

RAXN-LCD

Network Remote Annunciator Panel

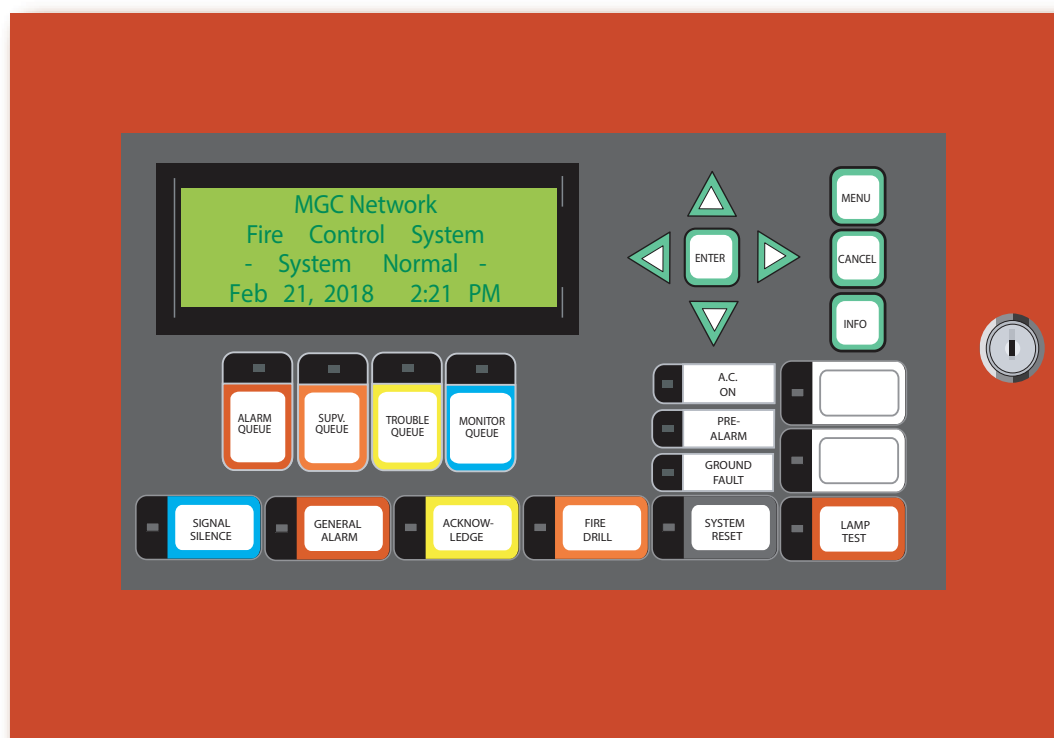
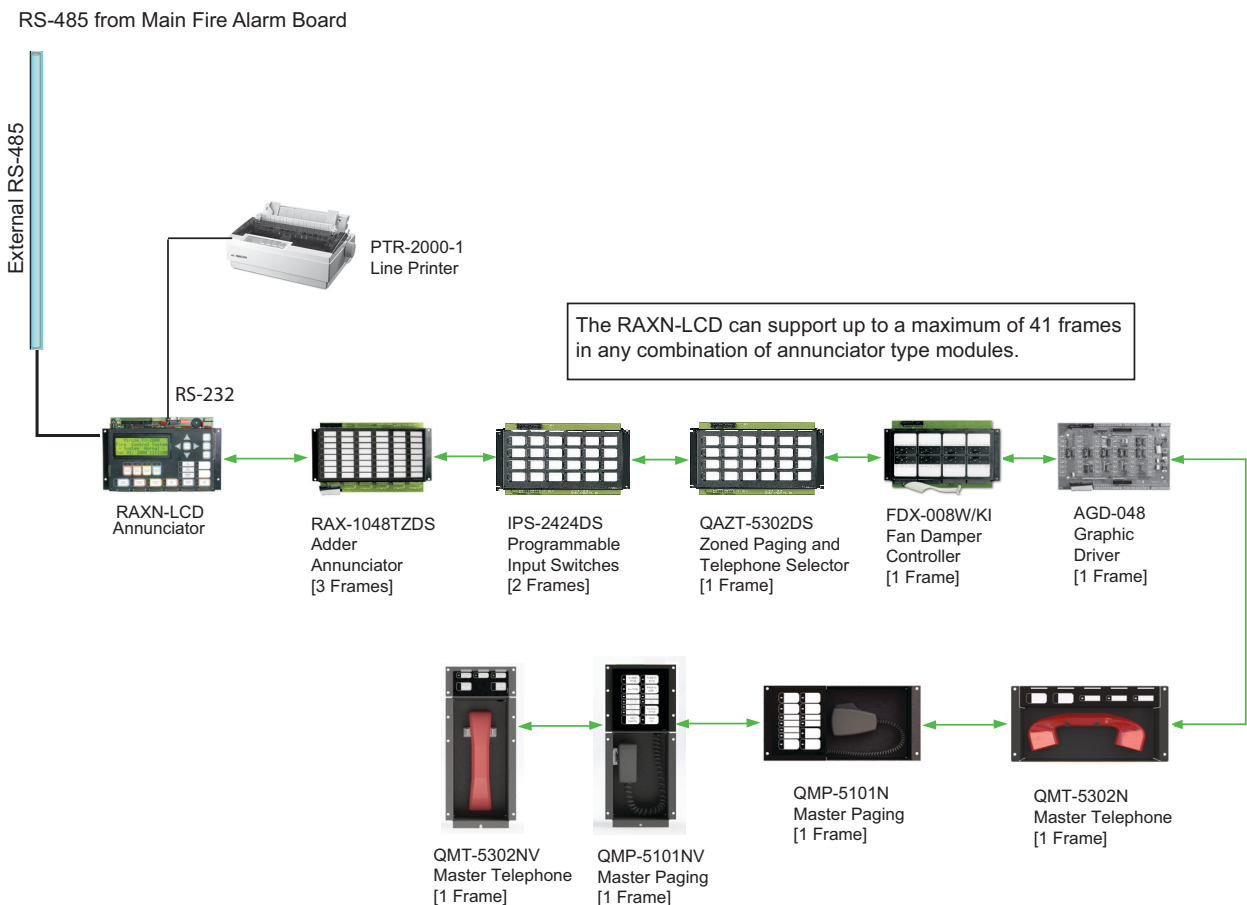


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1.0 Introduction

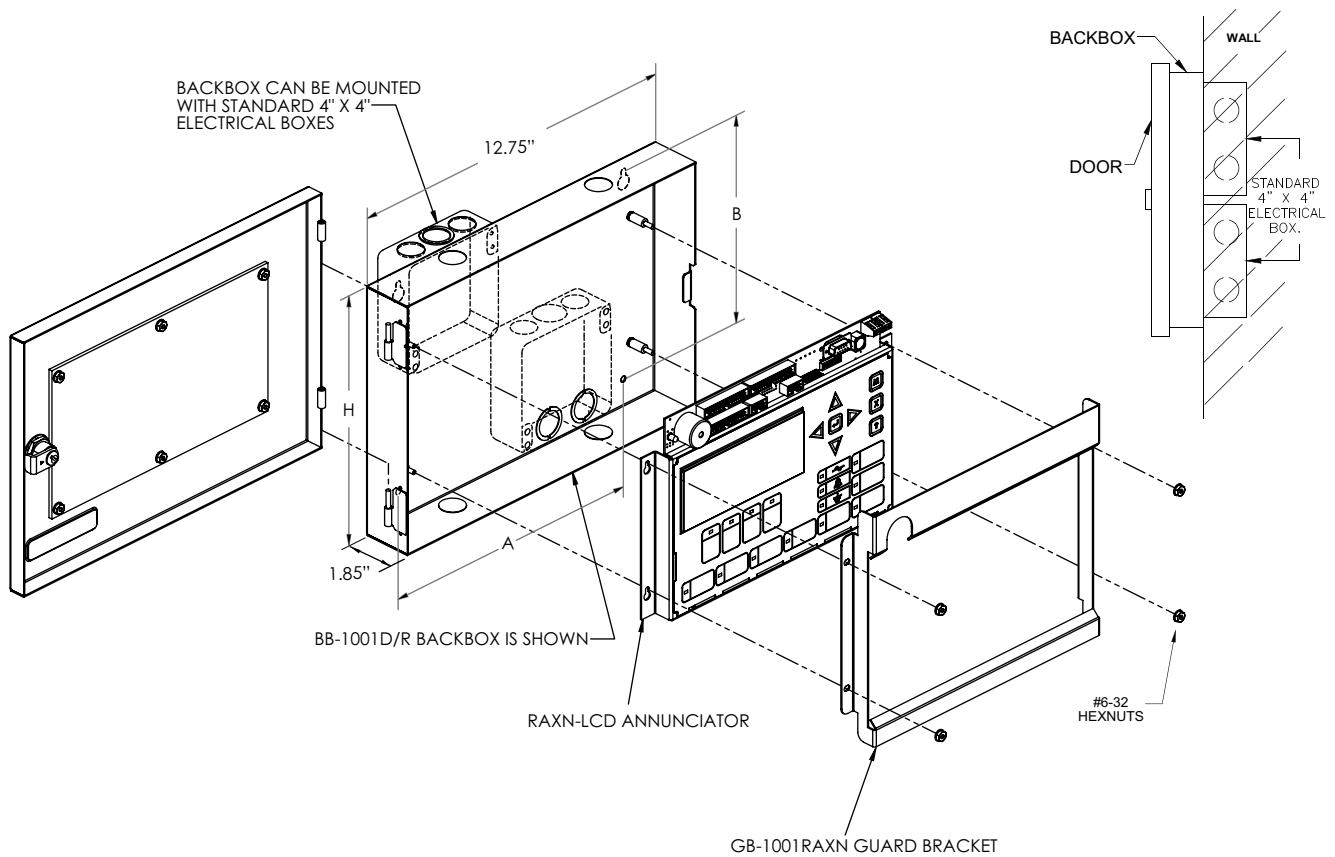
MGC's remote shared display is the RAXN-LCD. The RAXN-LCD provides a replica of the main Fire Alarm Panel display at a remote location. It is equipped with a large 4 line x 20 character back-lit alphanumeric LCD display that uses a simple menu system complete with a directional keypad and switches for Enter, Menu, Cancel and Info. The display expands with up to a total of 41 frames made up of display adder modules and up to 7 RAXN-LCDs per node, refer to figure below. The RAXN-LCD may be mounted in the BB-1000 (MMX-BB-1000) Series backboxes, the BB-5008, BB-5014, BBX-FXMNS (MMX-BBX-FXMNS) and FX-LOC (MMX-LOC) enclosures.



2.0 Installation Instructions

The RAXN-LCD chassis is mounted with four HEX nuts. Figure below shows the RAXN-LCD mounted into a BB-1001D/R (MMX-BB-1001D/R) backbox. Dimensions for height and mounting hole locations change for the various backboxes as shown in the table below.

BACKBOX MODEL	HEIGHT OF BACKBOX H (IN.)	WIDTH OF BACKBOX (IN.)	HORIZONTAL MOUNTING HOLE DIM. A (IN.)	VERTICAL MOUNTING HOLE DIM. B (IN.)
BB-1001D/R(MMX-BB-1001D/R)	9.0"	12.75"	9.95"	7.5"
BB-1002D/R(MMX-BB-1002D/R)	18.0"	12.75"	9.95"	16.5"
BB-1003D/R(MMX-BB-1003D/R)	26.5"	12.75"	9.95"	24.9"
BB-1008D/R(MMX-BB-1008D/R)	33.0"	22.5"	9.95"	35.2"
BB-1012D/R(MMX-BB-1012D/R)	45.0"	22.5"	9.95"	52.0"



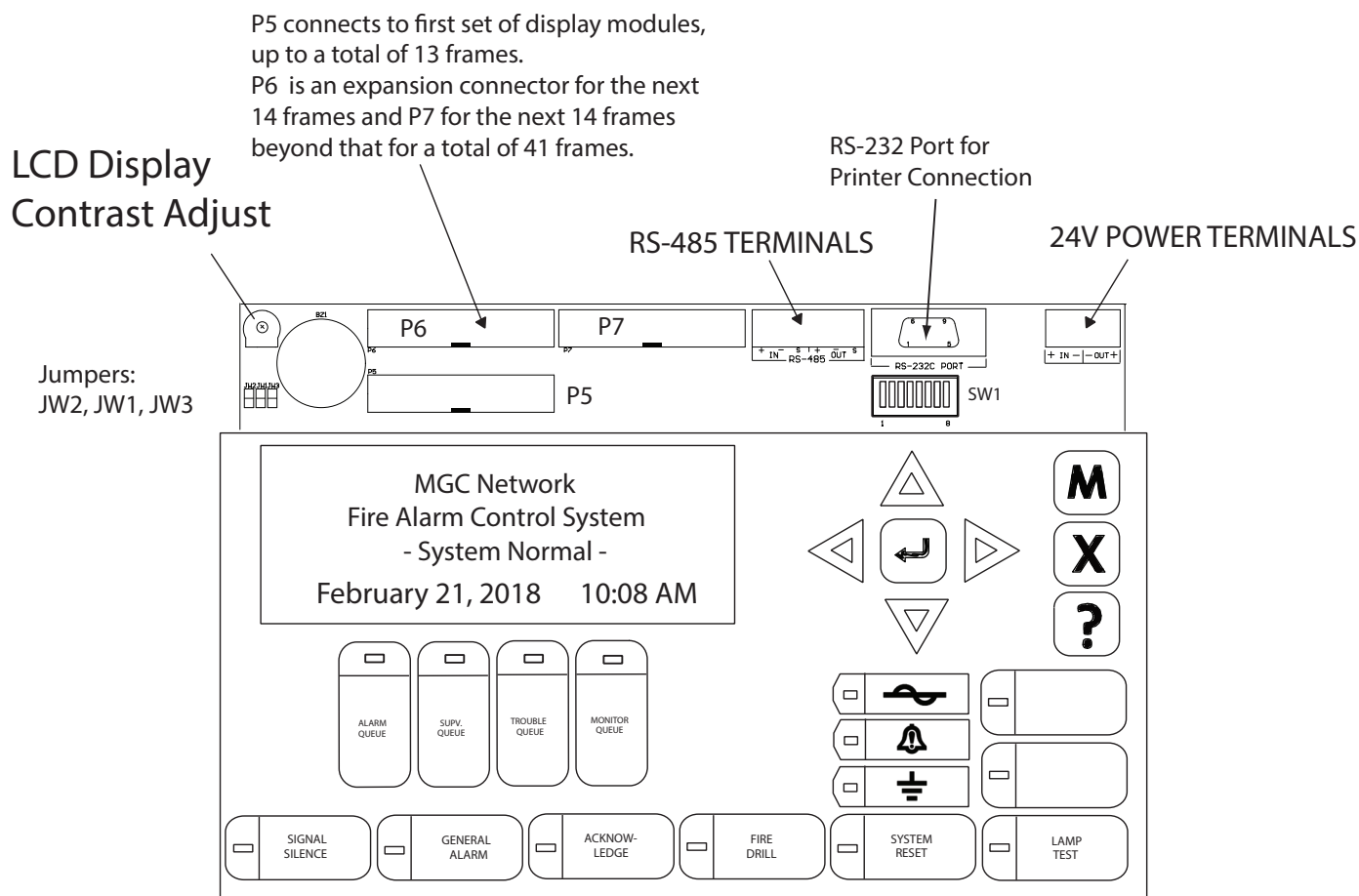
3.0 Jumper Settings

There are 3 jumpers located on the top left-hand side of the board position left to right as JW2, JW1 and JW3.

Jumper	Function
JW1	Left OPEN, used for hard reset
JW2	Jumpered (jumper installed) for watchdog timer
JW3	Left OPEN, if buzzer (located on the right-side of jumper JW3) is to be silenced.



Note: There are jumpers located in connectors P6 and P7. Remove these jumpers when using adder modules beyond the first 13 frames. Refer to the Fire Alarm Panel manual for further details.



4.0 DIP Switch Settings

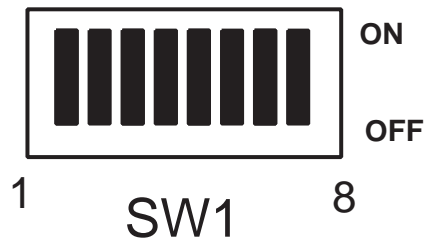
Each RAXN-LCD Shared Display Annunciator needs to be assigned a unique address via the DIP switches of SW1.

The RAXN-LCD SW1 DIP switches are set by selecting the active ON. The addresses available for the RAXN-LCD are 33 to 39, inclusive. Set the address as follows in the table below:

RAXN-LCD Remote Annunciator Address Setting (DIP SWITCH SW1)

RAXN-LCD Address	SW1-1	SW1-2	SW1-3	SW1-4	SW1-5	SW1-6	SW1-7	SW1-8
33	ON	OFF	OFF	OFF	OFF	ON	Leave in “OFF” position as Factory Set.	
34	OFF	ON	OFF	OFF	OFF	ON		
35	ON	ON	OFF	OFF	OFF	ON		
36	OFF	OFF	ON	OFF	OFF	ON		
Refer to Network Fire Alarm Manual as to whether addresses 37 to 39 are available								
37	ON	OFF	ON	OFF	OFF	ON		
38	OFF	ON	ON	OFF	OFF	ON		
39	ON	ON	ON	OFF	OFF	ON		

DIP switch SW1 is used to set the address of the RAXN-LCD



DIP switches are for assigning an address to the RAXN-LCD. Binary addresses 33 to 39 are available with the least significant bit being switch SW1-1 on the left and the most significant bit being SW1-6. The ON setting is active binary. DIP switches SW1-7 and SW1-8 are not used.

For example, address 33 is set by pushing DIP switch SW1-6 and SW1-1 to the ON position and all the other DIP switches to the OFF position.

Refer to Network Fire Alarm Manual as to whether addresses 37 to 39 are available.

5.0 Wiring Instructions

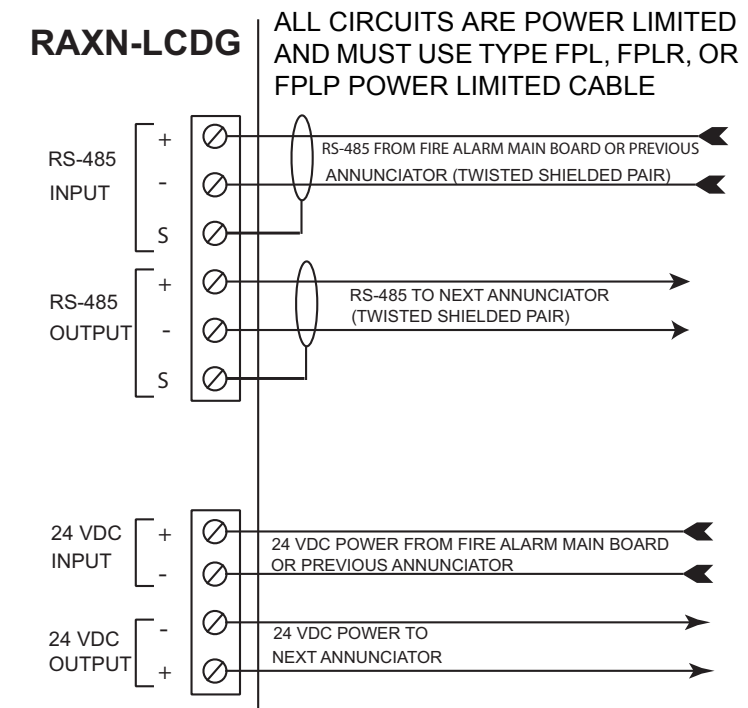
RS-485 Wiring

The RS-485 wiring to the RAXN-LCD Display Module is recommended to be twisted shielded pair as shown in the diagram to the right. The RS-485 wire gauge may be:

- 22 AWG up to 2000 ft.
- 20 AWG up to 4000 ft.

The RS-485 wiring from the fire alarm control panel to the annunciator(s) must be point-to-point from the fire alarm panel to the first annunciator, then to the next annunciator, and so on. No star wiring or T-tapping is allowed.

Each RAXN-LCD Shared Display has a 120 ohm end-of-line resistor on its RS-485 output terminals. This resistor is removed on all except the last wired annunciator.



24V DC Wiring

The 24 VDC field wiring needs to be of an appropriate gauge for the number of annunciators and the total wiring run length. Refer to the Current Drain for Battery Calculations on page 8 to calculate the maximum current for all annunciators summed together.



Accidentally connecting any of the 24 VDC wires to the RS-485 wiring will result in damage to the annunciator and/or to the fire alarm control panel to which it is connected.

Total Maximum Current for all Annunciators	Maximum Wiring Run to Last Annunciator								Max. Loop Resistance
	18AWG		16AWG		14AWG		12AWG		
Amperes	ft	m	ft	m	ft	m	ft	m	Ohms
0.12	1180	360	1850	567	3000	915	4250	1296	15
0.30	470	143	750	229	1200	366	1900	579	6
0.60	235	71	375	114	600	183	850	259	3
0.90	156	47	250	76	400	122	570	174	2
1.20	118	36	185	56	300	91	425	129	1.5
1.50	94	29	150	46	240	73	343	105	1.2
1.70	78	24	125	38	200	61	285	87	1.0

6.0 Cable Connections

The RAXN-LCD may be utilized by itself in a remote location or within a larger enclosure together with other display modules. It may also be used as part of a mass notification system.

Below is an example of a RAXN-LCD and a RAX-1048TZDS 48 LED Annunciator Display module in a BB-1002D/R (MMX-BB-1002D/R) enclosure.

Connections on the RAXN-LCD Annunciator

P5: Connects to the RAX-1048TZDS 48 LED Annunciator module. This connector may connect up to 13 frames of display modules.

P6: Connects to next 14 frames (i.e. frame 15 to 27) of display modules.

P7: Connects to next 14 frames (i.e. frame 28 to 41) of display modules.

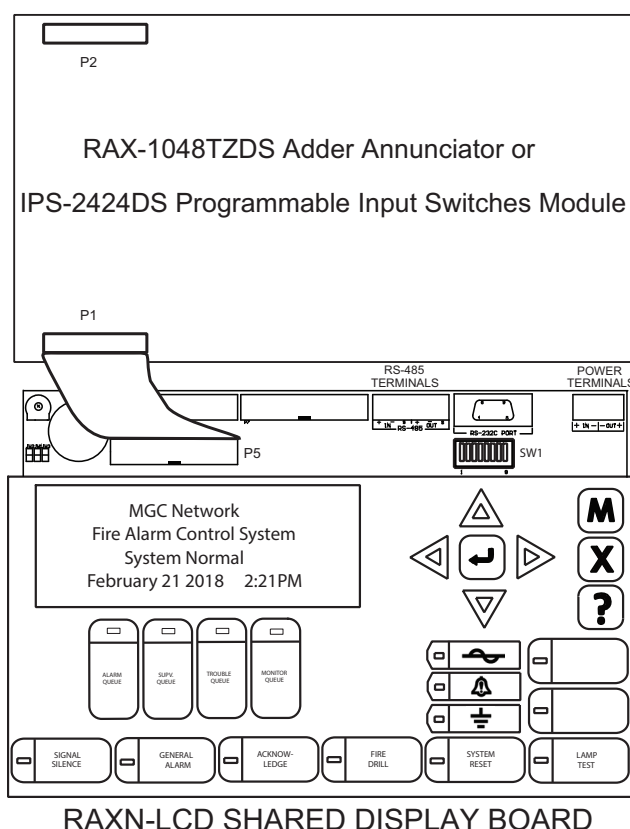
Terminals: Terminal wiring is required for the RS-485 loop and the 24V DC power source. See *Wiring Instructions* on page 5 for details.

SW1: DIP switch SW1 is used to set the address for the RAXN-LCD. See *DIP Switch Settings* on page 6 for details.

Connections on the RAX-1048TZDS 48 LED Annunciator Display Module:

P1: Connects to the main annunciator chassis RAXN-LCD P5.

P2: Connects to the next display module if used.



Note: The last annunciator must have a 120 ohm E.O.L. resistor connected to the RS-485 output terminals.

7.0 Specifications

Enclosure Models

BB-1001D/R (MMX-BB-1001D/R): Backbox for one annunciator chassis with keylock door.

BB-1002D/R (MMX-BB-1002D/R): Backbox for up to two annunciator chassis with keylock door.

BB-1003D/R (MMX-BB-1003D/R): Backbox for up to three annunciator chassis with keylock door.

BB-1008D/R (MMX-BB-1008D/R): Backbox for up to eight annunciator chassis with keylock door.

BB-1012D/R (MMX-BB-1012D/R): Backbox for up to twelve annunciator chassis with keylock door.



Notes: Enclosure finish: painted semi-gloss off white, except for models with suffix “R” which are painted red.

Material: BB-1001D/R (MMX-BB-1001D/R), BB-1002D/R (MMX-BB-1002D/R) are 18GA, BB-1003D/R (MMX-BB-1003D/R) is 16 GA CRS. BB-1008D/R (MMX-BB-1008D/R), BB-1012D/R (MMX-BB-1012D/R) backboxes are 16 GA. CRS, Doors are 14 GA.

See *Installation Instructions* on page 6 for enclosure dimensions.

Other larger enclosures available are **BB-5008**, **BB-5014**, **BBX-FXMNS (MMX-BBX-FXMNS)** and **FX-LOC (MMX-LOC)**.

Annunciator Models

RAXN-LCD Remote Network Shared Display LCD Annunciator

- 24V DC nominal.
- Interconnects via one ribbon cable (or wiring) to the Main Network Fire Alarm Panel or to previous RAXN-LCD.
- Provides exact functions as the main display.
- Standby: 139 mA Max., All LEDs ON: 164 mA Max.

RAX-1048TZDS Adder Annunciator Module (48 Display Points)

- Interconnects via one ribbon cable from RAXN-LCD or to previous RAX-1048TZDS or IPS-2424DS to the next RAX-1048TZDS or IPS-2424DS.
- Annunciation of up to 48 additional points.
- Standby: 22 mA Max., All LEDs ON: 262 mA Max.

8.0 Battery Calculations

Current Drain for Battery Calculations

The following are the currents for the RAXN-LCD to which is added the number of RAX-1048TZDS and/or IPS-2424DS or FDX-008W/KI used:

$$\text{Normal Standby Current} = 139 \text{ mA} + \frac{\text{[number of RAX-1048TZDS]}}{\text{[number of RAX-1048TZDS]}} \times 22 \text{ mA} + \frac{\text{[number of IPS-2424DS]}}{\text{[number of IPS-2424DS]}} \times 10 \text{ mA} = \text{_____}$$

$$\text{Maximum Alarm Current} = 164 \text{ mA} + \frac{\text{[number of RAX-1048TZDS]}}{\text{[number of RAX-1048TZDS]}} \times 35 \text{ mA} + \frac{\text{[number of IPS-2424DS]}}{\text{[number of IPS-2424DS]}} \times 15 \text{ mA} = \text{_____}$$

The **Normal Standby Current** is used for battery size calculations (see the Network Fire Alarm Manual for battery calculations) and includes the current drain for the Trouble Buzzer, Trouble LED, and one alarm LED. The **Maximum Alarm Current** is used to calculate the wire size required (see Wiring Table on page 5).

9.0 Warranty and Warning Information

WARNING!

Please read this document **CAREFULLY**, as it contains important warnings, life-safety, and practical information about all products manufactured by the Mircom Group of Companies, including Mircom and Secutron branded products, which shall include without limitation all fire alarm, nurse call, building automation and access control and card access products (hereinafter individually or collectively, as applicable, referred to as “**Mircom System**”).

NOTE TO ALL READERS:

1. **Nature of Warnings.** The within warnings are communicated to the reader out of an abundance of caution and create no legal obligation for Mircom Group of Companies, whatsoever. Without limiting the generality of the foregoing, this document shall NOT be construed as in any way altering the rights and obligations of the parties, governed by the legal documents that apply in any given circumstance.
2. **Application.** The warnings contained in this document apply to all Mircom System and shall be read in conjunction with:
 - a. the product manual for the specific Mircom System that applies in given circumstances;
 - b. legal documents that apply to the purchase and sale of a Mircom System, which may include the company's standard terms and conditions and warranty statements;
 - c. other information about the Mircom System or the parties' rights and obligations as may be application to a given circumstance.
3. **Security and Insurance.** Regardless of its capabilities, no Mircom System is a substitute for property or life insurance. Nor is the system a substitute for property owners, renters, or other occupants to act prudently to prevent or minimize the harmful effects of an emergency situation. Building automation systems produced by the Mircom Group of Companies are not to be used as a fire, alarm, or life-safety system.

NOTE TO INSTALLERS:

All Mircom Systems have been carefully designed to be as effective as possible. However, there are circumstances where they may not provide protection. Some reasons for system failure include the following. As the only individual in contact with system users, please bring each item in this warning to the attention of the users of this Mircom System. Failure to properly inform system end-users of the circumstances in which the system might fail may result in over-reliance upon the system. As a result, it is imperative that you properly inform each customer for whom you install the system of the possible forms of failure:

4. **Inadequate Installation.** All Mircom Systems must be installed in accordance with all the applicable codes and standards in order to provide adequate protection. National standards require an inspection and approval to be conducted by the local authority having jurisdiction following the initial installation of the system and following any changes to the system. Such inspections ensure installation has been carried out properly.
5. **Inadequate Testing.** Most problems that would prevent an alarm a Mircom System from operating as intended can be discovered by regular testing and maintenance. The complete system should be tested by the local authority having jurisdiction immediately after a fire, storm, earthquake, accident, or any kind of construction activity inside or outside the premises.

The testing should include all sensing devices, keypads, consoles, alarm indicating devices and any other operational devices that are part of the system.

NOTE TO USERS:

All Mircom Systems have been carefully designed to be as effective as possible. However, there are circumstances where they may not provide protection. Some reasons for system failure include the following. The end user can minimize the occurrence of any of the following by proper training, testing and maintenance of the Mircom Systems:

6. **Inadequate Testing and Maintenance.** It is imperative that the systems be periodically tested and subjected to preventative maintenance. Best practices and local authority having jurisdiction determine the frequency and type of testing that is required at a minimum. Mircom System may not function properly, and the occurrence of other system failures identified below may not be minimized, if the periodic testing and maintenance of Mircom Systems is not completed with diligence and as required.
7. **Improper Operation.** It is important that all system users be trained in the correct operation of the alarm system and that they know how to respond when the system indicates an alarm. A Mircom System may not function as intended during an emergency situation where the user is unable to operate a panic or emergency switch by reason of permanent or temporary physical disability, inability to reach the device in time, unfamiliarity with the correct operation, or related circumstances.
8. **Insufficient Time.** There may be circumstances when a Mircom System will operate as intended, yet the occupants will not be protected from the emergency due to their inability to respond to the warnings in a timely manner. If the system is monitored, the response may not occur in time enough to protect the occupants or their belongings.
9. **Carelessness or Safety Hazards.** Moreover, smoke detectors may not provide timely warning of fires caused by carelessness or safety hazards such as smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits or children playing with matches or arson.
10. **Power Failure.** Some Mircom System components require adequate electrical power supply to operate. Examples include: smoke detectors, beacons, HVAC, and lighting controllers. If a device operates only by AC power, any interruption, however brief, will render that device inoperative while it does not have power. Power interruptions of any length are often accompanied by voltage fluctuations which may damage Mircom Systems or other electronic equipment. After a power interruption has occurred, immediately conduct a complete system test to ensure that the system operates as intended.
11. **Battery Failure.** If the Mircom System or any device connected to the system operates from batteries it is possible for the batteries to fail. Even if the batteries have not failed, they must be fully charged, in good condition, and installed correctly. Some Mircom Systems use replaceable batteries, which have a limited life-span. The expected battery life is variable and in part dependent on the device environment, usage and type. Ambient conditions such as high humidity, high or low temperatures, or large temperature fluctuations may reduce the expected battery life. Moreover, some Mircom Systems do not have a battery monitor that would alert the user in the event that the battery is nearing its end of life. Regular testing and replacements are vital for ensuring that the batteries function as expected, whether or not a device has a low-battery monitor.
12. **Physical Obstructions.** Motion sensors that are part of a Mircom System must be kept clear of any obstacles which impede the sensors' ability to detect movement. Signals being communicated by a Mircom System may not reach the receiver if an item (such as metal, water, or concrete) is placed on or near the radio path. Deliberate jamming or other inadvertent radio signal interference can also negatively affect system operation.

13. **Wireless Devices Placement Proximity.** Moreover all wireless devices must be a minimum and maximum distance away from large metal objects, such as refrigerators. You are required to consult the specific Mircom System manual and application guide for any maximum distances required between devices and suggested placement of wireless devices for optimal functioning.
14. **Failure to Trigger Sensors.** Moreover, Mircom Systems may fail to operate as intended if motion, heat, or smoke sensors are not triggered.
 - a. Sensors in a fire system may fail to be triggered when the fire is in a chimney, walls, roof, or on the other side of closed doors. Smoke and heat detectors may not detect smoke or heat from fires on another level of the residence or building. In this situation the control panel may not alert occupants of a fire.
 - b. Sensors in a nurse call system may fail to be triggered when movement is occurring outside of the motion sensors' range. For example, if movement is occurring on the other side of closed doors or on another level of the residence or building the motion detector may not be triggered. In this situation the central controller may not register an alarm signal.
15. **Interference with Audible Notification Appliances.** Audible notification appliances may be interfered with by other noise sources such as stereos, radios, televisions, air conditioners, appliances, or passing traffic. Audible notification appliances, however loud, may not be heard by a hearing-impaired person.
16. **Other Impairments.** Alarm notification appliances such as sirens, bells, horns, or strobes may not warn or waken a sleeping occupant if there is an intervening wall or door. It is less likely that the occupants will be alerted or awakened when notification appliances are located on a different level of the residence or premise.
17. **Software Malfunction.** Most Mircom Systems contain software. No warranties are provided as to the software components of any products or stand-alone software products within a Mircom System. For a full statement of the warranties and exclusions and limitations of liability please refer to the company's standard Terms and Conditions and Warranties.
18. **Telephone Lines Malfunction.** Telephone service can cause system failure where telephone lines are relied upon by a Mircom System. Alarms and information coming from a Mircom System may not be transmitted if a phone line is out of service or busy for a certain period of time. Alarms and information may not be transmitted where telephone lines have been compromised by criminal tampering, local construction, storms or earthquakes.
19. **Component Failure.** Although every effort has been made to make this Mircom System as reliable as possible, the system may fail to function as intended due to the failure of a component.
20. **Integrated Products.** Mircom System might not function as intended if it is connected to a non-Mircom product or to a Mircom product that is deemed non-compatible with a particular Mircom System. A list of compatible products can be requested and obtained.

Warranty

Purchase of all Mircom products is governed by:

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CANADA - Main Office
25 Interchange Way
Vaughan, ON L4K 5W3
Tel: (888) 660-4655
(905) 660-4655
Fax: (905) 660-4113

U.S.A
4575 Witmer Industrial Estates
Niagara Falls, NY 14305
Tel: (888) 660-4655
(905) 660-4655
Fax: (905) 660-4113

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