693, 791, 793 Easy Entry™ Keypads

Description

The DMP 693, 791, and 793 Easy Entry™ LCD Keypads are the industry's first burglary/fire keypads with integrated access control capability.

Each keypad provides three 2-button Panic keys, an AC power LED, an Armed LED, 32-character display, backlit keyboard with easy-to-read lettering and an internal speaker. The 791 and 793 also provide four fully programmable Class B, Style A protection zones you can program for a variety of burglary, fire, and access control applications.

Removing the Base

The keypad housing is made up of two parts: the front, which contains the circuit board and other components, and the base. To remove the base, insert a flat screwdriver into one of the openings on the bottom and gently twist while pulling the halves apart. Repeat with the other opening.

Installing the Keypad

The Easy Entry keypads each use the same plastic housing. They both are designed to easily install on any 4" square box, 3-gang switch box, 695 and 696 backbox, or flat surface. Figure 1 shows the mounting hole locations on the keypad base.

Harness Wiring

The 693 is supplied with one 4-wire data bus harness and one 5-wire output reader harness. The 791 and 793 keypads are each supplied with one 12-wire data bus/zone harness and one 5-wire output/reader harness. The harness connections and color codes are shown in Figure 1.
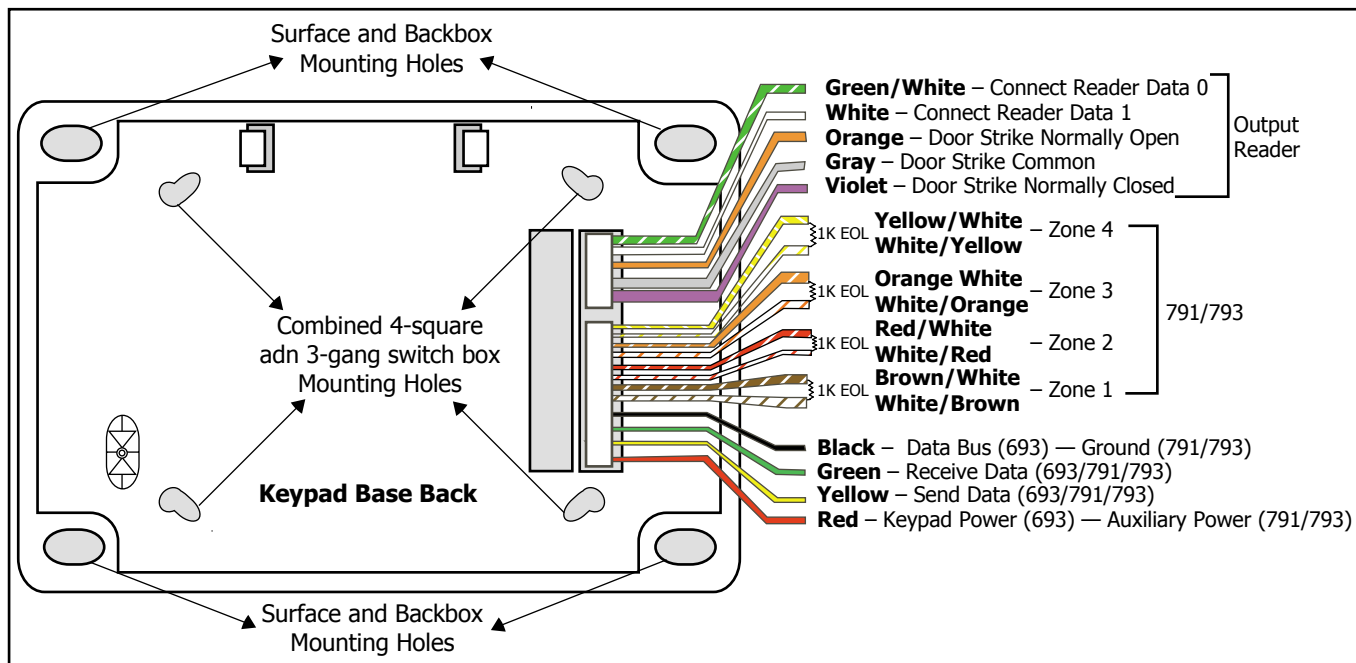

Figure 1: Keypad Back showing Wiring Harness assignments

Wiring Specifications

When planning an installation, keep in mind the following four specifications:

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. 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. Install an additional power supply to increase the wire length or add devices.

2. Maximum distance for any one 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.

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3. Maximum number of devices per 2,500 feet circuit is 40.
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.

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.

Refer to the 710 Module Installation Sheet (LT-0310) for more information. Also see the LX-Bus/Keypad Bus Wiring Application Note (LT-2031).

Voltage Protection Diode

Each keypad includes a separate clamping diode. This diode may be installed across an electromagnetic lock power inputs to shunt excessive voltages away from the keypad. Install diode as shown in Figure 2.
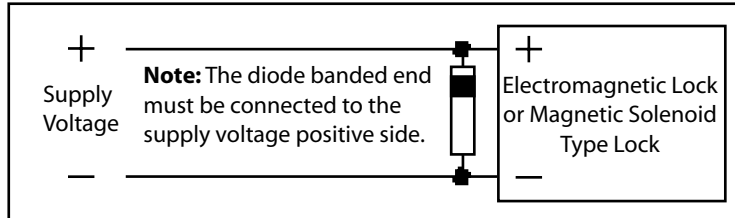

Figure 2: Voltage Diode Installation

2-Button Panic Keys

The Panic key function of the 693, 791, and 793 keypads allows users to send Panic, Emergency, or Fire reports to the central station. The user must press and hold the two Select keys until a beep from the keypad is heard. At the beep, the panel sends an alarm report to the central station with the following zone numbers:

- 19 = **Panic**
- 29 = non-medical **Emergency**
- 39 = **Fire**

You must program the Panic key function in order to use the Panic keys. See Programming Instructions later in this document. Install the supplied icon label below the top row of Select keys.
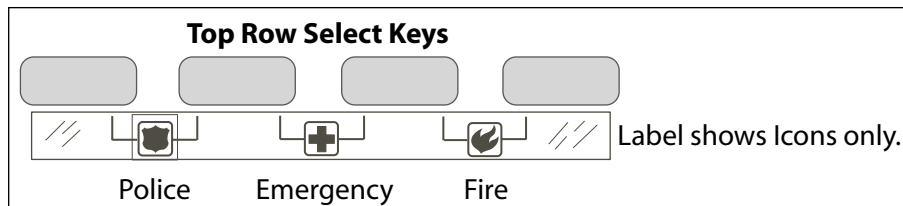

Figure 3: Panic key label placement

Internal Speaker Operation

The Easy Entry keypads emit standard tones for key presses, entry delay, and system alerts. When used with the XR200, XR200-485, XR2400F, or XR500XR500N Command Processor Panels, the speaker also provides distinct burglary, fire, zone monitor, and prewarn tones. The Easy Entry keypads provide an alternate entry delay audible prewarn cadence that occurs when a zone alarm displays in the status list.

Keyboard Backlighting

The Easy Entry keyboards light any time a key is pressed or the speaker sounds. During an alarm condition, the keyboard turns Red to visually alert on-site staff. The Red backlighting turns off when all areas in the system are disarmed or when the Sensor Reset function is used. The keypad backlighting dims to medium brightness whenever the speaker is on.

How the Easy Entry Keypads Work

The 693, 791, and 793 keypads allow users to present a proximity credential to an access control reader that in turn sends their user code to the keypad. Users can also manually enter their user code into the keypad. The keypad reads the user code, verifies its authority with the panel, and then powers its on-board Form C relay releasing a door strike or magnetic lock.

Door Contact Zone with Soft-Shunt™
If the door being released by the keypad is protected, you can provide a 40-second shunt by connecting its contact to zone 2 (White/Red pair) on the keypad and enabling the Soft-Shunt feature. See ACTIVATE ZONE 2 SHUNT and Door Strike Relay Operation in this document. Once the door strike relay is activated, the user has 5 seconds to open the door connected to zone 2. The zone is then shunted for 40 seconds. Door contacts may be N/C or N/O.

Zone 3 Request-to-Exit
You can also connect a normally open PIR (or other motion sensing device) or a mechanical switch to zone 3 (White/Orange pair) on the keypad to provide a request to exit capability to the system. See ACTIVATE ZONE 3 EXIT in this document. When zone 3 shorts, the keypad relay activates for 3 seconds. During this time, the user can open the protected door to start the 40-second Soft-Shunt entry/exit timer. If the door is not opened within 3 seconds, the relay restores the door to its locked state.

Note: A zone 3 Request-to-Exit is inhibited for 3 seconds after the keypad reads a card and a door strike occurs. This is to allow entry to the area and pass under a Request-to-Exit PIR.

12 VDC Access Control Readers
To use 12 VDC readers with the keypad, connect the Red and Black power wires from the reader to the power wires from the panel. These connect in parallel with the keypad power wires. Connect the White data wire from the reader (Data 1) to the White wire on the 5-wire keypad harness. Connect the Green data wire from the reader (Data 0) to the Green/White wire on the 5-wire keypad harness.
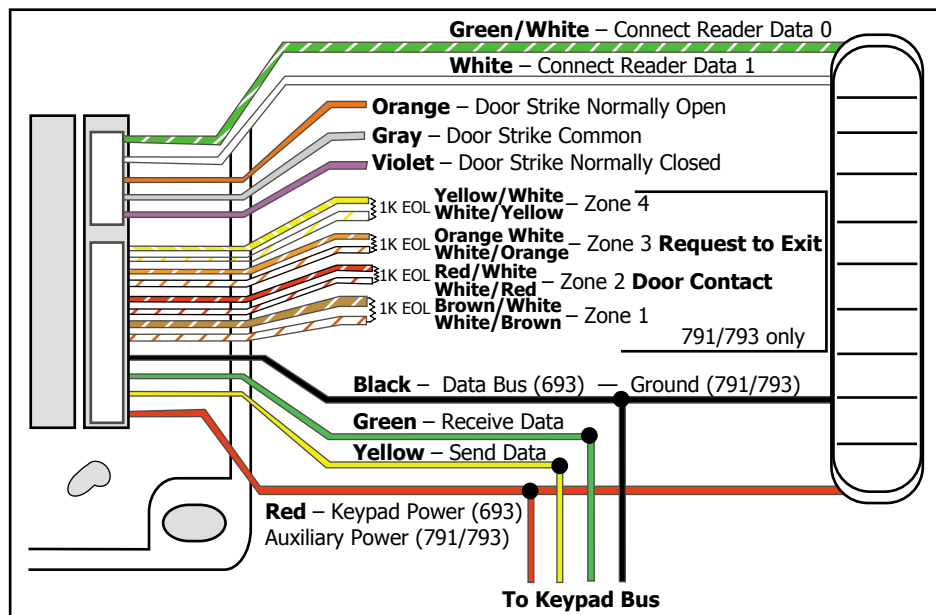

Figure 4: 12 VDC Reader Wiring

End-User Options

The 693, 791, and 793 Easy Entry™ Keypads provide three adjustments to the keypad that can be made by the end-user through a User Options Menu. The user can also view the keypad model number and address in User Options. Below is a description of the adjustments and their operation instructions.

To access the User Options portion of the keypad, press and hold the Back Arrow and COMMAND keys for two seconds. The keypad display changes to SET BRIGHTNESS. Use the COMMAND key to display the next Option or press the Back Arrow key to exit the User Options function.

Backlighting brightness
Set the keypad LCD Display brightness level, AC LED, and the Green keyboard backlighting. Use the left Select key to lower the keypad brightness and the right Select key to raise the brightness. If the brightness level is lowered, it reverts to maximum intensity whenever a key is pressed. If no keys are pressed, and the speaker has not sounded for 30 seconds, the user-selected brightness level restores.

Internal speaker tone
Set the keypad internal speaker tone. At the SET TONE display, use the left Select key to lower the tone and the right Select key to raise the tone.

Volume Level

Set the keypad internal speaker volume level for key presses and prewarn conditions. During alarm and trouble conditions, the volume is always at maximum level. Use the left Select key to decrease the keypad volume and the right Select key to increase the volume. Press the COMMAND key to display the Model Number.

Model Number

The LCD displays the model number, the version and date of the keypad firmware. The user cannot change this information in User Options.

Keypad Address

The LCD displays the current keypad address. While in User Options, the user cannot change the keypad address. Press the Back Arrow key to exit the User Options function.

Installer Options Menu

The Easy Entry keypads also contain a Keypad Options and Keypad Diagnostic program that allow installers and service technicians to configure and test keypad operation.

You can only access the Installer Options Menu through the User Options function. After holding down the Back Arrow and COMMAND keys for a few seconds, when the SET BRIGHTNESS prompt displays, enter the code 3577 (INST) and press COMMAND. The display changes to KPD OPT (keypad options) KPD DIAG (keypad diagnostics) and STOP.

Keypad Options (KPD OPT)

This option allows you to set the keypad address, select supervised or unsupervised mode, change the default keypad message, individually arm the 2-button Panic keys, and select Soft-Shunt, Request-to-Exit, and 4-digit entry cards. To program keypad options, press the left Select key under KPD OPT. The display changes to CURRENT KEYPAD ADDRESS: # #.

Set the CURRENT KEYPAD ADDRESS:

You can set the keypad address from 01 to 05 with the XRSuper6 and XR20, from 01 to 09 with the XR40, XR200, XR2400F, and 01 to 16 with the XR200-485 and XR500/XR500N. The factory default address is set at 01. To change the current address, press any Select key and then enter the new address using the appropriate number keys on the keyboard. It is not necessary to enter a leading zero for addresses 01 to 09.

Select Supervised or Unsupervised KEYPAD MODE:

You can configure the keypad for either supervised or unsupervised operation. Supervise keypads that have zones connected to them. Supervised keypads cannot share addresses with other keypads. To enhance the supervision feature, assign an output to the Device Fail Output in panel programming and connect a device to the corresponding output that trips when the keypad fails. This provides notification at the central station and the site. The other keypads do not display the device fail.

Unsupervised keypads can operate with other unsupervised keypads sharing the same address. Zones cannot be used on unsupervised keypads. To change the current setting, press the Select key under SUP or UNSUP. An asterisk appears next to the selected option.

Note: An unsupervised address cannot be programmed for Device Fail Output.

Change the DEFAULT KEYPAD MESSAGE:

You can enter a custom message of up to 16 characters to appear on the keypad display top line whenever that line is not used for any other purpose. Press any Select key to clear the current display and use the data entry keys to enter a new custom display.

Entering Alpha Characters

You can use the keypad to enter alpha characters. To enter an alpha character, press the key that has the desired letter written below it. The keypad display shows the number on that key. To change the number to a letter, press the top row Select key that corresponds to the letter location under the key. For example, if you press key number 1, the letters for that key are A, B, and C. Press the first Select key for A, the second Select key for B, and the third Select key for C.
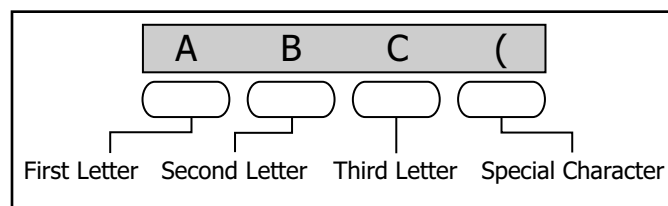

Figure 5: Entering Alpha Characters

Entering Non-Alphanumeric Characters

When in the Installer Options Menu, each key also has a special, non-alpha character you may use. These characters are not shown on the keypad. Enter a space by pressing 9 then the third Select key. The special characters available are as follows starting with the 1 digit key to the 9 digit key: ( ) ! ? / & $, ' and - . * # for the 0 key.
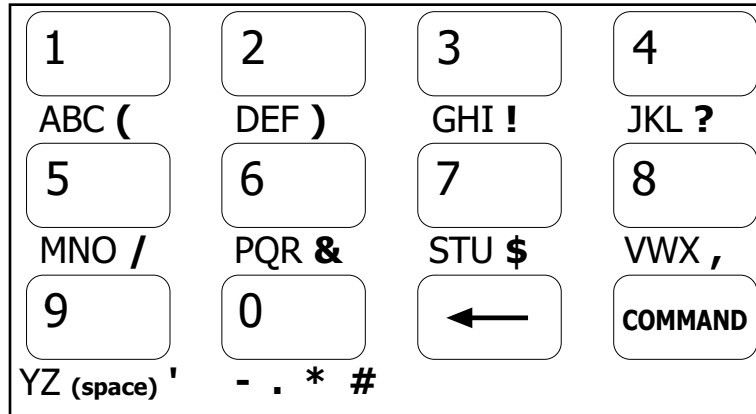

Figure 6: Keys with non-alpha characters

ARM PANIC KEYS:

Use this option to configure the top row Select keys as 2-button Panic keys. To enable or disable a Panic, press the Select key under the appropriate display: PN (Panic), EM (Emergency), and FI (Fire). Once the panic is enabled, an asterisk displays next to the description. Refer to the 2-Button Panic Keys section earlier in this document.

Burglary Zones

On 791 and 793 keypads, zones 1 and 4 can be used as burglary protection zones. See Figure 1 for information on zone wiring from the keypad harness.

ACTIVATE ZONE 2 SHUNT: NO YES

Select YES to enable the Soft-Shunt™ feature on zone 2. This zone provides the Soft-Shunt™ for door contacts. Zone 2 must be programmed into the panel.

ACTIVATE ZONE 3 EXIT: NO YES

Select YES to enable the Request to Exit feature on zone 3. Zone 3 is included in panel programming by default.

4 DIGIT ENTRY CARDS: NO YES

Select YES to enable the 4-Digit Entry Cards function on Home/Away or other systems that require 4-digit user codes.

ALL? NO YES DELAY: 2

Select the number of seconds the keypad should wait when an area system displays ALL? NO YES during arming/disarming or a HOME/SLEEP/AWAY system waits during arming only. If No or YES, or HOME, SLEEP, or AWAY is not pressed before the delay expires, the keypad automatically selects the YES or the AWAY key. Select zero (0) for no delay. The delay can be one to nine (1-9) seconds. The delay also occurs when a Wiegand card is presented for arming the Home/Sleep/Away system. After a card is presented, HOME SLEEP AWAY displays. The keypad waits the programmed number of seconds before automatically sending AWAY to the panel.

Keypad Diagnostics (KPD DIAG)

This option allows you to check the display segments, check the keyboard backlighting, and test individual keys.

Press the Select key under KPD DIAG. The keypad lights all display segments and illuminates the keyboard in green. A few seconds later the keypad turns the display off and illuminates the keyboard in red. The keypad then alternates between these two states for approximately two minutes.

Press COMMAND at any time to continue. The display changes to PRESS KEY TO TEST. This option allows you to test each key on the keyboard to ensure it is operating properly. Press and hold each key for about two seconds. The key number being held appears in the display. Verify the correct number displays before testing the next key.

Zone test

This option allows the keypads to display the current electrical status of the four protection zones. The status is shown as OPEN, SHRT, or OKAY.

INPUT WIEGAND

This option tests the reader input from proximity cards. The display shows OKAY each time a good card is read.

Exiting the Installer Options

When done, press the COMMAND key once to return to the Installer Options screen. Press the Select key under STOP to exit the Installer Options function.

Programming Cards into the System

From the User Menu, select USER CODES?. Choose ADD. At the ENTER CODE: - display, present the user card to the reader. The keypad works by reading the 4 or 5-digit user code from the data sent by the access control reader. For more information, refer to the panel user's guide section on adding, deleting, and changing user codes.

Additional Power Supply

If the current draw for all keypads exceeds the panel output, you can provide additional current by adding a Model 505-12 auxiliary power supply. Connect all keypad common wires to the negative terminal of the power supply. Run a jumper wire from the power supply negative terminal to the panel common terminal. Connect all keypad power (+12 VDC) wires to the power supply positive terminal. Do NOT connect the power supply positive terminal to any panel terminal. Refer to the 504-24 and 505-12 Power Supply Installation Guide (LT-0453) for more information.

701 and 793 Door Strike Relay Specifications

The Easy Entry keypads provide one internal Form C single pole, double throw (SPDT) relay for controlling door strikes or magnetic locks. Three wires on the 5-wire harness, Violet (N/C), Gray (Com), and Orange (N/O), allow you to connect devices to the relay.

The Form C relay draws up to 30mA of current and its contacts are rated for 1 Amp at 24 VDC.

Access the User Menu

You can also use a card reader to access the User Menu. When the MENU? NO YES displays, present your proximity card to the reader.

Door Strike Relay Operation

As soon as the user code sent from the reader has been verified by the panel, the keypad Door Strike relay activates for five seconds. During this time, the access door connected to zone 2 must be opened to start the 40-second entry/exit timer and zone soft shunt. See the timeline shown below.

Note: The 5-second delay length is programmable when the keypad is used on an XR200-485 or XR500/XR500N.
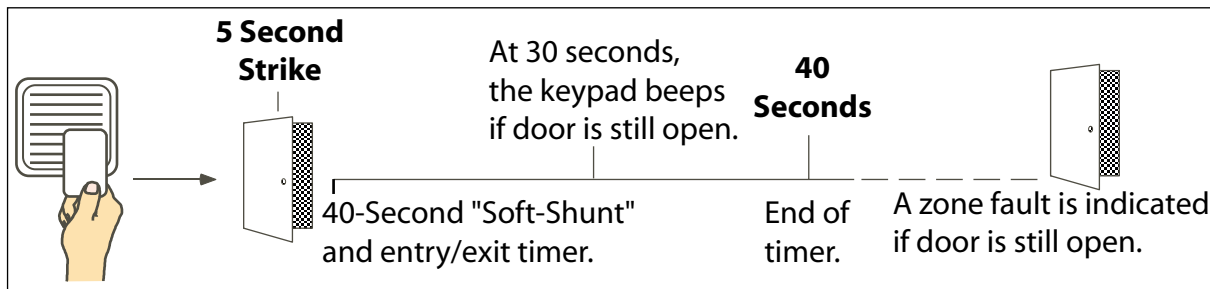

Figure 7: Door Strike Relay operation time line

User's Guide

There are three different operating modes: Door Strike, Arming and Disarming, and Entry Delay. All of the examples below assume that CLOSING CODE is YES in panel programming.

Door Strike

Area and All/Perimeter Door Strike. From the Status List, present your card to the reader. Once the system validates the card, the Door Strike relay activates. See Door Strike Relay Operation above. Home/Away systems only activate the Door Strike relay when arming and disarming.
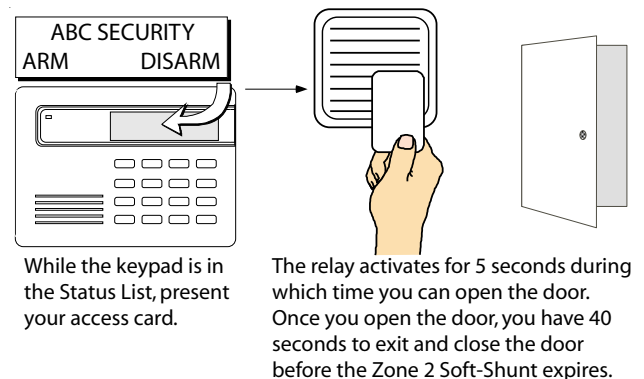

While the keypad is in the Status List, present your access card.

The relay activates for 5 seconds during which time you can open the door. Once you open the door, you have 40 seconds to exit and close the door before the Zone 2 Soft-Shunt expires.

Figure 8: Present access card

Arming and Disarming

Area system Arming and Disarming. Press COMMAND, the keypad displays ARM   DISARM. Press the Select key under either option. The keypad displays ENTER CODE: -. Present your card to the reader. Once validated by the system, all areas accessible by you arm or disarm automatically and the Door Strike relay activates.
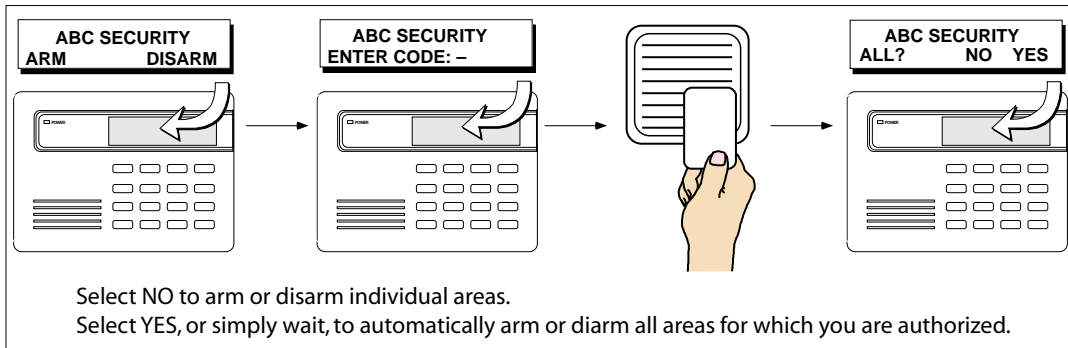

Select NO to arm or disarm individual areas.
Select YES, or simply wait, to automatically arm or diarm all areas for which you are authorized.

Figure 9: Area Arming and Disarming

All/Perimeter system Arming and Disarming. Press COMMAND, the keypad displays PERIM ALL (when arming) or DISARM?. Press the Select key under the desired option. The keypad displays ENTER CODE: -. Present your card to the reader. Once validated by the system, both areas arm or disarm automatically and the Door Strike relay activates.

Home/Away system Arming and Disarming. Present your card to the reader. If the system is armed, once the card is validated all areas are disarmed.

If the system is disarmed when you present your card, once the card is validated all areas are armed in the AWAY mode.

The system arms or disarms the areas and activates the door strike relay.

Figure 10: All Perimeter Arming and Disarming

ENTRY DELAY

All Systems. Once the protected door is opened and the entry delay starts, the keypad displays ENTER CODE: -. Present your card to the reader. Once validated, the system disarms all areas accessible by you and activates the Door Strike relay. Area systems provide a delay to allow selected areas only to be disarmed. See Arming and Disarming above.
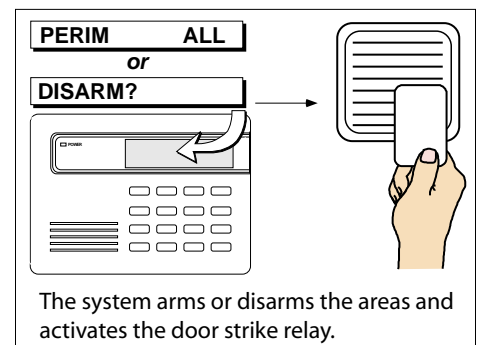

Access door opens.
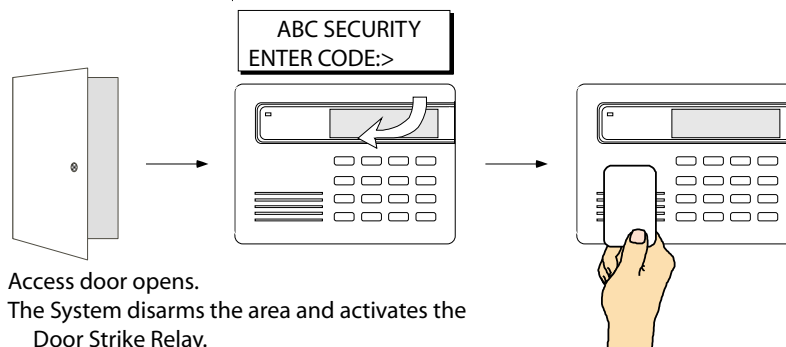The System disarms the area and activates the Door Strike Relay.

Figure 11: Entry Delay

Compatible Access Devices

The 693, 791, and 793 Keypads are compatible with the following readers.

Readers	Standby Current	Peak Current
PP-6005B ProxPoint Plus	30mA	75mA
MP-5365 MiniProx	20mA	110mA
PR-5455 ProxPro II	25mA	125mA
MX-5375 Maxi-Prox	200mA	700mA
TL-5395 ThinLine II	20mA	115mA

Current Draw

Keypad	Voltage	Normal Standby	Alarm
693			
791	8 VDC	46mA + 1.6mA per active zone	56mA + 2mA per active zone
	14.5 VDC	77mA + 1.6mA per active zone	84mA + 2mA per active zone
793	8 VDC	62mA + 1.6mA per active zone	88mA + 2mA per active zone
	14.5 VDC	92mA + 1.6mA per active zone	120mA + 2mA per active zone

FCC Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications made by the user and not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Specifications

Operating Voltage   8 - 14.5 VDC

Dimensions   6.5" W x 5" H x 1" D

Panel Compatibility

DMP Command Processor™ Panels

XRSuper6, XR20, XR40

XR200, XR200-485, XR2400F

XR500, XR500N

Approvals

- Underwriters Laboratories
- New York Material Equipment Acceptance (MEA)
- California State Fire Marshal (CSFM)
- Factory Mutual (FM)