

RAXN-4000LCDGC

Network Remote Graphic Color Annunciator
and Main Display



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1.0 Introduction

The **RAXN-4000LCDGC** is MGC's network remote graphic color annunciator and main display. It provides an exact replica of the main Flex-Net™ FX-4000 and MMX™-4000 Fire Alarm Panel display (except with an 8-event 16-line color graphical display) at a remote location or as a main display. It is equipped with a simple menu system complete with a directional keypad and switches for Enter, Menu, Cancel and Info. The RAXN-4000LCDGC supports up to a maximum of 41 frames: 13 for the first header P5, and 14 frames for each header P4 and P6. A frame is a measure of display capacity. Each display module has its own frame measure. See section 7.3 on page 10 for the list of available modules and their frames. There are five types of enclosures available (shown in Table 1). The RAXN-4000LCDGC may also be mounted in the BB-5008 and the BB-5014 backboxes as part of a central location or node, and it may be mounted in the inner deadfront chassis of all Flex-Net™ FX-4000 and MMX™-4000 fire alarm enclosures as a main display.

2.0 Installation Instructions

Table 1 Dimensions of enclosures

Enclosure Model	Height of enclosure H (in.)	Width of enclosure (in.)	Horizontal Mounting Hole dim. A (in.)	Vertical Mounting Hole dim. B (in.)	Number of chassis it holds
BB-1001D/DR/DS (MMX-BB-1001D/DR)	9.0"	12.75"	9.95"	7.5"	1
BB-1002D/DR/DS (MMX-BB-1002D/DR)	18.0"	12.75"	9.95"	16.5"	2
BB-1003D/DR/DS (MMX-BB-1003D/DR)	26.5"	12.75"	9.95"	24.9"	3
BB-1008D/DR/DS (MMX-BB-1008D/DR)	33.0"	22.5"	9.95"	35.2"	8
BB-1012D/DR/DS (MMX-BB-1012D/DR)	45.0"	22.5"	9.95"	52.0"	12

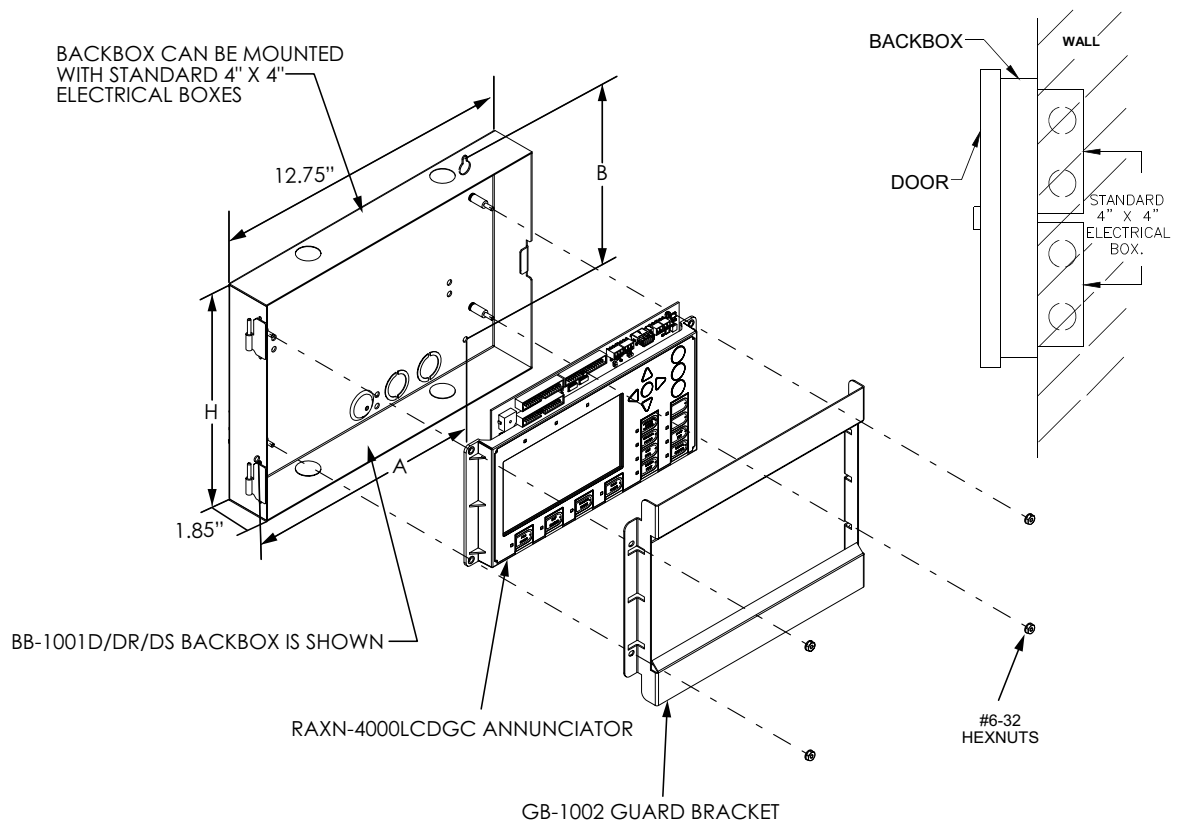


Figure 1 Mounting RAXN-4000LCDGC in BB-1001D

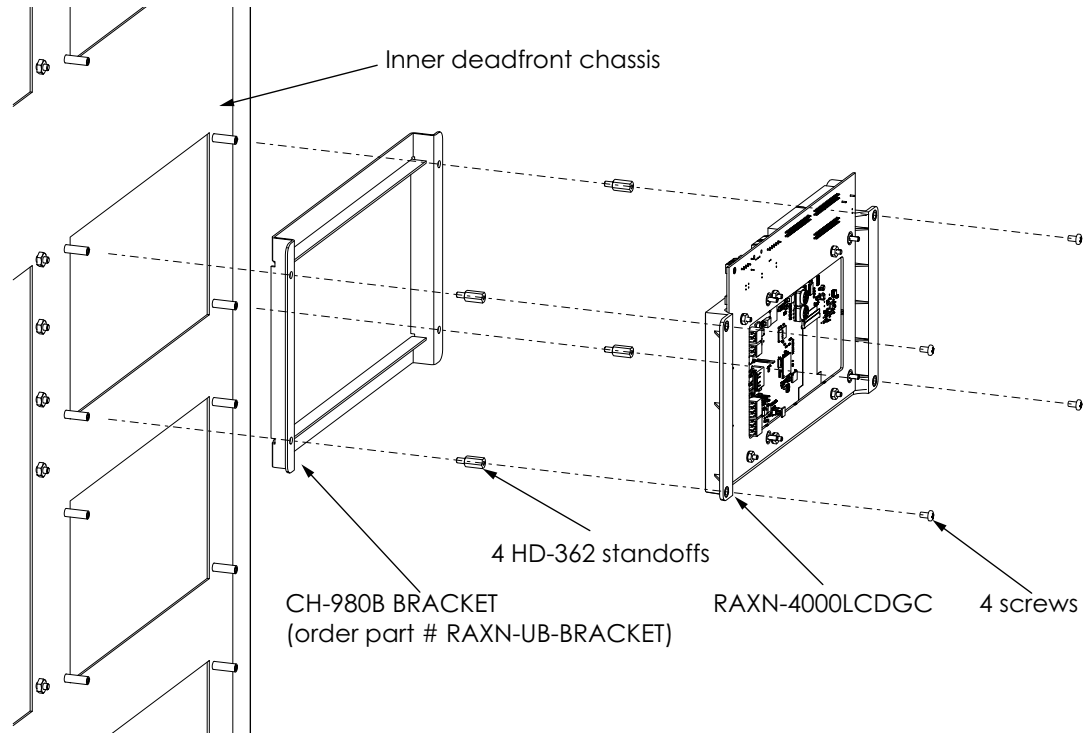


Figure 2 Mounting RAXN-4000LCDGC in a fire alarm enclosure

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Note: If the RAXN-4000LCDGC installed as a main display, close JW1 on the front to silence the buzzer. See section 3.1.

3.0 Connectors, Jumpers, and Switches

3.1 Front

Table 2 Connectors, jumpers, and switches on the front

Jumper or switch	Function
JW1	CLOSE to silence the buzzer. By default it is OPEN (OFF). Close if the RAXN-4000LCDGC is installed in the FACU as a main display.
JW2 and JW3	If there are problems with RS-485 communication, CLOSE both JW2 and JW3 on only one RAXN-4000LCDGC connected by RS-485. By default these jumpers are OPEN (OFF).
JW4	If the RAXN-4000LCDGC is the last controller connected by RS-485, CLOSE JW4 if an external end-of-line 120 Ω resistor is not available. By default this jumper is OPEN (OFF).
JW5	Leave CLOSED (shorted) (for watchdog timer).
JW6	Leave CLOSED (shorted).
SW1	Leave OFF.

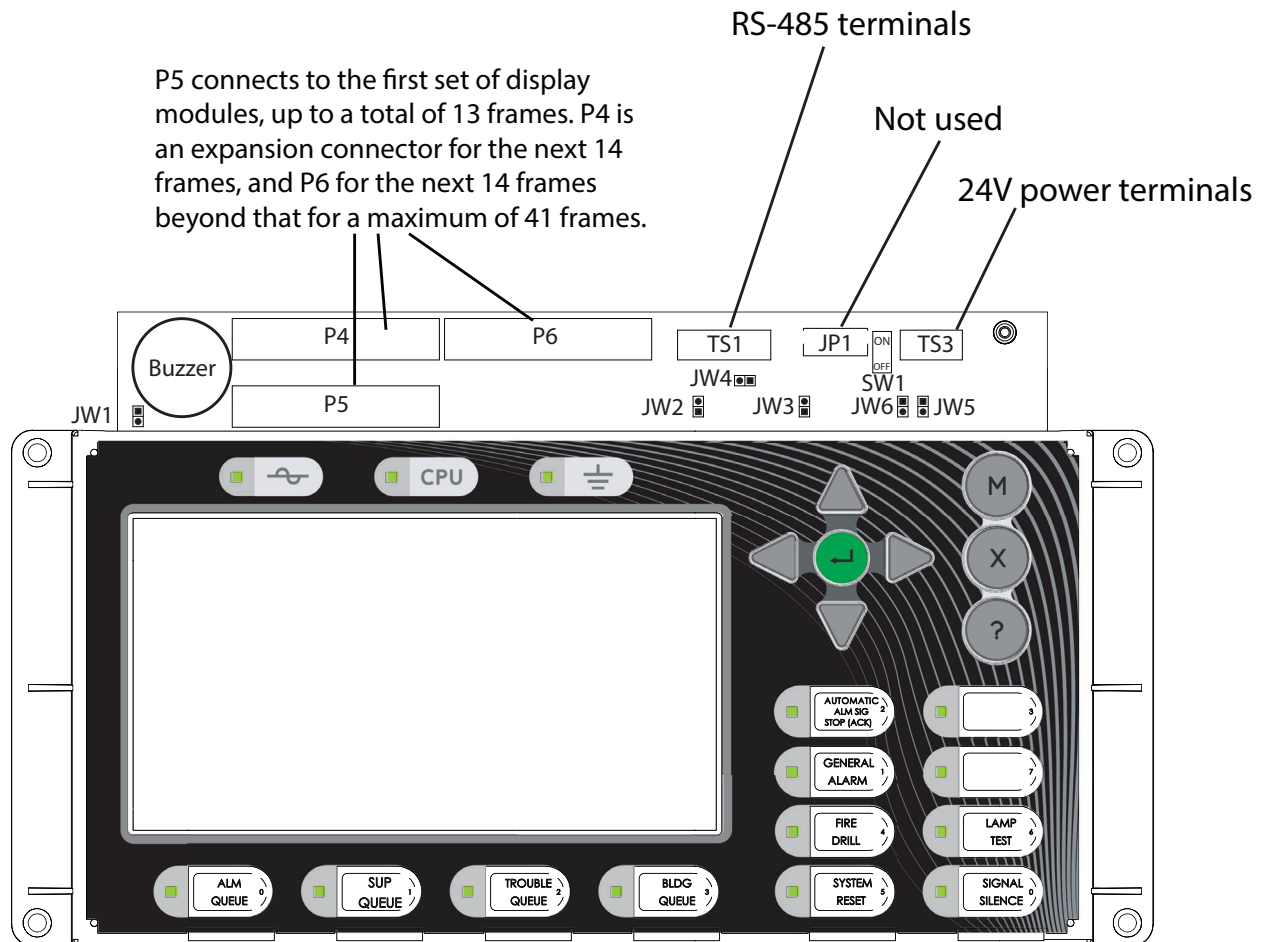


Figure 3 Front of RAXN-4000LCDGC

3.2 Back

Table 3 Connectors, jumpers, and switches on the back

Jumper or switch	Function
JW1	Leave OPEN (OFF).
JW2	Leave OPEN (OFF).
JW3	Leave OPEN (OFF).
JW4	Leave OPEN (OFF).
SW1	Reset button.
SW2	Leave OFF.
SW3	Leave OFF.
SW4	ONES dial for setting the address.
SW5	TENS dial for setting the address.

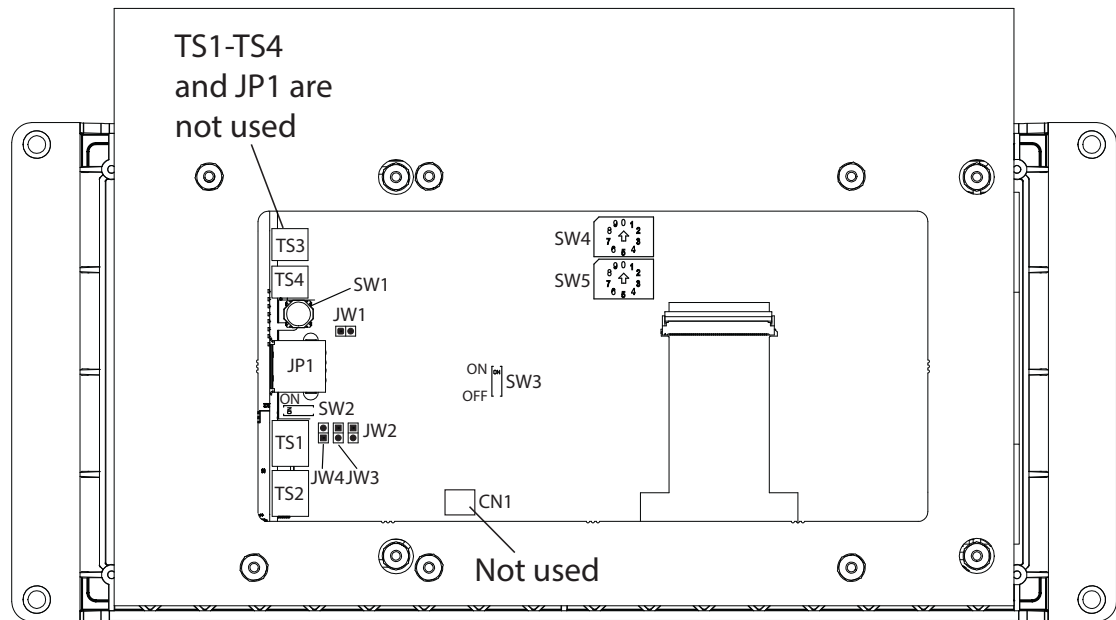


Figure 4 Back of RAXN-4000LCDGC

4.0 Address Settings

Each RAXN-4000LCDGC must be assigned a unique address on the 2 dials SW4 and SW5 located on the back of the unit.

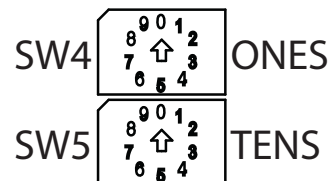


Figure 5 Address dials

For example, to set the address 34, turn SW4 to 4 and SW5 to 3.

The valid range of addresses is 33 to 39.

5.0 Cable Connections

On the RAX-1048TZDS Adder Annunciator Chassis:

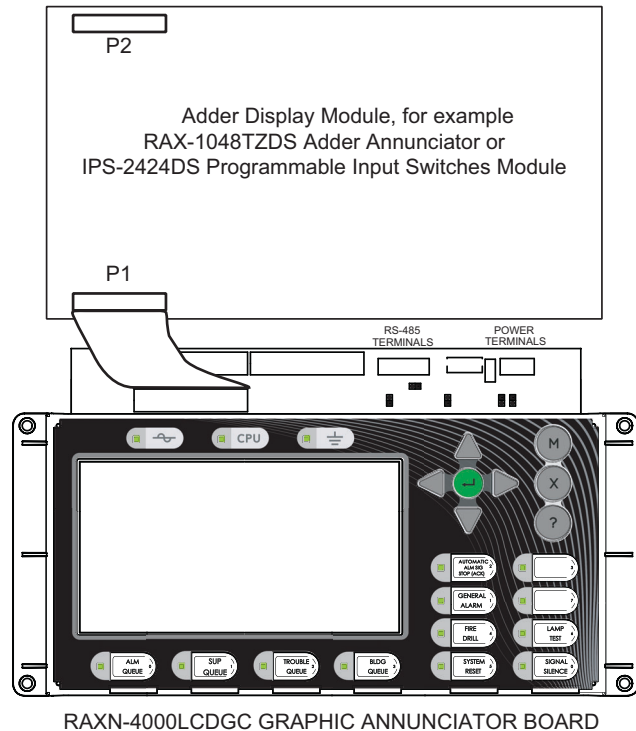
P1: Connects to the RAXN-4000LCDGC main annunciator chassis, or to the previous display modules RAX-1048TZDS, IPS-2424DS or other display adder.

P2: Connects to the next RAX-1048TZDS, IPS-2424DS or other display adder.

On the IPS-2424DS Programmable Input Switches Module (shown here as an example):

P1: Connects to the RAXN-4000LCDGC, or to the previous display module.

P2: Connects to the next display module.



On the RAXN-4000LCDGC Chassis:

P5: Connects to the first display module. This connector can support up to 13 frames.

P4: Connects to next 14 frames of display modules.

P6: Connects to next 14 frames of display modules.

If all headers are used, the RAXN-4000LCDGC can support up to a maximum of 41 frames.

Terminals: See section 6 on page 9 for details.



Note: If the RAXN-4000LCDGC is the last controller connected by RS-485, close JW4 if an external end-of-line 120 Ω resistor is not available. See section 3.1 on page 6.

6.0 Wiring Instructions

MGC recommends 18-22 AWG unshielded twisted pair for the RS-485 wiring, as shown in Figure 6. The maximum RS-485 wiring run between each device is 1000 feet (305 m). The maximum RS-485 wiring run between the first and last node is 4000 feet (1219 m). The maximum capacitance conductor to conductor is 13 pF/foot.

The RS-485 wiring from the fire alarm control panel to the annunciators 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. If the RAXN-4000LCDGC is the last controller connected by RS-485, close JW4 if an external end-of-line 120 Ω resistor is not available. See section 3.1 on page 6.

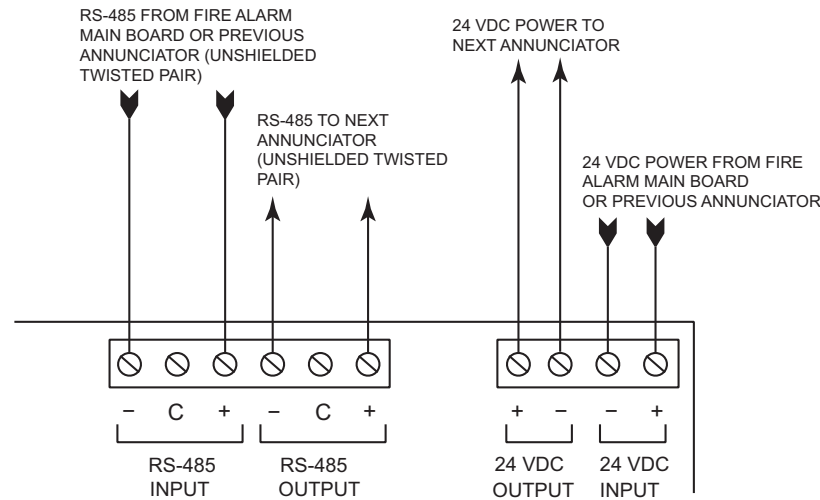


Figure 6 RS-485 and power wiring

The 24 VDC field wiring needs to be of an appropriate gauge for the number of annunciators and the total wiring run length.



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



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

Table 4 Power Wiring length and size

Total Maximum Current for all Annunciators	Maximum Wiring Run to Last Annunciator								Max. Loop Resistance
	18 AWG		16 AWG		14 AWG		12 AWG		
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

7.0 Specifications and Features

7.1 Enclosure Models

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

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

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

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

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



Note: Finish: Backbox painted black, white painted door (standard), suffix “R” for red painted door, suffix “B” for black painted door and suffix “S” for stainless steel finish. Material: BB-1001D/DR/DB/DS (MMX-BB-1001D/DR), BB-1002D/DR/DB/DS (MMX-BB-1002D/DR) 18 G.A. cold rolled steel (CRS), doors are 18 G.A. BB-1003D/DR/DB/DS (MMX-BB-1003D/DR) 16 G.A. CRS, door is 18 G.A. BB-1008D/DR/DB/DS (MMX-BB-1008D/DR), BB-1012D/DR/DB/DS (MMX-BB-1012D/DR) 16 G.A cold rolled steel (CRS), doors are 14 GA. See section 2 on page 4 for enclosure dimensions.

7.2 RAXN-4000LCDGC Specifications

- 24VDC nominal.
- Interconnects via wiring to the Network Fire Alarm Panel or to previous annunciators (see section 6 on page 9).
- Provides exact functions as the Network Fire Alarm main display.
- Standby: 225 mA Max., All LEDs ON: 235 mA Max.

7.3 Adder Display Modules

RAX-1048TZDS Adder Annunciator (3 frames)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or previous display module and to the next display module.
- Annunciation of up to 48 additional points.
- Standby: 22 mA Max., All LEDs ON: 262 mA Max.

IPS-2424DS 24 Programmable Input Switches Module (2 frames)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Annunciation of up to 48 additional points.
- Standby: 5 mA Max., All LEDs ON: 22 mA Max.

IPS-4848DS 48 Programmable Input Switches Module (4 frames)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.

- Annunciation of up to 96 additional points.
- Standby: 10 mA Max., All LEDs ON: 22 mA Max.

FDX-008W(KI) Smoke Control Fan Damper Module (1 frame)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Provides switch operation of 8 fan damper zones or operation of 7 fan damper zones and one keyswitch operation.
- Standby: 15 mA Max., All LEDs ON: 35 mA Max.

AGD-048 Adder Graphic Module (1 frame)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Annunciation of up to 48 Points.
- Standby: 25 mA, Alarm: 2.4 A Max.

QAZT-5302DS 24 Zone Paging and Telephone Selector Panel (2 frames)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Annunciation of up to 24 audio zones.
- Standby: 5 mA, Alarm: 22 A Max.

QAZT-5348DS 48 Zone Paging and Telephone Selector Panel (4 frames)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Annunciation of up to 48 audio zones.
- Standby: 10 mA, Alarm: 22 A Max.

QMP-5101N(V) Network Master Paging Control Panel (1 frame)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Standby: 3 mA, Alarm: 7 A Max.

QMT-5302N(V) Network Master Telephone Control Panel (1 frame)

- Interconnects via one ribbon cable from RAXN-4000LCDGC or from previous display module and to the next display module.
- Standby: 1 mA, Alarm: 13 A Max.

8.0 Applications

8.1 Operation of RAXN-4000LCDGC as a Main Display and Remote Display

When RAXN-4000LCDGC functions as the main display and a second RAXN-4000LCDGC functions as a remote display, then only the main RAXN-4000LCDGC must be connected to the FACU's auxiliary power. All remote displays must be powered by a different power source, such as the 4-wire power supply.

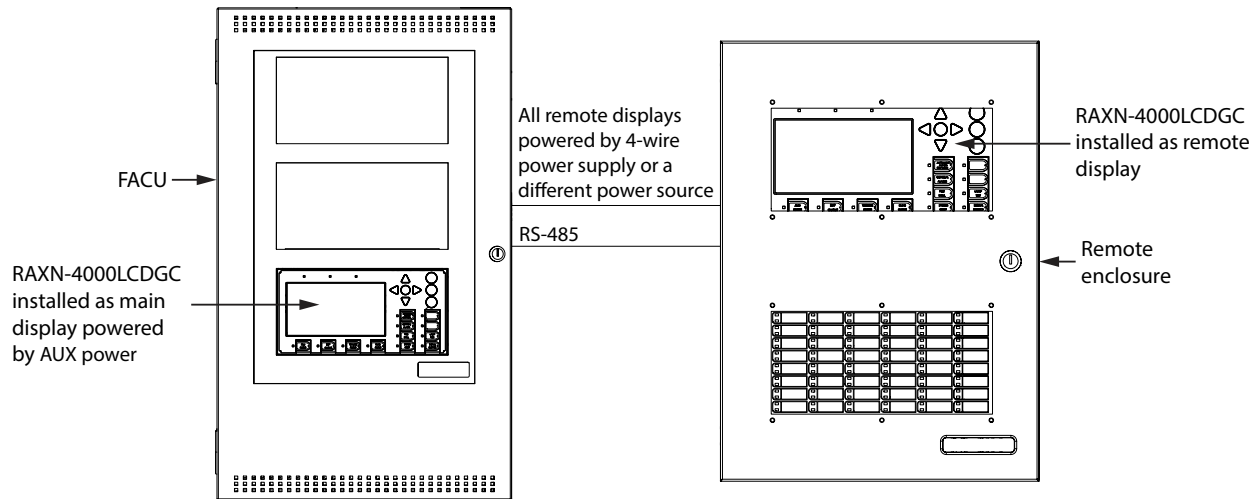


Figure 7 RAXN-4000LCDGC as both main display and remote display

8.2 Operation of RAXN-4000LCDGC as a Main Display in a Separate Enclosure

When RAXN-4000LCDGC is installed in a separate enclosure but functions as the main display, then the connections between the FACU and the RAXN-4000LCDGC must be in the same room within 20 feet (6.1 m) in the USA or 18 m in Canada, and enclosed in conduit or equivalently protected against mechanical injury.

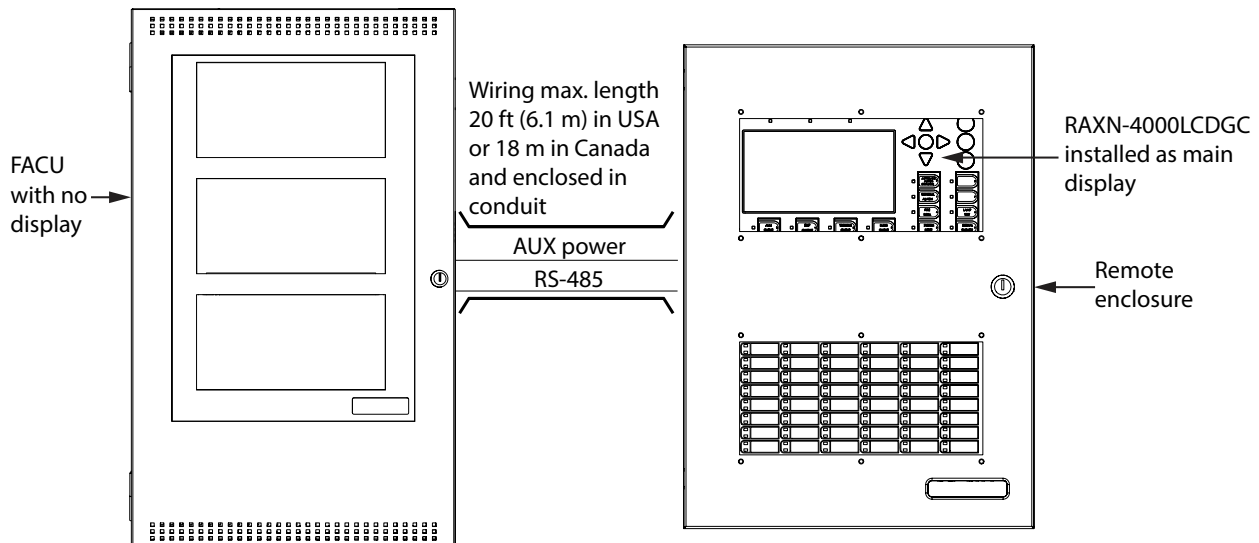


Figure 8 Operation of RAXN-4000LCDGC as a main display in a separate enclosure

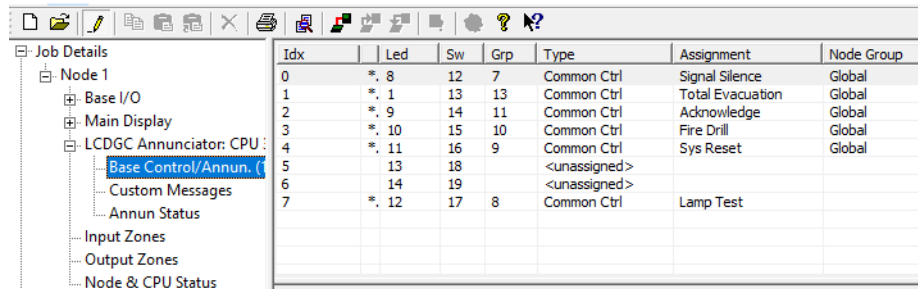
8.3 Operation of RAXN-4000LCDGC as an Ancillary Device as required by ULC S527

For use of RAXN-4000LCDGC as an ancillary device as required by ULC S527, the following manual controls must be disabled:

- Signal Silence
- Total Evacuation (General Alarm)
- Acknowledge
- Fire Drill
- System Reset

Only the Lamp Test button will remain active.

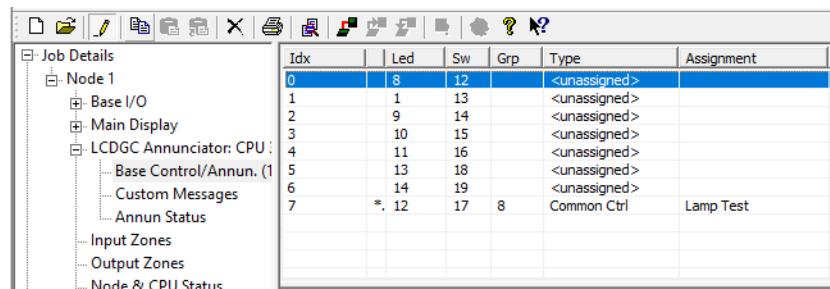
- In the MGC Configurator, the **Type** column for **Signal Silence**, **Total Evacuation**, **Acknowledge**, **Fire Drill** and **System Reset** is **Common Ctrl** by default.



Idx	Led	Sw	Grp	Type	Assignment	Node Group
0	*, 8	12	7	Common Ctrl	Signal Silence	Global
1	*, 1	13	13	Common Ctrl	Total Evacuation	Global
2	*, 9	14	11	Common Ctrl	Acknowledge	Global
3	*, 10	15	10	Common Ctrl	Fire Drill	Global
4	*, 11	16	9	Common Ctrl	Sys Reset	Global
5	13	18		<unassigned>		
6	14	19		<unassigned>		
7	*, 12	17	8	Common Ctrl	Lamp Test	

Figure 9 Default control assignments

1. Change the Type to <unassigned> for **Signal Silence**, **Total Evacuation**, **Acknowledge**, **Fire Drill** and **System Reset**.



Idx	Led	Sw	Grp	Type	Assignment
0	8	12		<unassigned>	
1	1	13		<unassigned>	
2	9	14		<unassigned>	
3	10	15		<unassigned>	
4	11	16		<unassigned>	
5	13	18		<unassigned>	
6	14	19		<unassigned>	
7	*, 12	17	8	Common Ctrl	Lamp Test

Figure 10 All controls unassigned except for Lamp Test

2. Leave **Lamp Test** as **Common Ctrl**.
3. In addition, select the **Buzzer is Local** checkbox for the RAXN-4000LCDGC. When this checkbox is selected, Buzzer Silence will silence only the local buzzer on the RAXN-4000LCDGC, and not any other buzzers.

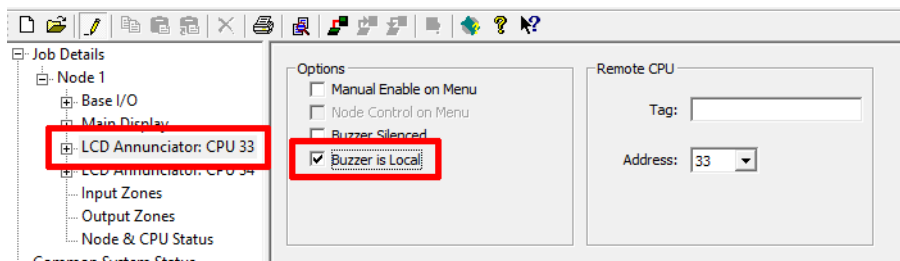


Figure 11 Buzzer is Local

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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