XR500 SERIES
CONTROL PANEL
FCC NOTICE

This equipment generates and uses radio frequency energy and, if not installed and used properly in strict accordance with the manufacturer’s instructions, may cause interference with radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the installer is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits

If necessary, the installer should consult the dealer or an experienced radio/television technician for additional suggestions. The installer may find the following booklet, prepared by the Federal Communications Commission, helpful:

“How to identify and Resolve Radio-TV Interference Problems.”

This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402
Stock No. 004-000-00345-4

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This information is subject to change without notice.
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Revisions to This Document

Certifications

Export Control
INTRODUCTION

1.1 Power Supply

Transformer Input:
- Model 327, plug-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16.5 VAC 50 VA
- Model 322/323, wire-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16 VAC 56 VA
- Model 324/324P, wire-in — Primary input: 120 VAC, 60 Hz, Secondary output: 16 VAC 100 VA

Standby Battery:
- 12 Vdc, 1.0 Amps Max. charging current
- Models 364, 365, 366, 368, or 369
  Replace every 3 to 5 years

Auxiliary:
- 12 Vdc output at 1.5 Amp Max*
- 12 Vdc output at 325mA used with two Model 364 batteries in the Model 341 enclosure

Bell Output:
- 12 Vdc at 1.5 Amp Max*

All circuits are inherent Power Limited except the red battery wire and AC terminal.

* For Commercial Burglary and Fire installations, see the Compliance Instructions section. See section 5.3 J12
3-Pin Header for Transformer Types for panel output 2 Amp or 3 Amp current limitations.

1.2 Communication

- Built-in network communication to DMP Model SCS-1R or SCS-VR Receivers (XR500N/XR500E only)
- Built-in encrypted communication to DMP Model SCS-1R Receivers (XR500E only)
- Built-in dialer communication to DMP Model SCS-1R Receivers
- Optional cellular communication to DMP Model SCS-1R or SCS-VR Receivers
- Built-in Contact ID communication to DMP Model SCS-1R Receivers
- Optional 893A Dual Phone Line Module with phone line supervision
- Can operate as a local panel

1.3 Panel Zones

- Eight 1k Ohm EOL burglary zones (zones 1 to 8)
- Two 3.3k Ohm EOL powered zone with reset (zones 9 and 10)

1.4 Keypad Bus

You can connect up to a total of 16 of the following supervised keypads and expansion modules to the keypad bus:

- Alphanumeric keypads
- Four- and/or single-zone expansion modules
- Single-zone detectors
- Access control modules
- Wireless Keypads (maximum of 4)

1.5 LX-Bus™

You can connect the following devices to the LX-Bus™ provided on the panel or by the DMP 481, 462N, 462P, 463C
464-263C and 464-263H Interface Cards up to the maximum number of LX-Bus™ addresses. See Accessory Devices in
section 3.4.

- Sixteen-, eight-, four- and/or single-zone expansion modules
- Model 521LX or 521LXT Smoke Detectors with CleanMe
- Graphic annunciator modules
- Model 2W-BLX or 2WT-BLX Smoke Detectors
- Relay output expansion modules

1.6 Outputs

The XR500 Series provide two Single Pole, Double Throw (SPDT) relay outputs which require the installation of two
Model 305 relays, each rated 1 Amp at 30 Vdc resistive (power limited sources only). A Model 431 Output Harness is
required to use these outputs.

The XR500 Series panels also provide four open collector outputs rated for 50mA each. The open collector outputs
provide ground connection for a positive voltage source. A Model 300 Output Harness is required to use these
outputs.

1.7 Enclosure Specifications

The XR500 Series panels are shipped in an enclosure with a transformer, End-of-Line resistors, battery leads, user’s
guide, and programming sheets.

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Panel Features

2.1 Description
The DMP XR500 Series panel is a versatile 12 Vdc, combined access control, burglary, and fire communicator panel with battery backup. The XR500 Series provides eight on-board burglary zones and two on-board 12 Vdc Class B powered zones. The powered zones have a reset capability to provide for 2-wire smoke detectors, relays, or other latching devices. The XR500 Series can communicate to DMP SCS-1R or SCS-VR Receivers using digital dialer, cellular, network, or Contact ID communication.

2.2 Zone Expansion
Up to 574 additional zones are available on the XR500 Series using DMP LCD keypad remote zone capability and zone expansion modules. The panel keypad data bus supports up to sixteen supervised device addresses with each address supporting up to four programmable expansion zones.

Up to 500 zones are available using the on board LX-Bus, Model 461 Interface Adaptor with 481, 462N, 462P, 463C, 464-263C and 464-263H Interface Cards, and any combination of single, four, eight, or 16-zone expansion modules and single-zone LX-Bus™ detectors.

Note: Do not use shielded wire for LX-Bus or Keypad Bus circuits.

2.3 Output Expansion
In addition to the two SPDT relays and four programmable open collector outputs on the XR500 Series, you can also connect up to 25 programmable Model 716 Output Expansion Modules to each LX-Bus. These modules can provide an additional 500 programmable SPDT relays.

The XR500 Series provides 100 Output Schedules for programming the 716 to perform a variety of annunciation and control functions. Also assign the 716 outputs to any panel Output Options such as Fire Alarm, Communication Fail, or Phone Trouble Outputs. Refer to the 716 Installation Guide (LT-0183).

The LX-Bus™ also supports the Model 717 Graphic Annunciator Module. Each 717 module supplies 20 switched ground outputs that follow the state of their assigned zones.

Note: The 717 supports the first eight Keypad Bus addresses. To follow Keypad Bus addresses nine through 16, install multiple 716 modules. Refer to the 717 Installation Guide (LT-0235) and 716 Installation Guide (LT-0183).

2.4 Central Station Communication
You can program the XR500 Series panel for reporting to DMP SCS-1R or SCS-VR Receivers using digital dialer, cellular, network, or Contact ID communication. The XR500 Series connects at the premises to a standard RJ31X or RJ38X telephone jack. Use the DMP 893A Dual Phone Line Module when connecting the XR500 Series panel to two separate phone lines in fire or burglary applications.

2.5 Encrypted Communications (XR500N/XR500E only)
An XR500E panel communicates using AES encryption. If you currently have an XR500N panel installed, you may contact DMP Customer Service with the panel serial number. The serial number(s) should be sent in writing via e-mail or fax. A separate feature key is sent for each panel to activate encrypted communications using the Feature Upgrade process. Encrypted communication cannot be enabled on a standard XR500 panel. For more information on the Feature Upgrade process see the XR500 Series Programming Guide (LT-0679).

2.6 Caution Notes
Throughout this guide you will see caution notes containing information you need to know when installing the panel. These cautions are indicated with a yield sign. Whenever you see a caution note, make sure you completely read and understand its information. Failing to follow the caution note can cause damage to the equipment or improper operation of one or more components in the system. See the example shown below.

Always ground the panel before applying power to any devices: The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components.

2.7 Compliance Instructions
For applications that must conform to a local authorities installation standard or a National Recognized Testing Laboratory certificated system, please see the Wiring Diagrams for Notification Appliances and the Listed Compliance Specifications section near the end of this guide for additional instructions.
3.1 Description
The DMP XR500 Series system is made up of an alarm panel with a built-in communicator, an enclosure, battery, one 16.5 VAC transformer, and keypads. You can use up to sixteen supervised 32-character LCD keypads; network communications and expansion interface cards; zone and output expansion modules; and initiating and indicating circuit modules. You can also connect auxiliary devices to the panel’s output relays to expand the basic system control capability. Combined current requirements of additional modules may require an auxiliary power supply. Refer to the XR500 Series Power Requirements section in this guide when calculating power requirements.

3.2 Wiring Diagram
The XR500 Series diagram below shows some of the accessory modules you can connect for use in various applications. A brief description of each module follows in section 3.4.

**INTRODUCTION**

**System Components**

**3.1 Description**

**The DMP XR500 Series system is made up of an alarm panel with a built-in communicator, an enclosure, battery, one 16.5 VAC transformer, and keypads. You can use up to sixteen supervised 32-character LCD keypads; network communications and expansion interface cards; zone and output expansion modules; and initiating and indicating circuit modules. You can also connect auxiliary devices to the panel’s output relays to expand the basic system control capability. Combined current requirements of additional modules may require an auxiliary power supply. Refer to the XR500 Series Power Requirements section in this guide when calculating power requirements.**

**3.2 Wiring Diagram**

The XR500 Series diagram below shows some of the accessory modules you can connect for use in various applications. A brief description of each module follows in section 3.4.

**Figure 1: XR500 Series Wiring Diagram**

**WARNING:** Incorrect connections may cause damage to the unit.

**CAUTION:** DO NOT USE LOOPED WIRE UNDER TERMINALS. BREAK WIRE RUN TO PROVIDE SUPERVISION OF CONNECTIONS.

**WARNING:** This unit may be programmed to use an alarm verification feature that results in delay of the system alarm signal from the indicated circuits. The total delay (control unit plus smoke detectors) shall not exceed 60 seconds. No other smoke detector shall be connected to these circuits unless approved by the local authority having jurisdiction (AHJ).
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3.3 Lightning Protection
Metal Oxide Varistors and Transient Voltage Suppressors help protect against voltage surges on XR500 Series input and output circuits. Additional surge protection is available by installing the DMP 370 or 370RJ Lightning Suppressors.

3.4 Accessory Devices

### Interface Adaptor and Interface Cards

<table>
<thead>
<tr>
<th>Card Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>461 Interface Adaptor Card</td>
<td>Allows you to connect two or more expansion interface cards to the XR500 Series panel. The 461 is an expansion mother board that plugs into the panel J6 Interface Connector and is required when using two or more Interface Cards. Use combinations of Interface Cards for expanding zones, network interfacing, local printing, and connecting wireless devices.</td>
</tr>
<tr>
<td>462P Printer Interface Card</td>
<td>Allows you to connect the XR500 Series to any compatible serial printer providing the user with real-time event recording. The 462P also provides an LX-Bus™ for connecting zone and output expansion modules.</td>
</tr>
<tr>
<td>464-263C/464-263H Cellular Communicator Card</td>
<td>Provides a fully supervised alarm communication path over the CDMA network or HSPA + network for XR500 Series panels. The 464-263C or 464-263H also provides an LX-Bus™ for connecting zone and output expansion modules to the panel.</td>
</tr>
<tr>
<td>481 Expansion Interface Card</td>
<td>Provides one LX-Bus for connecting up to 100 zone and output expansion modules.</td>
</tr>
</tbody>
</table>

### Expansion Modules

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>710 Bus Splitter/Repeater</td>
<td>Allows you to increase keypad or LX-Bus™ wiring distance to 2500 feet.</td>
</tr>
<tr>
<td>711 Single Point Zone Expanders</td>
<td>Provides one Class B zone for connecting burglary devices.</td>
</tr>
<tr>
<td>714, 714-8, 714-16 Zone Expanders</td>
<td>Provides Class B zones for connecting burglary and non-powered fire devices.</td>
</tr>
<tr>
<td>712-8 Zone Expander</td>
<td>Provides Class B zones for connecting burglary devices.</td>
</tr>
<tr>
<td>715, 715-8, 715-16 Zone Expanders</td>
<td>Provides 12 Vdc Class B powered zones for connecting smoke detectors, glassbreak detectors, and other 2- or 4-wire devices.</td>
</tr>
<tr>
<td>716 Output Expander</td>
<td>Provides four Form C relays (SPDT) and four switched grounds (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.</td>
</tr>
<tr>
<td>717 Graphic Annunciator Module</td>
<td>Provides 20 zone following annunciator outputs (open collector) for use in a variety of remote annunciation and control applications for use on the LX-Bus only.</td>
</tr>
</tbody>
</table>

### DMP Two-Way Wireless Devices

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100X/1100XH Receiver</td>
<td>Supports up to 500 devices in residential or commercial wireless operation.</td>
</tr>
<tr>
<td>1100R Repeater</td>
<td>Provides additional range for wireless devices.</td>
</tr>
<tr>
<td>1101 Universal Transmitter</td>
<td>Provides both internal and external contacts that may be used at the same time to yield two individual reporting zones from one wireless transmitter.</td>
</tr>
<tr>
<td>1102 Universal Transmitter</td>
<td>Provides an external contact.</td>
</tr>
<tr>
<td>1103 Universal Transmitter</td>
<td>Provides both internal and external contacts that may be used at the same time to yield two individual reporting zones from one wireless transmitter. Requires EOL resistor for external contact. Provides Disarm/Disable functionality.</td>
</tr>
<tr>
<td>1106 Universal Transmitter</td>
<td>Provides both internal and external contacts that may be used at the same time to yield two individual reporting zones from one wireless transmitter.</td>
</tr>
<tr>
<td>1107 Micro Window Transmitter*</td>
<td>Provides a wireless window transmitter.</td>
</tr>
<tr>
<td>1114 Four-Zone Expander*</td>
<td>Provides four wireless zones.</td>
</tr>
<tr>
<td>1115 Wireless Temperature Sensor and Flood Detector*</td>
<td>Temperature and flood detector with an internal temperature sensor. Can be paired with 470PB or T280R remote sensors.</td>
</tr>
<tr>
<td>1116 Relay Output*</td>
<td>Provides one Form C relay.</td>
</tr>
<tr>
<td>1117 LED Annunciator*</td>
<td>Provides a visual system status indicator.</td>
</tr>
<tr>
<td>1118 Remote Indicator Light*</td>
<td>Provides a visual indication of a Panic situation.</td>
</tr>
<tr>
<td>1119 Door Sounder*</td>
<td>Provides a battery powered sounder.</td>
</tr>
<tr>
<td>1121 PIR Motion Detector*</td>
<td>Provides motion detection with pet immunity.</td>
</tr>
<tr>
<td>1126R PIR Motion Detector*</td>
<td>Ceiling mount motion detector with panel programmable sensitivity and Disarm/Disable functionality.</td>
</tr>
<tr>
<td>1127C/1127W PIR Motion Detector</td>
<td>Wall mount motion detector with panel programmable sensitivity and Disarm/Disable functionality.</td>
</tr>
<tr>
<td>1129 Glassbreak Detector*</td>
<td>Detects the shattering of framed glass mounted in an outside wall and provides full-pattern coverage and false-alarm immunity.</td>
</tr>
</tbody>
</table>

* Security Device Only: This device has not been investigated and shall not be used in listed installations.
### 3.4 Accessory Devices (continued)

<table>
<thead>
<tr>
<th>DMP Two-Way Wireless Devices (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1131 Recessed Contact</strong>*</td>
</tr>
<tr>
<td><strong>1135 Wireless Siren</strong>*</td>
</tr>
<tr>
<td><strong>1137 Wireless LED Emergency Light</strong></td>
</tr>
<tr>
<td><strong>1139 Bill Trap</strong>*</td>
</tr>
<tr>
<td><strong>1141 Wall Button</strong>*</td>
</tr>
<tr>
<td><strong>1142BC Two-button Hold-up Belt Clip Transmitter</strong></td>
</tr>
<tr>
<td><strong>1142 Two-button Hold-up Transmitter</strong></td>
</tr>
<tr>
<td><strong>1144-4 (Four-Button)</strong></td>
</tr>
<tr>
<td><strong>1144-2 (Two-Button)</strong></td>
</tr>
<tr>
<td><strong>1144-1 (One-Button)</strong></td>
</tr>
<tr>
<td><strong>1164NS Wireless Commercial Smoke</strong></td>
</tr>
<tr>
<td><strong>1165 Commercial Smoke Detector</strong></td>
</tr>
<tr>
<td><strong>1183-135F Heat Detector</strong></td>
</tr>
<tr>
<td><strong>1183-135R Heat Detector</strong></td>
</tr>
<tr>
<td><strong>1184 Carbon Monoxide Detector</strong></td>
</tr>
</tbody>
</table>

### Indicating and Initiating Devices

| **860 Relay Module***                   | Provides dry relay contacts that are programmable and controlled from the DMP panel annunciator outputs. Includes one Form C (SPDT) relay rated 1 Amp @ 30 Vdc. Sockets are provided to allow the addition of three Model 305 plug-in relays. |
| **865 Supervised Style W or X Notification Circuit Module** | Provides supervised alarm current when using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 Vdc when using a listed auxiliary power supply. The 865 can supervise 2-wire or 4-wire style circuits for opens and shorts with individual LED annunciation. |
| **866 Style W Notification Circuit Module** | Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 Vdc when using a listed auxiliary power supply. The 866 can supervise 2-wire Style W circuits for opens and shorts. |
| **867 Style W LX-Bus Notification Circuit Module** | Provides supervised alarm current using the XR500 Series panel bell output and up to 5 Amps at 12 or 24 Vdc when using a listed auxiliary power supply. The 867 connects to the XR500 Series panel LX-Bus™ and provides one 2-wire Style W notification circuit for open and short conditions. Individual Bell Relay addresses Bell Ring styles. |
| **869 Dual Class A Style D Initiating Module** | Provides two Class A, Style D, 4-wire initiating zones for connecting waterflow switches and other non-powered fire and burglary devices. |

### Accessory Modules and Keypads

| **893A Dual Phone Line Module**         | Allows you to supervise two standard phone lines connected to an XR500 Series panel. The 893A module monitors the main and backup phone lines for a sustained voltage drop and alerts users when the phone line is bad. |
| **LCD keypads**                        | Allows you to control the panel from various remote locations. Connect up to sixteen supervised Model 630F Remote Fire Command Center, Model 7060, 7063, 7070, 7073, 7160, 7163, 7170, 7173 Thinline™ keypads, 7060A, 7063A, 7070A, 7073A Aqualite™ keypads, 7760 Clear Touch™ keypad, or 7872, 7873 Graphic Touchscreen keypads to the keypad bus using terminals 7, 8, 9, and 10. |
| **9000 Series Wireless keypads**       | Allows you to control the panel from various remote locations. Connect up to four 9060/9063 Wireless Keypads. |
| **9800 Series Wireless Graphic Touchscreen keypads** | Allows you to control the panel from various remote locations. Connect up to four keypads. 9862 Wireless Keypads. |

### Addressable Smoke Detectors

| **2W-BLX, 2WT-BLX**                    | Single-zone, addressable conventional smoke, smoke/heat detectors that connect to the LX-Bus. Includes drift compensation. |

* Security Device Only: This device has not been investigated and shall not be used in listed installations.
4.1 Mounting the Enclosure
The metal enclosure for the XR500 Series must be mounted in a secure, dry place to protect the panel from damage due to tampering or the elements. It is not necessary to remove the XR500 Series PCB when installing the enclosure. Figure 2 shows the mounting hole locations for the Model 350/350A Enclosures. Figure 3 shows the Model 341 Kiosk Enclosure. Figure 4 shows the Model 352X panel cabinet and 352S shelf cabinet for multiple batteries.

The 350A Attack Resistant enclosure is factory shipped with one knockout on the top left of the enclosure. As needed, additional knockouts or antenna exits may be added at the time of installation. See Figure 2 for the positions on the enclosure that can be added. Each additional knockout must be filled with conduit.

Note: When using the XR500 Series panel for listed applications, use the Model 350, 349, 341, or 352S enclosure for standby batteries. When using the 352X or 352S in listed applications, the enclosure must be surface mounted on the wall.

![Figure 2: XR500 Series in Model 350 or 350A Enclosure](image_url)
Figure 3: XR500 Series in Model 341 Enclosure

Figure 4: XR500 Series in Model 352X Enclosure and Separate 352S Enclosure with Shelves
4.2 Mounting Keypads and Zone Expansion Modules
DMP LCD keypads have removable covers that allow you to easily mount the keypad to a wall or other flat surface using the screw holes on each corner of the base. Before mounting the base, connect the keypad wire harness leads to the keypad cable from the panel and to any device wiring run to that location. Then attach the harness to the pin connector on the PC board, mount the base, and install the keypad cover making sure all of the keys extend through their respective holes.

For mounting keypads on solid walls, or for applications where conduit is required, use the Model 695 1-1/2” deep or the Model 696 1/2” deep backboxes.

The DMP 711, 712-8, 714, 715, 716, and 717 modules are each contained in molded plastic housings with removable covers. The base provides you with mounting holes for installing the unit to a wall, switch plate, or other surface.

4.3 Connecting LX-Bus and Keypad Bus Devices
Several factors determine the DMP LX-Bus™ and keypad bus performance characteristics: the wire length and gauge used, the number of devices connected, and the voltage at each device. When planning an LX-Bus™ and keypad bus installation, keep in mind the following information:

1. DMP recommends using 18 or 22-gauge unshielded wire for all keypad and LX-Bus circuits. Do not use twisted pair or shielded wire for LX-Bus and keypad bus data circuits.
2. On keypad bus circuits, to maintain auxiliary power integrity when using 22-gauge wire do not exceed 500 feet. When using 18-gauge wire do not exceed 1,000 feet. To increase the wire length or to add devices, install an additional power supply that is listed for Fire Protective Signaling, power limited, and regulated (12 Vdc nominal) with battery backup.
   Note: Each panel allows a specific number of supervised keypads. Add additional keypads in the unsupervised mode. Refer to the panel installation guide for the specific number of supervised keypads allowed.
3. Maximum distance for any one bus circuit (length of wire) is 2,500 feet regardless of the wire gauge. This distance can be in the form of one long wire run or multiple branches with all wiring totaling no more than 2,500 feet. As wire distance from the panel increases, DC voltage on the wire decreases. Maximum number of LX-Bus devices on the first 2,500 foot circuit is 40 devices.
4. Maximum voltage drop between the panel (or auxiliary power supply) and any device is 2.0 Vdc. If the voltage at any device is less than the required level, add an auxiliary power supply at the end of the circuit. When voltage is too low, the devices cannot operate properly.

For additional information refer to the LX-Bus/Keypad Bus Wiring Application Note (LT-2031).

Expansion Interface Cards (Models 481, 462N, 462P, 463C, 464-263C and 464-263H)
The LX-Bus provided on these cards requires only a 4-wire cable between the card and any devices connected to the bus. You can connect devices (zone or output expansion modules) together on the same cable or provide separate runs back to the card. Each LX-Bus provides up to 100 zones or outputs.

4.4 Wireless Keypad Association
Enable Wireless Keypad Association operation on both the keypad and panel.
To enable association operation in the keypad, access the Installer Options Menu (3577 (INST)) and select RF Survey). The keypad logo LEDs turn on Red until association is successful.

To enable association operation in the XR500 panel, reset panel 3 times within 12 seconds. Allow the keypad bus Transmit/Receive LEDs to turn back on between each reset.

For 60 seconds the panel listens for wireless keypads that are in the Installer Options Menu (3577 CMD) and have not been programmed, or associated into another panel. Those keypads are assigned to the first open device position automatically based upon the order in which they are detected. The keypad logo turns Green to indicate it has been associated with the panel.
5.1 AC Terminals 1 and 2
Connect the transformer wires to terminals 1 and 2 on the panel. Use no more than 70 ft. of 16 gauge or 40 ft. of 18 gauge wire between the transformer and the XR500 Series.

**Always ground the panel before applying power to any devices:** The XR500 Series must be properly grounded before connecting any devices or applying power to the panel. Proper grounding protects against Electrostatic Discharge (ESD) that can damage system components. See the Earth ground section.

5.2 Transformer Types
Use Model 327 (16.5 VAC 50 VA) plug-in or Model 322/323 (16 VAC 56 VA), or 324/324P (16 VAC 100 VA) wire-in transformer. Use Model 322/323 or 324/324P wire-in transformers when required by the Authority Having Jurisdiction (AHJ).

The transformer must be connected to an unswitched 120 VAC 60 Hz electrical outlet with at least .87A of available current. **Never share the transformer output with any other equipment.**

5.3 J12 3-Pin Header for Transformer Types
Place the jumper on the left two pins labeled 50VA for a Maximum 2 Amp (Bell+Aux+Smoke=2 Amp) when using the Model 322/323 56VA, or 327 50VA plug-in transformer (default).
Place the jumper on the right two pins labeled 75VA for a Maximum 3 Amp (Bell+Aux+Smoke=3 Amp) when using the Model 324/324P 100 VA wire-in transformer.

**Note:** For UL Commercial Fire installations, refer to the Universal Fire Alarm Specifications, Transformer section, for more information.

### Secondary Power Supply

6.1 Battery Terminals 3 and 4
Connect the black battery lead to the negative battery terminal. The negative terminal connects to the enclosure ground internally through the XR500 Series circuit board. Connect the red battery lead to the battery positive terminal. Observe polarity when connecting the battery.

You can add a second battery in parallel using the DMP Model 318 Dual Battery Harness. DMP requires each battery be separated by a PTC in the battery harness wiring to protect each battery from a reversal or short within the circuit. See Figure 6.

For listed installations, all batteries shall be installed in a DMP Model 350 or Model 352S enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

**Use sealed lead-acid batteries only:** Use the DMP Model 364 (12 Vdc 1.3Ah), DMP Model 365 (12 Vdc 9 Ah), Model 366 (12 Vdc 18 Ah), Model 368 (12 Vdc 5.0 Ah), or Model 369 (12 Vdc 7 Ah) sealed lead-acid rechargeable battery. Batteries supplied by DMP have been tested to ensure proper charging with DMP products.

GEL CELL BATTERIES CANNOT BE USED WITH THE XR500 SERIES PANEL.

6.2 Earth Ground (GND)
To provide proper transient suppression, XR500 Series panel terminal 4 must be connected to earth ground using 14 gauge or larger wire. DMP recommends connecting to a cold water pipe, ground rod, or building ground only. Do not connect to an electrical ground or conduit, sprinkler or gas pipes, or to a telephone company ground.

6.3 Battery Only Restart
When powering up the XR500 Series panel without AC power, briefly short across the battery start pads to pull in the battery cutoff relay. The leads need a momentary short only. Once the relay has pulled in, the battery voltage holds it in that condition. If the XR500 Series panel is powered up with an AC transformer, the battery cutoff relay is pulled in automatically. For more information refer to Figure 1.
**6.4 Battery Replacement Period**  
DMP recommends replacing the battery every 3 to 5 years under normal use.

**6.5 Discharge/Recharge**  
The XR500 Series battery charging circuit float charges at 13.9 Vdc at a maximum current of 1.0 Amps using a 50 VA or 56 VA transformer. Listed below are the various battery voltage level conditions:

- **Battery Trouble:** Below 11.9 Vdc
- **Battery Cutoff:** Below 10.2 Vdc
- **Battery Restored:** Above 12.6 Vdc

**6.6 Battery Supervision**  
The XR500 Series tests the battery when AC power is present. The test is done every three minutes and lasts for five seconds. During the test, the panel places a load on the battery; if the battery voltage falls below 11.9 Vdc a low battery is detected. If AC power is not present, a low battery is detected any time the battery voltage falls below 11.9 Vdc.

If a low battery is detected with AC power present, the test repeats every two minutes until the battery charges above 12.6 Vdc indicating the battery has restored voltage. If a weak battery is replaced with a fully charged battery, the restored battery will not be detected until the next two minute test is completed.

**6.7 Battery Cutoff**  
The panel disconnects the battery any time the battery voltage drops below 10.2 Vdc. This prevents battery deep discharge damage.
### 6.8 XR500 Series Power Requirements

During AC power failure, the XR500 Series panel and all connected auxiliary devices draw their power from the battery. All devices must be taken into consideration when calculating the battery standby capacity. The following table lists the XR500 Series panel power requirements. You must add the additional current draw of keypads, zone expansion modules, smoke detector output, and any other auxiliary devices used in the system for the total current required. The total is then multiplied by the number of standby hours required to calculate the total ampere-hours required.

<table>
<thead>
<tr>
<th>XR500 Series Battery Power Calculations</th>
<th>Standby Current</th>
<th>Alarm Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>XR500 Series Control Panel</td>
<td>Qty ___________ x 180mA 180 mA</td>
<td>Qty ___________ x 180mA 180 mA</td>
</tr>
<tr>
<td>Relay Outputs 1-2 (ON)</td>
<td>Qty ___________ x 30mA</td>
<td>Qty ___________ x 30mA</td>
</tr>
<tr>
<td>Switch Grounds 3-6 (ON)</td>
<td>Qty ___________ x 5mA</td>
<td>Qty ___________ x 5mA</td>
</tr>
<tr>
<td>Active Zones 1-8</td>
<td>Qty ___________ x 1.6mA</td>
<td>Qty ___________ x 2mA*</td>
</tr>
<tr>
<td>Active Zones 9-10</td>
<td>Qty ___________ x 4mA</td>
<td>Qty ___________ x 30mA</td>
</tr>
<tr>
<td>2-Wire Smoke Detectors</td>
<td>Qty ___________ x 0.1mA</td>
<td>Qty ___________ x 0.1mA</td>
</tr>
<tr>
<td>Panel Bell Output</td>
<td>Qty ___________ x 1500mA 1500 mA</td>
<td>Qty ___________ x 1500mA 1500 mA</td>
</tr>
<tr>
<td>893A Dual Phone Line Module</td>
<td>Qty ___________ x 12mA 12 mA</td>
<td>Qty ___________ x 50mA</td>
</tr>
<tr>
<td>461 Interface Adaptor Card</td>
<td>Qty ___________ x 7mA 7 mA</td>
<td>Qty ___________ x 7mA</td>
</tr>
<tr>
<td>462N Network Interface Card</td>
<td>Qty ___________ x 50mA</td>
<td>Qty ___________ x 50mA</td>
</tr>
<tr>
<td>462P Printer Interface Card</td>
<td>Qty ___________ x 50mA</td>
<td>Qty ___________ x 50mA</td>
</tr>
<tr>
<td>463C CDMA Cellular Communicator</td>
<td>Qty ___________ x 22mA</td>
<td>Qty ___________ x 22mA</td>
</tr>
<tr>
<td>464-263C CDMA Cellular Communicator</td>
<td>Qty ___________ x 15mA</td>
<td>Qty ___________ x 48mA</td>
</tr>
<tr>
<td>464-263H HSPA+ Cellular Communicator</td>
<td>Qty ___________ x 15mA</td>
<td>Qty ___________ x 48mA</td>
</tr>
<tr>
<td>481 Expansion Interface Card</td>
<td>Qty ___________ x 15mA</td>
<td>Qty ___________ x 15mA</td>
</tr>
<tr>
<td>1100X Wireless Receiver</td>
<td>Qty ___________ x 46mA</td>
<td>Qty ___________ x 46mA</td>
</tr>
<tr>
<td>1100XH Wireless High Power Receiver</td>
<td>Qty ___________ x 160mA</td>
<td>Qty ___________ x 160mA</td>
</tr>
<tr>
<td>860 Relay Output Module (one relay active)</td>
<td>Qty ___________ x 34mA</td>
<td>Qty ___________ x 34mA</td>
</tr>
<tr>
<td>All four relays active</td>
<td>Qty ___________ x 138mA</td>
<td>Qty ___________ x 138mA</td>
</tr>
<tr>
<td>865 Style Y or Z Notification Module</td>
<td>Qty ___________ x 26mA</td>
<td>Qty ___________ x 85mA</td>
</tr>
<tr>
<td>866 Style W Notification Module</td>
<td>Qty ___________ x 45mA</td>
<td>Qty ___________ x 76mA</td>
</tr>
<tr>
<td>867 LX-Bus Style W Notification Module</td>
<td>Qty ___________ x 30mA</td>
<td>Qty ___________ x 86mA</td>
</tr>
<tr>
<td>869 Dual Style D Initiating Module</td>
<td>Qty ___________ x 25mA</td>
<td>Qty ___________ x 75mA</td>
</tr>
<tr>
<td>630F Remote Fire Command Center</td>
<td>Qty ___________ x 63mA</td>
<td>Qty ___________ x 92mA</td>
</tr>
<tr>
<td>7060/7160 Thinline/7060A Aqualite Keypad</td>
<td>Qty ___________ x 72mA</td>
<td>Qty ___________ x 80mA</td>
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<tr>
<td>7063/7163 Thinline/7063A Aqualite Keypad</td>
<td>Qty ___________ x 85mA</td>
<td>Qty ___________ x 100mA</td>
</tr>
<tr>
<td>7070/7170 Thinline/7070A Aqualite Keypad Active Zones (EOL Installed)</td>
<td>Qty ___________ x 72mA</td>
<td>Qty ___________ x 87mA</td>
</tr>
<tr>
<td>7073/7173 Thinline/7073A Aqualite Keypad Active Zones (EOL Installed)</td>
<td>Qty ___________ x 85mA</td>
<td>Qty ___________ x 100mA</td>
</tr>
<tr>
<td>7872 Graphic Touchscreen Keypad Active Zones (EOL Installed)</td>
<td>Qty ___________ x 145mA</td>
<td>Qty ___________ x 215mA</td>
</tr>
<tr>
<td>7873 Graphic Touchscreen Keypad Active Zones (EOL Installed)</td>
<td>Qty ___________ x 143mA</td>
<td>Qty ___________ x 243mA</td>
</tr>
<tr>
<td>734 Wiegand Interface Module Active Zones (EOL Installed) Annunciator (ON)</td>
<td>Qty ___________ x 15mA</td>
<td>Qty ___________ x 15mA</td>
</tr>
<tr>
<td></td>
<td>Qty ___________ x 2mA*</td>
<td>Qty ___________ x 2mA*</td>
</tr>
<tr>
<td>734N Wiegand Interface Module Active Zones (EOL Installed) Annunciator (ON) Wiegand Reader</td>
<td>Qty ___________ x 146mA</td>
<td>Qty ___________ x 148mA</td>
</tr>
<tr>
<td></td>
<td>Qty ___________ x 1.6mA</td>
<td>Qty ___________ x 2mA*</td>
</tr>
<tr>
<td>734N-WiFi Wiegand Interface Module Active Zones (EOL Installed) Annunciator (ON) Wiegand Reader</td>
<td>Qty ___________ x 146mA</td>
<td>Qty ___________ x 148mA</td>
</tr>
<tr>
<td></td>
<td>Qty ___________ x 1.6mA</td>
<td>Qty ___________ x 2mA*</td>
</tr>
</tbody>
</table>

**Copy Sub-Totals to next page**

*Based on 10% of active zones in alarm.

Sub-Total Standby _____ mA  Sub-Total Alarm _____ mA
## Standby Battery Power Calculations

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Qty</th>
<th>Current (mA)</th>
<th>Part Description</th>
<th>Qty</th>
<th>Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>736P POPIT Interface Module</td>
<td>______</td>
<td>______</td>
<td>Radionics Popex, POPITs, OctoPOPITs</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>738A Ademco Wireless Interface Module</td>
<td>______</td>
<td>______</td>
<td>710 Bus Splitter/Repeater Module</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>711 Zone Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Zone (EOL Installed)</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>714 Zone Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Zones (EOL Installed)</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>712-8 Zone Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Zones (EOL Installed)</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>714-8, 714-16 Zone Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Zones (EOL Installed)</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>715 Zone Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Zones (EOL Installed)</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>715-8, 715-16 Zone Expansion Modules</td>
<td>______</td>
<td>______</td>
<td>2-Wire Smokes</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>716 Output Expansion Module</td>
<td>______</td>
<td>______</td>
<td>Active Form C Relays</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>717 Graphic Annunciator Module</td>
<td>______</td>
<td>______</td>
<td>Annunciator Outputs</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>521LX, 521LXT Smoke Detectors</td>
<td>______</td>
<td>______</td>
<td>2-Wire Smoke Detectors</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>COSMOD2W Module</td>
<td>______</td>
<td>______</td>
<td>COSMO-2W Smoke and CO Detectors</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td>572 Indicator LED</td>
<td>______</td>
<td>______</td>
<td>Aux. Powered Devices on Terminals 7 and 11</td>
<td>______</td>
<td>______</td>
</tr>
</tbody>
</table>

### Sub-Totals this page only
- Sub-Total Standby: ______ mA
- Sub-Total Alarm: ______ mA

### Sub-Totals from previous page
- Sub-Total Standby: ______ mA
- Sub-Total Alarm: ______ mA

*Based on 10% of active zones in alarm

# For systems that are not central station monitored, multiply alarm current by 12.

### Calculations
- Total Standby: ______ mA x number of Standby Hours needed = ______ mA-hours
- Total Alarm: ______ mA + ______ mA-hours
- Total: ______ mA-hours
- X .001 = ______ Amp-hrs

Refer to section 6.9 for standby battery selection.
6.9 Standby Battery Selection

To choose the type and number of batteries needed for 24, 60, or 72 hours of standby power based on the Amp Hours Required calculation from section 6.8 XR500 Series Power Requirements, perform the following:

1. Select the desired standby hours required from the table below: 24, 60, or 72 hours.
2. Select the desired battery size: Model 368 (12 Vdc 5.0 Ah), Model 369 (12 Vdc 7 Ah), Model 365 (12 Vdc 9 Ah), Model 366 (12 Vdc 18 Ah), or Model 364 (12 Vdc 1.3 Ah) when used in the Model 341 enclosure.
3. Select a Max. Ah Available number that is just greater than the number calculated in Amp Hours Required.
4. Install the number of batteries shown in the corresponding No. of Batteries required column.

**Example:** If the Amp Hours Required calculation equals 22 Ah for 24 hours of standby time and 4.5 Ah batteries are desired, install six (6) Model 368 (12 Vdc, 5.0 Ah) batteries.

**Note:** You can use a Model 327 Plug-in 50 VA or Model 322/323 Wire-in 56 VA with up to 36 Ah of batteries. The Model 324/324P Wire-in 100 VA Transformer may be used with any of the battery choices listed below.

For listed installations, all batteries shall be installed in a DMP Model 341, 349, 350 or 352S enclosure and all wiring shall run through conduit. The enclosure shall be installed to the left of the XR500 Series enclosure to ensure Battery and AC wire separation.

### 24 hours of standby power

<table>
<thead>
<tr>
<th>5.0 Ah Batteries</th>
<th>7 Ah Batteries</th>
<th>7.7 Ah Batteries</th>
<th>9 Ah Batteries</th>
<th>18 Ah Batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>16</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>24</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>16</td>
<td>4</td>
<td>31</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>37</td>
<td>5</td>
<td>32</td>
</tr>
<tr>
<td>24</td>
<td>6</td>
<td>43</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>28</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

### 60 hours of standby power

<table>
<thead>
<tr>
<th>7 Ah Batteries</th>
<th>7.7 Ah Batteries</th>
<th>9 Ah Batteries</th>
<th>18 Ah Batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Ah Available</td>
<td>Max. Ah Available</td>
<td>Max. Ah Available</td>
<td>Max. Ah Available</td>
</tr>
<tr>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
</tr>
<tr>
<td>13</td>
<td>2</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>3</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>27</td>
<td>4</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>33</td>
<td>5</td>
<td>37</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>6</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>47</td>
<td>7</td>
<td>52</td>
<td>7</td>
</tr>
<tr>
<td>54</td>
<td>8</td>
<td>59</td>
<td>8</td>
</tr>
<tr>
<td>60</td>
<td>9</td>
<td>67</td>
<td>9</td>
</tr>
<tr>
<td>67</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** 48 hours is the typical battery recharge time for any of the Number of Batteries shown in this section.

### 72 hours of standby power

<table>
<thead>
<tr>
<th>9 Ah Batteries</th>
<th>18 Ah Batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Ah Available</td>
<td>Max. Ah Available</td>
</tr>
<tr>
<td>No. of Batteries</td>
<td>No. of Batteries</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>50</td>
<td>6</td>
</tr>
<tr>
<td>59</td>
<td>7</td>
</tr>
<tr>
<td>67</td>
<td>8</td>
</tr>
</tbody>
</table>

**Note:** 72 hours is the typical battery recharge time required for any of the Number of Batteries shown in this section.

Note: If the Amp Hours Required calculation is greater than any Max. Ah Available number shown on a table, then add power supply(s) to power some system devices allowing the Amp Hours Required calculation to be reduced. See the 710 Bus Splitter/Repeater Installation Guide (LT-0310).
Bell Output

7.1  Terminals 5 and 6
Terminal 5 supplies positive 12 Vdc to power alarm bells or horns. This output can be steady, pulsed, or temporal depending upon the Bell Action specified in Bell Options. Terminal 6 is the ground reference for the bell circuit. This supervised output detects 1k Ohms or less as normal. The indicating appliance can supply this resistance. If using a horn or siren, a 1k Ohm 1/2 W EOL resistor (provided) should be added across the bell circuit to provide supervision. See the Notification Appliance section for a list of approved notification appliances and the Wiring Diagrams for connections.

Keypad Bus

8.1  Description
XR500 Series panel terminals 7, 8, 9, and 10 are for the keypad bus. You can connect up to sixteen supervised keypads and multiple unsupervised keypads to the XR500 Series. In addition to DMP LCD keypads, you can also connect any combination of zone expansion modules to the data bus. Refer to the specific device installation sheet for the maximum number of Keypad Bus devices.

Refer to the section titled LX-Bus for complete information about the LX-Bus 4-pin header and expansion slot.

Note: Do not use shielded wire for LX-Bus/Keypad Bus circuits.

8.2  Terminal 7 - RED
This terminal supplies positive 12 Vdc Regulated to power DMP LCD keypads and zone expansion modules. Terminal 7 also supplies power for any auxiliary device. The ground reference for terminal 7 is terminal 10.

The output current is shared with the smoke power output on terminal 11 and Zones 9 and 10. Current draw for all connected devices must not exceed the panel maximum current rating. See Power Supply in the Compliance section for maximum current in a fire listed application.

8.3  Terminal 8 - YELLOW
Terminal 8 receives data from keypads and zone expansion modules. It cannot be used for any other purpose.

8.4  Terminal 9 - GREEN
Terminal 9 transmits data to keypads and zone expansion modules. It cannot be used for any other purpose.

8.5  Terminal 10 - BLACK
Terminal 10 is the ground reference for DMP LCD keypads, zone expansion modules, and all auxiliary devices being powered by terminal 7.

8.6  J8 Programming Connection
A 4-pin header (J8) is provided to connect a keypad when using a DMP Model 330 Programming Cable. This provides a quick and easy connection for panel programming.

You may also use the J8 Programming Header to connect Keypad Bus devices. This is an alternative to connecting keypad bus devices to terminals 7, 8, 9, and 10.

8.7  OVC LED
The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus are shut down.

Smoke and Glassbreak Detector Output

9.1  Terminals 11 and 12
Terminal 11 supplies positive 12 Vdc Regulated to power 4-wire smoke detectors and other powered devices. This output can be turned off by the user for 5 seconds using the Sensor Reset User Menu option to allow latched devices to reset. Terminal 12 is the ground reference for terminal 11.

9.2  Current Rating
The Output current from terminal 11 is shared with terminals 7, 25, and 27.

The total current draw of all devices powered from the panel must be included with terminal 11 calculations and must not exceed the maximum output rating.
10.1 Terminals 13–24
Zones 1 to 8 (terminals 13 to 24) on the XR500 Series panel are all grounded burglary zones. For programming purposes, the zone numbers are 1 through 8. Listed below are terminal 13 to 24 connection functions.

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Function</th>
<th>Terminal</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Zone 1 voltage sensing</td>
<td>19</td>
<td>Zone 5 voltage sensing</td>
</tr>
<tr>
<td>14</td>
<td>Ground for Zones 1 and 2</td>
<td>20</td>
<td>Ground for Zones 5 and 6</td>
</tr>
<tr>
<td>15</td>
<td>Zone 2 voltage sensing</td>
<td>21</td>
<td>Zone 6 voltage sensing</td>
</tr>
<tr>
<td>16</td>
<td>Zone 3 voltage sensing</td>
<td>22</td>
<td>Zone 7 voltage sensing</td>
</tr>
<tr>
<td>17</td>
<td>Ground for Zones 3 and 4</td>
<td>23</td>
<td>Ground for Zones 7 and 8</td>
</tr>
<tr>
<td>18</td>
<td>Zone 4 voltage sensing</td>
<td>24</td>
<td>Zone 8 voltage sensing</td>
</tr>
</tbody>
</table>

The voltage sensing terminal measures the voltage across a 1k Ohm End-of-Line resistor to ground. Use DMP Model 311 1k Ohm resistors. Dry contact sensing devices can be used in series (normally-closed) or in parallel (normally-open) with any of the burglary protection zones.

10.2 Operational Parameters
Each protection zone detects three conditions: Open, Normal, and Short. Listed below are voltage and resistance parameters for each condition:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Resistance on zone</th>
<th>Voltage on positive terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>over 1300 ohms</td>
<td>over 2.0 Vdc</td>
</tr>
<tr>
<td>Normal</td>
<td>600 to 1300 ohms</td>
<td>1.2 to 2.0 Vdc</td>
</tr>
<tr>
<td>Short</td>
<td>under 600 ohms</td>
<td>under 1.2 Vdc</td>
</tr>
</tbody>
</table>

10.3 Zone Response Time
A condition must be present on a zone for 500 milliseconds before it is detected by the XR500 Series panel. Ensure detection devices used on the protection zones are rated for use with this delay. Zones 1-10 can also be programmed for a fast response delay of 160 milliseconds.

10.4 Keyswitch Arming Zone
Using a keyswitch on an Arming type zone allows you to arm and disarm selected areas without having to enter a user code.

11.1 Terminals 25–26 and 27–28
Panel terminals 25 through 28 provide two resettable Class B, Style A, 2-wire powered zones. For programming purposes the zone numbers are 9 and 10.

Note: The maximum wire length for either zone 9 or zone 10 is 3000 feet using 18 AWG or 1000 feet using 22 AWG. The maximum voltage is 14 Vdc and the maximum normal standby current is 1.25mA DC. The maximum line impedance is 100 Ohms. The maximum short circuit current is 56mA.

When using all other zone expansion modules, use listed Model 309 EOL resistors. The compatibility identifier for the zones is A.

Note: Do not mix detectors from different manufacturers on the same zone.

Caution: Performing a Sensor Reset momentarily drops power to the devices on Terminal 11 (SMK), Zones 9 and 10. The panel views these zones (9 and 10) as “Open” while the power is absent.
### 11.2 Compatible 2-Wire Smoke Detector Chart

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Detector ID</th>
<th>Base</th>
<th>Base ID</th>
<th>DC Voltage Range</th>
<th># of Detectors (12V/24V)</th>
<th>Zone Expansion Modules</th>
<th>Panel Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hochiki</td>
<td>SLR-835B-2</td>
<td>HD-6</td>
<td>N/A</td>
<td></td>
<td>8-35</td>
<td>14</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td></td>
<td>SLR-835BH-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EST</td>
<td>521B, 521BXT, 521NB, 521NBXT</td>
<td>S09A</td>
<td></td>
<td></td>
<td>6.5-20</td>
<td>12</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>System Sensor</td>
<td>2W-B, 2WT-B</td>
<td>A</td>
<td></td>
<td></td>
<td>8.5-35</td>
<td>10</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>System Sensor</td>
<td>2WTA-B</td>
<td>A</td>
<td>(*)</td>
<td></td>
<td>8.5-35</td>
<td>12</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>System Sensor</td>
<td>2WTR-B</td>
<td>A</td>
<td>(*)</td>
<td></td>
<td>8.5-35</td>
<td>1</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>System Sensor</td>
<td>1151, 2151</td>
<td>A</td>
<td>B110PL, B401</td>
<td></td>
<td>8.5-35</td>
<td>10</td>
<td>715, 715-8, 715-16</td>
<td>9 &amp; 10</td>
</tr>
<tr>
<td>System Sensor</td>
<td>COSMO-2W (using COSMOD2W)</td>
<td>A</td>
<td></td>
<td></td>
<td>8.5-35</td>
<td>12</td>
<td>714, 714-8, 714-16, 715, 715-8, 715-16</td>
<td>1-10</td>
</tr>
</tbody>
</table>

(*) = Must be used in conjunction with System Sensor Polarity Reversal Module model RRS-MOD.

Figure 7: Compatible 2-Wire Smoke Detectors
Dry Contact Relay Outputs

12.1 Description
The XR500 Series panel provides two programmable auxiliary SPDT relays when equipped with two DMP Model 305 relays in sockets K6 (Output 1) and K7 (Output 2) and a Model 431 Output Harness on the J2 6-pin Header. Each relay provides one SPDT set of contacts that can be operated by any of the functions listed below:

1) Activation by zone condition: Steady, Pulsing, Momentary, and Follow
2) Activation by 24-hour 7-day schedule: One on and one off time a day for each relay
3) Manual activation from the DMP LCD keypad menu
4) Communication failure
5) Armed area annunciation
6) Fire Alarm, Fire Trouble or Supervisory
7) Ambush Alarm
8) Exit and Entry timers
9) System Ready
10) Late to Close

Refer to the XR500 Series Programming Guide (LT-0679) for specific information.

12.2 Contact Rating
The Model 305 relay contacts are rated for 1 Amp at 30 Vdc (allows .35 power factor). Connect auxiliary power to the Relay Output 1 common terminal by installing the gray harness wire to terminal 7. Current draw for all connected devices must not exceed the panel maximum current rating.

12.3 Model 431 Output Harness Wiring
The relay contacts are accessible by installing the DMP 431 Output Harness on the 6-pin header labeled J2. Output 2 uses the top three prongs, and Output 1 uses the bottom three prongs. The wire harness and contact locations are shown below:

<table>
<thead>
<tr>
<th>Contact</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output 1 normally closed</td>
<td>Violet</td>
</tr>
<tr>
<td>Output 1 common</td>
<td>Gray</td>
</tr>
<tr>
<td>Output 1 normally open</td>
<td>Orange</td>
</tr>
<tr>
<td>Output 2 normally closed</td>
<td>Violet with white stripe</td>
</tr>
<tr>
<td>Output 2 common</td>
<td>White with gray stripe</td>
</tr>
<tr>
<td>Output 2 normally open</td>
<td>Orange with white stripe</td>
</tr>
</tbody>
</table>

The relay contacts must be connected to devices located within the same room as the XR500 Series panel.

Annunciator Outputs

13.1 Description
The four programmable annunciator outputs can be programmed to indicate the activity of the panel zones or conditions occurring on the system. Annunciator outputs do not provide a voltage but instead switch-to-ground a voltage from another source. The outputs can respond to any of the conditions listed in the Description section for Dry Contact Relays. Maximum voltage is 30 Vdc @ 50mA.

13.2 Model 300 Harness Wiring
Access the open collector outputs by installing DMP 300 Harness on the 4-pin header labeled J11. The output locations are shown below. For listed applications, devices connected to the outputs must be located within the same room as the panel.

<table>
<thead>
<tr>
<th>Output</th>
<th>Color</th>
<th>Wire</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Red</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Yellow</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Green</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Black</td>
<td>4</td>
</tr>
</tbody>
</table>

13.3 Model 860 Relay Module
Connect a Model 860 Relay Module to the J11 on the XR500 Series panel to provide relays for outputs 3-6. Use these relays for electrical isolation between the alarm panel and other systems or for switching voltage to control various functions. Power is supplied to the relay coils from a single wire connected to the panel auxiliary power terminal 7. The module includes one relay and provides three additional sockets for expansion of up to four relays. Mount the 860 inside the panel enclosure using the 3-hole pattern and plastic standoffs. Refer to the 860 Module Install Sheet (LT-0484) as needed.

Relay Contact Rating: 1 Amp at 30 Vdc (allows .35 power factor)
14.1 Description
The XR500 Series panel supports RS-232, LX-Bus, and DMP Wireless operation. Only one operation can function at a

time. Install a jumper on one pair of J23 headers to indicate how the panel is programmed to operate. Refer to the
table below when installing a jumper on J23. When a jumper is installed or moved on the 6-pin header, briefly reset
the panel using the J16 jumper to activate the selected operation.

Note: Only one operation, RS-232, LX-Bus, or DMP Wireless can function at a time.

<table>
<thead>
<tr>
<th>J23 6-Pin Header</th>
<th>Letter</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>R</td>
<td>Standard RS-232</td>
</tr>
<tr>
<td>L</td>
<td>L</td>
<td>LX-Bus</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>1100 Series DMP Wireless</td>
</tr>
</tbody>
</table>

15.1 Description
The XR500 Series panel supports up to 500 wireless bus zones or up to five LX-Bus circuits. Each Interface card
LX-Bus circuit provides 100 expansion zones. The maximum number of LX-Bus zones available on a fully populated
panel is 500. Use LX-Bus J22 Header for 100 zones. Install a single Interface Card Connector on the board to support
100 additional zones for a total of 200 zones. To install up to five Interface Cards install a Model 461 Interface
Adaptor Card.

15.2 J22 LX-Bus Header
Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log
Reporting, or use J22 to connect an LX-Bus or DMP Wireless device. Operation is determined by where you
install the jumper on the J23 6-Pin header. See the Connecting LX-Bus and Keypad Bus Devices section for
maximum wiring distances.

For each connection, respect wire colors when connecting devices and use all four wires. After placing the
jumper on the J23 6-Pin header to enable the required operation, briefly reset the panel using the J16 jumper
to activate operation.

Wireless Bus Operation: Place a jumper on the two pins next to the letter “X” on the J23 6-Pin header. When
using J22 as a wireless bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. Connect
the other end to the J3 header on the 1100X or 1100XH Wireless Receiver. This provides up to 500 wireless zones
numbered 500 to 999. Refer to the 1100X Wireless Receiver Install Guide (LT-0708) or the 1100XH Wireless Receiver
Install Guide (LT-0970).

LX-Bus Operation: Place a jumper on the two pins next to the letter “L” on the J23 6-Pin header. When using J22 as
an LX-Bus, connect a DMP Model 300 4-wire Harness to the J22 4-pin header labeled LX. This provides the first 100
LX-Bus zones numbered 500-599. No LX-Bus Interface Card is required.

Note: Do NOT use shielded wire when using the J22 LX-Bus Header.

RS-232 Operation: Place a jumper on the two pins next to the letter “R” on the J23 6-Pin header and refer to J21
Serial Connector.
15.3 LX-Bus Interface Cards

You can add one Interface Card (Model 481, 462N, 462P, 463C, 464-263C or 464-263H) to the XR500 Series using J6 Interface Card Connector located on the board right edge. To add more than one Interface Card install a 461 Interface Adaptor Card using J6 Interface Card Connector on the board right edge. The 461 Adaptor Card allows up to five Interface Cards to be installed. Refer to the 461 Installation Sheet (LT-0736). Each Interface card provides up to 100 LX-Bus Zones. Refer to the following tables to identify zone locations and numbers relative to J22 operation.

<table>
<thead>
<tr>
<th>J22 LX-Bus Enabled (Set J23 to “L”)</th>
<th>One Interface Card</th>
<th>461 Adaptor Card and Multiple Interface Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX-Bus Zone Numbers</td>
<td>LX-Bus Zone Numbers</td>
<td>LX-Bus Zone Numbers</td>
</tr>
<tr>
<td>1 500-599</td>
<td>2 600-699</td>
<td>2 (A) 600-699</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 (B) 700-799</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 (C) 800-899</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 (D) 900-999</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J22 LX-Bus NOT Enabled (J23 NOT set to “L”)</th>
<th>One Interface Card</th>
<th>461 Adaptor Card and Multiple Interface Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>LX-Bus Zone Numbers</td>
<td>LX-Bus Zone Numbers</td>
<td>LX-Bus Zone Numbers</td>
</tr>
<tr>
<td>1 500-599</td>
<td>1 (A) 500-599</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 (B) 600-699</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (C) 700-799</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 (D) 800-899</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 (E) 900-999</td>
<td></td>
</tr>
</tbody>
</table>

15.4 LX-Bus LEDs

The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting LX-Bus data. The bottom LED flashes yellow to indicate the panel is receiving LX-Bus data.

15.5 OVC LED

The Overcurrent LED (OVC) lights Red when the devices connected to the Keypad Bus and LX-Bus(es) draw more current than the panel is rated for. The OVC is located above Outputs 1 and 2 on the panel and turns a steady Red when lit. When the OVC LED lights Red, the LX-Bus(es) and Keypad bus shut down.

16.1 Description

Note: Only one connector, J21 or J22 can function at a time. Either use J21 to connect a serial device for PC Log Reporting, or use J22 to connect a DMP Wireless device or an LX-Bus device. Operation is determined by where you install the jumper on the J23 6-Pin header. The maximum line impedance is 100 Ohms.

To enable J21 to operate in RS-232 mode, place a jumper on the two pins next to the letter “R” on the J23 6-Pin header and briefly reset the panel using the J16 jumper to activate the selected operation. Panel programming using Remote Link™ can be set up through a direct connection to a computer. The Serial Connector allows the following operation options.

16.2 Computer Connection to J21

Use a straight through RS-232 Serial cable with a DB-9 female connector on one end and a DB-9 male connector on the other end. Plug the DB-9 male connector end of the cable onto the XR500 Series panel J21 RS-232 connector. Plug the DB-9 female connector end of the cable onto the DB-9 male connector located at the back of the computer. Program the XR500 Series panel as needed then disconnect the computer.
16.3 Serial Connector LEDs
The two LEDs, located near the bottom-right corner of J21 indicate data transmission and receipt. The top LED flashes green to indicate the panel is transmitting serial data. The bottom LED flashes yellow to indicate the panel is receiving serial data.

J1 Ethernet Connector (XR500N/XR500E only)

17.1 Description
The J1 Ethernet Connector is available on the XR500N/XR500E Network version to connect directly to an Ethernet network using a standard patch cable. The maximum impedance is 100 Ohms.

17.2 Ethernet LEDs
The two LEDs, located to the left of J1 Ethernet Connector, indicate network connection. The top, Link LED lights up green to indicate a valid receive connection from the host network. The bottom, Activity LED flashes yellow to indicate messages are being sent and received.

J3 Telephone RJ Connector

18.1 Description
Connect the panel to the public telephone network by installing a DMP 356 RJ Cable between the panel J3 connector and the RJ31X or RJ38X phone block. The maximum impedance is 100 Ohms. **CAUTION** - To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord, such as DMP Model 356 Series Phone Cords.

18.2 J10 893A Connector
Connect an 893A Dual Phone Line Module to J10 on the XR500 Series. Refer to the 893A Installation Sheet (LT-0135) for complete information.

18.3 Notification
The user must not repair registered terminal equipment. In case of trouble, immediately unplug the device from the telephone jack. The factory warranty provides for repairs. Registered terminal equipment may not be used on party lines or in connection with coin telephones. Notify the telephone company with the following information:

a. The particular line(s) where the service is connected
b. The FCC registration number as listed in Section 18.5
c. The ringer equivalence
d. The device make, model, and serial number

18.4 Phone Line Monitor
The XR500 Series panel has a built-in telephone monitor that monitors the phone line voltage to verify the connection to the central office. Figure 11 and the table below identify the phone block pin layout, wire numbers, and colors.

<table>
<thead>
<tr>
<th>Wire Number</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gray</td>
</tr>
<tr>
<td>2</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Black</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
</tr>
<tr>
<td>5</td>
<td>Green</td>
</tr>
<tr>
<td>6</td>
<td>Yellow</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
</tr>
<tr>
<td>8</td>
<td>Brown</td>
</tr>
</tbody>
</table>

The wires on the RJ31 that feed pins 4 and 5 should be the ONLY wires on the D-marc. All other house phone wiring should be tied to pins 1 and 8 coming back from the RJ31.

Dial tone must come into RJ31X on pins 4 and 5 and go back to house phones from pins 1 and 8. Follow these steps to determine if panel is seizing the line:

1. Unplug phone cord from RJ31X
2. Place butt-set on pins 4 and 5
3. Listen for dial tone. With dial tone present, lift either wire from pins 1 or 8
4. Listen for dial tone again. If the dial tone is present, RJ31X wiring is correct. If no dial tone is present, the RJ31X wiring is backwards. Rewire so dial tone is coming IN on 4 and 5. If you still have trouble with the phone line, you may need to replace the RJ cord. If the dial tone is still not present, swap out the RJ31X phone block.
18.5 FCC Registration

The Model XR500 Series complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the outside of the enclosure of this equipment is a label that contains, among other information, a product identifier in the format US:CCKAL00BXR500. If requested this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

If the XR500 Series causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn’t practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the Model XR500 Series, for repair or warranty information, please contact DMP at the address and telephone number listed on the back of this document. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

If your premises has specially wired alarm equipment connected to the telephone line, ensure the installation of the XR500 Series does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

**Caution:** To ensure proper operation, this equipment must be installed according to the installation instructions in this manual. To verify that the equipment is operating properly and can successfully report an alarm, this equipment must be tested immediately after installation, and periodically thereafter, according to the test instructions in this document and the XR500 Series Programming Guide (LT-0679). Additionally, verification of Line Seize capability should be made immediately after installation, and periodically thereafter, in order to ensure that this equipment can initiate a call even when other equipment (telephone, answering system, computer modem, etc.) connected to the same line is in use.
## 19.1 J16 Reset Header
The reset header is located just above the terminal strip on the right side of the circuit board and is used to reset the XR500 Series microprocessor. To reset the panel when first installing the system, install the reset jumper before applying power to the panel. After connecting the AC and battery, remove the reset jumper.

To reset the panel while the system is operational, for example, prior to reprogramming, install the reset jumper without powering down the system. Remove the reset jumper after one or two seconds.

After resetting the panel, begin programming within 30 minutes. If you wait longer than 30 minutes, you must reset the panel again.

![Diagram showing J16 Reset Header](image)

**Figure 12: XR500 Series Panel Showing the Reset Jumper**

## 19.2 J4 Tamper Header
The J4 header is for use with the optional DMP 306 Tamper Harness. The harness connects to one or more tamper switches mounted inside the panel enclosure to supervise against unauthorized enclosure opening or removal. Refer to the wiring diagram on the enclosure door for correct tamper switch wiring.

**How the Tamper Works**
If the enclosure is opened or removed while one or more of the system areas are armed, a panel tamper alarm is indicated. If all areas are disarmed, a panel tamper trouble is indicated.
Listed Compliance Specifications

20.1 Introduction
For applications that must conform to a local authorities installation standard or a National Recognized Testing Laboratory certificated system, please see the following sections.

Universal Burglary Specifications

21.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the XR500 Series panel in accordance with any of the burglary standards. Additional specifications may be required by a particular standard. See the XR500 Series Programming Guide (LT-0679).

21.2 Wiring
All wiring must be in accordance with NEC, ANSI/NFPA 70, ANSI/UL 681, and ANSI/UL 827 for all burglary installations. All transformer wires must be installed in conduit.

21.3 Transformer
The total combined Auxiliary and Bell outputs cannot exceed 1.3 Amps with a 50 VA Transformer. The total combined Auxiliary and Bell outputs cannot exceed 1.9 Amps with a 56 VA Transformer.

21.4 Control Outside of Protected Area
A Potter EVD or Sentrol 5402 should be used in place of a lined cabinet when the panel is installed outside of the protected area. Front and rear tamper switches are required. Refer to the system wiring diagram.

21.5 Police Station Phone Numbers
The digital dialer telephone number programmed for communication must not be a police station phone number.

21.6 Bypass Reports
The Bypass Reports option must be programmed as YES for all listed burglary applications.

21.7 System Maintenance
To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

21.8 Listed Receivers
Operation has been verified with the DMP SCS-VR and SCS-1R receivers and any Central Station Receiver that accepts industry standard Contact ID (DTMF) format. It is the installer’s responsibility to verify compatibility between the panel and the receiver used during installation. The installer shall verify the compatibility of the receiver and the system on a yearly basis.

21.9 Power Supply Supervision
For commercial burglary applications the power supply for all local bells shall be under 24-hour protection. Refer to the Secondary Power Supply section in this document.

21.10 Wireless Tamper
The Zone Information Disarmed Open Message to Transmit must be programmed Trouble (T). (Not applicable to ANSI/UL 1023).

21.11 Wireless External Contact
When used, the External Contact of 1101 or 1102 must be programmed Normally Closed.

21.12 Wireless Supervision Time
The Zone Information Supervision Time cannot be set to 0 (zero).

21.13 Detect Wireless Jamming
The Detect Wireless Jamming option must be programmed YES. (Not applicable to ANSI/UL 1023).

21.14 Standby Batteries
Use battery Models 365 (12 Vdc 9Ah), 366 (12 Vdc 18Ah), 368 (12 Vdc 5.0Ah), and 369 (12 Vdc 7Ah) with the XR500 panel when installed in the 341, 350, 350A, or 352 enclosures. The Model 364 (12Vdc 1.3Ah) battery is for use with the XR500 panel when using the 341 enclosure with the optional 341B Battery Bracket. The Model 364 battery is rated for 4 hours of standby time.
Area Information

22.1 Ownership
The control unit system shall be under one ownership.

22.2 Annunciation
The System shall be installed so that when arming any area from any keypad, the local bell shall annunciate.

22.3 Trouble Display
The Status List programming shall be set to annunciate all trouble messages at all keypads.

22.4 Closing Wait
The Closing Wait option must be programmed YES.

22.5 Local Bell Supervision
When a local bell is employed, the power supply for the bell shall be under 24-hour protection. Proper personnel for maintenance or security of the system shall be able to disarm that area.

Household Burglar-Alarm System Units
ANSI/UL 1023

23.1 Audible Devices
At least one listed audible device (Ademco AB12M) rated to operate over the voltage rate of 11.7 Vdc to 12.8 Vdc and rated at 85 DB minimum must be used.

23.2 Auxiliary Circuits
At least one burglary alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the burglary alarm initiating device shall be rated to operate over the range of 11.5 Vdc to 12.7 Vdc.

23.3 Bell Cutoff
The Bell Cutoff time cannot be less than five minutes.

23.4 Entry Delay
The maximum entry delay used must not be more than 45 seconds.

23.5 Exit Delay
The maximum exit delay used must not be more than 60 seconds.

23.6 Weekly Test
The product should be tested weekly.

23.7 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as DAY for residential applications.
Central-Station and Proprietary Burglar-Alarm Units
ANSI/UL 1610 AND ANSI/UL 1076

24.1 Opening/Closing Reports
The Opening/Closing Reports option must be programmed as YES.

24.2 Closing Wait
The Closing Wait option must be programmed YES.

24.3 Entry Delay
The maximum entry delay used must not be more than 60 seconds when using Model 350A or 350H Attack Resistant Housing.

24.4 Exit Delay
The maximum exit delay used must not be more than 60 seconds.

24.5 Proprietary Dialer
The Model XR500 Series provides proprietary service when configured as a digital dialer.

24.6 DACT Central Station
DACT Central Station service can be provided under by adding an Ademco AB12M bell and bell housing and placing the Model XR500 Series panel into Model 350A or 350H Attack Resistant Housing.

24.7 Bell Cutoff
The Bell Cutoff time cannot be less than 15 minutes.

24.8 Standard or Encrypted Line Security
Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel. The NET Check-in time must be set to 03 minutes or RND. When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A or 350H) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required.

To provide Encrypted Line security, install an XR500E panel.

For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel.

The XR500 Series Protected Premises Control Unit is suitable for Standard Line Security service when configured for NET communication with SCS-1R receiving system. This configuration is approved for the following:

- AMCX - Central Station Alarm Units
- APOU - Proprietary Alarm Units

24.9 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as ANY for commercial applications.

24.10 CELL Only, Standard or Encrypted Line Security
Standard or Encrypted Line Security is provided when programmed using Model 463C, 464-263C or 464-263H for CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Checkin: = 3 minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = CELL</td>
<td></td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Fail Time: = 3 minute</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Test Rpt: = NO</td>
</tr>
<tr>
<td>Sub Code: = NO or YES</td>
<td></td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.
24.11 NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with Model 463C, 464-263C or 464-263H for CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Path 2 programming</th>
<th>Path 3 programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = NET</td>
<td>Comm Type: = CELL</td>
<td>Comm Type: = DD</td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Path Type: = Backup (operates as alternate primary)</td>
<td>Path Type: = Backup (operates as second method)</td>
</tr>
<tr>
<td>Test Rpt: = NO</td>
<td>Test Rpt: = YES</td>
<td>Test Rpt: = YES</td>
</tr>
<tr>
<td>Checkin: = 6 minute, or RND (random)</td>
<td>Test Freq: = Daily</td>
<td>Test Freq: = Daily</td>
</tr>
<tr>
<td>Fail Time: = 6 minute, or RND (random)</td>
<td>Checkin: = ADAPT</td>
<td>Duplicate Alarms: = YES</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Encrypt: = NO or YES*</td>
<td></td>
</tr>
<tr>
<td>Sub Code: = YES</td>
<td>Sub Code: = Shared</td>
<td></td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.

24.12 NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and Model 463C, 464-263C or 464-263H for CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of an additional backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Path 2 programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = NET</td>
<td>Comm Type: = CELL</td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Path Type: = Backup (operates as second method)</td>
</tr>
<tr>
<td>Test Rpt: = NO</td>
<td>Test Rpt: = YES</td>
</tr>
<tr>
<td>Checkin: = 6 minute, or RND (random)</td>
<td>Test Freq: = Daily</td>
</tr>
<tr>
<td>Fail Time: = 6 minute, or RND (random)</td>
<td>Checkin: = ADAPT3</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Encrypt: = NO or YES*</td>
</tr>
<tr>
<td>Sub Code: = YES</td>
<td>Duplicate Alarms: = YES</td>
</tr>
<tr>
<td></td>
<td>Sub Code: = Shared</td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.
Holdup Alarm Units
ANSI/UL 636

25.1 ANSI/UL 1610 Required
The programming and installation specifications contained in this section must be completed in addition to ANSI/UL 1610 Specifications when installing a Model 1142 with a Model XR500 Series panel.

25.2 1100X/1100XH Wireless Receiver
The Model 1100X/1100XH Wireless Receiver in conjunction with the Model 1142 Holdup Alarm Transmitter must be installed in the system.

25.3 Wireless Supervision Time
The Zone Information Supervision Time must be a maximum of 240 minutes.

25.4 LED Display
The LED Operation option display must be set to NO when using a Model 1142 Holdup Alarm Transmitter.

25.5 Jamming Detection
The Detect Wireless Jamming option must be set to YES.

25.6 Local Alarm
The Bell Action for a PN (Panic) type zone must be programmed as N (None).

25.7 Message to Transmit
The Armed Open and Armed Short messages for a PN (Panic) type zone must be programmed to A (Alarm).

25.8 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as ANY for commercial applications.

Digital Burglar Alarm Communicator System Units
ANSI/UL 1635

26.1 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

26.2 Digital Dialer Telephone Number
Both programmed telephone numbers must begin with a P.

26.3 Test Time
The Test Time option must be programmed so that the XR500 Series sends a report once every 24 hours.

26.4 Closing Wait
The Closing Wait option must be programmed YES.

Police Station Connected and Local Burglar Alarm Units
ANSI/UL 365

27.1 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

27.2 Entry Delay
The maximum entry delay used must not be more than 60 seconds when using Model 350A or 350H Attack housing.

27.3 Exit Delay
The maximum exit delay used must not be more than 60 seconds.
27.4 Bell
A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.
The alarm housing for a mercantile alarm system without a remote alarm transmission connection shall be mounted on the outside of the building, visible from a public street or highway. It shall be accessible for examination and repair. It shall also be located not more than four stories above the street level unless:
   a) A second alarm sounding device and housing, intended for outside service, is mounted adjacent to the premises or area of the building in which the alarm system is installed or
   b) A second alarm sounding device, intended for inside service, is mounted within the premises.
   In either case, the outside alarm sounding device and housing may be mounted as high as the seventh floor.

27.5 Bell Cutoff
The Bell Cutoff time cannot be less than 15 minutes.

27.6 Automatic Bell Test
The Automatic Bell Test option must be programmed as YES.

27.7 Standard or Encrypted Line Security
Standard Line Security is provided when configured as a Path 1 NET system using an XR500N panel or an XR500 panel with an iCOM™ Network Alarm Router. The NET Check-in time must be set to 06 minutes or RND When programmed for Standard Line Security, Exit Time Restart is disabled. When a dialer is required for 06 minute check-in time, an attack resistant enclosure (DMP Model 350A) is required. When the check-in time is set to a number less than 200 seconds, an attack resistant enclosure is not required.
To provide Encrypted Line security, install an XR500E panel or an XR500 panel with an iCOM-E™ Encrypted Network Alarm Router.
For Encrypted Line security operation, communication between the Premise and Supervising Station provides 128 bit encryption when using an XR500E panel or an XR500 panel with an iCOM-E Encrypted Network Alarm Router.

27.8 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as ANY for commercial applications.

27.9 Model 463C, CELL Only, Standard or Encrypted Line Security
Standard or Encrypted Line Security is provided when programmed using CELL with no backup. XR500 cellular communication is used as primary with a 3 minute check-in when armed or disarmed.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Checkin: = 3 minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = CELL</td>
<td>Fail Time: = 3 minute</td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Test Rpt: = NO</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Sub Code: = NO or YES</td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.
27.10  Model 463C, NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided using NET communication with CELL as an alternate primary and with digital dialer as a backup. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the NET primary path become disabled, CELL adapts the same check-in time programmed for the primary communication and becomes an alternate primary path. The dialer path is used as the backup if both NET and CELL fail to receive acknowledgement from the receiver.

This method of operation causes the CELL alternate primary to adapt to the 6 minute NET primary check-in rate when the NET primary is unavailable maintaining line supervision and precludes the need for a central station runner to respond to the NET primary failure.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Path 2 programming</th>
<th>Path 3 programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = NET</td>
<td>Comm Type: = CELL</td>
<td>Comm Type: = DD</td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Path Type: = Backup (operates as alternate primary)</td>
<td>Path Type: = Backup (operates as second method)</td>
</tr>
<tr>
<td>Test Rpt: = NO</td>
<td>Test Rpt: = YES</td>
<td>Test Rpt: = YES</td>
</tr>
<tr>
<td>Checkin: = 6 minute, or RND (random)</td>
<td>Test Freq: = Daily</td>
<td>Test Freq: = Daily</td>
</tr>
<tr>
<td>Fail Time: = 6 minute, or RND (random)</td>
<td>Checkin: = ADAPT</td>
<td>Duplicate Alarms: = YES</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Encrypt: = NO or YES*</td>
<td>Encrypt: = NO or YES*</td>
</tr>
<tr>
<td>Sub Code: = YES</td>
<td>Sub Code: = Shared</td>
<td>Sub Code: = Shared</td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.

27.11  Model 463C, NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security

Standard or Encrypted Line Security is provided when programmed using NET communication and CELL as backup and as needed adapts and takes over as primary. XR500 network communication is used as primary with a 6 minute check-in when armed, and a random check-in over a 60 minute period when disarmed. CELL is the backup path and set to daily test. Should the primary path become disabled, the CELL adapts to a special 3 minute check-in time and because of that check-in rate becomes the primary without the requirement of an additional backup. This method of operation causes the CELL backup to adapt to the 3 minute check-in rate when the NET primary is unavailable becoming a standalone primary without the need for a backup. This maintains line supervision and precludes the need for a central station runner to respond to the NET primary failure.

<table>
<thead>
<tr>
<th>Path 1 programming</th>
<th>Path 2 programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type: = NET</td>
<td>Comm Type: = CELL</td>
</tr>
<tr>
<td>Path Type: = Primary</td>
<td>Path Type: = Backup (operates as second method)</td>
</tr>
<tr>
<td>Test Rpt: = NO</td>
<td>Test Rpt: = YES</td>
</tr>
<tr>
<td>Checkin: = 6 minute, or RND (random)</td>
<td>Test Freq: = Daily</td>
</tr>
<tr>
<td>Fail Time: = 6 minute, or RND (random)</td>
<td>Checkin: = ADAPT3</td>
</tr>
<tr>
<td>Encrypt: = NO or YES*</td>
<td>Encrypt: = NO or YES*</td>
</tr>
<tr>
<td>Sub Code: = YES</td>
<td>Duplicate Alarms: = YES</td>
</tr>
<tr>
<td></td>
<td>Sub Code: = Shared</td>
</tr>
</tbody>
</table>

*For Encrypted Line Security, program a Passphrase in Network Options.
POLICING

28.1 Mercantile
For Mercantile and Police Station Connect operation the Model XR500 Series must be mounted in an Attack Resistant Housing, (DMP Model 350A or 350H).

28.2 Entry Delay
The maximum entry delay used must not be more than 60 seconds when using the Model 350A or 350H housing.

28.3 Exit Delay
The maximum exit delay used must not be more than 60 seconds.

28.4 Mercantile Safe and Vault
When the DMP Model 350A or 350H Attack housing is used, the XR500 Series provides operation as a mercantile safe and vault alarm. Bell Supervision and wiring must be in accordance with ANSI/UL 681. When the XR500 Series is mounted outside the safe or vault, tamper protection and the Sentrol Model 5402 or Potter EVD listed vibration detectors should be used.

28.5 Bell
A local audible signal appliance must be used such as Ademco AB12M bell and bell housing.

In a mercantile burglar alarm system, a mercantile alarm sounding device located within a building but outside the protected area, is acceptable, provided it is rated for outside service and alarm conditions are transmitted to:

a) The dispatch location of the law enforcement agency having jurisdiction over the protected property or
b) A central station or residential monitoring station complying with the Standard for Central Station Alarm Services, UL 827.

In a mercantile burglar alarm system, an alarm sounding device located within the area of greatest protection, or outside the area of greatest protection but within an area protected by an alarm system and that shares a common control unit with the system installed in the area of greatest protection, is acceptable provided it is rated for inside service and alarm conditions are transmitted to:

a) The dispatch location of the law enforcement agency having jurisdiction over the protected property or
b) A central station or residential monitoring station complying with the Standard for Central Station Alarm Services, UL 827.

An inside sounding device shall be mounted at least 10 feet (3.05 m) above the floor or at the surface of the ceiling. When there is fixed construction within the area that could provide access for an intruder, the alarm sounding device shall also be mounted at least 4 feet (1.2 m), as measured horizontally, away from the edges of the fixed construction or at least 10 feet (3.05 m) above it so as to minimize access by an intruder.

28.6 Bank Safe and Vault (XR500N/XR500E only)
The Bank Safe and Vault option must be programmed as YES. The 72 hour battery standby must be provided. A Rothenbuhler Model 5110 High Security Bell must be used.

28.7 Wireless Audible Annunciation Option
The Wireless Audible option must be selected as ANY for commercial applications.
Access Control System Units
ANSI/UL 294

29.1 Panel Designation
The XR500 Series panels are designated stand alone units.

29.2 Tamper Protection
For listed Access Control installations, a tamper switch must be used.

29.3 Transformer
The total combined Auxiliary and Bell outputs cannot exceed 1.3 Amps with a 50 VA Transformer. The total combined Auxiliary and Bell outputs cannot exceed 1.9 Amps with a 56 VA Transformer.

29.4 Compatible Devices
The following devices are compatible with the XR500 Series panels.

<table>
<thead>
<tr>
<th>Access Control</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>734/734N/734N-WIFI* Wiegand Interface Module</td>
<td>Proximity reader connector</td>
</tr>
<tr>
<td>OP-08CB Motion Detector</td>
<td>Infrared sensor</td>
</tr>
<tr>
<td>PB-2 REX Button*</td>
<td>Exit control push button</td>
</tr>
<tr>
<td>PP-6005B Proxpoint Plus® Reader</td>
<td>Proximity reader</td>
</tr>
<tr>
<td>MP-5365 Miniprox® Reader</td>
<td>Slimline proximity reader</td>
</tr>
<tr>
<td>PR-5455 ProxPro® II Reader</td>
<td>Long range reader with sounder</td>
</tr>
<tr>
<td>MX-5375 Maxi-Prox™ Reader</td>
<td>Long range reader compatible with 1351 Prox Pass</td>
</tr>
</tbody>
</table>

* This device has not been investigated and shall not be used in listed installations.

Universal Fire Alarm Specifications

30.1 Introduction
The programming and installation specifications contained in this section must be completed when installing the Model XR500 Series in accordance with any of the ANSI/UL or NFPA fire standards. Additional specifications may be required by a particular standard. See the XR500 Series Programming Guide (LT-0679).

30.2 Wiring
All wiring must be in accordance with NEC, ANSI/NFPA 70.

30.3 Transformer
Use the Model 322/323 wire-in 16 VAC 56 VA or Model 324/324P wire-in transformer mounted within 20 feet of the panel and connected by conduit.

For UL Commercial Fire installations, the total current combined from Auxiliary and Bell Power cannot exceed: 1.2 Amps with a 56 or 100 VA transformer; .5 Amp Max for Auxiliary Power and .7 Amp Max for Bell

For UL Residential Fire installations, the total combined Auxiliary and Bell outputs cannot exceed 1.3 Amps with a 50 VA Transformer. The total current combined from Auxiliary and Bell Power cannot exceed: 1.9 Amps with a 56 VA or 100 VA transformer

30.4 End-of-Line Resistor
The DMP Model 310 1k Ohm EOL resistor should be used on all 1k Ohm EOL fire zones.

30.5 System Trouble Display
The Status List Display must include at least one keypad that displays system monitor troubles.

30.6 Fire Display
The Status List Display must include at least one keypad that displays troubles and alarms on fire type zones.
COMPLIANCE

30.7 Police Station Phone Number
The digital dialer telephone number programmed for communication must not be a police station phone number, unless that phone number is specifically provided for that purpose.

30.8 System Maintenance
To ensure continuous satisfactory operation of any alarm system, proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential. Offering a maintenance program and acquainting the user with the correct procedures for system use and testing is also the responsibility of the installing alarm company.

30.9 Audible Alarm
Fire Type zones must be programmed to activate an audible alarm. The Bell Action for Fire Type zones must not be programmed as N (None).

30.10 Fire Zone Programming
If a retard delay is used on a waterflow zone, it cannot exceed 90 seconds and any retard delay in the waterflow initiating devices must be subtracted from the 90 seconds allowed. The retard delay should not be used on a zone with smoke detectors.

30.11 Class A Style D Zones
If required, the DMP 869 Dual Style D Initiating Module provides for connection of two Class A Style D zones to the Model XR500 Series. See the 869 Installation Guide (LT-0186) and this guide for wiring information.

30.12 Listed Receivers
Operation has been verified with the DMP SCS-VR and SCS-1R receivers and any Central Station Receiver that accepts industry standard Contact ID (DTMF) format. It is the installer’s responsibility to verify compatibility between the panel and the receiver used during installation. The installer shall verify the compatibility of the receiver and the system on a yearly basis.

30.13 Standby Batteries
For UL listed applications, the panel must have 24 hour battery standby operation. The Model 364 battery should not be used for fire installations.
31.1 Power Supply
For listed Commercial Fire installations, the 50 VA Plug-in transformer cannot be used. The total combined current from Terminals 7, 11, 25, and 27 cannot exceed 1.2 Amps.

31.2 Zone Restoral Reports
The Restoral Reports option must be selected as YES or Disarm.

31.3 Power Fail Delay
The Power Fail Delay option must be selected as required by the service of the panel. For Central Station service: 6-12, for Remote Station service: 12-15.

31.4 Sprinkler Supervisory
Any zone used for sprinkler supervisory must be programmed with “SPRINKLR XXX” as the zone name. The last three characters in the zone name may be assigned a number to identify the zone. The Model 893A Dual Phone Line Module must be used on all sprinkler supervisory systems.

31.5 DACT Systems
A DACT system may be configured as one of the following:
- Path 1 Type DD Primary and Path 2 Type DD Backup
- Path 1 Type DD Primary and Path 2 Type CELL Backup
- Path 1 Type DD Primary and Path 2 Type NET Backup

Path 1 Type DD Primary and Path 2 Type DD Backup
Use two telephone lines and the Model 893A Dual Phone Line Module to provide two phone line connections to the system. Two different telephone numbers must be programmed for digital communication. Do not connect to ground start or party lines.

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = DD</td>
<td>Comm Type = DD</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>893A = Yes</td>
<td></td>
</tr>
</tbody>
</table>

Path 1 Type DD Primary and Path 2 Type CELL Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = DD</td>
<td>Comm Type = CELL</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Receiver IP Address</td>
<td></td>
</tr>
<tr>
<td>First GPRS APN</td>
<td></td>
</tr>
</tbody>
</table>

Path 1 Type DD Primary and Path 2 Type NET Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = DD</td>
<td>Comm Type = NET</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Receiver IP Address</td>
<td></td>
</tr>
</tbody>
</table>

31.6 Local Protective Signaling Systems
The DMP Model 865, 866, or 867 Notification Circuit Module must be used on the bell circuit for detection of shorts and grounds. Any burglary or other off premises communication must be done with the Model 893A Dual Phone Line Module. For local commercial fire installations, the 893A is required.
## 31.7 Remote Station Protective Signaling Systems

You must provide 60 hours of standby battery. See section 6.9 in this guide for standby battery calculations. Two Radionics Model D127 Reversing Relay Modules provide two reversing polarity telephone connections. See the D127 Installation Instruction sheet for wiring details. A DMP Model 893A is used to provide two line dialer communication.

## 31.8 Fire Protective Signaling Systems using Internet/Intranet/Cell Networks

An Other Transmission Technologies system as defined in UL 864 9th Edition, Section 40.7 may be configured as NET Primary using a hardwire IP network or CELL Primary using a Model 463C CDMA Cellular Communicator with or without a backup path. The system may be configured as one of the following:

### Path 1 Type NET or CELL Primary with no Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = NET or CELL</td>
<td>Checkin Min = 5</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Failtime Min = 5</td>
</tr>
<tr>
<td>Test Rpt = No</td>
<td>Sub Code = Yes</td>
</tr>
<tr>
<td>Checkin = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
</tbody>
</table>

### Path 1 Type NET Primary and Path 2 Type DD Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = NET</td>
<td>Comm Type = DD</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Send Comm Trbl = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
<tr>
<td>Comm Path Trbl = Yes (Status List Programming)</td>
<td></td>
</tr>
</tbody>
</table>

### Path 1 Type NET Primary and Path 2 Type CELL Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = NET</td>
<td>Comm Type = CELL</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Send Comm Trbl = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
<tr>
<td>Comm Path Trbl = Yes (Status List Programming)</td>
<td></td>
</tr>
</tbody>
</table>

### Path 1 Type CELL Primary and Path 2 Type NET Backup

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = CELL</td>
<td>Comm Type = NET</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Send Comm Trbl = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
<tr>
<td>Comm Path Trbl = Yes (Status List Programming)</td>
<td></td>
</tr>
</tbody>
</table>

## 31.9 Combination Systems

For combination fire and burglary systems, powered burglary devices (PIR, Glassbreak, etc.) must be powered from a separate listed power supply (DMP Model 505-12). This requirement is not needed for non-powered burglary devices (door contacts, etc.) which only connect to the zone input of zone expanders or keypads. Refer to Powered Burglary Devices later in this document.

For combination fire and burglary systems, burglary sounding devices such as sirens and bells must be energized using panel relays, 860 relays, or 716 relays. Programming the output to activate the relay must occur using the Burglary Bell Output option in Area Information or by the Alarm Action output option of Zone Information. The Burglary Bell Action option of the panel Bell Options must be programmed as None.

## 31.10 Remote Annunciators

At least one Model 630F Remote Annunciator must be used on the system. All fire alarms, fire troubles and supervisory alarms or troubles must be annunciated only on the 630F. All burglary alarms or troubles must only be annunciated on non-fire keypads. See Status List options of the XR500 Series Programming Guide (LT-0679).
### 31.11 Notification Appliances
The following table indicates the approved notification appliances that can be used with the XR500 Series system.

<table>
<thead>
<tr>
<th>Wheelock Model No.</th>
<th>Description</th>
<th>Max No. of Appliances using 56 VA/100 VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-12/24</td>
<td>Multi-tone Horn</td>
<td>8</td>
</tr>
<tr>
<td>MB-G6-12</td>
<td>Bell, 6 inch</td>
<td>16</td>
</tr>
<tr>
<td>MB-G10-12</td>
<td>Bell, 10 inch</td>
<td>16</td>
</tr>
<tr>
<td>ST Series</td>
<td>Strobe, 15/75 candela</td>
<td>5</td>
</tr>
<tr>
<td>HS Series</td>
<td>Horn Strobe, 15/75 candela</td>
<td>5</td>
</tr>
<tr>
<td>SM-12/24-R</td>
<td>Sync Module, Single circuit</td>
<td></td>
</tr>
<tr>
<td>DSM-12/24-R</td>
<td>Sync Module, Dual circuit</td>
<td></td>
</tr>
</tbody>
</table>

### 31.12 Cross Zoning
When using cross zoning, there must be a minimum of two detectors installed in each protected space and the detector installation spacing must be 0.7 times the linear spacing in accordance with National Fire Alarm Code, NFPA 72.

### 31.13 Ground Fault
For supervised circuits, ground fault is detected at 0 (zero) Ohms.

### 31.14 Wireless Testing
When using the 1100X or 1100XH Wireless Receiver for Fire Protective Signaling, after all transmitters are in position, the WLS option of the panel’s Walk Test must be operated and all transmitters programmed for Fire (FI) or Supervisory (SV) must show that their checkin message was received.

### 31.15 Wireless Supervision
When using the 1103 Universal Transmitter for Fire Protective Signaling, supervision time must be set for 3 minutes. Supervision time cannot be set to 0 (zero).

### Household Fire Warning System Units
**ANSI/UL 985, NFPA 72**

#### 32.1 Bell Output Definition
The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed or temporal on fire alarms.

#### 32.2 Audible Devices
At least one listed audible device rated to operate over the voltage rate of 11.7 Vdc to 12.8 Vdc and rated at 85 DB minimum must be used.

#### 32.3 Auxiliary Circuits
At least one fire alarm initiating device shall be used on the system. If the voltage for the device is applied by the control unit the fire alarm initiating device shall be rated to operate over the range of 11.5 Vdc to 12.7 Vdc.

#### 32.4 Bell Cutoff
The Bell Cutoff time cannot be less than five minutes.

#### 32.5 Detect Wireless Jamming
The Detect Wireless Jamming option must be programmed YES.

#### 32.6 Wireless Supervision Time
The Zone Information Supervision Time must be 240 minutes.

#### 32.7 Wireless Fire Verification
When used, the Model 1161 and 1162 wireless smoke detectors must not be programmed as Fire Verification (FV) zone type.

### California State Fire Marshal Specifications

#### 33.1 Bell Output Definition
The Model XR500 Series panel Bell Output must be programmed to operate steady on burglary alarms and pulsed, temporal, or California School Code on fire alarms.
COMPLIANCE

New York City (FDNY) Specifications

34.1 Introduction
The programming specifications contained in section 34.2 or 34.3 must be completed when installing the XR500 Series panel for New York City (FDNY) fire alarm installations for IP communication applications. Refer to the FDNY Certificate of Approval #6123 or #6145 for the complete conditions of approval.

Note: Fire alarm installations that use two digital dialer telephone lines do not need to comply with these two sections.

34.2 Network and Cellular Communication, Primary and Secondary
When installed as a central station Internet (Network) communicator or slave transmitter both primary and secondary channels of communication shall be required and shall meet the conditions below. Network communication shall be used as primary channel of communication with Central Station and a 463C Cellular Communicator shall be used as the secondary channel of communication or in reverse order: 463C Cellular Communicator as primary and Network connection as the secondary channel.

Path 1 Type NET Primary and Path 2 Type CELL Backup Programming

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = NET</td>
<td>Comm Type = CELL</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Checkin Min = 5</td>
<td>Checkin Min = 5</td>
</tr>
<tr>
<td>Failtime Min = 5</td>
<td>Failtime Min = 5</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Send Comm Trbl = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
<tr>
<td>Comm Path Trbl = Yes (Status List Programming)</td>
<td></td>
</tr>
</tbody>
</table>

Path 1 Type CELL Primary and Path 2 Type NET Backup Programming

<table>
<thead>
<tr>
<th>Path 1 Programming</th>
<th>Path 2 Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm Type = CELL</td>
<td>Comm Type = NET</td>
</tr>
<tr>
<td>Path Type = Primary</td>
<td>Path Type = Backup</td>
</tr>
<tr>
<td>Checkin Min = 5</td>
<td>Checkin Min = 5</td>
</tr>
<tr>
<td>Failtime Min = 5</td>
<td>Failtime Min = 5</td>
</tr>
<tr>
<td>Test Rpt = Yes</td>
<td>Test Rpt = Yes</td>
</tr>
<tr>
<td>Test Freq = 1 Dy</td>
<td>Test Freq = 1 Dy</td>
</tr>
<tr>
<td>Send Comm Trbl = Yes</td>
<td>Send Comm Trbl = Yes</td>
</tr>
<tr>
<td>Comm Path Trbl = Yes (Status List Programming)</td>
<td></td>
</tr>
</tbody>
</table>

34.3 Digital Dialer Primary and Network Secondary Communication
When used with a central office communicator or a transmitter, the installation and operation of the equipment and devices shall comply with 3RCNY 17-01. The installation shall employ the digital dialer as the primary communicator (using telephone line) with network IP communication as backup or secondary means of communication. It shall have the capability of transmitting separate and distinct signals to indicate manual pull station alarm, automatic detection alarm, sprinkler waterflow alarm, supervisory signal indications and trouble indications.

34.3.1 Communication Programming
For digital dialer communication with supervised network backup, program the following:

- PRIMARY COMM TYPE = DD
- FIRST PHONE NUMBER = Central Station Receiver Phone Number
- BACKUP COMM TYPE = NET
- RECEIVER
- ALARMS = YES

34.4 Wiring
All wiring must be in accordance with NEC, ANSI, and NFPA 70. All network cabling must be installed in accordance with NFPA 70 for communication circuits.

34.5 Additional Requirements
Program and install the equipment to comply with NFPA basic fire requirements. Refer to the Universal Fire Alarm Specifications and ANSI/UL 864 NFPA 72 Specifications in this document.
## False Alarm Reduction Programmable Options *

### 35.1 Shipping Defaults and Recommended Programming for ANSI/SIA CP-01-2010

<table>
<thead>
<tr>
<th>SIA CP-01 FEATURE PARAGRAPH # AND DESCRIPTION</th>
<th>DMP XR500 PROGRAMMING GUIDE LT-0679 SECTION #</th>
<th>REQUIREMENT</th>
<th>RANGE</th>
<th>SHIPPING DEFAULT</th>
<th>RECOMMENDED PROGRAMMING*</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.2.1 Exit Time</td>
<td>15.2 Exit Delay</td>
<td>Required (Programmable)</td>
<td>45 sec. - 250 sec.</td>
<td>60 Seconds</td>
<td>60 Seconds</td>
</tr>
<tr>
<td>4.2.2.2 Progress Annunciation</td>
<td>15.2 Exit Delay</td>
<td>Allowed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.2.3 Exit Time Restart</td>
<td>15.2 Exit Delay</td>
<td>Required Option</td>
<td>For re-entry during exit time</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>4.2.2.5 Auto Stay Arm on Unvacated Premises</td>
<td>33.3 Occupied Premise - See XR500 Install Guide (LT-0681)</td>
<td>Required Option (except for remote arming)</td>
<td>Area 1 = Perimeter Area 2 = Interior</td>
<td>Enabled</td>
<td>Enabled for Residential Applications</td>
</tr>
<tr>
<td>4.2.2.4 Exit Time and Progress Annunciation/ Disable - for Remote Arm</td>
<td>Not Available on Remote Arming</td>
<td>Allowed Option</td>
<td>Progress Annunciation Always disabled for Remote Arming</td>
<td>Not Available</td>
<td>Remote Arming not allowed for CP-01 installations.</td>
</tr>
<tr>
<td>4.2.3.1 Entry Delay(s)</td>
<td>8.3 Entry Delay</td>
<td>Required (Programmable)</td>
<td>30 sec. - 240 Sec. **</td>
<td>30 Seconds</td>
<td>At least 30 Seconds **</td>
</tr>
<tr>
<td>4.2.5.1 Abort Window - for Non-Fire Zones</td>
<td>3.7 Transmit Delay</td>
<td>Required Option</td>
<td>Disable by zone or zone type</td>
<td>Enabled NT DY EX Zone</td>
<td>Enabled</td>
</tr>
<tr>
<td>4.2.5.1 Abort Window Time - for Non-Fire Zones</td>
<td>3.7 Transmit Delay</td>
<td>Required (Programmable)</td>
<td>15 sec. - 45 sec. **</td>
<td>30 Seconds</td>
<td>At least 15 Seconds **</td>
</tr>
<tr>
<td>4.2.5.1.2 Abort Annunciation</td>
<td>3.7 Transmit Delay</td>
<td>Required Option</td>
<td>Annunci ate that no alarm was transmitted (S45)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4.2.5.4.1 Cancel Annunciation</td>
<td>Always Enabled - Not Programmable</td>
<td>Required Option</td>
<td>Annunci ate that a Cancel was transmitted (S49)</td>
<td>Always Enabled</td>
<td>Yes</td>
</tr>
<tr>
<td>4.2.6.1 &amp; 4.2.6.2 Duress Feature</td>
<td>User Code + 1 = Ambush Code Not Available</td>
<td>Allowed Option</td>
<td>No 1 + derivative of another user code/no duplicates with other user codes</td>
<td>Code +1 Always Disabled</td>
<td>Not Programmable</td>
</tr>
<tr>
<td>4.3.1 Cross Zoning</td>
<td>16.22 Cross Zone</td>
<td>Required Option</td>
<td>Yes/No Zone Programming</td>
<td>No</td>
<td>Enabled using two or more programmed zones</td>
</tr>
<tr>
<td>4.3.2 Programmable Cross Zoning Time</td>
<td>8.4 Cross Zone Time</td>
<td>Allowed</td>
<td>4 sec. - 250 sec.</td>
<td>4 Seconds</td>
<td>Per walk path in protected premises</td>
</tr>
<tr>
<td>4.3.2 Swinger Shutdown</td>
<td>8.7 Swinger Bypass Trips</td>
<td>Required (Programmable)</td>
<td>1-6 trips</td>
<td>2 trips</td>
<td>2 trips</td>
</tr>
<tr>
<td>4.3.2 Swinger Shutdown Disable</td>
<td>16.16 Swinger Bypass</td>
<td>Allowed</td>
<td>For non-police response zones</td>
<td>Yes</td>
<td>Enabled (all zones)</td>
</tr>
<tr>
<td>4.3.3 Fire Alarm Verification</td>
<td>16.4 Zone Type</td>
<td>Required Option</td>
<td>FV Type Zone</td>
<td>No</td>
<td>Yes as required (unless sensors can self verify)</td>
</tr>
<tr>
<td>4.5 Call Waiting Cancel</td>
<td>3.19 Telephone Number</td>
<td>Required Option</td>
<td>Include *70P in Telephone Number</td>
<td>Disabled</td>
<td>Enabled if user has call waiting</td>
</tr>
<tr>
<td>4.6.3 System Test</td>
<td>17.5 Walk Test</td>
<td>Allowed</td>
<td>Test all protection devices</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>4.6.5 Communications</td>
<td>17.5 Walk Test</td>
<td>Not Allowed</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

* Programming at installation may be subordinate to other listed requirements for the intended application.
** For listed Installations, combined Entry Delay and Transmit Delay should not exceed 1 minute.
35.2 Call Waiting
The Call Waiting default setting is disabled. To cancel the Call Waiting feature, program * (star) 7 0 P (pause), the standard telephone code prefix that cancels call waiting, into the telephone number string. Cancel Call Waiting for telephone lines that have Call Waiting operational on the telephone line. See the XR500 Series Programming Guide (LT-0679).

⚠️ Caution: A call waiting cancel programmed on a non-call waiting telephone line, would prevent communication to the central station.

35.3 Occupied Premise
When only two areas are used, and area one is named Perimeter, and area two is named Interior, and no exit type zone transition occurs during the exit delay because the premise continues to be occupied, the Interior area will automatically disarm at the end of the exit delay.

35.4 Entry Delay
Only use Entry Delay 1. Do not use Entry Delay 2, 3, or 4. See the XR500 Series Programming Guide (LT-0679).

35.5 Minimum Installation Requirements
SIA CP-01-2010 minimum system installation requirements include an XR500, a listed local Bell, and off premise DACT communication to an SCS-1R receiver plus one of the following compatible keypads.

- 630F Fire Command™ Center
- 7060, 7063, 7070, or 7073 Thinline™ keypads
- 7060A, 7063A, 7070A, or 7073A Aqualite™ keypads
- 7160, 7163, 7170, or 7173 Thinline™ keypads
36.1 866 with NAC Extender

DMP Model 866
45mA @ 12 VDC

The 866 Notification Appliance Circuit Module in alarm draws up to 31mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.

See the 866 Installation (LT-0059)

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel

The Bell Output programming for Fire type zones must be set to Steady
36.2 866 Class B Style W using Single Notification Appliance

DMP Model 866
45mA @ 12 VDC

The 866 Notification Appliance Circuit Module in alarm draws up to 31mA through its Terminal 3 Alarm Input and 45mA from its Terminal 1 Aux Power Input.

The maximum voltage drop between the panel Bell Output and the Model 308 EOL is 1 VDC when a separate power supply is not used.

**Note:** Terminals 3 and 4 jumper together to supply Bell Power from the panel. Only one notification appliance may be used when not using a sync module. The Bell Output programming for Fire type zones must be set to Temporal.

Listed, Polarized Notification Appliance
See the Notification Appliance section for a list of appliances.
DMP Model 866
45mA @ 12 VDC

The Model 866 Notification Appliance Circuit Module in alarm draws up to 31mA through Terminal 3 Alarm Input and 45mA from Terminal 1 Aux Power Input.

Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup. **Note:** If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.

When using a separate power supply, the maximum current is 3 Amps.

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

The Bell Output programming for Fire type zones must be set to Steady.

Sync module required when using multiple notification appliances

The Bell Output programming for Fire type zones must be set to Steady.

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

Polarized Notification Appliances

See the Notification Appliance section for a list of appliances.
36.4 866 Class B Style W Dual Notification Appliance Circuits

The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

DMP Model 865
26mA @ 12 VDC

The Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.

Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.

When using a separate power supply, the maximum current is 3 Amps.

The Bell Output programming for Fire type zones must be set to Steady.

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.
36.5  865 Class B Style W using Single Notification Appliance

The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

DMP Model 865 26mA @ 12 VDC

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

Model 308 10K EOL

The Bell Output programming for Fire type zones must be set to Temporal.

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel.

Model 310 1K EOL

Listed Polarized Notification Appliance

See the Notification Appliance section for a list of appliances.

Regulated 12 VDC

Model 308 10K EOL

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel.
36.6 865 Class B Style W Multiple Notification Appliance Circuit

The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

DMP Model 865 26mA @ 12 VDC

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.

Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.

The Bell Output programming for Fire type zones must be set to Steady.

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

When using a separate power supply, the maximum current is 3 Amps.

When using a separate power supply, the maximum current is 3 Amps.

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

Polarized Notification Appliances

See the Notification Appliance section for a list of appliances.
36.7 865 Class B Style W Dual Notification Appliance Circuits

DMP Model 865
26mA @ 12 VDC

The Model 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

Auxiliary Power Supply must be regulated, power limited, and listed for Fire Protective Signaling Service. Power Supplies must have battery backup.

Note: If an auxiliary power supply is not used, terminals 3 and 4 can be jumpered together to supply Bell Power from the panel.

Sync module required when using multiple notification appliances

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

The maximum voltage drop between the panel Bell Output and the Model 308 is 1 VDC when a separate power supply is not used.

See the Notification Appliance section for a list of appliances.
36.8 865 Class A Style X using Single Notification Appliance

The 865 Notification Appliance Circuit Module in alarm draws up to 59mA through its Terminal 3 Alarm Input and 26mA from the Terminal 1 Aux Power Input.

DMP Model 865 26mA @ 12 VDC

Note: Terminals 3 and 4 jumper together to supply Bell Power from the panel
Terminals 2 and 5 jumper together to provide Ground from the panel
Only one notification appliance may be used when not using a sync module.
The Bell Output programming for Fire type zones must be set to Temporal.

See the Notification Appliance section for a list of appliances.
36.9 867 Class B Style W using Single Notification Appliance

The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the XR500 Series to properly supervise each module.

DMP Model 867 30mA @ 12 VDC

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

Listed, Polarized Notification Appliances

See the Notification Appliance section for a list of appliances. Only one notification appliance may be used when not using a sync module.
The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

When using an SM Sync Module, the maximum current is 3 Amps.

Sync module required when using multiple notification appliances

Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

Auxiliary Power Supply must be Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.

When using an SM Sync Module, the maximum current is 3 Amps.

DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.

Model 310
1K EOL
Bell Ring Style (Steady)
Power Supply Monitor LED
Data LED

Model 308
10K EOL

505-12 Power Supply
12 VDC @ 5 Amps

Sync module required when using multiple notification appliances

Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.

Model 310
1K EOL
Bell Ring Style (Steady)
Power Supply Monitor LED
Data LED

Model 308
10K EOL

505-12 Power Supply
12 VDC @ 5 Amps

Sync module required when using multiple notification appliances

Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.

DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.

Model 310
1K EOL
Bell Ring Style (Steady)
Power Supply Monitor LED
Data LED

Model 308
10K EOL

505-12 Power Supply
12 VDC @ 5 Amps

Sync module required when using multiple notification appliances

Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.
36.11 867 Class B Style W Multiple Notification Appliance Circuits

DMP Model 867
30mA @ 12 VDC
The 867 must have its own independent address ranging from 500 to 999. A Supervisory zone must be programmed into the panel to properly supervise each module.

Normal/Silence Switch
- Ground Fault LED
- Bell Trouble LED
- Bell In + 1
- Bell In - 2
- Bell Out + 3
- Bell Out - 4
- Bell Trouble 5
- Bell Trouble 6
- PWR Mon. 7
- Mon. RTN 8

Auxiliary Power Supply must be Listed for Fire Protective Signaling Service. Power Supplies must have battery backup.

When using an DSM Sync Module, the maximum current is 3 Amps.

Sync module required when using multiple notification appliances

The Auxiliary Power Supply and Notification Circuit Module trouble contact zone must be programmed as a Supervisory Type zone and must be selected for display in the keypad status list.

Listed, Polarized Notification Appliances
See the Notification Appliance section for a list of appliances.
WIRING DIAGRAMS

36.12 Panel Slave Communicator for FACP using 630F Annunciator

XR100/XR500 Series
Command Processor™ Panel
Slave Communicator for FACP
using 630F Annunciator for local annunciation for slave

630F Annunciator
To 322/323 transformer
Must be connected to same circuit as FACP
Standy Batteries

Program for Fire Protective Signaling communication to the Central Station.
Program Fire Alarm zone as type FI and set Fire Panel Slave Input option as YES.
Program General Trouble zone as type FI.
Program Supervisory zone as type SV and set the Latch Supervisory option in System Options as NO.

Fire Alarm
Form C alarm contacts activate short on General Fire Alarm.

General Trouble
Form C trouble contacts activate open on General Trouble.
General Trouble must not be used to indicate AC power fail unless it can be delayed at least 1 hour.

Supervisory
Form C contacts activate short on Supervisory condition.
36.13 Panel Slave Communicator for FACP using Outputs

Main Fire Alarm Control Panel (FACP)

Fire Alarm
Form C alarm contacts activate short on General Fire Alarm.

General Trouble
Form C trouble contacts activate open on General Trouble.
General Trouble must not be used to indicate AC power fail unless it can be delayed at least 1 hour.

Supervisory
Form C contacts activate short on Supervisory condition.

Communication Fail
Program FACP Zone Input to indicate a communication trouble locally.

Fire Trouble
Program FACP Zone Input to indicate a trouble locally.

Program at least one Device in Device Setup as a Fire Type although a keypad is not actually connected.
Program for Fire Protective Signaling communication to the Central Station.
Program Fire Alarm zone as type FI and set Fire Panel Slave Input option as YES.
Program General Trouble zone as type FI.
Program Supervisory zone as type SV and set the Latch Supervisory option in System Options as NO.

Communication Fail
Output 1 must be programmed as a Comm Fail output in Output Options.

Fire Trouble
Output 2 must be programmed as a Fire Trouble output in Output Options.

Must be installed in conduit and located within 20 feet.

Transformer
Must be connected to same circuit as FACP

Standy Batteries

Program Bell Options fire type as None.
36.14 Dual Style D Zone Module Installation

Model 869

Dual Style D Initiating Module
DMP Model 869
25mA Standby, 75mA Alarm
@ 12 VDC

Heat Detectors, manual pull stations, or any other listed shorting device. Unlimited number of units.

Heat Detectors, manual pull stations, or any other listed shorting device. Unlimited number of units.

Supervised Circuit

Model 869

GND
Fault A

Zone A
A1
A2

Zone A
GND

Aux Power

Zone B
B1
B2

Zone B
GND
Fault B

Regulated 12 VDC

Accident

Interface Card Expansion Connector

XR500 Series Command Processor™ Panel
36.15 Derived Channel Installation Using Bosch D8122

Interfacing D8122 to the XR500 Series Panels

The D8122 may only be used in conjunction with telephone systems that support Derived Channel network. For installation instructions, see the Derived Channel STUD8121A/D8122 Operation and Installation Guide.

- For Standard Line Security applications, the panel must be installed and programmed to meet burglary alarm system requirements.
- The panel must be installed and programmed for reporting all alarm conditions through the integral DACT or network connection to the same central station that monitors the D8122.
- The D8122 must be installed in the same enclosure as the XR500 Series panel using the supplied mounting hardware. Refer to the STUD8121A/D8122 Operation and Installation Guide.
- Derived Channel Communication is not applicable for ULC Canadian Installations.
36.16 Rothenbuhler 5110 High Security Bell Wiring.

All outputs must be located within the same room as the control panel.
Each LX-Bus Module must have its own independent address ranging from 00 to 99. A Supervisory zone must be programmed into the XR500 Series to properly supervise each module.

S = Supervised Circuit

Open Collector Annunciator Outputs
Optional LED wiring 50mA at 50 VDC resistive
Form C Contacts
Typical
Normally Closed
Common
Normally Open

Relay 1
Relay 2
Relay 3
Relay 4

Model 716 Output Expander Module
13m at 12 VDC

Optional LED wiring 50mA at 50 VDC resistive

Model 717 Graphic Annunciator Module
10m at 12 VDC
36.18 Model 860 Relay Module Connection

**J2 Output Header**
All outputs must be located within the same room as the control panel.

Relay contact rating:
1 Amp @ 30 VDC, resistive

36.19 Powered Burglary Devices
36.20 System Sensor 2-Wire Smoke Detectors

XR500 Series Panel

- J3 Phone Line
- J4 Tamper
- J1 Ethernet
- J5 Power LED
- J23 Battery
- J21 Start
- J20 RS-232 Power
- J8 LED
- J15 PROG
- J7 Tamper
- J18 Reset
- J17 Out1 Out2
- J16 Outputs 3-6
- J10 Output 1
- J9 Output 2
- J11 System Sensor Loop
- J12 System Sensor Reversing Relay/Synchronization Module
- J13 System Sensor Loop Test & Maintenance Module
- J14 SYSTEM SENSOR 2WTA-B or 2WTR-B SMOKE DETECTORS

- 3.3K to transformer
- 470 Ohm or (2) 1k in Parallel
- 3.9K EOL
- PWR +
- PWR -
- OUT +
- OUT -
- IN +
- IN -
- + -
- + -

Digital Monitoring Products
XR500 Series Installation Guide
### 36.21 System Sensor i4 Series Smoke and CO Detectors

**Using A Single COSMOD2W Module**

See i4 Series Interface Module Installation and Maintenance Instructions for additional information.

- **Program Smoke zone as type Fire (FI)**
- **Program Maintenance zone as type Auxiliary (AUX)**
- **Program CO zone as type Emergency (EM) and include CO in Zone name.**

**The COSMOD2W sends a smoke maintenance inquiry to the smoke detectors every 24 hours.** If a response indicating a maintenance condition is received, such as the detector needs cleaning, the maintenance zone will indicate a trouble condition.

The CO detector reports any maintenance conditions on the Emergency zone.

- Install 3.9K EOL Resistor at last detector (supplied with COSMOD2W)
- To silence detectors perform a Sensor Reset

**Optional Power Supply connection**

If using optional Power supply, program Output Options Fire Output for the 716 relay to provide Sensor Reset capability.

*** Listed for Fire Applications, output limited power, regulated
36.22 System Sensor i4 Series Smoke and CO Detectors
Using Multiple COSMOD2W Modules

See i4 Series Interface Module Installation and Maintenance Instructions for additional information.

If installing multiple COSMOD2W Interface modules, connect the Bell In terminal to a N/O relay output to turn on ALL COSMOD2W smoke detector sounders during a fire alarm. Connect the Output Common to the panel SMK or optional Power Supply positive terminal (+). In Bell Options, program Bell Output for the relay output number. Program the Bell Output Bell Action as Temporal (T).

To turn on ALL CO detector sounders installed on multiple COSMOD2W modules during a CO alarm, connect the CO Trigger to a N/O relay output. Connect the Output Common to the panel SMK or optional Power Supply positive terminal (+). In Zone Information Alarm Action, program each COSMOD2W Emergency Zone (CO Alarm) for the COSMO-2W to turn on the relay output Steady (STD) when the zone is in a shorted condition.

See i4 Series Interface Module Installation and Maintenance Instructions for additional information.
### Revisions to This Document

This section explains the changes that were made to this document during this revision. This section lists the version, section number with heading, and a quick summary of the change.

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<th>Summary of Changes</th>
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<td>11.2 Compatible 2-Wire Smoke Detector Chart</td>
<td>Updated to current devices</td>
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<td>36.21 System Sensor i4 Series Smoke and CO Detectors Using A Single COSM0D2W Module</td>
<td>Added Wiring Diagram</td>
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<td>Added Wiring Diagram</td>
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<td>3.4 Accessory Devices</td>
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<td>6.8 XR500 Series Power Requirements</td>
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<td>Complete Guide</td>
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<td>Updated for current product</td>
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<td>24.10 CELL Only, Standard or Encrypted Line Security</td>
<td>Added 464-263C, 464-263H</td>
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<td>24.11 NET with CELL as Alternate Primary and Dialer Backup, Standard or Encrypted Line Security</td>
<td>Added 464-263C, 464-263H</td>
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<tr>
<td></td>
<td>24.12 NET with CELL as Backup and Adaptive Primary, Standard or Encrypted Line Security</td>
<td>Added 464-263C, 464-263H</td>
</tr>
<tr>
<td>1.26</td>
<td>6.1 Battery Terminal 3 and 4</td>
<td>Updating model 368</td>
</tr>
<tr>
<td></td>
<td>6.9 Standby Battery Selection</td>
<td>Updating model 368</td>
</tr>
<tr>
<td></td>
<td>21.14 Standby Batteries</td>
<td>Updating mosel 368</td>
</tr>
<tr>
<td>1.25</td>
<td>21.8 Listed Receivers</td>
<td>Clarified listed receivers for contact ID</td>
</tr>
<tr>
<td></td>
<td>30.12 Listed Receivers</td>
<td>Clarified listed receivers for contact ID</td>
</tr>
<tr>
<td></td>
<td>Listings and Approvals</td>
<td>Added California Stare fire Marshal (CSFM)</td>
</tr>
<tr>
<td>1.24</td>
<td>3.2 Wiring Diagram</td>
<td>Add 734 to Wiring Diagram</td>
</tr>
<tr>
<td></td>
<td>32.6 Wireless External Contact</td>
<td>Removed 1101, 1102, and 1105 section</td>
</tr>
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Certifications

California State Fire Marshal (CSFM)
ANSI/SIA CP-01-2010 False Alarm Reduction
FCC Part 15
FCC Part 68 Registration ID CCKAL00BXR500
NIST Validated XR500E Encrypted Command Processor Panel Certificate #130
New York City (FDNY COA #6167)
ANSI/UL 294  Access Control System Units
ANSI/UL 365  Police Connected Burglar
ANSI/UL 609  Local Burglar
ANSI/UL 1023  Household Burglar
ANSI/UL 1076  Proprietary Burglar
ANSI/UL 1610  Central Station Burglar
ANSI/UL 1635  Digital Burglar
ANSI/UL 2017  General Purpose Signaling Devices and Systems
ANSI/UL 985  Household Fire Warning
ANSI/UL 864  Fire Protective Signaling 9th Edition
Compatible with Devices listed for
  ANSI/UL 268  Smoke-Automatic Fire Detectors
  ANSI/UL 346  Waterflow Indicators for Fire Protective Signaling Systems
  ANSI/UL 636  Holdup Alarm Units and Systems Accessory
UL Bank, Safe, and Vault
UL Standard Line Security
UL Encrypted Standard Line Security

Export Control

The XR500E uses AES encryption and any export beyond the United States must be in accordance with Export Administration Regulations.