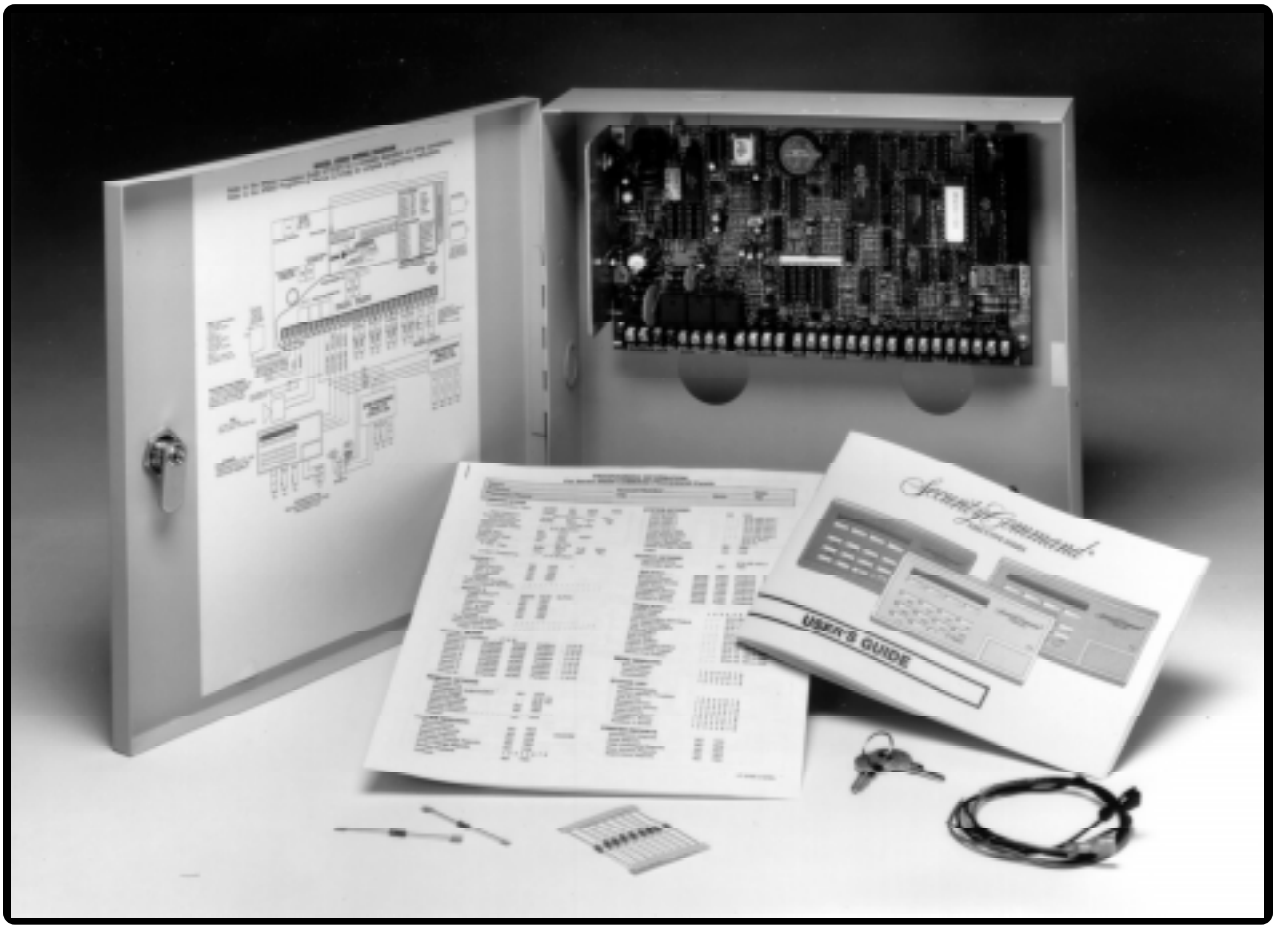
XR200 Command Processor Panel Installation Guide



242 Zone Burglary/Fire/Access Control Panel with Built-in Communicator

2841 E. Industrial Drive Springfield, MO 65802-6310

Digital Monitoring Products

LT-0197 (2/97)

MODEL XR200
COMMAND PROCESSOR
INSTALLATION GUIDE

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 B 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 compute 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

Information furnished by DMP is believed to be accurate and reliable.
This information is subject to change without notice.

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Product Specifications

1.1 Power supply

Transformer Input: 16.5 VAC 40VA (Models 320 or 321)

Standby Battery: 12 VDC 6.5A (40VA charges two batteries, 100VA charges up to four batteries)

Auxiliary: 12 VDC output at 1 Amp

Bell Output: 12 VDC at 1.5 Amp

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

1.2 Communication

Built-in dialer communication to DMP Model SCS-1 Receivers

Built-in multiplex communication to DMP Model SCS-1 Receivers

Built-in Contact ID communication to non-DMP receivers

Built-in Modem IIe communication to non-DMP receivers

Optional 893 or 893A Dual Phone Line Modules with phone line supervision

Can operate as a local panel

1.3 Panel zones

Eight 1k Ω EOL burglary zones (zones 1 to 8)

Two 3.3k Ω EOL Class B (Style A) powered zone with reset (zones 9 and 10)

1.4 Keypad Data Bus

You can connect up to eight of the following supervised keypads or expanders to the XR200 keypad data bus:

- Alphanumeric keypads
- Four and single point zone expanders
- Single point detectors

1.5 LX-Bus™

You can connect the following devices to the LX-Bus provided by the DMP 462N, 462P, 472, and 481 Interface Cards up to the maximum number of LX-Bus addresses. See Accessory Devices in section 4.1.

- Four and single point zone expanders
- Relay output expanders
- Graphic annunciator modules
- Single point detectors

1.6 Outputs

Two SPDT relay outputs (requires two Model 305 relays, each rated 1 Amp at 30 VDC resistive) power limited sources only

Eight auxiliary 12 VDC, 50mA resistive outputs

To use the outputs, you need one Model 430 Output Harness.

1.7 Enclosure specifications

The XR200 is shipped in an enclosure with end of line resistors, battery leads, user's guide, and programming sheets.

Size:	Model 349 Enclosure (XR200M) 12.5" W x 11.25" H x 3.0" D - 8 lbs with panel
	Model 349A Enclosure 12.5" W x 11.25" H x 3.0" D (enclosure only)
	Model 350 Enclosure (XR200L) 17.0" W x 14.5" H x 3.0" D - 10 lbs with panel
Color:	Black (61), Gray (63), or Red (81)
Construction:	20 gauge cold rolled steel

Panel Features

2.1 Description

The DMP XR200 Command Processor is a versatile 12 VDC, combined burglary and fire communicator panel with battery backup. The XR200 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 XR200 can communicate to one or two DMP SCS-1 Receivers using multiplex or digital dialer, or to non-DMP receivers using the Contact ID and Modem IIe formats.

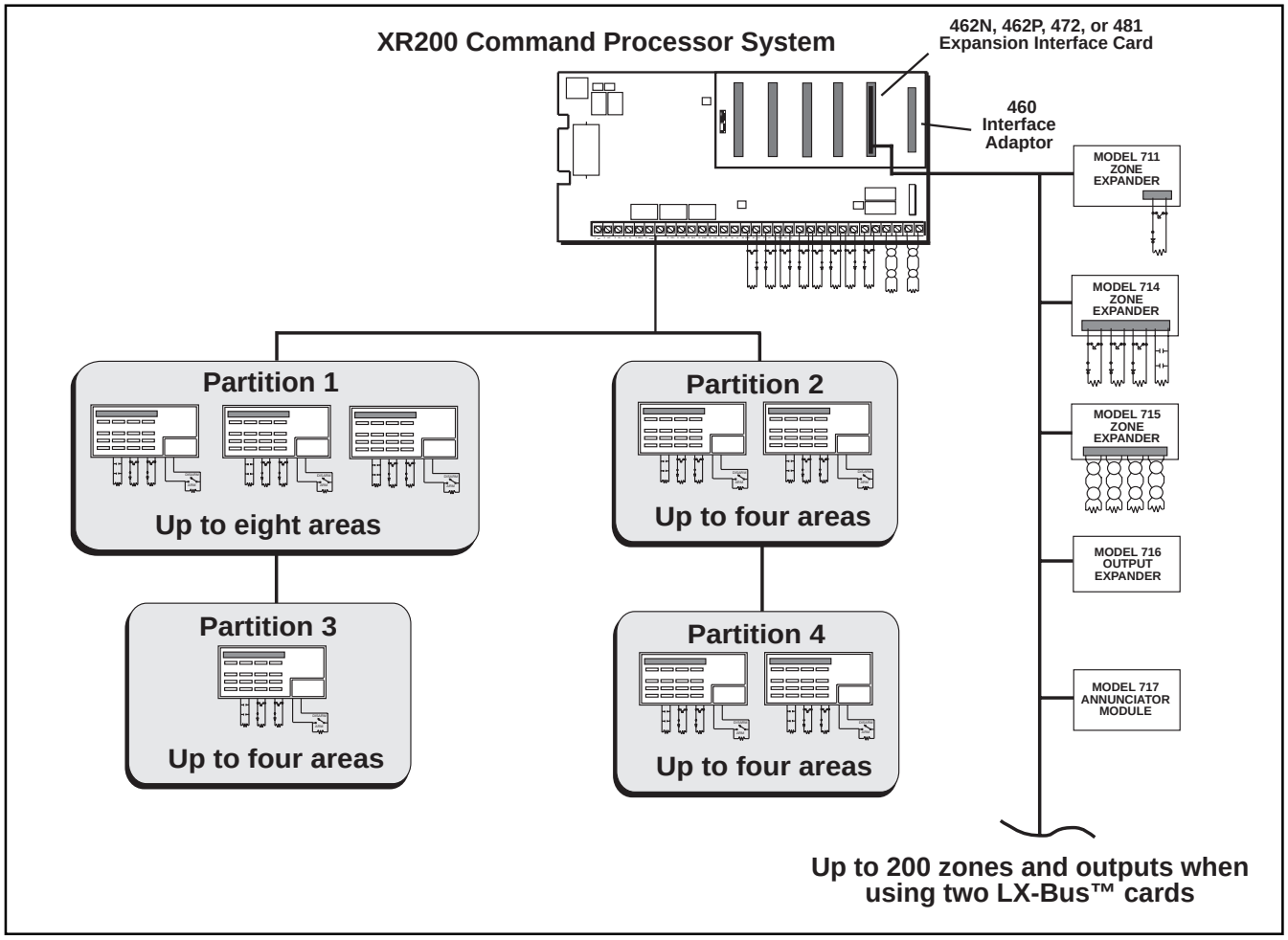


Figure 1: Typical XR200 System Configuration

2.2 Expansion zones

Up to 232 additional zones are available on the XR200 using the remote zone capability of DMP Security Command keypads and zone expander modules. The panel's keypad data bus supports up to eight supervised device addresses with each address supporting up to four programmable expansion zones.

Up to 200 zones are available using the Model 460 Interface Adaptor, 462N, 462P, 472, or 481 Interface Cards, and any combination of four and single point zone expander modules and single point LX-Bus™ detectors.

2.3 Output (relay) expansion

In addition to the two SPDT relays and eight voltage outputs on board the XR200, you can also connect up to 25 Model 716 Output Expanders to each card's LX-Bus™. These modules can provide an additional 200 programmable SPDT relays. The XR200 provides 50 Output Schedules you can use for programming the 716 to perform a variety of annunciation and control functions. You can also assign the 716 outputs to any of the panel's Output Options such as Fire Alarm, Communication Fail, or Phone Trouble Outputs.

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.

2.4 Partitions and areas

The 20 reporting areas of the XR200 are divided into four separate partitions. Partition 1 provides up to eight individual reporting areas while partitions 2, 3, and 4 each provide up to four individual reporting areas. Keypads installed on the XR200 system are assigned to partitions allowing users to operate the functions of those areas.

2.5 Central station communication

You can program the XR200 panel for local annunciation only, or for reporting to one or two DMP SCS-1 Receivers using multiplex or digital dialer. The panel can also communicate to non-DMP receivers using the Contact ID or Modem IIe communication formats. The XR200 connects at the premises to a standard RJ31X or RJ38X telephone jack. Use the DMP 893 or 893A Dual Phone Line Module when connecting the XR200 panel to two separate phone lines in fire or burglary applications.

2.6 Before you begin

Before installing the XR200, we recommend you read through the entire contents of this guide. Familiarize yourself with the features of the panel and the key points to remember during the installation. Be sure to read and understand all of the caution statements printed in bold italics.

2.7 About this guide

The information in this guide is organized into three sections: Table of Contents, Introduction, and Installation.

- The Table of Contents at the front lists the headings and subheadings used throughout each section of the guide. To the right of each heading is the section number where the information can be found.
- The Introduction section gives you an overview of the various components that go into a XR200 system and provides diagrams of typical system configurations. This section gives descriptions of the panel, keypads, zone expanders, and accessory modules and provides details on how each of them operate together in the system.
- The Installation section begins with mounting instructions for the enclosure and continues on to detail the operational characteristics of the XR200 panel.

Caution notes

Throughout this guide you'll see caution notes containing information you need to know when installing the XR200 panel. These cautions are written with a bold, italicized introductory clause followed by a detailed description of the caution. See the example shown below:

Always ground the panel before applying power to any devices: The XR200 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.

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.

2.8 How to use this guide

To locate information about the installation of the XR200, first go to the Table of Contents at the front of this guide. Find the subject heading that best describes the information you need and turn to the section number shown to the right of the heading.

The text that follows the heading has been written to provide as much information about the subject as possible. If you can't find the information you need under that heading, try scanning through a few of the headings before and after and reading the text under those that sound similar.

System Components

3.1 Description

The DMP XR200 system is made up of an alarm panel with built in communicator, an enclosure, battery, one 16.5 VAC transformer, and a keypad. You can add up to eight supervised Security Command keypads, wireless, network communications, and expansion interface cards, zone and output expander modules, and initiating and indicating circuit modules. You can also connect auxiliary devices to the panel's output relays to expand the basic system's control capability. Combined current requirements of additional modules may require an auxiliary power supply. Refer to section 6.6 in this guide when calculating power requirements.

3.2 Wiring diagram

The XR200 system 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.

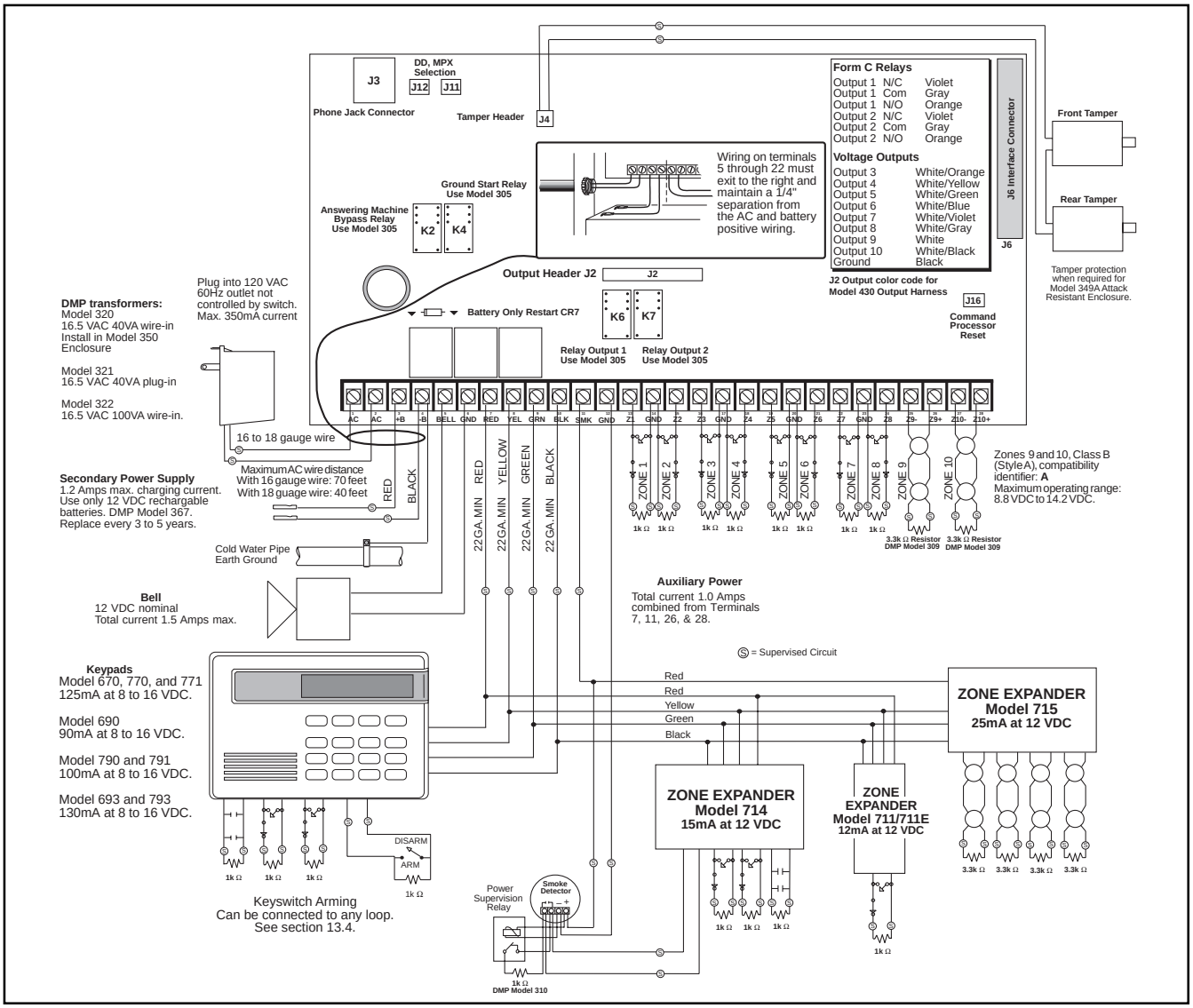


Figure 2: XR200 wiring diagram

3.3 Lightning protection

Metal Oxide Varistors and Transient Voltage Suppressors help protect against voltage surges on input and output circuits of the XR200. Additional surge protection is available by installing the DMP 370 or 370RJ Lightning Suppressors.

3.4 Accessory Devices

Model	Description
Interface Adaptor and Plug-in Cards	
460 Interface Adaptor	An expansion mother board that plugs into the J6 Interface Connector of the XR200 panel. The 460 is required when connecting ttwo or more expansion interface cards. You can use any combination of the following cards to provide zone expansion, network interfacing, local printing, and wireless device connection. Requires Model 349-A or 350 enclosure.
462N Network Interface Card	Allows you to connect the XR200 to any compatible data network and use its communication capability in place of standard dial out telephone lines. The 462N also provides an LX-Bus for connecting zone and output expansion modules to the panel. The 462N is listed for Grade AA Burglary communication.
462P Printer Interface Card	Allows you to connect the XR200 to any compatible serial printer and provide real time event recording to the user. The 462P also provides an LX-Bus for connecting zone and output expansion modules to the panel.
472 Hard-wire-less Interface Card	Provides an interface between the Inovonics FA400 Wireless Receiver and the XR200 panel. You can use any of the wireless equipment compatible with the FA400 to contruct a strictly wireless or combined wireless/hardwire system. Wireless functionality is listed for Household Fire and Burglary. The 472 also provides an LX-Bus for connecting zone and output expansion modules.
481 Expansion Interface Card	Provides one LX-Bus connection for zone and output expansion modules.
Zone and output expansion modules	
711/711E Single Point Zone Expanders	Provides one Class B burglary zone for connecting burglary and non-powered fire devices.
714 Zone Expander	Provides four Class B burglary zones for connecting burglary and non-powered fire devices.
715 Zone Expander	Provides four 12 VDC Class B powered zones for connecting smoke detectors, glassbreak detectors, or other 2 or 4-wire devices.
716 Output Expander	Provides four Form C relays (SPDT) and four switched grounds (open collector) for use in a variety of remote annunciation and control applications.
717 Graphic Annunciator Module	Provides 20 zone following switched grounds (open collector) for a variety of remote annunciation and control applications.
Indicating and initiating modules	
865 Supervised Style Y or Z Notification Circuit Module	Provides up to 1.5 Amps of supervised alarm current when using the bell output of the XR200 panel and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 865 can supervise 2-wire Style Y or W circuits or 4-wire Style Z or X circuits for ground faults, opens, and shorts with individual LED annunciation.
866 Notification Circuit Module	Provides up to 1.5 Amps of supervised alarm current using the bell output of the XR200 panel 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 up to 1.5 Amps of supervised alarm current using the bell output of the XR200 panel and up to 5 Amps at 12 or 24 VDC when using a listed auxiliary power supply. The 867 connects to the LX-Bus of the XR200 panel and provides one 2-wire Style W notification circuit for ground fault, open, and short conditions. Individual Bell Relay addresses and Bell Ring styles.
869 Dual Style D Initiating Module	Provides two Style D, 4-wire initiating zones for connecting waterflow switches and other non-powered fire and burglary devices.
Accessory Modules and Keypads	
893/893A Dual Phone Line Modules	Allows you to supervise two standard phone lines connected to an XR200 panel. The 893 and 893A modules monitor two phone lines and indicate trouble when the level drops below 3 VDC.
Security Command Vacuum Fluorescent keypads	Allows you to connect up to eight **supervised** Model 670, 770, or 771 Security Command keypads to the keypad data bus on terminals 9, 10, 11, and 12. Use an auxiliary power supply when connecting more than five keypads or installing excessively long wire runs.
Security Command LCD keypads	Allows you to connect up to eight **supervised** Model 690, 693, 790, 791, or 793 Security Command keypads to the keypad data bus on terminals 9, 10, 11, and 12. Use an auxiliary power supply when connecting more than five keypads or installing excessively long wire runs.

Installation

4.1 Mounting the enclosure

The metal enclosure for the XR200 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 XR200 PC board when installing the enclosure. Below are the mounting hole locations for two of the panel's enclosures.

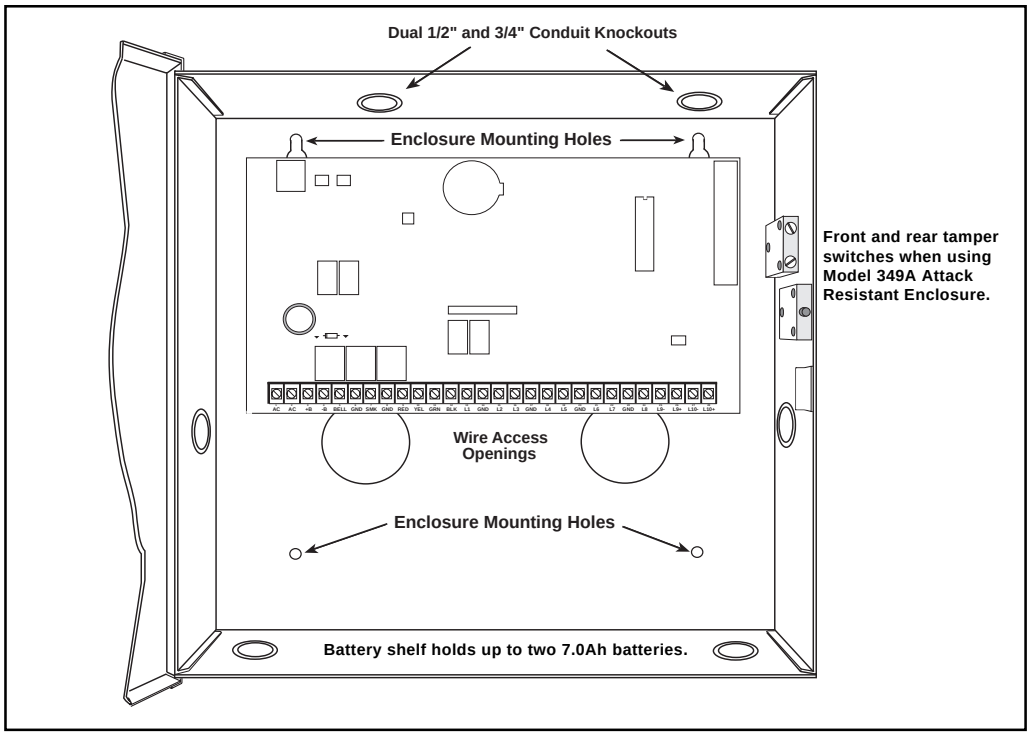


Figure 3: XR200M in Model 349 Enclosure

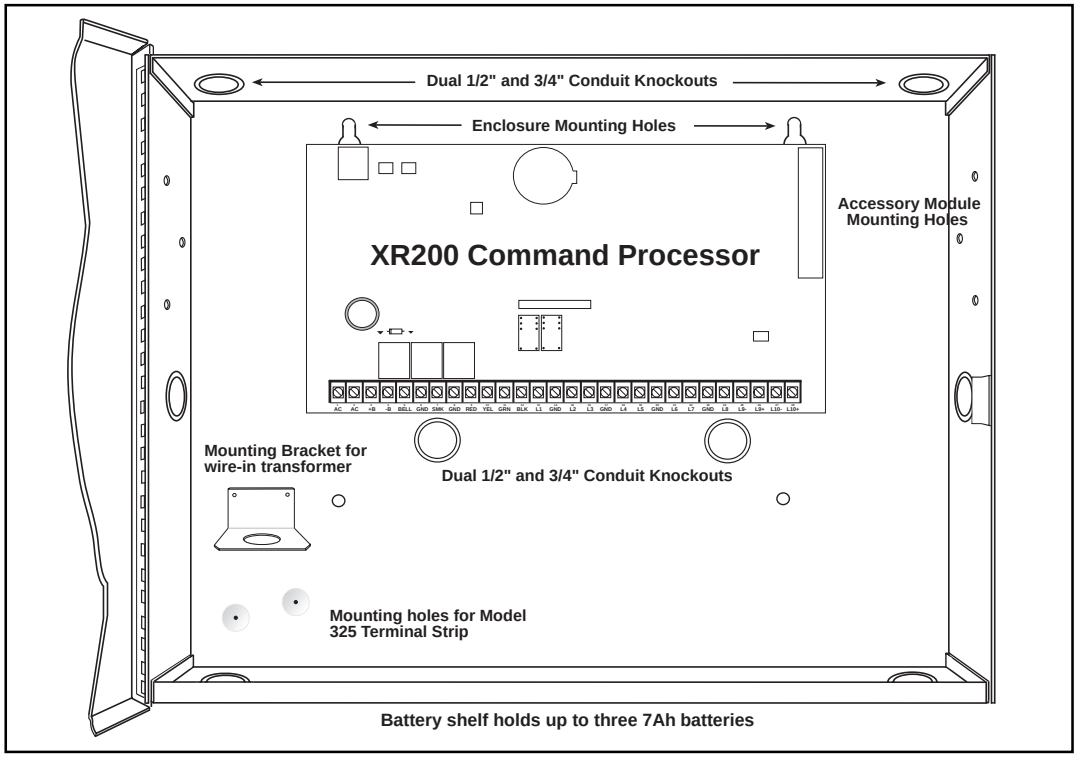


Figure 3A: XR200L in Model 350 Enclosure

4.2 Mounting keypads and zone expanders

Security Command keypads have removable covers that allow you to easily mount the keypad to a wall or other flat surface using the screw holes provided 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 a DMP 775 or 776 keypad conduit backbox for 770 series keypads. To provide additional protection for the keypad against unauthorized access, you can install the 777 Plastic Keypad Cover that provides a clear 1/8" thick polycarbonate housing with locking mechanism.

For the 790 series keypads, you can use the Model 695 1-1/2" deep or the Model 696 1/2" deep backboxes.

The DMP 711, 711E, 714, 715, 716, and 717 modules are each contained in molded plastic housings with removable covers. The housing cover contains the module while the base provides you with two mounting holes for installing the unit to a wall, switch plate, or other surface.

4.3 Connecting serial devices

Keypad Data Bus

The keypad data bus requires only a 4-wire cable between devices and the panel. You can connect devices in parallel on the same cable or provide separate runs back to the panel. The maximum cable length for one keypad can be up to 500 feet using 22 gauge wire or up to 1000 feet using 18 gauge wire. Additional keypads installed on the same cable decrease the maximum distance at which they'll operate properly.

Refer to the wiring diagram (section 3.2) in this guide for additional wiring information.

Expansion Interface Cards (Models 462N, 462P, 472, 481, and 482)

The LX-Bus provided on these cards also requires only a 4-wire cable between the card and any devices connected to the bus. You can connect devices (zone or output expanders) together on the same cable or provide separate runs back to the cards. You can determine the maximum length of each wire run by totaling the number of devices against the size wire used. Up to 100 zones or relays are available on each LX-Bus.

Refer to the 710 Bus Splitter/Repeater Installation Sheets, LT-0310 (Document No. 0310 on DMP Fax) for information concerning LX-Bus wiring distances and capacities.

Primary Power Supply

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 XR200.

Always ground the panel before applying power to any devices: The XR200 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 Earth ground section 6.2.

5.2 Transformer types

The standard transformer for the XR200 is the Model 321 (16.5 VAC 40VA). Refer to the XR200 Wiring Diagram (LT-0204) on the panel enclosure door for a list of optional transformers that can be used with the panel.

The Model 320 wire-in transformer is available when required by the AHJ.

The transformer must be connected to an unswitched 120 VAC 60 Hz electrical outlet with at least 350mA of available current. **Never share the transformer output with any other equipment.**

Secondary Power Supply

6.1 Battery terminals 3 and 4

Connect the black battery lead to the negative terminal of the battery. The negative terminal connects to the enclosure ground internally through the XR200 circuit board. Connect the red battery lead to the positive terminal of the battery. **Observe polarity when connecting the battery.**

You can add a second battery in parallel using the DMP Model 318 Dual Battery Harness.

Use sealed lead-acid batteries only: Use the DMP Model 367, 12 VDC 6.5Ah sealed lead-acid rechargeable battery. Batteries supplied by DMP or manufactured by Eagle Picher or Yuasa have been tested to ensure proper charging with DMP products.

GEL CELL BATTERIES CANNOT BE USED WITH THE XR200 PANEL.

6.2 Earth ground

Terminal 4 of the XR200 panel must be connected to earth ground using 14 gauge or larger wire to provide proper transient suppression. DMP recommends connecting to a cold water pipe or ground rod 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 XR200 panel without AC power, it's necessary to short across the CR7 leads 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 XR200 panel is powered up with an AC transformer, the battery cutoff relay is pulled in automatically.

6.4 Replacement period

DMP recommends the battery be replaced every 3 to 5 years under normal use.

6.5 Discharge/recharge

The XR200 battery charging circuit float charges at 13.9 VDC at a maximum current of 1.2 Amps using a 40VA transformer. The total current available is reduced by the combined auxiliary current draw from terminals 5, 6, and 24. The various battery voltage level conditions are listed below:

Battery Trouble:	Below	11.9 VDC
Battery Cutoff:	Below	10.2 VDC
Battery Restored:	Above	12.6 VDC

6.7 Battery supervision

The XR200 tests the battery once every hour when AC power is present. The test is done at 15 minutes past the hour and lasts for five seconds. During the test, the panel places a load on the battery and if its 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 is repeated every two minutes until the battery charges above 12.6 VDC; the battery 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 done.

6.8 Battery cutoff

The panel disconnects the battery any time the voltage of the battery drops below 10.2 VDC. This prevents deep discharge damage to the battery.

6.6 XR200 power requirements

During AC power failure, the XR200 panel and all auxiliary devices connected to the XR200 draw their power from the battery. All devices must be taken into consideration when calculating the battery standby capacity. Below is a list of the power requirements of the XR200 panel. Add the additional current draw of Security Command keypads, zone expanders, 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 arrive at the total ampere/hours required.

XR200 STANDBY BATTERY POWER CALCULATIONS

	Standby Current	Alarm Current
XR200 Control Panel	80mA _____ mA	80mA _____
Relay Outputs 1-2 (ON)	Qty _____ x 30mA _____	Qty _____ x 30mA _____
Voltage Outputs 3-10 (ON)	Qty _____ x 5mA _____	Qty _____ x 5mA _____
Active Zones 1-8	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
Active Zones 9-10	Qty _____ x 4mA _____	Qty _____ x 30mA _____
2-Wire Smokes	Qty _____ x .1mA _____	Qty _____ x .1mA _____
893 Phone Dual Line Module	12mA _____	50mA _____
462 Network Interface Card	Qty _____ x 50mA _____	Qty _____ x 50mA _____
472 HARD-WIRE-LESS Interface Card	Qty _____ x 85mA _____	Qty _____ x 85mA _____
481 Expansion Interface Card	Qty _____ x 15mA _____	Qty _____ x 15mA _____
Panel Bell Output		1500mA max. _____
865 Style Y or Z Notification Module	Qty _____ x 26 mA _____	Qty _____ x 85mA _____
866 Style W Notification Module	Qty _____ x 45mA _____	Qty _____ x 75mA _____
867 LX-Bus Style W Notification Module	Qty _____ x 30mA _____	Qty _____ x 85mA _____
690, 693, 790, 791, 793	Qty _____ x 100mA _____	Qty _____ x 100mA _____
Active Zones (EOL installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
670, 770, 771 Keypads	Qty _____ x 125mA _____	Qty _____ x 125mA _____
Annunciator (ON)		Qty _____ x 20mA _____
Active Zones (EOL installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
710 Bus Splitter/Repeater	Qty _____ x 30mA _____	Qty _____ x 30mA _____
711 or 714 Zone Expander	Qty _____ x 7mA _____	Qty _____ x 7mA _____
Active Zones (EOL installed)	Qty _____ x 1.6mA _____	Qty _____ x *2mA _____
715 Zone Expander	Qty _____ x 7mA _____	Qty _____ x 7mA _____
Active Zones (EOL installed)	Qty _____ x 4mA _____	Qty _____ x 30mA _____
2-Wire Smokes	Qty _____ x .1mA _____	Qty _____ x .1mA _____
716 Output Expander	Qty _____ x 7mA _____	Qty _____ x 7mA _____
Active Form C Relays		Qty _____ x 28mA _____
717 Graphic Annunciator	Qty _____ x 10mA _____	Qty _____ x 10mA _____
Annunciator Outputs		Qty _____ x 1mA _____
Aux. Powered Devices on Terminals 7 and 9 (Other than keypads and LX-Bus modules)	_____ mA	_____ mA
* Based on 10% of active zones in alarm condition	Total Standby _____ mA	Total Alarm _____ mA

Total Standby _____ mA x Number of standby hours needed _____ = _____ mA/hours

Total Alarm + _____ mA/hours

Total _____ mA/hours

x _.001_____

=_____ Amp/hrs Required

Cannot exceed 7.0 with one 367 Battery
Cannot exceed 14.0 with two 367 Batteries
Cannot exceed 21.0 with three 367 Batteries
Cannot exceed 28.0 with four 367 Batteries

Bell Output

7.1 Terminals 5 and 6

Terminal 5 supplies positive 12 VDC to power alarm bells or horns. The output is rated for a maximum output of 1.5 Amps. This output can be steady or pulsed depending upon the Bell Action specified in Output Options. Terminal 6 is the ground reference for the bell circuit.

Keypad and Zone Expander Bus

8.1 Description

Terminals 7, 8, 9, and 10 of the XR200 panel are for the keypad data bus. In addition to Security Command keypads, you can also connect any combination of up to eight zone expanders, 5845LX Glassbreak detectors, 6155LX PIRs, and DS775LX PIRs to the data bus.

8.2 Terminal 7 - RED

This terminal supplies positive 12 VDC to power Security Command keypads and zone expanders. This is also where power for any auxiliary device is supplied. The ground reference for terminal 7 is terminal 10 with the maximum output rated at 1 Amp.

The output current is shared with the smoke detector output on terminal 11 and Zones 9 and 10. All devices totalled together must not exceed the panel's maximum current rating of 1 Amp.

8.3 Terminal 8 - YELLOW

Data receive from keypads and zone expanders. It cannot be used for any other purpose.

8.4 Terminal 9 - GREEN

Data transmit to keypads and zone expanders. It cannot be used for any other purpose.

8.5 Terminal 10 - BLACK

Terminal 10 is the ground reference for Security Command keypads, zone expanders, and any auxiliary devices being powered by terminal 7.

Smoke and Glassbreak Detector Output

9.1 Terminals 11 and 12

Terminal 11 supplies positive 12 VDC 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, 26, and 28. 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 of 1 Amp.

Powered Zones for 2-Wire Smoke Detectors

10.1 Terminals 25-26 and 27- 28

Two resettable Class B (Style A) 2-wire powered zones are provided on terminals 25 through 28 on the panel. For programming purposes the zone numbers are 9 and 10.

The zones use a Model 309, 3.3k Ω EOL resistor provided with the panel and have an operating range of 8.8 to 14.2 VDC.

The DMP UL compatibility identifier for the zones is: A.

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

Make	Model	Detector ID	Base	Base ID	# of Detectors
Detection Systems	DS282	B	None	N/A	10
Detection Systems	DS282TH	B	None	N/A	10
Detection Systems	DS250	B	MB2W, MB2WL	A	10
Detection Systems	DS250TH	B	MB2W, MB2WL	A	10
Detection Systems	DS250HD	B	MB2W, MB2WL	A	10
Sentrol/ESL	429AT	S09A	None	N/A	12
Hochiki	SLK-835	HD-5	HSB-200, HSB-200N	HB-55	7
Hochiki	SLK-835H	HD-5	HSB-200, HSB-200N	HB-55	7
Hochiki	SLK-12	HD-4	HSB-12-1, HSB-12-1N	HB80	20

Figure 4: Compatible 2-wire smoke detectors

Protection Zones

11.1 Description

Zones 1 to 8 on the XR200 panel (terminals 13 to 24) are all grounded burglary zones. For programming purposes, the zone numbers are 1 through 8. Terminals 13 to 24 provide connection as listed below.

Terminal	Function	Terminal	Function
13	Zone 1 voltage sensing	19	Zone 5 voltage sensing
14	Ground for Zones 1 & 2	20	Ground for Zones 5 & 6
15	Zone 2 voltage sensing	21	Zone 6 voltage sensing
16	Zone 3 voltage sensing	22	Zone 7 voltage sensing
17	Ground for Zones 3 & 4	23	Ground for Zones 7 & 8
18	Zone 4 voltage sensing	24	Zone 8 voltage sensing

The voltage sensing terminal measures the voltage through a 1k Ω End Of Line resistor to ground. Dry contact sensing devices can be used in series (normally-closed) or in parallel (normally-open) with any of the burglary protection zones.

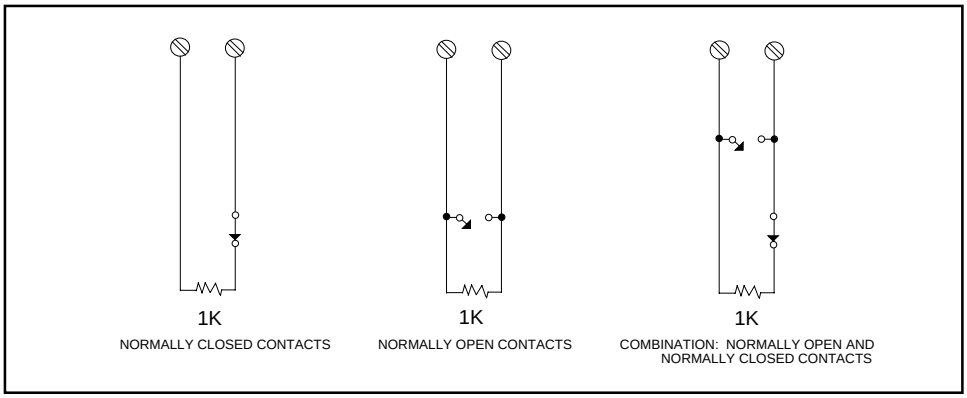


Figure 5: Protection zone contact wiring

11.2 Operational parameters

Each protection zone detects three conditions: open, normal, and short. The voltage and resistance parameters for each condition are listed below:

Condition	Resistance on zone	Voltage on positive terminal
Open	over 1300 ohms	over 2.0 VDC
Normal	600 to 1300 ohms	1.2 to 2.0 VDC
Short	under 600 ohms	under 1.2 VDC

11.3 Zone response time

A condition must be present on a zone for 500 milliseconds before it's detected by the XR200 panel. Ensure detection devices used on the protection zones are rated for use with this delay. The zones can also be programmed for a fast response delay of 160 milliseconds.

11.4 Keyswitch arming zone

Momentary keyswitches

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

How it works

When the Arming zone is placed into a *shorted* condition from a *normal* condition, the area(s) it controls **arm** if they were disarmed and **disarm** if they were armed.

If the Arming zone is placed into an *open* condition and any area it controls is **armed**, a burglary alarm is indicated. If the Arming zone is placed into an *open* condition and all areas it controls are **disarmed**, a burglary trouble is indicated.

Dry Contact Relay Outputs

12.1 Description

The XR200 panel provides two auxiliary SPDT relays when equipped with two DMP Model 305 relays in sockets K6 (Output 1) and K7 (Output 2) and a Model 430 Output Harness. Each relay provides one single pole, double throw (SPDT) set of contacts that can be operated by any of the functions listed below:

1) Activation by zone condition
   - Steady
   - Pulsing
   - Momentary
   - Follow
2) Activation by 24 hour 7 day schedule
   One on and one off time a day for each relay
3) Manually from the Security Command keypad menu
4) Communication failure
5) Armed area annunciation
6) Fire Alarm or Fire Trouble
7) Other system conditions. See the XR200 Programming Guide.

12.2 Contact rating

The Model 305 relay contacts are rated for 1 Amp at 30 VDC resistive. You can connect auxiliary power to the common terminal of Relay Output 1 by installing the gray harness wire to terminal 7.

12.3 Output Harness wiring

The relay contacts are accessible by installing the DMP 430 Output Harness on the 15-pin header labeled J2. The contact locations on the wire harness are shown below:

Contact	Color
Output 1 normally closed	Violet
Output 1 common	Gray
Output 1 normally open	Orange
Output 2 normally closed	Violet
Output 2 common	Gray
Output 2 normally open	Orange

The relay contacts must be connected to devices located within the same room as the XR200 panel.

12 VDC Voltage Outputs 3 to 10

13.1 Description

The XR200 also provides eight 12 VDC, 50mA resistive voltage outputs on J2 to power external relays or other devices. The voltage outputs are operated from the same functions as Outputs 1 and 2. See section 13.1.

When connecting any devices to outputs 3 to 10, subtract the current draw of the device from the panel's available auxiliary power.

13.2 Output Harness wiring

The voltage outputs are accessible by installing the DMP 430 Harness on the 15-pin header labeled J2. The output locations are shown below:

Output	Color	Output	Color	Output	Color
3	White/Orange	6	White/Blue	9	White
4	White/Yellow	7	White/Violet	10	White/Black
5	White/Green	8	White/Gray	Ground	Black

Devices connected to the outputs must be located within the same room as the XR200 panel.

Telephone RJ Connector

14.1 Description

Connect the panel to the public telephone network by installing a DMP 356 RJ Cable between the panel's J3 connector and the RJ31X or RJ38X phone jack. Set the 3-pin headers labeled J11 and J12 on the XR200 to **DD** for digital dialer, Contact ID, or Modem IIe operation or **MPX** for multiplex operation.

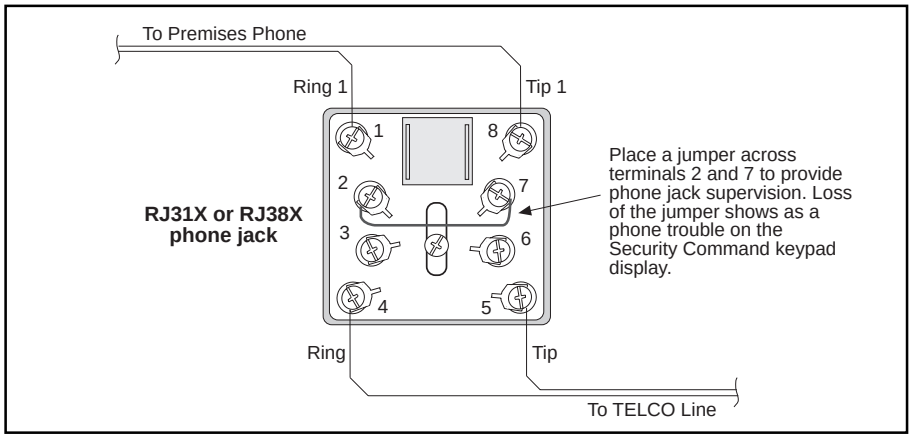


Figure 7: Phone jack wiring

14.2 FCC registration

The Model XR200 complies with FCC part 68 and is registered with the FCC.

Registration number: CCKUSA-18660-AL-R / Ringer Equivalence: 1.1B

14.3 Notification

Registered terminal equipment must not be repaired by the user. In case of trouble, the device must be immediately unplugged 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. Notification must be given to the telephone company of:

a. The particular line(s) the service is connected to
b. The FCC registration number
c. The ringer equivalence
d. The make, model, and serial number of the device

14.4 Ground start

For ground start operation, install a DMP Model 305 Relay into socket K4. Ground start phones cannot be used on commercial or residential fire applications.

14.5 Answering machine bypass

For answering machine bypass capability, install a DMP Model 305 Relay into socket K2 according to the Wiring Diagram in this guide. See section 3.2. The bypass function operates by detecting the frequency of the tone sent to the premises by the Remote Access computer. Tones emitted by fax machines or other devices are ignored by the panel. When the correct frequency tone is detected, the panel picks up the phone line and establishes communication with the calling computer.

Reset Jumper J16

15.1 Description

The reset jumper is located just above the terminal strip on the right side of the circuit board and is used to reset the microprocessor of the XR200. 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.

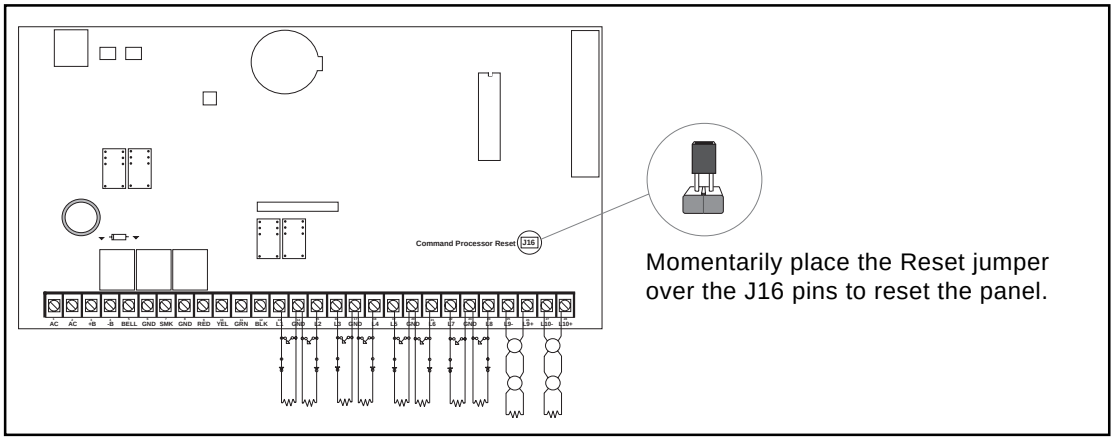


Figure 8: XR200 panel showing reset

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, you must begin programming within 30 minutes. If you wait longer than 30 minutes, you'll have to reset the panel again.

15.2 J4 tamper connector

The J4 connector 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 opening or removal of the enclosure. 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's areas are armed, a panel tamper alarm is indicated. If all areas are disarmed, a panel tamper trouble is indicated.

UNIVERSAL UL BURGLARY SPECIFICATIONS

16.1 Introduction

The programming and installation specifications contained in this section must be completed when installing the XR200 panel in accordance with any of the UL burglary standards. Additional specifications may be required by a particular standard.

16.2 Wiring

All wiring must be in accordance with NEC, ANSI/NFPA 70, UL 681, and UL 611 for all burglary installations.

16.3 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.

16.4 Police station phone numbers

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.

16.5 Bypass reports

The Bypass Reports option must be programmed as YES for all UL burglary applications. See section 6.4 of the XR200 Programming Guide (LT-0196).

16.6 System maintenance

Proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential to ensure continuous satisfactory operation of any alarm system. Offering a maintenance program and acquainting the user with the correct procedure for use and testing of the system is also the responsibility of the installing alarm company.

16.7 Partitions

The partition option may only be used for UL burglary applications when all partitions are used for one subscriber. See section 4.2 and 11.2 of the XR200 Programming Guide (LT-0196). The panel must be tamper protected and Sentrol Model 5402 or Potter EVD listed vibration detectors should be used.

16.8 UL Listed Receivers

UL has verified operation with the DMP SCS-1, Sur-Gard SG-HLR2-DG, FBII CP220PB, Osborne-Hoffman Quick-Alert, and Radionics D6500 receivers.

UL 1023 SPECIFICATIONS

Household Burglar-Alarm System Units

17.1 Bell cutoff

The Bell Cutoff time cannot be less than five minutes. See section 8.2 of the XR200 Programming Guide (LT-0196).

17.2 Entry delay

The maximum entry delay used must not be more than 45 seconds. See section 7.3 of the XR200 Programming Guide (LT-0196).

17.3 Exit delay

The maximum exit delay used must not be more than 60 seconds. See section 12.4 of the XR200 Programming Guide (LT-0196).

17.4 Weekly test

The product should be tested weekly.

UL 1610 AND 1076 SPECIFICATIONS
Central-Station and Proprietary Burglar-Alarm Units

18.1 Multiplex network capacity
The total number of panels assigned to a standard MPX or DNET receiving line of the SCS-1 Receiver System must not exceed 90. This may be increased to 180 by setting the SNRM option to NO in the SCS-1 Receiver system. This is to allow any signal from a XR200 Command Processor to be transmitted to the receiver within 90 seconds. This allows Grade AA Multiplex service.

18.2 Opening/Closing reports
The Opening/Closing Reports option must be programmed as YES. See section 12.6 of the XR200 Programming Guide (LT-0196).

18.3 Closing wait
The Closing Wait option must be programmed YES. See section 7.2 of the XR200 Programming Guide (LT-0196).

18.4 Proprietary dialer
The Model XR200 provides Grade A proprietary service when configured as a digital dialer.

18.5 AA Network Communication
When HST communication is used, a dialer line must also be used along with the Model 893 Dual Phone Line Module to supervise the dialer line. The HST Check-in time must be set from 01 to 06 minutes or AA. This provides AA Central Station Service. See sections 3.2, 3.2.1, and 3.3 of the XR200 Programming Guide (LT-0196).

UL 1635 SPECIFICATIONS
Digital Burglar Alarm Communicator System Units

19.1 System trouble display
The Status List Display must include at least one keypad that displays system monitor troubles. See section 10.1 of the XR200 Programming Guide (LT-0196).

19.2 Digital Dialer telephone number
Both programmed telephone numbers must begin with a D or P. See sections 3.17 and 3.18 of the XR200 Programming Guide (LT-0196).

19.3 Entry delay
The maximum entry delay used must not be more than 60 seconds. See section 7.3 of the XR200 Programming Guide (LT-0196).

19.4 Exit delay
The maximum exit delay used must not be more than 60 seconds. See section 12.4 of the XR200 Programming Guide (LT-0196).

19.5 Test time
The Test Time option must be programmed so that the XR200 sends a report once every 24 hours. See sections 3.8 to 3.10 of the XR200 Programming Guide (LT-0196).

19.6 Closing wait
The Closing Wait option must be programmed YES. See section 7.2 of the XR200 Programming Guide (LT-0196).

19.7 Grade B Central Station
Grade B Central Station service can be provided under UL 1635 by adding a Grade A local audible signal appliance and placing the Model XR200 panel into the Model 349A Grade A Attack Resistant Housing.

UL 365 AND 609 SPECIFICATIONS

Police Station Connected and Local Burglar Alarm Units and Systems

20.1 System trouble display

The Status List Display must include at least one keypad that displays system monitor troubles. See section 10.3 of the XR200 Programming Guide (LT-0196).

20.2 Entry delay

The maximum entry delay used must not be more than 60 seconds when using the Model 349A Grade A housing. See section 7.3 of the XR200 Programing Guide (LT-0196).

20.3 Grade A bell

A Grade A local audible signal appliance must be used.

20.4 Bell cutoff

The Bell Cutoff time cannot be less than 15 minutes. See section 8.2 of the XR200 Programming Guide (LT-0196).

20.5 Automatic bell test

The Automatic Bell Test option must be programmed as YES. See section 8.3 of the XR200 Programming Guide (LT-0196).

20.6 Grade A Mercantile

For Grade A Mercantile and Police Station Connect operation the Model XR200 must be mounted in a Grade A Attack Resistant Housing, (DMP Model 349A).

20.7 Mercantile Safe and Vault

When the DMP Model 349A housing is used, the XR200 provides operation as a mercantile safe and vault alarm. Bell Supervision and wiring must be in accordance with UL 681. If the Model XR200 is mounted outside the safe or vault, tamper protection and the Sentrol Model 5402 or Potter EVD listed vibration detectors should be used.

20.8 Line security for Police Connect

Basic line security is provided when the Model XR200 is configured as a dialer system.

20.9 Bank Safe and Vault

In addition to the requirements for Mercantile Safe and Vault in section 20.7, the following must be done for Bank Safe and Vault systems. The Bank Safe and Vault option must be programmed as YES. See section 12.19 of the XR200 Programming Guide (LT-0196). The 72 hour battery standby must be provided. A Rothenbuhler Model 5110 High Security Bell must be used. See section 25.8 of the XR200 Installation Guide (LT-0197).

20.10 High Line Security

High Line Security is provided when configured as a MPX, DNET, or HST system. When HST communication is used, a dialer line must also be used along with the Model 893 Dual Phone Line Module to supervise the dialer line. The HST Check-in time must be set from 01 to 06 minutes or AA. See sections 3.2, 3.2.1, and 3.3 of the XR200 Programming Guide (LT-0196).

UNIVERSAL UL and NFPA FIRE ALARM SPECIFICATIONS

21.1 Introduction

The programming and installation specifications contained in this section must be completed when installing the Model XR200 in accordance with any of the UL or NFPA fire standards. Additional specifications may be required by a particular standard.

21.2 Wiring

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

21.3 Transformer

A wire-in transformer should be used. Use the 16.5 VAC 40VA DMP Model 320. The transformer must be mounted within 20 feet of the panel connected by conduit.

21.4 End of Line resistor

The DMP Model 310 1K Ω EOL resistor should be used on all 1K Ω EOL fire zones.

21.5 System trouble display

The Status List Display must include at least one keypad that displays system monitor troubles. See section 10.3 of the XR200 Programming Guide (LT-0196).

21.6 Fire display

The Status List Display must include at least one keypad that displays troubles and alarms on fire type zones. See section 10.4 of the XR200 Programming Guide (LT-0196).

21.7 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.

21.8 System maintenance

Proper installation and regular maintenance by the installing alarm company and frequent testing by the end user is essential to ensure continuous satisfactory operation of any alarm system. Offering a maintenance program and acquainting the user with the correct procedure for use and testing of the system is also the responsibility of the installing alarm company.

21.9 Audible alarm

Fire Type zones should be programmed to activate an audible alarm. The Bell Action for Fire Type zones should not be programmed as “N”. See section 8.4A in the XR200 Programming Guide (LT-0196).

21.10 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. See sections 13.4 and 13.17 in the XR200 Programming Guide (LT-0196). The retard delay should not be used on a zone with smoke detectors.

21.11 Style D zones

If required, the Radionics D129 Dual Style D Initiating Module provides for connection of two Style D zones to the Model XR200. See section 26.4 and the D129 Installation Instructions for wiring information.

21.12 Video Option

The Video option must be selected as NO when any fire protection is connected to the XR200. See section 7.9 in the XR200 Programming Guide (LT-0196).

21.13 UL Listed Receivers

UL has verified operation with the DMP SCS-1 (SDLC), Sur-Gard SG-HLR2-DG (CID, M2E), FBII CP220PB (CID), Osborne-Hoffman Quick-Alert (CID, M2E), and Radionics D6500 (M2E) receivers.

UL 985 NFPA 72 (Chapter 2) SPECIFICATIONS

Household Fire Warning System Units

22.1 Bell output definition

The Bell Output of the Model XR200 must be programmed to operate steady on burglary alarms and pulsed or temporal on fire alarms. See sections 8.4A and 8.4B of the XR200 Programming Guide (LT-0196).

UL 864 NFPA 72 (Chapter 9) SPECIFICATIONS

Control Units for Fire-Protective Signaling Systems

23.1 Zone restoral reports

The Restoral Reports option must be selected as YES or DISARM. See section 6.3 in the XR200 Programming Guide (LT-0196).

23.2 Power fail delay

The Power Fail Delay option must be selected as 6 hours. See section 7.6 of the XR200 Programming Guide (LT-0196).

23.3 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 893 Dual Phone Line Module must be used on all sprinkler supervisory systems.

23.4 DACT systems

Two phone lines must be used. The two phone lines cannot be ground start or party lines. The 893 Dual Phone Line Module is used to provide connection of two phone lines to the system. The 2ND Phone Line communication option must be selected as YES. See section 3.3 of the XR200 Programming Guide (LT-0196).

Two different phone numbers must be programmed for digital communication. See sections 3.17 and 3.18 of the XR200 Programming Guide (LT-0196). The Test Time option must be programmed so that the XR200 sends a report every 24 hours. See sections 3.8 to 3.10 of the XR200 Programming Guide (LT-0196).

Additionally, you can use the 462N Network Interface Card and the HST (Host) Communication type for ancillary communication over digital data networks.

23.5 Type 2 and Type 3 Central Station Service

Type 2 and Type 3 Central Station Service can be provided by using MPX communication to the DMP SCS-1 Receiver system. See section 3.2 of the XR200 Programming Guide (LT-0196).

23.6 Type 1 Central Station Service

Type 1 Central Station Service can be provided by using MPX as the main communication and digital dialer as backup. The 893 Dual Phone Line Module is used to provide connection of the MPX and dialer lines. See section 3.2 of the XR200 Programming Guide (LT-0196). If Type 1 Central Station service is provided, the Test Time option must be programmed to send a report every 24 hours. See sections 3.8 to 3.10 of the XR200 Programming Guide (LT-0196).

With both Type 1 and Type 2 Central Station service, the total number of panels assigned to a standard MPX receiving line of the SCS-1 Receiver System must not exceed 90. This may be increased to 180 by setting the SNRM option to NO in the SCS-1 Receiver system. This is to allow any signal from a XR200 to be transmitted to the receiver within 90 seconds.

23.7 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. See sections 25.1 to 25.3 for wiring diagrams. Any burglary or other off premises communication must be done with the Model 893 Dual Phone Line Module.

23.8 Proprietary Protective Signaling Systems

The total number of panels assigned to one MPX or DNET receiving line of the DMP SCS-1 Receiver system must not exceed 90. This may be increased to 180 by setting the SNRM option to NO in the SCS-1 Receiver system. This is to allow any report from a XR200 to be sent to the receiver within 90 seconds.

23.9 Remote Station Protective Signaling Systems

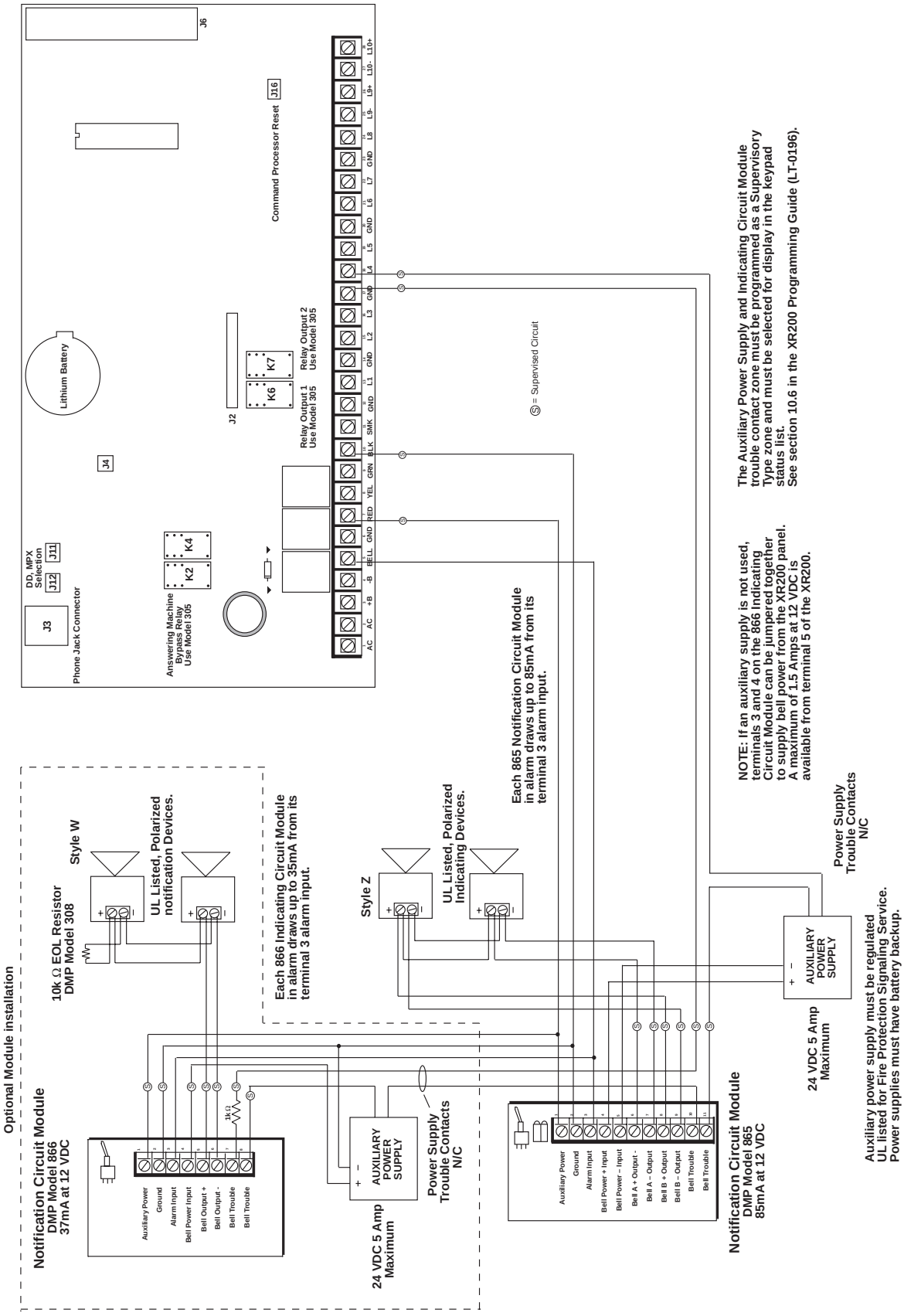
You must provide 60 hours of standby battery. Up to four 12 VDC, 6.5Ah batteries may be used. See section 6.6 for standby battery calculations. Two Radionics Model D127 Reversing Relay Modules provide two reversing polarity telephone connections. See section 25.5 and the D127 Installation Instruction sheet for wiring details. A DMP Model 893 is used to provide two line dialer communication or Type 1 Multiplex communication.

CALIFORNIA STATE FIRE MARSHAL SPECIFICATIONS

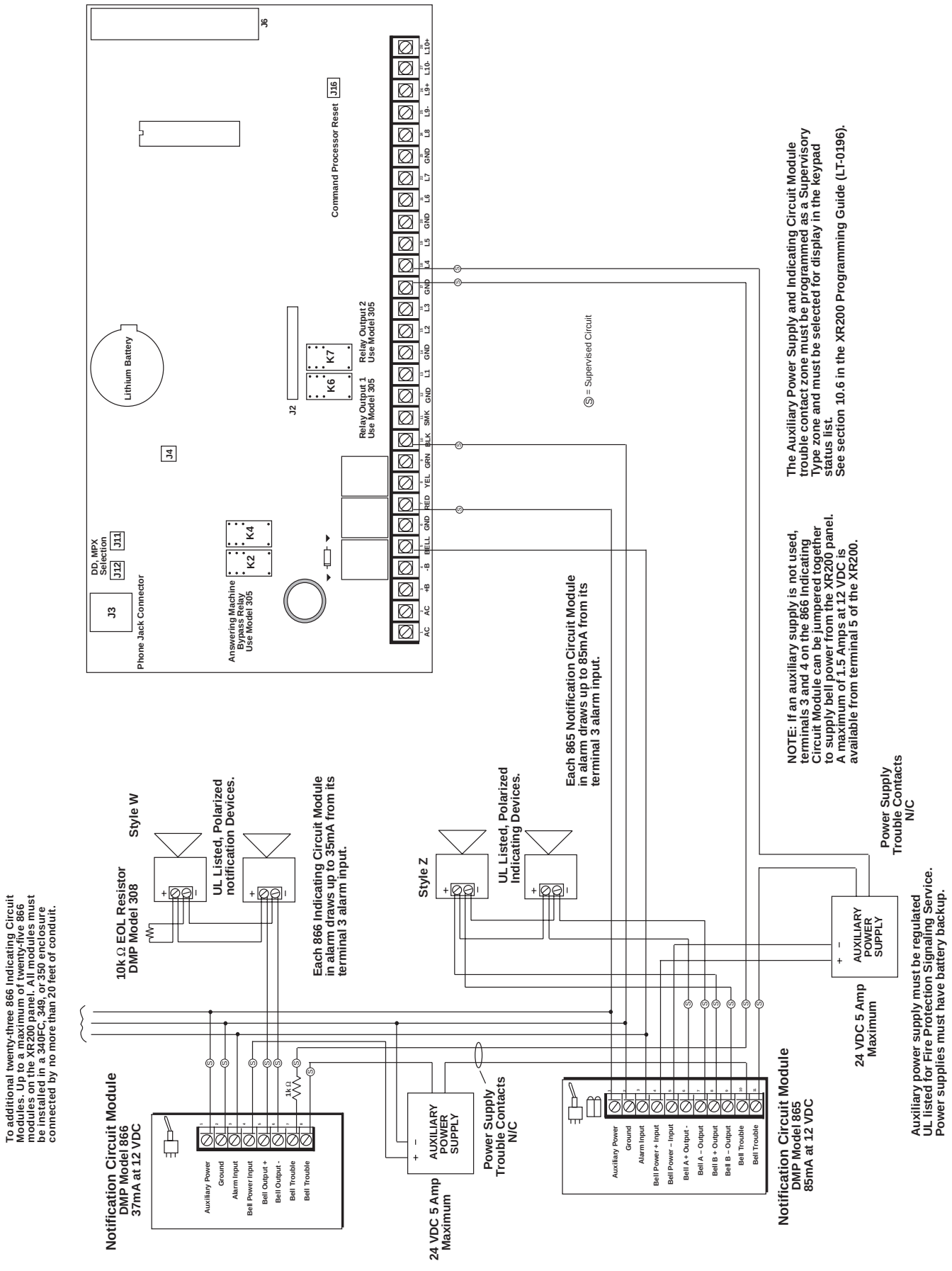
24.1 Bell output definition

The Bell Output of the XR200 panel must be programmed to operate steady on burglary alarms and pulsed, temporal, or California School Code on fire alarms. See sections 8.4A and 8.4B of the XR200 Programming Guide (LT-0196).

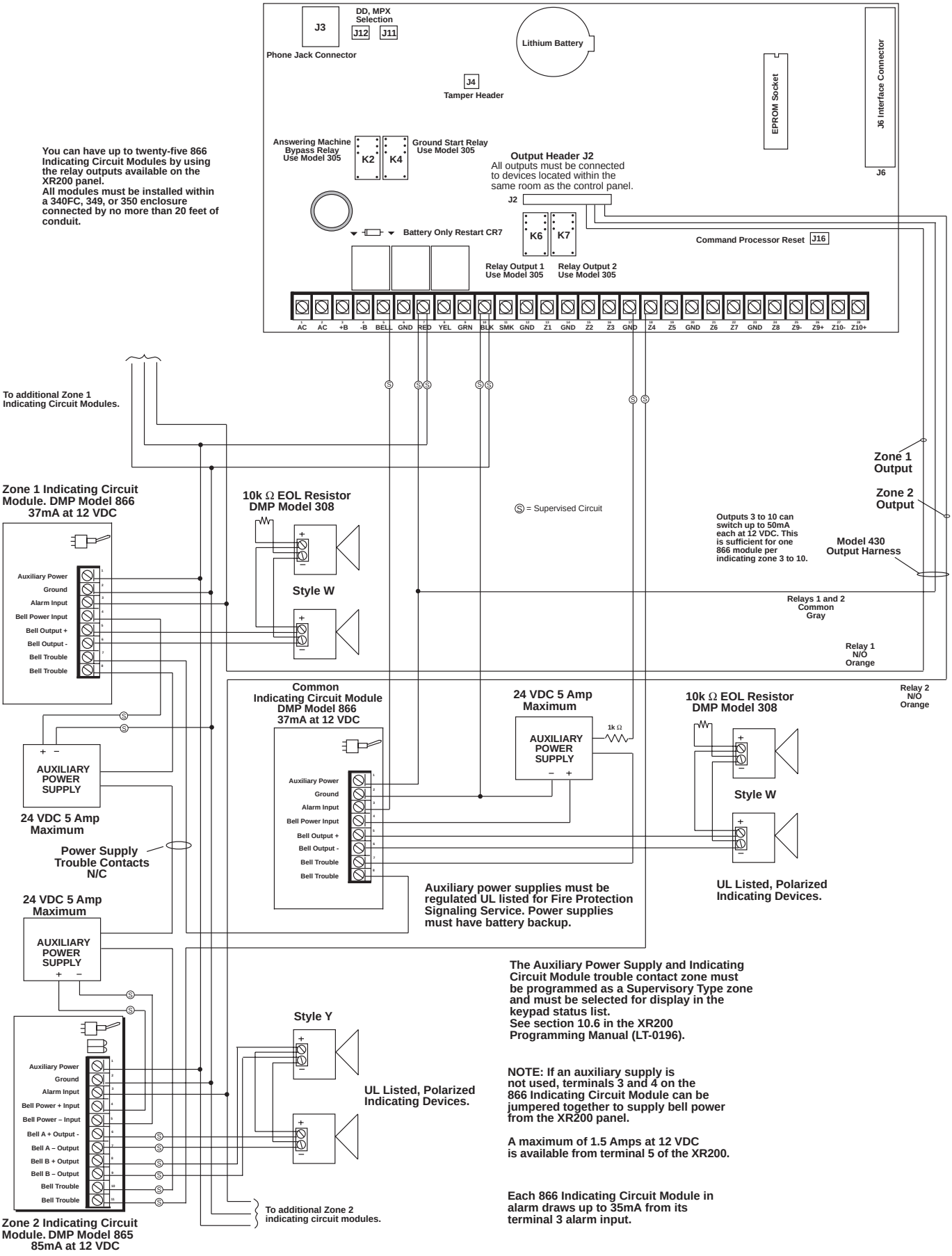
25.1 Indicating circuit module installation



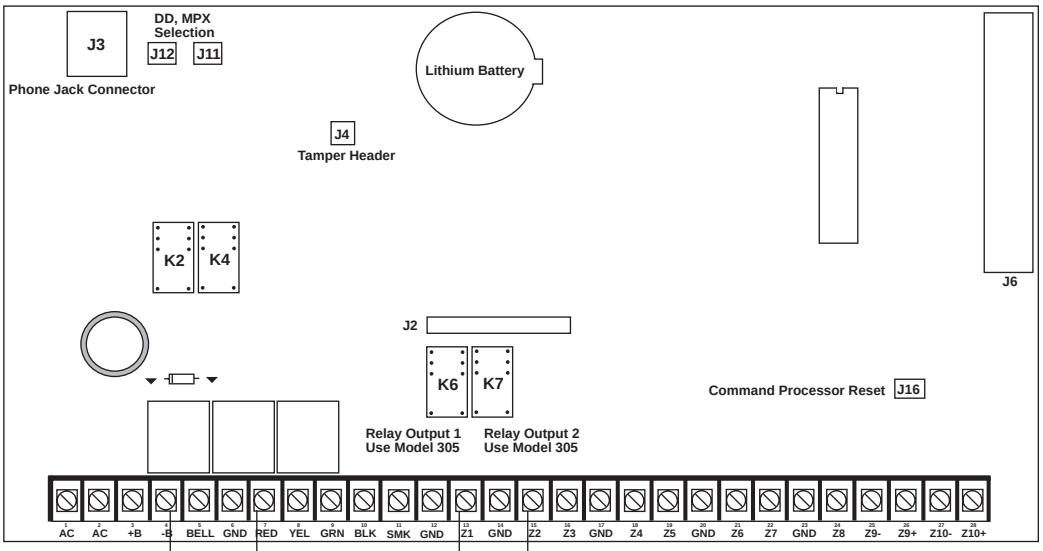
25.2 Multiple indicating circuit modules



25.3 Multiple indicating circuit modules for zoned annunciation

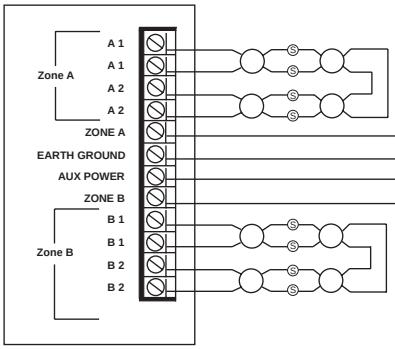


25.4 Dual Style D Zone Module installation



Ⓢ = Supervised Circuit

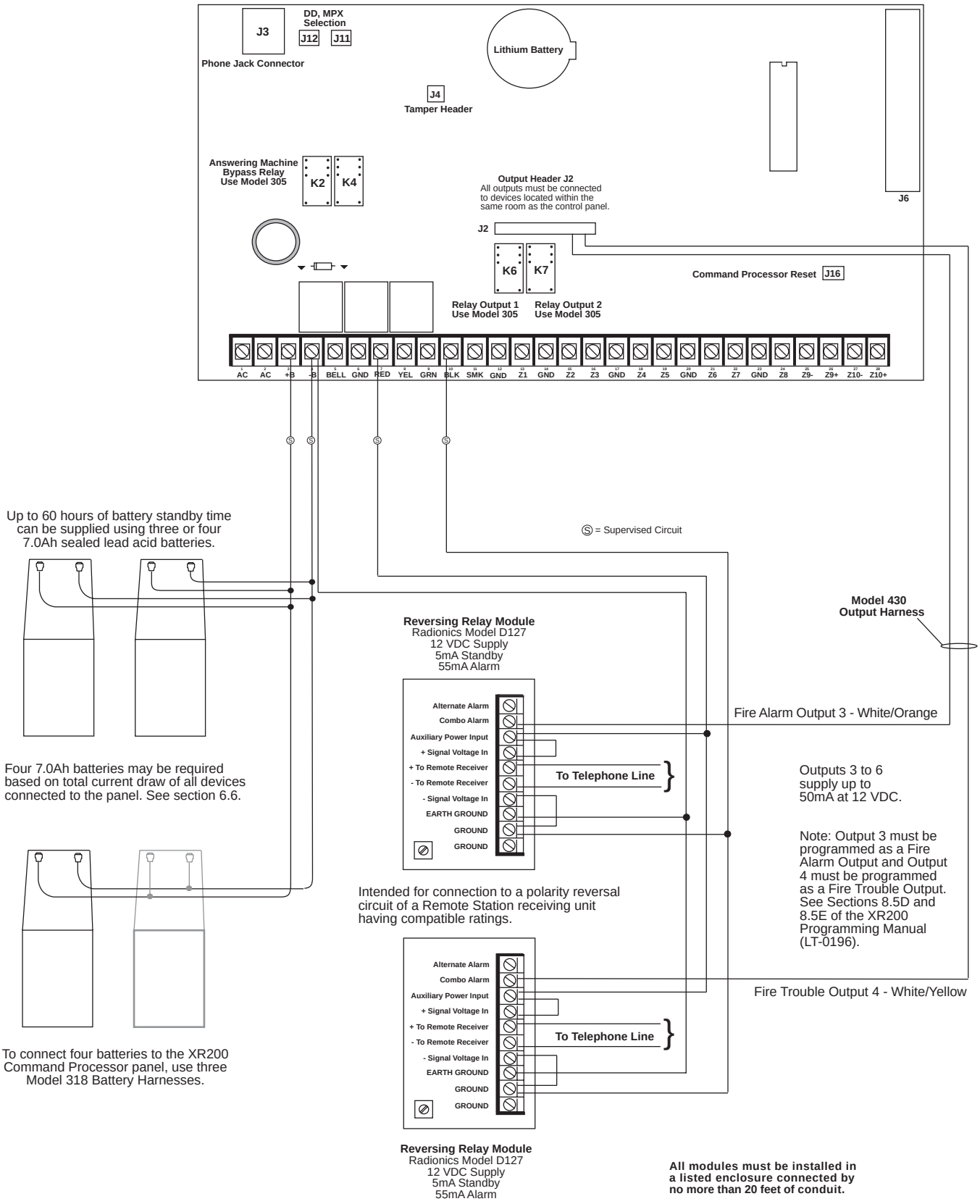
Dual Style D Initiating Module
Model 869



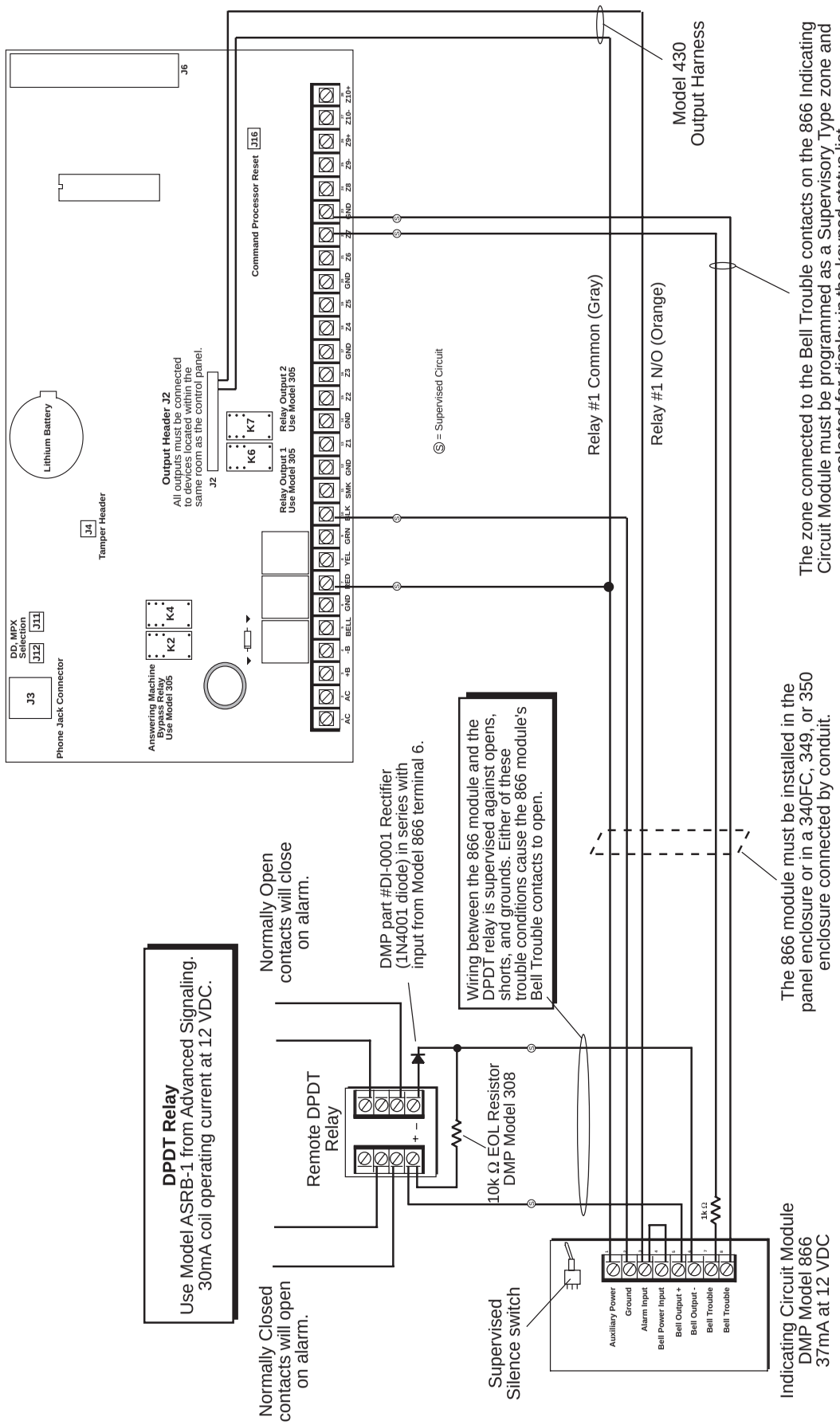
12 VDC Supply
25mA Standby Current
75mA Alarm Current

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

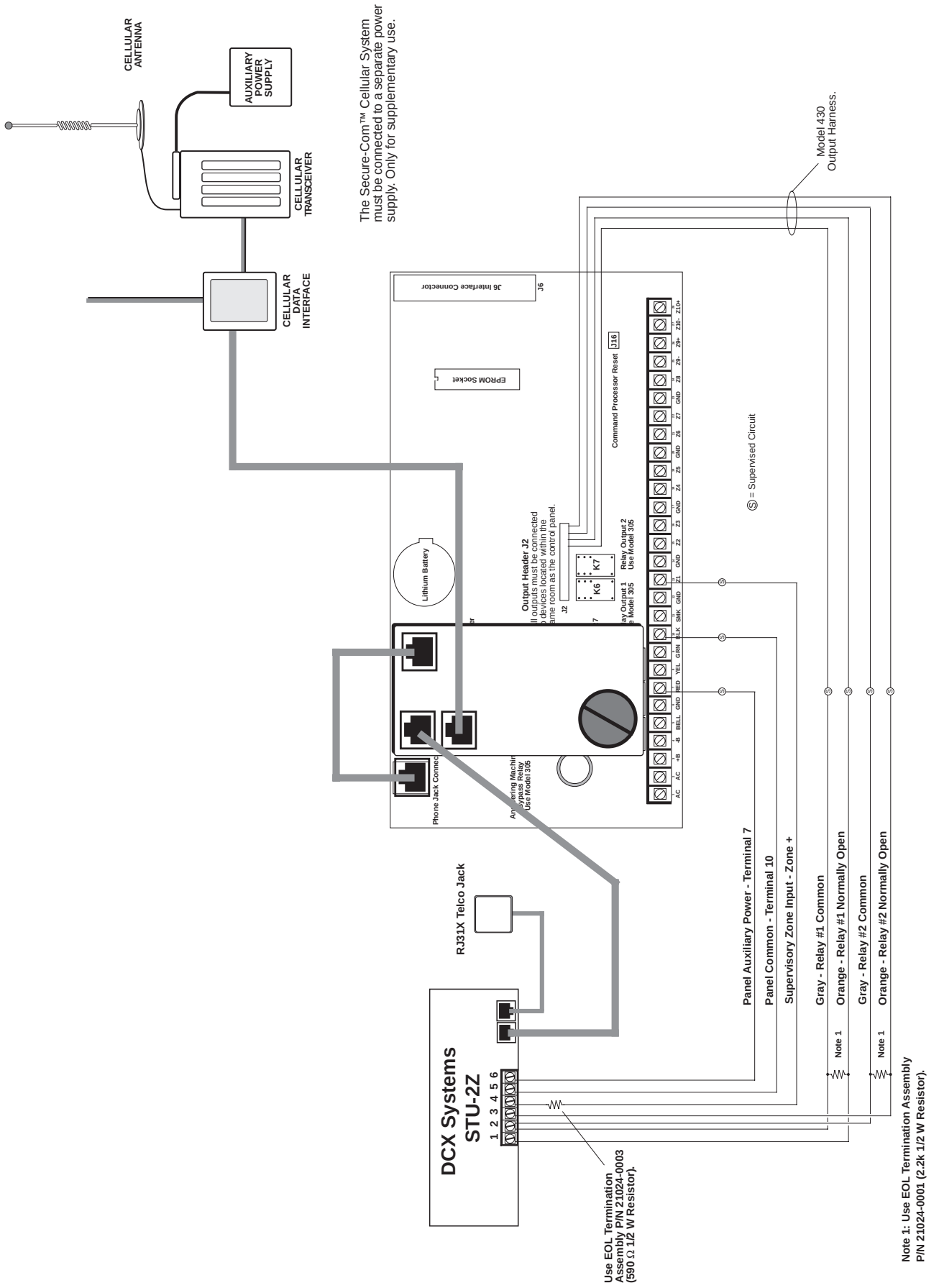
25.5 Remote Station reversing relay connection



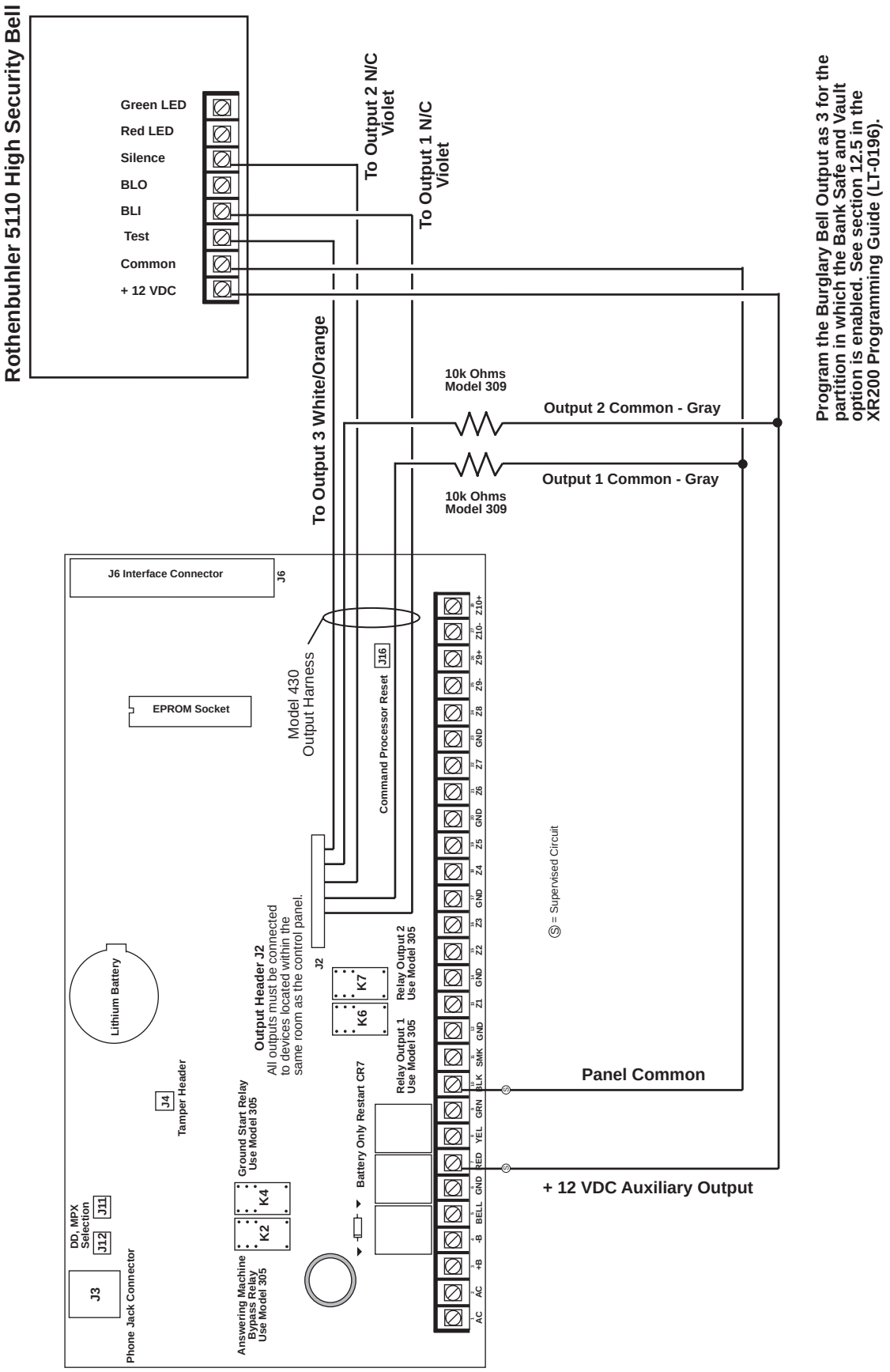
25.6 Supervised remote relay



25.7 Cellular backup installation for Derived Channel burglary



25.8 Rothenbuhler 5110 High Security Bell wiring



25.9 LX-Bus™ Module Connection