must be in same room as panel • Cable must be in conduit
TB5	External AIO-Bus	• Characteristic impedance: 120 ohms • Supervised return • Power-limited (Class 2) • A maximum of 80 annunciator devices can be connected to the system. Up to 10 annunciators can be configured as routers, each supporting 15 additional annunciators • Long line resistance: 100 ohms
J1	OCuLink Connection	• To display (DIS-10-RD)
J7	Trouble Input	• Dry contact
J8	Tamper Input	• Dry contact
J9	Future Use	• Future use
J10	Network Service Connection (NUP)	• Power-limited (Class 2) • Supervised • Must be in cabinet located in the same room within 20 feet of the panel with cables in conduit
J11	USB A	• N/A
J12	USB B Micro	• N/A
J13	Future Use	• Future use
J15	PMB Connection	• RS-485 Interface to panel • 24V power IN, 6A max • Alarm Bus • Sync Bus • CLP Bus terminated on core board
J16	CLP Bus Connection	• RS-485 Interface to panel • 24V power OUT, 6A max • Alarm Bus • Sync Bus • CLP Bus terminated on core board
SW1	Class A/B Selection for External AIO Bus	• Default Class B • Class A/B selection for external AIO Bus
SW2	Class A/B Selection for Internal AIO Bus	• Default Class B • Class A/B selection for internal AIO Bus • No Class A setting available for Internal AIO Bus

Table 1 N16 Core Wiring Connections and Switches

Terminal block/ Connector on PMB	Description	Specification
TB2	NAC 1 and NAC 2	• Power-limited (Class 2) • 24VDC, 1.5 Amps • Special applications Class A/B NAC power, Class D door holder power, special applications Class A/B aux power, UZC • 24VDC, 150mA Regulated Class A/B NAC power • 2.8 ohm max line impedance • End-of-Line Resistor 2.2K 1/2 W (ELR-2.2K)
TB3	NAC 3 and NAC 4	• Power-Limited (Class 2) • 24VDC, 1.5Amps • Special applications Class A/B NAC power, Class D door holder power, special applications Class A/B aux power, UZC • 24VDC, 150mA Regulated Class A/B NAC power • 2.8 ohm max line impedance • End-of-Line Resistor 2.2K 1/2 W (ELR-2.2K)
TB9	Battery Connection	• Sealed lead-acid battery charger which will charge 7-100 AH batteries • Charging current: 1A, 2A, and 4.25A • Charging voltage: 27.6 VDC nominal
TB6	Remote Sync Input	• Power-limited (Class 2)
TB7	Aux Power 1/ Aux Power 2	• Aux Power 1 • 24VDC, 1.5Amps Class A/B • Power-limited (Class 2) • Special Applications • Resettable/Non-Resettable • Aux Power 2 • 24VDC, 1.5Amps Class B • Power-limited (Class 2) • Special Applications • Resettable/Non-Resettable
TB8	AC Power Connection	• 2.5A, 120VAC, 50/60 HZ; 1.25A, 240VAC, 50/60 Hz • Non-power-limited
J3	CLP Board Connection	• Carry RS-485 data and internal 24V power to the SLM-318 loop cards and the core board on the N16 CPU assembly • PMB power supplies use only the RS-485 data
J6	CLP/Core Board Connection	• Carry RS-485 data and internal 24V power to the SLM-318 loop cards and the core board on the N16 CPU assembly • PMB power supplies use only the RS-485 data
SW1	Ground Fault Detection Switch	• Default is enabled
SW3	Address Switch	• Addresses the PMB • Default is set to ONE
SW6	Multiple Units Installed Switch	• Turn ON if more than one PMB is installed on the system

Table 2 PMB Wiring Connections

NOTE: When disabling the battery charger on the PMB Power Supply, the batteries must be shared with a UL 864 compliant, supervised power supply capable of charging batteries with a charger voltage not to exceed 29VDC.

Battery Capacity	Alarm Time				
	5	10	15	20	30
7	0.118	0.089	N/A	N/A	N/A
12	0.285	0.255	0.225	0.196	0.136
18	0.485	0.455	0.425	0.396	0.336
26	0.752	0.722	0.692	0.662	0.603
33	0.985	0.955	0.925	0.896	0.836
75	2.385	2.355	2.325	2.296	2.236

Table 3 Maximum Battery Standby Loads for 24 Hour Standby on the PMB Power Supply

Battery Capacity	Alarm Time				
	5	10	15	20	30
100	3.218	3.189	3.159	3.129	3.069

Table 3 Maximum Battery Standby Loads for 24 Hour Standby on the PMB Power Supply

2.3 N16 Display Layout

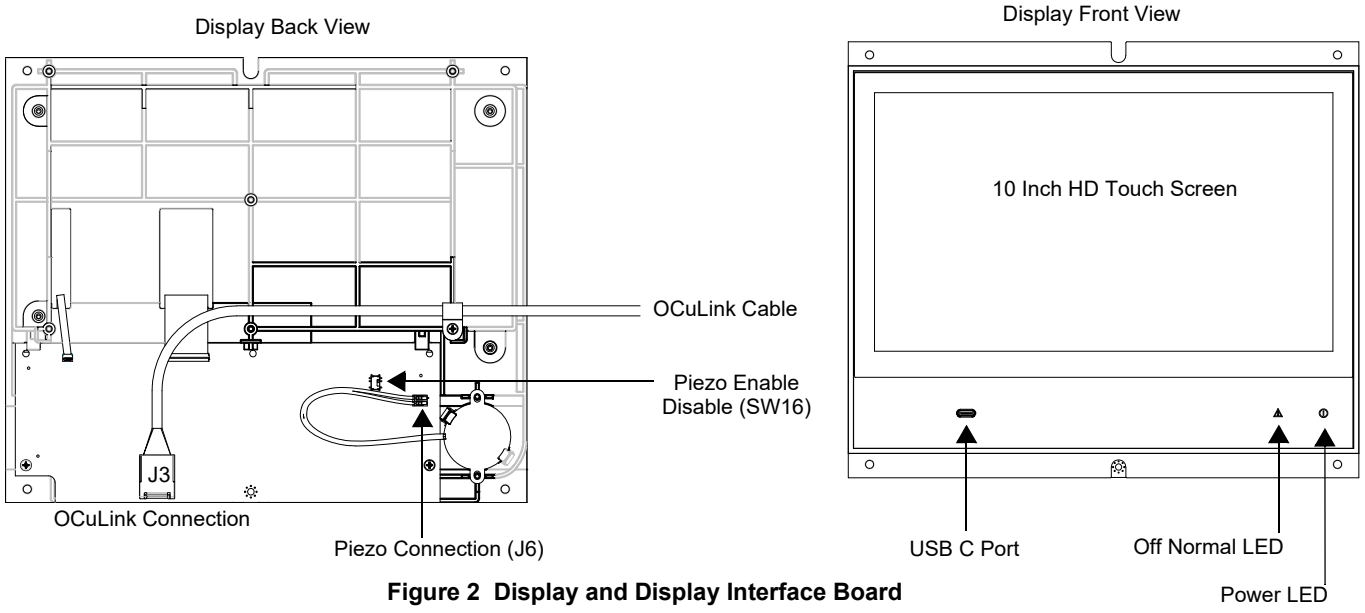

Figure 2 Display and Display Interface Board

WARNING: OCULINK CABLE
DO NOT CONNECT OR DISCONNECT THE OCULINK CABLE WHILE POWER IS APPLIED TO PREVENT SYSTEM DAMAGE.

2.4 SLM-318 SLC Loop Card

The SLM-318 is a SLC loop card that offers additional device capacity for the N16 Series Fire Alarm Control Panels. Each card can support 318 points when operated in FlashScan protocol, and 198 devices when operated in CLIP protocol.

Refer to the *SLM-318 Product Installation Document (LS10243-000GE-E)* for more information on the SLM-318.

2.4.1 SLM-318 Connections

Note the following when installing the SLM-318 boards.

- The SLM-318 can be mounted adjacent to the fire panel CPU or below in a secondary chassis within the same enclosure.
- Mounting multiple loop modules in one chassis position may cause intermittent electrical interference. If this occurs, move one to a separate chassis position.
- Set switches and other board settings before layering other boards on top.
- Each SLM-318 should be assigned a unique SLC loop number (1-10) but does not have to match the module's location in the daisy chain.
- Up to ten (10) SLM-318 cards can be installed on the fire panel with a maximum of five (5) SLM-318 cards per PMB power supply.
- If programmed for CLIP mode, do not install more than 198 devices on the loop.

Refer to the *SLM-318 Product Installation Document (LS10243-000GE-E)* for more information. Refer to the *Notifier Device Compatibility Document(15378)* for a list of compatible Notification Appliances. Refer to the *SLC Wiring Manual (51253)* for SLC devices that are compatible with the N16. For NAC applications, NAC support is provided via the PowerStrike PS Series power supplies, the ACPS-610 power supply, and the PMB-AUX power supplies. Refer to documents provided with these products for NAC application information.

Terminal Block/ Connection	Description	Specification
TB1	SLC Connection	24VDC Alarm 210mA Class B/A/X Standby 159mA Power Limited Supervised 50 ohms Maximum

Table 4 SLM-318 Connections

Terminal Block/ Connection	Description	Specification
J3	CLP Board Connection	• Carry RS-485 data and internal 24V power to the SLM-318 loop cards and the core board on the N16 CPU assembly • PMB power supplies use only the RS-485 data
J4	CLP/PMB Board Connection	• Carry RS-485 data and internal 24V power to the SLM-318 loop cards and the core board on the N16 CPU assembly • PMB power supplies use only the RS-485 data

Table 4 SLM-318 Connections

2.4.2 Self-Test Detector Function on the SLC

The SLM-318 is capable of supporting up to 159 Self Test Detectors. When Self-Test Detectors are installed on the SLM-318 and a self test is being performed the voltage on the SLC Loop will increase to 29.5VDC +/-5% (28.0-30.98VDC). If there is no self test in process, the voltage will remain at 24VDC.

CAUTION: LOOP POLLING INTERRUPTION
WHEN THE FACP IS PREFORMING A SELF TEST THE DEVICES ON THE LOOP WILL NOT POLL

NOTE: When the FACP is using back up battery power a self test will not be preformed.

WARNING: DISCONNECT ALL POWER SOURCES
REMOVE ALL POWER SOURCES TO EQUIPMENT WHILE CONNECTING ELECTRICAL COMPONENTS. LEAVE EXTERNAL, MAIN POWER BREAKER OFF UNTIL INSTALLATION OF THE ENTIRE SYSTEM IS COMPLETE. SEVERAL SOURCES OF POWER CAN BE CONNECTED TO THE CONTROL PANEL. BEFORE SERVICING THE CONTROL PANEL, DISCONNECT ALL SOURCES OF INPUT POWER INCLUDING THE BATTERY. WHILE ENERGIZED, THE CONTROL PANEL AND ASSOCIATED EQUIPMENT CAN BE DAMAGED BY REMOVING AND/OR INSERTING CARDS, MODULES, OR INTERCONNECTING CABLES.

2.5 Cabinet and Equipment Layout

The N16 series equipment can be installed in CAB-5 or CAB-4 series backbox. Additional rows of equipment can be mounted to dress panels or chassis mounted on rows below the N16. For additional information on the CAB-5 and CAB-4 series backbox, refer to the *CAB-5 Product Installation Document (LS10242-000GE-E)* and *CAB-3/CAB-4 Series Cabinets Product Installation Document (15330)*. For additional information on mounting the CPU-16-RTO in the CAB-4 series enclosures, refer to the *PMB-AUX Series Product Installation Document (LS10242-000GE-E).*

NOTIFIER INSPIRE™ equipment compatible with the CAB-4 Series includes:

- DP-4A-CB4 - Dress panel for mounting four (4) ACM-30 annunciators
- DP-T2A-CB4 - Dress panel for mounting the NCD or DIS-10-RD display and two (2) ACM-30 annunciators
- DP-GDISP1 - Dress panel for mounting the NCD or DIS-10-RD display and Onyx Series Annunciators for use in first row only
- DP-GDISP2 - Dress panel for mounting the NCD or DIS-10-RD display and Onyx Series Annunciators in the second, third, or fourth rows
- CHS-CGW - Chassis to mount the CGW-MB CLSS gateway

NOTIFIER INSPIRE™ equipment compatible with the CAB-5 Series includes:

- CHS-ADP - Adapter plate to mount a CAB-4 chassis into a CAB-5 backbox
- DP-4A - Dress panel for mounting four (4) ACM-30 annunciators
- DP-T2A - Dress panel for mounting the NCD or DIS-10-RD display and two (2) ACM-30 annunciators
- CHS-CGW - Chassis to mount the CGW-MB CLSS gateway

NOTE: When designing the cabinet layout, consider UL requirements regarding separation of power-limited (Class 2) and non-power-limited wiring. Refer to UL Power-Limited Wiring Requirements on page 13

2.5.1 N16 Chassis

The N16 chassis can mount in any row of the cabinet in a CAB-5. The core board and PMB power supply occupy the left half (positions one and two) of the chassis and can hold up to three layers of equipment, including option cards.

2.5.2 Option Cards

Option cards may be mounted next to the core board on the N16 chassis, in a stacked configuration, in positions three and four. All option modules come with the necessary hardware for mounting. Refer to the *SLM-318 Installation Document #LS10243-000GE-E* for mounting instructions.

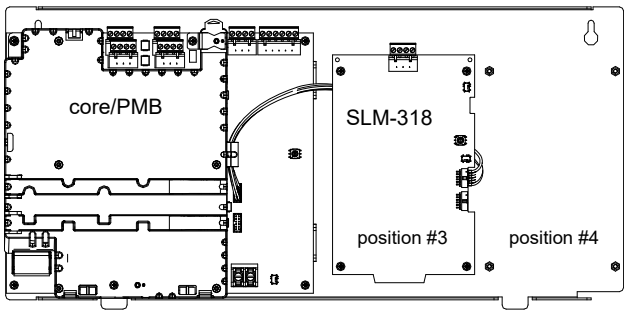

Figure 3 CPU Mounting and Option Card Locations

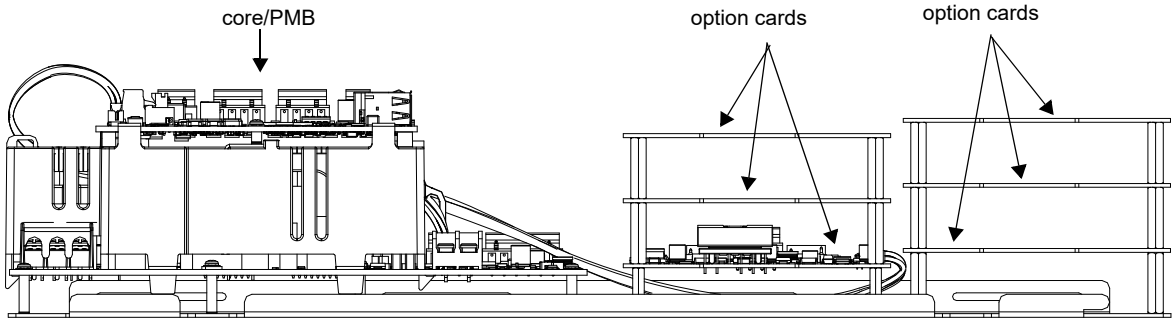

Figure 4 N16 Equipment Mounting Options (Shown with Stacked Option Cards)

3 Primary Power Source

The N16 uses the PMB power supply. The PMB provides a total of 3A of power to the CPU and can recharge batteries ranging from 7 - 100 AH. Before connecting the batteries, check the AC power to the system. Use Table 5 as a guide for checking AC power.

Component	Status
Core/PMB	The green power LED will illuminate when power is coming from the main power supply. The yellow trouble indicator will illuminate until the batteries are connected.
Each auxiliary power supply	The yellow off normal indicator will illuminate because batteries are not connected.

Table 5 AC Power Guidelines

CAUTION: RISK OF EQUIPMENT DAMAGE
WHILE CHECKING POWER, MAKE SURE BATTERIES ARE NOT CONNECTED.

3.1 Secondary Power Sources

Batteries provide +24 VDC secondary (backup) power. Batteries can be installed in the fire panel cabinet or in an optional battery backbox. All wiring must be encased in conduit. A secondary power source is required to support the system during primary AC loss.

NOTE: If using multiple power supplies with one set of batteries, refer to the main power supply manual for connection requirements.

3.2 External Power Sources

Additional power can be provided via auxiliary power +24 VDC power supplies that are UL/ULC-listed for fire protective service. For additional information on connecting auxiliary power supplies, follow connection procedures specified in the auxiliary power supply manual.

AC Voltage	AC Current	Max. AH Capacity	Max. Standby Current	Max. Alarm Current	Max. Standby Time	Max. Alarm Duration
120VAC, 50/60 Hz	2.5A	N/A	Refer to Table 3, "Maximum Battery Standby Loads for 24 Hour Standby on the PMB Power Supply," on page 4.	8.5 A	24 hours	N/A
		26				5 minutes standard, 15 minutes for emergency voice/ alarm communications systems. 30 minutes-Future use
240VAC, 50/60 Hz	1.25A	55				
		100				

Table 6 System Power

Accessories/Subassemblies/Networked panels	Maximum System Capacity
Monitor and Control Modules	159 per loop, up to 1,590 total in FlashScan; 99 per loop, up to 990 in CLIP
Detectors	159 per loop, up to 1,590 total in FlashScan; 99 per loop, up to 990 in CLIP
Signaling Line Circuits (SLC)	10
N16 Fire Alarm Control Panel	High-Speed Noti•Fire•Net - 200 Nodes Noti•Fire•Net - 103 Nodes. 54 nodes when DVC is used in network paging.

Table 7 System Size

4 Equipment Wiring

4.1 N16 Configurations

The connections between the PMB, the N16 Core Board, and SLM-318s have two primary purposes; they carry communications, and they carry power. The communications take place on a bus with two endpoints. The ends of the communication bus are set for "enable termination" (SW6 on the SLM-318 and SW5 on the PMB-AUX). On the N16 Core Board, termination is always enabled.

The power is segregated by the PMBs. The Core and SLM-318 on the top section are powered by the top PMB (refer to Figure 5, "Multiple PMBs with Ten SLM-318s" on page 9) The SLM-318s on the bottom two sections are powered by EITHER the middle PMB-AUX OR bottom PMB-AUX.

NOTE: The Core Board on the N16 can only receive power on J15, it cannot pass power out of J15.

NOTE: A maximum of five (5) SLM-318 loop cards can run on one (1) N16 PMB. For additional power needs or loop cards, additional PMB-AUX power supplies will be required. Each PMB-AUX can power up to five (5) SLM-318 cards for a maximum of ten (10) total SLM-318 cards on a system. If ten (10) loop cards are installed, two (2) additional PMB-AUX power supplies will be required.

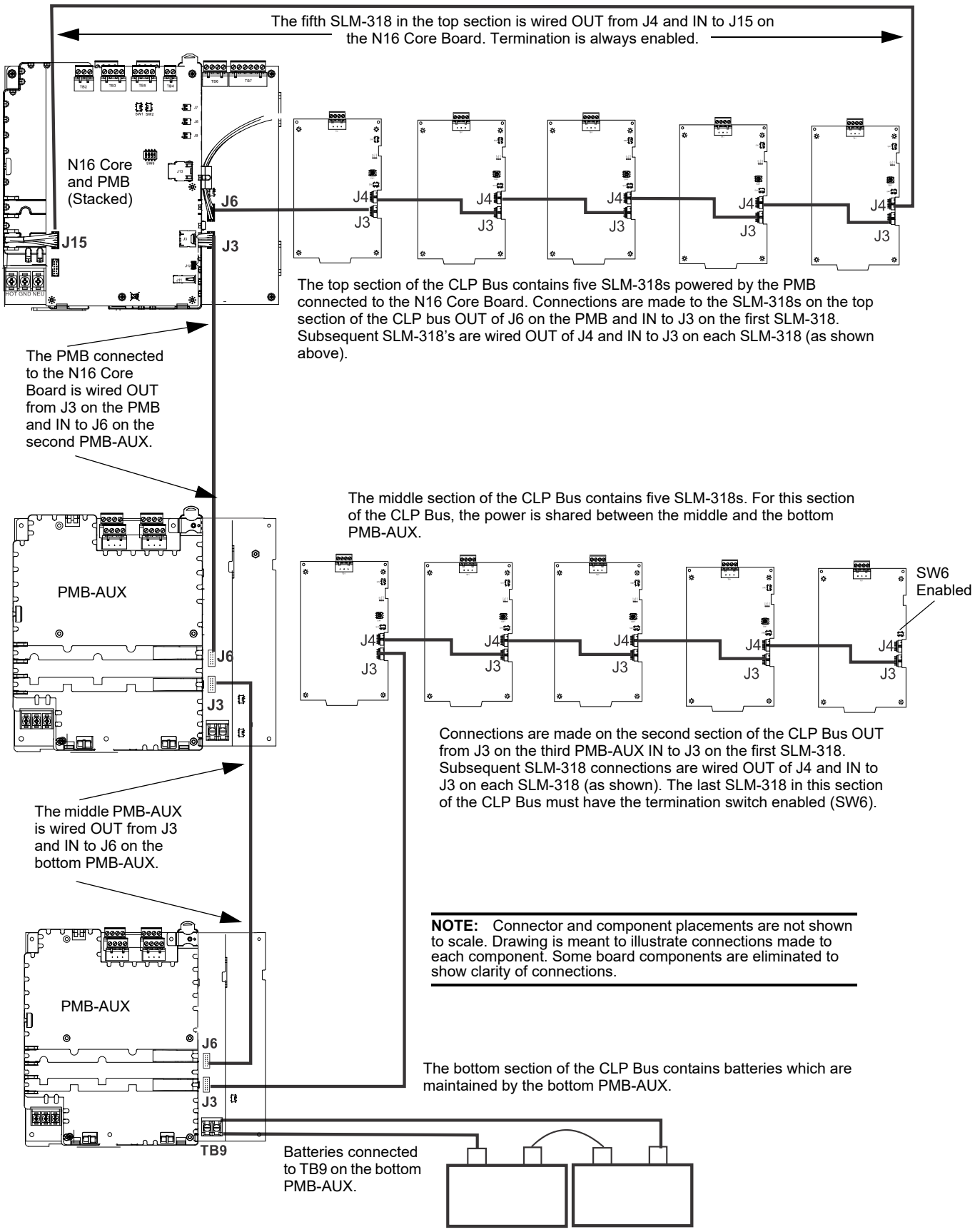

Figure 5 Multiple PMBs with Ten SLM-318s

4.2 System Configuration

The following tables display System Configuration information for UL applications

Module	Description	CS	Local	RS	P (PPU)	P(Burg)	P Rec	Process Mana.(1)	Emerg. Sign. (2)
ACM-30	Annunciator	O	O	O	O	Y	O	O	O
RLD	Remote Display	O	O	O	O	O	O	O	O
ABP-1	Blank Plate for ACM-30	O	O	O	O	O	O	O	O
ABB-1	Backbox for One ACM-30	O	O	O	O	O	O	O	O
ABB-2	Backbox for Two ACM-30's	O	O	O	O	O	O	O	O
BP-5	Battery Dress Panel for CAB-5	O	O	O	O	O	O	O	O
CGW-MB	CLSS Gateway Main Board	Y(8)	O	N	N	N	N	O	Y(8)
HON-CGW-MBB	CLSS Gateway in Plastic Enclosure	Y(8)	O	N	N	N	N	O	Y(8)
CGW-PT	CLSS POTS Board	Y(8,10)	N	N	O	N	N	O	Y(8)
CGW-BB	CGW-MB Enclosure	Y(11)	0(11)	N	N	N	N	0(11)	Y(11)
CGW-DACT	CLSS Dialer (CGW-MB with CGW-PT)	Y(8,10)	N	N	O	N	N	O	Y(8)
CGW-DACT-CH	Chassis for CGW-DACT	O	O	O		N	O	O	O
HON-CGW-DACT	CLSS Dialer in Plastic Enclosure	Y(8,10)	N	N	O	N	N	O	Y(8)
HWF2A-COM	LTE/IP Dialer Capture Alarm Communicator	O(8,10)	N	N	O	N	N	O	O(8)
HWF2V-COM	LTE/IP Dialer Capture Alarm Communicator	O(8,10)	N	N	O	N	N	O	O(8)
TG7LAF02	LTE Dialer Capture Alarm Communicator	O(8,10)	N	N	O	N	N	O	O(8)
TG7LVF02	LTE Dialer Capture Alarm Communicator	O(8,10)	N	N	O	N	N	O	O(8)
CCM-ATT-HON	AT&T Cellular Module	O	O	N	N	N	N	O	O
CCM-VZ-HON	Verizon Cellular Module	O	O	N	N	N	N	O	O
CPU-N16LD	CPU Board (Core/PMB/SLM-318) with 10inch HD Display	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)
CPU-N16-RB	CPU Board Only (Core)	O	O	O	O	O	O	O	O
CPU-N16LND	CPU Board (Core/PMB/SLM-318) w/o Display	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)
CPU-16-RTO	Core Board with Retrofit Chassis for CAB-4	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
DP-4A	Dress Panel, Mounts 4 ACM-30	O	O	O	O	O	O	O	O
DP-4A-CB4	Dress Panel, Mounts 4 ACM-30s in a CAB-4 Enclosure	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
DP-BLN	Blank Dress Panel	O	O	O	O	O	O	O	O
DP-T2A	Dress Panel for 10inch Display for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DP-T2A-CB4	Dress Panel for 10inch Touch Screen Display and two ACM-30 Annunciators for CAB-4 Enclosure	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
NCA-2*	Network Control Annunciator	O	O	O	O	O	O	O	O
NCD	Network Control Display	O	Y(9)	O	O	O	O	O	O
CPU-NCD-RB	NCD Replacement Board	O	O	O	O	O	O	O	O
NBB-2	Backbox for NCD	O	O	O	O	O	O	O	O
DVC/DVC-EM	Digital Voice Command/Extended Memory Module	O	O	O	O	O	O	N	N
DVC-RPU	Digital Voice Command Remote Paging Unit	O	O	O	O	O	O	N	N
DAA-5025 (E)*	Digital Audio Amplifier	O	O	O	O	O	O	N	N
DAA-5070 (E)*	Digital Audio Amplifier	O	O	O	O	O	O	N	N
DAA-7525 (F) (SF)*	Digital Audio Amplifier	O	O	O	O	O	O	N	N

Table 8 System Configuration for UL Requirements (1 of 4)

Module	Description	CS	Local	RS	P (PPU)	P(Burg)	P Rec	Process Mana.(1)	Emerg. Sign. (2)
DIS-10-RD	10inch Touch Screen Display	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)	Y(9)
NCM-W/F	Network Control Module	O	O	O	O	O	O	O	O
HS-NCM-W/MF/SF/ WMF/WSF/MFSF/W-2/ WMF-2/WSF-2	Network Control Module	O	O	O	O	O	O	O	O
PMB-AUX	Power Supply	O	O	O	O	O	O	O	O
PMB-AUX-RTO	Power Supply with CAB-4 Retrofit Chassis	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
CMIC-1	Microphone Assembly	O	O(5)	O	O	O	O	O	O
SLM-318	Signaling Loop Card	Y	Y	Y	Y	Y	Y	Y	Y
TELH-1	Telephone Assembly	O	O(5)	O	O	O	O	O	O
N16E-R	CPU-N16LD in Red Enclosure	O	O	O	O	O	O	O	O
N16E	CPU-N16LD in Enclosure	O	O	O	O	O	O	O	O
N16-GZ	Panel License for General Zones	O	O	O	O	O	O	O	O
N16-LGZ	Panel License for Logic Zones	O	O	O	O	O	O	O	O
N16-UZC	Panel License for Universal Zone Coding	O	O	O	O	O	O	O	O
N16-NWD	Panel License for Network Display Mode	O	O	O	O	O	O	O	O
N16-CAC	Panel License for Custom Action Buttons	O	O	O	O	O	O	O	O
N16-CLP	Panel License for CLIP Mode	Y	Y	Y	Y	Y	Y	Y	Y
SBB-A5	CAB-5 Backbox Size A	Y	Y	Y	Y	Y	Y	Y	Y
SBB-B5	CAB-5 Backbox Size B	Y	Y	Y	Y	Y	Y	Y	Y
SBB-C5	CAB-5 Backbox Size C	Y	Y	Y	Y	Y	Y	Y	Y
SBB-D5	CAB-5 Backbox Size D	Y	Y	Y	Y	Y	Y	Y	Y
SBB-E5	CAB-5 Backbox Size E	Y	Y	Y	Y	Y	Y	Y	Y
CHS-ADP	Chassis for Amplifier	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
CHS-CGW	Chassis for CGW-MB Communicator	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)	0(7)
CAB-A4	Enclosure	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)
CAB-B4	Enclosure	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)
CAB-C4	Enclosure	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)
CAB-D4	Enclosure	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)	Y(6)
ADDR-B4	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
ADDR-C4	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
ADDR-D4	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DP-1B	Blank Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
BMP-1	Blank Module	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
BP2-4	Battery Plate	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
CA-1	Chassis	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
CA-2	Chassis	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
C5A-M	DVC Chassis, Well for Phone and Mic, Includes Mic-1 for CAB-5	O	O	O	O	O	O	O	O
C5A-NW	DVC Chassis Without Mic and Phone Well for CAB-5	O	O	O	O	O	O	O	O
DPA-1A4	Dress Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DPA-1	Dress Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DPA-2	Dress Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DPA-2A5	Dress Plate DVC-KD with 2 Annunciator Positions CAB-5	O	O	O	O	O	O	O	O
DPA-C5	Dress Plate, DVC one row for DVC-KD	O	O	O	O	O	O	O	O
DR-A5	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-A5B	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)

Table 8 System Configuration for UL Requirements (2 of 4)

Module	Description	CS	Local	RS	P (PPU)	P(Burg)	P Rec	Process Mana.(1)	Emerg. Sign. (2)
DR-B5	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-B5B	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-C5	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-C5B	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-D5	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-D5B	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-E5	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DR-E5B	Door Assembly	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DTR-A5	Red Cladding for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DTR-B5	Red Cladding for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DTR-C5	Red Cladding for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DTR-D5	Red Cladding for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DTR-E5	Red Cladding for CAB-5 Enclosure	O	O	O	O	O	O	O	O
DVC-KDB	DVC Keypad, Black	O	O	O	O	O	O	O	O
VP-2B	Dress Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
DP-DISP2	Dress Panel	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
CHS-M3	Chassis, 1st tier	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)	O(7)
FZM-1	Monitor Module	O	O	O	O	O	O	O	O
FMM-1*	Monitor Module	O	O	O	O	O	O	O	O
FMM-101*	Monitor Module	O	O	O	O	O	O	O	O
FDM-1*	Dual Monitor Module	O	O	O	O	O	O	O	O
FTM-1*	Control Module	O	O	O	O	O	O	O	O
FCM-1*	Control Module	O	O	O	O	O	O	O	O
FRM-1*	Relay Module	O	O	Y	O	O	O	O	O
AA-30*	Amplifier 30 watts	O	O(5)	O	O	O	O	O	O
AA-100*	Amplifier 100 watts	O	O(5)	O	O	O	O	O	O
AA-120*	Amplifier 120 watts	O	O(5)	O	O	O	O	O	O
ACT-1*	Audio Coupling Transformer	O	O(5)	O	O	O	O	O	O
ACT-2*	Audio Coupling Transformer	O	O(5)	O	O	O	O	O	O
ACT-4	Audio Coupling Transformer	O	O(5)	O	O	O	O	O	O
ACT-25	Audio Coupling Transformer	O	O(5)	O	O	O	O	O	O
ACT-70	Audio Coupling Transformer	O	O(5)	O	O	O	O	O	O
XPM-8L*	Transponder Monitor Module	O	O	O	O	X	O	O	O
PRN-6*	Printer	O	O	O	O	O	O	O	O
PRN-7*	Printer	O	O	O	O	O	O	O	O
AMG-E*	Audio Message Generator	O	O(5)	O	O	O	O	O	O
AKS-1*	Annunciator Key Switch	O	O	O	O	O	O	O	O
RKS-S*	Remote Security Keyswitch	O	O	O	O	Y	O	O	O
RPT-W*	Repeater Wire	O	O	O	O	O	O	O	O
RPT-F*	Repeater Fiber	O	O	O	O	O	O	O	O
RPT-485W*	Repeater Wire	O	O	O	O	O	O	O	O
RPT-485FW*	Repeater Wire/Fiber	O	O	O	O	O	O	O	O
FFT-7*	Firefighter's Telephone	O	O(5)	O	O	O	O	O	O
FFT-7S*	Firefighter's Telephone	O	O(5)	O	O	O	O	O	O
FHS*	Fireman's Handset	O	O(5)	O	O	O	O	O	O
FPJ*	Fireman's Phone Jack	O	O(5)	O	O	O	O	O	O
NBG-12LX*	Addressable Manual Pull Station	O	O	O	O	O	O	O	O

Table 8 System Configuration for UL Requirements (3 of 4)

Module	Description	CS	Local	RS	P (PPU)	P(Burg)	P Rec	Process Mana.(1)	Emerg. Sign. (2)
RM-1, RM-1SA*	Remote Microphone	O(5)	O	O	O	O	O	O	O
BP2-4	Battery Plate	Y	Y	Y	Y	Y	Y	Y	Y
FCO-851	Fire/CO Detector	O	O	O	O	O	O	O	O
XP6-R	6 Relay Control Module	O	O	Y	O	O	O	O	O

KEY:
***** - Modules are listed separately **Y** - Yes **N** - No **O** - Optional **X** - Not permitted for security applications
NOTES:

1. Non-emergency
2. Emergency
3. At least one power supply must be utilized.
4. The system must contain one of these units.
5. When configured for Emergency Relocation and Evacuation Equipment, the system must meet Local configuration with a minimum of one amplifier, one Audio Message Generator, one Voice Control Module. The phones, remote microphones, and audio coupling transformers are optional. (Voice Alarm System Manual, Part No. 51252, shown in File S635, Vol. 5C, ILL. 1)
6. One of the cab enclosures must be utilized.
7. Various dress panels/dead fronts/trim rings must be employed so that internal components and high voltage is not accessible.
8. Also required when devices for Carbon Monoxide signaling are employed

- When configured for security applications, system must be configured for a maximum of 60 seconds for Entry/Exit delay.
- Standby power must provide 24 hours of standby.

9. In a large networked system, the NCD can be used as a primary display allowing multiple CPU-N16LND to be employed in lieu of CPU-N16LD
10. Required if utilizing a central station other than supported by CGW-MB
11. Required when using CGW-MB alone OR using a CGW-MB with CGW-PT OR using CGW-DACT.

The units may employ the following features

- Alarm verification (maximum verification period of 60 for field programmable between 0 and 60s)
- Supports standard 2-wire smoke detectors using Models FZM-1. refer to the Device Compatibility Document for compatible 2-wire smoke detectors
- Supports addressable or analog devices
- Field Programming
- Signal Silence Inhibit
- Remote annunciator outputs
- Automatic Alarm Signal Silence
- Drift compensation
- Detector sensitivity testing per Par. 7-3.2.1 of NFPA 72

Table 8 System Configuration for UL Requirements (4 of 4)

UL Type Service	Model	IDC Class	Initiating Device Types	NAC	Type Signaling	Signal Line Circuit
Local	N16, N16E	A, B	A,M,WF,SS	A, B	C, NC	(Class B) (Class A,X)
Process Management (Note 1)		A, B	A, M	A,B	C,NC	(Class B, Class A)
Emergency Signaling	N16, N16E	A, B	A, M	A,B	C,NC	(Class B, Class A)
Note 1 - Non-emergency						

Table 9 UL Type of Service Configurations

4.3 UL Power-Limited Wiring Requirements

Power-limited (Class 2) and non-power-limited circuit wiring must remain separated in the cabinet. The following requirements apply:

- All power-limited circuit wiring must remain 0.25 inches (6.35mm) from non-power-limited circuit wiring.
- All power-limited and non-power-limited circuit wiring must enter and exit the cabinet through different knockouts or conduits.
- If the device connected is only power-limited when connected to a power-limited source, the power limited marking must be removed, and at the time of installation, each non-power-limited circuit connected to these modules must be identified in the space provided on the cabinet door label.
- If additional knockouts are added to the backbox, proper separation of power-limited and non-power-limited wiring should be maintained.

NOTE: Relays are power-limited only when connected to power-limited sources for the relay outputs.

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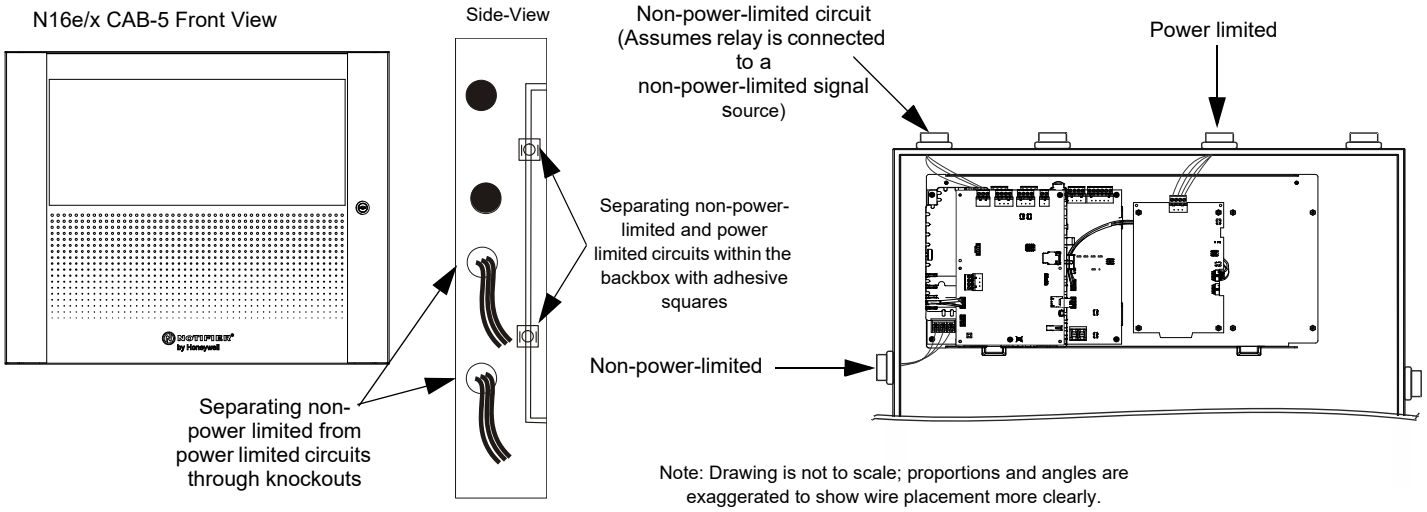


Figure 6 Power-Limited and Non-Power-Limited Wiring

4.4 Fire/Security Applications

General Operation

The N16can be used as a combination Fire/Security system when installed and operated according to the instructions in this section.

For security applications, program one or more monitor module (listed for security applications) with the security-L, system monitor, or area monitor Type Codes, and wire as shown in Figure 8. Activating these types of modules lights the security LED, and displays a security alarm condition on the primary display. The panel sounder will sound until you acknowledge the Security alarm. You can also program additional sounders or output devices to activate with the security alarm initiating device. These type codes are designed to indicate an alarm in one or more of the following situations:

(a) on an open or short circuit
(b) on a ±50% change in resistance value from the End-of-Line resistor value
(c) on loss of communication with the device.

A tamper switch installed in the cabinet door will indicate a door tamper condition whenever the door is open. If the control panel indicates a Security alarm, you can perform acknowledge, signal silence, and system reset from the control panel.

CAUTION: WIRING
DAMAGE CAN RESULT FROM INCORRECT WIRING CONNECTIONS.

General Security Requirements

The following security requirements must be met:

- Use a PMB-AUX power supply
- Shielded cable must be used on all input/output wiring associated with security functions.
- SLC Loop Shielding (refer to the *SLC Wiring Manual*)
- Security Module I/O Circuit Shielding - terminate the shield at earth ground at the junction box containing the module.
- When employed as a Protected Premises Unit, the control panels cabinet door must be wired with an STS-1 Tamper Switch that is monitored by the control panel
- If the system has arming and disarming capability, a ring-back signal from the Central Station to the arming location is required. The ring-back signal informs the Protected Premises Control Panel that the signal to arm/disarm has been received by the Central Station
- An ACM-30 point must be programmed as ‘disable’ for each security point or zone programmed, doing so allows for a manual bypass before arming if the point or zone is in trouble
- A duplicate control panel or sufficient spare parts should be made available so that the control panel can be brought back online within 30 minutes of any failure
- There must be a sufficient number of ACM-30s installed on the control panel to show the status of each zone or point so that each zone or point can be monitored Any ACM-30’s or optional annunciators must be installed inside the protected area
- A single control panel combines a Protected Premises Unit and Receiving Unit as a single unit, as such, it must be located in an area that is monitored at all times
- The Installer should be familiar with and follow the best practices set forth within ANSI/SIA CP-01 for troubleshooting and reduction in dispatch calls

NOTE: For Security applications the maximum number of points on a system must be limited to 1000 or less.

Programming

The control panel can communicate with any number of security devices. To do so, select the address of the module to be used for security and assign one of the type codes described in General Security Requirements on page 14.

NOTE: NAC devices for Security are not required and are considered supplementary

There are five software type IDs associated with security operation: ACCESS MONITOR alarm, AREA MONITOR, EQUIP MONITOR, SECURITY-L, and SYS MONITOR. There is also one software function, Security Delay (SDEL). These software elements are essential to all aspects of security operation, including Control-By-Event (CBE) programming. Devices with the type IDs ACCESS MONITOR and EQUIP MONITOR do not automatically display at the LCD or require state change acknowledgment. State changes in devices with these software types may be output at a printer.

4.5 Installing a Security Tamper Switch

Follow the instructions below to wire the cabinet with a Security Tamper Switch kit model STS-1:

1. Install the STS-1 Tamper Switch onto the side of the backbox opposite the door hinge, pushing the switch through the opening until it snaps into place.
2. Install the magnet on the same side of the cabinet door as the lock. Push the magnet through the opening in the door until it snaps into place.
3. Connect the STS-1 connector to J6 Security on the CPU.
4. Program panel supervision for Tamper Input "Yes".

All monitor modules used for security application must be installed in the control panel cabinet with STS-1 Security Tamper Switch

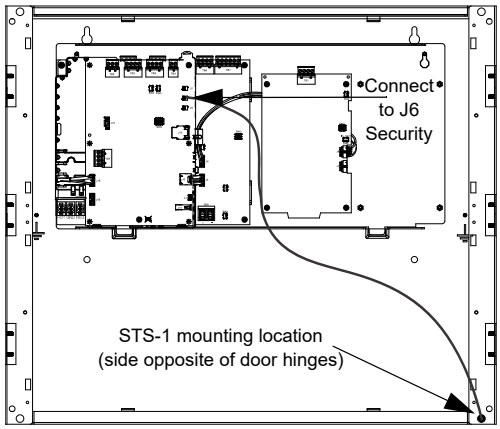


Figure 7 Installing the STS-1 Security Tamper Switch

4.6 Proprietary Security Alarm

NOTE: Total SLC points connected to the FACP are limited to 1000 or less for security applications

For security applications, program one or more monitor modules (listed for security applications) with a security type code.

Note the following:

- The module is programed as an ACCESS MONIITOR, AREA MONITOR, EQUIP MONITOR, SECURITY-L, or SYS MONITOR type code.
- Supplementary use applies to UL Systems only.
- NAC devices used for security cannot be shared with fire NAC devices. NAC devices for Security applications are not required and are considered supplementary.
- Refer to the Device Compatibility Document, document number 15378, for compatible NAC devices.A maximum of 1000 SLC points may be programmed with security type codes.

Wiring for Proprietary Security Alarm Applications

Typical wiring for proprietary security alarm applications with the FMM-1 module.

Note the following:

- The module is programmed with one of five type codes (see "General Security Requirements" on page 14).
- Supplementary use only applies to UL-listed systems.
- NAC devices used for security cannot be shared with fire NAC devices.
- Refer to the *Device Compatibility Document* for compatible NAC devices.

NOTE: If NAC devices are used, the audible pattern for a Security Alarm signal should be distinct from a Fire Alarm

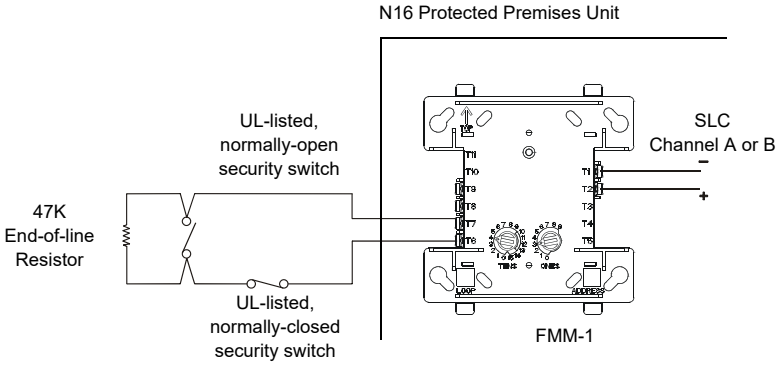


Figure 8 Wiring Diagram for Proprietary Security Alarm Applications

Connecting an RKS-S Remote Key Switch

The RKS-S Remote Key Switch arms and disarms the system. It can be mounted in a UL listed single-gang electrical box. Both the monitor module and RKS-S must be mounted within the protected area. Refer to the *RKS-S Product Installation Document (15984)* for information on how to wire the RKS-S to a FMM-1 and FMM-101 module.

Single Tenant Security System with Entry/Exit Delay

The following system requirements are illustrated in Figure 9 on page 16.

- One NFS2-3030 Control Panel
- Multiple Security Supervisory Circuits Reporting to Central Station as a Single Area
- The minimum security equipment required is as follows:
  - Multiple MM Monitor Modules per Protected Area
  - One Group Interface for security alarm
  - One Group Interface to generate trouble arming system
  - Contact Switch for Each Entry/Exit Door
  - RKS-S Key Switch
  - MM Monitor Modules
  - Remote Annunciator for Each Entry/Exit Door (ACM-24AT, ACM-48A, ACM-16AT, ACM-32A)
  - Security Devices
  - RM Relay Module
  - Compatible Printer

Security System Entry/Exit Delay

For security applications, logic zone programming is used to provide exit and entry alarm delays (See examples below).

Programming a 1 minute exit delay using a DEL Logic Zone: DEL(1:00, 00:00, LXXMYYY)

where LXXMYYY is the SLC point of the switch being monitored for the delay.

Programming a 30 second entry delay using an SDEL Logic Zone: SDEL(00:30, 00:30, ZXXX)

where ZXXX is the fire panel zone programmed to the switch being monitored for the delay.

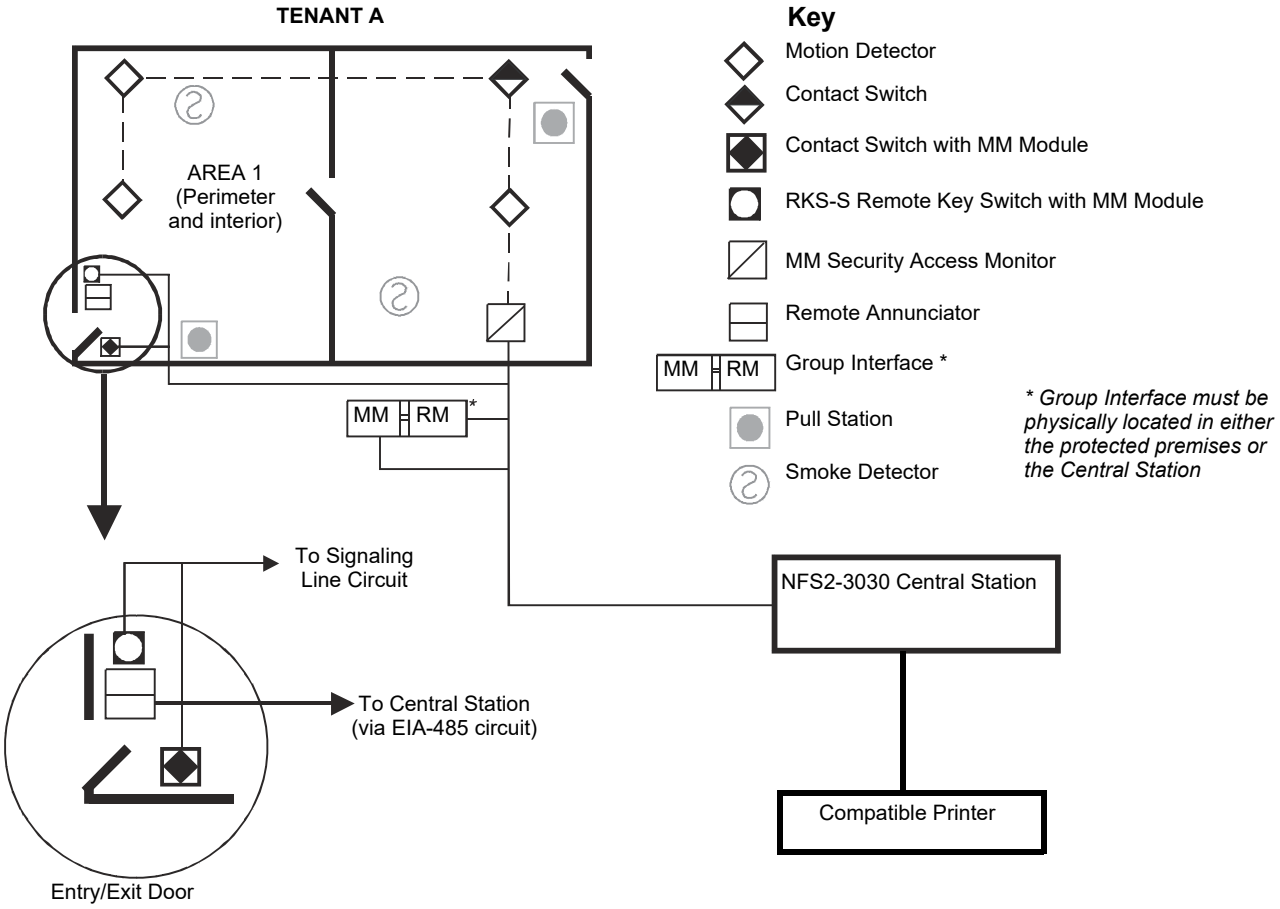


Figure 9 Single Tenant Security System with Entry/Exit Delay

Programming of Key Switch, Access Points, and Motion Detection

RKS Remote Key Switch with Monitor Module

Address: LXXMYYY (arbitrary)
Type ID: ACCESS MONITOR
Zone Map: (none)
Custom Label: Arming Switch


Contact Switches with Monitor Modules
Address: LXXMYYY (arbitrary)
Type ID: ACCESS MONITOR
Zone Map: ZA
Custom Label: Exit Door #


Motion Detectors with Monitor Modules
Address: LXXMYYY (arbitrary)
Type ID: ACCESS MONITOR
Zone Map: ZB
Custom Label: Motion Detection

5. Programming of Logic Equations

Logic Equation for 1 minute exit delay:
ZLa* = DEL(00:30, 00:00:00, address of key switch)

Logic Equation for Trouble arming system:
ZLb* = AND (ZA, address of key switch, NOT(Zla))

Logic Equation to arm system:
ZLc* = AND (ZLa, NOT(ZLb))

Logic Equation providing 30-second entry delay:
ZLd* = SDEL(00:00:30, 00:00:30, AND (ZA,ZLc)

Logic Equation for Security Alarm:
ZLe* = AND (ZLc, OR (ZLd))

*Follow the following restrictions on values:
a < b < c < d <e

6. Programming Group Interfaces

MM RM Group Interface for Trouble when system is armed while access point(s) active

A. CM programming
Address:LXXMYYY (arbitrary)
Type ID:RELAY
Zone Map:ZLb
Custom Label:Arming Trouble Group Output
Signal Silence:No
Walk Test:Yes/No (Installer Specified)
Switch Inhibit:Yes
B. MM Programming
Address:LXXMYYY (arbitrary)
Type ID:TROUBLE MON
Zone Map:(none)

Group Interface for Security Alarm
A. CM programming
Address:LXXMYYY (arbitrary)
Type ID:RELAY
Zone Map:ZLe
Custom Label:Security Group Output
Signal Silence:No
Walk Test:Yes/No (Installer Specified)
Switch Inhibit:Yes
B. MM Programming
Address:LXXMYYY (arbitrary)
Type ID:SECURITY-L
Zone Map:(none)

Security Annunciation

A1P1

Mode: Monitor

Source: ZLc

A1P2

Mode: Monitor

Source: ZLe

A1P3

Mode: Monitor

Source: LXXMYY

A1P4

Mode: Monitor

Source: LXXMYY

Additional doors can be monitored, up to the number of available annunciator points.

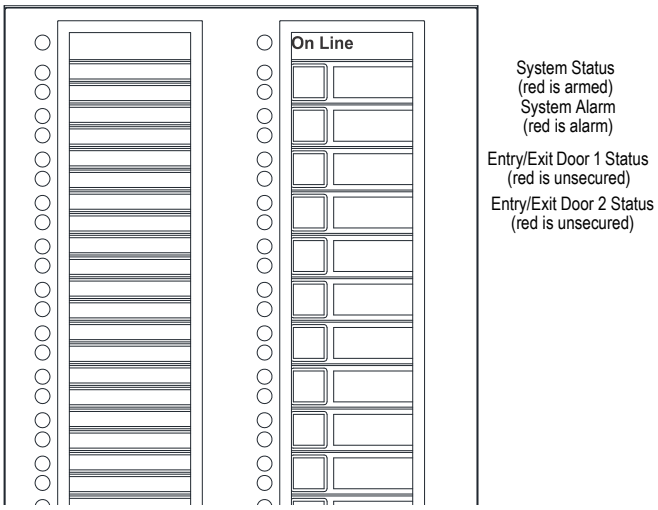


Figure 10 Sample Annunciator Display

4.7 NFPA 72 Proprietary Fire Alarm Systems

When connected and configured as a protected premises unit with monitor and relay modules, the N16 will automatically transmit General Alarm, General Trouble, General Supervisory, and Security signals to a listed compatible Protected Premises Receiving Unit. A simplified drawing of connections between the receiving unit and the N16 protected premises unit is shown in Figure 11, “Typical Proprietary Fire Alarm Systems Wiring Connections”. Connect the receiving unit to the protected premises unit as shown in Figure 13, “CGW-MB Mounted on Chassis with CPU-N16NLD NUP to NUP” . Install and program the Receiving unit with type codes and zone mappings shown in Table 16, “Type Codes for Monitor Modules,” on page 50.

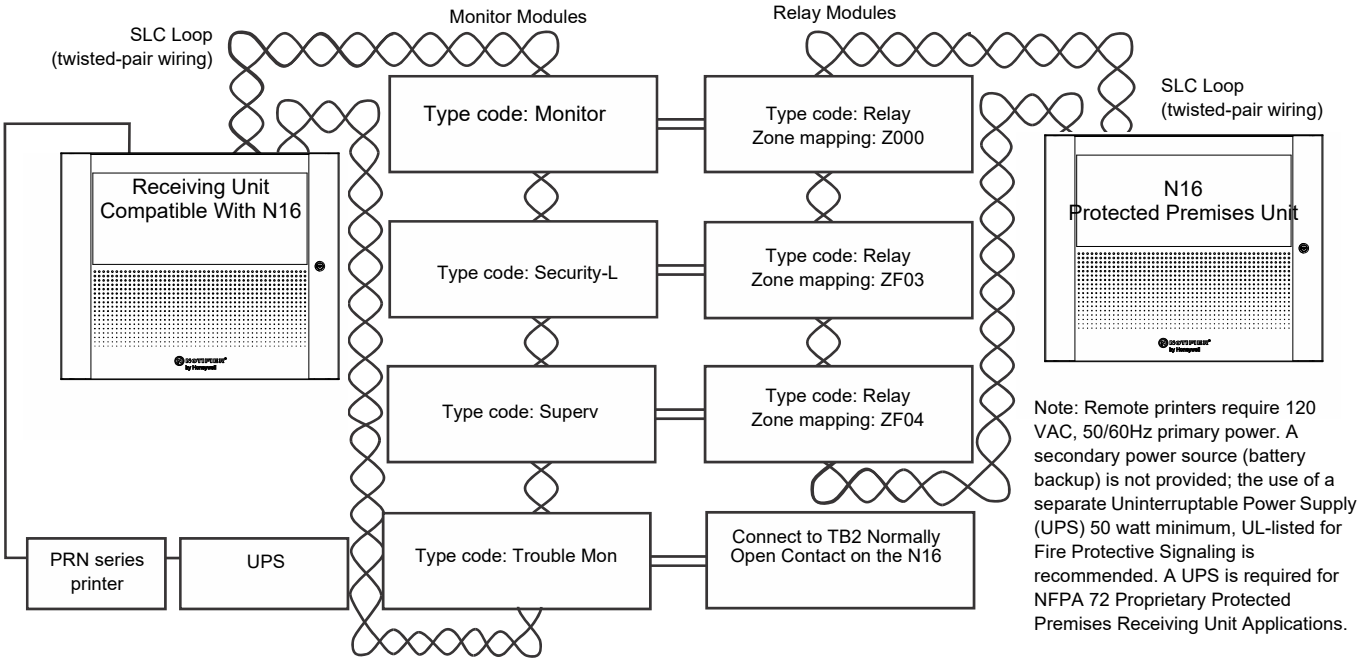


Figure 11 Typical Proprietary Fire Alarm Systems Wiring Connections

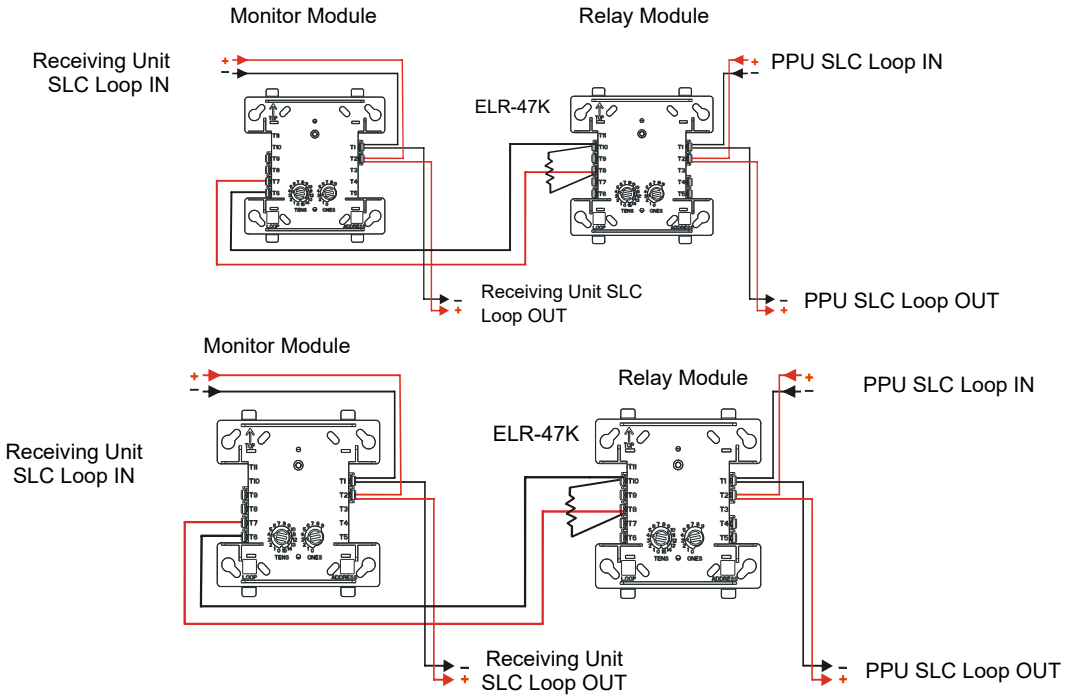


Figure 12 Typical Proprietary Fire Alarm Systems Wiring Connections: Detail Views

4.8 NFPA 72 Central Station Fire Alarm System (Protected Premises Unit)

The figure below shows a typical wiring diagram for a NFPA 72 Central Station Fire Alarm System (Protected Premises Unit) using the Common Communicator Module (CGW-MB) and the N16 for a NUP-to-NUP configuration. The CGW-MB must be mounted on a CHS-CGW. Connect and program the CGW-MB according to the directions given in *The CLSS Gateway Listing Document (LS10248-051HW-E).*

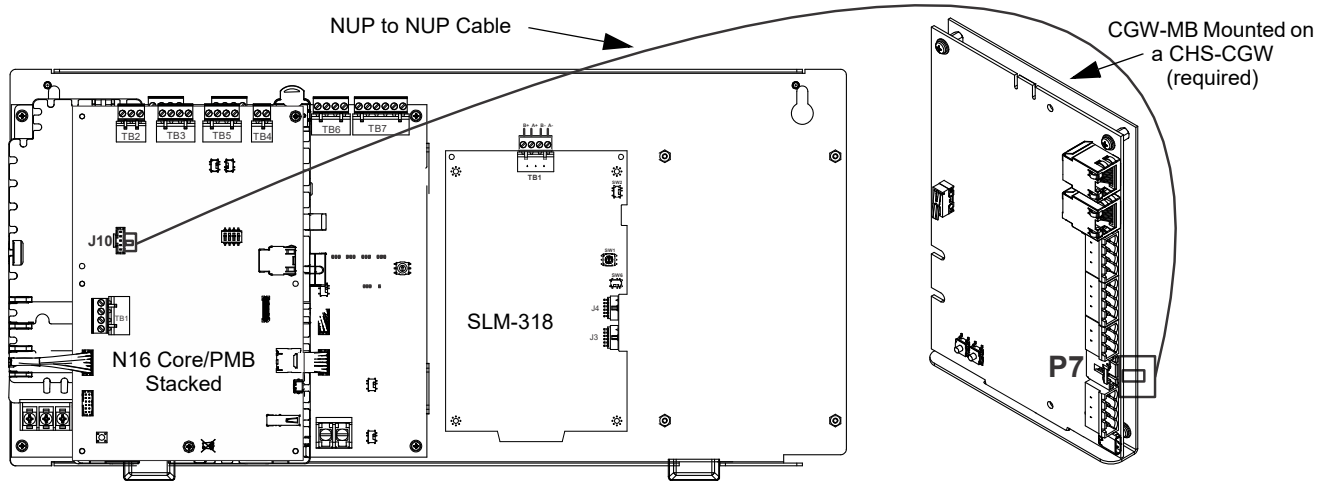


Figure 13 CGW-MB Mounted on Chassis with CPU-N16NLD NUP to NUP

NOTE: An NFPA 72 Central Station requires 24 hours of standby power

NOTE: The following models do not comply with requirements for AC loss delay reporting when used with Central Station Protected Premises systems: AA-30, AA-120, AA-100, APS-6R, CHG-120

Mounting the CGW-MB on the CHS-CGW

The CHS-CGW must be mounted on the far right side of the N16 chassis in the last position. No other option card can be mounted above it due to lack of mounting holes in the CGW-MB.

To mount the CGW-MB on the CHS-CGW as shown in Figure 14 on page 21 follow the steps below:

1. Mount plate to standoff supplied with the chassis/CGW-MB
2. Use screws (38134) to secure the bottom of the mounting plate to the standoffs on the chassis
3. Use standoff (42124) to secure the top of the mounting plate to the standoffs on the chassis
4. Slide the CGW-MB into the slot on the bottom of the mounting plate
5. Attach the top of the CGW-MB with screws (38134) to the standoffs

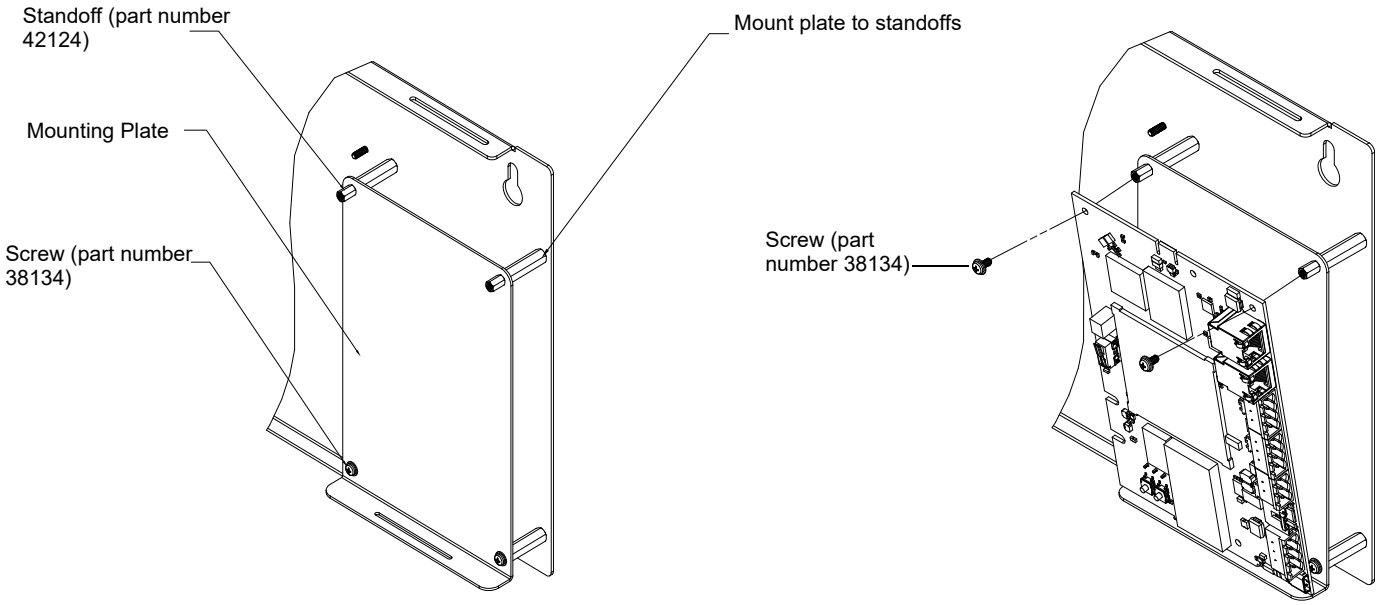


Figure 14 Mounting the CGW-MB to the CHS-CGW

4.9 Remote Station Application Using the FRM-1

The FRM-1 can be used for a Remote Station Application when using a UL864 Contact Closure DACT Listed for Remote Station. Refer to Figure 15, "Wiring Diagram for Contact Closure Remote Station" for typical wiring with the FRM-1.

Program each FRM-1 as follows:

FRM-1 used to transmit Fire Alarm Signals: CBE: Z0

FRM-1 used to transmit Supervisory Signals: CBE: ZF4

FRM-1 used to transmit Trouble Signals: CBE: ZLxxx (Where ZLxxx is the Logic Zone programmed for Trouble Signals)

Logic Zone Programming: OR(ZF1,ZF2)

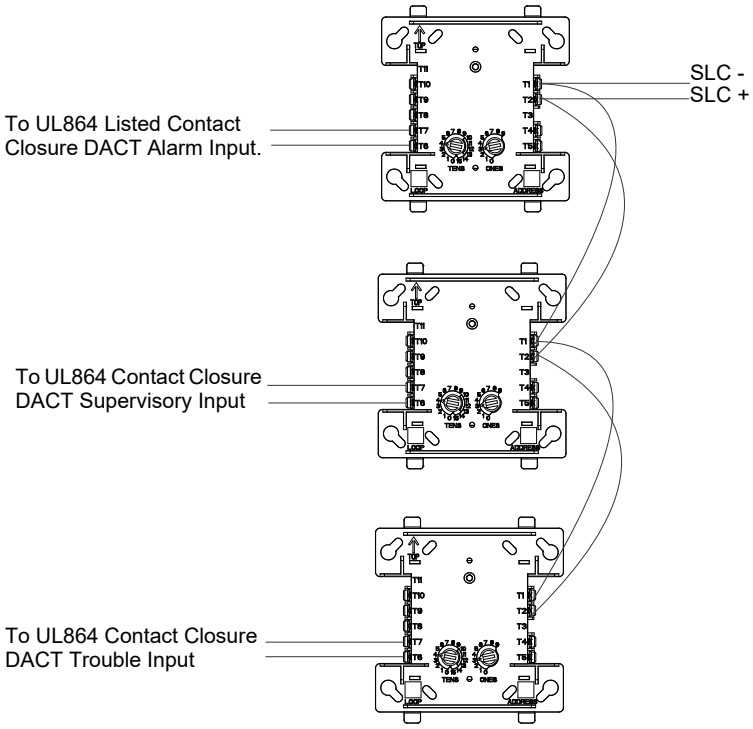


Figure 15 Wiring Diagram for Contact Closure Remote Station

4.10 CLSS Dialer

The N16 can report to central stations via the public switched telephone network using the CGW-DACT. The assembly includes one CGW-MB and one CGW-PT. The HON-CGW-DACT includes the CGW-PT and the CGW-MB housed in the CGW-BB. There are no Gateway capabilities with this configuration. Refer to the *CLSS Dialer User Manual (LS10318-000HW-E) and the CLSS Dialer Quick Start Guide (LS10319-000HW-E)* for more information.

4.11 Networking

The N16 can be networked to another control panel or network control annunciator. Each panel (known as a node when networked) requires a Network Communications Module (NCM) or High-Speed Network Communications Module (HS-NCM). Refer to the *Noti•Fire•Net Version 5.0 & Higher Manual*, (document number 51584) and the *NCM Installation Document* (document number 54014) or the *High-Speed Noti•Fire•Net Manual* (document number 54013) and *HS-NCM Installation Document* (document number 54014) for system configuration information

NOTE: NCM hardware is not compatible with HS-NCM hardware and should not be mixed on the same network.

4.11.1 SWIFT Wireless Device Restrictions

- Wireless inputs cannot activate network points on standard NFN (54 display nodes on a 54 node network)
- Wireless inputs can activate wired network outputs on high speed network with a limit of 12 module groups per SLC
- Wireless inputs cannot activate wireless outputs over the network (standard or high speed)
- There is a limit of 8 ACM-30s per node that can be mapped to alarm points when using SWIFT Wireless devices as inputs (High-speed network only)
- There is a limit of 32 ACM-30s per node that can be mapped to alarm points when there are no SWIFT Wireless devices being used as inputs.

4.12 Gentex Notification Appliance Using the ELRD-2.2K

The Gentex Commander III Notification Appliance requires the ELRD-2.2K to be installed across the H+ and H- terminals on the appliance for proper operation on the N16 FACP. Refer to Figure 16, “Gentex Notification Appliance with ELRD-2.2K Wiring” for a wiring illustration.

Follow the steps below to install the ELRD-2.2K

1. A Gentex Strobe Only Notification Appliance must be installed within twenty feet of the FACP.
2. On the Strobe Only Appliance, install the ELRD-2.2K resistor across the H+ and H- terminals.
3. Wire Strobe Only to the next Notification Appliance as normal.

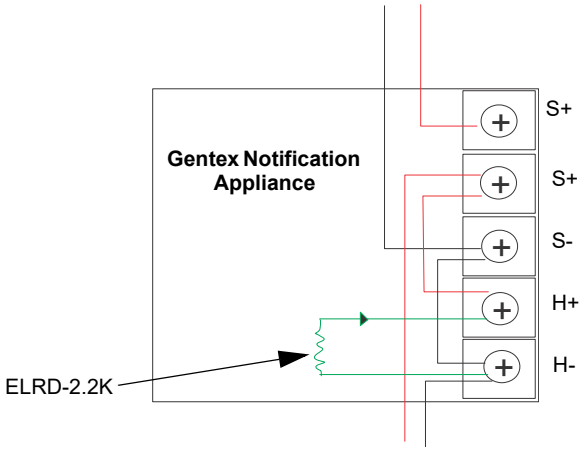


Figure 16 Gentex Notification Appliance with ELRD-2.2K Wiring

NOTE: **NOTE POLARITY** on the ELRD-2.2K. Install the positive side of the ELRD-2.2K on H+ terminal on the Gentex strobe only appliance, install the negative side of the ELRD-2.2K to the H- terminal on the Gentex strobe only appliance.

5 Operation

The following are approved applications for the N16.

NOTE: ONYXWORKS-WS: When operating as a Protected Premises Control Unit, the ONYXWORKS-WS is UL Listed for monitoring and control of fire alarm notification devices.

The N16, when installed in accordance with the above manuals, comply with the following NFPA 72 standards for fire protective signaling systems:

- Central station (protected-premises unit, requires CGW-MB)
- Local, remote station (protected-premises unit, requires UL 864 10th edition listed contact closure DACT)
- Proprietary (protected-premises unit)
- Proprietary (receiving unit)
- Emergency communication (requires DVC/DAA/DAA-2)
- Relocation

The N16 is also suitable for use as the following:

- Proprietary burglar alarm unit, (multiplex requires ACM-30)
- Type of signaling service: Non-Coded, March Time, Coded.
- Class A or B power-limited initiating device circuits
- Class A or B power-limited notification appliance circuits
- Power-limited communications loop meeting NFPA 72 Class A, B, and X requirements
- Alarm signal cutoff (if enabled) programmable from 180 – 1200 seconds
- Presignal delay (if enabled) programmable from 60 – 180 seconds
- Signal inhibit (if enabled) programmable from 0 – 300 seconds
- Performance based Technologies (requires CGW-MB)

Types of signals: automatic fire alarm, manual fire alarm, waterflow alarm, sprinkler supervisory service

Type of signaling device: Type NM (non-monitoring) and SM (self-monitoring). Installation limits in all categories of service are under the jurisdiction of the local authority and in accordance with NFPA70 National Electrical Code. System and peripherals for indoor dry use (without specific marine listings) in a recommended environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Electrical ratings: 2.5A @ 120V or 1.25 A @ 240 V, 50/60 Hz (primary power source), and 24 VDC battery (standby power source). Operating system software: software version information may be displayed by navigating to the Settings > About menu on the main display.

Local Applications:

- Emergency relocation (paging, live and pre-recorded)
- Emergency communication (telephone)

Protected premises unit:

- Central station
- Remote station
- Proprietary
- Local

Communication transmission path:

- POTS communication off premises using CGW-MB
- Performance-based with CGW-MB

Process control, non-critical

Regional settings

- Chicago
  - Panel signal silence button will not function
  - Annunciator control modules and SLC modules given a drill or signal silence mode or type code will not allow local drill or signal silence initiation
  - Events must be acknowledged prior to system reset

5.1 N16 Display

The N16 has as high definition 10 inch touchscreen to display system events. The display features a touchpoint for menu access, a header bar which shows color-coded event status, and touchpoints for acknowledge, signal silence, and reset functions.

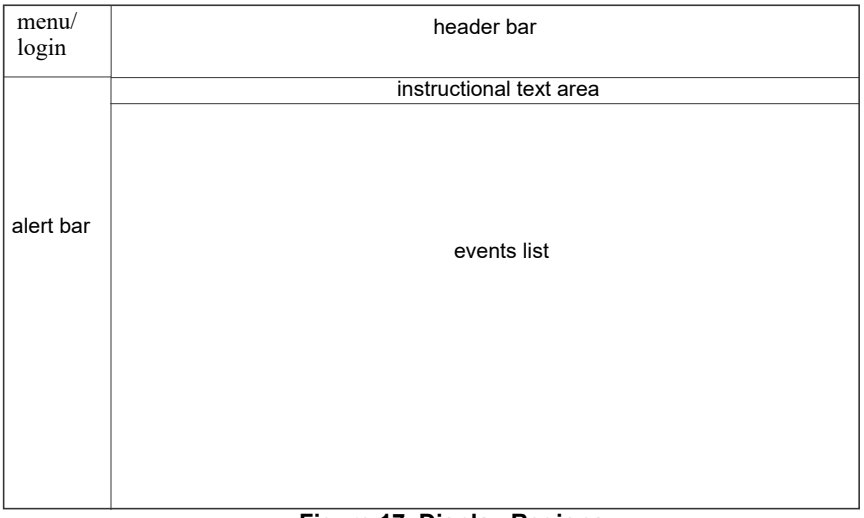


Figure 17 Display Regions

CAUTION: DISPLAY LIFE

SETTING THE DISPLAY BRIGHTNESS ABOVE 75% FOR PROLONGED PERIODS OF TIME WILL DECREASE THE OVERALL LIFE OF THE DISPLAY.

5.2 Panel Features

- Custom banner/graphics
- Basic functions
- Ack
- Silence
- Reset
- Date and time
- Display conditioning mode
- Alarm verification
- Pre-signal/alarm delay
- Fire Event List
- History
- Filtering history
- Extracting history
- Look-ahead warning
- Drill
- Disable/enable
- Custom action buttons (license)

- Co-operative detection
- Menu
- Alert bar and customization
- Instructional text
- Logic zones (license)
- Special function zones
- General zone (license)
- Control-by-event
- Networking
- User management
- Firmware update & backup (the trouble for running a backup partition)
- Force on/off
- Occupancy schedule
- Precedence
- Temperature measurements
- Network display node (license)
- Auto program
- Read status
- Reminders
- Configuration tool user
- Remote access

5.2.1 Display Conditioning Mode

Every 30 minutes, the display will enter Display Conditioning mode. During Display Conditioning, the display will transition through various screens including a completely blank screen. This process takes about seven seconds. It is done to prevent image persistence, and keeps information clear and undistorted. Any display interaction will abort Display Conditioning mode.

NOTE: Display Conditioning mode is not configurable. Display Conditioning will not engage when there is a Fire or CO alarm on the system, as well as Fire and CO pre-alarm.

5.2.2 Configurable Alert Bar

The number of events in the Alert Bar is customizable using VeriFire Tools. The Alert Bar can be configured for a minimum of four events up to a maximum of ten events

5.2.3 Alarm Verification

Alarm Verification delays a device from going into alarm to reduce false alarms. The user programs which devices participate in alarm verification, sets a panel-wide alarm verification time, alarm confirmation time, maximum verification count, and a verification pre-alarm setting. If a device reaches or exceeds the alarm threshold, it will delay going into alarm by the programmed amount of alarm verification time. If during this time, a second device on the same loop reaches its alarm threshold, the first device will immediately go into alarm.

5.2.4 Pre-Signal/Alarm Delay

The panel shall have an option to program a presignal/alarm delay time between one and three minutes (resolution in seconds). The default is 3 minutes. The panel shall have local alarm delay setting that can be turned on or off. Automatic detection devices and output devices shall have a setting designating them to participate in local alarm delay. Devices may not be programmed for both local alarm delay and alarm verification.
Note: when using the Alarm Delay feature, only local evacuation outputs configured to participate in the Alarm Delay feature will be delayed upon receipt of initial alarm. Off-premises signaling will IMMEDIATELY be transmitted upon initial alarm receipt. Refer to Table 11, “Programing Features Subject to AHJ Approval,” on page 34 for programming details.

5.3 Main Menu

From the Main Menu of the N16, the following options can be selected:

Settings This menu provides access to Display Settings, Panel Settings, About, Licensing Information and User Accounts. Refer to “Display” on page 37, “Panel Settings” on page 39, “About” on page 37, “User Accounts” on page 38, and “Obtaining a License” on page 34 for more information.

Programming This menu provides access to network programming and Autoprogram options. Refer to “Network” on page 40 and “Autoprogram” on page 40 for more information.

Point Information Allows the user to enable/disable points, control points on/off, perform read status of a point, and view point history. Refer to “Point Information” on page 40 for more information.

Test/Diagnostics This menu provides access to Diagnostics, Lamp Test, History and also allows for the export of Diagnostics and History. Refer to “History” on page 41, “Diagnostics” on page 41 and “Lamp Test” on page 41 for more information.

Custom Allows the user to customize virtual buttons that can be mapped and assigned to manually control common system commands such as enable/disable points.

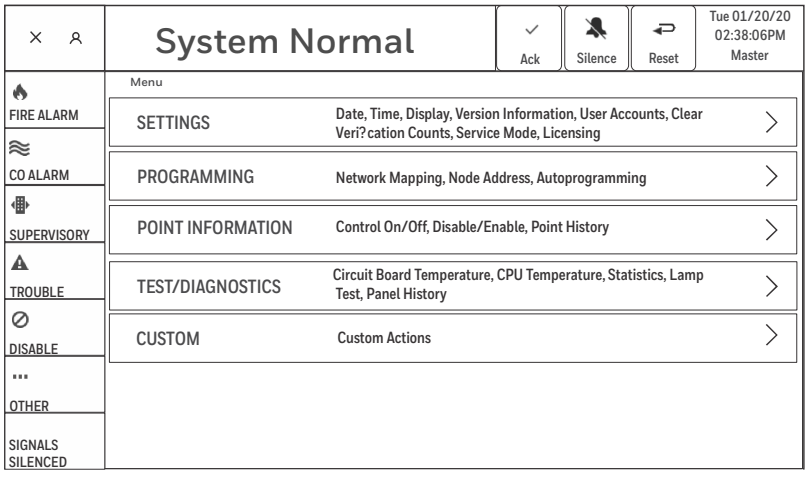


Figure 18 Main Menu Screen

5.4 Settings

From the Settings Screen, the following options can be selected

Display Tap to access brightness levels and Clean Mode.

About Tap to access any system update, model, application, boot, kernel, and M4 (co-processor) information, hardware version, database information, loop 1 information, update loops application, serial number, AIO software versions, and network HS-NCM versions.

User Accounts Tap to add users, remove a user, change a password, and recover a password.

Panel Tap to clear verification counts, enter service mode, and change the date and time.

Licensing Tap to view status on licensing for general zones, logic zones, custom action buttons, network display mode, UZC (universal zone coding) and CLIP mode.

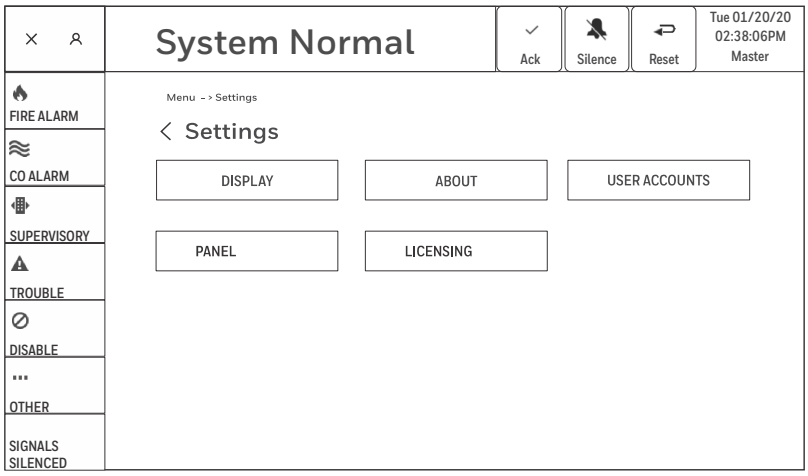


Figure 19 Settings Screen

5.5 Programming

From the programming screen, the following options can be selected:

Network Tap to view/change the panel node number and network mapping.

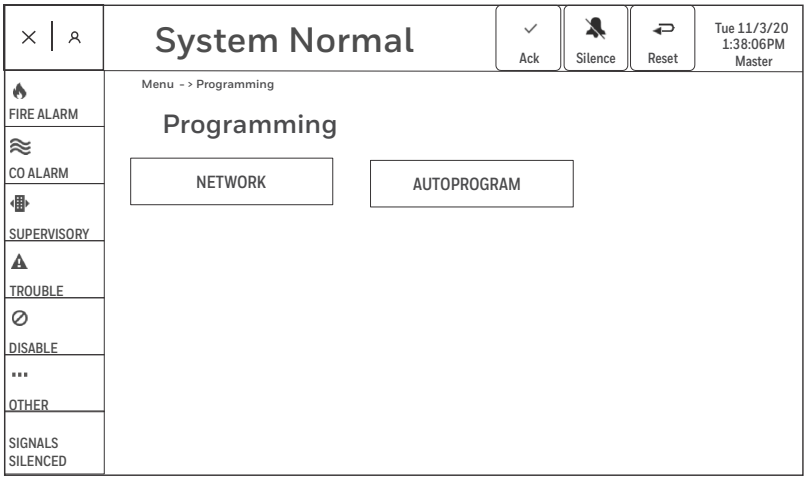


Figure 20 Programming Screen

.

Autoprogram Tap the desired loop to autoprogram the devices connected to the selected loop onto the FACP. Tap START AUTOPROGRAM to begin the autoprogram for selected loops. Deleting and editing of devices cannot be done from the FACP. See VeriFire Tools for more information.

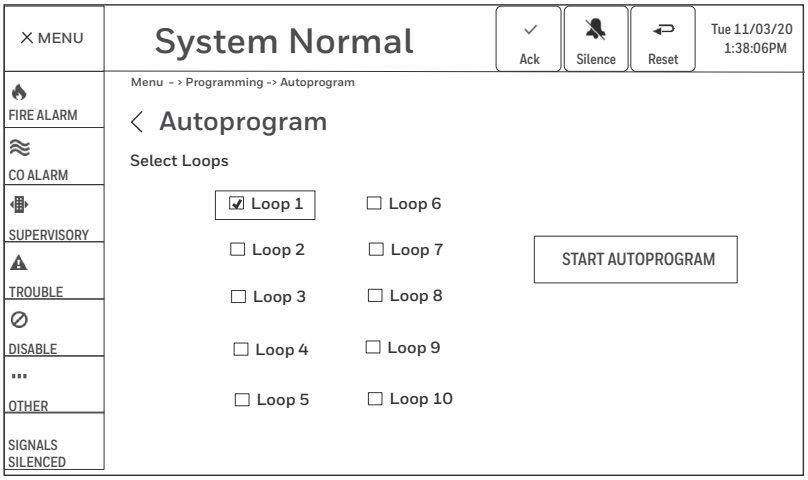


Figure 21 Autoprogram Screen

5.6 Point Information.

The Point Information Screen allows for disabling/enabling specific points on the FACP as well as controlling ON/OFF and viewing Point History as well as read status

Point Type Tap to select a specific point type. Can be used as a network node for viewing points over a network that is mapped. Refer to “Point Information” on page 40 for more information.

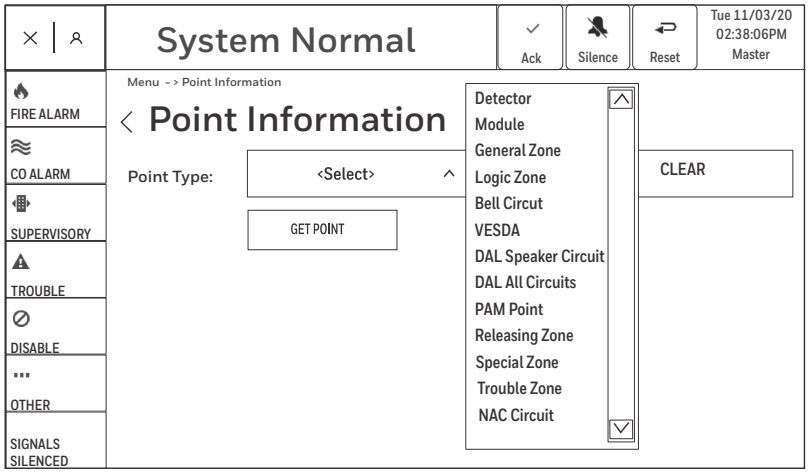


Figure 22 Point Information Screen

5.7 Test/Diagnostics

The Test/Diagnostics screen allows access to FACP diagnostics, Lamp Test, History, as well as allowing for the exporting of diagnostics and history.

Diagnostics Tap to view temperature information for the board/CPU. This will show the current temperature and the highest measured temperature. The user can reset the highest temperature record. The user can also reset the SLM-318 and PMB communication statistics. The diagnostic feature also shows the current occupancy schedule. Note: U= unoccupied.

Lamp Test Tap the LAMP TEST touchpoint to turn on all pixels on the screen. This will illuminate the entire screen as well as the AC Power and Off Normal LED for approximately four seconds. During this time, a tone will sound. A black spot on the screen will indicate that a pixel is out.

History Tap to view and search panel history.

Export Diagnostics Tap to export the panel diagnostics to a USB flash drive.

Export History Tap to export the panel history to a USB flash drive.

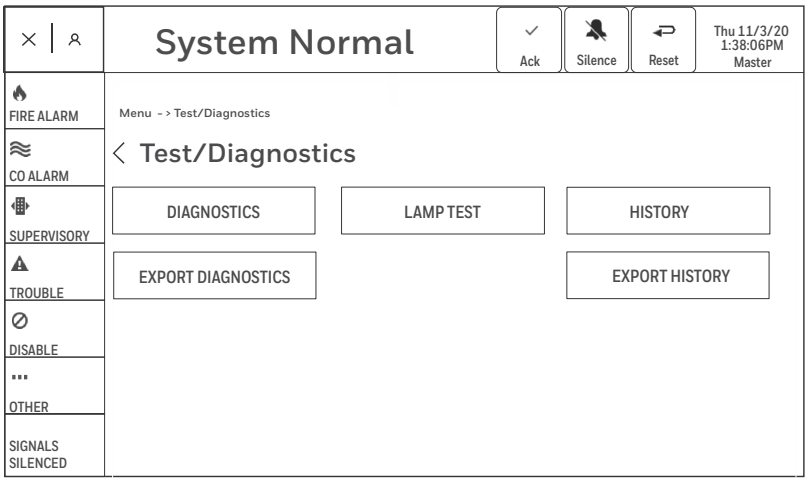


Figure 23 Test Diagnostics Screen

5.8 Custom

Custom Actions are virtual touchpoints that can be mapped and assigned to manually control common system commands such as enable/disable points. Custom actions are completely programmable and can be user-defined within VeriFire Tools.

Custom Actions Configured touchpoints and their respective functions will be displayed here.

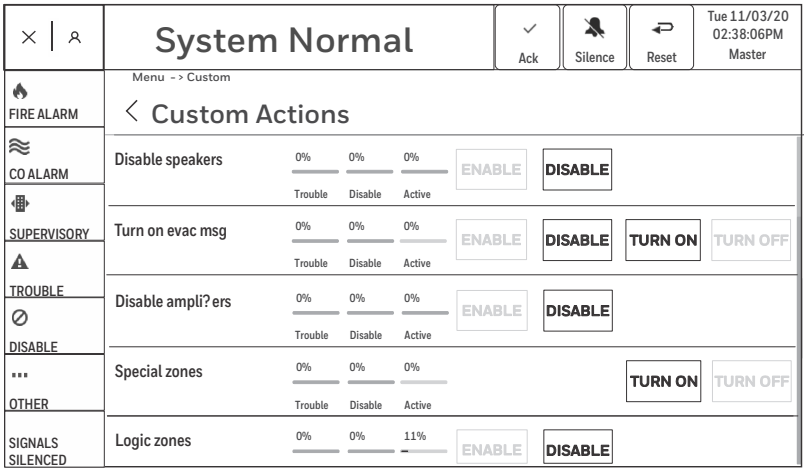


Figure 24 Custom Screen

5.9 Fire Alarm

Fire Alarm Event

- Produces a steady audible tone
- FIRE ALARM appears in the Header Bar
- FIRE ALARM illuminates in the Alert Bar as a red color indicator and provides fire event counts
- Illuminates the yellow Off Normal Event LED
- Displays FIRE ALARM and specific device information in the Events List
- Displays information on how to react to the event in the Instructional Text Area
- Latching events must be corrected and a Reset performed to clear the alarm state from the N16

Initiating Device Activation

- Produces a steady audible tone
- Flashes the FIRE ALARM
- Displays a type code that indicates the type of fire alarm being generated
- Latches the control panel in alarm (condition must be corrected and a reset performed to clear the alarm state from the panel)
- Activates the general alarm zone (Z000)
- Displays FIRE ALARM in the status banner on the control panel, along with information specific to the device
- Sends an alarm message to the graphic display, remote annunciators, history buffer, and installed printers
- Initiates any control-by-event actions
- Starts timers such as Silence Inhibit and Auto Silence
- Sends an alarm message to the proprietary receiver via the network, if applicable. If the panel is not networked, the CGW-MB will be directly connected to the fire panel and send the alarm message to the proprietary receiver via the CGW-MB

NOTE: If the alarm event is initiated by a device with a waterflow type Code, the control panel will disable the Signal Silence key and the Auto Silence Timer.

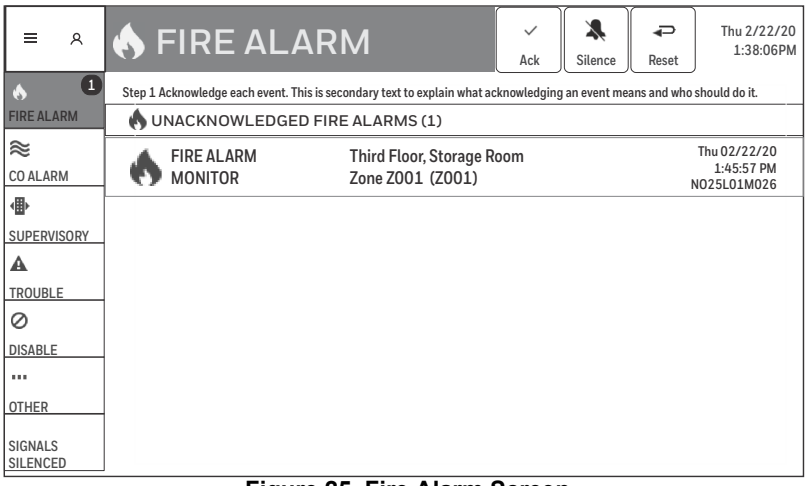


Figure 25 Fire Alarm Screen

Responding to a fire alarm event:

- The Informational Text Area on the screen will indicate step by step how to acknowledge and silence the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar, which will be highlighted in blue. A check mark will appear next to the acknowledged event. ACKNOWLEDGE will need to be tapped for each Fire Event. Block Acknowledge is not available. Once all the events have been acknowledged, the blue highlight indicator will move from the ACKNOWLEDGE touchpoint to the SILENCE touchpoint.
- Tap on the SILENCE touchpoint located in the Header Bar. The SILENCE icon in the Alert Bar will illuminate yellow once the N16 has silenced and all silenceable outputs will turn off.
- Investigate and correct the condition that activated the Fire Alarm.
- Once the N16 has been silenced the blue highlight indicator will move from the SILENCE touchpoint to the RESET touchpoint.
- Tap the RESET touchpoint located in the Header Bar to return the N16 to normal operations.

5.10 System Trouble

Trouble Event

System or Point Trouble, electrical or mechanical faults (when no higher priority unacknowledged events exist)

- Produces a pulsed audible tone
- Turns on the trouble relay
- TROUBLE appears in the Header Bar
- TROUBLE appears in the Alert Bar as a yellow color indicator and provides Trouble event counts
- The Off Normal LED flashes yellow
- Displays TROUBLE and specific device information in the Events List
- Displays information on how to react to the event in the Informational Text Area

NOTE: If an unacknowledged, higher priority event exists, the control panel will retain the indications of the higher priority event, such as the Graphic, audible tone, etc. The Trouble relay, flashing the system Off Normal LED and sending the trouble message to the history buffer and printer, and annunciators will still occur at the time of the event.

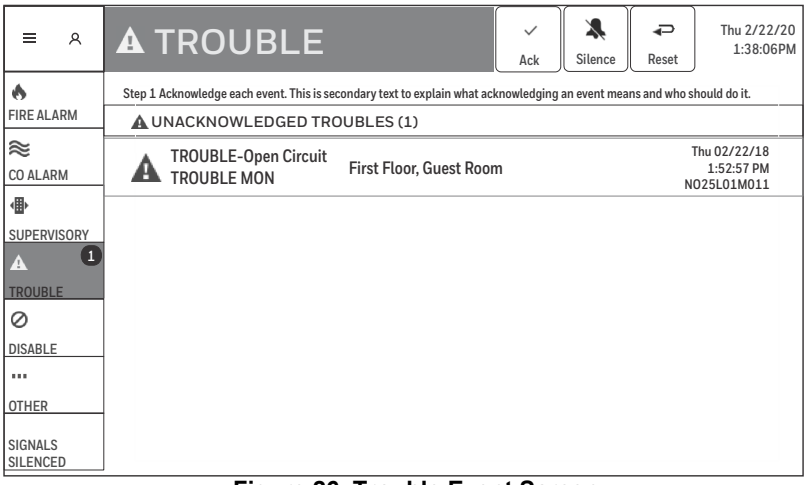


Figure 26 Trouble Event Screen

Responding to a Trouble Event

- The Informational Text Area on the screen will indicate step by step what needs to be done to acknowledge the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar. The ACKNOWLEDGE touchpoint will be highlighted in blue. A check mark will appear next to the acknowledged event.
- BLOCK ACKNOWLEDGE allows for multiple events to be acknowledged at once.
- Investigate and correct the condition that initiated the trouble condition.

5.11 CO Alarm

CO Alarm Event

- Activation of a device (detector or module) with a CO Alarm type code. (Refer to Table 16, “Type Codes for Monitor Modules,” on page 50)
- Produces a pulsed audible tone
- CO ALARM appears in the Header Bar
- CO ALARM illuminates in the Alert Bar as a blue color indicator and provides CO event counts
- Illuminates the yellow Off Normal LED
- Displays CO ALARM and specific device information in the Events List
- Displays information on how to react to the event in the Instructional Text Area

NOTE: If an unacknowledged, higher priority event exists, the control panel will retain the indications of the higher priority event, such as an audible tone, etc. The flashing the CO Pre-Alarm Graphic and sending the CO Pre-Alarm message to the history buffer and printer, and annunciators will still occur at the time of the event.

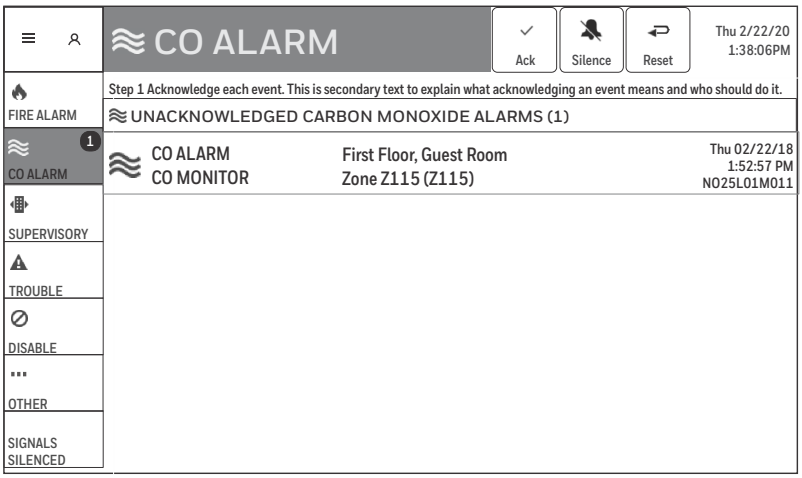


Figure 27 CO Alarm Screen

Responding to a CO Alarm Event:

- The Informational Text Area on the screen will indicate step by step what needs to be done to acknowledge and silence the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar. The ACKNOWLEDGE touchpoint will be highlighted in blue. A check mark will appear next to the acknowledged event. Once all the events have been acknowledged the blue highlight indicator will move from the ACKNOWLEDGE touchpoint to the SILENCE touchpoint.
- Tap on the SILENCE touchpoint located in the Header Bar. The SILENCE icon in the Alert Bar will illuminate yellow once the N16 is silenced all silenceable outputs will turn off.
- Investigate and correct the condition that activated the CO Alarm point.
- Once all events on the N16 have been silenced the blue highlight indicator will move from the SILENCE touchpoint to the RESET touchpoint.
- Tap the RESET touchpoint located in the Header Bar to return the N16 to normal operations.

5.12 Other Events

Events listed as Other are as follows:

- CO Pre-Alarm (blue)
- Critical Processes (yellow)
- Security (blue)
- Pre-Alarm (red)
- Hazard/Weather Alert (Yellow)

NOTE: When more than one of these conditions have been activated, they will be listed in order of priority. CO-Pre Alarm will be listed first, followed by Critical Processes, Security, Pre-Alarm and Hazard/Weather Alert.

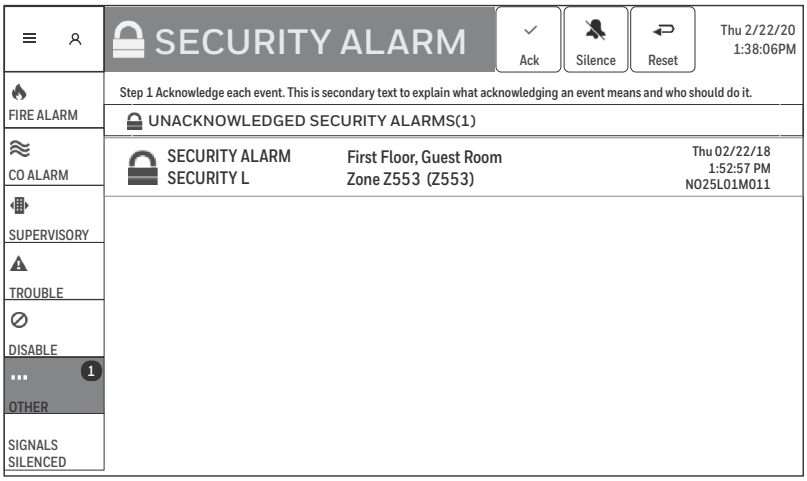


Figure 28 Other Event Screen

Responding to an Other Event:

- The Informational Text Area on the screen will indicate step by step what needs to be done to acknowledge and silence the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar. The acknowledge touchpoint will be highlighted in blue. A check mark will appear next to the acknowledged event.
- BLOCK ACKNOWLEDGE allows for multiple events to be acknowledged at once.
- Tap on the SILENCE touchpoint located in the Header Bar. The SILENCE icon in the Alert Bar will illuminate yellow once the N16 is silenced.
- Once all the events have been acknowledged the blue highlight indicator will move from the ACKNOWLEDGE touchpoint to the SILENCE touchpoint.
- Tap RESET for a latched event.

5.13 Supervisory

Supervisory Event (If a fire alarm exists and alarms are silenced, a supervisory alarm will resound the panel sounder)

- Produces a warbling audible tone
- SUPERVISORY appears in the Header Bar
- SUPERVISORY illuminates on the Alert Bar as a yellow color indicator and provides Supervisory event counts
- Illuminates the yellow off normal LED
- Displays SUPERVISORY and specific device information in the Events List
- Displays information on how to react to the event in the Instructional Text Area

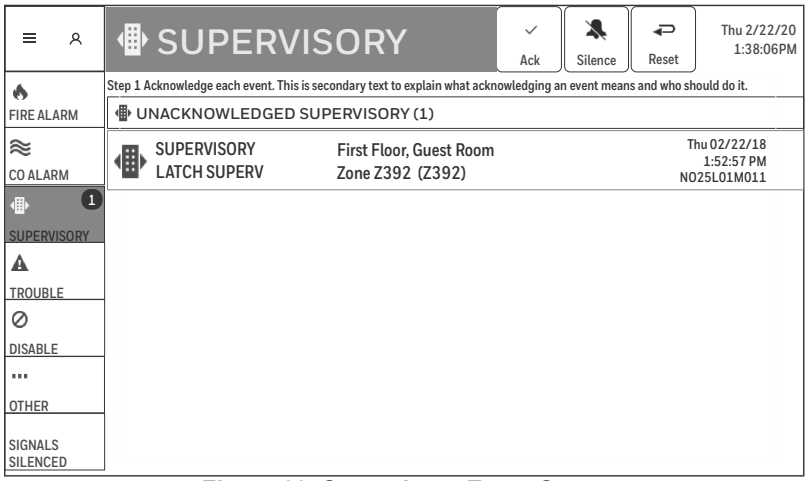


Figure 29 Supervisory Event Screen

Responding to a Supervisory event:

- The Informational Text Area on the screen will indicate step by step what needs to be done to acknowledge and silence the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar. The ACKNOWLEDGE touchpoint will be highlighted in blue. A check mark will appear next to the acknowledged event.
- Tap on the SILENCE touchpoint located in the Header Bar. The SILENCE icon in the Alert Bar will illuminate yellow once the N16 is silenced. All silenceable will turn off.
- BLOCK ACKNOWLEDGE allows for multiple events to be acknowledged at once.
- Investigate and correct the condition that activated the Supervisory point.
- Once all the events have been acknowledged the blue highlight indicator will move from the ACKNOWLEDGE touchpoint to the SILENCE touchpoint.
- For a non-latching event, the N16 will return to normal once the supervisory condition is corrected.
- For a latching event, tap on the RESET touchpoint located in the Header Bar to return the N16 to normal.

5.14 Disabled Point

Disabled Point Event

- Produces a pulsed audible sound
- Turns on the trouble Relay
- DISABLED appears in the Header Bar
- DISABLED illuminates in the Alert Bar as a yellow icon and indicated device event count
- Illuminates the yellow off normal LED
- Displays DISABLED and specific point information in the Screen Area
- Displays information on how to react to the event in the Informational Text Area

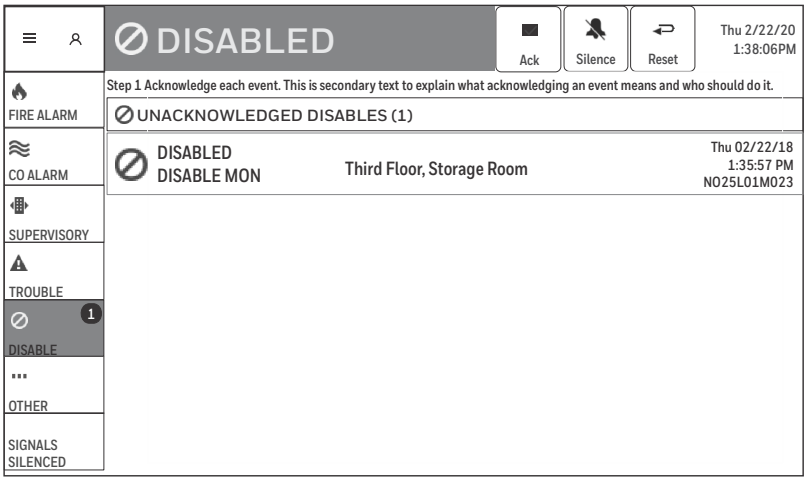


Figure 30 Disabled Point Screen

Responding to a Disabled Point

- The Informational Text Area on the screen will indicate step by step what needs to be done to acknowledge the event.
- Tap on the ACKNOWLEDGE touchpoint located in the Header Bar. The acknowledge touchpoint will be highlighted in blue. A check mark will appear next to the acknowledged event.
- BLOCK ACKNOWLEDGE allows for multiple events to be acknowledged at once.
- Enable the disabled point.

5.15 Functionality

The following are approved functions for the N16.

- Drift Compensation
- Connected Capabilities (CLSS gateway required for Connected Capabilities)
  - CLSS gateway
  - Remote access for diagnostics
  - Remote communication session- requires FACP to be in service mode. Technician required on site
- Service Mode
  - Remote programming. Technician required on-site
- Multiple Detector Operation
  - Units employing multiple detector operation shall include a minimum of two detectors in each protected space and reduce the detector installation spacing to 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA
- Alarm Delay
- Pre-signal
- Alarm verification
- Two-wire compatibility
  - One alarm per initiating device circuit
- Polling Style limitations
  - Polling Style is FlashScan or CLIP (Classic Loop Protocol)
  - All detectors and modules on an SLC may be programmed as FlashScan. All detectors and modules must be FlashScan type devices. Maximum number of devices per SLC: 159 detectors, 159 modules.
  - All detectors and modules on an SLC may be programmed as CLIP. Detectors and modules may be a mix of CLIP and FlashScan type devices, but all must be programmed as CLIP. Maximum number of devices per SLC: 99 detectors, 99 modules.
  - All detectors may be programmed as CLIP, all modules as FlashScan, on an SLC. Detectors may be a mix of CLIP and FlashScan type devices, modules must all be FlashScan type devices. Maximum number of devices per SLC: 99 CLIP detectors, 159 FlashScan modules.
- NAC Resound
- Local Mode
- Primary power source failure indication
- CGW-MB Communication Format
  - TCP/IP
- Interconnected control panels
  - Alarm, supervisory, and trouble conditions, as well as reset, alarm silence, or trouble silence actuation originating at this panel are annunciated at this panel.
- Integrated/network local functionality
- Circuit disables
- Network Mapping
- Detection/alarm algorithms
- Day/night sensitivity
- Detection sensitivity adjustment
- Extent/limitations of combination system
  - Priority of signals

6 Licensing

The functionality of the N16 can be enhanced through the addition of the following software based licensed options

Title	License	Description
Legacy devices running in CLIP mode	Yes	Will generate trouble if not licensed. Device functionality remains
Fire Zone Expansion	General Zones Yes* Logic Zones Yes†	Configuring or programming a zone that exceeds the limit set by the license(s) will generate a trouble condition. Multiple licenses can be activated for the same panel, each license will expand the zone limit
UZC (Universal Zone Coding)	Yes	Adding zone coding capability without a license will generate a trouble condition.
Network Display	Yes	Allows the fire panel to act as a network display with full capabilities of an NCD, applies only to network applications
Custom Actions	Yes	Initial 8 Custom Action touchpoints require NO license. Each set of 8 Custom Actions touchpoints following the initial 8 will require a license. The N16 only supports up to 32 Custom Action touchpoints.
CLIP Mode	Yes	Allows the panel to run in CLIP protocol for older devices.

Table 10 Licensing Requirements

* General Zones, up to 250 zones, no license required. Additional blocks of 250 zones will require a license for each block. Maximum of 2,000 zones
† Logic Zones, up to 250 zones, no license required. Additional blocks of 250 zones will require a license for each block. Maximum of 2,000 zones

6.1 Obtaining a License

To obtain a License for the N16 programming features:

1. Logon to the CLSS website, www.fire.honyewell.com, and purchase the required amount of tokens.
2. Use the tokens to purchase the desired VeriFire Tools licenses via the CLSS web.

Refer to the *CLSS Gateway Manual (LS10248-000HW-E)* for more information

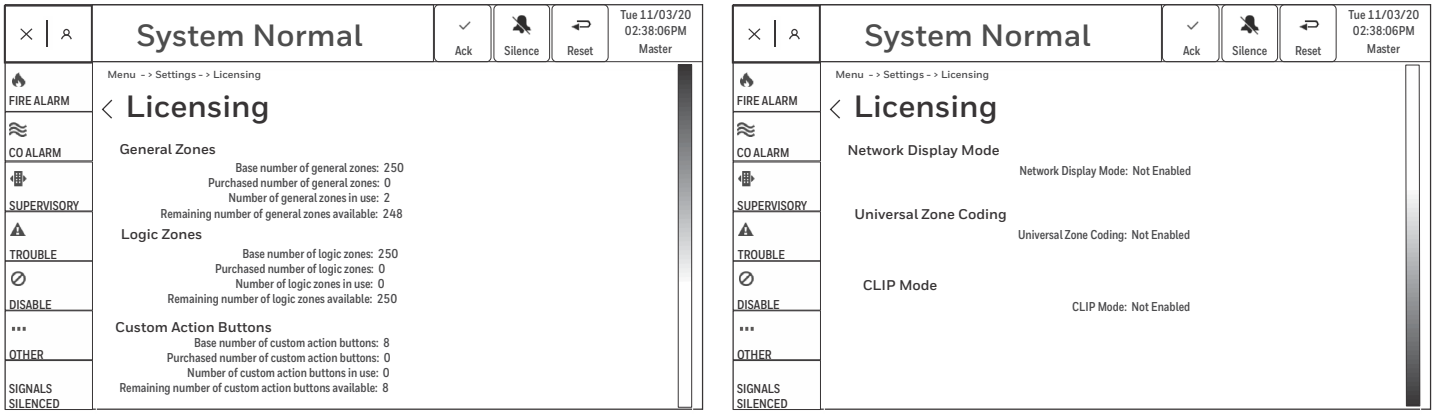


Figure 31 Licensing Screens

7 Programming

7.1 Programming Features Subject to AHJ Approval

This product incorporates field-programmable software. The features and/or options listed below must be approved by the local AHJ.

This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program Feature or Option	**Permitted in UL 864? (Y/N)**	**Possible Settings**	**Settings Permitted in UL 864**
Service Mode	No	Yes No Timed	No
Detector Programming: Supervisory Type Codes	Yes	SUP L(DUCTI) SUP T(DUCTI) SUP T(DUCTP) SUP L(DUCTP) SUP L(ION) SUP T(ION) SUP L(PHOTO) SUP T(PHOTO) SUP L(LASER) SUP T(LASER) P/CO (P SUP)	SUP L(DUCTI) SUP T(DUCTI) SUP L(DUCTP) SUP T(DUCTP)
AC Fail Delay Timer	Yes	0 for no delay, or 1-12 hours	1-3 hours
Regional Settings	Yes	Chicago	Chicago
Alarm Verification Reset Time	Yes	0 to 240 seconds	0 to 60 seconds
Alarm Verification Confirmation Time	Yes	0-300 seconds	60-300 seconds
Trouble reminder Duration: Wireless Applications	Yes	Off 4 Hours Daily = 24 Hours	4 Hours
Alarm Reminder	Yes	0-24 Hours	1-24 Hours
Supervisory Reminder	Yes	0-24 Hours	1-24 Hours
CO Reminder	Yes	0-24 Hours	0-24 Hours

Table 11 Programing Features Subject to AHJ Approval

This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated below.			
Program Feature or Option	**Permitted in UL 864? (Y/N)**	**Possible Settings**	**Settings Permitted in UL 864**
Presignal Delay/Alarm Delay	No	Presignal Delay: 60-180 seconds Alarm Delay:15-59 seconds	No
Auto Silence Timer (Global Setting)	Y	0(none) or 3-20min Note: When Auto Silence activates, special function zone ZF40 will activate and will remain active until a system reset, alarm resound or drill is initiated. Acknowledged trouble, supervisory, alarm and CO events will re-annunciate after 24 hours, if not cleared	0(none) or 3-20min

Table 11 Programing Features Subject to AHJ Approval

7.2 Levels of Programing Access for Users on the N16

There are four access levels (1-4) that can be assigned to 49 of the 50 programmable users. Additionally, there is a master user whose access level is fixed at level five (5). Only one level five user allowed. Refer to Table 12, “User Level Permissions,” on page 36 for default information on user level capabilities. Actions defaulted to YES can be changed to NO through the user setup screen. This applies to user levels 1 through 4.

*All user names can be customized to a unique user name in VeriFire Tools.

User Level Permissions

- Master User (level 5 user)
- Admin User (level 4 user)
- Technician User (level 3 user)
- Building Maint User (level 2 user)
  - A Level 2 user can be programmed to be logged in by default when there is no other user logged in The default user name is set at “General Access”
  - A Level 2 user can also be programmed to be logged in via a key-switch wired to the back of the panel. The default user name is set at “Key-switch Access”
- System Operator (level 1 user)
  - A Level 1 user can be programmed to be logged in by default when there is no other user logged in. The default user name is set at “Public Access”

7.3 User Level Programming Capabilities

Action	Master (Level 5)	Level 4	Level 3	General Access (Level 2)	Public Access (Level 1)
Acknowledge	Yes	Yes	Yes	Yes	Yes
Signal Silence	Yes	Yes	Yes	Yes	Yes
Reset	Yes	Yes	Yes	Yes	Yes
Enable/Disable	Yes	Yes	Yes	Yes	No
Modify Point Label	Yes	Yes	Yes	No	No
Clone Points	Yes	Yes	No	No	No
Delete Point	Yes	Yes	No	No	No
Change Password	All Users	Individual Level 4 All Level 3 and 2	Individual Level 3 All Level 2	Individual Level 2	N/A
Drill	Yes	Yes	Yes	Yes	Yes
Read Status	Yes	Yes	Yes	Yes	Yes
Force ON/OFF	Yes	Yes	Yes	Yes	No
Upload Database	Yes	Yes	No	No	No
Download Database	Yes	Yes	No	No	No
Change Time/Date	Yes	Yes	Yes	No	No
Set Network Configuration	Yes	Yes	No	No	No
Ability to Revoke Other Users	Yes	No	No	No	No
View General History	Yes	Yes	Yes	Yes	Yes
View Sensitive History	Yes	No	No	No	No
Export History	Yes	Yes	Yes	No	No
Scroll the Display	Yes	Yes	Yes	Yes	Yes
Resound	Yes	Yes	Yes	No	No
Download Firmware	Yes	Yes	No	No	No
Change Sensitivity	Yes	Yes	Yes	No	No
Change Node Address and Label	Yes	Yes	No	No	No
Autoprogram SLC	Yes	Yes	No	No	No
Autoprogram Node Map	Yes	Yes	No	No	No
Modify Node Map	Yes	Yes	No	No	No
Add Annunciators/Remote Displays/ Communicator	Yes	Yes	No	No	No
Auto Program (add/remove) Annunciators/ Remote Displays/Communicator	Yes	Yes	No	No	No
Add/remove Loop Cards/Modules	Yes	Yes	No	No	No
Modify Loop Card/Module Settings	Yes	Yes	No	No	No
Add Communicator	Yes	Yes	No	No	No
Power Supply Monitoring Settings	Yes	Yes	No	No	No
Lamp Test	Yes	Yes	Yes	Yes	
Service Mode	Yes	Yes	No	No	No
Firmware Update Via USB	Yes	Yes	No	No	No

Table 12 User Level Permissions

8 Programming Features Accessed from the FACP

8.1 Display

From the main menu, tap the SETTINGS touchpoint and then DISPLAY to access the back-light brightness setting and clean mode.

Brightness Tap and hold the touchpoint and slide to adjust the backlight brightness. Setting the display brightness above 75% for prolonged periods of time will decrease the overall life of the display.

Clean mode Tap the CLEAN touchpoint to activate clean mode. Once activated, clean mode disables the touch response to allow for cleaning of the screen. A countdown timer is displayed, providing indication of time left before the system exits Clean Mode. The Clean Mode countdown timer is programmable through VeriFire Tools and defaulted to 15 seconds.

CAUTION: CLEANING RECOMMENDATIONS

IT IS RECOMMENDED TO USE ONLY A DRY CLEAN, LINT FREE/MICROFIBER CLOTH TO CLEAN THE DISPLAY. IF ADDITIONAL CLEANING IS NEEDED, APPLY A SMALL AMOUNT OF ISOPROPYL ALCOHOL TO THE CLOTH AND WIPE CLEAN. DO NOT USE DETERGENTS, SOLVENTS, OR WATER FOR CLEANING. DO NOT SPRAY LIQUID DIRECTLY ONTO THE DISPLAY.

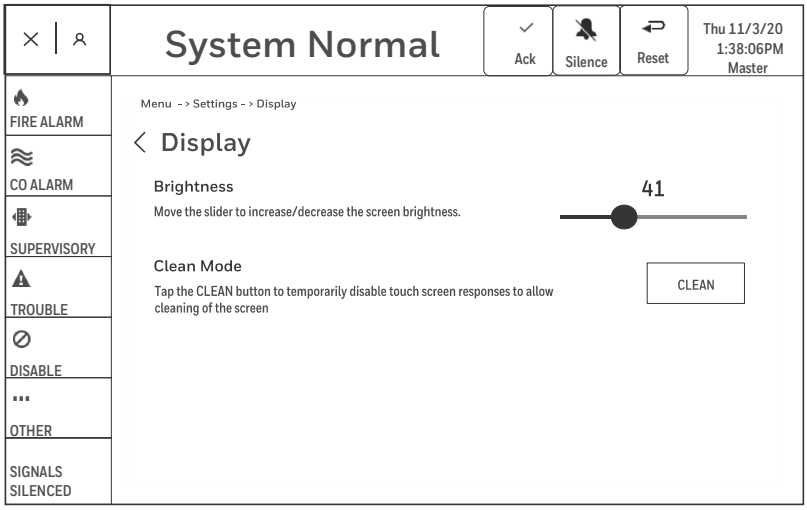


Figure 32 Display Screen

8.2 About

Tap the ABOUT touchpoint to access the system update screen, model information, application information, boot, kernel information, M4(Co-processor) information, hardware version, database information, loop information, update loops application, serial number, AIO software versions, and Network HS-NCM versions.

System Update The user must be logged into the FACP as either a level 4 or 5 User to perform a system update. Move/copy the appropriate firmware update image (name.sys) to a USB A flash drive. Insert the USB A memory drive to the USB port on the Core board (J11) of the FACP. Select from the following update types: N16 APPLICATION, N16OS, SLM BOOTLOADER, SLM APPLICATION, PMB APPLICATION, ACM-30 APPLICATION, and RESTORE DEFAULT WALLPAPER.

Tap the SYSTEM UPDATE touchpoint to access all update capabilities. To update a specific application, tap on that particular application. Tap on PREFORM UPDATE to complete the update.

NOTE: The system will copy the image to flash, and reboot running the new image. Do not power down the system during this time.

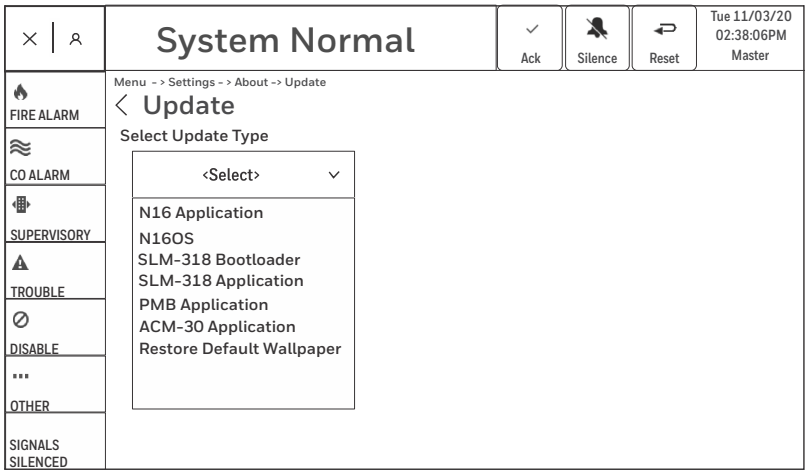


Figure 33 System Update Screen

The About Screen has multiple screens, there is a scroll bar touchpoint on the right side of the screen. Tap and hold on this touchpoint to scroll up or down between the screens.

Updating the N16 When updating the N16 the user should connect the flash drive with the update file on it to the N16 via the USB A port located on the Core Board. The update for the N16 must be initiated from the either the N16 or the NCD and will require a file with a .sys extension.

Updating the NCD When updating the NCD the user should connect the flash drive with the update file on it to the NCD via the USB A port located on the Core Board. The update for the NCD must be initiated from either the NCD or the N16 and will require a file with a .sys extension.

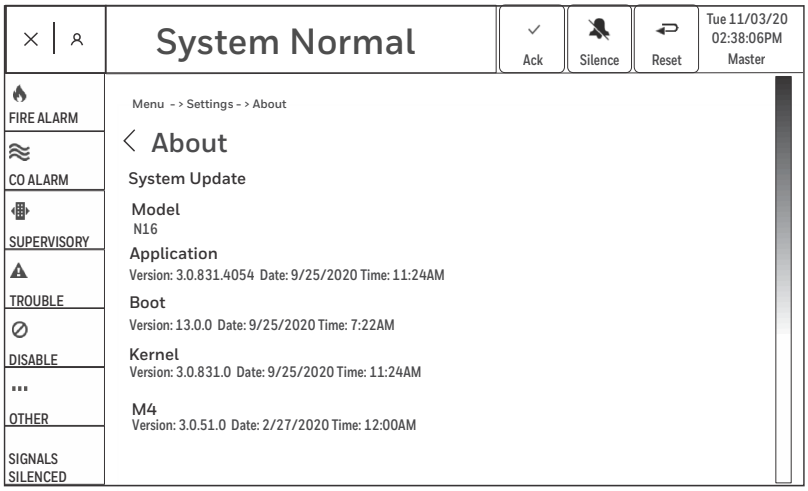
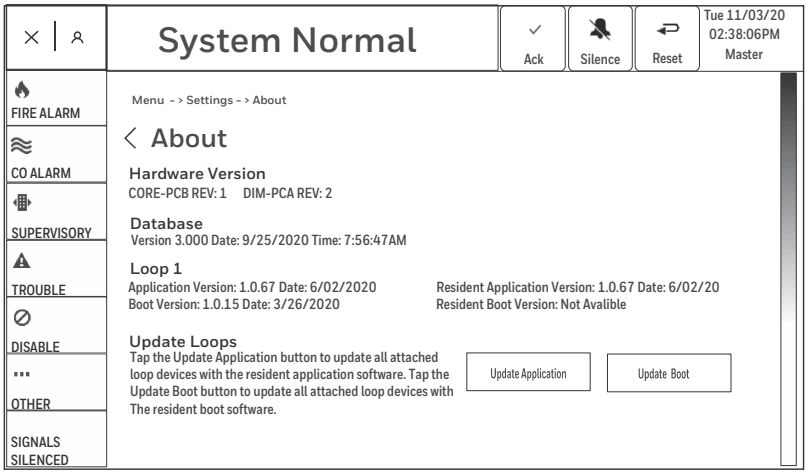


Figure 34 About Screens (3 Screens)

Update Loops Tap the UPDATE APPLICATION touchpoint to update all attached loop devices with resident application software. Tap the UPDATE BOOT touchpoint to update all resident loop devices with the resident boot software.

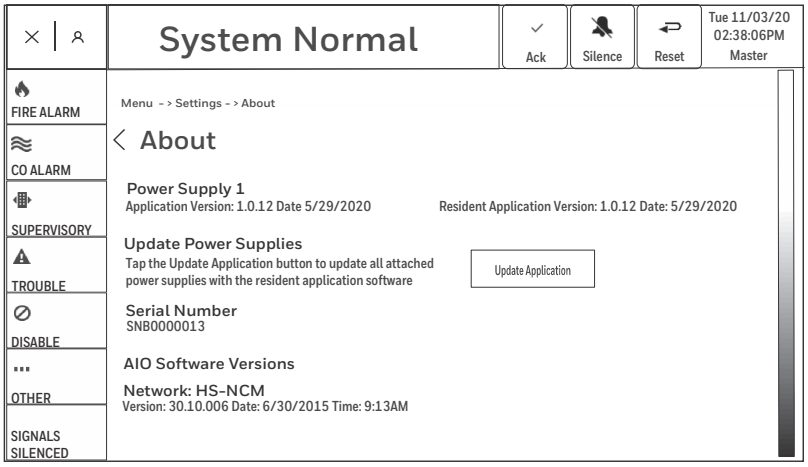
Updating the SLM-318 A SLM-318 firmware update can be imitated from the N16 or the NCD using a flash drive connected to the USB A port located on the Core Board. Alternately the SLM-318 can be updated from VeriFire Tools. The SLM-318 firmware update will require a file with a .slmboot or .slm file extension.



Update Power Supplies Tap the UPDATE APPLICATION touchpoint to update all attached power supplies with the resident application software.

Updating the PMB A PMB firmware update can be initiated from the N16 or the NCD using a flash drive connected to the USB A port located on the Core Board. Alternately, the PMB can be updated via VeriFire Tools. The PMB firmware update will require a .pmb file extension.

AIO Software Versions Tap the AIO Software Versions touchpoint to view connected AIO devices on both the internal and external AIO-Bus. Tap the Resident Version touchpoint to view connected AIO devices resident application version. Tap the UPDATE (relevant connected AIO device) touchpoint to update all connected AIO devices of that particular type.



CAUTION: RISK OF EQUIPMENT DAMAGE

THE ACM-30 FIRMWARE MUST BE UPDATED BEFORE UPDATING THE N16 OR NCD FIRMWARE.

Updating the ACM-30 The ACM-30 firmware update can be initiated from the N16 or NCD. Alternately, the ACM-30 can be updated via VeriFire Tools. The ACM-30 firmware update will require a .acm30 file extension.

8.3 User Accounts

Tap the USER ACCOUNTS touchpoint to add a user, remove a user, change a password, and recover a password. The default password for the master user account on the N16 is eight zeros.

NOTE: For firmware version 5.0 or higher a USB Drive is required for password recovery

Add User At the main menu tap on the SETTINGS touchpoint and then USERS. Once in the users menu, tap on the ADD USER touchpoint. A virtual keyboard will appear. Type in the name of the user to be added. Type in a password for the added user in the NEW PASSWORD box. Re-enter the password in the RE-ENTER PASSWORD box. If the user is to be visible on the log in screen, tap on the box SHOW ON LOGIN SCREEN and a check mark will appear. Tap again to remove the check mark. Tap in the ACCESS LEVEL box to select what access level the added user will be set for (levels 1-4 can be selected). Tap on the ADD USER touchpoint to save and add the new user.

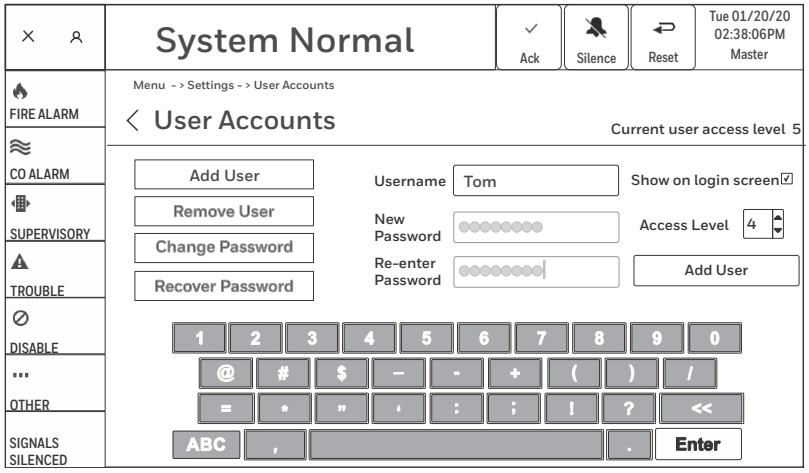


Figure 35 User Accounts Screen

Remove User At the main menu, tap on the SETTINGS touchpoint and then USERS. Once in the users menu, tap on the REMOVE USER touchpoint. A virtual keyboard will appear. Tap in the name of the user to be removed in the USERNAME text box. Tap on the REMOVE USER touchpoint to remove the specified user.

Changing the Password At the main menu, tap on the SETTINGS touchpoint and then USERS. Once in the user menu, tap on CHANGE PASSWORD. A virtual keyboard will appear and prompt to enter the user name for the password that is changing. Type in the new password. Tap on CHANGE PASSWORD to save the new password.

Recovering a Master Password At the main menu, tap on SETTINGS and USERS. Once in the users menu, tap on RECOVER PASSWORD and then tap on GENERATE RECOVERY CODE. Record the code and contact NOTIFIER Technical Support. Once the temporary password has been received and entered into the panel, the master password must be changed. The temporary password is only active for five days. Once it expires the recovery process must be re-initiated.

Recovering a Master Password for firmware version 5.0 or higher. To recover a master password on firmware version 5.0 or higher a USB drive is required. Follow the steps below to recover the master password.

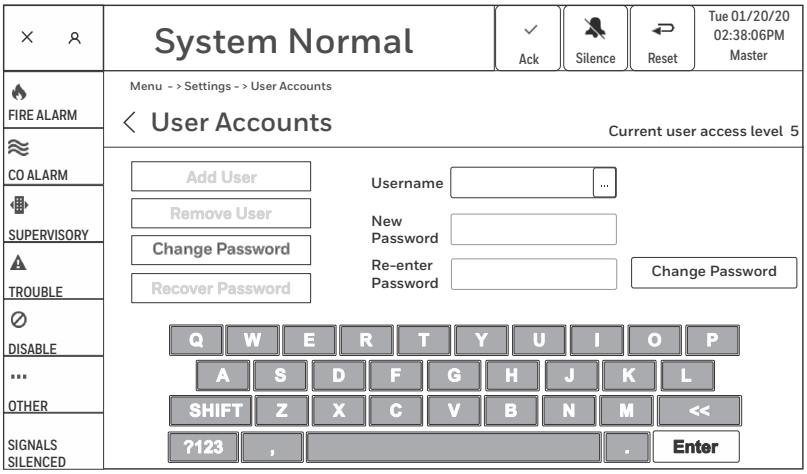


Figure 36 Password Screen

- At the main menu, tap on SETTINGS and USERS
- Once in the users menu, insert the USB drive, tap on RECOVER PASSWORD and follow the prompts
- A password recovery file will upload to the USB drive
- Once the password change file has been received and uploaded to the panel, the master password must be changed
- The password change file is only active for five days. Once it expires the recovery process must be re-initiated
- Send an email to notifier.tech@honeywell.com to initiate the NOTIFER password agreement process

8.4 Panel Settings

Tap on the PANEL touchpoint to clear Verification Counts, enter Service Mode and adjust the date and time.

Clear Verification Counts Tap the CLEAR touchpoint to clear verification counters for all detectors connected to the N16 that participate in Alarm Verification.

Service Mode Service Mode must be off to change the settings. The OFF box will be highlighted when Service Mode is off. When Service Mode is on, time and node settings will be grayed out and unable to be changed. Tap the ALL NODES box and a check mark will appear. Tap again to remove the check mark. A check mark in this box indicates that all networked nodes on the panel have been enabled for Service Mode. Tap in the time box to select a time period from UNLIMITED to 18 HOURS. Service Mode will terminate after the selected time period. Tap the ON touchpoint to enable Service Mode on the N16. Tap OFF to disable Service Mode on the N16.

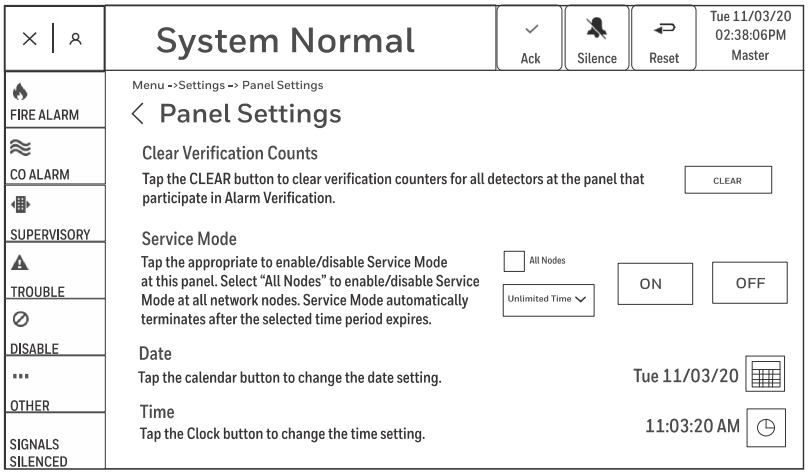


Figure 37 Panel Setting Screen

Date and Time Settings Tap the calendar touchpoint to change the date settings. A virtual calendar will appear. Tap in the correct date. Tap the left and right arrows to select the correct month and year. Tap the clock touchpoint to change the time settings. A digital clock with plus, minus and a check mark will appear. Tap the plus and minus touchpoints to adjust the time. Tap the check mark touchpoint to save the settings.

8.5 Network

Tap on the NETWORK touchpoint to access the Network Mapping screen. Network Mapping allows the user to view all online nodes, mapped nodes, unmapped nodes and grid view. Grid view provides access to view and edit mapped and unmapped node addresses.

Network Mapping Tap on the MAPPING touchpoint to view mapped nodes.Tap on the VIEW touchpoint to select from ALL ONLINE NODES, MAPPED NODES, UNMAPPED NODES and GRID VIEW. Tap on the circle next to the desired view. Tap the LEGEND touchpoint for information on node status for both online and off-line mapped and unmapped nodes. To map a node, tap on the desired node number. The number will change from gray to green indicating it is now mapped. Tap on the ACCEPT CHANGES touchpoint to save any changes made in Grid view.

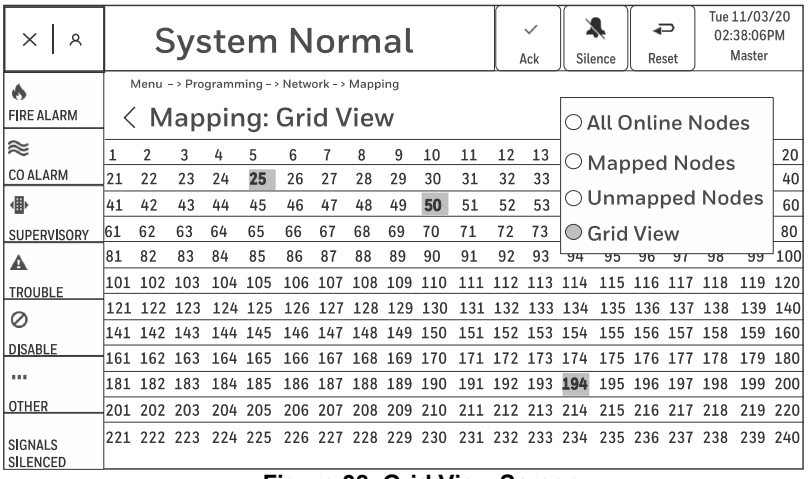


Figure 38 Grid View Screen

8.6 Autoprogram

Autoprogram allows the user to select loops 1-10 and program the devices on each installed loop card into the panel. It shows installed and new device counts for each loop and adds any new devices (detectors/modules). Autoprogram allows the user to install an SLM-318 card on the FACP with default settings. Any editing or additional loop programming must be done through VeriFire Tools. Refer to VeriFire Tools for more information.

NOTE: To delete an installed point, use VeriFire Tools. Autoprogram will not prompt the user to delete a previously installed point. If a point is removed, it will appear on the loop as unresponsive after autoprogram.

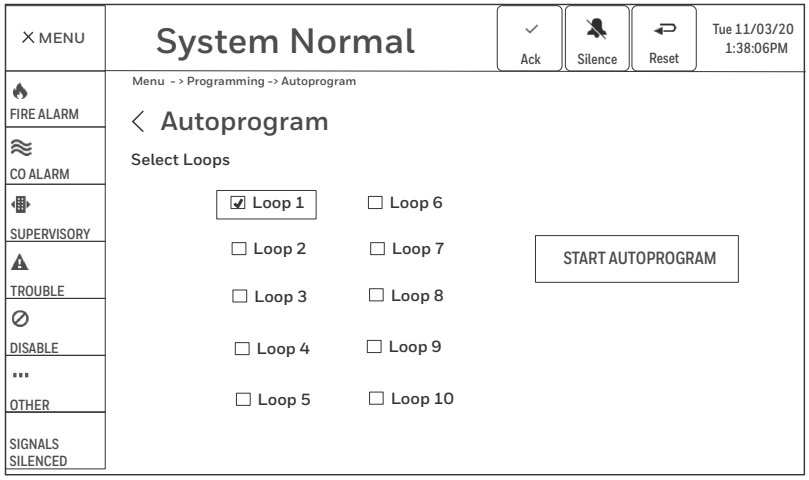


Figure 39 Autoprogram Screen

8.7 Point Information

From the Main Menu, tap on Point Information. Then, tap on the SELECT touchpoint. A drop-down menu will appear listing the following point types: Detector, Module, General Zone, Logic Zone, VEDSA, DAL Speaker Circuit, DAL All Circuits, PAM Point, Releasing Zone, Special Zone, Trouble Zone and NAC Circuit. Tap on the desired point type. A select box for node will appear. Tap on SELECT for a list of nodes connected to the N16. Tap the desired node number to select that node. If a point type is not connected to the system, a node number will not appear. Specific point types will display various menu selections that pertain to that point type. Refer to the following point types for specific menus:

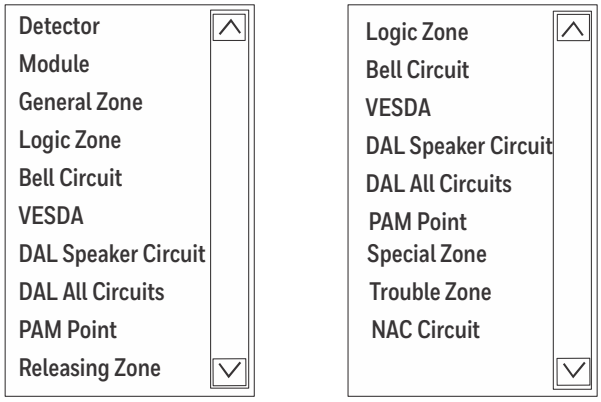


Figure 40 Point Type Selections

NAC Circuit If NAC CIRCUIT is selected, a drop-down menu for power supply will appear. Tap on SELECT for a list of power supply address numbers. Tap on the desired power supply address number (1-3). A drop-down menu for NAC circuit will appear. Tap on SELECT to for a list of NAC circuits (1-4). Tap on the desired NAC circuit number. Tap GET POINT. The screen will change to the point commands screen. From this screen, the user can disable the point, view the history, as well as view read status for the point, and force on the point. Tap DISABLE to disable the selected point. Tap READ STATUS to view the programmed settings of the selected point. Tap FORCE ON to force the point to an active state. Tap POINT HISTORY to view and search the history of the selected point.

Detector/Module/VESDA If a detector module or VESDA is selected, a drop-down menu for loop will appear. Tap SELECT and choose the desired loop number (1-10). A drop-down menu for detector or module will appear. Tap SELECT to choose the desired point address. Tap GET POINT. The screen will change to the point commands screen. From this screen the user can disable the point, view the history as well as view read status for the point and force on the point. Tap DISABLE to disable the selected point. Tap READ STATUS to view the programmed settings of the selected point. Tap FORCE ON to force the point to an active state. Tap POINT HISTORY to view and search the history of the selected point.

General Zone/Logic Zone/Special Zone/Releasing Zone/Trouble Zone: A drop-down menu for the selected zone type will appear. Tap on select to choose the desired point address. Tap on GET POINT. The screen will change to the point commands screen. From this screen the user can disable the point, view the history as well as view read status for the point and force on the point. Tap DISABLE to disable the selected point. Tap READ STATUS to view the programmed settings of the selected point. Tap FORCE ON to force the point to an active state. Tap POINT HISTORY to view and search the history of the selected point.

Bell Circuit If Bell Circuit is selected, a drop-down menu for Bell Circuit will appear. Tap on SELECT to for a list of Bell Circuits (1-4). Tap on the desired Bell Circuit number. Tap GET POINT. The screen will change to the point commands screen. From this screen, the user can disable the point, view the history for the point and force on/off the point. Tap DISABLE to disable the selected point. Tap FORCE ON to force the point to an active state. Tap POINT HISTORY to view and search the history of the selected point

PAM Point If PAM POINT is selected, a drop-down menu for node will appear. Tap SELECT to choose the appropriate node number. Tap on the desired node number. A drop-down menu for Amplifier will appear. Tap on the desired amplifier number. A drop-down menu for speaker circuit will appear. Tap on the desired speaker circuit. A drop-down menu for input will appear. Tap on the selected input number. Tap GET POINT. The screen will change to the point commands screen. From this screen, the user can force on/off the point and view the status of the point. Tap FORCE ON to force the point to an active state.

DAL All Circuits If DAL ALL CIRCUITS is selected, a drop-down menu for node will appear, tap SELECT to choose the appropriate node number. Tap on the desired node number. A drop-down menu for Amplifier will appear. Tap on the desired amplifier number. Tap GET POINT. The screen will change to the point commands screen. From this screen, the user can disable the point.

DAL Speaker Circuit If DAL SPEAKER CIRCUITS is selected, a drop-down menu for node will appear, tap SELECT to choose the appropriate node number. Tap on the desired node number. A drop-down menu for Amplifier will appear. Tap on the desired amplifier number. A drop-down menu for speaker circuit will appear. Tap on the desired speaker circuit. Tap GET POINT. The screen will change to the point commands screen. From this screen, the user can disable the point and view the point history.

8.8 Diagnostics

Tap the DIAGNOSTICS touchpoint to view the circuit board temperature and the CPU temperature. The screen displays the highest circuit board temperature and the highest CPU temperature. Each may be reset by tapping on the RESET touchpoint next to the relevant information. The user can also view and reset all SLM-318 and PMB communication statistics. Tap the RESET touchpoint next to SLM-318 and PMB Communication Statistics to reset the statistics.

Exporting diagnostics to a USB flash drive Tap on the EXPORT DIAGNOSTICS touchpoint. A pop up box will appear prompting you to insert a USB memory drive and then tap CONTINUE. Diagnostics will be exported onto the USB memory drive. If the user wishes to cancel exporting of Diagnostics, tap the touchpoint CANCEL.

NOTE: The user must be logged in as either a lever 5 or 4 user to export panel history and diagnostic information.

8.9 Lamp Test

Tap the LAMP TEST touchpoint to turn on all pixels on the screen. This will illuminate the entire screen as well as the AC Power and Off Normal LED for approximately four seconds. During this time a tone will sound. A black spot on the screen will indicate that a pixel is out.

8.10 History

The history feature allows the user to view the panel history as well as the network history. History views may also be filtered.

Sorting and filtering Tap on the FILTER touchpoint. A touchpoint for SEARCH and CLEAR will appear along with a virtual keyboard. Enter a date under DATE RANGE to search a specific date range. Type in a keyword in the CONTAINS TEXT section to search the history for particular text. To clear a search, tap the CLEAR touchpoint. Tap on the EXCLUDE BACKGROUND ACTIVATIONS check box to select that feature. Tap again to clear the field.

History will show, and can be filtered, for the following:

All Events This displays the entire history buffer, regardless of event type. The history buffer can display up to a total of 10,000 events, including alarms.

Alarms Only This displays only the alarm events stored in the history buffer.

Troubles Only This displays only the trouble events stored in the history buffer.

Supervisory Only This displays only the supervisory events stored in the history buffer.

Security/Other This displays only security and events deemed "other" stored in the history buffer. (i.e. Critical Process, Pre-alarm CO Alarm, etc.)

Time Date Interval This displays a screen to allow for the selection of a time period to define the range of events displayed, as well as specific event type. (i.e. All Events, Alarms Only, etc.)

Point Range This displays a screen to allow for the selection of a beginning and an end point that defines the range of events to be displayed.

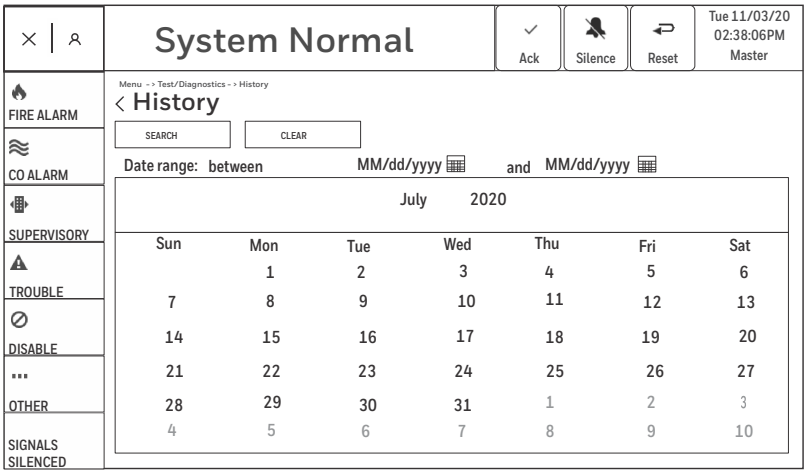


Figure 41 History Search Screen

Exporting History to USB Flash Drives: Tap on the EXPORT HISTORY touchpoint. A pop-up box will appear prompting the user to insert a USB flash drive and then tap CONTINUE. The history will be exported onto the USB flash drive. Tap the CANCEL Touchpoint to cancel history export.

NOTE: The user must be logged in as either a lever 5 or 4 user to export panel history and diagnostic information.

8.11 Cybersecurity History

Cybersecurity history events are stored in the panel history. A master level user is the only user level that can access Cybersecurity History.

Items logged in Cybersecurity history are as follows:

- Signing file failed
- Verify file signature failed
- Verify file signature failed-file open
- Verify file signature failed-start
- Verify file signature failed-sign fail
- N16 starting
- N16 shutting down
- N16 shutdown canceled

9 Programming Features Accessed Through VeriFire Tools

NOTE: The following panel functions are programmed through VeriFire Tools only and cannot be done at the FACP. Refer to VeriFire Tools help files for more information

9.1 Local Control

This option disables or enables local panel control of the Signal Silence, System Reset, and Drill Fixed Function keys, as well as S, and ACKNOWLEDGE. A setting of NO (disable) turns the panel piezo sounder off, overriding the if PIEZO is set to ON. Default: YES

9.2 AIO Mapping

The N16 has both an external and internal AIO-Bus that connects annunciators and remote displays with the FACP. Each AIO device can have a customizable primary label of up to 80 characters. The External AIO-Bus can be wired in Class A or Class B. The internal AIO is fixed at Class B only. Devices on the AIO-Bus can be configured as routers or peripherals. There is a maximum of 10 unique router addresses available for devices configured as routers.

The N16 AIO-Bus can support 80 ACM-30 annunciators with up to 10 configured as routers, each controlling up to 15 ACM-30s configured as peripherals. Additionally, the AIO-Bus can support up to 5 RLDs (remote display). The RLD can be configured as a router, each utilizing one of the 10 available router addresses but does not support peripherals.

The following restrictions apply: When mapping alarm points using SWIFT Wireless devices as inputs there is a limit of 8 ACM-30s per node (High-speed network only). If no SWIFT Wireless devices are being used as inputs, there is a limit of 32 ACM-30s per node that can be mapped to alarm points.

For more information, refer to the *ACM-30 User Manual #LS10237-051GE-E* and the *RLD User Manual #LS10310-000NF-E.*

9.3 Audio Settings

Piezo: Can be set for Events and Touch Screen Beep. It is defaulted with both settings enabled.

CAUTION: PIEZO DISABLE

WHEN THE PIEZO IS DISABLED IT IS NOT SUPERVISED WHEN THE FACP IS IN ALARM AND IS NOT AN APPROVED METHOD OF ACKNOWLEDGING OR SILENCING EVENTS ON THE FACP.

9.4 Local Mode

The SLM-318 is capable of running in Local Mode if it has not received communication from the core board for one minute. A user can create a local mode zone and map both inputs and outputs to this zone. While the SLM-318 is in Local Mode, if any of the inputs placed in the local mode zone activate, the SLM-318 will turn ON all of the outputs mapped to the same zone.

Limitations: Alarm Signals cannot be silenced. The control panel will not report SLC faults/troubles when in Local Mode. All events are non-latching until the control panel restores communication with the SLM-318.

9.5 Power Management Mode

The power management mode will conserve power consumption. In this mode, the number of LEDs that can be turned ON for a particular loop will be limited. A maximum of 30 input device (monitor modules and detectors) LEDs will be allowed ON at a time. No output module LEDs will turn ON. When the limit of 30 LEDs is reached, every time a new LED is turned ON, the oldest LED activation will turn OFF and will poll in red rather than the usual green. Default: OFF

9.6 Holiday and Weekly Occupancy Scheduling

Holiday Menu The Holiday settings allow a user to program up to 15 holidays which are used with the occupancy schedule to determine holiday occupancy hours.

Weekly Occupancy Schedule: The Weekly Occupancy Schedule allows for up to six different occupancy schedules to be programmed. Choose between schedules 1 - 6. A value of zero indicates no schedule.

9.7 Reminder Settings

Trouble reminder: Choose between OFF, Every Four Hours, and Daily.

Trouble reminder Time: If Trouble Reminder is enabled: Choose between 4 HOURS and 24 HOURS to select the duration of time between trouble reminders.

CO Reminder Choose to set CO Reminder 0 OFF Set from 1-24 hours. Default value is 24

Supervisory Reminder Choose to set Supervisory Reminder 0 OFF Set from 1-24 hours Default value is 24

Fire Alarm Reminder Choose to set Fire Alarm Reminder 0 OFF Set from 1-24 hours Default value is 24

9.8 Panel Timers Settings

Verify Time: Set the Alarm Verification timer. Choose a value of 0-240 (seconds), which will delay initiating devices set for Alarm Verification from signaling for the amount of time entered. If a second alarm occurs while the alarm verification timer is counting, the timer will stop and the alarm will signal immediately. Default: 30

NOTE: If this value exceeds 60 seconds, AHJ approval is required.

Alarm Verification Maximum Count:

Enter a value from 0-20 for a maximum verification count threshold value that applies to detectors set to participate in Alarm Verification. A value of zero produces no verification trouble. When the counter exceeds the threshold value entered, a trouble is generated to the panel. Default: 4

AC Fail Delay: Set the timing for the time delay from AC failure to when the trouble is reported. Choose a value of 1-12 (hours), or select 0. A value of 0 will turn OFF the AC Fail delay.

- The on-board trouble relay (TB2 on the N16) will activate
- CGW-MBs are notified immediately of AC failure by the panel, regardless of the panel's delay setting. Once the CGW-MB receives notification, it operates according to its own programmed AC Fail Delay reporting schedule.
- Power LED is NOT delayed and will turn off immediately if all installed PMB supplies lose power.
- Delay timer starts the countdown when the first PMB goes into AC Fail, will not reset if additional PMB's also go into AC Failure.

Signal Silence Inhibit Time: Enter a value from 0 (disabled) to 5 minutes. This software timer disables the SIGNAL SILENCE function for the time entered when a fire alarm occurs. The timer starts at the first alarm only; it does not restart with each new alarm. Default: 0

Automatic Silence time: Enter a value from 0 (disabled) to 20 minutes. This global software timer functions like pressing the SIGNAL SILENCE key. For example, if a value of 10 is entered, the control panel will silence all active outputs programmed as silenceable after ten minutes. When Auto Silence activates, special function zone ZF40 will activate and will remain active until a system reset, alarm resound, or drill is initiated. Default: 0

Verify=Pre-Alarm Check the box to enable Verify=Pre-Alarm. Default unchecked.

Enable Alarm Delay: Check the check box to enable Alarm Delay. Set the timer for between 0-59 seconds. Default is 15 seconds.

Presignal Delay Time: Enter a value of 00:00 (disabled) or a value of 1:00 to 3:00 minutes (in the format MM:SS, where MM= minutes, SS= seconds). This feature initially causes alarm signals to sound only in specific areas, monitored by qualified personnel. This allows delay of the alarm for up to 3 minutes after the start of alarm processing. Default: 3:00

NOTE: An error box will appear if entering a value greater than 3:00 for the Presignal Delay Time

Program Setting for:	Default:
Verification Time	30 seconds
Max. Verification Time	0 (disabled)
Verification Conformation Time	60 seconds
AC Fail Delay	2 hours
Silence Inhibit	0 (disabled)
Auto Silence	0 (disabled)
Verify=Prealarm	Unchecked
Alarm Delay	Unchecked
Presignal Delay	3 minutes
Alarm Delay Timer	15 Seconds

Table 13 Panel Timer Settings

9.9 Printer Functions

Programming Allows for the printing of Network Parameters, Panel Settings, Panel Timers, LCD Display, Supervision and Custom Action Message information.

Active Points Displays the Active Points screen. Allows for the printing of Alarms, Troubles, Supervisory Alarms, Security/Other, Prealarms, Disabled Points and Activated Points.

9.10 Supervision Settings

Printer: Types: NONE, 40-COLUMN, 40-COLUMN SUPERVISED, 80-COLUMN, 80-COLUMN SUPERVISED, The printer will not be active if NONE is selected. If a SUPERVISED selection is made, the printer will be supervised. Default: NONE

Choice of Baud Rate Settings:

- 300bps
- 2400bps
- 4800bps
- 9600bps
- 19.2Kbps
- 38.4Kbps

- 57.6Kbps

Power Supply (PMB): AUX trouble input if connected to trouble contacts of an N16 for supervision. Auxiliary Trouble Reporting

Check the box to enable Auxiliary trouble reporting.

Tamper Input: There are three options are available: Not Used, Security Alarm and AKS Key Switch.

- Not Used: Does not report a tamper situation at the panel cabinet door
- Security Alarm: Reports a tamper security event at the panel when the cabinet door is using an STS-1 tamper switch.
- AKS Key Switch: Should be used when there is an AKS-1 key switch connected to the panel cabinet door. The AKS switch may enable level 2 access. Must be programmed to do so in the password database and enabled in the N16 programming database

9.11 Loop Configuration

Installed: Choose between YES and NO, depending on whether an SLC is installed at this address

Detector Mode: Select Loop Polling mode for detectors on this loop.

Module Mode: Select Loop Polling mode for modules on this loop.

Wiring style: Select the NFPA wiring Class (B or A) of the loop. If Class A is entered when the wiring is Class B, a trouble message will be generated at the panel.

LED Disable: Enable or disable individual SLC loop device LEDs.

9.12 Silenceable Waterflow

Set for YES or NO. If set for NO the incoming Waterflow events will not be allowed to be silenced. If set for YES the incoming Waterflow events can be silenced. The default is NO

9.13 Point Programming

Allows the user to edit/change point information for detectors, modules, and general zonesand logic zones.

NOTE: When programming points, take the following into design consideration:
Each general zone must be dedicated to a single event type (i.e. Fire, Security, etc.).
Map inputs only to general zones designated for the input's event type.
Outputs can be mapped to multiple general zones that are dedicated to different event types. For instance, a single output can be mapped to an MN general zone and a Fire general zone.

9.13.1 Detector Point Programming

The following device type settings for detectors apply:

FIRE/CO (Photo supervisory) Latching: Only applies to Fire/Co detectors programmed as PSUP: Choose between YES and NO. This option will allow the photo element of any PSUP detectors on the fire panel to be latching or tracking.

If NO: The photo element of all PSUP detectors will be tracking.

If YES: The photo element of all PSUP detectors will be latching.

Default: NO

FIRE/CO (Co Supervisory) Latching: Only applies to Fire/CO detectors programmed as CSUP: Choose between YES and NO. This option will allow the CO element of any CSUP detectors on the fire panel to be latching or tracking.

If NO: The CO element of all CSUP detectors will be tracking.

If YES: The CO element of all PSUP detectors will be latching.

Default: NO

Acclimate Device Settings: Only applies to Acclimate Photo Supervisory detectors (PSUP): Choose between YES and NO. This option will allow the photo element of any Acclimate PSUP detectors on the fire panel to be latching or tracking.

If NO: The photo element of all Acclimate PSUP detectors will be tracking.

If YES: The photo element of all Acclimate PSUP detectors will be latching.

Default: NO

The control panel will automatically perform a detector initialization routine when a detector is added/changed in programming or if the detector was removed for more than 15 seconds. This can take approximately 2.5 minutes. During this time, the detector does not perform fire protection functions. When in this mode, the LEDs of the detectors will be on a steady green (for FlashScan) or red (for CLIP). Make sure the detector is free of residual smoke during initialization and do not test the detector until the initialization is complete.

Replacing a detector with a different type of detector: When replacing a detector with a different type of detector, the control panel must be immediately programmed for the new detector type to avoid incorrect panel operation, including false alarms. To replace a detector, follow these steps:

1. Physically remove the old detector.
2. In VeriFire Tools, change the Type and FlashScan Code label to the values appropriate for the new detector.
3. Physically install the new detector. Initialization will occur automatically.

Multi-detector: Displays up to 2 other detectors that can be linked with the one being programmed for cooperative multi-detector sensing. The detector addresses do not need to be sequential.

Sensitivity: Set between 1-9 for individual detectors. Can be set for both occupied and unoccupied detectors, for both alarm and prealarm.

Low Temp Enable: Fire/CO detectors only: Select YES or NO to enable the Low Temperature Warning.

Prealarm: select ALERT or ACTION for the Prealarm function.

Silenceable:

Determines whether a user can manually silence an activated sounder/relay base.

- NO: Not manually silenceable.
- YES - RESOUND FIRE: Silenceable, resound on fire events (Network and Local resound)
- YES - RESOUND SUPERV: Silenceable, resound on supervisory events (Network and Local resound)
- YES - NO RESOUND: Silenceable, no resound

Specific nodes can be excluded from having the ability to initiate a resound on the local fire panel.

CO Pre-Alarm: Fire/CO detectors only: Select YES or NO to enable the CO Prealarm function for the FIRE/CO smoke detector.

Custom Action Message: Displays the custom action message number (1 through 100). The default value is 0 (no message). Press to display the Custom Action Message screen.

Alarm Verification Participation: Select from Alarm Verification Reset, Alarm Verification Confirmation Timer, and Alarm Verification Max Count to determine the device's participation in Alarm Verification.

Flow Fault Threshold: Set the percentage change from the baseline value when a Flow Fault is detected. Range: 0-45%
DEFAULT: 21%

Flow Fault Delay: Set the amount of time before the panel indicates the Flow Fault. Range 0-255 seconds
DEFAULT: 200s

NOTE: Specific nodes can be excluded from having the ability to initiate a resound on the local fire panel. This option is programmable via VeriFire Tools.

Reference Detector Address: Set a detector for to be used as a reference for air flow for other FAAST detectors. All 5 detectors of each FAAST device using this detector as a reference must be set with the same reference detector address, have the same Threshold value (set via PipeIQ), and must be on the same loop as the reference detector. Range: 0, 1-159
DEFAULT: 0 (No reference detector programmed)

Zone Map: Up to 10 zones available. During initial programming, the primary zone (position 1) displayed is associated with the loop the device is installed on. For example, the device's default programming set the primary zone as Z003, indicating that the device is installed on Loop 3. Certain zone map positions are used for specific functions.

- Position 1 - Use to link zone label to detector and for group zone disable.
- Position 3 - Fire/CO detector only: Activates when the photo element of the Fire/CO detector activates.
- Position 4 - Fire/CO and PHOTO/CO detectors only: Activates when the CO element of the Fire/CO detector activates. (Map the zone in this location to one of the Aux Controls of the intelligent sounder bases in order to play the Temp-4 tone for CO Alarms.)
- Position 5 - Fire/CO, PHOTO/CO, and CO detectors only: Activates when the Fire/CO detector reports a CO Pre-Alarm.
- Position 9 - Used to activate sounder/relay bases of FlashScan detectors.
  When mapped to the same zone as Position 10, the sounder or relay base will activate when the detector goes into prealarm (Action).
  When mapped to a general or logic zone, and this zone activates, the panel is searched for any detector with the same zone mapped in its 9th position. The sounder base of any FlashScan detector that matches the search will activate. Continuous tone only. Position 9 is not typically used with intelligent sounder bases.
  Position 10 - Used for detectors set to Prealarm, Action. This zone will activate when the detector reaches its Prealarm threshold; no other zones in this detector's zone map will activate.

Sensitivity: The N16 Control panel provides 9 levels of Prealarm and Alarm in percent per foot obscuration with the following 3 exceptions:

- for heat detectors, the settings are in degrees Centigrade.
- for beam detectors, there are only 6 levels of Alarm. Prealarm is not an option for beam detectors in CLIP mode.
- for Intelliquad FSC-851 detectors, there are only six levels of Alarm and Prealarm for FlashScan mode, The sixth level is a fixed 135oF, and it is not available in CLIP mode.

Alarm Sensitivity Values range from one to nine; one represents the most sensitive level, nine the least sensitive.

Prealarm Sensitivity: values range from zero to nine; Zero indicates no prealarm, a value of one can be a self-optimizing setting where the control panel selects a suitable prealarm level for the detector. Values one or two through nine represent decreasing sensitivity, with nine being the least sensitive. Refer to Table 15, "Detector Sensitivity Settings," on page 48 for sensitivity settings for detectors by type.

9.13.2 Sounder Base Setup

AUX Tone 1: Select CONTINUOUS, TEMP-3, TEMP-4, MARCH or CUSTOM for the first auxiliary tone of the intelligent sounder base.

AUX Tone 1 Control:

Enter the Logic Zone or General Zone that will control the activation of the first auxiliary tone of the intelligent sounder base.

AUX Tone 2: Select CONTINUOUS, TEMP-3, TEMP-4, MARCH or CUSTOM for the second auxiliary tone of the intelligent sounder base.

AUX Tone 2 Control: Enter the Logic Zone or General Zone that will control the activation of the second auxiliary tone of the intelligent sounder base.

Volume: Select LOW or HIGH for the intelligent sounder base volume level.

Sounder Base Custom Tone Setup

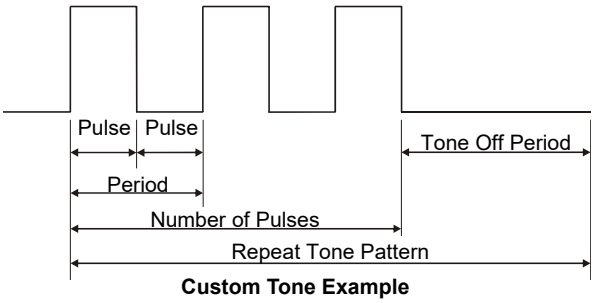
Pulse On Time: The Pulse On time is the amount of time that the tone will be ON within a Period. Enter the amount of time in second and fraction of a second increments.

Period: A Period is the length of time designated for a pulse, including Pulse On time and Pulse Off time. The pulse off time is designated by the amount of time left in a Period after the Pulse On time has expired. Enter the amount of time in second and fraction of a second increments.

Number of Pulses: Enter the number of pulses that will occur before the Tone Off Period.

Tone Off Period: The Tone Off Period is the amount of time that the tone will be silent before running the pulse pattern again.

Temp 3 Sync Setting: Choose between Power Supply and Loop Card. Default: Power Supply



Custom Tone Example

9.13.3 Detector Type Codes

The following is a list of intelligent detector Type Codes, which specify the type of detector installed at an SLC address.

Type Code	Point Type	Latching (Y=yes N=no)	Activates CBE	Device/Point Function
ASPIRATION*	fire	Y	Y	Aspiration laser or Intelligent Aspiration detector
ASPIR. (SUP)*	supervisory	Y	Y	Supervisory for Intelligent Aspiration detector
ASPIR. (PRE)*	prealarm	N	Y	Pre-alarm for Intelligent Aspiration detector
ASPIR. (NON)*	non-fire	N	Y	Non-fire for Intelligent Aspiration detector
ASPIR. (REF)*	non-fire	N	Y	Reference for Intelligent Aspiration detector
Note for Aspiration detector programming: The FAAST Intelligent Aspiration detector requires five (5) consecutive SLC devices addresses. Refer to the FAAST installation documentation for additional programming information.				
SMOKE (ION)	fire	Y	Y	Ionization smoke detector
SUP L(ION)†	supervisory	Y	Y	Ionization smoke detector
SUP T(ION)†	supervisory	N	Y	Ionization smoke detector
SMOKE(DUCTI)	fire	Y	Y	Duct Ionization smoke detector
SUP L(DUCTI)	supervisory	Y	Y	Duct ionization smoke detector
SUP T(DUCTI)	supervisory	N	Y	Ionization smoke detector used as a duct detector to report supervisory condition rather than alarm.
SMOKE(PHOTO)	fire	Y	Y	Photoelectric smoke detector
SUP L(PHOTO)†	supervisory	Y	Y	Photoelectric smoke detector
SUP T(PHOTO)†	supervisory	N	Y	Photoelectric smoke detector
SMOKE(DUCTP)	fire	Y	Y	Duct Photoelectric smoke detector
SUP L(DUCTP)	supervisory	Y	Y	Photoelectric smoke detector used as a duct detector to report supervisory condition rather than alarm
SUP T(DUCTP)	supervisory	N	Y	Photoelectric smoke detector used as a duct detector to report supervisory condition rather than alarm.
RFSMOKE(PHOTO)	fire	Y	Y	Wireless Photoelectric smoke detector
SMOKE(HARSH)	fire	Y	Y	HARSH smoke detector
SMOKE(LASER)	fire	Y	Y	Laser smoke detector
SUP T (LASER)†	supervisory	N	Y	Laser Smoke Detector
SUP L (LASER)†	supervisory	Y	Y	Laser Smoke Detector
SMOKE(DUCTL)	fire	Y	Y	Duct Laser smoke detector
SUP L(DUCTL)	supervisory	Y	Y	Laser smoke detector used as a duct detector to report supervisory condition rather than alarm.
SUP T(DUCTL)	supervisory	N	Y	Laser smoke detector used as a duct detector to report supervisory condition rather than alarm.
FIRE/CO	fire	Y	Y	Combination Photoelectric/CO detector
F/CO (P SUP)*	fire	Y (See Note below)	Y	Combination Photoelectric/CO detector. Photo element activation generates a supervisory condition.

Table 14 Intelligent Detector Type Codes (1 of 2)

Type Code	Point Type	Latching (Y=yes N=no)	Activates CBE	Device/Point Function
F/CO (C SUP)	fire	Y (See Note below)	Y	Combination Photoelectric/CO detector. CO element activation generates a supervisory condition.
Note: For Fire/CO detectors: Detectors programmed as F/CO (P SUP), the Heat and CO elements will latch and require a system reset to clear. The Photo element will latch or track, depending on the Fire/CO (Photo SUP) setting. Detectors programmed as F/CO (C SUP), the Heat and Photo elements will latch and require a system reset to clear. The CO element will latch or track, depending on the Fire/CO (CO SUP) setting.				
PHOTO/CO	Fire	Y	Y	PHOTO CO detector.
P/CO (P SUP)	PHOTO-Supervisory CO- Alarm	Y (See note below)	Y	PHOTO CO detector
P/CO (C SUP)	PHOTO- Fire CO-Supervisory	Y	Y	PHOTO CO detector
CO Alarm	CO Alarm	Y	Y	CO detector
CO SUP	Supervisory	Y (See note below)	Y	CO detector
Note: PHOTO/CO and CO Detectors programmed as PHOTO/CO (P SUP)/CO (CO SUP) will either latch or track, depending on the setting.				
AIR REF	fire	Y	Y	Assign to one or more FSL-751detectors used to monitor the quality of air entering the protected area. The air quality measurement allows the VIEW system to compensate for vehicle fumes, fog, or other particles brought into the protected area through the ventilation system. Poor air quality will lower the sensitivity of all FSL-751 detectors on the SLC. The detector sensitivity, however, remains within approved limits (always less than 1% obscuration per foot).
Note: A reference detector still functions as a smoke detector, but the detector sensitivity level should be set to the least sensitive level—AL:9 and PA:9 Alarm and Pre-Alarm sensitivity. Refer to “Detector Sensitivity Settings” on page 48 for a complete list of detector sensitivity settings.				
HEAT	fire	Y	Y	190^{o}F heat detector
HEAT+	fire	Y	Y	190^{o}F heat detector with low temperature warning
HEAT(FIXED)	fire	Y	Y	135^{o}F intelligent thermal sensor
HEAT (ROR)	fire	Y	Y	15^{o}F per minute rate-of-rise detector
SMOKE ACCLIM	fire	Y	Y	Combination Photoelectric/heat detector
SMOKE(ACCLI+)	fire	Y	Y	Combination Photoelectric/heat detector with low temperature warning, *or* Intelliquad FSC-851 Photoelectric Multi-Criteria Smoke Sensor.
SMOKE(MULTI)‡	fire	Y	Y	Multi-sensor smoke detector
SMOKE(BEAM)	fire	Y	Y	Beam Smoke Detector
ACCL(P SUP)	fire	Y (See note below)	Y	Combination Photoelectric/Heat detector. Photo element activation generates a supervisory condition.
ACCL+(P SUP)	fire	Y (See note below)	Y	Combination Photoelectric/Heat detector with low temperature warning. Photo element activation generates a supervisory condition.
Note: For ACCL/ACCL+ detectors: Detectors programmed as ACCL (P SUP) or ACCL+(P SUP), the Heat element will latch and require a system reset to clear. The Photo element will latch or track, depending on the ACCL (P SUP) Latching setting.				

Table 14 Intelligent Detector Type Codes (2 of 2)

* When a device associated with a FAAST device is disabled locally, all devices associated with that FAAST will automatically be disabled as well.
† Use only with approval of AHJ
‡ CLIP Mode only

9.13.4 Detector Sensitivity Settings

The following is a table of detector sensitivity settings by detector type:

Note: If a detectors sensitivity is changed to a value in its Special Applications range, the extended label should be modified at this detector address to include the phrase `SPECIAL APPLICATIONS' or `SPECIAL APPS'. Refer to the VeriFire Tool help files for more information on extended label programming.

Detector Type	Alarm (FlashScan)	Alarm (CLIP)	Pre-Alarm
Photo Electric SMOKE (PHOTO) (See notes * and †)	AL:1=0.50 % AL:2=0.73 % AL:3=0.96 % AL:4=1.19 % AL:5=1.43 % AL:6=1.66 % AL:7=1.89 % AL:8=2.12 %~ AL:9=2.35 %		PA:1=Auto PA:2=0.30 % PA:3=0.47 % PA:4=0.64 % PA:5=0.81 % PA:6=0.99 % PA:7=1.16 % PA:8=1.33 %~ PA:9=1.50 %
Ion SMOKE (ION) (See notes * and **)	AL:1=0.50 % AL:2=0.75 % AL:3=1.00 % AL:4=1.25 % AL:5=1.50 % AL:6=1.75 %~ AL:7=2.00 % AL:8=2.25 % AL:9=2.50 %		PA:1=Auto PA:2=0.40 % PA:3=0.50 % PA:4=0.75 % PA:5=1.00 % PA:6=1.25 %~ PA:7=1.50 % PA:8=1.75 % PA:9=2.00 %
FlashScan Laser‡ (See Note **)	AL:1=0.02 % AL:2=0.03 % AL:3=0.05 % AL:4=0.10 % AL:5=0.20 % AL:6=0.50 %~ AL:7=1.00 % AL:8=1.50 % AL:9=2.00 %		PA:1=Auto PA:2=0.02 % PA:3=0.05 % PA:4=0.10 % PA:5=0.20 % PA:6=0.50 %~ PA:7=0.70 % PA:8=1.00 % PA:9=1.50 %
Acclimate Multi-Sensor See Note †† and ‡‡)	AL:1=0.50 % AL:2=1.00 % AL:3=1.00 to 2.00 % AL:4=2.00 % AL:5=2.00 to 3.00 %~ AL:6=3.00 % AL:7=3.00 to 4.00 % AL:8=4.00 % AL:9=thermal 135°F	AL:1=1.00 % AL:2=1.00 % AL:3=1.00 to 2.00 % AL:4=2.00 % AL:5=2.00 to 4.00 %~ AL:6=2.00 to 4.00 % AL:7=2.00 to 4.00 % AL:8=4.00 % AL:9=4.00 %	PA:1=0.50 % PA:2=1.00 % PA:3=1.00 % PA:4=1.00 to 2.00 % PA:5=1.00 to 2.00 %~ PA:6=2.00 % PA:7=2.00 % PA:8=2.00 to 3.00 % PA:9=2.00 to 3.00 %
Heat (Adjustable Threshold)	AL:1=43°C AL:2=57°C AL:3=63°C~ AL:4=68°C AL:5=74°C AL:6=88°C AL:7=88°C AL:8=88°C AL:9=88°C		PA:1=40°C PA:2=43°C PA:3=57°C~ PA:4=65°C PA:5=70°C PA:6=75°C PA:7=75°C PA:8=75°C PA:9=75°C
Beam (See Note ***)	AL:1=25% AL:2=30% AL:3=40% AL:4=50% AL:5=30 - 50% AL:6=40 - 50%		PA:1=50% PA:2=55% PA:3=60% PA:4=65% PA:5=70% PA:6=75% PA:7=80% PA:8=85% PA:9=90%

Table 15 Detector Sensitivity Settings (1 of 2)

Detector Type	Alarm (FlashScan)	Alarm (CLIP)	Pre-Alarm
Intelliquad FSC-851 (See Note †††)	AL:1= 1% AL:2= 2% AL:3= 3% AL:5= 4% w/ 10 minute confirmation period AL:6= Thermal 135°F		PA:1= 1% PA:2= 2% PA:3= 3% PA:4= 3% w/ 10 minute confirmation period PA:5= 4% w/ 10 minute confirmation period PA:6= Thermal 135°F
Fire/CO (See Note ‡‡‡) PHOTO/CO (See Note ****)	AL:1=1% AL:2=2% AL:3=3% AL:5=4% with a 10 minute confirmation period AL:6=Thermal 135°F		PA:1=1% PA:2=2% PA:3=3% PA:4=3% with a 10 minute confirmation period PA:5=4% with a 10 minute confirmation period PA:6=Thermal 135°F
			~Signifies the factory default setting.

Table 15 Detector Sensitivity Settings (2 of 2)

* Detectors are suitable for open area protection within the listed air velocity range. Typically, this range is 0 - 4,000 ft/min for photoelectric detectors and 0 - 1,200 ft/min for ionization detectors. Be sure to confirm this range before installing the detector by referring to the manufacturer's installation instructions.The nominal sensitivity displayed on the FACP is for reference only.

† Photo detectors (FSP-951/IV, FSP-951R/IV, FSP-951T/IV) in UL268 7th Edition compliance must be programmed as follows: Open Area Protection sensitivity level 8 or 9, for Special Applications: sensitivity level 1 through 7. (default is 8)

‡ 1% max. on CLIP. Larger figures may display.

** The use of alarm sensitivities below 0.50% obscuration per foot requires a 90 day test to ensure that the environment for the detectors is suitable for the higher sensitivity setting.

††For Acclimate detectors installed in Canada: Use only the alarm settings of AL:1 or AL:2.

‡‡Acclimate detectors (FPTI-951/951-IV) in UL 268 7th Edition compliance must be programmed as follows: Open Area Protection: sensitivity level 8, for Special Applications sensitivity level 2, 4, or 6 (default is 8)

***Refer to the beam detector manual to determine the alarm settings: they are a function of the distance between the detector and its reflector. There is no Pre-alarm for beam detectors in CLIP mode.

†††AL:6 and PA:6 are not available in CLIP mode.

‡‡‡Fire/CO detectors (FCO951/951-IV) in UL 268 7th Edition compliance must be programmed as follows: Open Area Protection sensitivity level 3, 4, or 5, for Special Application: sensitivity level 1 and 2 (default is 4)

****The heat only setting (sensitivity level 6) applies to Fire/CO only.

9.13.5 Module Point Programming

Type Code Label: Choose the appropriate type code label. (Refer to Table 16, "Type Codes for Monitor Modules," on page 50 for a list of type code labels.)

Module Type: Choose between Control and Monitor.

Flashscan Type: Select NONE if the device is not Flashscan.

Point Label: Create a point label up to 20 characters long. If no entry is made, the field will default to the point address.

Custom Action Message: Displays the custom action message number (1 through 100). The default value is 0 (no message).

Zone Map: Displays the zones mapped to this device. Refer to General Zone Programming on page 53 for a list of available zone types and their descriptions. Certain zone map positions are used for specific functions.

Position 1 - Use to link zone label to detector and for group zone disable.

Alarm Verification: Choosing Yes will set the device participation to the values entered in Panel Timers. The only module type that can participate in alarm verification **is** the **FZM-1.** Refer to "Panel Timers Settings" on page 43 for Panel Timer programming information.

Waterflow delay: When the WATERFLOW DELAY option is set to 0, waterflow events are immediately reported to the panel upon activation. If a non-zero value is entered in the WATERFLOW DELAY, activation of a waterflow event is delayed for the duration of that time. The waterflow event will have to remain active for the duration of the delay. If the waterflow event does not remain active for the entire delay duration, the waterflow event will not be reported to the panel.

Default: 0

Range: 0-60 seconds

9.13.6 Module Point Programming: Control

Programmed through VeriFire Tools. When Control is selected as the module type, the following control module programming options are available:

Zone Map: Map the zones that will activate this device. Refer General Zone Programming on page 53 for a list of available zone types and their descriptions.

Switch Inhibit: This determines whether a user can manually activate an output. Box checked (cannot be activated manually) or box unchecked (can be activated manually). Default: Box unchecked

Silenceable: Determines whether the user can manually silence an activated output. Values are as follows:

- NO: Not manually silenceable.
- YES - RESOUND FIRE: Silenceable, resound on fire events (Network and Local resound)
- YES - RESOUND SUPERV: Silenceable, resound on supervisory events (Network and Local resound)
- YES - RESOUND SECURITY: Silenceable, resound on security events (Network and Local resound)
- YES - RESOUND TROUBLE: Silenceable, resound on trouble events (Local resound)
- YES - NO RESOUND: Silenceable, no resound
- YES - RESOUND CO: Silenceable, resound on CO events (Network and Local resound)

Specific nodes can be excluded from having the ability to initiate a resound on the local fire panel. This option is programmable via VeriFire Tools. This key will not appear for type codes where silence is not an option.

LED Enable: Disabling will disable the LED on the device.

Local Alarm Delay: Selection of this feature will delay activation until alarm delay routine has completed.

Drill Participation: Selection of this feature will activate a device in a drill.

9.13.7 Type Codes for Monitor Modules

Following is a list of monitor module Type Codes, which can be used to change the function of a monitor module point.

Type Code	Point Type	Point Characteristics		
		Latching (Y=yes, N=no)	Activates CBE	Device Function
MONITOR	fire alarm	Y	Y	Alarm-monitoring device
NC MONITOR	fire alarm	Y	Y	Alarm monitoring device, where an open circuit=active.
PULL STATION	fire alarm	Y	Y	Manual fire-alarm-activating device
SMOKE CONVEN	fire alarm	Y	Y	Indicates activation of a conventional smoke detector. An FZM-1 must be used for alarm verification of a two-wire conventional detector.
SMOKE DETECT	fire alarm	Y	Y	Indicates activation of a conventional smoke detector. An FZM-1 must be used for alarm verification of a two-wire conventional detector
WATERFLOW	fire alarm	Y	Y	Monitor for waterflow alarm switch
WATERFLOW S	supervisory	Y	Y	Indicates supervisory condition for activated waterflow switch
ACCESS MONTR	non-alarm security	N	Y	Used for monitoring building access
AREA MONITOR	security	Y	Y	Monitors building access
AUDIO SYSTEM	trouble	N	N	Used for monitoring audio equipment (use trouble zones for activations)
EQUIP MONITR	non-alarm security	N	Y	Used for monitoring equipment
SECURITY L	security	Y	Y	Indicates activation of security alarm
LATCH SUPERV	supervisory	Y	Y	Indicates latching supervisory condition
NC SUP L	supervisory	Y	Y	Indicates latching supervisory condition, where an open circuit=active.
TRACK SUPERV	supervisory	N	Y	Monitors for waterflow tamper switches for alarm points
NC SUP T	supervisory	N	Y	Indicates tracking supervisory condition, where an open circuit=active.
SPRINKLR SYS	supervisory	Y	Y	Monitors a waterflow device
SYS MONITOR	security	Y	Y	Monitors equipment security
TAMPER	supervisory	Y	Y	Indicates activation of tamper switch
ACK SWITCH	non-alarm	N	N	Performs Acknowledge function
ALLCALL PAGE	non-alarm	N	Y	Performs function AMG-1 All-call and telephone page
DRILL SWITCH	non-alarm*	Y	N	Performs Drill function (Not for use in Canadian Applications)
EVACUATE SWITCH	non-alarm*	Y	N	Performs Drill function (Alarm Signal for Canadian applications), activates silenceable fire outputs
FIRE CONTROL	non-alarm	N	Y	Monitors non-fire activations

Table 16 Type Codes for Monitor Modules (1 of 2)

Type Code	Point Type	Point Characteristics		
		Latching (Y=yes, N=no)	Activates CBE	Device Function
NON FIRE	non-alarm	N	Y	Monitors non-fire activations
NC NON FIRE	non-alarm	N	Y	Monitors non-fire activations, where an open circuit =active.
POWER MONITR	trouble†	N	N	Monitors main and auxiliary power supplies (use trouble zones for activations)
RESET SWITCH	non-alarm	N	N	Performs Reset function
SIL SWITCH	non alarm	N	N	Performs Signal Silence function
TELE PAGE	non-alarm	N	Y	Performs function of page button on FFT-7. Allows remote paging to a fire area
DISABLE MON	disable	N	N	When this point activates it will create a disable on the panel for that point. No CBE generated. Modules cannot be disabled via ACS, Alter Status, or over the network.
TROUBLE MON	trouble	N	N	Monitors trouble inputs (use trouble zones for activations)
Blank	fire alarm	Y	Y	Monitors for a device with no description
HEAT DETECT	fire alarm	Y	Y	Monitors for conventional heat detector
RF MON MODUL	fire alarm	Y	Y	Wireless alarm-monitoring device
RF PULL STA	fire alarm	Y	Y	Wireless manual fire-alarm-activating device
RF SUPERVSRY	supervisory	N	Y	Wireless supervisory-monitoring device
HAZARD ALRT	non-fire	N	Y	Monitors for a hazard alert
WEATHER ALRT	non-fire	N	Y	Monitors for a weather alert
PROCESS MON	critical process	Y	Y	Monitors for a critical process
PROCESS AUTO	critical process	N	Y	Monitors for a critical process
CO MONITOR	CO alarm	Y	Y	Monitors conventional CO detectors for a CO alarm condition.
RF GATEWAY	non-alarm	N	Y	Provides communication between wireless devices and the fire panel.
ALARM TRACK‡	alarm	N	Y	This unit must be installed in accordance with the following requirements: Monitor modules located with the protected premises which are responsible for supervising the state of the protected premises control unit may be programmed for Tracking (non-latching) operation. The supervised protected premises control unit shall be responsible for all notification and evacuation.

Table 16 Type Codes for Monitor Modules (2 of 2)

* Local Mode treats this point as a fire alarm point.
† Does not participate in Local Mode.
‡ Does not activate General Alarm Zone Z0

9.14 Type Codes for SLC Output Devices

The following is a list of Type Codes for SLC control module points. Select from these codes to define the type of point.

Type Code	Silenceable (Y=yes N=no)*	Switch Inhibit (Y=yes, N=No)*	SLC Output Point	Local Mode Group Point Types	Device Function
CONTROL†	Y	N	NAC	fire	Supervised NAC
RELAY†	Y	N	Relay	n/a	Relay output
BELL CIRCUIT	Y	N	NAC	fire	Supervised NAC
STROBE CKT†	Y	N	NAC	fire	Supervised NAC
HORN CIRCUIT†	Y	N	NAC	fire	Supervised NAC
AUDIBLE CKT	Y	N	NAC	fire	Supervised NAC
SPEAKER	Y	N	NAC	fire	Supervised NAC for speaker circuits
blank†	Y	N	NAC	n/a	Supervised NAC for undefined device
NONRESET CTL†	N	N	Relay or NAC	n/a	Supervised output, unaffected by “System Reset” command
TELEPHONE	N	N	Telephone	fire	Supervised Telephone circuit

Table 17 SLC Control Module Type Codes (1 of 2)

CONTROL NAC	Y	N	NAC	fire	Supervised NAC
GEN ALARM†	N	Y	NAC	fire	Control Module, XPC-8, or an XP5-C (in NAC mode) configured as a Municipal Box Transmitter for NFPA 72 Auxiliary Fire Alarm Systems applications (MBT-1 required). This Type ID can also be used for general alarm activation.
GEN SUPERVIS†	N	Y	NAC	supervisory	Control Module, XPC-8, or an XP5-C (in NAC mode) activated under any Supervisory condition (includes sprinkler type).
GEN TROUBLE†	N	Y	NAC	trouble	Control Module, XPC-8, or an XP5-C (in NAC mode) activated under any System Trouble condition.This device will not turn ON when it is in trouble (short or open).
GENERAL PEND†	N	Y	NAC	trouble	Control Module XPC-8 circuit, or an XP5-C (in NAC mode) that will activate upon receipt of an alarm and/or trouble condition, and remain in the ON state until all events have been ACKNOWLEDGED. This device will not turn ON when it is in trouble (short or open)
TROUBLE PEND†	N	Y	NAC	trouble	Control Module or an XP5-C (in NAC mode) that will activate upon receipt of a trouble condition, and remain in the ON state until all troubles have been ACKNOWLEDGED. This device will not turn ON when it is in trouble (short or open).
ALARMS PEND†	N	Y	NAC	fire	Control module or NAC for output that will activate upon receipt of an alarm condition, and remain in the alarm state until all alarms have been acknowledged.
INST RELEASE‡	N	Y	NAC (SLC only)	fire	Supervised for open circuits and ground faults. Short = normal
FORM C RESET†	N	Y	Form-C Relay (SLC only)	n/a	Relay module used to interrupt 24V power to four-wire conventional detectors for 30 seconds upon reset. Used in conjunction with a monitor module with a conventional detector Type ID

* Values represent program defaults

Table 17 SLC Control Module Type Codes (2 of 2)

† With LCM-320 revision 2.0 and higher, this Type Code has external power supervision (FlashScan only). An external power-supervision relay is not required. Note that Type Codes RELAY, REL FORM C, and FORM C RESET are for use only with FRM-1 modules. Refer to the section on devices requiring external power supervision in this panel's installation manual

‡ The FCM-1-REL checks for shorts with all releasing type codes.

9.15 Output Type Codes for PMB Devices

Type Code			
NAC System Sensor	Inst Relay Door Hold	NAC System Sensor	UZC
Relay/Power Const	Del 30 Door Hold	NAC Wheelock	NAC Sync Follower
Relay/Power Reset	NAC Coded Alarm	NAC Gentex	

Table 18 PMB Output Type Codes

9.16 UZC Programming Requirements:

When utilizing the UZC function of the PMB, the following parameters must be followed, depending on the application:

- Alarm Coded Signal - A coded alarm signal shall consist of not less than three complete rounds of the number transmitted and each round shall consist of not less than three impulses.
- Coded Supervisory Signal - A coded supervisory signal shall consist of not less than 2 complete rounds of the number transmitted to indicate a supervisory off-normal condition and not less than one complete round of the number transmitted to indicate the restoration of the supervisory condition to normal.

9.17 FlashScan Codes

The following is a list of FlashScan Codes for FlashScan SLC devices Select from these codes to define the type of point:

ACCLIMATE	FAPT-751, FAPT-851	HEAT ROR	FSP-951R, FSP-951RA, FSP-951R-IV, FSP-951RA-IV
BEAM	FSB-200,FSB-200S	PHOTO/CO	FPC-951, FPC-951-IV
IQUAD	FSC-851	C/O	FSCO-951
CONTROL	FCM-1	FAASTX	FSA-20000/A, FSA-5000/A FSA-20000P
HEAT	FST-751/R, FST-851/R,	FAAST	FSA-8000/A
HIGH HEAT	FST-851H	PS RELAY	ACPS RELAY
ION	FSI-751, FSI-851	RELAY	FRM-1
LASER	FSL-751	RFX SMOKE	SDRF-751
MANUAL STATION	FSM-101 (NBG-12LX Series)	TELEPHONE	FTM-1
RF PULL STATION	FW-MM	RF MONITOR*	FW-MM
RF GATEWAY	FWSG	RF HEAT*	FWH-200FIX135,FWH-200ROR135
RF PHOTO	FWD-200P	RF ACCLIMATE*	FWD-200ACCLIMATE
RF RELAY	FW-RM	PS MON	PS MON
MINI/DUAL MONITOR	FMM-101,FDM-1	PS CONTROL	ACPS CONTROL
MONITOR	FMM-1	ZONE MONITOR	FZM-1
PHOTO	FSP-751,FSD-751P/RP, FSP-851, FSD-751PL/RPL, FSH-75,		
PHOTO/HEAT	FSP-751T, FSP-851T,		
FIRE/CO	FCO-851		

Table 19 FlashScan Codes

9.18 Self-Test FlashScan Codes

The following are FlashScan Codes for Self-Test Devices.

+Self Test FlashScan Code	Device
Photo	FSP-951-SELFT
Photo/Heat	FSP-951-SELFT
Heat	FSP-951-SELFT
High Heat	FSP-951-SELFT
Heat ROR	FSP-951-SELFT

Table 20 Self-Test FlashScan Codes

9.19 General Zone Programming

The following zone programming options are available (Z0-Z999):

Zone Label: Choose a 20-character maximum zone description that will appear in the zone's display messages.

Non-resettable Control: Select YES to designate the zone as non-resettable (not affected by System Reset), or NO to designate the zone as resettable (zone will turn off when System Reset occurs.). Default: NO

Silenceable Zone: Designates the general zone as silenceable. When programmed as silenceable, a signal silence local to the panel or over the network will deactivate the zone and any devices mapped to it, unless those devices are programmed with another active zone that is not silenceable. Default: NO

Precedence Participation: Must be set to YES if the zone is programmed as a control zone to an ACM or SCS device. Default: NO

9.19.1 Zones

The following is a list of available zone types for CBE (Control-By-Event) and Zone Map programming when programming devices.

Zone Type	Description/Function
General Zone	A general zone is used to link input and output devices. When an input device activates, any general zone in its zone map will be active, and any output device that has an active general zone in its map will be active. General zones can be used as arguments in logic equations. Zone Z000 is a general alarm zone: those points listing Z000 in their zone map participate in a general alarm. The panel will support up to 2000 general zones, designated as Z0 through Z2000. General zones can be used in CCBE applications when a node number is entered before the zone number.
Logic Zone	A logic zone consists of a logic equation. Whenever the logic equation becomes true, all output points mapped to the logic zone will activate. The panel will support up to 2000 logic zones, designated as ZL1 through ZL2000. Logic zones can be used in CCBE applications when a node number is entered before the zone number. Note:

Table 21 Zone Types

9.19.2 Special Function Zones

Special Function Zone	Description
ZF1	(Trouble less AC) An output programmed to turn on/off if a System Trouble (other than an AC power loss) occurs
ZF2	(AC Trouble) An output programmed to turn on/off if an AC power loss or a brownout condition occurs
ZF3	(Security) An output programmed to turn on/off if a Security input activates
ZF4	(Supervisory) An output programmed to turn on/off if a Supervisory input activates
ZF5	(Alternate Sensitivity Activation) An input programmed to switch from the active detector alarm sensitivities to the alternate alarm sensitivities when a non-fire point with ZF5 in its CBE activates
ZF9	(ALERT, ACTION) An output programmed to turn on/off if a PreAlarm is active
ZF10	Any detector or module programmed for alarm verification will activate this zone
ZF11	When the Drill touchpoint is activated or Drill Signal is performed, ZF11 will become active. ZF11 will return to normal after a 5 second delay
ZF12	When the Acknowledge touchpoint is tapped, or a Block Acknowledge or Event Acknowledge is performed, ZF12 will become active. After a five-second delay, ZF12 will return to normal
ZF13	When a signal silence is performed, ZF13 will activate. After a five-second delay, ZF13 will return to normal.
ZF14	When the System Reset touchpoint is tapped or a System Reset is performed, ZF14 will become active. After a ten second delay, ZF14 will return to normal.
ZF15	When there are disabled events present in the system, ZF15 will be set to active. When all disabled events have cleared, the state of ZF15 will return to normal.
ZF16	(Drill Zone When a Drill Signal is performed on the FACP, ZF16 will be set to active. ZF16 will return to normal following a system reset
ZF18	(CO Alarm) When a CO Alarm is present, ZF18 will activate
ZF19	(CO Pre-Alarm) When a CO Pre-Alarm is present, ZF19 will activate
ZF40	(Auto Silence Activation) ZF40 will activate when the Auto Silence Timer has expired and silenceable outputs on the FACP have been silenced. ZF40 will remain active until a System Reset, Resound, or Drill is performed*

Table 22 Special Function Zones

* Auto Silence is only applicable for Fire Alarm activations

9.19.3 Trouble Zone Programming (Logic Zones)

On the N16, Trouble Zones have been replaced with Logic Zones. A logic equation using the logic function **TBL** will monitor the arguments you place in that equation for trouble conditions. Place points of either a detector, module, or a trouble code into the equation. When a detector or module is in trouble or the system trouble is active the **TBL** operand will go into an active state, activating the logic equation. For system troubles you do not have to use the **TBL** operand you can use the System TBL point directly to activate the logic equation when the trouble is active.

Detector Example:

OR(TBL(L1D1)) will activate when the lo5/17/2022cal loop 1 detector 1 goes into trouble and not when it activates.

OR(TBL(N1L1D1)) will activate when node 1 loop 1 detector 1 goes into trouble and not when it activates.

Module Example:

OR(TBL(L1M1)) will activate when local loop 1 module 1 goes into trouble and not when it activates.

OR(TBL(N1L1M1)) will activate when node 1 loop 1 module 1 goes into trouble and not when it activates.

System Trouble Example:

OR(TBL(T1)) will activate when local system trouble 1 is active.

OR(TBL(N1T1)) will activate when node 1 system trouble 1 is active.

OR(T1) will activate when local system trouble 1 is active.

OR(N1T1) will activate when node 1 system trouble 1 is active.

9.20 System Trouble Codes

The following table lists possible System Trouble Codes that can be used in Logic Equation programming. The System Trouble index number can be used as an argument in equation building.

System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name
0	GROUND FAULT	1	AC FAIL	2	BATTERY	3	CLASS A POS LOOP 1
4	CLASS A POS LOOP 2	5	CORRUPT LOGIC EQUAT	6	LCD80 SUPERVISORY	7	EPROM ERROR
8	INTERNAL RAM ERROR	9	EXTERNAL RAM ERROR	10	PROGRAM CORRUPTED	11	NO DEV INST ON L1
12	PANEL DOOR OPEN	13	AUXILIARY TROUBLE	14	RESERVED	15	ANNUN 1 TROUBLE
16	ANNUN 1 NO ANSWER	17	ANNUN 2 TROUBLE	18	ANNUN 2 NO ANSWER	19	ANNUN 3 TROUBLE
20	ANNUN 3 NO ANSWER	21	ANNUN 4 TROUBLE	22	ANNUN 4 NO ANSWER	23	ANNUN 5 TROUBLE
24	ANNUN 5 NO ANSWER	25	ANNUN 6 TROUBLE	26	ANNUN 6 NO ANSWER	27	ANNUN 7 TROUBLE
28	ANNUN 7 NO ANSWER	29	ANNUN 8 TROUBLE	30	ANNUN 8 NO ANSWER	31	ANNUN 9 TROUBLE
32	ANNUN 9 NO ANSWER	33	ANNUN 10 TROUBLE	34	ANNUN 10 NO ANSWER	35	ANNUN 11 TROUBLE
36	ANNUN 11 NO ANSWER	37	ANNUN 12 TROUBLE	38	ANNUN 12 NO ANSWER	39	ANNUN 13 TROUBLE
40	ANNUN 13 NO ANSWER	41	ANNUN 14 TROUBLE	42	ANNUN 14 NO ANSWER	43	ANNUN 15 TROUBLE
44	ANNUN 15 NO ANSWER	45	ANNUN 16 TROUBLE	46	ANNUN 16 NO ANSWER	47	ANNUN 17 TROUBLE
48	ANNUN 17 NO ANSWER	49	ANNUN 18 TROUBLE	50	ANNUN 18 NO ANSWER	51	ANNUN 19 TROUBLE
52	ANNUN 19 NO ANSWER	53	ANNUN 20 TROUBLE	54	ANNUN 20 NO ANSWER	55	ANNUN 21 TROUBLE
56	ANNUN 21 NO ANSWER	57	ANNUN 22 TROUBLE	58	ANNUN 22 NO ANSWER	59	ANNUN 23 TROUBLE
60	ANNUN 23 NO ANSWER	61	ANNUN 24 TROUBLE	62	ANNUN 24 NO ANSWER	63	ANNUN 25 TROUBLE
64	ANNUN 25 NO ANSWER	65	ANNUN 26 TROUBLE	66	ANNUN 26 NO ANSWER	67	ANNUN 27 TROUBLE
68	ANNUN 27 NO ANSWER	69	ANNUN 28 TROUBLE	70	ANNUN 28 NO ANSWER	71	ANNUN 29 TROUBLE
72	ANNUN 29 NO ANSWER	73	ANNUN 30 TROUBLE	74	ANNUN 30 NO ANSWER	75	ANNUN 31 TROUBLE
76	ANNUN 31 NO ANSWER	77	ANNUN 32 TROUBLE	78	ANNUN 32 NO ANSWER	79	NETWORK FAIL PORT A
80	NETWORK FAIL PORT B	81	NETWORK FAILURE	82	FUTURE USE	83	CHARGER FAIL
84	GROUND FAULT LOOP 2	85	CLASS A NEG LOOP 1	86	CLASS A NEG LOOP 2	87	GROUND FAULT LOOP 1
88	RESERVED	89	RESERVED	90	PROG MODE ACTIVATED	91	LOADING...NO SERVICE
92	FUTURE USE	93	NFPA 24HR REMINDER	94	NVRAM BATT TROUBLE	95	RESERVED
96	RESERVED	97	RESERVED	98	RESERVED	99	RESERVED
100	RESERVED	101	RESERVED	102	RESERVED	103	RESERVED
104	RESERVED	105	CLASS A ON LOOP 3	106	RESERVED	107	RESERVED
108	MAN EVAC INITIATED	109	MAN EVAC RECEIVED	110	RESERVED	111	RESERVED
112	RESERVED	113-175	RESERVED	176	GROUND FAULT LOOP 3	177	GROUND FAULT LOOP 4
178	GROUND FAULT LOOP 5	179	GROUND FAULT LOOP 6	180	GROUND FAULT LOOP 7	181	GROUND FAULT LOOP 8
182	GROUND FAULT LOOP 9	183	GROUND FAULT LOOP 10	184	CLASS A NEG LOOP 3	185	CLASS A NEG LOOP 4
186	CLASS A NEG LOOP 5	187	CLASS A NEG LOOP 6	188	CLASS A NEG LOOP 7	189	CLASS A NEG LOOP 8
190	CLASS A NEG LOOP 9	191	CLASS A NEG LOOP 10	192	CLASS A POS LOOP 3	193	CLASS A POS LOOP 4
194	CLASS A POS LOOP 5	195	CLASS A POS LOOP 6	196	CLASS A POS LOOP 7	197	CLASS A POS LOOP 8
198	CLASS A POS LOOP 9	199	CLASS A POS LOOP 10	200	RESERVED	201	BUZZER OFF-LINE
202	RESERVED	203	RESERVED	204	RESERVED	205	RESERVED
206	PRINTER PAPER OUT	207	PRINTER OFF LINE	208	RESERVED	209	RESERVED
210	MANUAL MODE ENTERED	211	NCM COMM FAILURE	212	CLASS B SHORT A LOOP 1	213	CLASS B SHORT B LOOP 1

Table 23 System Trouble Names and Codes

System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name
214	CLASS B SHORT A LOOP 2	215	CLASS B SHORT B LOOP 2	216	CLASS B SHORT A LOOP 3	217	CLASS B SHORT B LOOP 3
218	CLASS B SHORT A LOOP 4	219	CLASS B SHORT B LOOP 4	220	CLASS B SHORT A LOOP 5	221	CLASS B SHORT B LOOP 5
222	CLASS B SHORT A LOOP 6	223	CLASS B SHORT B LOOP 6	224	CLASS B SHORT A LOOP 7	225	CLASS B SHORT B LOOP 7
226	CLASS B SHORT A LOOP 8	227	CLASS B SHORT B LOOP 8	228	CLASS B SHORT A LOOP 9	229	CLASS B SHORT B LOOP 9
230	CLASS B SHORT A LOOP 10	231	CLASS B SHORT B LOOP 10	232	RESERVED	233	CLASS A SHORT LOOP 1
234	CLASS A SHORT LOOP 2	235	CLASS A SHORT LOOP 3	236	CLASS A SHORT LOOP 4	237	CLASS A SHORT LOOP 5
238	CLASS A SHORT LOOP 6	239	CLASS A SHORT LOOP 7	240	CLASS A SHORT LOOP 8	241	CLASS A SHORT LOOP 9
242	CLASS A SHORT LOOP 10	243	NCM COM FAILURE	244	RESERVED	245	RESERVED
246	RESERVED	247	RESERVED	248	RESERVED	249	RESERVED
250	SELF TEST FAILED	251	NETWORK INCOMPATIBILITY	252	RESERVED	253	NETWORK MAP LIMIT EXCEEDED
254	INVALID NODE TYPE	255	DISPLAY NODE LIMIT EXCEEDED	256-383	RESERVED	384	REMOTE DISPLAY 1 TROUBLE
385	REMOTE DISPLAY 1 NO ANSWER	386	REMOTE DISPLAY 2 TROUBLE	387	REMOTE DISPLAY 2 NO ANSWER	388	REMOTE DISPLAY 3 TROUBLE
389	REMOTE DISPLAY 3 NO ANSWER	390	REMOTE DISPLAY 4 TROUBLE	391	REMOTE DISPLAY 4 NO ANSWER	392	REMOTE DISPLAY 5 TROUBLE
393	REMOTE DISPLAY 5 NO ANSWER	394	REMOTE DISPLAY 6 TROUBLE	395	REMOTE DISPLAY 6 NO ANSWER	396	REMOTE DISPLAY 7 TROUBLE
397	REMOTE DISPLAY 7 NO ANSWER	398	REMOTE DISPLAY 8 TROUBLE	399	REMOTE DISPLAY 8 NO ANSWER	400	REMOTE DISPLAY 9 TROUBLE
401	REMOTE DISPLAY 9 NO ANSWER	402	REMOTE DISPLAY 10 TROUBLE	403	REMOTE DISPLAY 10 NO ANSWER	404	REMOTE DISPLAY 11 TROUBLE
405	REMOTE DISPLAY 11 NO ANSWER	406	REMOTE DISPLAY 12 TROUBLE	407	REMOTE DISPLAY 12 NO ANSWER	408	REMOTE DISPLAY 13 TROUBLE
409	REMOTE DISPLAY 13 NO ANSWER	410	REMOTE DISPLAY 14 TROUBLE	411	REMOTE DISPLAY 14 NO ANSWER	412	REMOTE DISPLAY 15 TROUBLE
413	REMOTE DISPLAY 15 NO ANSWER	414	REMOTE DISPLAY 16 TROUBLE	415	REMOTE DISPLAY 16 NO ANSWER	416	REMOTE DISPLAY 17 TROUBLE
417	REMOTE DISPLAY 17 NO ANSWER	418	REMOTE DISPLAY 18 TROUBLE	419	REMOTE DISPLAY 18 NO ANSWER	420	REMOTE DISPLAY 19 TROUBLE
421	REMOTE DISPLAY 19 NO ANSWER	422	REMOTE DISPLAY 20 TROUBLE	423	REMOTE DISPLAY 20 NO ANSWER	424	REMOTE DISPLAY 21 TROUBLE
425	REMOTE DISPLAY 21 NO ANSWER	426	REMOTE DISPLAY 22 TROUBLE	427	REMOTE DISPLAY 22 NO ANSWER	428	REMOTE DISPLAY 23 TROUBLE
429	REMOTE DISPLAY 23 NO ANSWER	430	REMOTE DISPLAY 24 TROUBLE	431	REMOTE DISPLAY 24 NO ANSWER	432	REMOTE DISPLAY 25 TROUBLE
433	REMOTE DISPLAY 25 NO ANSWER	434	REMOTE DISPLAY 26 TROUBLE	435	REMOTE DISPLAY 26 NO ANSWER	436	REMOTE DISPLAY 27 TROUBLE
437	REMOTE DISPLAY 27 NO ANSWER	438	REMOTE DISPLAY 28 TROUBLE	439	REMOTE DISPLAY 28 NO ANSWER	440	REMOTE DISPLAY 29 TROUBLE
441	REMOTE DISPLAY 29 NO ANSWER	442	REMOTE DISPLAY 30 TROUBLE	443	REMOTE DISPLAY 30 NO ANSWER	444	REMOTE DISPLAY 31 TROUBLE
445	REMOTE DISPLAY 31 NO ANSWER	446	REMOTE DISPLAY 32 TROUBLE	447	REMOTE DISPLAY 32 NO ANSWER	448	SYSTEM INITIALIZATION
449-502	RESERVED	503	SOFTWARE MISMATCH	504	NO POWER SUPPLY INST	505	LOOP 1-2 COMM FAILURE

Table 23 System Trouble Names and Codes

System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name
506	LOOP 3-4 COMM FAILURE	507	LOOP 5-6 COMM FAILURE	508	LOOP 7-8 COMM FAILURE	509	LOOP 9-10 COMM FAILURE
510	TEST PROGRAM UPDATE	511-521	RESERVED	522-571	RESERVED	572	GROUND FAULT PORT A
573	GROUND FAULT PORT B	574	AMPLIFIER TROUBLE	575	AUXIN TROUBLE	576	DIGIN TROUBLE
577	FFT TROUBLE	578	REMOTE MIC TROUBLE	579	DAP PORT A FAILURE	580	DAP PORT B FAILURE
581	DAA NO ANSWER	582	LOCAL MIC TROUBLE	583	LOCAL PHONE TROUBLE	584	ANALOG OUTPUT A TROUBLE
585	ANALOG OUTPUT B TROUBLE	586	ANALOG OUTPUT C TROUBLE	587	ANALOG OUTPUT D TROUBLE	588	FLASH IMAGE ERROR
589	POWER SUPPLY TROUBLE	590	AMPLIFIER LIMIT	591	AMPLIFIER SUPERVISION	592	DAA ADDRESS CONFLICT
593 - 603	RESERVED	604	DATABASE CORRUPTED	605	AUDIO LIBRARY CORRUPTED	606	DATABASE INCOMPATIBLE
607	AUDIO LIBRARY INCOMPATIBLE	608	DAA DOWNLOAD IN PROGRESS	609	RESERVED	610	RESERVED
611	PHONE CHANNEL LIMIT EXCEEDED	612	NCM SNIFFER MODE ACTIVE	613	NCM CONNECTION LIMIT EXCEEDED	614	HARDWARE MISMATCH
615	DAL DEVICE NO ANSWER	616	PRIMARY AMP 1 HARDWARE FAILURE	617	PRIMARY AMP 2 HARDWARE FAILURE	618	PRIMARY AMP 3 HARDWARE FAILURE
619	PRIMARY AMP 4 HARDWARE FAILURE	620	BACKUP AMP 1 HARDWARE FAILURE	621	BACKUP AMP 2 HARDWARE FAILURE	622	BACKUP AMP 3 HARDWARE FAILURE
623	BACKUP AMP 4 HARDWARE FAILURE	624	DSBUS 1 COMMFAIL	625	DSBUS 2 COMMFAIL	626	DSBUS 3 COMMFAIL
627	DSBUS 4 COMMFAIL	628	AA TROUBLE BUS FAIL	629	NFN PAGING CHANNEL LIMIT EXCEEDED	630	BACKUP AMP LIMIT
631	PRIMARY AMP 1 LIMIT	632	PRIMARY AMP 2 LIMIT	633	PRIMARY AMP 3 LIMIT	634	PRIMARY AMP 4 LIMIT
635	BACKUP AMP 1 LIMIT	636	BACKUP AMP 2 LIMIT	637	BACKUP AMP 3 LIMIT	638	BACKUP AMP 4 LIMIT
639	PRIMARY AMP 1 OVERCURRENT	640	PRIMARY AMP 2 OVERCURRENT	641	PRIMARY AMP 3 OVERCURRENT	642	PRIMARY AMP 4 OVERCURRENT
643	BACKUP AMP 1 OVERCURRENT	644	BACKUP AMP 2 OVERCURRENT	645	BACKUP AMP 3 OVERCURRENT	646	BACKUP AMP 4 OVERCURRENT
647	PRIMARY AMP 1 TRIP	648	PRIMARY AMP 2 TRIP	649	PRIMARY AMP 3 TRIP	650	PRIMARY AMP 4 TRIP
651	BACKUP AMP 1 TRIP	652	BACKUP AMP 2 TRIP	653	BACKUP AMP 3 TRIP	654	BACKUP AMP 4 TRIP
655	DSBUS 1 AC FAIL	656	DSBUS 2 AC FAIL	657	DSBUS 3 AC FAIL	658	DSBUS 4 AC FAIL
659	DSBUS 1 HIGH BATT	660	DSBUS 2 HIGH BATT	661	DSBUS 3 HIGH BATT	662	DSBUS 4 HIGH BATT
663	DSBUS 1 LOW BATT	664	DSBUS 2 LOW BATT	665	DSBUS 3 LOW BATT	666	DSBUS 4 LOW BATT
667	DSBUS 1 SELF TEST FAIL	668	DSBUS 2 SELF TEST FAIL	669	DSBUS 3 SELF TEST FAIL	670	DSBUS 4 SELF TEST FAIL
671	PRIMARY AMP 1 FAIL	672	PRIMARY AMP 2 FAIL	673	PRIMARY AMP 3 FAIL	674	PRIMARY AMP 4 FAIL
675	BACKUP AMP 1 FAIL	676	BACKUP AMP 2 FAIL	677	BACKUP AMP 3 FAIL	678	BACKUP AMP 4 FAIL
679	BACKUP AMP NOT INSTALLED	680	BACKUP AMP 1 NOT INSTALLED	681	BACKUP AMP 2 NOT INSTALLED	682	BACKUP AMP 3 NOT INSTALLED
683	BACKUP AMP 4 NOT INSTALLED	684	MODBUS COMMUNICATIONS FAULT	685	VESDANET TROUBLE	686-724	RESERVED
725	ALARM SIGNAL	726	FUTURE USE	727	CHANGE SERVICE PASSWORD	728	LOOP CARD 1 COMM LOSS
729	LOOP CARD 2 COMM LOSS	730	LOOP CARD 3 COMM LOSS	731	LOOP CARD 4 COMM LOSS	732	LOOP CARD 5 COMM LOSS
733	LOOP CARD 6 COMM LOSS	734	LOOP CARD 7 COMM LOSS	735	LOOP CARD 8 COMM LOSS	736	LOOP CARD 9 COMM LOSS

Table 23 System Trouble Names and Codes

System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name	System Trouble Index	System Trouble Name
737	LOOP CARD 10 COMM LOSS	738	PLEASE CHANGE THE MASTER USER PASSWORD	739	PASSWORD DATABASE CORRUPTED	740	DEFAULT DATABASE PLEASE PROGRAM
741	PMB 1 COMM LOSS	742	PMB 2 COMM LOSS	743	PMB 3 COMM LOSS	744	PMB 4 COMM LOSS
745	PMB 5 COMM LOSS	746	RECOVERY PARTITION APPLICATION ACTIVE	747	AIO COMM CLASS A TROUBLE	748	AC FAILURE
749	EARTH FAULT	750	EARTH FAULT SWITCH MISMATCH	751	BATTERY LOW	752	BATTERY HIGH
753	BATTERY VERY LOW OR MISSING	754	CHARGER FAIL	755	POWER SUPPLY FAILURE	756	AIO ADDRESS N COMM LOSS

Table 23 System Trouble Names and Codes

10 Network Mapping

Network Display Mode allows the N16 to display network events for mapped nodes.

Resound Mapping The resound mapping setting determines if an active device event is received from a network node will resound any silenced outputs on the local node based on the outputs silenceable setting. For example, if an output on the local node is programmed to have a silenceable setting set to resound on fire and that node is selected for network resound mapping. Then when a fire event occurs on the remote node the local node will resound the output if it was silenced.

The silenceable setting can be used to program an output to resound on these event types: Fire, Supervisory, Security, Trouble, and CO.

Limitations: Only the following network node types can be mapped to the N16:

- CGW-MB
- N16
- DVC
- NFS2-3030
- NFS2-640
- NFS-320
- NCD
- ONYXWorks Workstation v4.60 and higher

EVENT, AND DRILL/ MAPPING: The N16 can be programmed to monitor events and initiate drill on additional fire panels and the DVCs.

Mapping a network node to the N16 will allow the N16 to monitor and annunciate events for that node. Drill Mapping for the N16 can only be changed through VeriFire Tools. Refer to the VeriFire Tools Help Files for more information.

Panel Control Functions: Acknowledge, System Reset, Signal Silence and Drill

The N16 has the ability to perform a network Acknowledge, System Reset, Signal Silence and Drill. Only the network nodes mapped to the N16 will be affected.

Auto Silence The Auto Silence feature also applies to any network nodes mapped to the N16.

Print Functions When in Network Display Mode, printing active points on the N16 will also display any active points of any mapped network nodes.

11 Testing/Maintenance

When installation and programming is finished, conduct a complete operational test on the entire installation to verify compliance with applicable NFPA standards. Testing should be conducted by a factory-trained fire alarm technician in the presence of a representative of the Authority Having Jurisdiction and the owner's representative. Follow procedures outlined in NFPA Standard 72's section on Inspection, Testing and Maintenance.

NOTE: Use 0 (zero) ohm impedance when testing wire-to-wire faults

CAUTION: ZONE DISABLE/ENABLE

WHEN A ZONE IS DISABLED, ANY INPUT AND OUTPUT DEVICES MAPPED TO THE ZONE ARE DISABLED IF THE ZONE IS THE POINT'S PRIMARY ZONE. (THE PRIMARY ZONE IS THE ZONE IN THE FIRST POSITION OF THE ZONE MAP.)WHEN A DISABLED OUTPUT IS ENABLED, IT WILL BE AFFECTED BY CONDITIONS PRE-EXISTING IN THE SYSTEM. WHEN A CONDITION EXISTS IN THE SYSTEM THAT WOULD NORMALLY TURN THE OUTPUT ON, THE OUTPUT WILL TURN ON WHEN IT IS ENABLED.

Disable/Enable Points or Zones: Points or zones can be disabled for testing or maintenance via the Point Information Menu in VeriFire Tools. Refer to VeriFire Tools for more information.

Disable/Enable: Choose enable or disable to either enable or disable an installed, programmed point or enable a previously disabled point.

Group Zone Disable: Disabling a general zone will disable all devices with that zone programmed in the first zone map position.

When a point associated with a FAAST device is disabled, all 5 detector addresses programmed for the device will be disabled.

11.1 Periodic Testing and Service

Periodic testing and servicing of the control panel, all initiating and notification devices, and any other associated equipment is essential to ensure proper and reliable operation. Test and service the control panel according to the schedules and procedures outlined in the following documents:

- NFPA Standard 72's section on Inspection, Testing and Maintenance.
- Service manuals and instructions for the peripheral devices installed in the system. Correct any trouble condition or malfunction immediately.
- Drill: Use the Drill Participation Setting to activate all silenceable outputs and NACs. Press and hold the Drill key for 2 seconds. During a drill the panel will turn on all silenceable NACs and sends a Manual Evacuate message to the History Buffer and installed printers.
- Lamp Test: Use the Lamp Test function to test the control panel LEDs and panel sounder. Activated through the GUI. The panel will light all control panel LEDs, turn on the panel sounder, and light all segments of the Graphic Display.

11.2 Operational Checks

Before proceeding: a) notify the fire department and the central alarm receiving station if transmitting alarm conditions; b) notify facility personnel of the test so that alarm sounding devices are disregarded during the test period; and c) when necessary, disable activation of alarm notification appliances and speakers to prevent their sounding.

- Check that the green POWER LED is illuminated.
- Check that the off normal LED is off, that there are no active events on the system, and that there are no active alert bar indicators.
- Tap the LAMP TEST touchpoint to turn on all pixels on the screen. This will illuminate the entire screen as well as the AC Power and Off Normal LED for approximately four seconds. During this time a tone will sound. A black spot on the screen will indicate that a pixel is out. Verify that all LEDs and all Graphic Display segments work.
- Activate an Initiating Device Circuit using an alarm initiating device or an addressable initiating device on the SLC and check that all programmed active notification appliances function. Reset the alarm initiating device, the control panel, and any other associated equipment. In voice alarm applications, confirm that the proper tone(s) and/or messages sound during alarm conditions. Select the paging function and confirm that the message can be heard in the affected fire zones. Repeat the above step with each Initiating Device Circuit and each addressable device.
- On systems equipped with a fire fighter's telephone circuit, make a call from a telephone circuit and confirm a ring tone. Answer the call and confirm communication with the incoming caller. End the call and repeat for each telephone circuit in the system.
- Remove AC power, activate an Initiating Device Circuit through an alarm initiating device or an addressable initiating device on the SLC, and check that programmed active notification appliances sound, and alarm indicators illuminate. Measure the battery voltage with notification appliances active. Replace any battery with a terminal voltage less than 21.6 VDC and reapply AC Power.

NOTE: The battery test requires fully charged batteries. If batteries are new or discharged due to a recent power outage, allow the batteries to charge for 48 hours before testing.

- Return all circuits to their pretest condition.
- Check that the off normal LED is off and the green POWER LED is on.
- Notify fire, central station and/or building personnel when you finish testing the system.

11.3 Battery Checks and Maintenance

Maintenance-free sealed lead-acid batteries used in the system do not require the addition of water or electrolyte. These batteries are charged and maintained in a fully charged state by the main power supply's charger during normal system operation. A discharged battery typically reaches the voltage of 27.6 VDC within 48 hours; the charge rate depends on the battery size (1 amp for 7-26AH, 2 amps for 33-55AH, 4.25A for 100AH).

Sealed lead-acid batteries must be replaced within at most 5 years from their date of manufacture. Minimal replacement battery capacity appears on the control panel marking label. Immediately replace a leaking or damaged battery. Replacement batteries are available from the manufacturer.

WARNING: SULFURIC ACID
BATTERIES CONTAIN SULFURIC ACID WHICH CAN CAUSE SEVERE BURNS TO THE SKIN AND EYES AND DAMAGE TO FABRICS.

If a battery leaks and contact is made with the Sulfuric Acid, immediately flush skin and/or eyes with water for at least 15 minutes. Water and household baking soda provides a good neutralizing solution for Sulfuric Acid.

- If Sulfuric Acid gets into eyes, seek immediate medical attention.
- Ensure proper handling of the battery to prevent short circuits.
- Take care to avoid accidental shorting of the leads from uninsulated work benches, tools, bracelets, rings, and coins.

WARNING: EQUIPMENT DAMAGE
SHORTING THE BATTERY LEADS CAN DAMAGE THE BATTERY, EQUIPMENT, AND COULD CAUSE INJURY TO PERSONNEL.

12 Additional References

The table below provides a list of documents referenced in this manual, as well as documents for selected other compatible devices.

Compatible Conventional Devices (Non-addressable)	**Document Number**
Device Compatibility Document	15378
Fire Alarm Control Panel (FACP) and Main Power Supply Installation	**Document Number**
PMB-AUX Installation Document	LS10242-000GE-E
DVC Digital Voice Command Manual	52411

Table 24 Related Documentation

Compatible Conventional Devices (Non-addressable)	**Document Number**
DVC-RPU UL Listing Document	50107424-001
DAA2 and DAX Amplifiers Manual	53265
DS-DB Digital Series Distribution Board and Amplifier	53622
DAL Devices Reference Document	52410
AA-Series Audio Amplifier Manual	52526
SLC Wiring Manual	51253
Note: For individual SLC Devices, refer to the *SLC Wiring Manual*	
Off-line Programming Utility	**Document Number**
VeriFire® Tools help file	*Available for download*
Cabinets & Chassis	**Document Number**
CAB-3/CAB-4 Series Cabinet Installation Document	15330
CAB-5 Series Cabinet Installation Document	LS10244-000GE-E
ABB Series Annunciator Backboxes	LS10249-000GE-E
NBB-2 Backbox	LS10250-000GE-E
Battery/Peripherals Enclosure Installation Document	50295
Heat Dissipation for Cabinets with Digital Audio Products	53645
Power Supplies, Auxiliary Power Supplies & Battery Chargers	**Document Number**
ACPS-610 Installation Manual	53018
APS2-6R Instruction Manual	53232
CHG-120 Battery Charger Manual	50641
FCPS-24S6/FCPS-24S8 Field Charger/Power Supply	51977
HPF24S6/S8 Field Charger/Power Supply	52751
HPF-PS6/10 Series Power Supplies	LS10227-003HP-E
Networking	**Document Number**
High-Speed Network Communications Module	54014
High-Speed Noti•Fire•Net Instruction Manual	54013
NCD Network Control Display	LS10210-051NF-E
ONYXWorks® Workstation	52342
NFN-GW-PC W/F UL Listing Document	LS10077-051NF-E
NFN-GW-PC-Hxxx UL Listing Document	LS10078-051NF-E
Onyx FirstVision UL Listing Document	LS10079-051NF-E
BACNET-GW-3 UL Listing Document	LS10014-051NF-E
MODBUS-GW UL Listing Document	LS10015-051NF-E
LEDSIGN-GW UL Listing Document	LS10019-051NF-E
CAP-GW UL Listing Document	LS10021-051NF-E
VESDA-HLI-GW UL Listing Document	LS10023-051NF-E
XP6-C Supervised Control Module Installation Document	I56-1805
XP6-MA Six Zone Interface Module Installation Document	I56-1806
XP6-R Six Relay Control Module Installation Document	I56-1804
XP Transponder Manual	15888
XP10-M Ten Input Monitor Module Installation Document	I56-1803
SLC-IM Listing Document	LS10026-051NF-E
SWIFT Network Manual	LS10036-000NF-E
System Components	**Document Number**
ACM-30 Annunciator Manual	LS10238-000GE-E
CGW-MB CLSS Gateway Manual	LS10248-000NF-E
CLSS Dialer User Manual	LS10318-000HW-E
RLD User Manual	LS10310-000NF-E

Table 24 Related Documentation

12.1 NOTIFIER Notifier Compatible Equipment

NOTE: Products marked with a check mark have not received UL 864 9th Edition certification and may only be used in retrofit applications.

For a list of additional compatible devices for the FACP refer to the *Device Compatibility Document* (*15378)*, the *SLC Wiring Manual* (*51253)* and the *SWIFT Wireless Manual (LS10036-000NF-E)*

Devices:

- **FSP-951** Intelligent Photoelectric Smoke Detector
- **FMM-1** Monitor Module
- **NBG-12LX Series** Addressable Manual Pull Station

Electronic Equipment:

- **AA-100** 100-Watt Audio Amplifier
- **AA-120** 120-Watt Audio Amplifier
- **AA-30** 30-Watt Audio Amplifier
- **A2143-00** End of Line Resistor Assembly (system sensor equipment)
- **ACM-30** Annunciator
- **ACPS-610** Addressable Charger/Power Supply
- **ACPS2-6R** Auxiliary Power Supply
- **ACT-1** Audio Coupling Transformer
- **ACT-2** Audio Coupling Transformer
- **AKS-1B** Annunciator Key Switch
- **APJ-1B** Annunciator Phone Jack-G
- **A77-716B** End-of-Line Resistor Assembly
- **APS2-6R** Auxiliary Power Supply (for UL applications only)
- **CMM-1** Communication converter Module
- **CGW-DACT** CLSS Dialer
- **CGW-MB** Common Communicator Module
- **CGW-PT** POTS Card
- **CPU-NCD-RB NCD** Replacement Board
- **DAA Series** Digital Audio Amplifiers
- **DAA2** Series Digital Audio Amplifier
- **DAX** Digital Audio Amplifier
- **DS-AMP** Audio Amplifier
- **DS-BDA** Backup Audio Amplifier
- **DS-DB** Digital Distribution Board
- **HS-NCM-MFSF** High-Speed Network Communications Module (Multi-Mode Fiber to Single-Mode Fiber)
- **HS-NCM-W/-2** High-Speed Network Communications Module (Wire)
- **HS-NCM-WSF/-2** High-Speed Network Communications Module (Wire to Single-Mode Fiber)
- **HS-NCM-MF** High-Speed Network Communications Module (Multi-Mode Fiber)
- **HS-NCM-SF** High-Speed Network Communications Module (Single-Mode Fiber)
- **HS-NCM-WMF/-2** High-Speed Network Communications Module (Wire to Multi-Mode Fiber)
- **DS-XF70V** Transformer
- **DVC-EM** Digital Voice Command
- **DVC-RPU** DVC Remote Paging Unit
- **EOL-CR/CB** Assortment ELR Pack with Mounting Plate
- **EOLR-1** End of Line Resistor Assembly
- **FCM-1** NAC Module
- **FHS** Fireman's Handset
- **FPJ** Fireman's Phone Jack
- **FTM-1** Telephone Module
- **MRD-1** Manual Releasing Disconnect Assembly
- **N16-CAC** License for Custom Action Buttons
- **N16-CLP** License for CLIP Mode
- **N16-GZ** License for General Zones
- **N16-LGZ** License for Logic Zones
- **N16-NWD** License for Network Display Mode
- **N16-UZC** License for Universal Zone Coding
- **NCD** Network Control Display
- **NCM-F** Network Communications Module (Fiber)
- **NCM-W** Network Communications Module (Wire)
- **NCS** Network Control Station
- **N-ELR** Assortment ELR Pack with Mounting Plate
- **ONYXWorks** Workstation Network Monitoring Workstation
- **PMB-AUX** Power Supply
- **PRN-6** 80-Column Printer
- **PRN-7** 80-Column Printer
- **R-120** 120 Ohm End-of-Line Resistor
- **R-470** 470 End-of-Line Resistor
- **R-27K** 27K End-of-Line Resistor
- **R-47K** 47K End-of-Line Resistor
- **R-2.2K** 2.2K End-of-Line Resistor
- **RKS-S** Remote Security Keyswitch
- **RLD** Remote Display
- **RM-1** Remote Microphone
- **RM-1SA** Remote Microphone
- **RPJ-1** Remote Phone Jack
- **RPT-485W** EIA-485 Repeater (Wire)
- **RPT-485SF** EIA-485 Repeater (Fiber)
- **RPT-485WF** EIA-485 Repeater (Wire/Fiber)
- **SLC-IM** Signaling Line Circuit Integration Module (FlashScan)
- **SLM-318** SLC Loop Module
- **STS-1** Security Tamper Switch
- **VeriFire Tools** Upload/Download Software

Retrofit Equipment: Compatible Notifier Equipment Listed Under Previous Editions of UL 864
NOTE: The products in this list have not received UL 864 9th Edition certification and may only be used in retrofit applications.

- ✔**CHG-120** Battery Charger
- ✔**VS4095** Keltron Printer (Dress plate P-40)
- ✔**PRN-4, PRN-5** 80-Column Printers

13 Operating Instructions

Frame and mount the N16 Operating Instructions, p/n LS10240-000NF-E, adjacent to the control panel.

N16 Series Operating Instructions

Section 1 Operating Information

Normal Standby Operation.

1. System Normal indicated on the Header Bar.
2. Green POWER LED lit steadily.
3. No Red FIRE ALARM indication.
4. No Blue CO ALARM indication.
5. No Yellow SUPERVISORY, TROUBLE, DISABLE, OTHER or SIGNALS SILENCED indications.
6. Off Normal LED off

Alarm Condition.

1. Red FIRE ALARM, Blue CO ALARM, and/or Yellow OTHER indication(s) on the touch screen display.
2. Alarm signaling devices activated.
3. Alarm information is visible on the touch screen display
4. Off Normal LED illuminated

Pre-Alarm Condition.

Alarm Reset. After locating and correcting the alarm condition, reset the control panel by tapping the RESET touch point.

Trouble Condition. Activation of trouble signal under normal operation indicates a condition that requires **immediate** attention. Contact your local service representative. Silence the audible signal by tapping the ACK touch point. The trouble indication will remain on the N16 till the trouble is cleared.

Section 2 N16 Touch Point Functions

ACK (ACKNOWLEDGE). This silences the piezo sounder, steadies the flashing event on the header bars, and changes each condition to Acknowledged. If more than one event exists, it advances the display to the next item and displays it until ACKNOWLEDGE is tapped again. Only one tap is necessary for non-fire, trouble, or supervisory signals. Fire alarms require one tap for each activation.

SILENCE. The SILENCE touch point turns off all silenceable circuits and illuminates the SIGNALS SILENCED indicator on the Alert Bar. A subsequent alarm will then resound the system.

DRILL. The N16 waits for the DRILL switch to be pressed for 2 seconds (to prevent accidental activations), then turns on all silenceable circuits (all control modules/panel circuits that are programmed silenceable), and turns off the SIGNALS SILENCED LED. This event shows on the LCD, printer, and History file.

RESET. Resets the N16 in standalone applications. Resets the associated panel when enabled in network applications.

LAMP TEST. A Lamp Test can be performed via the Test/Diagnostics option on the N16. Press the Menu option and select Test/Diagnostics. Tap the LAMP TEST touch point to turn on all pixels on the screen, sound the piezo, and illuminate the Power and Off Normal Event LEDs for four (4) seconds.

Section 3 Event Indicators

Fire Alarm. Red indication on the Alert Bar and flashes on the Header Bar when one or more alarms occur. Illuminates steadily after alarms are acknowledged, and turns off when RESET is pressed after the alarm(s) clear.

CO Alarm. Blue indication on the Alert Bar and flashes on the Header Bar for a CO alarm. Illuminates steadily after alarms are acknowledged, and turns off when RESET is pressed after the alarm(s) clear.

Supervisory. Yellow Indication that flashes on the Alert Bar when a Supervisory or Tamper condition occurs, such as a sprinkler valve tamper condition. The indication illuminates steady after conditions are acknowledged, and turns off when the conditions are cleared. A Tamper indication will latch until RESET is pushed. RESET is required for any latched event.

Security. A blue indication on the Alert Bar and flashes on Header Bar when a security activation occurs. Illuminates steadily after acknowledge is pressed, and turns off when the security activation is cleared. RESET is required for any latched event.

Trouble. Yellow indication on the Alert Bar and flashes on the Header Bar when one or more troubles occur. Illuminates steadily when ACKNOWLEDGE is pressed, and turns off when all trouble conditions are cleared.

Disable. Yellow indication on the Alert Bar and flashes on the Header Bar when one or more points are disabled. The display will indicate which points have been disabled. Turns off when points are re-enabled.

Other Event. Yellow indication that flashes on the Alert Bar when a Critical Process or Hazard /Weather Alert occurs . When a CO Pre-alarm occurs, indication flashes blue, and a Pre-alarm indication will flash red. Illuminates steady when Acknowledge is pressed, and turns off when the condition is cleared.

Signals Silenced. Yellow indication that illuminates after SIGNALS SILENCED has been pressed. Turns off when DRILL or RESET is pressed.

Section 4 LED Indicators

Power. Green LED which illuminates when primary power is applied to the N16.

Off Normal. Yellow LED which illuminates when any off normal event is present on the N16.

Section 5 N16 Audible Sounder

Alarm. A continuous sounding tone.

Trouble, Disable, Pre-alarm. One beep per second.

CO-Alarm. Four beeps per second.

Supervisory. Four beeps per second.

Security. Eight beeps per second.

Other Event. Four beeps per second.

Section 6 Periodic Testing and Maintenance

To ensure proper and reliable operation, system inspection and testing should be scheduled monthly, or as required by NFPA 72 or local fire codes. A qualified Service Representative should perform testing.
Test batteries semi-annually, replace with led acid free according to the manufacture.

Before Testing. Notify fire department if alarm condition is transmitted. Notify facility personnel of the test so alarm sounding devices are ignored during the test period.

After Testing. Notify all fire, and/or building personnel when testing is complete.

Section 7 Local Service Representative:

NAME: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

Cut along dotted line.

Cut along dotted line.