INTELLIGENT FIRE CONTROL UNIT & AGENT RELEASE CONTROL UNIT   FX-3500 SERIES

FX-3500 with two optional RAX-1048TZDS modules

Description

Mircom's FX-3500 is a series of powerful Intelligent Addressable Fire Alarm Control Units which include Release Control Units (RCUs). These panels are UL 864Rev 9 and ULC S527-2011 listed for fire control and releasing service.

The FX-3500 is recommended for both new and retrofit special-hazard/critical- infrastructure suppression/special agent applications. Small in enclosure size yet powerful enough to deliver complex programming requirements, the FX-3500 is fully expandable.

The FX-3500 provides up to three addressable Signal Line Circuits (UL's-SLC or ULC's-Data Communication Links- DCLs) and connects up to 954 addressable devices/points. Capable of releasing up to six discrete physical hazard zones, the FX-3500 offers exceptional value for complex installations.

Elegant configuration options by onsite laptop, or when required by the Engineer of Record, by remote PC via modem, the FX-3500 can be operational with minimal set up time.

Programming versatility makes the FX-3500 Series the ideal choice for dependable fire detection, signaling and protection in industrial, commercial and institutional buildings. Typically these environments require agent-based suppression solutions easily managed by the FX-3500 Intelligent Addressable Release Control Unit.

Hardware Features

- One onboard SLC/DCL communication circuit that supports up 318 addressable devices/points;
- Expandable to three SLC/DCL communication circuits that supports up to 954 addressable devices/points;
- Reliable and industry proven dedicated releasing power supply;
- Six dedicated hazard zone LED indicators;
- Convenient USB Programming port;
- Built-in UDACT/DACT for remote monitoring;
- Enhanced tactile response for operator interface;
- 4 x 20 character Liquid Crystal Display (LCD);
- Easy to read numerical keypad;
- 10 Ampere (Amp.) Power Supply to satisfy typical releasing load requirements;
- Four Class A/B Notification Appliance Circuits (NAC) rated at 1.5Amp. each;
- SLC is capable of NFPA 72 Style 4, Style 6, or Style 7 wiring & ULC's DCL-A & DCL-B;
- Resettable auxiliary power supply;
- Four easy to read status queues with selector switches and LEDs for Alarm, Supervisory, Trouble and Building Safety (Formerly Monitor) Input visual indications;
- Supports up to seven remote annunciators;
- Accessible multifunction RS-232 port for:
    - • Serial Communication interface
- RS-485 Interface for remote LCD/LED Annunciators and other devices;
- Optional City Tie/Polarity Reversal module for central station monitoring.

UL S7010   ULC S7010   LISTING SERVICE 7165-1477:0165   FM APPROVED NYC Fire Dept. COA #6165

CATALOG NUMBER
5690

Mechanical Features

- The FX-3500 supports both flush and surface mount applications;
- Dimensions   26" x 14.5" x 4.2"
                        66 cm x 36 cm x 11 cm
- Modular display placement options;
- Fits up to 2, 18 Ampere Hour batteries.
- Durable CAT-30 lock and key.
- Removable enclosure door.
- Easy access to all modules for serviceability.

Software and Operational Features

Audible alarm response within three seconds of activation in Advanced Protocol mode (when using AP devices only);

      • AP is a completely digital protocol;
      • AP is an Interrupt base protocol;

- Individual LED Control;
- Releasing capability for up to 6 Zones
- Supports Pre-Action/Agent Release and Deluge Applications;
- Supports up to 3 SLC loops and 954 points
- Supports CLIP and AP System Sensor protocols;
- Built-in strobe synchronization support for Mircom, Potter/Amseco, System Sensor, Gentex and Wheelock protocols;
- Grouped inputs and outputs;
- NACs can be configured as Silenceable or Non-Silenceable for both signals and strobes;
- Group bypass with built-in false alarm prevention technology;
- Zone Counting;
- Built-in Drift Compensation for AP protocol;
- Positive Alarm Sequence;
- Configurable Signal Silence Inhibit, Auto Signal Silence, Two Stage Operation and One-Man Walk Test;
- Relay contacts for Common Alarm, Auxiliary/ Alarm (Disconnectable), Common Supervisory and Common Trouble;
- Two event history logs comprised of a 400 event alarm log for alarm related events and a 400 event general log for all other events;

Additional Features

- Compatible with INX-10A Addressable Intelligent NAC Expander Panel.
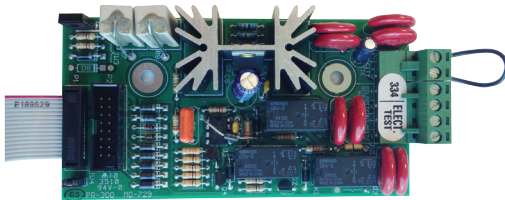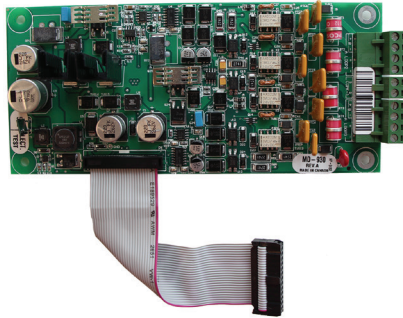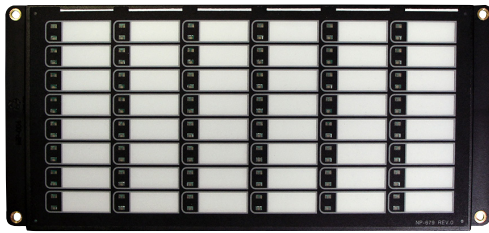- Supports Acclimate smoke detection sensors.

Sensors can be configured as:

- Alarm Input
- Priority Alarm
- Verified Alarm
- Latched Supervisory
- Non-Latching Supervisory
- Monitor
- Trouble Input

FX-3500 Features and Benefits

- Cross-zoned or Counting Zone Smoke Detection programming to enable release by either counting active zone detection circuits or active cross-zoned detection circuits (includes options for single, double, triple and 2 different inputs counting zones)
- The FX-3500 Series RCUs are fully expandable to meet the demanding requirements for mission critical facilities, both inside the high value asset areas and also in the office environments.

NOT TO BE USED FOR INSTALLATION PURPOSES.

Optional Adder Modules

RAX-1048TZDS Programmable LED Annunciator Module

The RAX-1048TZDS Programmable LED Annunciator provides the FX-3500 with 48 Programmable Alarm/Supervisory Bi-colored LEDs & 48 Trouble LEDs which can be configured as: Alarm (Red), Supervisory (Amber), Trouble (Amber) or Monitor (Amber). The RAX-1048TZDS mounts in the FX-3500 enclosure

ALC-636 Dual Loop Controller Module

The ALC-636 Dual Analog Loop Controller Module provides two additional Signaling Line Circuits (SLC) to the FX-3500 consisting of 159 intelligent sensors and 159 intelligent modules per loop. The ALC-636 mounts in the FX-3500 enclosure.

PR-300 Polarity Reversal/City Tie Module

The PR-300 provides outputs for city box and polarity reversal applications. As a city tie module the PR-300 provides an interface between the control panel indicating circuits and a master box. As a polarity reversal module the PR-300 provides an interface between the control panel and a reverse polarity receiver.

Remote Annunciators

RAM-3500-LCD Remote LCD Annunciator

The RAM-3500-LCD provides remote annunciation through a 4 line by 20 character LCD display. It is a direct mimic of the main panel display so that the LCD, LEDs and switches are an exact duplicate of the main display. The RAM-3500-LCD provides control switches for System Reset, Signal Silence, Fire Drill and Acknowledge, four Status Queues with selector switches and LEDs for Alarm, Supervisory, Trouble and Monitor, along with a numeric keypad to access the menu functions. The RAM-3500-LCD mounts in separately orderable single unit enclosures or in larger enclosures that support up to two optional RAX-1048TZDS remote LED annunciators. All remote enclosures are equipped with a CAT-30 Lock and key.

RAX-LCD-Lite Remote LCD Annunciator

The FX-3500 also supports the RAX-LCD-LITE Remote LCD Annunciator. The RAX-LCD-LITE display mimics the main Fire Alarm Panel display at a remote location. It is equipped with a large 4 line x 20 character back-lit alphanumeric LCD display that uses a simple menu system complete with a directional keypad and switches for Enter, Menu, Cancel and Info. There are five types of enclosure available: the BB-1001, BB-1002, BB-1003, BB-1008, and BB-1012 which can take 1,2,3,8,12 chassis respectively.

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Specifications

FX-3500 Series Fire Alarm Control Panel			
General	Digital signal processor based design, fully configurable from front panel with password protection		
Electrical ratings	**AC line voltage**	120VAC 60Hz/240VAC 50Hz, 10A slow blow fuse on secondary of transformer	
	Power supply rating	29VAC 10A maximum (secondary of transformer) 120VAC 60Hz 3.1Amp (maximum primary of transformer) 240VAC 50Hz 1.57Amp (maximum primary of transformer) Total load not to exceed 10A at 24VDC	
Battery	Type	24VDC Gel Cell/Sealed lead acid – 10AH to 42AH	
	Charging capability	10AH to 42AH	
	Charging current	3A maximum	
	Protection	20A slow blow micro fuse built into WX-058 battery cable, field replaceable	
	Standby current rating at full load	1.25A	
Addressable loops	Advanced Protocol mode with one or three loops with 159 addressable sensors and 159 addressable modules per loop. CLIP mode with one or three loops with 99 addressable sensors and 99 addressable modules per loop. Maximum loop resistance depends on number of devices and device type. For a complete list of compatible devices see 9.0 Appendix B - FX-3500 Series Compatible Devices.		
	Power Limited / 22VDC / 350mA alarm maximum / 0.5 µF		
	Power Limited / 22VDC / 280mA normal standby maximum / 0.5 µF		
NAC Circuits	4 supervised style Y (Class B) NAC circuits, configured as strobes or audibles. Terminals are labelled as "NAC 1", "NAC 2", "NAC 3" and "NAC 4".		
	Rating	Power limited / Regulated 24V FWR / 1.5A @ 49C per circuit	
	Max power allowed	Total 6.0A 1.5A per circuit	
Aux supply 1	Power limited / 24VDC regulated / 500mA max		
Aux supply 2	Power limited / 24VDC regulated / 300mA max		
Unfiltered supply	Power limited / 24V FWR special application / 1.7A max at 49C List of Compatible Devices: RAM-1016TZDS, RAM-1032TZDS, RAM-3500-LCD, RAX-LCD-LITE		
Auxiliary relays	**Common Alarm/ MSupv./Trouble/ Auxiliary Alarm**	Must be connected to a listed power limited source of supply Form C/28VDC/1A max	
RS-485 port	For remote annunciators. Terminals are labelled "RS-485".		
Ground Fault Impedance	10 K Ohms		
Open Circuit Fault	100 K Ohms		
Open Circuit Fault	0 Ohms		
Applicable Standards	NFPA 70, 72, 12, 12A, 12B, 13,15, 16, 2001, CAN/ULC-S559-13, UL-864 Rev. 9, ULC S524, CAN/ULC-S527-11 and ULC-S536-04		
FX-3500 System Modules and Annunciators			
RAM- 3500LCD	Remote Annunciator	Standby 70mA / alarm 100mA	
RAX-LCDLITE	Remote Annunciator	Standby 65mA / alarm 80mA	
RTI-1	Remote Trouble Indicator	Normal standby 0mA / alarm 30mA maximum	
PR-300	Polarity Reversal and City Tie Module		
	City Tie	power limited / 24VDC unfiltered / 270mA max / 13.7 and 14.4 Ohms	
	Polarity Reversal	power limited / 24VDC open / 12VDC at 3.5mA / 8mA max (shorted)	
	Polarity Reversal Supv.Terminal	24VDC (normal) / -24VDC (supervisory) / 0V (trouble)	
	Polarity Reversal AlarmTerminal	24VDC (normal) / -24VDC (alarm) / 0V (trouble)	
	Current Consumption	standby 50mA / alarm 300mA (city tie in use) / alarm 70mA (city tie not in use)	

Battery Calculations

IMPORTANT NOTICE
The main AC branch circuit connection for Fire Alarm Control Unit must provide a dedicated continuous power without provision of any disconnect devices. Use #12 AWG wire with 600-volt insulation and proper over-current circuit protection that complies with the local codes. For specifications see Appendix C Specifications And Features on page 98 of the Manual

Power Requirements (All currents are in amperes)							
Model Number	Description	Qty		Standby	Total Standby	Alarm	Total Alarm
FX-3500	FX-3500 FACP with Dialer		X	0.390	=	0.630	=
ALC-636	636 Point Dual Loop Adder		X	0.120	=	0.200	=
RAM-3500-LCD	Remote Annunciator with 4- line LCD Display		X	0.070	=	0.100	=
RAX-LCD-LITE	Remote Annunciator with 4- line LCD Display		X	0.065	=	0.080	=
PR-300	Polarity Reversal and City Tie Module		X	0.050	=	0.300	=
SRM-312(W/R)	Smart Relay Module		X	0.030	=		=
RAM-1016TZDS	16 Point Annunciator Chassis		X	0.050	=	0.150	=
RAM-1032TZDS	32 Point Remote Annunciator		X	0.050	=	0.300	=
RAX-1048TZDS	48 Point adder annunciator display		X	0.022	=	1 zone active: 0.026 2 zone active: 0.030 3 zone active: 0.035 4 zone active: 0.039 48 zone active: 0.262	=
RTI-1	Remote Trouble Indicator, Buzzer and LED		X	0.035	=	0.035	=
MIX-1251AP(A)	Advanced Protocol Ion Smoke Detector (ULC)		X	0.000	=	0.005	=
MIX-2251AP(A)	Advanced Protocol Photo Smoke Detector (ULC)		X	0.000	=	0.005	=
MIX-2251TAP(A)	Advanced Protocol Photo Heat Detector (ULC)		X	0.000	=	0.005	=
MIX-2251TMAP(A)	Advanced Protocol Acclimate Detector (ULC)		X	0.000	=	0.005	=
MIX-5251AP(A)	Advanced Protocol Heat Detector (ULC)		X	0.000	=	0.005	=
MIX-5251HAP(A)	Advanced Protocol High Temperature Heat Detector (ULC)		X		=		=
MIX-5251RAP(A)	Advanced Protocol Rate of Rise Heat Detector (ULC)		X		=		=
MIX-M500MAP(A)	Advanced Protocol Monitor Module (ULC)		X	0.000	=	0.005	=
MIX-M500RAP(A)	Advanced Protocol Relay Control Module (ULC)		X	0.000	=	0.005	=
MIX-M500SAP(A)	Advanced Protocol Supervised Control Module (ULC)		X	0.000	=	0.005	=
MIX- M501DMAP(A)	Advanced Protocol Dual Input Mini Monitor Module (ULC)		X		=		=
MIX-M501MAP(A)	Advanced Protocol Mini Monitor Module (ULC)		X	0.000	=	0.002	=
MIX-M502MAP(A)	Advanced Protocol Conventional Zone Module (ULC)		X	0.000	=	0.005	=
B501BH(A)	Intelligent Sounder Base (ULC)		X	0.001	=	0.015	=
B501BHT(A)	Intelligent Temporal Tone Sounder Base (ULC)		X	0.001	=	0.015	=
INX-10A	Main Chassis (10 Amp)		X	0.005	=	0.005	=
Device & Remote LEDs (Maximum 20 per loop)			X				=
Signal Load (bells, horns, strobes, and etc.)			X				=
Auxiliary Power Supply (Aux 1, Aux 2, Un-filtered)					=	Alarm	=
Total currents (Add above currents) STANDBY					(A)		(B)

Battery Capacity Requirement

Battery (AH) = (Standby Current Total x Discharge Time) + (Alarm Current Total x Alarm Time)

([STANDBY (A) _____] X [(24 Hours) ___]) + ([ALARM (B) _____] X [Alarm in Hr.] _____) = (C) _____AH

Total Alarm Current must be 10 amperes or less. NAC Circuits must not exceed 6 amperes.

Battery Selection

Battery Size = Multiply (C) by 1.20 to derate battery.

See the following table for the recommended Mircom batteries for use with this panel

Battery Model	Battery Size	UL/ULC Rating
BA-110	12AH	10AH
BA-117	18AH	17AH
BA-124	26AH	24AH
BA-140	42AH	40AH

BA-110 (12 AH) and BA-117 (18 AH) will fit into the BBX-1024DS.

To house BA-124 (26 AH) and BA-140 (42AH) batteries a BC-160 Battery Cabinet is required.

Use of alternative batteries may result in failure of the panel to meet agency and regulatory requirements, and may result in shortened battery life. Batteries should be tested regularly, and replaced at least every 3 years. If the Battery Trouble indicator activates, obtain required service.

Ordering Information

Model	Description
FX-3500	Single Loop, 318 Point Intelligent Fire Alarm Control Unit with built-in UDACT/Digital Communicator, expandable to 954 points with ALC-636 Dual Loop controller module. Includes UB-1024DS back box and DOX-1024DSR red door.
FX-3500RCU	All features of the FX-3500 plus releasing capability included.
FX-3500W	Single Loop, 318 Point Intelligent Fire Alarm Control Unit with built-in UDACT/Digital Communicator, expandable to 954 points with ALC-636 Dual Loop controller module. Includes UB-1024DS back box and DOX-1024DS white door.
FX-3500RCUW	All features of the FX-3500W plus releasing capability included.
Optional Adder Modules	
ALC-636	Dual Loop Controller Module
PR-300	Polarity Reversal/City Tie Module
PCS-100	Power Supply Interface Board
Remote Annunciators	
RAM-3500-LCD	Remote LCD Annunciator with 4-line display. Mounts in a BB-1000 Series enclosure.
RAX-LCD-Lite	Remote Annunciator with Large LCD display. Mounts in a BB-1000 Series enclosure.
RAX-1048TZDS	Programmable Remote LED Display Adder with 48 programmable bi-colored LEDs and 48 Trouble LEDs. Mounts in a BB-1000 Series enclosure.
RAM-1016TZDS	16 Zone Remote LED Annunciator with trouble LEDs. Mounts in a BB-1000 Series enclosure.
RAM-1032TZDS	32 Zone Remote LED Annunciator with trouble LEDs. Mounts in a BB-1000 Series enclosure.
AGD-048	Graphic Annunciator Adder Driver Module
MGD-32	Graphic Annunciator Driver Module
RTI-1	Remote Trouble Indicator, Buzzer and LED
Enclosures for Remote Annunciators	
BB-1001D	Remote enclosure, white door. Houses 1 module.
BB-1001DR	Remote enclosure, red door. Houses 1 module.
BB-1002D	Remote enclosure, white door. Houses 2 modules.
BB-1002DR	Remote enclosure, red door. Houses 2 modules.
BB-1003D	Remote enclosure, white door. Houses 3 modules.
BB-1003DR	Remote enclosure, red door. Houses 3 modules.
BB-1008D	Remote enclosure, white door. Houses 8 modules.
BB-1008DR	Remote enclosure, red door. Houses 8 modules.
BB-1012D	Remote enclosure, white door. Houses 12 modules.
BB-10012DR	Remote enclosure, red door. Houses 12 modules.
Other Items	
INX-10A	Intelligent NAC Expander Panel
BC-160	External Battery Cabinet
SRM-312W	Smart Relay Module with White Enclosure. Can support up to 12 relays.
SRM-312R	Smart Relay Module with Red Enclosure. Can support up to 12 relays.
MP-3500R	Solenoid EOL Module (Red) - 47K.
MP-3500W	Solenoid EOL Module (White) - 47K.
MP-300	End of Line Plate, White.
MP-300R	End of Line Plate, Red.

Note: For releasing application please see the Releasing Guide LT-1091

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