

MR-2312-AT Series

Remote Multiplex Annunciator Panel

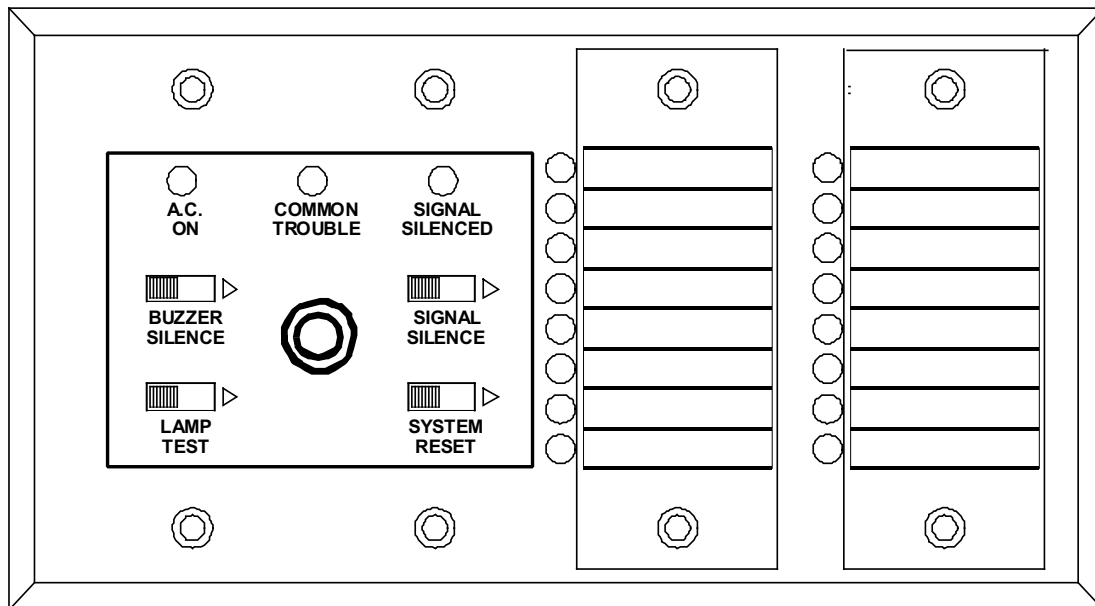


Table of Contents

1.0	Introduction	4
2.0	Installation Instructions	5
2.1	Controls and Displays	6
3.0	Wiring Instructions	7
4.0	DIP Switch Settings	9
4.1	Jumper Selection	9
5.0	Specifications and Features	10
5.1	Enclosure	10
5.2	Electrical Specifications	10
5.3	Current Drain for Battery Calculations	10
5.4	Environmental Specifications	10
6.0	Warranty and Warning Information	11

1.0 Introduction

Secutron's MR-2312-AT Annunciator is a 16-circuit annunciator for use with Secutron's MR-2300 Series Fire Alarm Control Panels. Annunciators mount into the MMX-BB-1001D enclosure, and may not be expanded. Control access is by a keyswitch. Each circuit indicator is a bi-colour LED that is automatically configured to match the fire alarm control panel configuration.



Note: For ULC S527 applications the MR-2312-AT is an ancillary display device.

2.0 Installation Instructions

Table 1 Enclosure Dimensions and Capacity

Enclosure Model Number	Height H(in.)	Width (in.)	Mounting A (in.)	Mounting B (in.)	Annunciator Capacity
MMX-BB-1001D / MMX-BB-1001DR / MMX-BB-1001DB / MMX-BB-1001DS	9.0"	12.75"	9.95"	7.5"	1

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Note: No suffix R is for white door.
Suffix R is for red door.
Suffix S is for stainless steel door.
Backbox is always black.

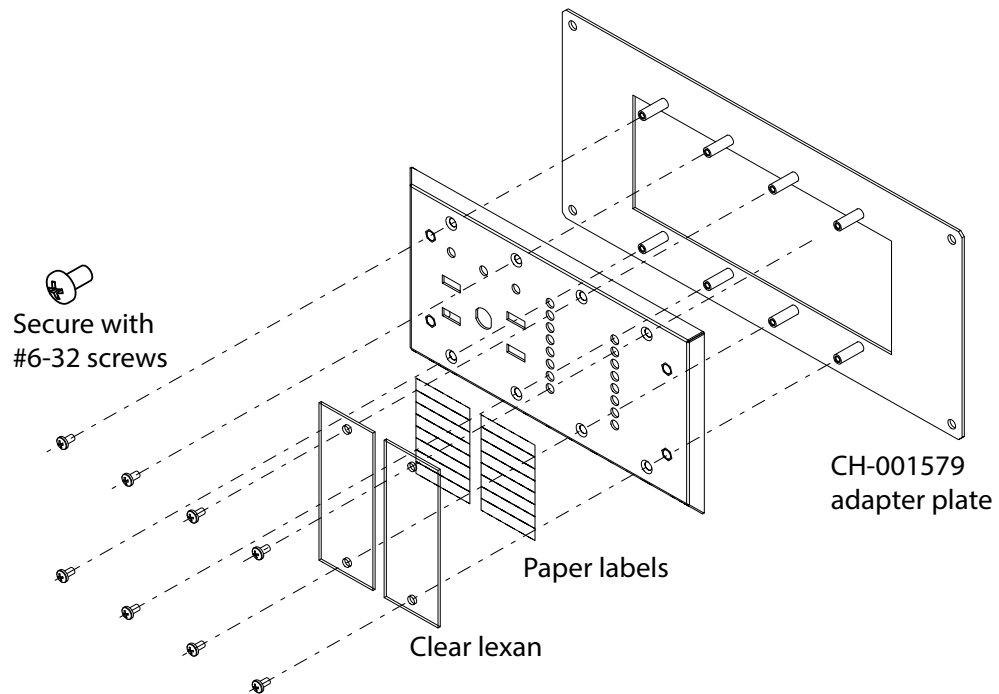


Figure 1 Secure MR-2312-AT to CH-001579

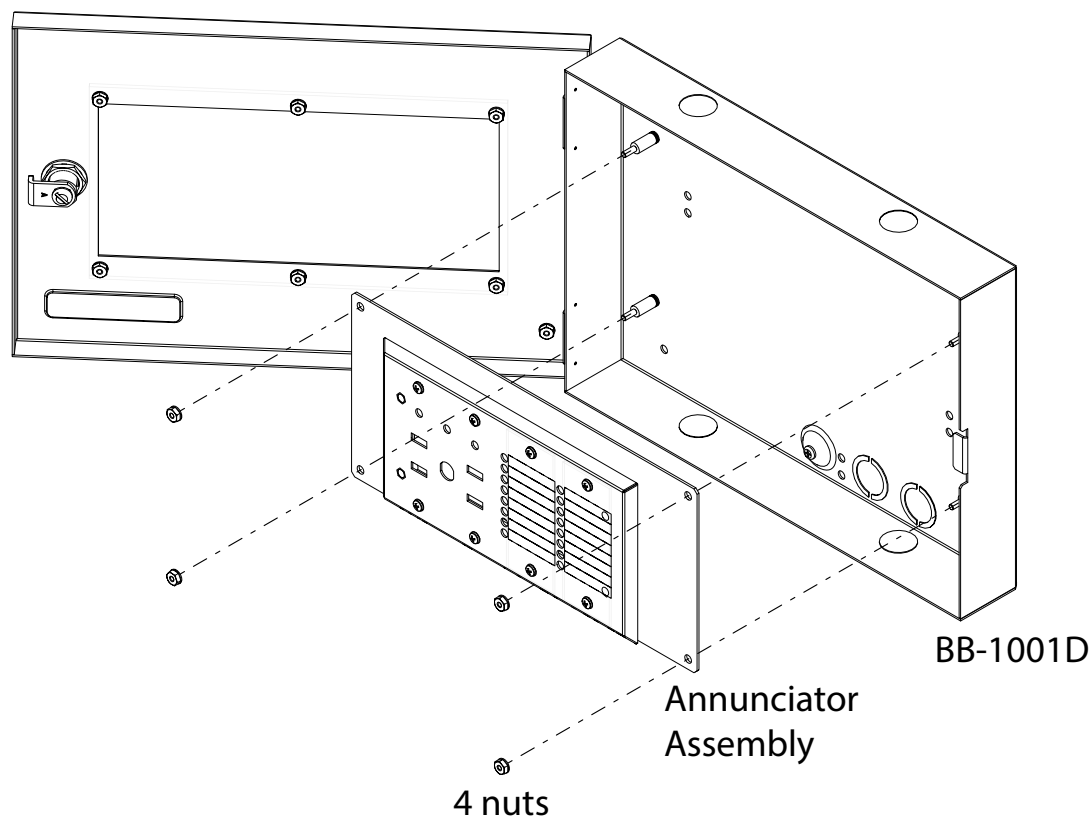


Figure 2 Secure annunciator assembly to MMX-BB-1001D enclosure

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Notes: The MR-2312-AT is supplied with NP-386 paper labels for zone identification.

This annunciator displays initiating circuit status only (no individual circuit troubles). Indicating and relay circuits are not remotely displayed. For more details, refer to the manual of the fire alarm control panel that the annunciator will be connected to.

The MR-2312-AT has a keyswitch to enable the four slide-switch controls. The key should be appropriately secured.

2.1 Controls and Displays

For precise definitions of control & display operation, refer to the manual of the fire alarm control panel that the annunciator will be connected to.

Table 2 Controls and Displays Listing

Controls	Displays
System Reset, Signal Silence Switches	AC On, Common Trouble, Signal Silence LEDs
Buzzer Silence, Lamp Test Switches	16 circuit status bi-coloured (red/amber) LEDs

3.0 Wiring Instructions

The RS-485 Wiring to the MR-2312-AT Module is recommended to be twisted shielded pair as shown in the diagram. The 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 MR-2312-AT Annunciator Module has a 120 ohm end-of-line resistor on its RS-485 output terminals. This is removed on all except the last wired module.

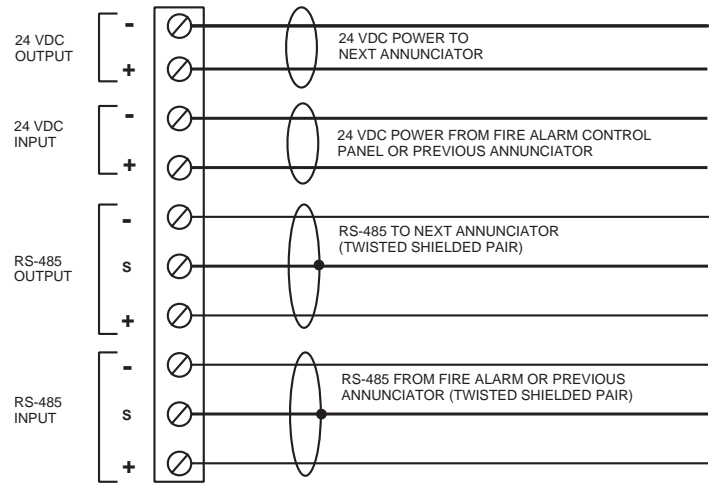


Figure 3 Wiring Diagram

The 24 VDC field wiring needs to be of an appropriate gauge for the number of annunciators and the total wiring run length. Use the *Current Drain for Battery Calculations* on page 10 to calculate the maximum current for all annunciators summed together.

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Note: All circuits are power limited and must use type FPL, FPLR, or FPLP power limited cable.

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Attention: 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.

Table 3 Maximum Wiring Run to Last Annunciator

Total Maximum Current for all Annunciators									Maximum 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

4.0 DIP Switch Settings

Each annunciator needs to be assigned a unique, sequential address via DIP switches SW1-1, SW1-2, and SW1-3. DIP switch SW1-4 is used to allow disabling of some front panel slide switches.

SW1-1 = Address A0

SW1-2 = Address A1

SW1-3 = Address A2

Three digit address of the annunciator (address range 1 to 7 inclusive)

SW1-4 = When SW1-4 is "off", the System Reset and Signal Silence slide-switches are always disabled, regardless of the operation of the keyswitch. The Buzzer Silence and Lamp Test slide-switches will operate with the use of the keyswitch.

When SW1-4 is "on", all four slide -switches on the front panel will operate with the use of the keyswitch.

Set the annunciator address (see the manual for the fire alarm control panel being used), as follows in the table below

Table 4 SW1 DIP Switch Settings

Annunciator Address	SW1-1	SW1-2	SW1-3
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON



Note: Annunciators on a common RS-485 connection must be numbered sequentially; i.e.: 1,2,3,4, and not randomly such as 5,3,7! Note that not all Annunciator "Addresses" are valid for all Fire Alarm Control Panels. Refer to the Fire Alarm Control Panel Manual for further information.

4.1 Jumper Selection

Jumper JP1 connects pins 1 and 2 and thus provides an eight bit checksum. The eight bit checksum is used for MR-2300 Series Panel.

JW4 (Orange Wire)

Jumper Intact = Buzzer silence & Lamp Test local function only. System Reset & Signal Silence are disabled.

Cut Jumper (Orange Wire) to have all remote functions operate.

5.0 Specifications and Features

5.1 Enclosure

- A standard 4-gang electrical box is used.

5.2 Electrical Specifications

- 24 VDC nominal voltage
- Slide-switch controls, LED indicators, and keyswitch to enable controls.
- Local buzzer, indicators (ac-on, common trouble, signal silence), and controls (system reset, lamp test, buzzer silence, signal silence).
- Annunciation of up to 16 points.
- Not expandable.
- Standby 35 mA Max., All LED's illuminated 140 mA max.

5.3 Current Drain for Battery Calculations

The lamp test feature draws the maximum normal current because it illuminates all lamps on one chassis at a time. Thus the currents are:

**Normal Standby
Current = 35 mA**

**Maximum Current
= 140 mA**

Use the “normal standby current” for battery size calculations (see the fire alarm control panel manual for battery calculations) and includes the current drain for the Trouble Buzzer, Trouble LED, and one alarm LED. Use the “maximum current” to calculate the wire size (see the wiring instructions on page 7).

5.4 Environmental Specifications

This annunciator is intended for indoor use only.

6.0 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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