NOTIFIER®
by Honeywell

Honeywell JB-TG-NFS3-3030

Fire Alarm Control Panel

User Guide

Disclaimer

Intended purpose

This product may only be used for the applications outlined in the catalogue and in the technical description, and only in conjunction with the recommended and approved external devices and components.

This documentation contains registered and unregistered trademarks. All trademarks are the property of the respective owners. The use of this documentation does not grant you a license or any other right to use the name, logo and/or the label.

The information contained in this documentation is provided without warranty.

Safety-related user information

This manual includes all information required for the proper use of the products described.

In order to ensure correct and safe operation of the product, all guidelines concerning its transport, storage, installation, and mounting must be observed. This includes the necessary care in operating the product.

The term 'qualified personnel' in the context of the safety information included in this manual or on the product itself designates:

- Project engineers who are familiar with the safety guidelines concerning fire alarm and extinguishing systems.
- Trained service engineers who are familiar with the components of fire alarm and extinguishing systems and the information on their operation as included in this manual.
- Trained installation or service personnel with the necessary qualification for carrying out repairs on fire alarm and extinguishing systems or who are authorized to operate, ground and label electrical circuits and/or safety equipment/systems.

Symbols

The below information is given in the interest of personal safety and to prevent damage to the product described in this manual and all equipment connected to it.

Safety information and warnings for the prevention of dangers putting at risk the life and health of user and maintenance personnel as well as causing damage to the equipment itself are marked by the below pictograms. Within the context of this manual, these pictograms have the below meanings:

Warning - Designates risks for man and/or machine. Non-compliance will create risks to man and/or machine. The level of risk is indicated by the word of warning.

Note - Important information on a topic or a procedure and other important information!

Standards and guidelines - Observe configuration and commissioning information in accordance to the national and local requirements.

Hazard warnings on the system components

Warning – risk source.

Warning – dangerous electrical voltage.

Revision

Issue	Date	Revisions
A	09/2023	The 1st release of the document
B	10/2023	The 2nd release of the document
C	01/2026	The 3rd release of the document, added new section: Features Supported Under CCCF Mode

Fire Alarm System Limitations

While a fire alarm system may lower insurance rates, it is not a substitute for fire insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel with remote notification capability can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photo-electronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast-flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, neither type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist. Heat detectors are designed to protect property, not life.

IMPORTANT! Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication. Please note that:

- Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.
- Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.
- In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

The most common cause of fire alarm malfunction is inadequate maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required per the manufacturer's recommendations, and UL

standards. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance.

A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and/or local fire codes and should be performed by authorized professional fire alarm installers.

Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. The control unit and associated equipment may be damaged by removing and/or inserting cards, modules, or interconnecting cables while the unit is energized. Do not attempt to install, service,

or operate this unit until this manual is read and understood.

CAUTION - System Reacceptance Test after Software Changes. To ensure proper system operation, this product must be tested after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets requirements for operation at 0°C to 49°C (32°F to 120°F) and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 3°F). However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15-27° C/60-80° F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices this system may operate erratically or can be damaged when subjected to lightning-induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

Though designed to last many years, system components can fail at any time. This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static-suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

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CHAPTER

1 ABOUT THIS DOCUMENT

This document provides instructions for installing and operating the Honeywell NFS3-3030 Fire Alarm Control Panel. This document is intended for system installers, administrators, and operators.

User Instructions

- Please read this manual before operating the equipment, and keep the manual for further reference.
- This manual has been reviewed and approved. The instructions and descriptions contained in this manual are technically accurate to the NFS3-3030 on the market. However, the information is subject to change without notice.
-
- It is strongly recommended that users read all warnings and notes in this manually carefully.
- This product may only be used for the applications outlined in the catalogue and in the technical description, and only in conjunction with the recommended and approved external devices and components.
- In order to ensure correct and safe operation of the product, all guidelines concerning its transport, storage, installation, and mounting must be observed. This includes the necessary care in operating the product.
- The figures in this manual are for illustration purposes only.

CHAPTER

2 OVERVIEW

System Overview

The JB-TG-NFS3-3030 Fire Alarm Control Panel (hereafter referred as NFS3-3030) is the latest generation of fire alarm control panel equipped with a 10-inch color graphic touchscreen display that simplifies user operation. With its modular design, modules can be fast inserted/removed from its rack. Installation and customization can thus be done with ease. It supports NFC identity recognition and user management and is compatible with various Honeywell components.

System Components

NFS3-3030 system components are listed in the following table.

Table 2-1 NFS3-3030 Components

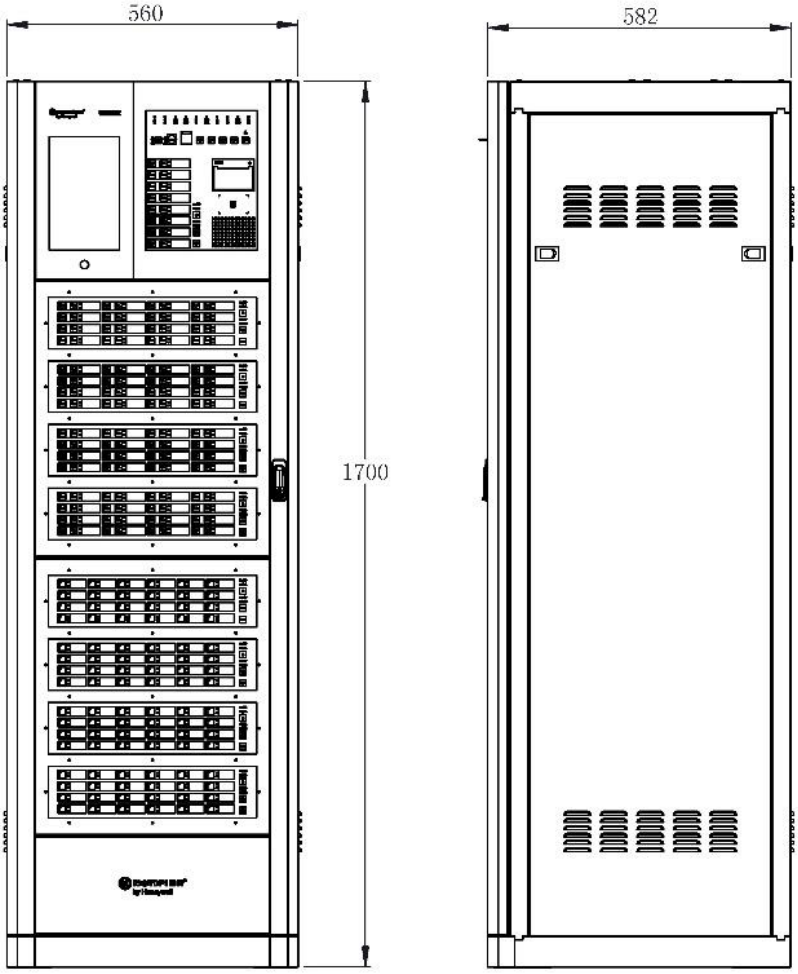
Component	Abbreviation	Part No.	PCBA Name	Mandatory/Optional
Annunciate Control Module-24	ACM-24	ACM3-24	VMP-ACM	Optional
Display Module	DPM	DPM3-3030	N/A	Mandatory
Main Power Supply	MPS	AMPS3-24	VMP-MPS-CPU VMP-MPS-Charger	Mandatory
Central Process Module	CPM	CPU3-3030	VMP-CPM	Mandatory
Loop Control Module	LCM	LCM3-318	VMP-LCM	Mandatory
Protective Operation Module - 16	POM-16	POM3-16	VMP-POM-F VMP-POM-IO VMP-POM-IOE	Optional
Protective Operation Module - 8	POM-8	POM3-8	VMP-POM-8	Mandatory
Network Control Module-Fiber	NCM-F	HS-NCM3-SF	NCM-F	Optional
Network Control Module-Wire	NCM-W	NCM3-W	VMP-NCM	Optional
Remote Fire Display	RFD	LCD-300	VMP-RFD	Optional

Standard Operation Panel	SOP	SOP3-3030	VMP-SOP	Mandatory
Interface Module	IFM	IFM3-3030	VMP-IFM	Optional
NFC Card	N/A	NFC3-3030	VMP-NFC	Optional
Speaker	N/A	N/A	N/A	Mandatory
Micro-printer	N/A	SP-RMD18ASH	N/A	Optional
Data Storage Module	DSM	DSM3-8G	N6000P-BB	Optional
Battery	N/A	N/A	N/A	Mandatory
Mother Board – LCM	MB-LCM	LCM3-MB	VMP-MB-LCM	Mandatory
Mother Board – POM	MB-POM	POM3-MB	VMP-MB-POM	Optional
Mother Board – Core	MB-Core	CPU3-MB	VMP-MB-Core	Mandatory
Terminal Breakout Board	TBB	LCM3-TB	VMP-Transist	Mandatory
Terminal Breakout Board–Core	TBB-Core	CPU3-TB	VMP-Transist-Core	Mandatory
NFS3-3030 Rack Panel Cabinet			N/A	Mandatory

Rack Dimensions

The NFS3-3030 is a rack-mounted fire alarm system. The rack dimension is listed as follows: 1700mm in height, 560mm in width and 582mm in depth.

Figure 2-1 NFS3-3030 Rack



Rack Layout

A NFS3-3030 is composed of the front panel and inside components which modules are installed on. On the front panel DPM, SOP, POM-8, POM-16 and ACM-24 operation panels are placed to enable users to execute various operations.

Within the rack motherboards and TBB boards are mounted. The modules are installed on motherboards and connected to TBB boards or TBB-core boards correspondingly.

Figure 2-2 NFS3-3030 Front Panel

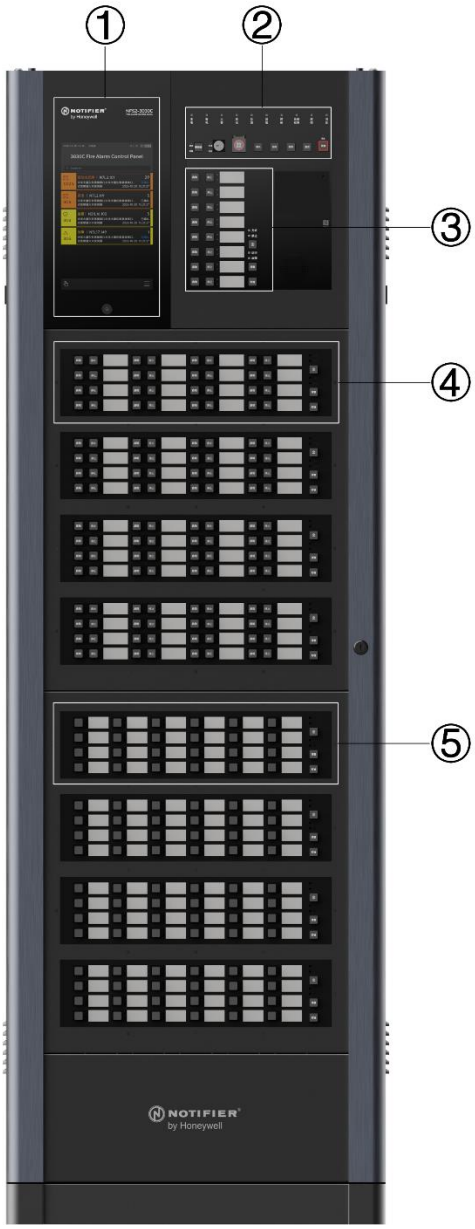
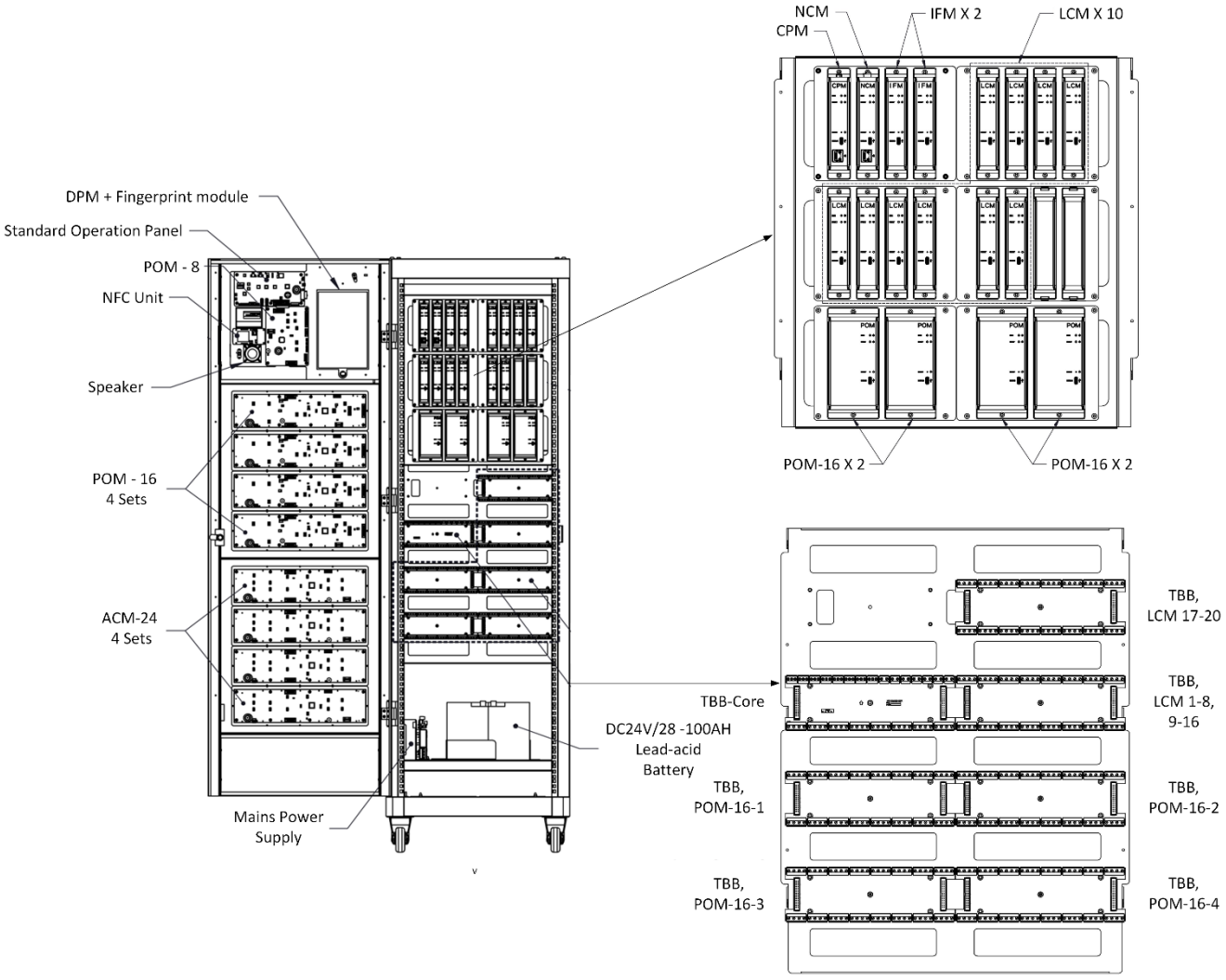


Table 2-2 NFS3-3030 Front Panel Components

Abbreviation	Description
①	DPM, The Display module. A 1280 X 800 resolution touchscreen that enables users to check and acknowledge status of fire alarms.
②	SOP, the Standard Operation Panel. The panel that supports various operations.
③	POM-8, the Protective Operation Module, 8 buttons. The POM-8 is installed by default to execute various operations.
④	POM-16, the Protective Operation Module, 16 buttons. The POM-16 is an optional extension module that can be added on NFS3-3030. A maximum of 4 sets of POM-16 can be installed on a NFS3-3030.
⑤	ACM-24, Annunciate Control Module-24 that enables the user to perform various operations. At maximum, 4 ACM-24 can be installed as expansion modules on a NFS3-3030.

Figure 2-3 NFS3-3030 Rack Layout



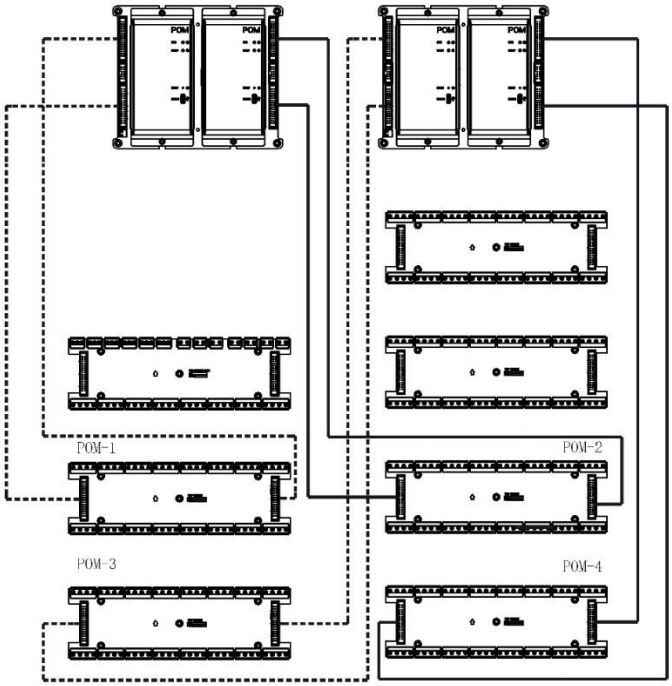
The NFS3-3030 can accommodate a range of modules, including 1 CPM, 1 NCM, 2 IFMs, 10 LCMs, and 4 POM-16 modules. The figure above shows the recommended installation layout, which features the CPM on the first slot in the upper left corner, followed by the NCM and the IFMs. The LCMs take up the remaining four slots in the first row and six slots in the second row, while the four POM-16 modules are located at the bottom.

To connect the modules, you will need to use the TBB and TBB-Core boards. The rack should have one TBB-Core board and six TBB boards installed.

The rack has several TBB and TBB-Core boards installed to connect the different modules. On the first row, the TBB for LCM modules is located in the upper right corner and supports loops 17 to 20. The second row has the only TBB-Core board on the left side, which connects the CPM, POM-8, NCM, and IFM modules. On the right side of the second row is the TBB for LCM modules, which supports loops 1 to 16. The third and fourth rows each have 2 TBBs for the POM-16 modules.

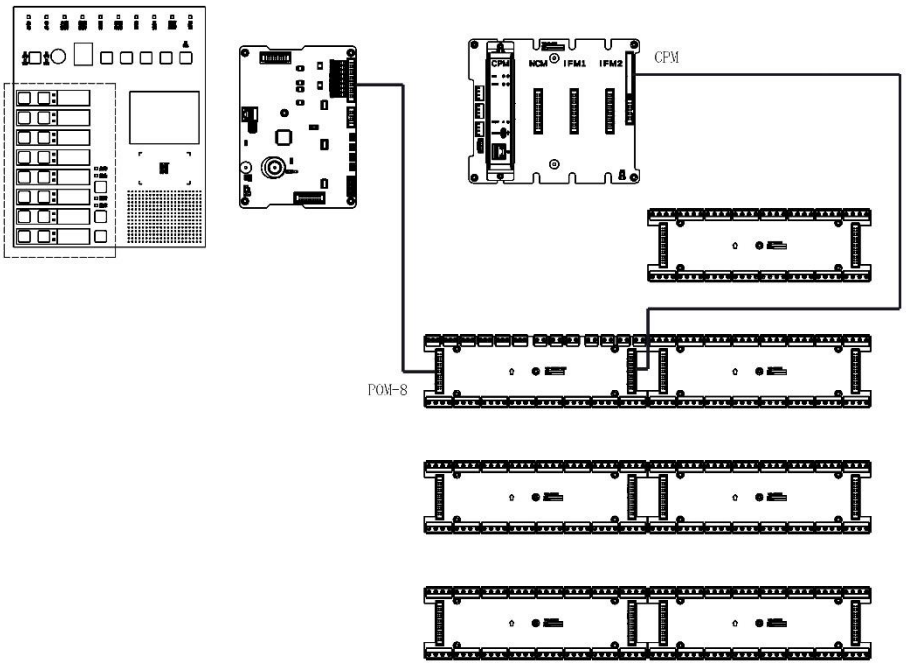
- All modules must be installed in the fixed slots indicated in the above figure.
- TBB and TBB-Core boards are fixed in the rack and must be installed in the designated positions indicated in the above figure.

Figure 2-4 POM-16 & TBB Wiring



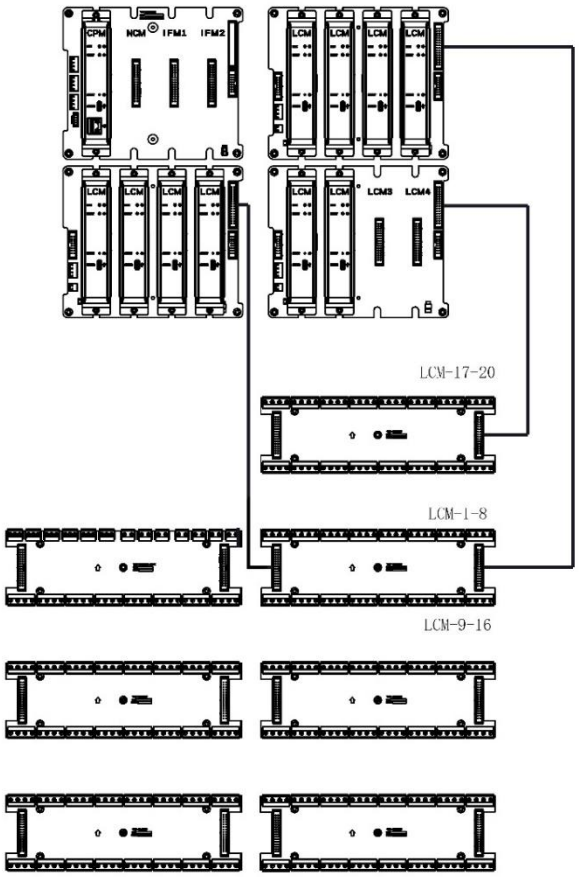
On the 3rd and 4th row, 4 TBBs for 4 POM-16 are located.

Figure 2-5 CPM & TBB Wiring



On the left side of the 2nd row, the only TBB-Core is installed. It is used to connect the CPM, POM-8, NCM and IFM, following on the right side is the TBB for LCM, loop 1-16.

Figure 2-6 LCM & TBB Wiring



On the 1st row, upper right corner, a TBB is installed for LCM modules, for loop 17 – 20.

Features

- Modular hardware & wiring
- Network Card
- 10-inch color graphic touchscreen display
- User management
- High compatibility with Honeywell products
- Rack cabinet
- Loop diagnostic tool
- FECBUS module

System Limitations

System expansion must take into consideration the following:

- The physical limitations of the cabinet configuration.

- The electrical limitations of the system power supply.
- The capacity of the secondary power source (standby batteries).

Compatible Accessories

The following accessories can be integrated with NFS3-3030:

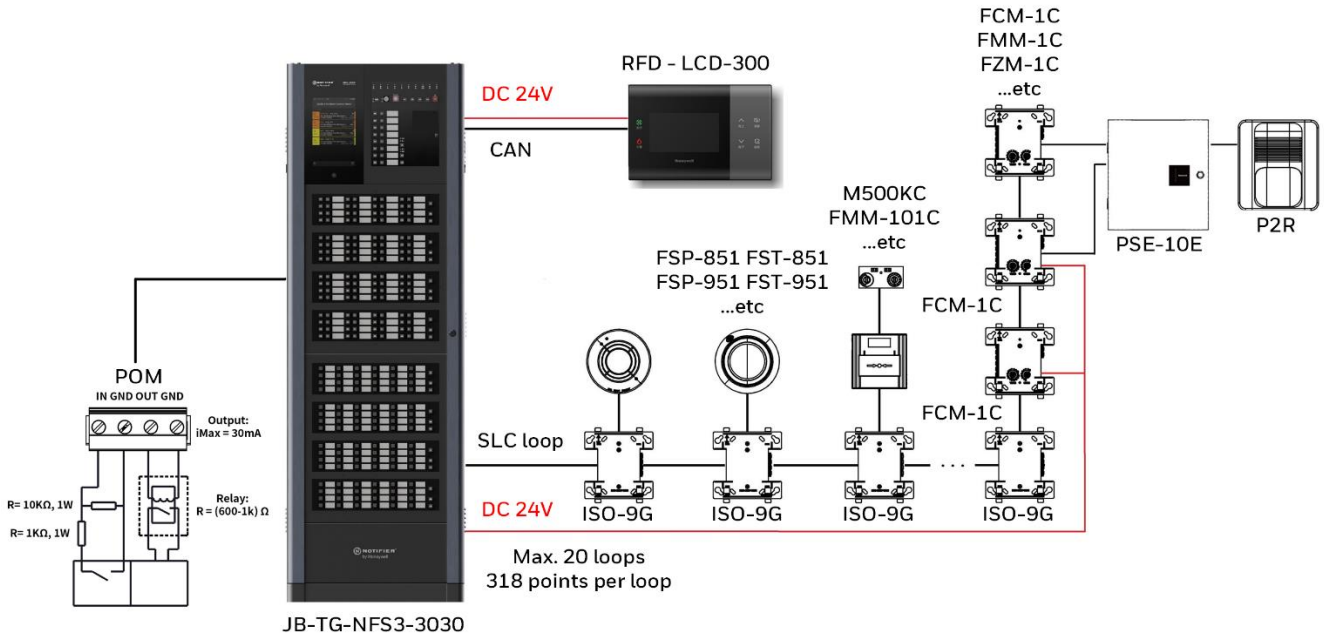
Table 2-3 NFS3-3030 Accessories

Type	Description	Model
851/951 Series Intelligent Detector	Addressable Photoelectric Smoke Detector	JTY-GD-FSP-851C
		FSP-951G
	Addressable Heat Detector	JTW-BD-FST-851C
		FST-951G
851 Series Module	Addressable Manual Pull Station	J-SAP-M-M500KC
	Monitor Module	JSM-FMM-1C
	Mini Monitor Module	JSM-FMM-101C
	Output Module	JKM-FCM-1C
Conventional Fire Accessories	Sound and Light Alarm	SYS-HSR (UL Certified)
	Sound and Light Alarm	P2R
Building Fire Annunciator	Remote Fire Display	LCD-300 for NFS3-3030
Detector Base	Detector base for 851/951 series intelligent detectors	B501

- The RFD LCD-300 is powered via external 24V DC.
- Each loop can be connected to 318 devices at most. A total of 20 loops are available for each controller.
- The SYS-HSR must be connected to the output module JKM-FCM-1C.

A connection figure is illustrated as follows:

Figure 2-7 Controller & Accessories Typology



Features Supported Under CCCF Mode

The following features are supported ONLY under the CCCF mode:

- The introduction of resound mechanism, allowing any device reporting a new event to reactivate other muted devices on the network.
- Optimization of the CPM, allowing it to display events received from other nodes on its own Remote Fire Display.
- ACM buttons' control over the loop output devices of remote controllers. This requires password input.
- Selection of working modes for logical areas to be effective through the user interface.
- Voice message as an option for prompt tone.
- Contamination simulation values obtained when a contamination fault is detected and reported by a smoke detector.
- Open-circuit fault detection by heat detectors.

CHAPTER

3 COMPONENTS & INSTALLATION

This chapter introduces NFS3-3030 components and installation procedures.

Standard Operation Panel

The Standard Operation Panel (SOP) is the operation panel installed on the upper right front panel of NFS3-3030 that allows the user to implement operations and check system status.

The SOP is illustrated as follows:

Figure 3-1 SOP Front Panel

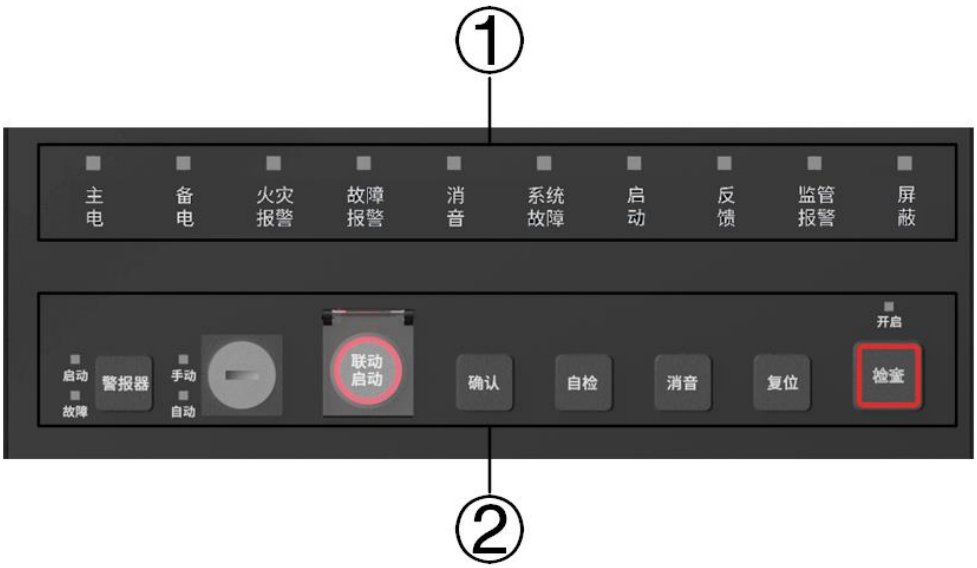


Table 3-1 SOP Components

Component	Description		
①	10 indicators, from left to right they are: • Mains Power • Backup Power • Fire Alarm	Mains Power	• Green, permanently on: Mains power up • Yellow, permanently on: Mains power fault
		Backup Power	• Green, permanently on: backup power up • Yellow, permanently on: backup power fault
		Fire Alarm	• Red, flashing: one or multiple unacknowledged fire

<table>
<tr><td rowspan="8"></td><td rowspan="8">Trouble Alarm
Mute
System Trouble
Output
Feedback
Supervisory
Disable</td><td></td><td>alarm events are detected</td></tr>
<tr><td>Trouble</td><td>Yellow, flashing: One or multiple unacknowledged system faults or loop device faults are detected</td></tr>
<tr><td>Mute</td><td>Yellow, permanently on: The controller is on mute. This indicator turns off if new event occurs</td></tr>
<tr><td>System Trouble</td><td>Yellow, permanently on: A CPU trouble is detected</td></tr>
<tr><td>Output</td><td>Red, flashing: one or multiple unacknowledged output events are detected</td></tr>
<tr><td>Feedback</td><td>Red, permanently on: One or multiple feedback events are detected</td></tr>
<tr><td>Supervisory</td><td>Red, flashing: One or multiple unacknowledged supervisory events are detected</td></tr>
<tr><td>Point Disable</td><td>Yellow, flashing: One or multiple loop devices are isolated</td></tr>
<tr><td rowspan="8">②</td><td rowspan="8">8 operation buttons, from left to right they are:
Siren
Status Switch Key
Linkage Activation
Acknowledge
Self-check
Mute
Reset
Check</td><td colspan="2">Siren: Press this button to manually activate and deactivate the control modules for audible and visual alarms, audible and visual alarms (CBE), alarm bells, light alarms, and audible alarms.
The 2 LED indicators on the left are activation and fault LEDs:
Output: Red, permanently on: NAC devices are activated
Trouble: Yellow, permanently on: NAC devices fault</td></tr>
<tr><td colspan="2">Status Switch Key: Switch manual/automatic status of the controller.
The 2 LED indicators on the left are Manual & Automatic LEDs:
Manual: Green, permanently on: The controller is in Manual Control status. When the controller is In automatic control status, this LED turns OFF.
Automatic: Green, permanently on: The controller is in Automatic Control status. When the controller is In manual control status, this LED turns OFF.</td></tr>
<tr><td colspan="2">Collaborative Activation: A transparent cover is installed on this button to prevent misoperation. In Manual Control status, press this button to activate predefined control signal triggered by fire alarms.</td></tr>
<tr><td colspan="2">Acknowledge: To acknowledge an event.</td></tr>
<tr><td colspan="2">Self-check: Press this button, the system will be in self-checking status. After the check is complete, the controller exits the status automatically.</td></tr>
<tr><td colspan="2">Mute: Press this button to manually mute sound signal of the controller.</td></tr>
<tr><td colspan="2">Reset: Press this key to clear all latched alarms and other events as well as turn off event LEDs. If alarms or other events exist after reset, they will resound the system and relight the LEDs</td></tr>
<tr><td colspan="2">Check: The Check button is used to view the following:
All the engineering designs connected to the controller
the device categories and the total number of devices in normal, trouble and disabled status.
An indicator is set above this check button. When the controller is in the checking status, the indicator lights up green, and when it exits the checking status, the indicator goes out.</td></tr>
</table>

SOP PCB

Figure 3-2 SOP PCB

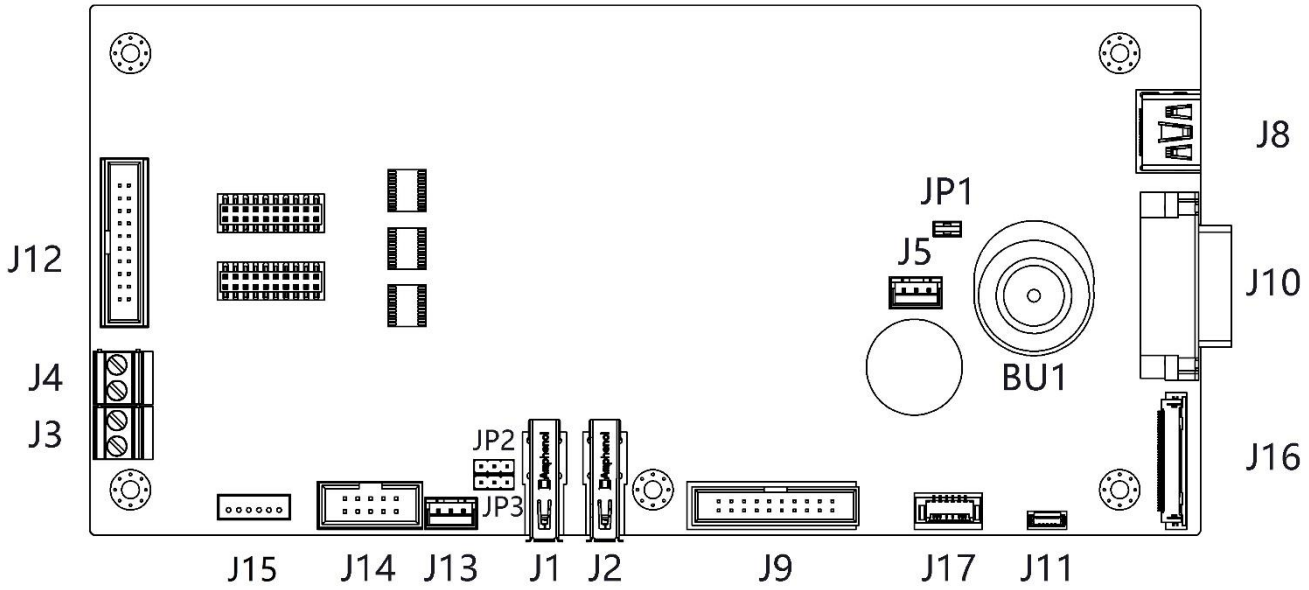
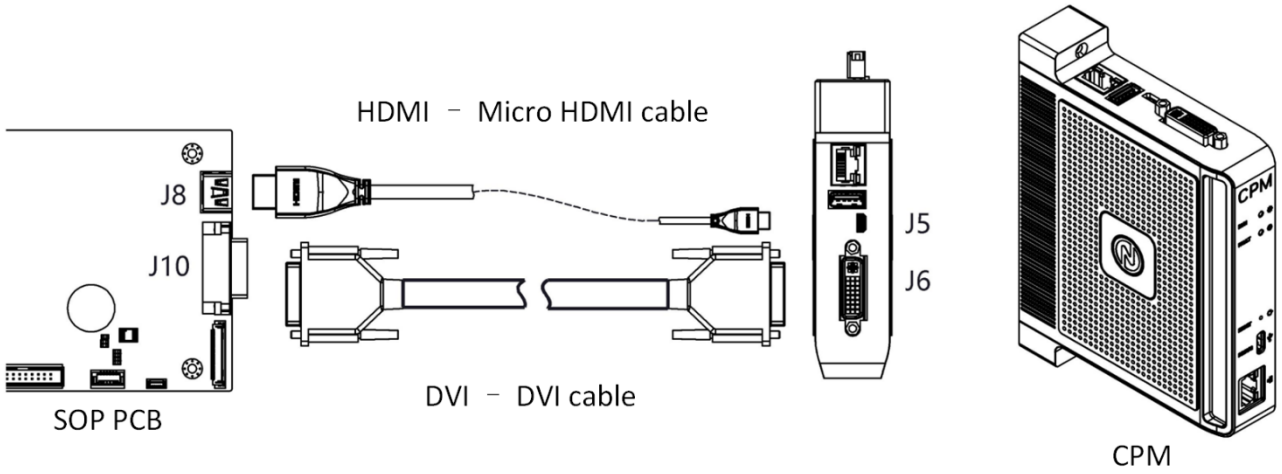


Table 3-2 SOP Terminals

Terminal	Description
J1 & J2	USB1 & USB2
J3	Speaker (+, -)
J5	Status Switch Key
J8	HDMI to connect the CPM
J9	Interface to connect the POM-8
J10	DVI to connect the CPM
J11	Fingerprint Lock
J12	NFC CAT1
J13	Printer power
J14	Printer data communication
J16	LCD screen
J17	Touch screen
BU1	To install the Buzzer
JP2	Jumper for printer. To enable the printer, close the rightmost two terminals of the jumper
JP3	Jumper for printer. To enable the printer, close the rightmost two terminals of the jumper

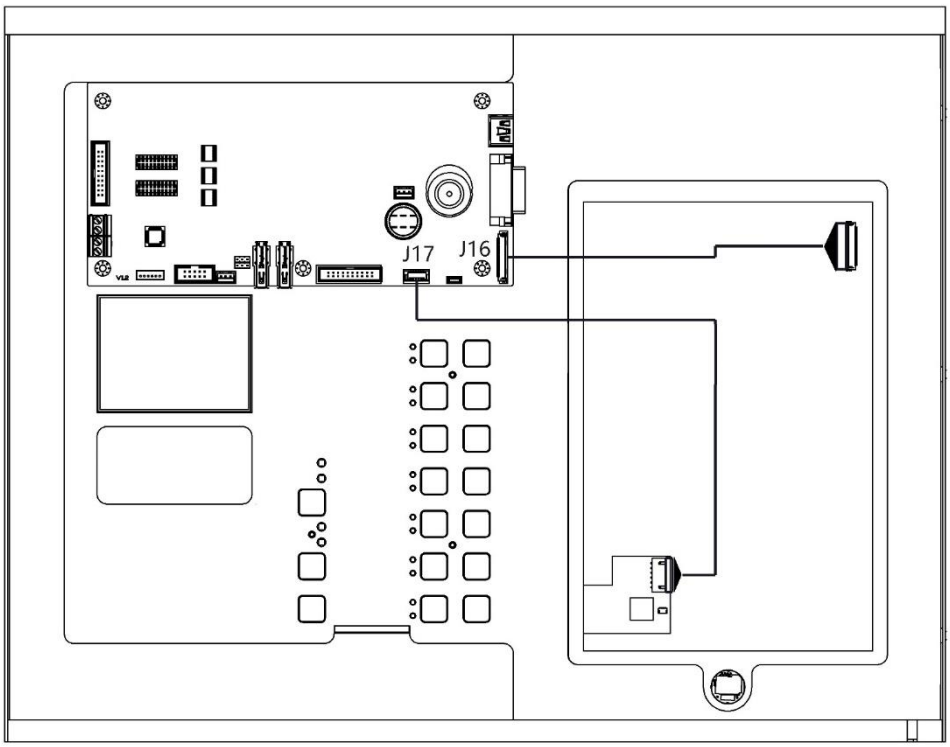
Figure 3-3 Wiring SOP and CPM



To connect the SOP PCB board to the CPM, follow these steps:

Step 1. Connect J8 on the SOP board to J5 on the CPM using an HDMI to Micro HDMI cable.
Step 2. Connect J10 on the SOP board to J6 on the CPM using a DVI to DVI cable.

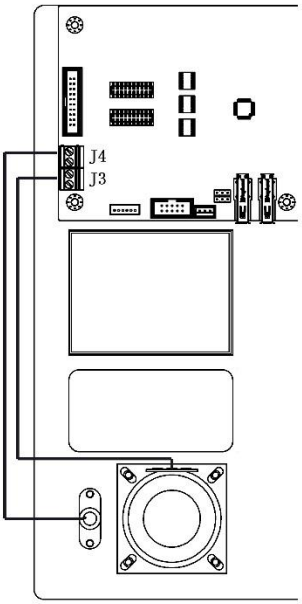
Figure 3-4 SOP and DPM



To connect the SOP PCB board to the DPM, follow these steps:

Step 1. Connect J16 on the SOP board to the LCD screen.
Step 2. Connect J17 on the SOP board to the touch screen.

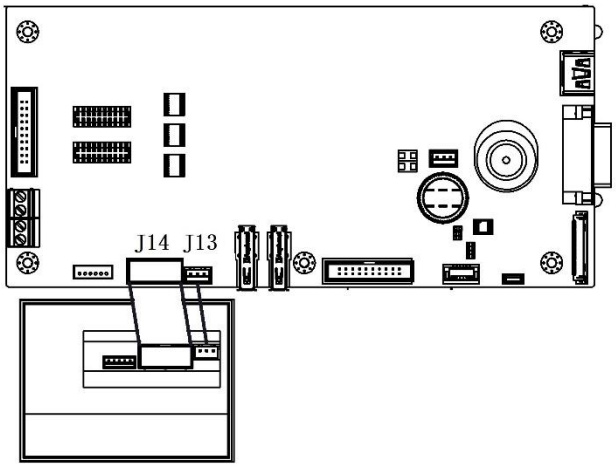
Figure 3-5 Wiring SOP and Buzzer



To connect the SOP PCB board with the buzzer, follow these steps:

Step 1. Connect J3 on the SOP board to the speaker.

Figure 3-6 Wiring SOP and Printer



To connect the SOP PCB board with the printer, follow these steps:

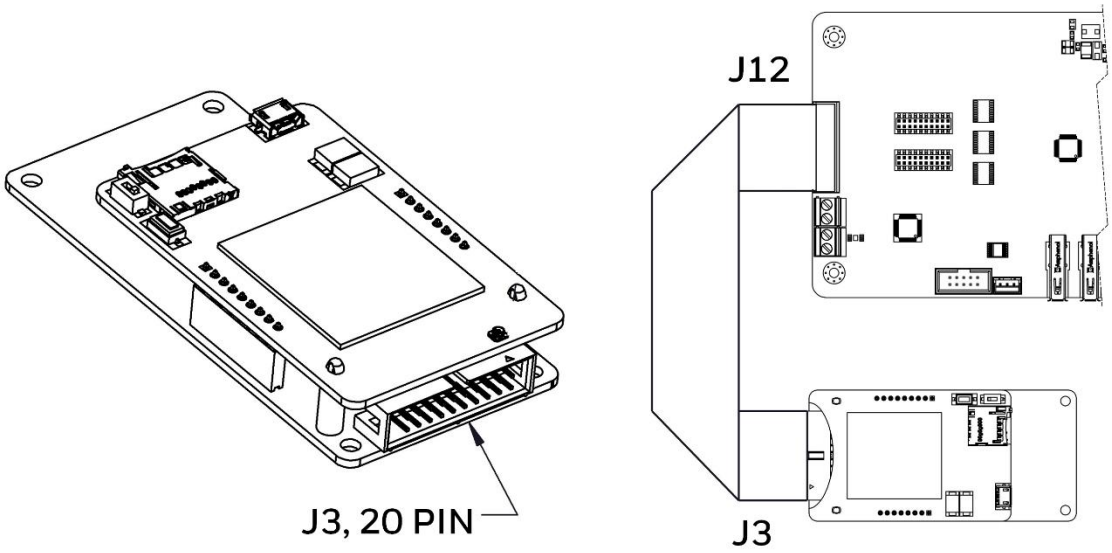
Step 1. Connect J13 on the SOP board to the printer power supply (GND, NC, 5V).
Step 2. Connect J14 on the SOP board to the printer for signal.

NFC Card

The NFC Card (Near Field Communication Card, Part No. NFC3-3030) allows short-range communication between the controller and an identity card. A user is allowed to swipe the identity card for different access levels without the need to enter password.

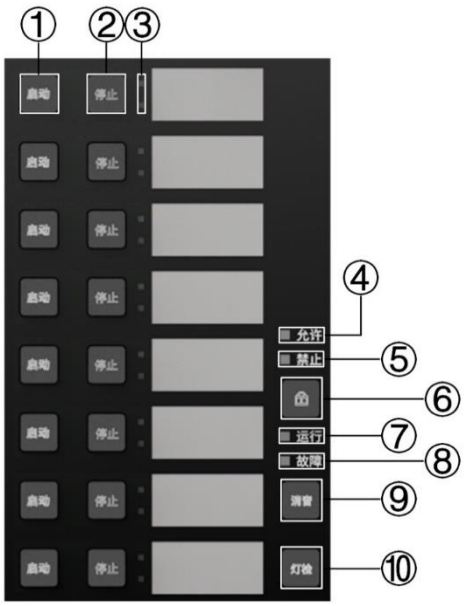
Connect J3 terminals of NFC Card to the J12 terminals of SOP.

Figure 3-7 NFC – SOP Connection



Protective Operation Module – 8 (Part No. POM3-8)

Figure 3-8 POM-8 Operation Panel



The Protective Operation Module – 8 (hereafter referred as POM-8) is intelligent multi-line control device that can work independently to monitor status of circuits. Each channel provides 1 24V control output (30mA) and 1 signal feedback line. Control line status are determined by detecting status of circuits. The following status can be monitored and reported:

- Normal
- Open circuit
- Short circuit

A POM-8 is installed by factory, at the top of the NFS3-3030 front panel. POM-16 are expansion modules that can be installed on the front side of NFS3-3030 rack.

Table 3-3 POM8 Operation Panel

Component	Description
①	8 buttons for channel power on. Once pressed, the channel is supplied with 24V. The enablement LED indicator lights up.
②	8 buttons for channel power off. Once pressed, the channel 24V power is off. The disablement LED indicator lights up.
③	8 sets of channel LED indicators, each consisting of 2 LEDs. For each channel: • The LED above: Channel Output/Feedback LED • The LED below: Channel Trouble LED
④	Button enablement LED. When the Button enablement key is pressed, all buttons on the operation panel are unlocked. This LED lights up in green.
⑤	Button disablement LED. When the Button disablement key is pressed, all buttons on the operation panel are locked. This LED lights up in yellow.
⑥	Button enablement/disablement key. Press to lock/unlock all buttons on the operation panel.
⑦	System operation status LED. When it lights up, system is operating normally.
⑧	System trouble status LED. When it lights up , one or multiple troubles are detected.
⑨	Buzzer Mute. When the POM-8 fails to connect the CPM, the buzzer on the POM-8 is triggered. Press this button to mute the buzzer.
⑩	Lamp test button. Press to implement LED lamp test for the operation panel.

POM-8 PCB (VMP-POM-8)

Figure 3-9 POM-8 PCB

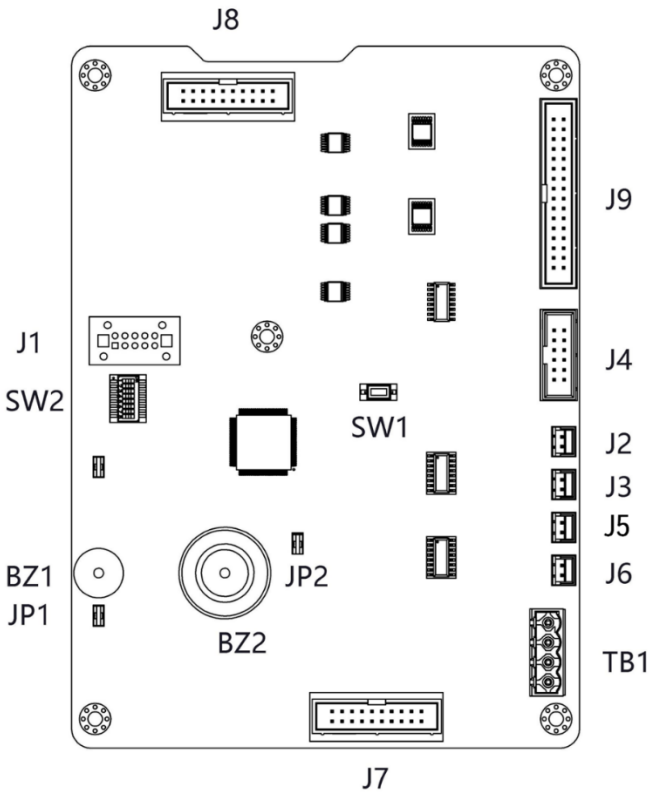


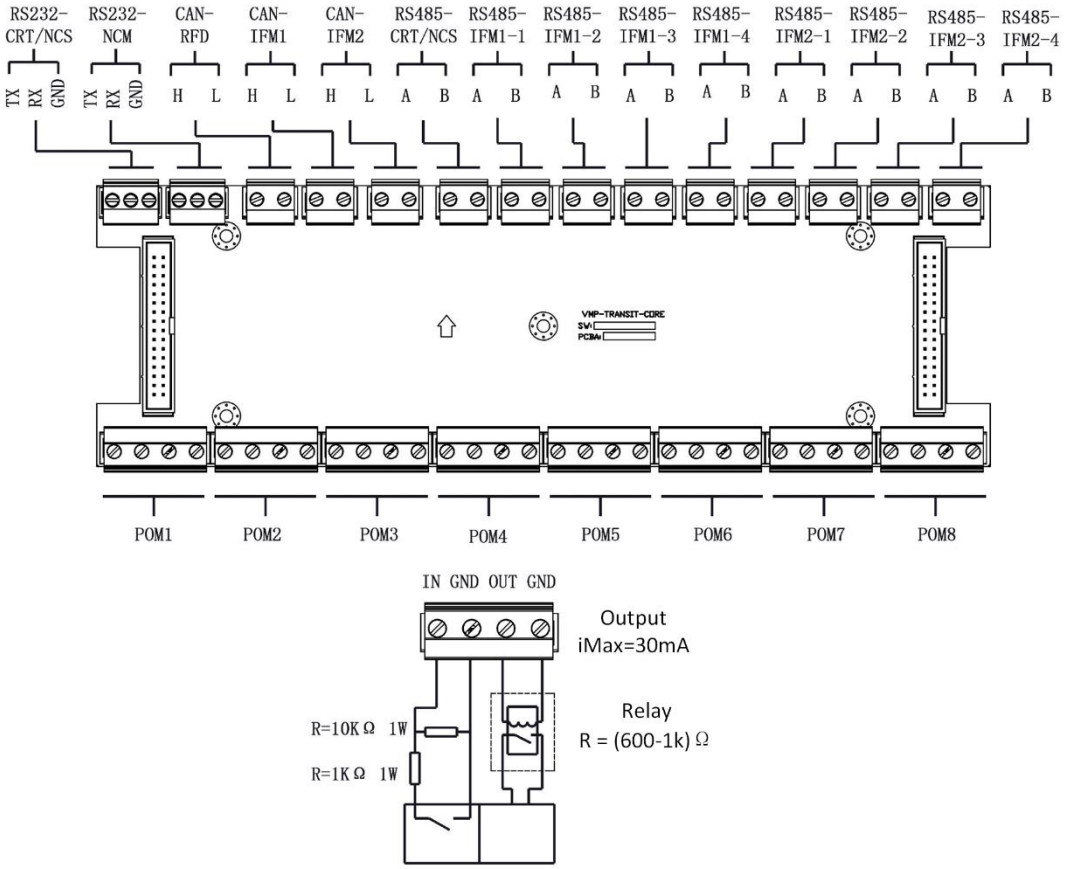
Table 3-4 POM-8 Terminals

Terminal	Description
J1	Debug interface
J2/J3/J5/J6	CAN interface to connect POM-16 (CANH & CANL)
J4	CAN interface to connect the MB-POM
J7	Interface to connect the ACM-24
J8	Interface to connect the SOP
J9	POM-8 Output to connect the TBB-Core
SW1	Reset button
SW2	8 position DIP switch that adopts binary numbering to set POM address. With ON representing 1 and OFF representing 0. From position 1 to 8 the code is 11100000. Set to 0111 for POM-8.
JP1	Button tone enablement
JP2	Trouble & Start-up beep
JP3	The jumper for CAN End-of-Line Resistor. When ACM-24 & POM-16 are not installed in the system, close this jumper.
BZ1	Jumper for button tone enablement. Close this jumper to enable button tone.
BZ2	Jumper for sound alarm enablement. Close this jumper to enable sound alarm.

POM-8 Wiring with the TBB-Core

The POM-8 must be connected to the TBB-Core as illustrated in the following figure:

Figure 3-10 POM-8 Wiring with the TBB-Core



Protective Operation Module – 16

The Protective Operation Module – 16 (hereafter referred as POM-16) is the expansion module for POM-8, with identical function but double-numbered operation buttons and LEDs. For a NFS3-3030, a maximum of 4 POM-16 can be added as per requirement.

Each POM-16 is composed of the following:

- An operation panel installed at the front panel of the rack
- A plug-in module mounted to MB-POM
- A TBB that connects the terminals for the POM-16

POM-16 Operation Panel

The POM-16 operation panel is equipped with 16 sets of buttons and LEDs for users to perform various operations. The panel is illustrated below:

Figure 3-11 POM-16 Operation Panel

Table 3-5 POM-16 Operation Panel Components

Component	Description
①	16 buttons for channel power on. Once pressed, the channel supplied with 24V power. The enablement LED indicator lights up.
②	16 buttons for channel power off. Once pressed, the channel 24V power is off. The disablement LED indicator lights up.
③	16 channel power on & off LED indicators.
④	Button enablement LED. When the Button enablement key is pressed, all buttons on the operation panel are unlocked. This LED lights up in green.
⑤	Button disablement LED. When the Button disablement key is pressed, all buttons on the operation panel are locked. This LED lights up in yellow.
⑥	Button enablement/disablement key. Press to lock/unlock all buttons on the operation panel.
⑦	System operation status LED. When it lights up, system is operating normally.
⑧	System trouble status LED. When it lights up , one or multiple troubles are detected.
⑨	Buzzer Mute. When the POM-16 fails to connect the CPM, the buzzer on the POM-16 is triggered. Press this button to mute the buzzer.
⑩	Lamp test button. Press to implement LED lamp test for the operation panel.

POM-16 PCB

Figure 3-12 POM-16 PCB

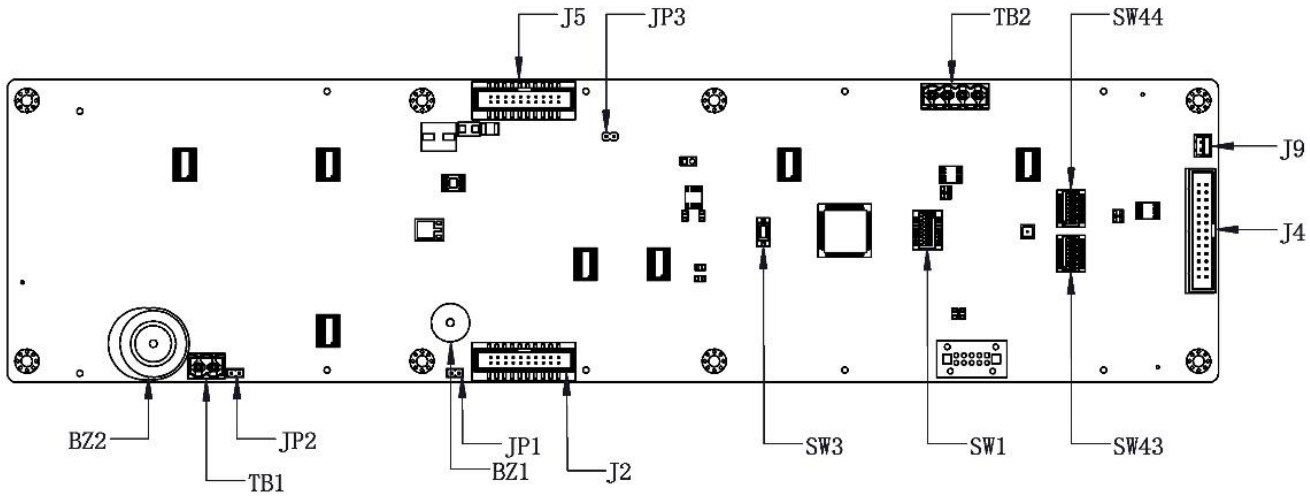


Table 3-6 POM-16 Terminals

Terminal	Description
J2	Power and communication interface. It is connected to next POM-16 (if any)
J5	Power and communication interface . It is connected to last POM-16 (if any)
J9	Interface to POM-8
TB1	Interface to external buzzer
TB2	Power and communication interface (for test purpose)
SW1	4 position DIP switch that adopts binary numbering to set address. With ON representing 1 and OFF representing 0. From position 1 to 4, 1 is the lowest position when 4 is the highest. Its address = N+1.
SW3	Reset button
JP3	The jumper for CAN End-of-Line Resistor. It should be closed when the ACM-24 is not installed in the system.

POM-IO & IOE

To install a POM-16 operation panel on the front of the rack, a corresponding POM-16 module comprising of POM-IO and POM-IOE is required inside the rack. This module can be easily inserted onto the MB-POM using 2 countersunk screws. It includes indicators, a reset key, and a debug interface for convenient operation.

Each NFS3-3030 can support up to 4 POM-16 operation panels, which can be installed on the POM-MB.

Figure 3-13 POM-IO & IOE

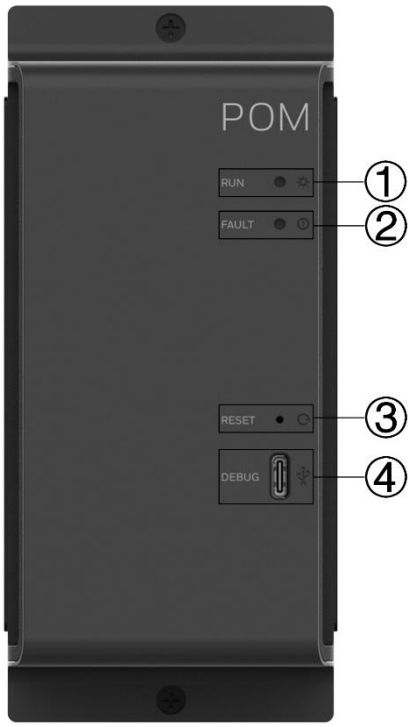


Table 3-7 POM-16 Module Card Components

Component	Description
①	Operation status LED indicator
②	Fault status LED indicator
③	SW1, reset key
④	J7, Type-C interface for commissioning

Table 3-8 POM-16 Electrical Specification

Item	Value
POM Output	24VDC / 30mA MAX for each channel
POM Input	1.3mA MAX @ 12VDC MAX

MB-POM

Figure 3-14 MB-POM

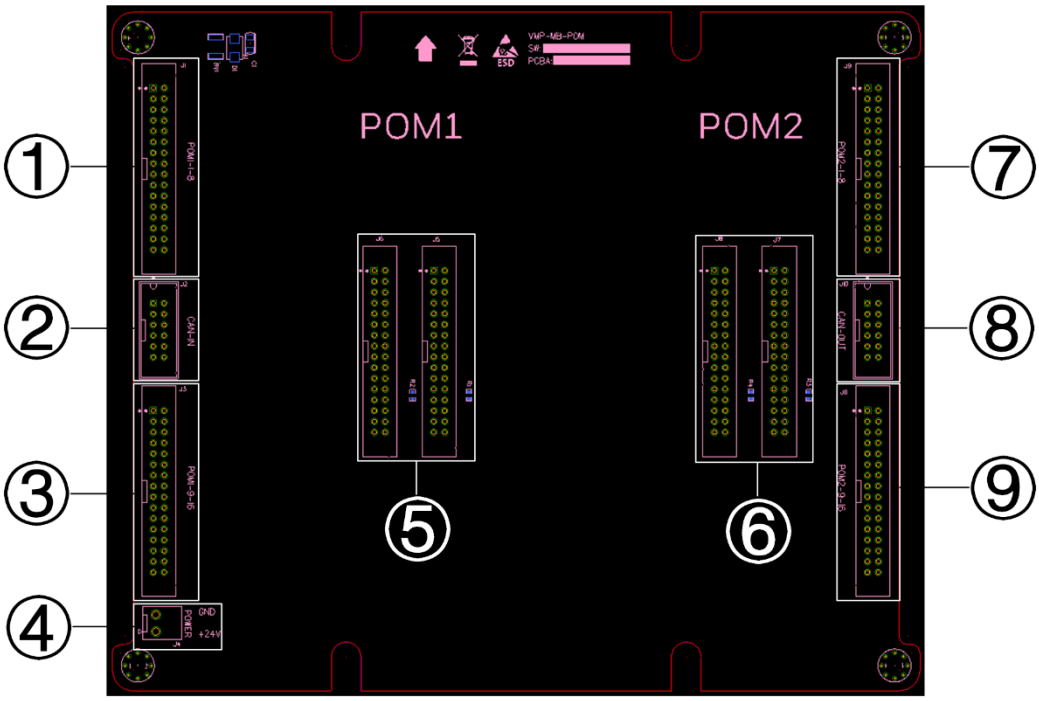


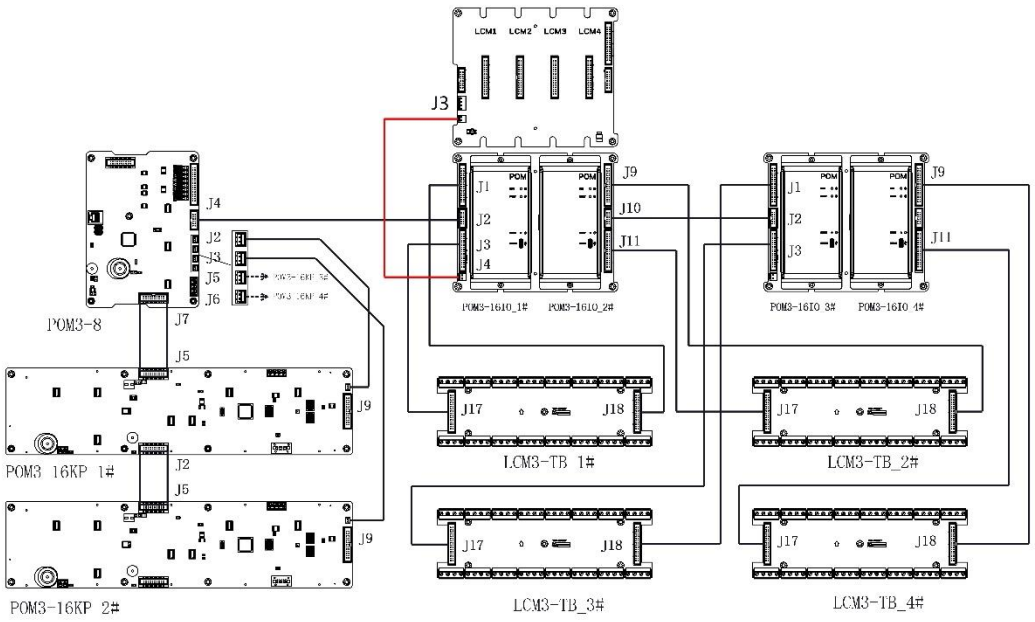
Table 3-9 MB-POM Terminals

Terminal	Description
①	J1, Loop 1-8 for POM1
②	J2, 4 sets of CAN bus used to connect the POM-8
③	J3, Loop 9-16 for POM1
④	J4, power port used to connect the MB-LCM
⑤	J5 and J6 for POM1, J5 as main slot
⑥	J7 and J8 for POM2, J7 as main slot
⑦	J9, Loop 1-8 for POM2
⑧	J10, MB expansion port. It is connected to the MB-POM on the right(if any)
⑨	J11, Loop 9-16 for POM2

Attaching the POM-16 & POM-8

This section describes POM-16 & POM-8 connection with NFS3-3030 components.

Figure 3-15 POM-16 Wiring with POM-8



POM-16 PCB boards are wired as follows:

To connect POM-16 PCB boards to the POM-8 PCB, use their J9 connectors. The POM-8 has four connectors for POM-16 boards: J2, J3, J5, and J6. Connect POM-16 boards to these ports in ascending numerical order.

The first POM-16's J5 should be connected to the POM-8's J7 connector. For subsequent POM-16 boards, use J5 to connect to the last POM-16.

MB-POM has two connectors for POM-16 boards: J2 and J10. Each MB-POM supports two POM-16 boards, which must be connected to two TBBs each.

Each POM-MB can accommodate two POM-16 modules: POM1 on the left and POM2 on the right. To connect POM1 to the POM-MB, plug its J17 into J1 and its J18 into J3 on the POM-MB. For POM2, plug its J17 into J9 and its J18 into J11 on the POM-MB.

Finally, to connect an MB-LCM to MB-POM, use the J4 connector on MB-POM to connect to MB-LCM's J3 connector.

Annunciate Control Module-24

An Annunciate Control Module-24 is the intelligent multi-line linkage operation panel equipped with 24 LED indicators and operation buttons. You can control and monitor the output module on each loop manually by pressing corresponding operation button. The LED indicator will report trouble status of the loop accordingly.

Figure 3-16 ACM-24 Panel

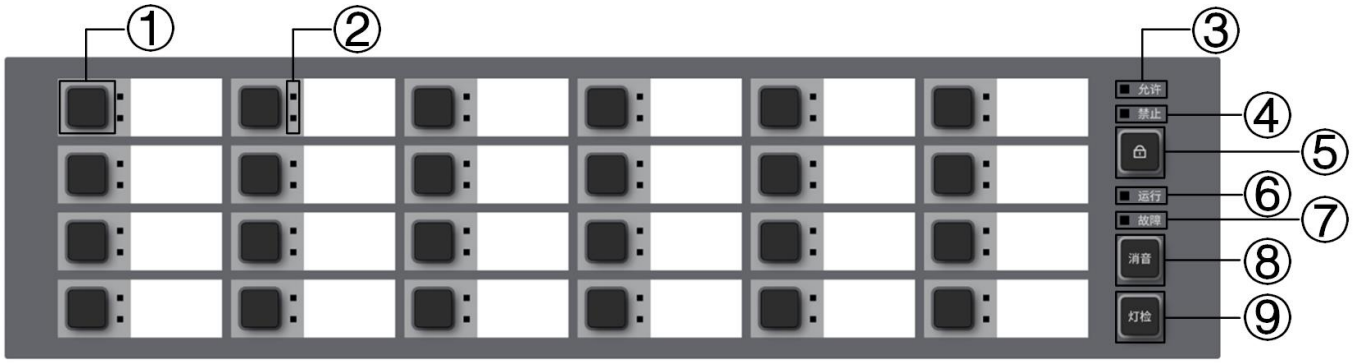


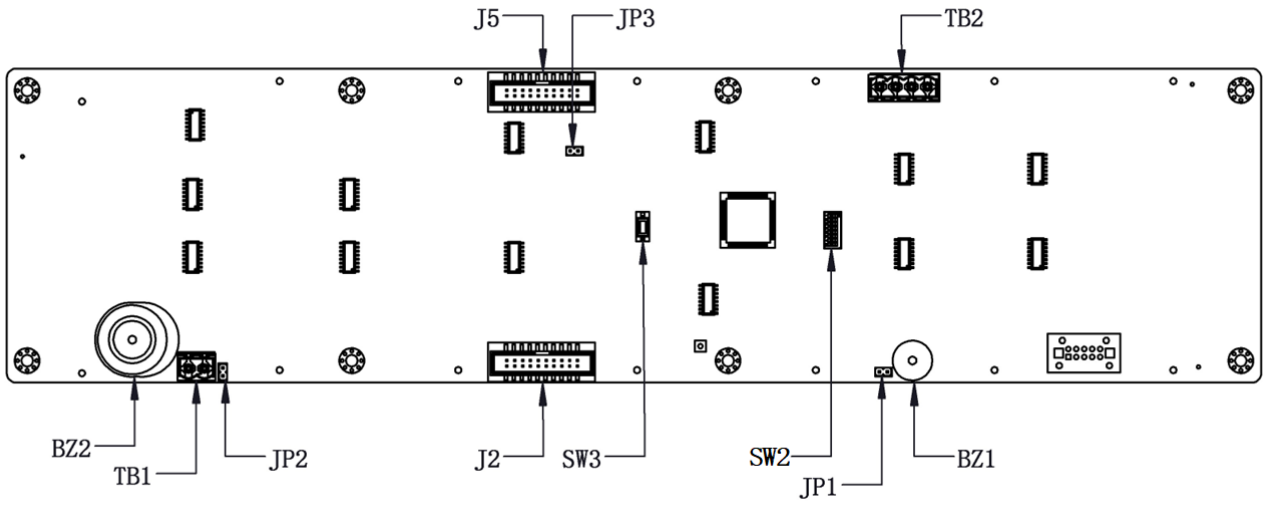
Table 3-10 ACM-24 Panel

Component	Description
①	Manual button & button indicator x 24, press to execute pre-configured operations. Each button is equipped with an indicator located on the upper left, providing visual feedback to indicate whether the button has been pressed. Button indicator: • Permanently on: The button has been pressed, and the module is activated successfully. • Flashing: When the module is activated, press this button to deactivate the module. This indicator will then flash until the system is reset. 
②	• Output LED x 24. This LED is for output module. When the output module is on and no feedback event is reported within 10s, this indicator flashes. When a feedback event is reported, it lights up permanently. If it lights up yellow, the corresponding device is in trouble. • Feedback LED (Feedback or having a fault) x 24. The feedback LED lights up when a feedback event is reported for the device. If this LED lights up yellow, the corresponding device is in trouble.
③	Button enablement LED. When the Button enablement key is pressed, all buttons on the operation panel are unlocked. This LED lights up in green.
④	Button disablement LED. When the Button disablement key is pressed, all buttons on the operation panel are locked. This LED lights up in yellow.
⑤	Button enablement/disablement key. Press to lock/unlock all buttons on the operation panel.

⑥	System operation status LED. When it is on, system is operating normally
⑦	System fault status LED. When it is on, one or multiple faults are detected
⑧	Mute button. Push to mute the system
⑨	Lamp test button. Push to implement LED lamp test for the device

At maximum, 4 ACM-24 can be installed as expansion modules on a NFS3-3030 as per your requirement.

Figure 3-17 ACM PCB



The following tables list ACM-24 terminals & jumpers:

Table 3-11 ACM-24 Terminals

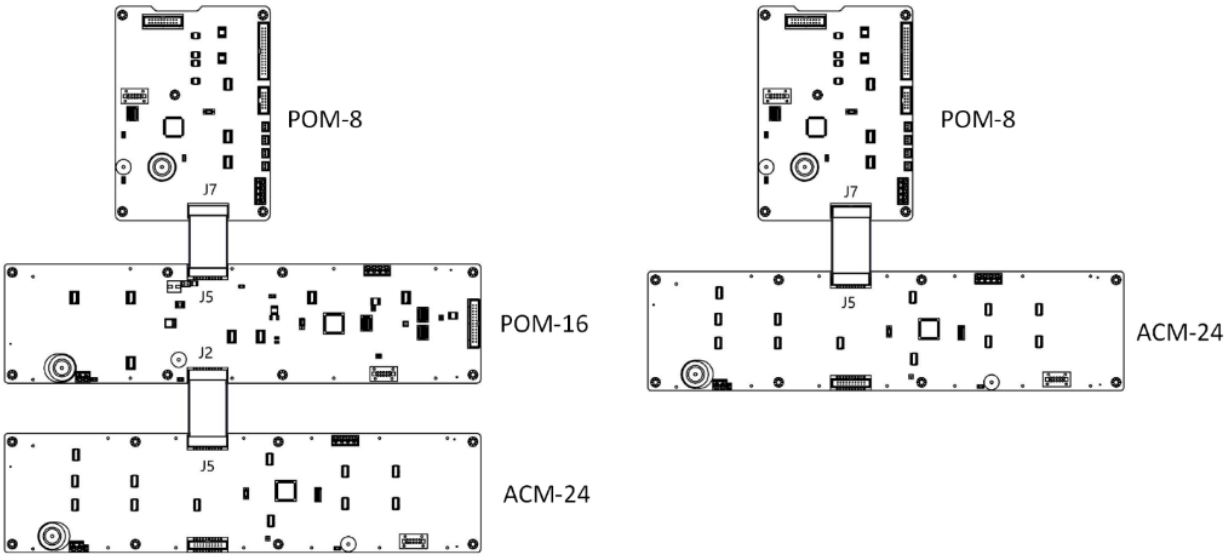
Terminal	Description
J2	Power and communication interface. It is connected to next ACM-24 (if any)
J5	Power and communication interface . It is connected to last ACM-24 (if any)
J6	Debug interface
TB1	Interface to external buzzer
TB2	Power and communication interface (for test purpose)
SW2	DIP switch
SW3	Reset button

Table 3-12 ACM-24 Jumpers

Jumpers	Description
JP1	Jumper for button tone enablement. Close this jumper to enable button tone.
JP2	Jumper for sound alarm enablement. Close this jumper to enable sound alarm.
JP3	The jumper for CAN End-of-Resistor. Close this jumper if this is the last ACM-24 in the chain.

Attaching POM to ACM-24

Figure 3-18 POM Connection with ACM-24



POM-8 & POM-16 are connected to ACM as follows:

- POM-8: Connect its J7 connector to J5 connector on ACM-24.
- POM-16: Connect POM-8 J7 connector to J5 connector on POM-16 (DXKZ-16), on which J2 is connected to ACM-24, J5.

Central Process Module

The Central Process Module (CPM) is the central processing unit for NFS3-3030. It is connected to various components to implement processing of data and monitoring & operation.

CPM Panels

On CPM front panel and top panel there are indicators and interfaces.

Figure 3-19 CPM Front Panel

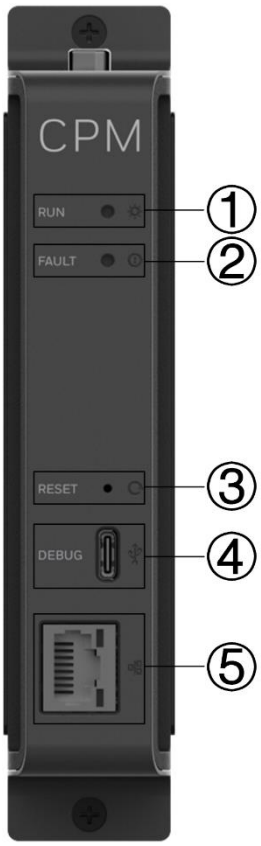


Figure 3-20 CPM Top Panel

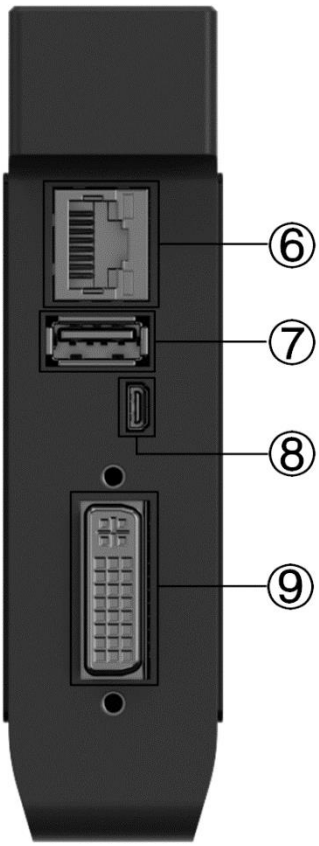


Table 3-13 CPM Components

Component	Description
①	Operation LED indicator, green and permanently on when CPM is working normally.
②	Fault status LED indicator, yellow and permanently on when CPM is in fault.
③	SW3, the reset key.
④	J8, Type-C debug interface for downloading programs and debugging.
⑤	J7, RJ45 interface for VFT and debug.
⑥	J3, RJ45 interface, reserved.
⑦	J4, USB-A interface, it is used to connect the Data Storage Module (DSM).
⑧	J5, Mini HDMI interface, it is used to connect the Standard Operation Panel (SOP).
⑨	J6, DVI interface, it is used to connect the Standard Operation Panel(SOP).

MB-CORE

Figure 3-21 MB-Core

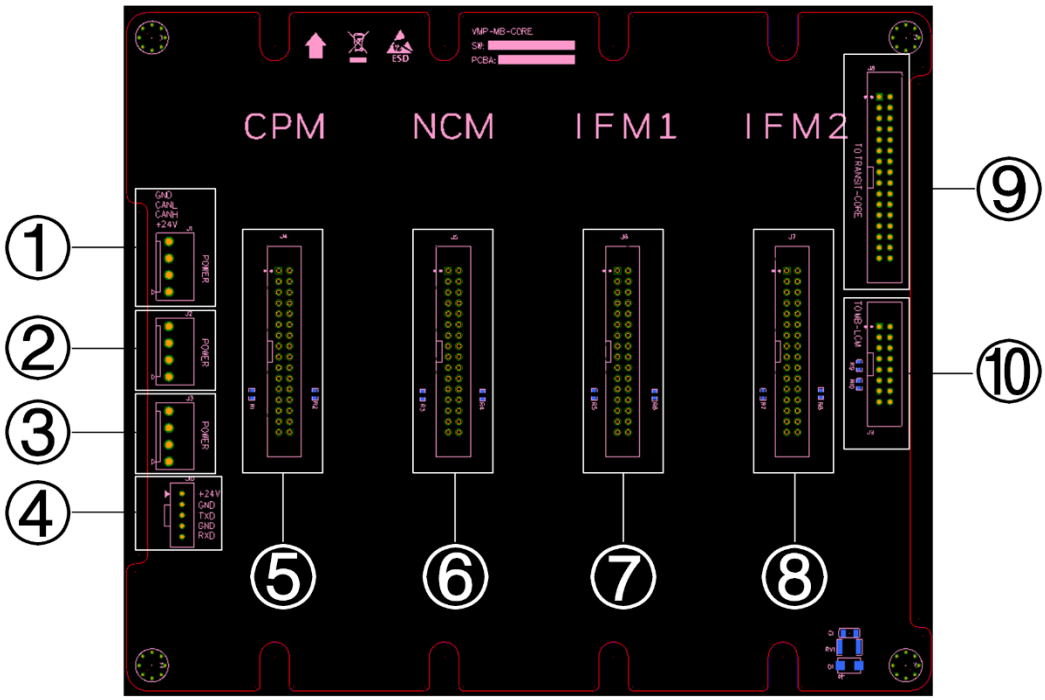


Table 3-14 MB-Core Terminals

Terminal	Description
①	J1, power and internal CAN bus
②	J2, power and internal CAN bus
③	J3, power and internal CAN bus
④	J10, network card connector
⑤	CPM slot
⑥	NCM slot
⑦	IFM slot x 2
⑧	IFM slot
⑨	J8, communication port. It has RS232, RS485 and CAN bus for CPM, NCM and IFM. It is connected to the TBB-CORE
⑩	J9, MB expansion port. It is connected to the MB-LCM on the right of MB-CORE.

Loop Control Module

The Loop Control Module (LCM) is used to connect addressable loop devices such as detectors, modules and manual pull station, etc. Each NFS3-3030 fire alarm panel can be connected to a maximum of 10 LCMs, each of which supports 2 loops and a total of 20 loops are supported. Each loop supports a maximum of 318 addressable loop devices based on the FLASHSCAN protocol. Loops supports Class B loop connection.

Note: A single communication protocol is supported per loop.

A LCM communicates with the CPM via MB-LCM. Its address is determined by the slot it takes in the MB-LCM and does not need to be set manually.

LCM Panel

The LCM front panel is illustrated as follows:

Figure 3-22 LCM Panel

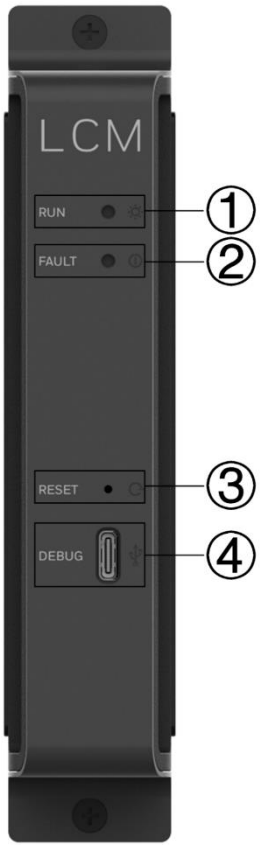


Table 3-15 LCM Components

Terminal	Description
①	Operation LED indicator, green and permanently on when the LCM is working normally.
②	Fault status LED indicator, yellow and permanently on when the LCM is in fault.
③	SW1, the reset key.
④	J3, Type-C debug interface for downloading programs and debugging.

Table 3-16 LCM Electrical Specification

Item	Value
LCM Output	27 VDC / 135mA rated, 320mA MAX for each loop

MB-LCM

Figure 3-23 MB-LCM

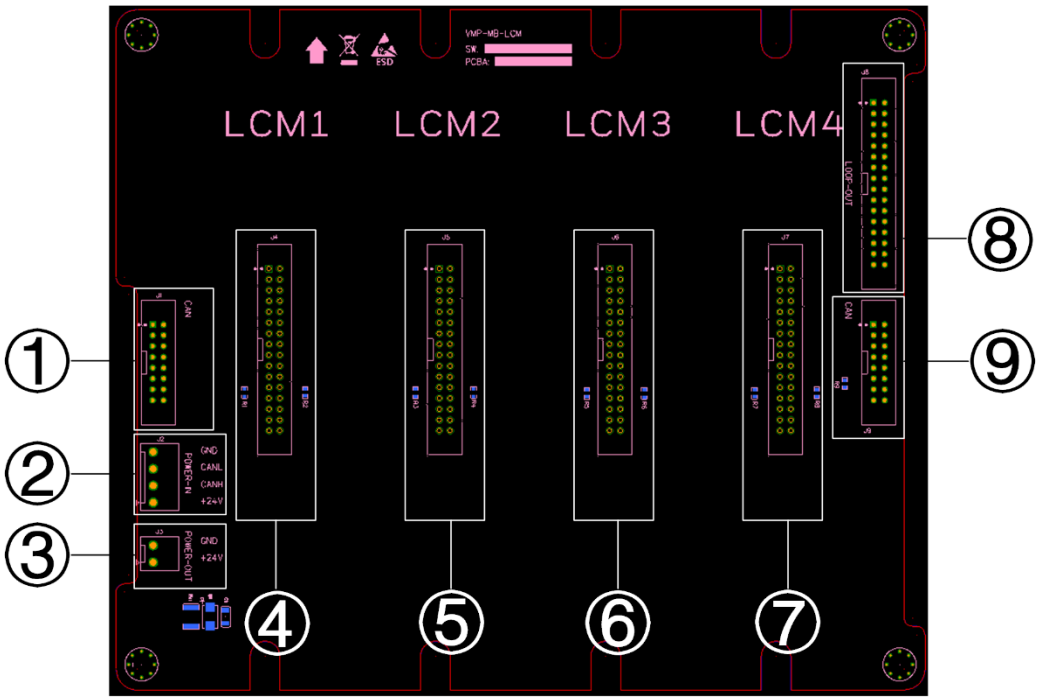


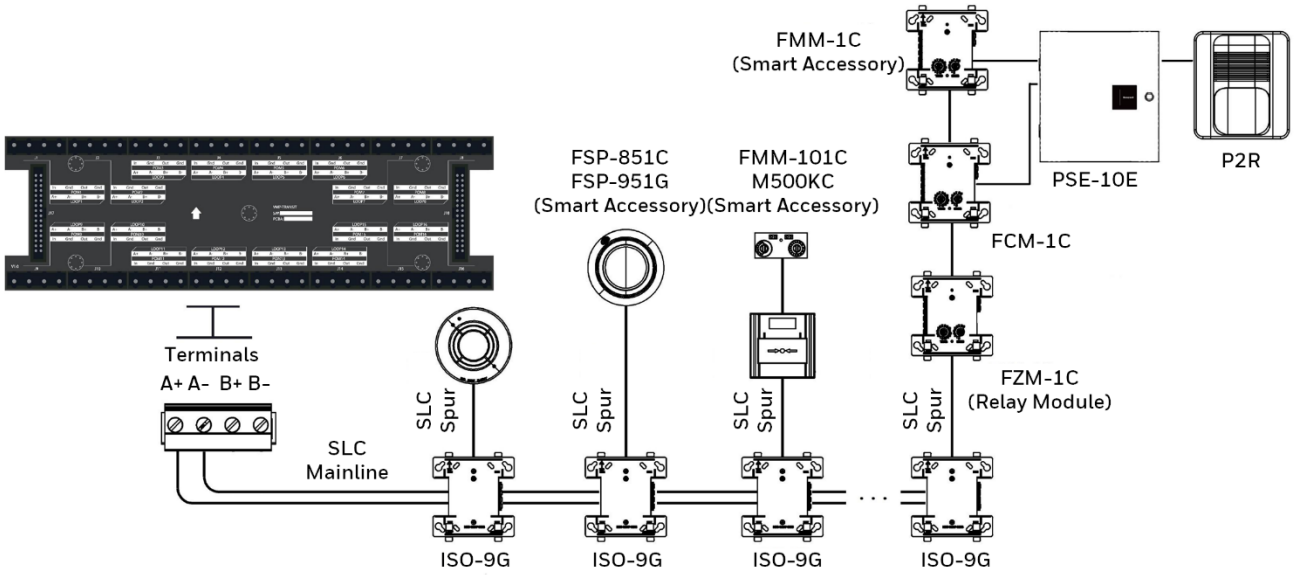
Table 3-17 MB-LCM Terminals

Terminal	Description
①	J1, MB expansion port. It is connected to the MB-LCM or MB-CORE
②	J2, power and internal CAN bus. It is connected to the MB-CORE
③	J3, power supply. It is connected to the MB-POM.
④	J4, LCM1/LCM5/LCM9 slot
⑤	J5, LCM2/LCM6/LCM10 slot
⑥	J6, LCM3/LCM7 slot
⑦	J7, LCM4/LCM8 slot
⑧	J8, loop output. A+, A-, B+, B- for 4 loops. It is connected to the TBB.
⑨	J9, MB expansion port. It is connected to the next MB-LCM.

Signaling Line Circuit (SLC) Wiring

A Signaling Line Circuit (SLC) can be wired to meet the requirements of NFPA Class B circuits as illustrated below:

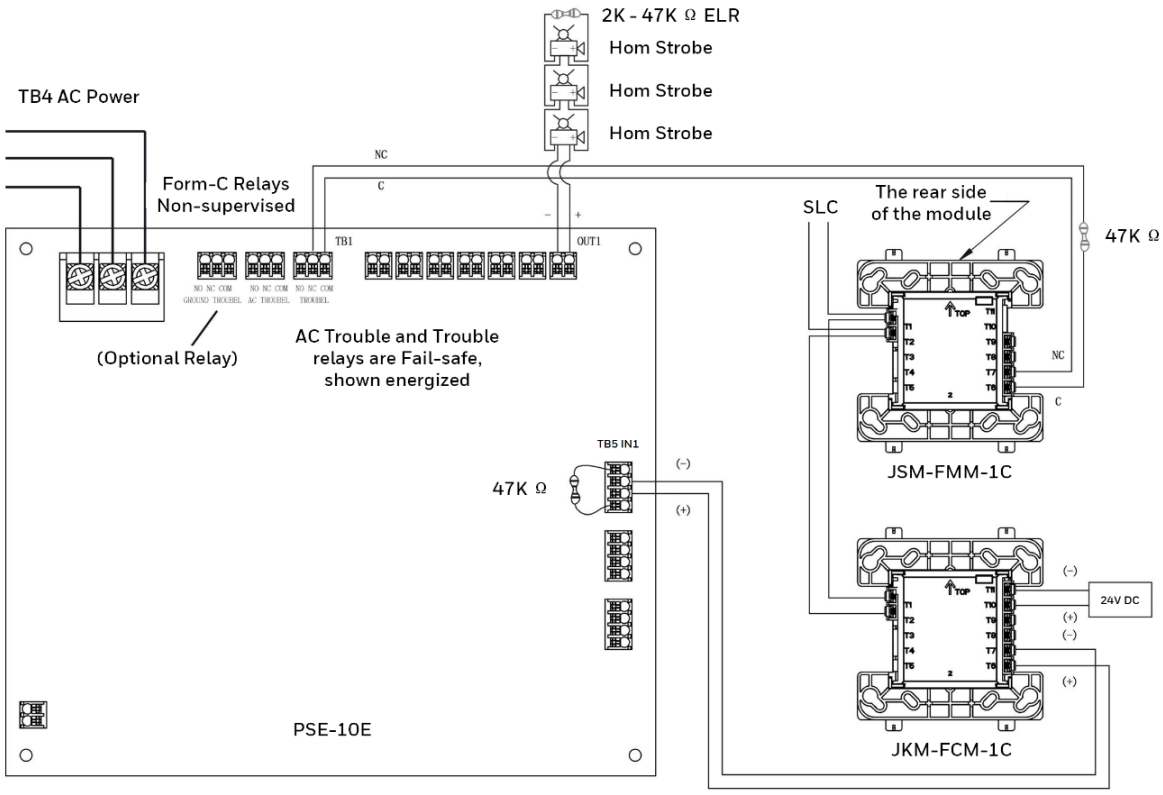
Figure 3-24 SLC Wiring



Notification Appliance Circuit (NAC) Wiring

PSE-10E is used to provide power for Notification Appliance devices (NAC). 1 output module of FACP is used to provide 24V DC to activate the NAC, and 1 input module is used to supervise the trouble status of PSE-10E. Each output of PSE-10E can be connected to 6 P2R sound and light alarms at maximum. Currently the NAC supports only the Master mode.

Figure 3-25 NAC Wiring



- End-of Line resistor supplied with input module JSM-FMM-1C and output module JKM-FCM-1C.
- The output module and input module shall be installed in separated loop.
- The JKM-FCM-1C can only be connected to one loop.
- NAC synchronization is one per circuit basis, there shall be only one notification zone per SLC.

PSE-10E Power Supply in Master Mode Connected to NFS3-3030

Currently the PSE-10E must be set to the **Master Mode – System Sensor** to be integrated with the NFS3-3030.

Each output circuit has its own programming DIP switch that are located at the bottom of the PES-10E PCB as illustrated below:

DIP Switch S1 located on the left is used to set global setting.

Table 3-18 SW1 Global Setting

DIP Switch	ON / OFF	Description
SW1-1	ON	These switches determine the command input debounce/dejitter setting (Setting applies to ALL inputs)1. **1 ON, 2 ON** = 1 ms (for strobe sync signals, control/relay modules)
SW1-2	ON	
SW1-3	ON	Command Input #1 configured as normal
SW1-4	ON	Internal battery charger = enabled
SW1-5	OFF	These switches determine door holder dropout delay after AC power loss **5 OFF, 6 OFF**= Power does not drop out
SW1-6	OFF	
SW1-7	ON	These switches determine the AC loss delay timer **7 ON, 8 ON** = none
SW1-8	ON	
SW1-9	OFF	These switches determine the operating mode of the power supply. Return switches to normal mode to exit change output circuit configurations and display trouble history modes! **9 OFF, 10 OFF** = normal
SW1-10	OFF	

DIP switches S2-S8 are labeled on the PCB to indicate which output circuit it is controlling.

Currently only S2 and S3 switches are used to set NAC outputs and others are reserved for future use.

- S2: 1st NAC output (TB8)
- S3: 2nd NAC output (TB9)

Table 3-19 SW2 & SW3 NAC Output Setting

DIP Switch	ON / OFF	Description
SW2-1 & SW3-1	OFF	NAC output will activate when Command Input #1 is activated.
SW2-2 & SW3-2	OFF	
SW2-3 & SW3-3	OFF	Master mode - System Sensor
SW2-4 & SW3-4	OFF	
SW2-5 & SW3-5	ON	
SW2-6 & SW3-6	ON	
SW2-7 & SW3-7	OFF	Class B
SW2-8 & SW3-8	OFF	Unused/Unassigned

Network Control Module

The JB-TG-NFS3-3030 controller is connected to the NFS-GW Super Gateway via the Network Control Module (NCM), which translates Notifier's protocol (UFN) into the Modbus protocol. This facilitates the integration between the controller and third-party systems.

In case the NFS3-3030 needs to integrate with a third-party system that can monitor and control NFS3-3030. For example, the Integrated Supervise Connected System (ISCS) (although the application extends beyond ISCS) can be connected to the NFS3-3030 controller via the NCM and the NFS-GW. The ISCS requires the controller to report all fire alarms, troubles, and supervisory events. It should also be able to monitor the connection status in real-time. When the NFS3-3030 controller experiences a trouble, the ISCS can detect its offline status. To accomplish such integration, the NFS3-3030 controller needs to transmit events via the NCM to the NFS-GW, which in turn reports events to the ISCS.

The NCMs can be classified as following according to various network media:

Table 3-20 NCM Models

NCM Model	Description
NCM-F	The NCM model that applies optical fiber cables.
NCM-W	The NCM model that applies copper twisted pair cables. It must be connected to the TBB-CORE.

Figure 3-26 NCM

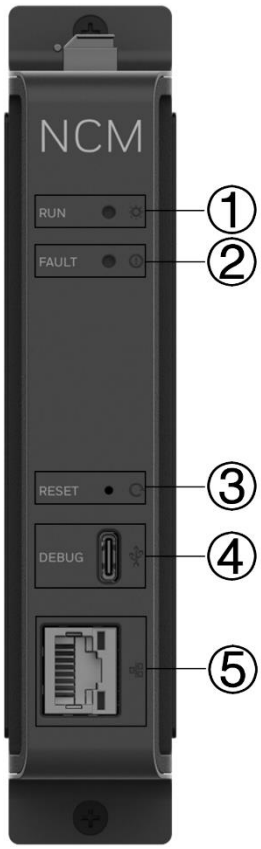


Table 3-21 NCM Components

Component	Description
①	Operation LED indicator, green and permanently on when the NCM is working normally.
②	Fault status LED indicator, yellow and permanently on when the NCM is in fault.
③	SW3, the reset key.
④	J5, Type-C debug interface for downloading programs and debugging.
⑤	J7, RJ45 interface for VFT and debug.

Component	Description
①	J2, RJ45 port
②	J3, SFP port to allow optical fiber network connection

Figure 3-27 NCM-F

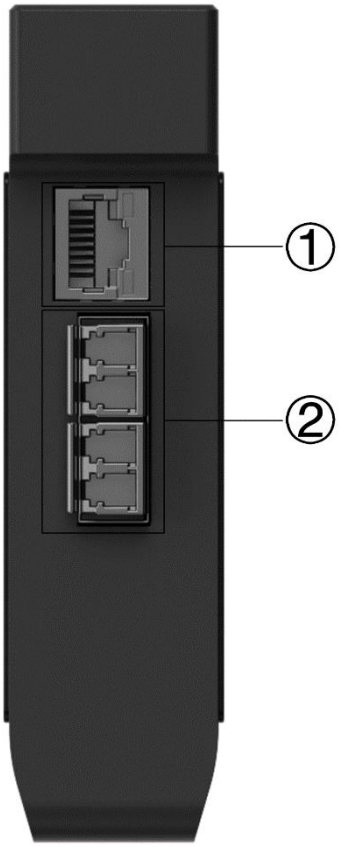


Table 3-22 NCM-F Top Panel

Figure 3-28 NCM-W

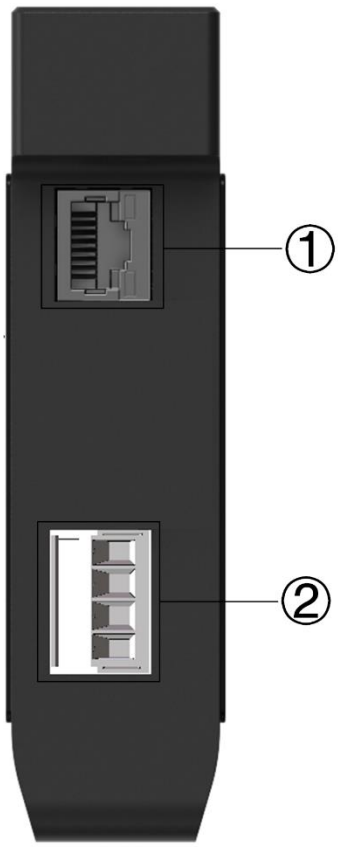


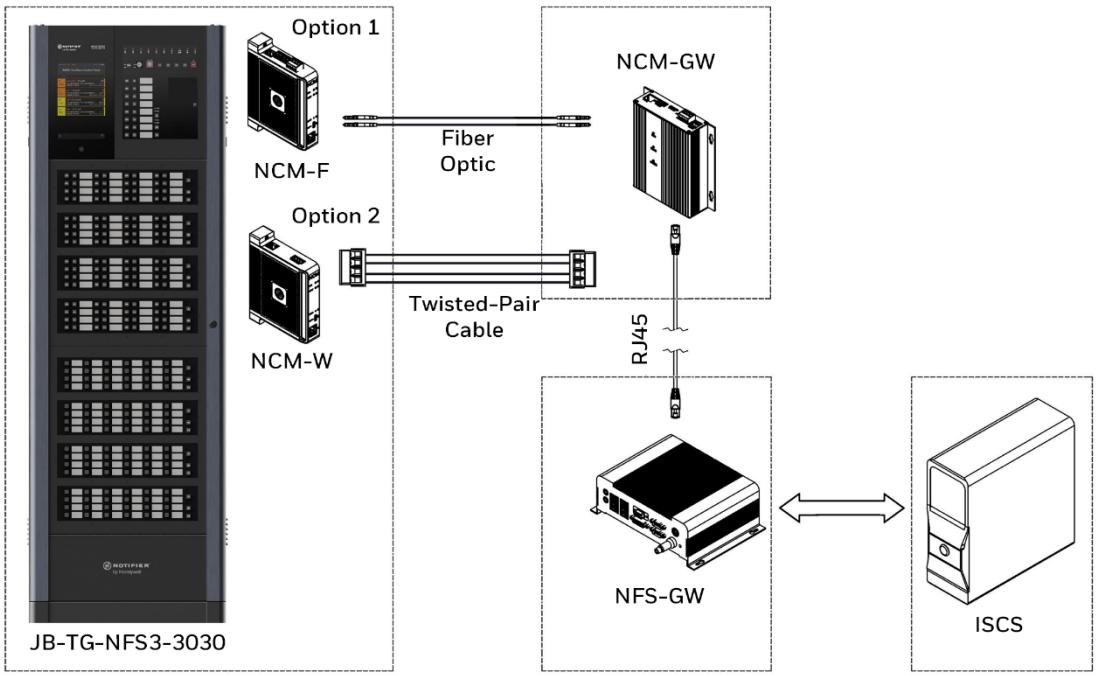
Table 3-23 NCM-W Top Panel

Component	Description
①	J2, RJ45 port
②	J1, twisted pair network port to allow copper wire network connection

The NCM-F/W can be connected to the NCM-GW, which is in turn connected to the NFS-GW super gateway via RJ45 in the following ways:

- The fiber optic interface (J3) of the NCM-F is connected to the fiber optic interface of NCM-GW, which in turn connects to the NFS-GW.
- The twisted-pair network interface (J1) of the NCM-W is connected to the twisted-pair network interface of NCM-GW, which in turn connects to the NFS-GW.

Figure 3-29 NCM - NCM-GW - NFS-GW - ISCS



Interface Module

The Interface Module (IFM) serves as the data interface module that connects the NFS3-3030 and external systems. It transmits and receives data and converts various protocols such as FECbus, Modbus and CRT.

The IFM communicates with the CPM via the MB-CORE. At maximum of 2 IFMs can be installed on each NFS3-3030. The communication address for each IFM is determined by the slot it takes on MB-CORE.

Table 3-24 IFM Port Type & Protocol

Port Type	Port Protocol
RS-485	Modbus x 1 Fecbus x 1
CAN	Fecbus x 1
RJ 45	Modbus x 1 Fecbus x 1

Figure 3-30 IFM Front Panel

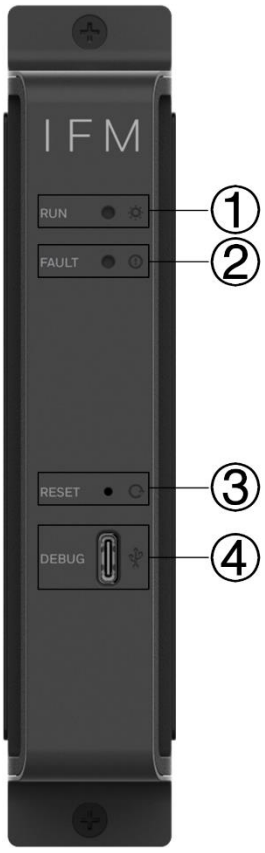


Figure 3-31 IFM Rear Panel

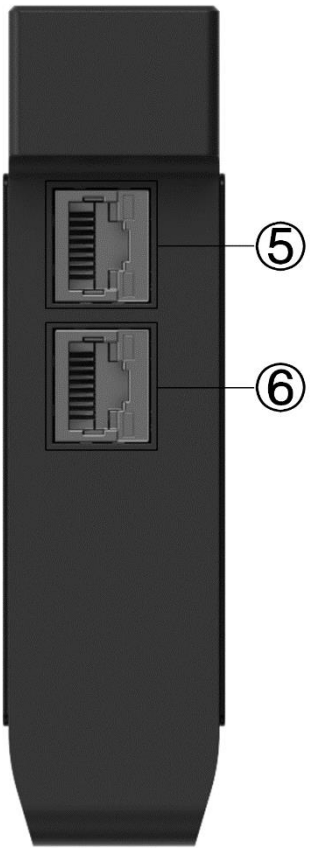


Table 3-25 IFM Components

Component	Description
①	Operation LED indicator, green and permanently on when the IFM is working normally.
②	Fault status LED indicator, yellow and permanently on when the IFM is in fault.
③	SW3, the reset key.
④	J1, Type-C debug interface for downloading programs and debugging.
⑤	J2, RJ45 port
⑥	J3, RJ45 port

Mains Power Supply

The Mains Power Supply (MPS) is the power input module for NFS3-3030. Internally It provides stable power supply for NFS3-3030 and can be used as power output for external devices.

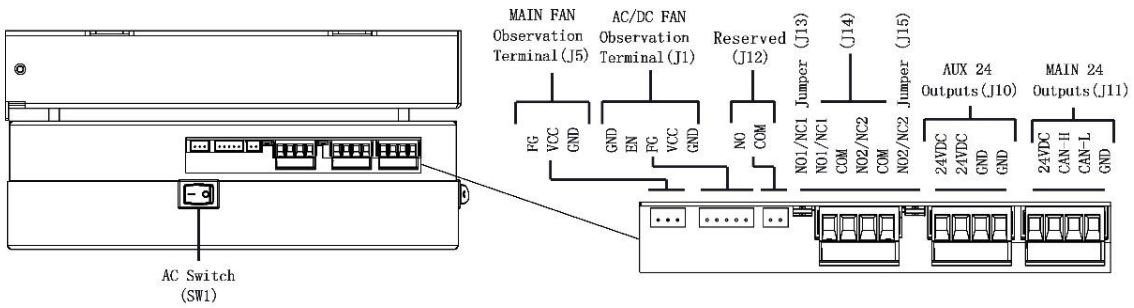
Table 3-26 MPS Specifications

Item	Value
Primary Power Supply	220VAC, 3.4A
Fuse	5A
Battery	Lead-acid battery，24VDC 28-100Ah
Battery Charging	24VDC @ 3A MAX
MPS Output	24VDC / 3A

Mains Power Supply Components

The MPS components are illustrated in the following figures:

Figure 3-32 MPS Components - 1



The J11 connector is connected to one of the mother boards to supply power to modules. Any alteration to its designated cable, modification of cable terminals, or incorrect installation of this cable may potentially damage the controller. Should you encounter any issues, kindly return the controller to the factory for maintenance. Please refrain from independently installing or modifying the cable to ensure safety and proper functioning.

Figure 3-33 MPS Components - 2

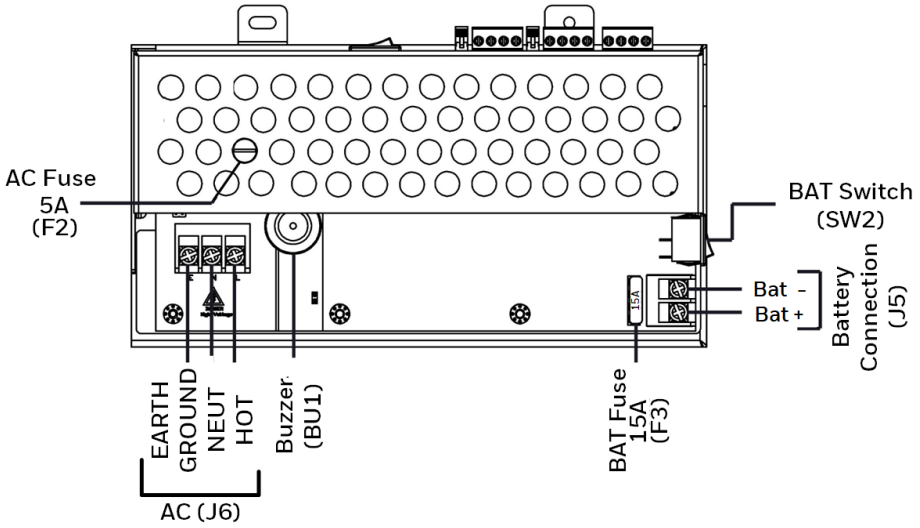


Figure 3-34 MPS Components - 3

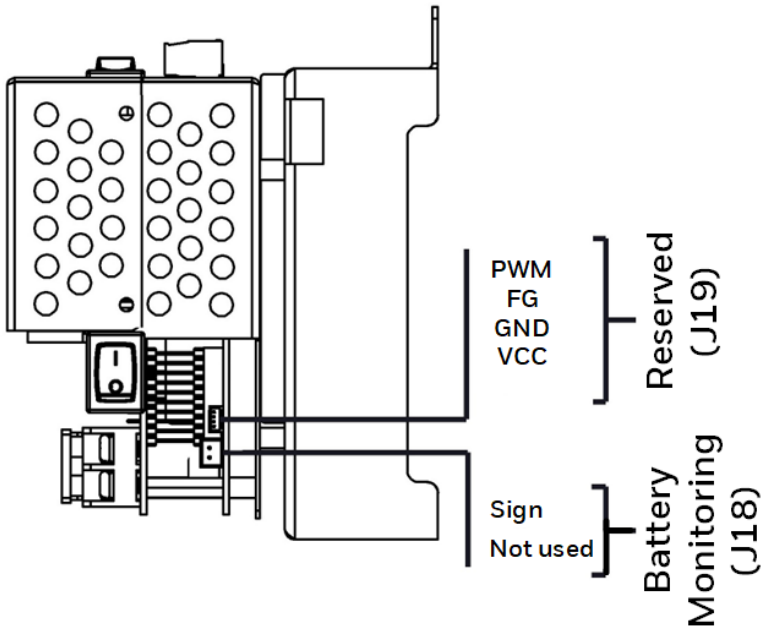


Table 3-27 MPS Components

Item	Value
AC (J6)	220V AC three-prong plug terminals, from left to right are Ground, Neutral and Hot.
SW1	Mains power switch (220V AC)
BU1	The buzzer. It is designed to send an alarm when the mains power supply is lost, and the backup power is insufficient to maintain normal operation of the controller.
Battery Connection(J5)	Backup power (battery) supply terminals
SW2	Backup power (battery) switch
J5	Reserved

J1	Fan terminals
J12	Sensor Terminal: This terminal is used to connect the sensor that detects whether the cabinet is open or closed.
J14	Dry contact output terminals for Relay 1 (NO1/NC1-COM) and Relay 2 (NO2/NC2-COM)
J13	Define Relay 1 (NO1/NC1-COM) status. Relay 1 is considered **closed** & **enabled** when it is in a short position, and **open** & **disabled** when it is not.
J15	Define Relay 2 (NO2/NC2-COM) status. Relay 2 is considered **closed** & **enabled** when it is in a short position, and **open** & **disabled** when it is not.
J10	Resettable 24V power output terminals: • Pin 1: + 24V • Pin 2: + 24V • Pin 3: GND • Pin 4: GND
J11	Internal 24V DC power CANBUS terminals, connected to J2 connector on MB-Core: • Pin 1: + 24V • Pin 2: CANH • Pin 3: CANL • Pin 4: GND
J19	Reserved
J18	Battery monitoring, used to check voltage and current of backup batteries.
F2	Power fuse for AC switch, 5A
F3	Car fuse for backup power, 15A

Data Storage Module

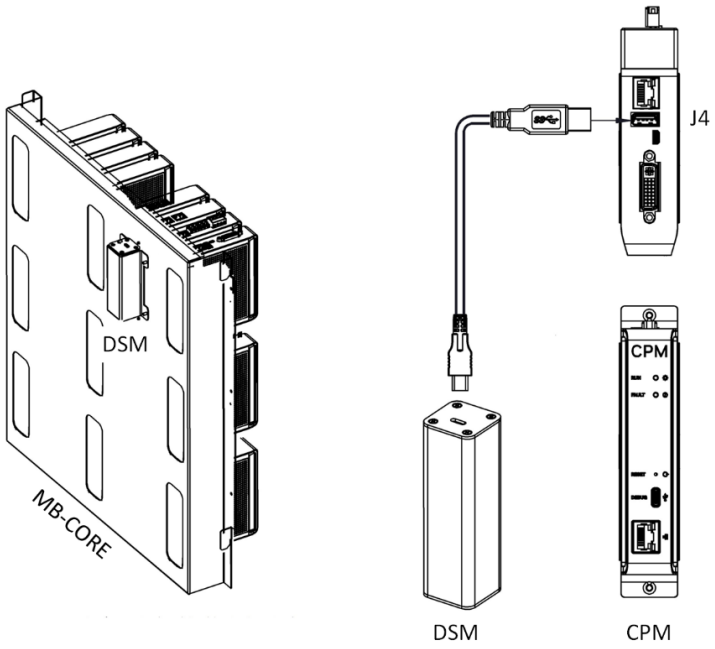
The Data Storage Module (DSM) is the data storage unit that records operations performed and events of fire alarm accessories and fire devices that are linked to the NFS3-3030. Such

operations and events information could be read via a customized PC tool and used as reference for fire incidents investigation.

It has a storage capacity of 8G and is a cuboid-shaped module installed on the back of MB-CORE and connected to the CPM.

The installation of DSM is illustrated as follows:

Figure 3-35 DSM Installation



TBB Boards

TBB boards are boards where terminals of modules and MB are connected to the NFS3-3030.

There are 2 types of TBB boards:

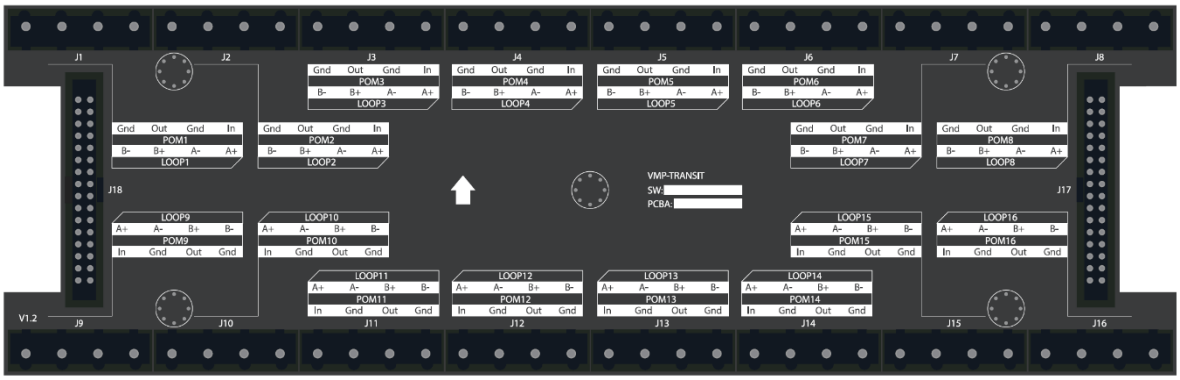
- The TBB: The TBB is used to connect LCMs and POM-16. A total of 6 TBBs can be installed in the rack, 2 TBBs for LCMs and 4 TBBs for POM-16.
- TBB-CORE: The TBB-CORE is the one and only in the rack. It is used to connect the MB-CORE that installed the CPM, NCM and 2 IFMs.

TBB

Each TBB provides 16 sets of terminals for LCM and 16 sets of terminals for POM. Terminals for LCM and for POM cannot function simultaneously. Therefore, a TBB can be deployed to connect either 16 loop outputs or a single POM-16 (with 16 outputs) at any given time.

A TBB must be located as required in the rack. For the TBB position in the rack, please see Rack Layout.

Figure 3-36 TBB



The terminals for TBB are listed as follows:

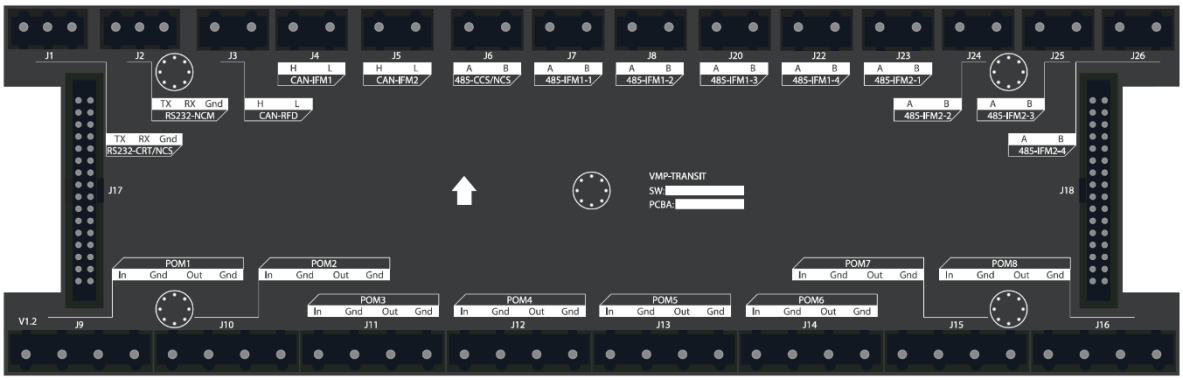
Table 3-28 TBB Terminals

Terminal	Description
J1 - J8	POM output & input, 1-8: Gnd, Out, Gnd, In, LCM loop, 1-8: B-, B+, A-, A+,
J9 – J16	POM output & input, 9-16: In, Gnd, Out, Gnd LCM loop, 9-16: A+, A-, B+, B-
J17	Used to connect the last MB-POM (if any)
J18	Used to connect the next MB-POM (if any)

TBB-Core

A NFS3-3030 is equipped with only one TBB-Core board. It provides terminals for CPM, NCM and IFM. It has 8 terminals for the inbuilt POM-8.

Figure 3-37 TBB-Core



The terminals for TBB-Core are listed as follows:

Table 3-29 TBB-Core Components

Terminal	Description
J1	Connected to the CPM for CRT/NCS connection via RS232
J2	Connected to the NCM via RS232
J3	CAN bus connector to LCD-300 Remote Fire Display

J4, J5	2 CAN bus connectors to IFM1 & IFM2
J6	Connector to CCS/NCS via RS485
J7, J8, J20, J22	4 RS485 connectors to IFM1
J23, J24, J25, J26	4 RS485 connectors to IFM2
J9 – J16	8 connectors for POM-8
J17	Used to connect the MB-LCM
J18	Used to connect the MB-CORE

Connect the Controller to VFT

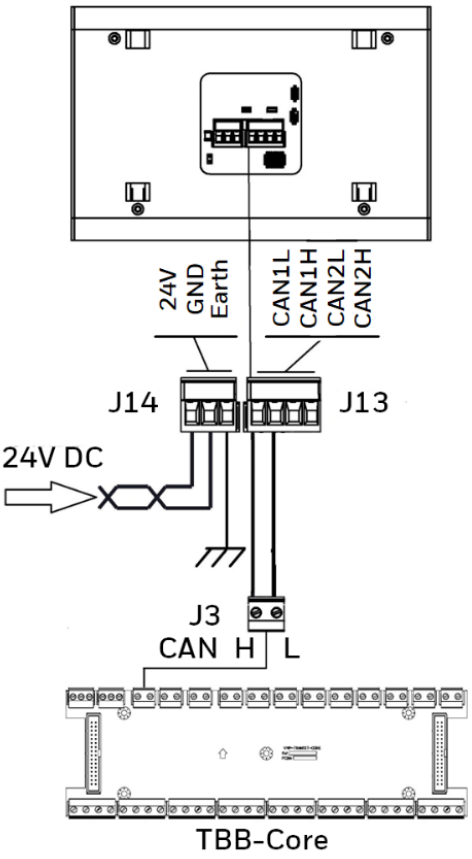
The VFT is the configuration tool for NFS3-3030. It is used to configure, upload and download configurations from the controller. The NFS3-3030 is connected to a PC for VFT via CPM and its J7 connector.

For more information on VFT wiring, see CPM Panel.

Connect the Controller to RFD

The Remote Fire Display (RFD) is a multi-lingual annunciator used in the fire alarm control system. It displays fire alarm status in fire zones and can be applied in projects of various sizes.

Figure 3-38 Controller & RFD Wiring



To connect the RFD to the controller:

1. Connect CAN1 interface (J13) on the RFD to the J3 interface of TBB-Core.
2. Connect J14 interface on the RFD to 24V DC for power supply.
3. Set jumpers:
    - Close JP1 and JP2 jumpers.
4. Set DIP switch. See LCD-300 User Guide for reference.

- All cables should be introduced through the threading holes on the rear box
- Use 1 mm^2 twisted copper wire with an impedance of 120 ohms

- Power must be disconnected before wiring
- Do not apply Class A loop connection, which could cause system instability

CHAPTER

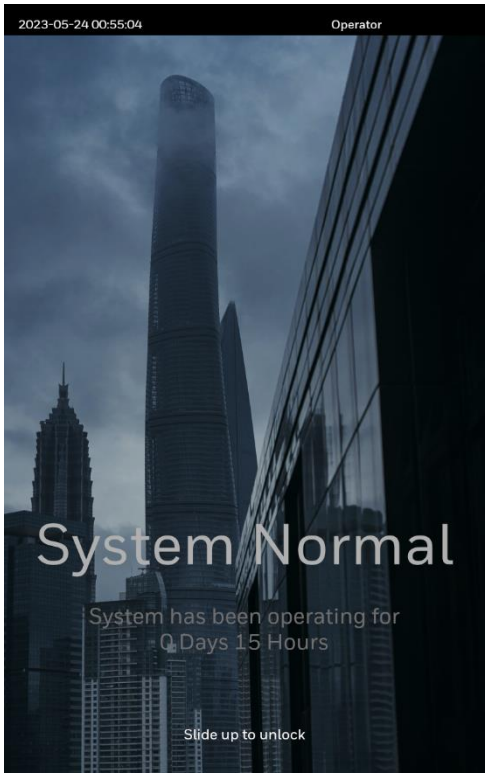
4 OPERATION

This chapter describes steps for users to operate the DPM touchscreen.

System Power Up

The system will cost around 2-5 minutes to power up, after which the lock screen is displayed. It shows the days for the system to be securely operated.

Figure 4-1 System Lock Screen



Main Interface

The system main interface is comprised of the Status Bar at the top and 6 zones' display for various events and buttons to change alarm modes, etc.

Status Bar

The Status Bar consists of various parts that displays information in a clear and easy way.

Figure 4-2 Status Bar

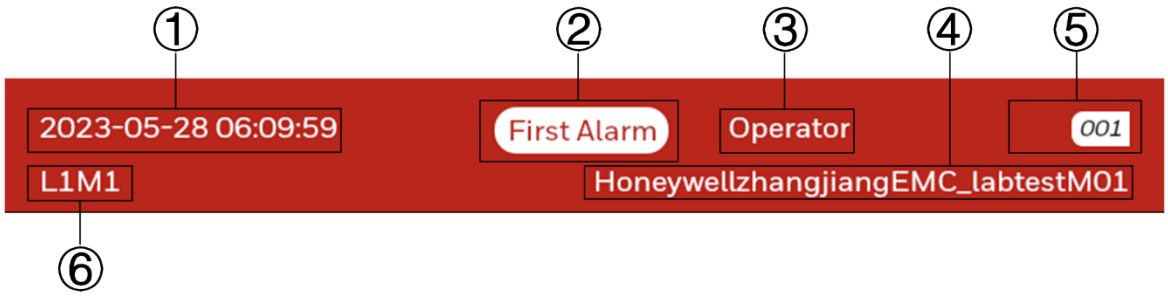


Table 4-1 Status Bar

Item	Description
①	Date & Time
②	First alarm. Click to view the first reported fire alarm event
③	Access level, the access level of the current user
④	Zone information
⑤	USB, Network type and NCA Status. • USB: With the USB icon, a USB disk is added for data storage. • Network type: The icon will display if it is an optical fiber network or twisted copper wire network. • NCA: When the NCA (Network Control Annunciator) icon is present on a controller, it indicates this controller is supervising other nodes in the system. Currently it is not recommended for controllers to mutually supervise each another.
⑥	Device address. The address of the device that reports the first fire alarm.

Figure 4-3 Main Interface, No Events

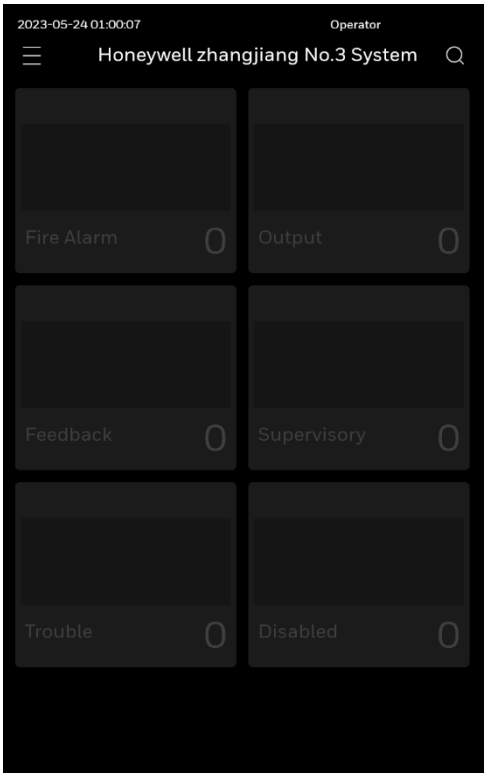
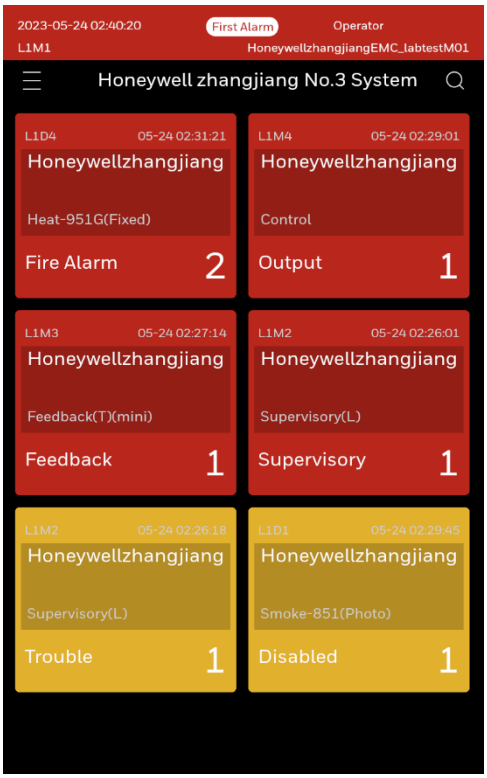


Figure 4-4 Six Types of Events



Six types of events can be reported and viewed on the DPM.

Table 4-2 Event Type

Event Type	Description
Fire alarm event	A fire alarm event is reported in the following scenarios: • When smoke or high temperature is detected by detectors • When the J-SAP-M-M500KC pull station is manually triggered
Trouble event	A trouble event is reported when there is a trouble in the system or for a device.
Output event	An output event is reported when the output module in the loop is triggered, and a 24V DC is outputed to fire-fighting equipment.
Feedback event	When an output event is successfully trigged, a signal is sent back by fire-fighting equipment to trigger a feedback event, by which a user could confirm if the fire-fighting equipment has started working.
Supervisory event	A supervisory event is reported when an output event is triggered. By checking the supervisory event, a user can constantly check status of fire-fighting equipment.
Disabled event	A disabled event is triggered when a device in the system is blocked, for example, a heat detector. A disabled device does not report a fire alarm event. A device **cannot** be disabled when it is reporting a fire alarm event.

How to Indicate an Event

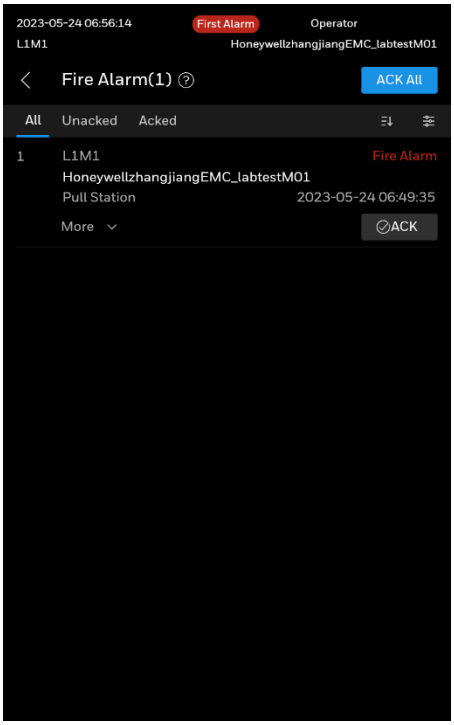
Perform the following steps to indicate an event:

Step 1. Unlock the screen to jump to the main interface.
Step 2. Click one type of event to check event details of this type.

How to Acknowledge Events

Step 1. Click one type of events. As illustrated in below figures, all fire alarm events are displayed with detailed node and time information.
Step 2. On the right of an event, click **ACK** to acknowledge this event.

Figure 4-5 Acknowledging an Event



Events Page Operations

On the event list page, the following steps can be performed for various purposes:
Step 1. (Optional) Click **Unacknowledged** to check all unacknowledged events of this type.
Step 2. (Optional) Click **Acknowledged** to check all acknowledged events of this type.
Step 3. (Optional) Click **Order** to change order of listed events (in ascending or descending order).

Menu

This section introduces various operations that can be performed under **Menu**.

To enter the **Menu**:

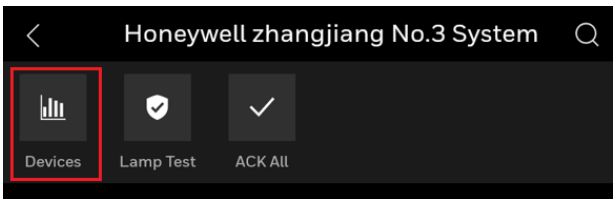
Step 1. Unlock the screen to enter the main interface.
Step 2. Click the menu button on the upper left corner.

Figure 4-6 The Menu Button

How to Check Device Status

Step 1. Under the **Menu**, click the **Devices** button.

Figure 4-7 The Devices Button



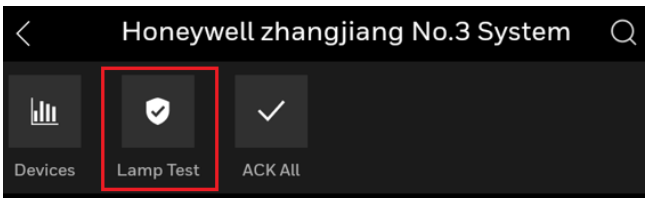
- **Total**: total amount of this type of devices
- **Normal**: The number of this type of devices that are operating normally
- **Trouble**: The number of this type of devices that are in trouble status
- **Disable**: The number of this type of devices that are disabled

How to Perform a Lamp Test

Perform the following steps to implement a lamp test:

Step 1. Under the **Menu**, click the **Lamp Test** button to implement the lamp test. During the lamp test, the touchscreen switches among various colors. All LEDs flash for around 30s.

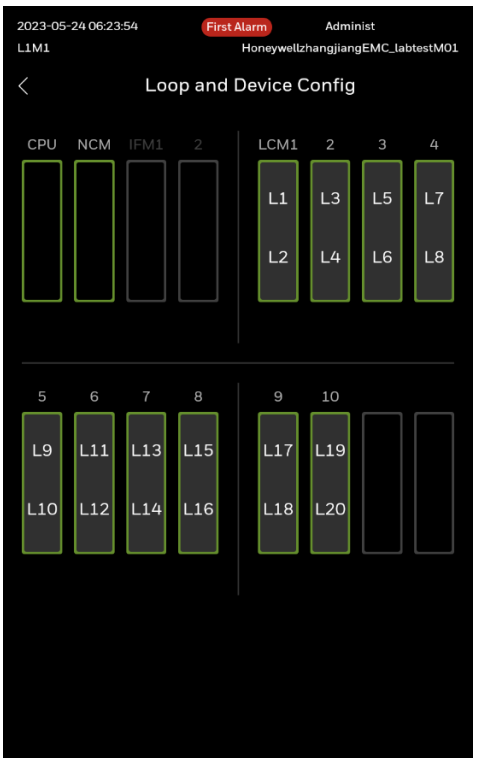
Figure 4-8 The Lamp Test Button



How to Operate a Device

Step 1. Under the Menu, click **Loop and Device Config**. The mother boards and inserted modules are displayed. Troubles of any loop are directly displayed on the interface.

Figure 4-9 Loop and Device Config Graphical Interface

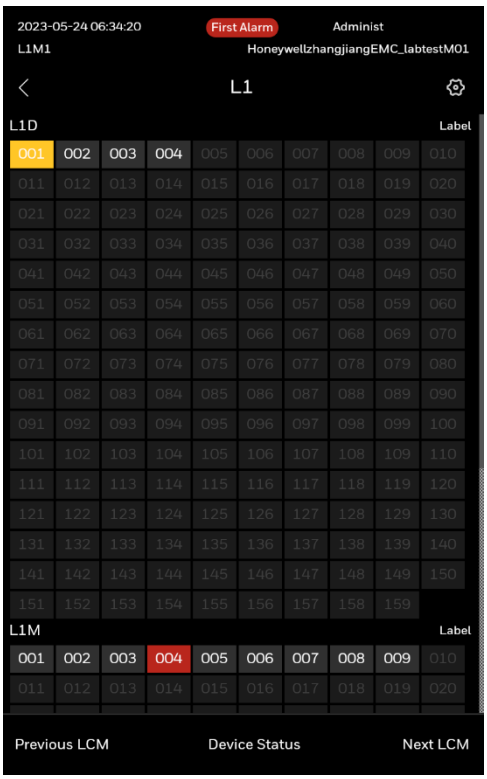


Step 2. Click a module to display its detailed information. For example, L6.

How to Operate a Loop Control Module

Step 1. Under the **Device List** interface, click a loop.
Step result: A detailed interactive interface that contains all nodes on this loop is displayed.

Figure 4-10 Loop Interactive Interface



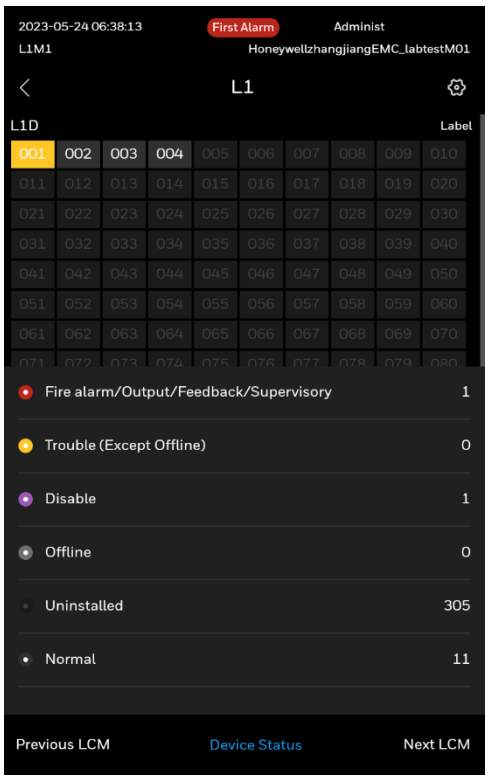
Nodes are printed with various colors for different status.

Table 4-3 Node Status Type

Node Symbol	Description
	The device is online, reporting a fire alarm event / output event / feedback event / supervisory event.
	The device is online, reporting a trouble event.
	The device is online, reporting a disabled event.
	The device is offline.
	The device is not installed.
	The device is operating normally.

To check node status overview, click **Device Status** at the bottom of the page. An overview is displayed.

Figure 4-11 Device (Loop) Status Overview

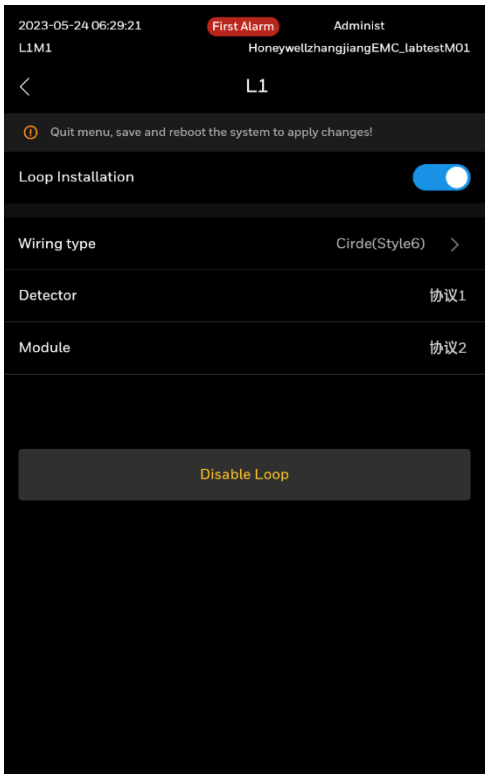


Click an online/offline node to operate the node.

Device Setting

A Loop can be configured by clicking **Device Setting** on the upper right corner.

Figure 4-12 Device Setting



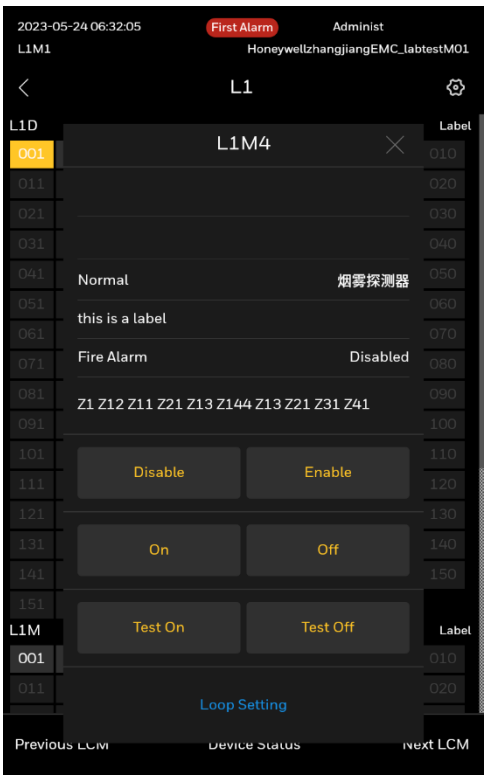
The following can be configured:

Loop Installation: It must be enabled for the loop to work. When disabled, all nodes on the loop will be disconnected.
Wiring Type: The way the loop is wired.
Disable Loop: If clicked, the whole loop is disabled and will not report any events.

Operate an Online Node

Step 1. Click an online node.
Step result: A pop-up window for the node is displayed. The type of the device, events reported by the device, location of the device and status of the device can be viewed on the page.

Figure 4-13 Online Node Interface



Step 2. (Optional) Click **Disable** to block the node.
Step 3. Click **Loop Setting** to configure the device. The following can be configured:

- **Installation status**: when enabled, the device is connected. When disabled, the device cannot be detected in the system.
- **LED Flash**: When enabled, the LED of the device can function as required.
- **Device Category**: To select the device category, it can be **Detector** or **Module**.
- **Device Type**: To select specific device type under a certain category.

Operate an Offline Node

Step 1. Click an offline node and enable **Installation status**. For rest of operation, please see Operate an Online Node for reference.

How to View System Message

Perform the following steps to view system messages:

Step 1. Under the **Menu**, click **Message**.

All system messages are listed on the page.

Step 2. (Optional) Click **Unacknowledged** to check all unacknowledged system messages.

Step 3. (Optional) Click **Acknowledged** to check all acknowledged system messages.

Step 4. (Optional) Click **Order** to change order of system messages. (in ascending or descending order).

Step 5. (Optional) Click **Filter** to filter system messages to be displayed.

How to View Event History

Perform the following steps to view event history:

Step 1. Under the **Menu**, click **History**.
history of all events is listed on the page.

Step 2. (Optional) Click **Fire Alarm** to check all fire alarm events.

Step 3. (Optional) Click **Trouble** to check all trouble events.

Step 4. (Optional) Click **Order** to change order of events. (in ascending or descending order).

Step 5. (Optional) Click **Filter** to filter events to be displayed.

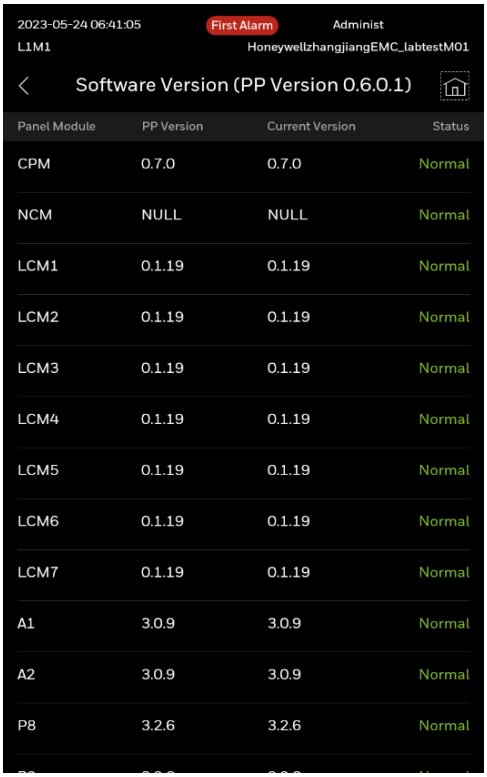
How to Configure General Settings

Perform the following steps o configure general settings:

Step 1. Under the **Menu**, click **General**.

Step 2. (Optional) Click **Software Version** to view software versions for all modules.

Figure 4-14 Check Software Version



Step 3. (Optional) Click **Project Information to view the following:**

- **Update Times**: The number of times the system has been updated
- **Update Time**: The time when the system was last updated
- **VFT Serial No.**: The Serial number of the VFT

Step 4. (Optional) Click **Language** to configure system language. The following languages are supported:
- Chinese (Simplified)
- English

Step 5. (Optional) Click **Date & Time** to set system date & time.

Step 6. (Optional) Click **Printer** to set the printer:
- Printer Switch: Enable the switch to activate the printer connected to the system.
- Fire Alarm Events: When selected, Fire Alarm events can be printed by the printer.
- Output Events: When selected, Output events can be printed by the printer.
- Feedback Events: When selected, Feedback events can be printed by the printer.
- Supervisory Events: When selected, Supervisory events can be printed by the printer.
- Trouble Events: When selected, Trouble events can be printed by the printer.
- Disabled events: When selected, Disabled events can be printed by the printer.
- Other Events: When selected, Other events can be printed by the printer.

Access Level

NFS3-3030 is strictly controlled by limited access given to the user.

There are 4 access levels in the system. For each access level, a password is required to log in.

Figure 4-15 Input Password for Access

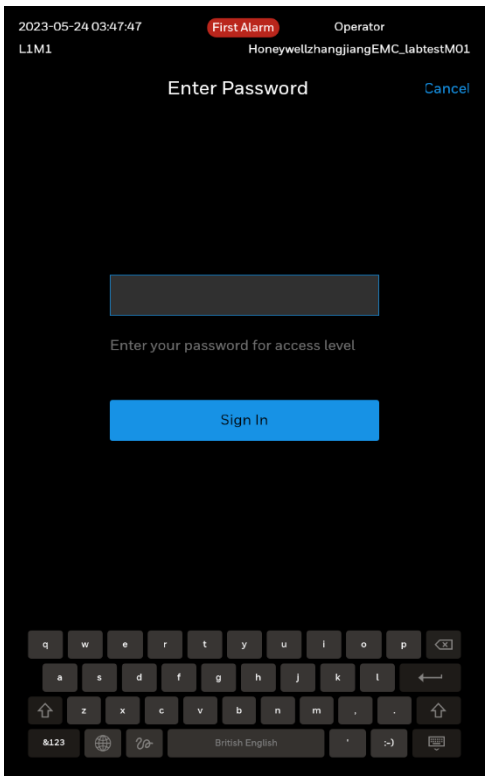


Table 4-4 Access Levels

Level	Description

Level 1	The **Operator** level, with basic access to operate the NFS3-3030
Level 2	The **Supervisor** level, with more access to perform system reset, lamp test, etc
Level 3	The **Administrator** level, with higher access to configure the database, zones, etc.
Level 4	The **Maintenance Personnel** level, with physical access to the device for maintenance purpose.

The following table lists access levels with corresponding accesses:

Table 4-5 Access Levels and Operations

Access	Description	Operator	Supervisor	Administrator	Maintenance Personnel
View	**To view information**	X	X	X	
Mute	**To mute sound of the controller**	X	X	X	
Check	To implement check of the followings: • Design of All the engineering designs connected to the controller • The device categories and the total number of devices in normal, trouble and disabled status.	X	X	X	
Acknowledge	**To acknowledge events and messages**	X	X	X	
Sound & Light Alarms	**To manually enable / disable signals of sound & light alarms**		X	X	
Reset	**To reset the system**		X	X	
Manual Control	**To manually enable controlled output module devices**		X	X	
Self-Check	**To enter self-check**		X	X	
Time Setting	**To set Date & Time**		X	X	
Power on/off	**To power on / off or adjust the mains power & backup power**		X	X	
Manual / Automatic Switch	**To switch manual control / automatic control status**		X	X	
Disable	**To disable and enable events and devices**		X	X	
Database Configuration	**To configure or input data**			X	

Programming	**To program zones**			X	
Delay Setting	**To set delay feature**			X	X
Software / Hardware Upgrade	**To configure or update software / hardware**				X
Data Export	**To export data and view exported data**				X

APPENDIX

Troubleshooting

Trouble Level	Trouble	Cause	Solution
System	Firmware upgrade failure	Incorrect board firmware version	The board was offline during the upgrade. Reboot the controller to upgrade the board again.
	Service mode activated	The controller enters project programming	Quit project programming will clear this trouble. It is only recorded in event history and no further action is required.
	System is grounded	1. 24V output is grounded 2. Any board on CAN bus is grounded	1. Disconnect 24V output to see if the trouble is clear 2. Check if any board is grounded
	Printer out of paper	Out of paper	Add papers for the printer
	CPU offline	CPM off-normal operation	Check CPM operation and trouble LED indicators
	ACMxxx offline	ACM fails to communicate with the CPU	Check ACM address. The address must be identical to the address in the configured database
	LCMxxx offline	LCM fails to communicate with the CPU	1. Check LCM jumpers 2. Check loose connection between LCM and the MB-LCM
	LCDxxx offline	LCD fails to communicate with the CPU	1. Check loose connection between LCD and communication board 2. Check jumpers on LCD CAN port
	Nxxx node offline	NCA and Nx fail to communicate	1. Check connection between NCA and node devices
	PxPCx offline	POM-16 and POM-IO/POM-IOE off-normal connection	1. Check if the POM-IO/POM-IOE is installed 2. Check wiring between POM-16 and POM-8 3. Check flexible flat cable between POM-8 and MB-POM 4. Check flexible flat cable between MB-POMs
	PxPMx offline	POM-16 and POM-IO/POM-IOE off-normal connection	

POM-16	PxPCx / PxPMx open circuit	PxPCx / PxPMx corresponding port open circuit	1. Check if corresponding termination resistor is open-circuited. • For PxPCx, Its value is 1K • For PxPMx, Its value is 10K 2. Check if any off-normal connection with the 3rd party equipment
	PxPCx / PxPMx short circuit	PxPCx / PxPMx corresponding port short circuit	1. Check if corresponding termination resistor is short-circuited. • For PxPCx, Its value is 1K • For PxPMx, Its value is 10K 2. Check if any off-normal connection with the 3rd party equipment
LCM	Loop port trouble (Lxx port)	The loop is configured in the database but not physically connected, or for some reasons the LCM fails to communicate with all devices	1. Check if the loop is configured but not physically connected. 2. Check loop cabling
	Open circuit at the positive end of the loop (Lxx open circuit)	The loop is ring wired and A+ or B+ is first disconnected	Check if the A+ or B+ of the circuit is disconnected, and after reconnection, the controller needs to be reset to clear the trouble
	Open circuit at the negative end of the loop (Lxx open circuit)	The loop is ring wired and A- or B- is first disconnected	Check if the A- or B- of the circuit is disconnected, and after reconnection, the controller needs to be reset to clear the trouble
	Loop module is grounded (LCMx ground)	The A+/A-/B+/B- line of the circuit is shorted to the ground	Check if the 2 loop lines and connected devices of the loop module are short connected to the ground
	Loop short circuit (Lxx short circuit)	The A+/A- or /B+/B- are shorted to each other	Check if there is a positive or negative short in the A+/A-/B+/B- on 2 loop lines from the loop module
	Lxx.xx device type error	When the actual type of the device does not match the type configured in the database	Check the database configuration
	Lxx.xx device address conflict	When multiple devices have duplicate addresses	Check if the reported address has a duplicate code on a loop
	Lxx.xx device general trouble	When device dysfunction is detected for any device in the loop	Check if the PW value of the device deviates too much from other normally functioning devices of the same type, if so, replace the device
	Lxx.xx open circuit	1. Off-normal monitoring resistance for the input	1. Check connection of monitoring resistor of the input

		module 2. Off-normal monitoring resistance for 24V power input or 24V output of output module	module and its value 2. Check if the 24V power input of the output module is open and connection of monitoring resistor of the input module along with its value
	Lxx.xx offline	LCM cannot detect Lxx.xx	Check device connection
	Lxx.xx short circuit	The 24V output port of the output module is short-circuited	Check 24V output port of the output module
Power	Mains power trouble	1. Loose connection with AC220V power supply 2. External short circuit or overcurrent causes fuse to blow	1. Re-plug AC220V power supply 2. Replace the fuse
	Backup power trouble	1. Poor connection of the connector 2. The backup power has been damaged 3. External short circuit or overcurrent causes fuse to blow	1. Check the connector 2. Replace the backup power 3. Replace the fuse
	Backup power low voltage	backup power battery voltage is too low	Check if the backup battery voltage is too low, it will be reported if the voltage is lower than 23.6V

Note:

1. Loop-related events are prioritized as follows:

   Disable > offline > device address conflict > device type trouble > short circuit > open circuit > general device trouble > device activation (For example, fire alarm, module start, etc.)

   For devices with same address, less than 2 abovementioned events can be reported at the same time. (disabled events excluded, a disabled event will appear in output event list and disabled event list simultaneously. After reset, the output event list will be clear). Therefore, when multiple events should be reported for devices, an event with higher priority will be reported.

   For example, L1.1 is physically connected to a temperature detector but is configured as a smoke detector in the database. Meanwhile there is a device also using address of L1.1. The “duplicate address” trouble is more prioritized than “wrong device type” and the controller will report only the “duplicate address” trouble.

2. When the following troubles are reported, corresponding devices can continue to work but still they should be dealt with ASAP:
   - Open circuit at the positive end of the loop (Lxx open circuit)
   - Open circuit at the negative end of the loop (Lxx open circuit)
   - Loop module is grounded (LCMx ground)