

AFP-3030A NZ

Intelligent Fire Alarm Control Panel

General



AFP-3030A NZ in CAB-900 and CAB650

The AFP-3030A NZ is an intelligent Fire Alarm Control Panel (FACP) with a flexible and scalable architecture which makes it suitable for virtually any application including large scale networked facilities. Fire emergency detection and evacuation are extremely critical to life safety, and the AFP-3030A NZ is ideally suited for these applications.

The AFP-3030A NZ is part of the ONYX[®] Series of products from NOTIFIER. With one to ten Signaling Line Circuits (SLCs), the AFP-3030A NZ supports up to 3,180 intelligent addressable devices per panel and is networkable up to 200 nodes.

A host of other options are available, including single or multichannel voice; LED, LCD, or PC-based graphic annunciators; networking; advanced detection products for challenging environments, and many additional options.

Connectivity with a range of NOTI-FIRE-NET[™] integration options such as Bacnet, Modbus, OnyxWorks and Notifier WebServer (NWS-3) permit the AFP-3030A NZ and NOTI-FIRE-NET[™] to integrate into critical component building management systems.

Features

- One to ten isolated intelligent Signaling Line Circuits
- Up to 159 detectors and 159 modules per SLC, 318 devices per loop / 3,180 per FACP (or network node)
- Detectors can be any mix of photo, laser photo, thermal, or multi-criteria detectors; modules can be addressable manual call points, normally open contact devices, two-wire smoke detectors, notification, relay or 4-20 mA modules
- Large 640-character LCD backlit display or display-less (a node on a network)
- Network up to 200 nodes with high-speed Noti-Fire-Net
- VeriFire Tools non-proprietary online/offline program, test and reporting PC software
- Weekly Occupancy Schedules allow changing sensitivity by time of day and day of week
- With built-in SLC Local mode operation; the system is capable of activating sounders and relays if a fire alarm condition is present even if the central processing unit (CPU) fails
- Range of annunciators for ancillary display & control
- History file with 4000-event capacity plus separate 1000-event alarm-only file
- Advanced history filters allow sorting by event, time, date, or address
- Alarm Verification Facility (AVF) selection per point, with automatic counter
- Auto-programming and Walk Test reports
- Alarm delay operation
- Field-programmable on panel with QWERTY keypad
- Non-alarm points for lower priority functions
- Remote Silence, System Reset, Evacuate via monitor modules
- Support for AS1668.1 compliant smoke control with SCS Series smoke control system

Display Features

- **Large LCD Display:** 640 characters (16 lines x 40 characters) with long-life LED backlight
- **Program keypad:** full QWERTY keypad for field programmability
- **User Control:** Up to nine users, each with a password and selectable access levels
- **LED indicators:** Fire; Pre-Alarm; Fault; Disable; Supervisory; Other Event; System Fault; Alarm Routing Equipment Status; Alarm Devices Status; Smoke Control Status; Controls Active
- **Membrane Switch Controls:** Silence Buzzer; Silence/ Re-sound Alarm; Scroll Alarms; Reset; Disable

FlashScan® Intelligent Features

- Polls up to 318 devices on each loop in less than two seconds
- Activates up to 159 outputs in less than five seconds
- Multicolor LEDs blink device address during Walk Test
- Fully digital, high-precision protocol
- Manual sensitivity adjustment - up to nine levels
- Pre-alarm ONYX intelligent sensing - up to nine levels
- Sensitivity levels:
 - Photo electric – 2.0 to 8.0%/metre obscuration
 - Acclimate Plus™ – 2.0 to 10.0%/metre obscuration
 - IntelliQuad™ – 1.6 to 12.5%/metre obscuration
- - IntelliQuad™ – 1.6 to 12.5%/metre obscuration password and selectable access levels
- Drift compensation
- Multi-detector algorithm involves nearby detectors in alarm decision
- Automatic detector sensitivity testing
- Maintenance alert (two levels)
- Self-optimizing pre-alarm
- Programmable activation of sounder/relay bases during alarm or pre-alarm
- Read Status displays the level of detector cleanliness

FSP-851AUS Photoelectric Smoke Sensor

- Advanced ONYX intelligent sensing including automatic drift compensation to reduce unwanted alarms and provide warning of contamination build-up
- Addressable operation pinpoints the fire location
- Protection against the entry of insects and other contaminants

FAPT-851AUS Acclimate Plus™ Intelligent Multi-Criteria Detector

- Detector automatically adjusts sensitivity levels without operator intervention or programming. Sensitivity increases with heat
- Microprocessor-based technology; combination photo and thermal technology



FSC-851AUS IntelliQuad™ Advanced Multi-Criteria Detector

- Detects all four major elements of a fire (smoke, heat, CO, and flame)
- Automatic drift compensation of smoke sensor and CO cell
- High nuisance-alarm immunity

FST-851(R)-WP Sealed Thermal Sensor

- Suitable for harsh environments with wide operating temperature and sealed to IP67
- Addressable operation pinpoints the fire location and annunciates alarm with dual LEDs

FMM-4-20 Interface Module

- Interface to industry standard linear scale 4-20mA sensors
- Five programmable thresholds

Voice Evacuation Features

- 30/60/120 watt digital amplifiers (DA Series)
- Solid state message generation
- Hard-wired voice control module options
- Backup tone generator and amplifier option

FlashScan® World Leading Detector Protocol

At the heart of the AFP-3030A NZ is a set of detection devices and device protocol — FlashScan®. FlashScan® is an all-digital protocol that gives superior precision and high noise immunity.

As well as giving quick identification of an active input device, this protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed of communication also allows the AFP-3030A NZ to have the largest device per loop capacity in the industry — 318 points — yet every input and output device is sampled in less than two seconds.

The FlashScan® detectors have bicolor LEDs that can be coded to provide diagnostic information, such as device address during Walk Test.



FlashScan® World Leading Detector Protocol

ONYX Intelligent Sensing is a set of software algorithms that provide the AFP-3030A NZ with industry-leading smoke detection capability. These complex algorithms require many calculations on each reading of each detector, and are made possible by the very high-speed microcomputer used by the AFP-3030A NZ.

Drift Compensation and Smoothing. Drift compensation allows the detector to retain its original ability to detect actual smoke, and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by AS1851. Smoothing filters are also provided by software to remove transient noise signals, usually caused by electrical interference.

Maintenance Warnings. When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised, and special warnings are given. There are three warning levels: (1) Low Chamber value; (2) Maintenance Alert, indicative of dust accumulation that is near but below the allowed limit; (3) Maintenance Urgent, indicative of dust accumulation above the allowed limit.

Sensitivity Adjust. Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

Self-Optimizing Pre-Alarm. Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

Co-operative Multi Detector Sensing. A patented feature of ONYX Intelligent Sensing is the ability of a smoke sensor to consider readings from nearby sensors in making alarm or pre-alarm decisions. Without statistical sacrifice in the ability to resist false alarms, it allows a sensor to increase its sensitivity to actual smoke by a factor of almost two to one.

Alarm Verification Facility (AVF). All devices are capable of performing an alarm verification facility, whereby communication between the panel and the device performs an additional confirmation of an alarm event in order to reduce unwanted spurious alarms.



Field Programming Options

Autoprogram is a timesaving feature. The FACP “learns” what devices are physically connected and automatically loads them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

Keypad Program Edit. The AFP-3030A NZ has the exclusive feature of program creation and editing capability from the front panel keypad, while continuing to provide fire protection. The architecture of the AFP-3030A NZ software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per point segments, while the AFP-3030A NZ simultaneously monitors other (already installed) points for alarm conditions.

VeriFire Tools. VeriFire Tools is a non-proprietary offline programming, test and reporting utility that can greatly reduce installation programming time, and increase confidence in the site-specific software. It is Windows® based and provides technologically advanced capabilities to aid the installer. The installer may create the program for the AFP-3030A NZ and the entire network in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel. VeriFire Tools can use Noti-Fire-Net to configure, diagnose or report on any node(s) from any location around the network.

OYNX Intelligent Testing

Intelligent Walk Test. One man walk test allows the testing engineer to activate devices on the system to ensure correct operation and connection. During a walk test ONYX AFP-3030A NZ will deactivate intelligent algorithms in the devices resulting in a further 60% reduction in test time.

Alarm Test. When Alarm Test is activated on a specific device or devices on the system, the test engineer is capable of verifying the cause and effect of the device in the same manner as an alarm event removing the need to actually activate a device which may be difficult to access for this task.

Automatic Device Test. Each Notifier FlashScan® detector is capable of performing an automatic device test each 24 hours to ensure correct communication and operation between FACP and device.

Product Line Information

Main System Components

CPU2-3030NZ	AFP-3030A NZ central processing unit including field interfaces
DISP-3030NZ:	Keypad and display; includes 640-character backlit LCD display, QWERTY programming and control keypad.
NPS-5CHS/NPS-11CHS	24VDC power supply unit for AFP-3030A NZ
ELCM-320	Loop Control Module. Provides one SLC. AFP-3030A NZ supports up to five LCM-320s and five LEM-320 expanders for a total of ten SLCs.
LEM-320	Loop Expander Module. Expands an ELCM-320



Networking Options

NCA-2	Network Control Annunciator, 640 characters. An alternate primary display for CPU2-3030NZ can be provided by the NCA-2, or ONYXWorks. On network systems, the NCA-2 connects to a standard NCM or HS-NCM. See DOC-02-166
AFP-2800	Addressable fire alarm control panel. DOC-02-023
NCM-W, NCM-F	Standard Network Communications Modules. Wire and multi-mode fiber versions available. See DOC-02-109
HS-NCM-W/MF/SF/WMF/WSF/MFSF	High-speed Network Communications Modules that can connect to two nodes. Wire, single-mode fiber, multi-mode fiber, and media conversion models are available. See DOC-02-072
RPT-W, RPT-F, RPT-WF	Standard-network repeater board with wire connection (RPT-W), multi-mode fiber connection (RPT-F), or allowing a change in media type between wire and fiber (RPT-WF). Not used with high-speed networks. See DOC-02-165
ONYXWorks	Graphics PC workstation, ONYXWorks GUI software, and computer hardware. See DOC-02-080
NFN-GW-EM-3	NFN Gateway, embedded. See DOC-02-091
NWS-3	NOTI•FIRE•NET™ Web Server. See DOC-02-079
VESDA-HLI-GW	VESDAnet high-level interface gateway. See DOC-02- 142
BACNET-GW-3	Bacnet Gateway, embedded. See DOC-02-082
MODBUS-GW-3	Modbus Gateway, embedded. See DOC-02-097

Auxiliary Power Supplies and Batteries

NPS-5S	One optional for each AFP-3030A NZ. Power supply and battery charger with two 24 VDC outputs up to 5A output total. Charges 7 to 200 AH batteries. Auxiliary power for panel or panel equipment
NPS-11S	One optional for each AFP-3030A NZ. Power supply and battery charger with two 24 VDC outputs up to 11A output total. Charges 7 to 200 AH batteries. Auxiliary power for panel or panel equipment
BATT SERIES	Batteries. PS5/PS11 and NPS-5S/NPS-11S use two 12 volt, 7 to 200 AH batteries. See DOC-02-171

Audio Options

DA-30/ DA-60/ DA-120	Digital Amplifier. DA-30 is 30 watts, DA-60 is 60 watts, DA-120 is 120 watts, 100 Vrms. Includes audio input and amplified output supervision. See DOC-02-066
DA-DISP/A, DA-DISP/B, DA-DISP/C, DA-DISP/D, DA-DISP/E	Display control and paging microphone modules for DA series amplifiers. See DOC-02-066
SDM-4	4 way Speaker distribution module for use with DA series amplifiers. See DOC-02-085

Compatible Devices, EIA-485 Ports

ACM-24AT	ONYX® Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED, Trouble LED, and switch per circuit. Active/Alarm LEDs can be programmed (by powered-up switch selection) by point to be red, green, or yellow; the Trouble LED is always yellow. See DOC-02-167
AEM-24AT	Same LED and switch capabilities as ACM-24AT; expands the ACM-24AT to 48, 72, or 96 points. See DOC-02-167
ACM-48A	ONYX® Series ACS annunciator – up to 96 points of annunciation with Alarm or Active LED per circuit. Active/ Alarm LEDs can be programmed (by powered-up switch selection) in groups of 24 to be red, green, or yellow. Expandable to 96 points with one AEM-48A. See DOC-02-167
AEM-48A	Same LED capabilities as ACM-48A; expands the ACM-48A to 96 points. See DOC-02-167



Compatible Devices, EIA-485 Ports

ACM-8RA	Relay Module with eight Form-C contacts. See DOC-02-168
LCD2-80	Terminal and ACS mode. 80-character, backlit LCD display. Mounts up to 1800m from panel. Up to 32 per FACP. See DOC-02-169
SCS SERIES (SCS-8A, SCE-8A, SCS-8L)	Smoke control station; eight (expandable to 16) circuits. See DOC-02-035
LDM-32	Lamp Driver Module - up to 32 points that provide low-current outputs to LEDs, typically used for graphical mimics. See DOC-02-035
LDM-E32	Same LED output capabilities as LDM-32; expands outputs up to 64 points. See DOC-02-035
LDM-R32	Relay module for LDM-32, LDM-E32 - up to 32 points that provide 1A relay outputs. See DOC-02-035
ZMS/ 900RF-8ZI	Zone Index Mimic - 8 zones fitted
ZMS/ 425RF-8ZI	Zone Index Mimic - 8 zones fitted

Compatible Intelligent Devices

FSB-200	Intelligent beam smoke detector. See DOC-02-051
FSB-200S	Intelligent beam smoke detector with integral sensitivity test. DOC-02-051
FSC-851	FlashScan® IntelliQuad Advanced Multi-Criteria Detector. See DOC-02-048.
FSI-851AUS	Low-profile FlashScan® ionization detector. See DOC-02- 025
FSP-851AUS	Low-profile FlashScan® photoelectric detector. See DOC-02-026
FST-851AUS	FlashScan® thermal detector 57°C. See DOC-02-027
FST-851RAUS	FlashScan® thermal detector 57°C with rate-of-rise. See DOC-02-027
FST-851-WP	FlashScan® sealed thermal detector 57°C. See DOC-02- 135
FST-851R-WP	FlashScan® sealed thermal detector 57°C with rate-of-rise. See DOC-02-135
FST-851HAUS	FlashScan® 88°C high-temperature thermal detector. See DOC-02-027
FAPT-851AUS	FlashScan® Acclimate Plus™ low-profile multi-sensor detector. See DOC-02-029
FSL-751	FlashScan® VIEW® laser photo detector. See DOC-02-049
SDX-851AUS	Low-profile CLIP photoelectric detector. See DOC-02-128
FDX-851AUS	FlashScan® thermal detector 57°C. See DOC-02-133
FDX-851RAUS	FlashScan® thermal detector 57°C with rate-of-rise. See DOC-02-0133
IDX-751AE	Intrinsically-safe CLIP photoelectric detector. See DOC-02-129
DNR	InnovairFlex low-flow non-relay duct-detector housing (order FSP- 851 separately). See DOC-02-098
DNRW	Same as above with NEMA-4 rating, watertight. See DOC-02-098
B501AUS	4" (10.16 cm) universal detector base. See DOC-02-030. B521IEFT-IV: 4" (10.16 cm) universal detector base with in-built shortcircuit isolator. See DOC-02-030



Compatible Intelligent Devices

B521IEFT-IV	4" (10.16 cm) universal detector base with in-built shortcircuit isolator. See DOC-02-030
AAM	Alarm acknowledgement module. Models available in vertical and horizontal orientation and with (or without) remote indicator; AAM-VL, AAM-V, AAM-HL. Alarm Acknowledgement Modules. See DOC-02-086
NFX-BS	CLIP Sounder base, Temporal 3 or Continuous tone. See DOC-02-144
NFX-BF	CLIP Beacon base. See DOC-02-144
NFX-BSF	CLIP Sounder beacon base, Temporal 3 or Continuous tone. See DOC-02-144
NFX-WS	CLIP Wall Sounder Temporal 3 or Continuous tone. See DOC-02-145
NFX-WF	CLIP Wall Beacon. See DOC-02-145
NFX-WSF	CLIP Wall Sounder beacon, Temporal 3 or Continuous tone. See DOC-02-145
NOTE: NFX addressable AV devices are available in a range of colours. Colour variants are included as part of the models listed above. For example red wall sounder is NFX-WS-R. Versions of NFX series addressable AV are available with in-built short circuit isolator. These are designated in the model NFXI. for example red wall sounder with isolator is NFXI-WS-R	
FMM-1	FlashScan® monitor module. See DOC-02-040
FDM-1	FlashScan® dual monitor module. See DOC-02-040
FZM-1	FlashScan® conventional zone module. See DOC-02-040
FMM-101	FlashScan® miniature monitor module. See DOC-02-040
FMM-4-20	FlashScan® 4-20 mA protocol monitor module. See DOC-02-170
FCM-1	FlashScan® control module. See DOC-02-038
FRM-1	FlashScan® relay module. See DOC-02-038
FDMR-1	FlashScan® dual monitor/dual relay module. See DOC-02-033
NFX-MCP-GLASS	FlashScan® manual call point, addressable. See DOC-02-088
ISO-X	Isolator module. See DOC-02-042
WCP-5A	CLIP outdoor manual call point. See DOC-02-088
XP6-C	FlashScan® six-way monitored control module. See DOC-02-044
XP6-MA	FlashScan® six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone. See DOC-02-043
XP6-R	FlashScan® six-relay (Form-C) control module. See DOC-02-045
XP10-M	FlashScan® ten-input monitor module. See DOC-02-046
IMX-IE	Translator module for use with intrinsically safe devices. See DOC-02-129
Y-2221	Single channel galvanic isolator for use with IMX-IE. See DOC-02-129

Enclosures, Chassis and Dress Plates

CAB SERIES ENCLOSURES	AFP-3030A NZ mounts in a standard CAB Series enclosure (available in two sizes, CAB650 and CAB900). The CAB series enclosures are available with a solid and window outer door. A trim ring option is available for semi-flush mounting
U SERIES ENCLOSURES	AFP-3030A NZ mounts in a "U" Series enclosure (available in three sizes, 18U, 28U and 40U). The "U" Series cabinets are available with a solid and window outer door. Custom trim ring options are available for semi-flush mounting



Enclosures, Chassis and Dress Plates

BMP-1	Blank module for unused module positions
CHS-3L	Low-profile Chassis. Mounts up to three modules in any CAB series row
CHS-4L	Low-profile Chassis. Mounts up to four modules in any U series row
ZMS/ 425RF-8ZI	Zone Index Mimic - 8 zones fitted
CHS-4	Chassis used with the XP6 and XP10 Multi-Modules. Mounts up to four modules in any CAB series row
CHS-6	Chassis used with the XP6 and XP10 Multi-Modules. Mounts up to six modules in any U series row.
CAB650/BB	Enclosure for batteries. The CAB650/BB is used to mount up to two 40 AH batteries if needed. 250mm high x 450mm wide x 190mm deep. Depth includes door
18U/BB	Enclosure for batteries and additional equipment. The 18U/BB is used to mount up to six 40AH batteries (three sets) if needed. 300mm high x 450mm wide x 190mm deep. Depth includes door

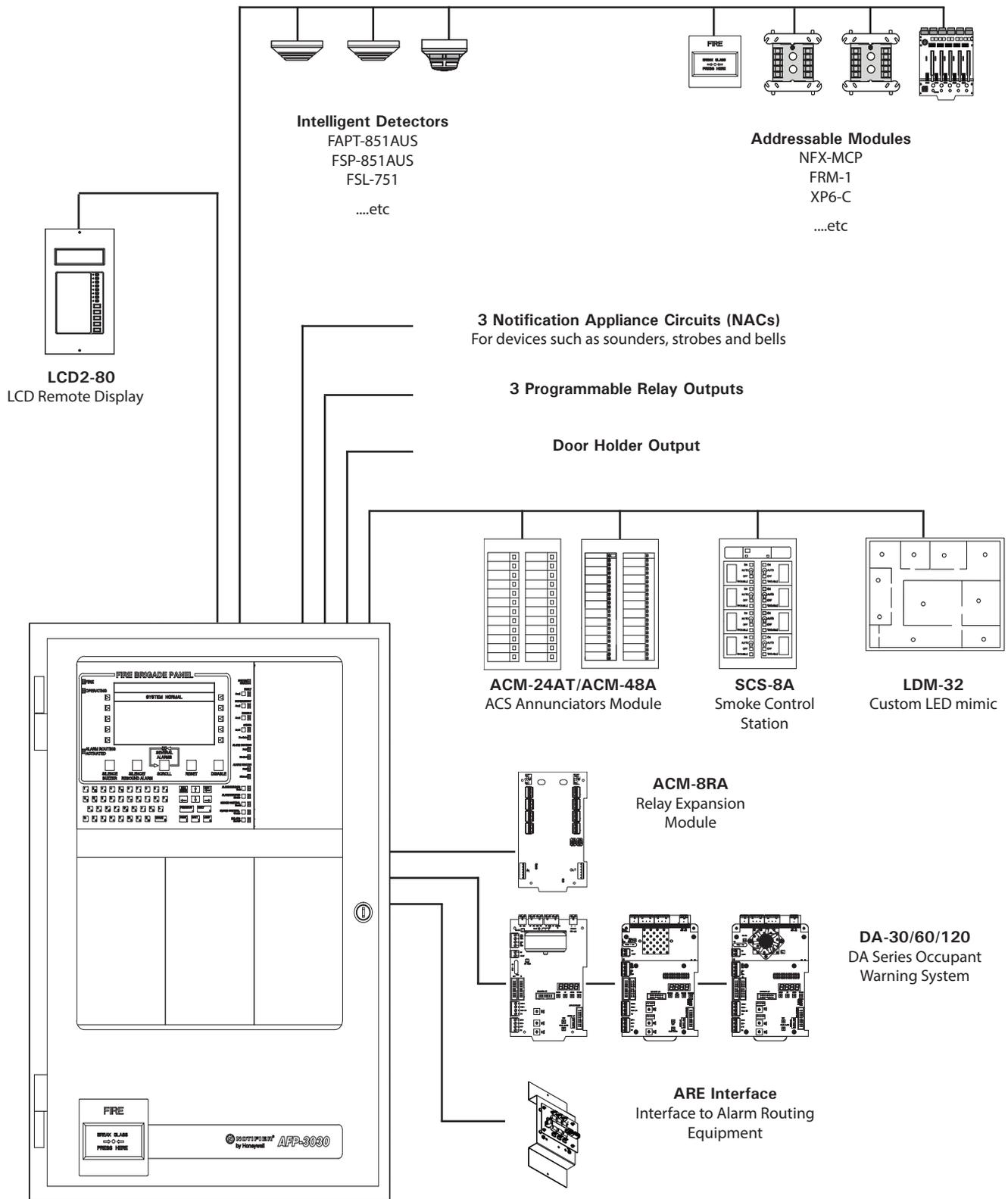
Other Options

IFS-2008	Agent releasing module for extinguishing agent releasing CIE in accordance with AS4214.1:2002, AS & ISO14520.1:2009. See DOC-02-020
IFS-993	Strobe/sounder interface. See DOC-02-173

NOTE:

For other options including compatibility with retrofit equipment, refer to the SLC manual, and the AFP-3030A NZ manual.





AFP-3030A NZ Connection Overview



Product Line Information

System Capacity

INTELLIGENT SIGNALING LINE CIRCUITS	1 expandable to 10
INTELLIGENT DETECTORS	159 per SLC
ADDRESSABLE MONITOR/CONTROL MODULES	159 per SLC
PROGRAMMABLE SOFTWARE ZONES	Over 2000
ACS ANNUNCIATORS PER CPU	32 address x 64 or 96 points

NOTE: The CPU2-3030NZ can support up to 96 annunciator address points per ACM-24AT/48A

Electrical Specifications

PRIMARY INPUT POWER	NPS-5CHS Fitted: 240vac, 0.8A, 50Hz. NPS-11CHS Fitted: 240vac, 1.5A, 50Hz. Input Fuse: 2=M205 8.0A, 250vac
BATTERY	Two 12V Sealed Lead-Acid batteries. Battery charger capacity: 7AH-85AH (CAB650/CAB900 enclosures hold a maximum of two 33AH batteries)

Current Draw (Standby/ Alarm)

AFP-3030A NZ (with display)	0.205 A / 0.225 A
AFP-3030A NZ (without display)	0.140 A / 0.150 A
LCM-320	0.130A
LEM-320	0.100A

NOTE: See AFP-3030A NZ Manual # DOC-01-037 for a complete current draw calculation sheet and details of input and output values.

Enclosed Specifications

CAB650	650mm(h) x 450mm(w) x 190mm(d)
CAB900	900mm(h) x 450mm(w) x 190mm(d)
CAB650BB	250mm(h) x 450mm(w) x 190mm(d)
18U	887mm(h) x 610mm(w) x 285mm(d)
28U	1330mm(h) x 610mm(w) x 375mm(d)
40U	1865mm(h) x 610mm(w) x 375mm(d)
18UBB	443mm(h) x 610mm(w) x 285mm(d)

All cabinets are powder-coated black fine sand. RAL9005

Temperature and Humidity

This system meets AS requirements for operation at 0 –49°C and at a relative humidity 93% ± 2%.

Agency Listings and Approvals

These listings and approvals apply to the modules specified in this document. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult system consultant for latest listing status.

- NZS 4512:2010
- AS7240.2:2004 & AS7240.4:2004.
- AS4428.3:2010
- Activfire certificate # afp-2973



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For more information, contact Notifier:
Phone (Australia): 1800 220 345 (Toll Free)
Phone (New Zealand): 800 220 345 (Toll Free)
www.notifier.com.au

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