

Price \$15.00



PREMIUM VISION® WARNING SYSTEM (with Slide Switch Control Head)



OPERATION AND CONFIGURATION INSTRUCTIONS

LIMITED WARRANTY

The Signal Division, Federal Signal Corporation (Federal), warrants each new product to be free from defects in material and workmanship, under normal use and service, for a period of two years on parts replacement and one year on labor from the date of delivery to the first user-purchaser.

During this warranty period, the obligation of Federal is limited to repairing or replacing, as Federal may elect, any part or parts of such product which after examination by Federal discloses to be defective in material and/or workmanship.

Federal will provide warranty for any unit which is delivered, transported prepaid, to the Federal factory or designated authorized warranty service center for examination and such examination reveals a defect in material and/or workmanship.

This warranty does not cover travel expenses, the cost of specialized equipment for gaining access to the product, or labor charges for removal and re-installation of the product. Lamps, flash tubes, or batteries are not covered under warranty.

This warranty does not extend to any unit which has been subjected to abuse, misuse, improper installation or which has been inadequately maintained, nor to units which have problems relating to service or modification at any facility other than the Federal factory or authorized warranty service centers.

THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL FEDERAL BE LIABLE FOR ANY LOSS OF PROFITS OR ANY INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY SUCH DEFECT IN MATERIAL OR WORKMANSHIP.



FEDERAL SIGNAL CORPORATION

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SECTION I OPERATION

SAFETY MESSAGE TO OPERATORS OF FEDERAL SIGNAL LIGHT/SOUND SYSTEMS

WARNING

The lives of people depend on your safe operation of Federal products. It is important to read and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

Qualifications

- To properly use a light system: you must have a good understanding of general vehicle operation, a high proficiency in the use of safety warning equipment, and thorough knowledge of state and federal UNIFORM TRAFFIC CODES.

Sound Hazards

- Your hearing and the hearing of others, in or close to your emergency vehicle, could be damaged by loud sounds. This can occur from short exposures to very loud sounds, or from longer exposures to moderately loud sounds. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 offers guidance on “Permissible Noise Exposure.”
- All effective sirens and horns produce loud sounds which may, in certain situations, cause permanent hearing loss. You should minimize your exposure times and wear suitable hearing protection.

Sound Limitations

- Maximum sound output will be severely reduced if any objects are in front of the speaker. If your installation has obstructions in front of the speaker, drive even more cautiously.
- Frequently inspect the speaker to ensure that it is clear of any obstruction, such as mud or snow, which will reduce maximum sound output.

Signaling Limitations

- Be aware that the use of your visual and audible signaling devices does not give you the right to force your way through traffic. Your emergency lights, siren, and actions are REQUESTING the right-of-way.

- Although your warning system is operating properly, it may not alert everyone. People may not hear, see, or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Situations may occur which obstruct your warning signal when natural or man-made objects are between your vehicle and others, such as when you raise your hood or trunk lid. If these situations occur, be especially careful.
- The control head’s LED display simulates the light pattern(s) being executed by the warning system. The display is intended ONLY as a guide and NOT as an indication of proper warning system operation. Before using the warning system, its operation should be observed from outside the vehicle.

Driving Limitations

- At the start of your shift, you should ensure that the warning system is securely attached to the vehicle and operating properly.
- If the unique combination of emergency vehicle equipment installed in your vehicle has resulted in the light/siren controls being installed in a position that does not allow you to operate them by touch only, OPERATE CONTROLS ONLY WHILE YOUR VEHICLE IS STOPPED.
- If driving conditions require your full attention, you should avoid operating the light/siren controls while the vehicle is in motion.

Continuing Education

- File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to new recruits and trainees.

Failure to follow these safety precautions may result in property damage, serious injury, or death to you, to passengers, or to others.

1-1. GENERAL.

IMPORTANT

Since most Premium Vision features are programmable, operation is described only for the keyboard configurations' factory (default) settings. System configuration and any changes to the keyboard configurations (if any) **MUST** be provided to the operator by the installer or person responsible for programming. It is the operator's responsibility to understand how his particular system is configured (programmed) to operate.

The Premium Vision control head is designed to assist the operator's selection of functions. Each control head switch is recessed and aids guiding the operator's finger to the switch's center for activation. When a switch is pressed, "tactile feedback" provides function selection indication as follows: a click is felt, a beep is heard, and the selected function's LED is illuminated. Also, the control head's V-shaped LED display acts **ONLY AS A GUIDE** while it simulates, but does not necessarily indicate, proper system operation. If the optional SignalMaster directional light is installed, the control head display simulates the directional light pattern being executed.

To alert the driver that a function is selected, a function indicator sound (double beep) can be enabled as described in Section II Configuration. This feature can be very useful if a brake light cutoff is in use.

Two selectable keyboard configurations are available. Only one keyboard configuration can be selected at a time. Keyboard Configuration 2 has a different function assigned to each of the control head switches, and Keyboard Configuration 3 is "open" (no functions assigned) allowing selection of up to eleven patterns. Keyboard configuration selection and pattern selection (described in Section II) is performed, if required, when the warning system is installed.

The keyboard configurations are as follows:

- Keyboard Configuration 1 (Federal Signal use only).
- Keyboard Configuration 2 (POLICE).
- Keyboard Configuration 3 (CLEAR-BOARD).

WARNING

Peoples' lives depend on your safe operation of this warning system. Ensure that you are thoroughly familiar with the selected keyboard configuration's function selection and warning system operation.

1-2. POWER-UP.

The Premium Vision warning system does not have a separate on-off switch. It is usually wired to the vehicle's ignition switch and is enabled when the vehicle's ignition switch is "on".

If a user-supplied switch is installed, enable the system by operating the switch to its "on" position.

CAUTION

The Premium Vision warning system draws approximately 3.0A (all functions deactivated) and will eventually discharge the vehicle battery. Do not leave the system powered-up unless the vehicle engine is running.

After power is applied, the system will power-up as follows:

A. The system performs a self-test. During the self-test, the keyboard will not operate the warning system and the reflectors in the lightbar will rotate to the "home" position.

B. After the self-test is completed, the RESET LED and the WAIL LED are illuminated. In addition, the control head will sound a beep to indicate the warning system is now ready for use.

NOTE

If the self-test is unsuccessful, the V-shaped LED display will flash and a beeping self-test failure signal will sound. This failure indication may be caused by lamp failure, communication link failure, or other failure.

Press the RESET switch to clear the failure indication. If the failure indication is cleared, observe for proper warning system operation from outside the vehicle. Lamps are tested only once during power-up and should be observed from outside the vehicle. If the failure indication is persistent, the warning system should be serviced before use.

1-3. LED ILLUMINATION INTENSITY ADJUSTMENT.

The bright LED's provide maximum visibility in high ambient lighting conditions. The RESET LED illumination intensity can be adjusted from bright illumination to dimmed, dimmer, or extinguished for night operations. The backlighting illumination intensity does not change, but does extinguish when the RESET LED is extinguished.

To adjust, proceed as follows:

A. Switch the slide switch to the OFF position. If any other functions are activated, press the RESET switch. The RESET LED should be illuminated.

B. Press the RESET switch again to decrease the LED illumination intensity.

C. Continue to press the RESET switch until the desired LED illumination intensity and back-lighting are achieved.

NOTE

Operating the foot switch (if installed), or pressing any control head switch (except RESET) will cause the LED illumination intensity to revert to bright illumination.

Also, the LED illumination intensity will revert to bright illumination when the vehicle ignition switch, or user-supplied switch, is switched “off” and switched “on”.

1-4. PARK-SIREN DEACTIVATOR.

This feature uses the foot switch (pursuit) wire to automatically deactivate siren tones when the vehicle is shifted into PARK.

If installed, shift the vehicle into PARK to deactivate siren tones.

1-5. FOOT SWITCH.

NOTE

When the Model V7PSS is shipped from the factory, the foot switch (pursuit) function is NOT ACTIVATED. The procedure for activating the foot switch (pursuit) function is described in Section II Configuration.

Either the *pursuit function* **or** the *park-siren deactivator function* can be selected. Both functions are not available at the same time. It is the operator's responsibility to know which function is available.

Operating the optional foot switch will alternate between the slide switch position 3 function (usually Mode 3) and the slide switch position 2 function (usually Mode 2). If installed, operate the foot switch to activate the slide switch position 3 function. Operate the foot switch again to deactivate the slide switch position 3 function and activate the slide switch position 2 function. Operating the foot switch a third time does not deactivate the warning system; it will deactivate the slide switch position 2 function and reactivate the slide switch position 3 function.

To deactivate a foot switch activated function, operate the reset switch (switch 4).

1-6. HORN RING TRANSFER.

NOTE

Switch 15 (MAN) operates the same as the horn ring when Mode 2 or Mode 3 is selected.

The Premium Vision's horn ring transfer feature allows activating a light pattern/siren tone associated with the vehicle's horn ring. In this keyboard configuration, the horn ring is transferred when Mode 2 or 3 is activated. The chart below demonstrates how the horn ring transfer function can change the light pattern/siren tone.

HORN RING TRANSFER FUNCTION

Selected Siren Tone	First Horn Ring Press Produces	Second Horn Ring Press Produces
WAIL	175FPM Sync. Center Out/Yelp	Original light pattern/Wail

An alternate sound (air horn) can be activated when a siren tone other than wail is selected. Press and hold the horn ring for as long as the alternate sound is desired. Note that the light pattern does not change. The chart below shows the “Press and Hold” functions.

HORN RING TRANSFER PRESS AND HOLD FUNCTIONS

Selected Siren Tone	Press on Horn Ring Produces	Release of Horn Ring Produces
YELP	Air Horn	Yelp
H/L	Air Horn	H/L
PRIORITY	Air Horn	Priority
none	Peak and Hold	silence

1-7. KEYBOARD CONFIGURATIONS.

IMPORTANT

The control head's LED display simulates the light pattern(s) being executed by the warning system. The display is intended ONLY as a guide and NOT as an indication of proper warning system operation.

Before using the warning system, its operation should be observed from outside the vehicle.

The installer or person responsible for configuration MUST provide you with information regarding

ANY changes to the described keyboard configuration. It is YOUR responsibility to understand how this system is configured (programmed) to operate.

NOTE

Keyboard Configuration 2 (preselected at the factory) is referred to as the default keyboard configuration .

A. Keyboard Configuration 2 (POLICE).

NOTE

Refer to figure 1-1 while reading paragraph 1-7.A.

1. Slide Switch Position 1 (MODE 1).

Slide switch position activates Mode 1. In this keyboard configuration; the center light rotates at 90 FPM and a four-light, alternating, oscillating pattern to the rear is activated. The LED's in the V-shaped display will flash simulating, but not necessarily indicating, the lights are activated and the slide switch position 1 LED illuminates. Return the slide switch to OFF to deactivate Mode 1. The LED's in the V-shaped display and the slide switch position 1 LED will extinguish.

2. Slide Switch Position 2 (MODE 2).

Slide switch position 2 activates Mode 2. In this keyboard configuration, four lights rotate at 90 FPM and three lights oscillate to the front. The wail siren tone will sound. The LED's in the V-shaped display will flash simulating, but not necessarily indicating, the lights are activated and the slide switch position 2 LED will illuminate. Return the slide switch to OFF to deactivate Mode 2. The LED's in the V-shaped display and the slide switch position 2 LED will extinguish. The wail siren tone will silence.

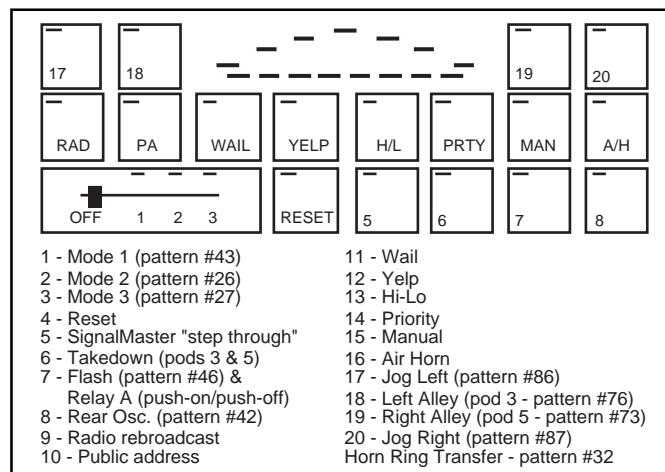


Figure 1-1. Keyboard Configuration 2.

3. Slide Switch Position 3 (MODE 3).

Slide switch position 3 activates Mode 3. In this keyboard configuration, all seven lights rotate in synchronization at 90 FPM creating a center-out pattern. The wail siren tone will sound. The LED's in the V-shaped display will flash simulating, but not necessarily indicating, the lights are activated and the slide switch position 3 LED will illuminate. Return the slide switch to OFF to deactivate Mode 3. The LED's in the V-shaped display and the slide switch position 3 LED will extinguish. The wail siren tone will silence.

4. Switch 4 (RESET).

Press this switch to extinguish all lights (if activated) in the lightbar. The RESET LED will illuminate and the reflectors rotate to the "home" position. All other LED's will extinguish and activated functions will deactivate.

NOTE

The RESET switch may be pressed at any time to deactivate any previously selected function(s). If a slide switch function is activated when the RESET switch is pressed, all activated lights in the lightbar momentarily extinguish. Then the slide switch selected function reactivates.

5. Switch 5 (SignalMaster).

NOTE

This switch may be labeled "LRC-O" indicating—Left, Right, Center out, and Off.

Pressing this switch controls the SignalMaster directional signal (if installed). It provides a flashing arrow signal directing traffic to move to the left, right, or around both sides of the vehicle. In this keyboard configuration, the SignalMaster switch utilizes "step through" activation. Each press of switch 5 steps through the various directional signals.

Switch 5 LED illuminates when the SignalMaster is activated. Also, the row of LED's under the V-shaped display simulates, but does not necessarily indicate, the light pattern being executed by the directional signal.

a. Press switch 5 to activate a left arrow directional signal.

b. Press switch 5 a second time to activate a right arrow signal.

c. Press switch 5 a third time to activate a center out signal.

d. Press switch 5 a fourth time to deactivate the SignalMaster directional signal and the switch 5 LED will extinguish.

6. Switch 6 (TAKE-DOWN).

Press switch 6 to activate the take-down lights. The two lights fitted with clear domes illuminate and rotate to the take-down (straight ahead) position. Two LED's in the V-shaped display (which represent the take-down lights) will illuminate and the switch 6 LED illuminates. Press switch 6 again to deactivate the take-down lights. The LED's in the V-shaped display and switch 6 LED will extinguish. The take-down lights will return to the previously activated function, if any.

NOTE

Take-down lights and alley lights can be aimed or rotated horizontally. Refer to the descriptions for the JOG LEFT and JOG RIGHT switches below.

7. Switch 7 (FLASH).

Press switch 7 to activate a four-light front and rear flashing pattern. Switch 7 also activates the auxiliary device, such as headlight flashers or grille lights, connected to the relay A output. The installer should inform you what device (if any) is connected to the relay A output. The switch 7 LED will illuminate. Press switch 7 again to deactivate the flashing pattern, the auxiliary device, and extinguish the switch 7 LED.

8. Switch 8 (REAR OSCILLATE).

Press switch 8 to activate a four-light, alternating, oscillating pattern to the rear. The LED's in the V-shaped display will flash simulating, but not necessarily indicating, the lights are activated and the switch 8 LED illuminates. Press switch 8 again to deactivate the pattern. The LED's in the V-shaped display and the switch 8 LED will extinguish.

9. Switch 9 (RAD).

Press switch 9 to activate the radio rebroadcast function. The switch 9 LED is illuminated. Incoming radio messages are amplified and rebroadcast by the outside speaker(s). When switch 9 is activated, the radio messages will override all siren tones and public address operations. Press switch 9 again to deactivate the radio rebroadcast function and extinguish the switch 9 LED.

10. Switch 10 (PA).

Switch 10 is used only when the system is configured for a common microphone. The

installer **MUST** inform you if the system is configured for a common microphone.

Press switch 10 to activate the PA function. The switch 10 LED is illuminated. The user-supplied switching device is energized allowing microphone audio to be routed to the PA circuits in the Interface/Relay Unit, instead of the radio transmitter.

Operate the microphone P-T-T (push-to-talk) switch to broadcast voice messages over the outside speaker(s). The voice messages will override any siren tone until the P-T-T switch is released.

NOTE

The PA switch must be activated (common microphone configuration), when the microphone P-T-T switch is operated, or the operator's voice will be broadcast by the radio transmitter.

If a user-supplied switching device is not used, the P-T-T switch will override any siren function and supply public address operation except when switch 9 (RAD) is activated.

Press switch 10 again to deactivate the PA function and extinguish the switch 10 LED.

IMPORTANT

In this keyboard configuration, the siren tones **DO NOT** sound unless Mode 2 or 3 is also activated.

11. Switch 11 (WAIL).

The switch 11 LED is illuminated and the wail siren tone is selected. Press switch 11 to select no siren tone and extinguish the switch 11 LED. Press switch 11 again to select the wail siren tone and illuminate the switch 11 LED.

12. Switch 12 (YELP).

Press switch 12 to select the yelp siren tone and illuminate the switch 12 LED. Press switch 12 again to select no siren tone and extinguish the switch 12 LED.

13. Switch 13 (H/L).

Press switch 13 to select the hi-lo siren tone and illuminate the switch 13 LED. Press switch 13 again to select no siren tone and extinguish the switch 13 LED.

14. Switch 14 (PRIORITY).

Press switch 14 to select the priority siren tone and illuminate the switch 14 LED. Press switch 14 again to select no siren tone and extinguish the switch 14 LED.

15. Switch 15 (MAN).

If a siren is not activated, press and hold switch 15 to sound the peak-and-hold siren tone. The switch 15 LED is illuminated while the switch is pressed. The peak-and-hold siren tone sounds as long as the switch is pressed.

If Mode 2 or Mode 3 is activated (siren and pattern activated), switch 15 (MAN) operates the same as the horn ring.

16. Switch 16 (A/H).

In all modes, press and hold switch 16 to sound the air horn tone. The switch 16 LED is illuminated while the switch is pressed. The air horn tone sounds as long as the switch is pressed.

17. Switch 17 (JOG LEFT).

Press switch 17 to manually position activated take-down/alley lights for use as a spot-light. Each time switch 17 is pressed with a take-down light activated, the light will move one step to the left and the switch 17 LED will illuminate momentarily. Each time switch 17 is pressed with the alley light(s) activated, the light(s) will move one step to the rear and the switch 17 LED will illuminate momentarily. Press and hold switch 17 until the activated light(s) rotates left or rear to the desired position.

18. Switch 18 (LEFT ALLEY).

Press switch 18 to activate the left alley light. The LED in the V-shaped display illuminates to simulate, but not necessarily indicate, which light is activated and the switch 18 LED illuminates. Press switch 18 again to deactivate the left alley light and extinguish the switch 18 LED.

19. Switch 19 (RIGHT ALLEY).

Press switch 19 to activate the right alley light. The LED in the V-shaped display illuminates to simulate, but not necessarily indicate, which light is activated and the switch 19 LED illuminates. Press switch 19 again to deactivate the right alley light and extinguish the switch 19 LED.

20. Switch 20 (JOG RIGHT).

Press switch 20 to manually position activated take-down/alley lights for use as a spot-light. Each time switch 20 is pressed with a take-down light activated, the light will move one step to the right and the switch 20 LED will illuminate momentarily. Each time switch 20 is pressed with the alley light(s) activated, the light(s) will move one step to the front and the switch 20 LED will illuminate momentarily. Press and hold switch 20 until the activated light(s) rotates right or forward to the desired position.

B. Keyboard Configuration 3 (CLEARBOARD).

NOTE

Refer to figure 1-2 while reading paragraph 1-7.B.

1. Switch 4 (RESET).

Press this switch to extinguish all lights (if activated) in the lightbar. The RESET LED will illuminate and the reflectors rotate to the “home” position. All other LED’s will extinguish and activated functions will deactivate.

NOTE

The RESET switch may be pressed at any time to deactivate any previously selected function(s).

2. Slide Switch Positions 1, 2, 3, and Switches 5, 6, 7, 8, 17, 18, 19, 20.

In this keyboard configuration, these switches are not assigned functions. The installer/programmer **MUST** inform you which functions are assigned to the switches.

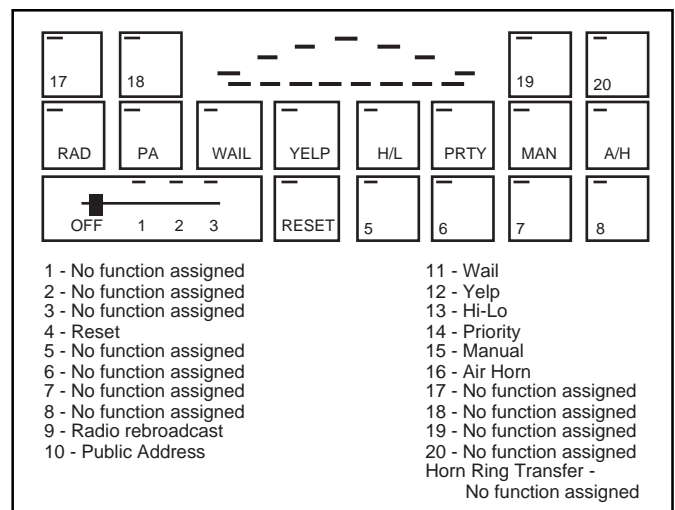


Figure 1-2. Keyboard Configuration 3.

SECTION II CONFIGURATION

WARNING

Property damage, serious injury, or death to you or others may result if the Premium Vision warning system is improperly configured. Configuration, if required, is to be performed at the time of installation. It is NOT intended for operators to “customize” the Premium Vision’s operation for their individual preferences. It is the USER’s responsibility to determine compatibility, suitability, and ensure proper configuration of the Premium Vision warning system.

The person responsible for configuration MUST be familiar with local codes and procedures for safe emergency vehicle warning system operation.

NOTE

After configuration is completed and all functions thoroughly tested, reconfiguration by unauthorized individuals can be prevented by performing the procedure described in CONFIGURATION MODE DISABLE/ENABLE at the end of this section (page 2-8).

CONFIGURATION

GENERAL

Many times, the default just doesn't meet all the needs for a particular installation. When changes need to be made, the control head is used to reconfigure the system.

Since reconfiguration can get somewhat complicated, it is best to figure out exactly what needs to be changed before diving into reconfiguration. Therefore, please take the time to determine your needs before you start reconfiguring.

To assist in determining your needs, there is a WORKSHEET section on the last two pages of this section. It is very important to complete the WORKSHEET. It will help you determine your present needs and will act as a permanent record of how the system is configured.

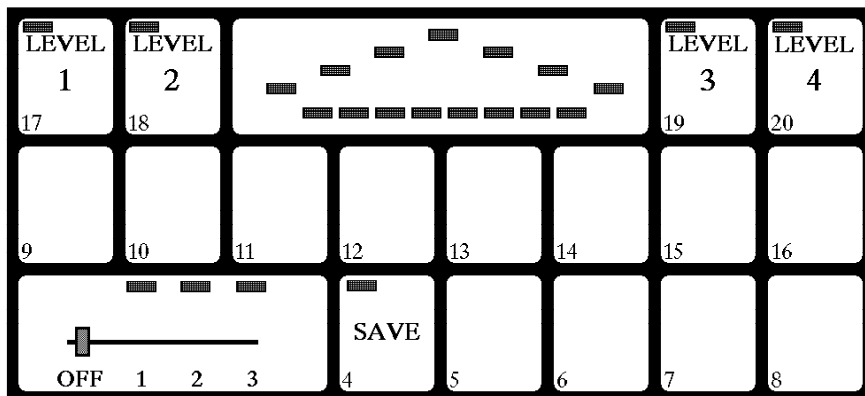
STARTING CONFIGURATION

To enter configuration mode, simply execute the following steps.

1. Power up system and wait for diagnostics to complete.
2. Unplug control head.
3. Press RESET/SAVE and continue holding.
4. Plug control head back in while continuing to hold RESET/SAVE.
5. If configuration entry was successful, the top row of keys and the RESET/SAVE key should be illuminated.

If unsuccessful, go back to step 2.

If successful, go to MAIN MENU.



MAIN MENU

When you successfully enter configuration mode, the MAIN MENU will appear. Keys 17, 18, 19, 20, and the SAVE key will be illuminated.

At this point you have five choices:

- SAVE
- ENTER LEVEL 1
- ENTER LEVEL 2
- ENTER LEVEL 3
- ENTER LEVEL 4

Always leave the Slide Switch OFF while programming!

1. Pressing SAVE will end the configuration session.
2. Pressing key 17 will enter LEVEL 1 (KEYBOARD CONFIGURATION).

If LEVEL 1 is selected, go to the LEVEL 1 section of the manual.

3. Pressing key 18 will enter LEVEL 2 (INDIVIDUAL KEY CONFIGURATION).

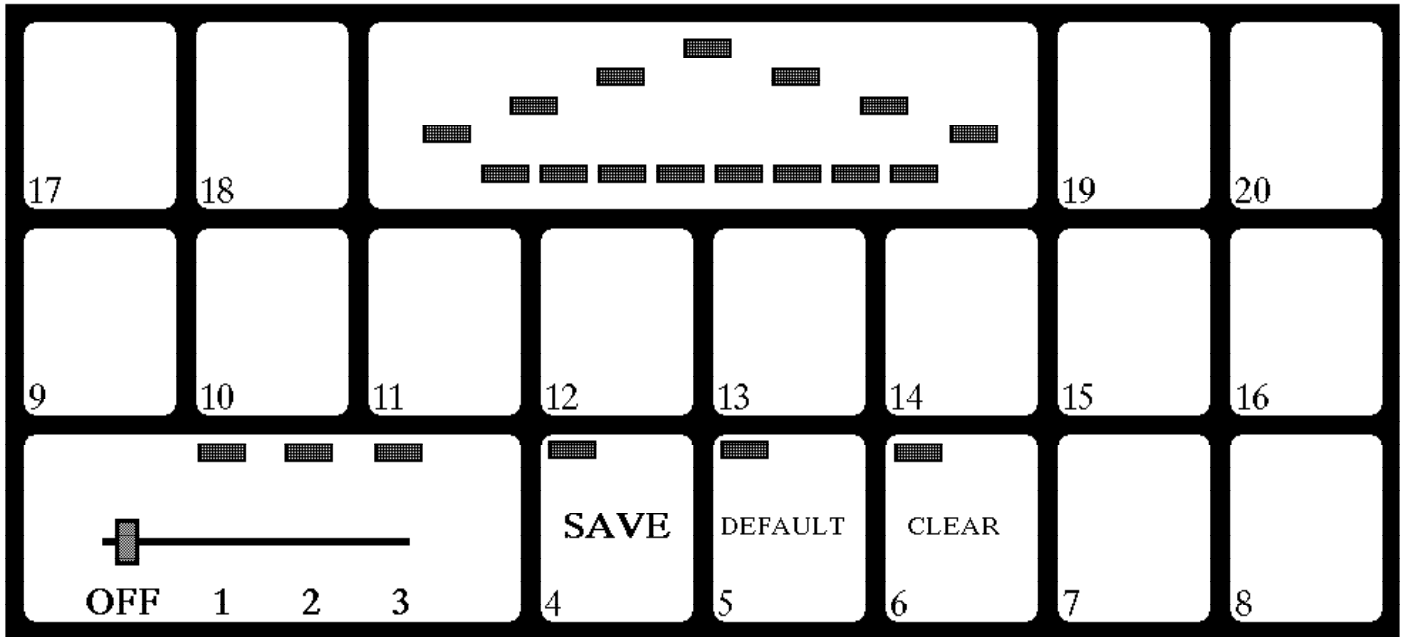
If LEVEL 2 is selected, go to the LEVEL 2 section of the manual.

4. Pressing key 19 will enter LEVEL 3 (SPECIAL FUNCTION CONFIGURATION).

If LEVEL 3 is selected, go to the LEVEL 3 section of the manual.

5. Pressing key 20 will enter LEVEL 4 (SIREN CONFIGURATION).

If LEVEL 4 is selected, go to the LEVEL 4 section of the manual.



GENERAL

In LEVEL 1 you have three choices:

1. Pressing key 6 will select CLEAR.
2. Pressing key 5 will select DEFAULT.
3. Pressing key 4 to save selection and return to MAIN MENU.

Always leave the Slide Switch OFF while programming!

Important Note:

Selecting CLEAR or DEFAULT will erase all Level 2, 3, or 4 changes made previously.

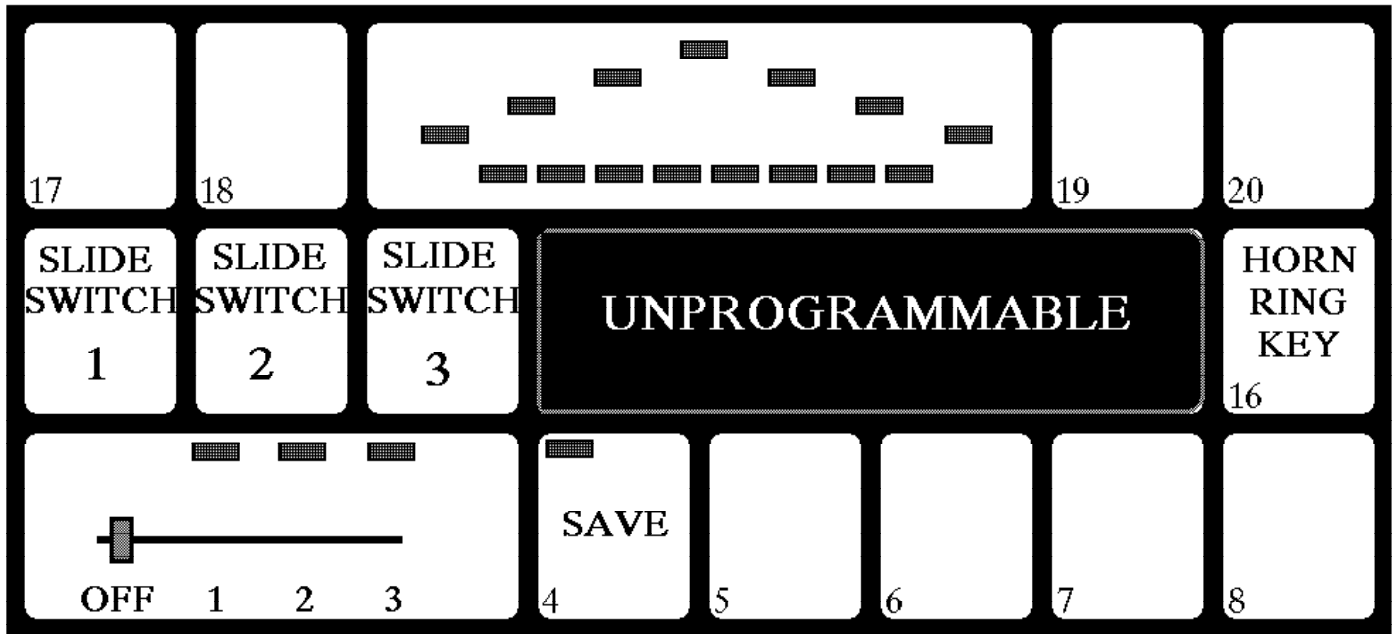
CLEAR KEYBOARD

Selecting CLEAR will clear all keys on the keyboard to give you a clean slate to do LEVEL 2 configuration.

DEFAULT KEYBOARD

Selecting DEFAULT will set the Keyboard to the default settings. The default settings are those described in the Operating section of this manual.

LEVEL 2



GENERAL

LEVEL 2 is used to reconfigure individual keys. Only certain keys are reconfigurable. They are displayed in the above graphic.

To reconfigure a key, simply press the key you wish to reconfigure. Once the key is pressed, go to LEVEL 2 - KEYS (next page) to see how that key is configured and how to reconfigure it.

When all the keys are configured the way you wish, press the SAVE key to save changes and return to the MAIN MENU.

PROGRAMMING SLIDE SWITCHES

To program the slide switches, simply press the appropriate key above the slide switch to enter LEVEL 2 - KEYS (next page).

IMPORTANT NOTES:

Slide switch positions must be programmed with a Pattern to assure proper operation.

Slide Switches must be programmed as Push-On/Push-Off.

HORN RING KEY

On typical Siren systems that are equipped with the TAPII function, when the Horn is pressed, the Siren changes. With Vision Premium, the *siren and the lights* have the capability of changing with the Horn press.

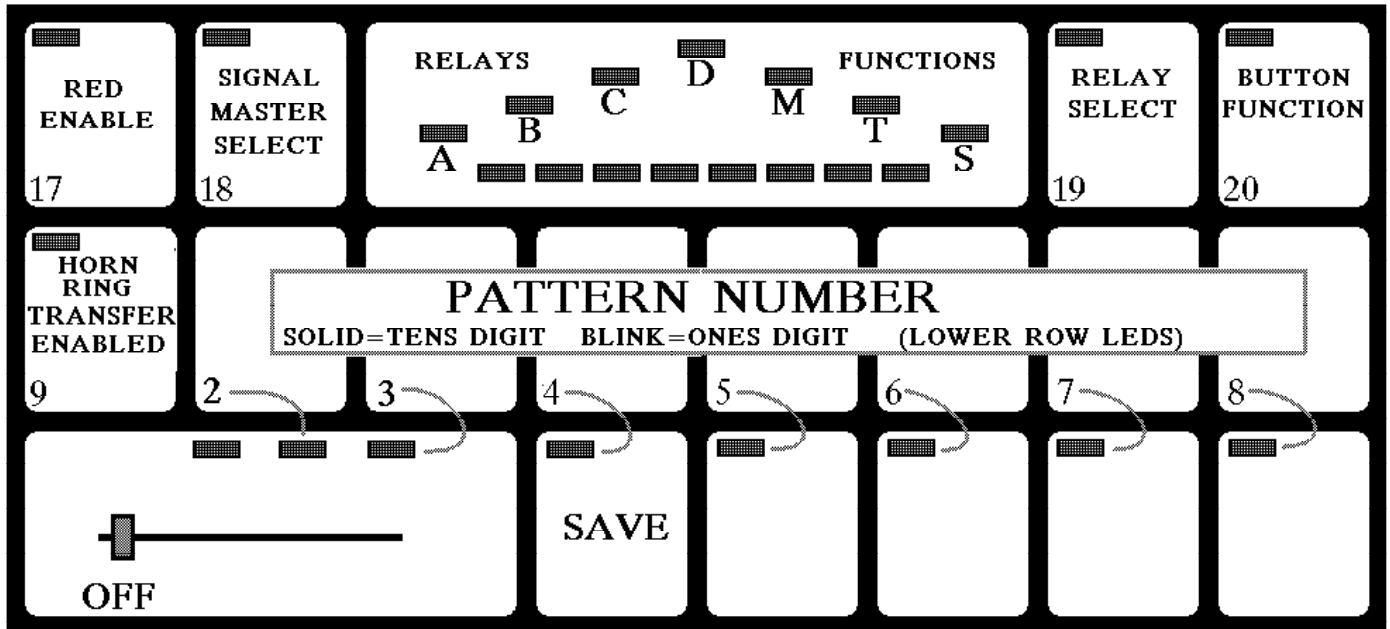
Therefore, the system needs to know what to do when the Horn is pressed. The HORN RING KEY is where this information is configured.

Simply enter the HORN RING KEY like any other key and configure it with LEVEL 2 - KEYS instructions just like any other key.

The Horn Ring Key MUST have a pattern configured into it.

The Horn Ring Key can be configured as an 8-second timeout key. (Use key 20 on the next page to select the 8-second timeout function.)

Always leave the Slide Switch OFF while programming!



GENERAL

In LEVEL 2 - KEYS you can assign many different functions to a key/switch. Each key can control:

- A Pattern.
- A SignalMaster Pattern.
- Any combination of relays.
- Key Functionality.
- Steady Red Enable.
- Horn Ring Transfer Enable.

Once the key is configured, press SAVE to return to LEVEL 2.

RED ENABLE

Press key 17 to enable the steady red pod(s) with the key being configured.

DO NOT use this option with pattern 32.

PATTERN NUMBER

To select a pattern number, press keys 10 through 16 (labeled above as 2 through 8 for convenience) to create the number cross referenced to the chart on the last page of WORKSHEET.

If a pattern already exists, press any key labeled above as 2 through 8 to clear the pattern.

Press the tens digit number. (Key display on bottom row will be solid for tens digit.)

Press the ones digit number. (Key display on bottom row will be blinking for ones digit.)

SIGNALMASTER

Press key 18, SignalMaster Select, until the desired SignalMaster pattern appears on the SignalMaster display. (Two LED's bouncing back and forth signifies the SignalMaster step through function.)

RELAYS

Press key 19 (RELAY SELECT) until the needed combination of relays are selected. The relays being selected are displayed on the left four LED's of the "V-Display".

BUTTON FUNCTION

Press key 20 (BUTTON FUNCTION) until the needed function is selected. The function is displayed on the right three LED's of the "V-Display".

No LED's = Push-On/Push-Off,
M = Momentary, T = 8-second Timeout,
S = Security Timeout.

HORN RING TRANSFER

Press key 9 to enable Horn Ring Transfer with the key being configured (can only be configured into bottom row of keys).

LEVEL 3

STAND-ARD 17	NO WHITE LIGHT 18					19	20
9	RED POD 2 10	RED POD 3 11	RED POD 4 12	RED POD 5 13	RED POD 6 14	RED PODS 2&6 15	RED PODS 3&5 16
		SAVE 4	5	6	7	8	

GENERAL

Level 3 configuration is used in areas where no white light can shine forward or a steady red light is needed.

You have basically three choices in Level 3: No White Light, Steady Red, or Standard.

Only one function can be chosen from this level. You cannot program Steady Red and No White Light on the same system.

NO WHITE LIGHT

No White Light makes the pods used for takedown nonfunctional during primary or secondary patterns. The takedown pods are used because these are usually the only clear pods on the bar.

STEADY RED

Steady Red is used extensively in California. The steady red pod chosen (2, 3, 4, 5, 6, 2 and 6, or 3 and 5) causes that pod to position its reflector forward and turn on solid.

Level 3 is used to choose which pod, or pods, to use for steady red. It is in LEVEL 2 that the key to enable the red pod is configured.

DONOT use this option with pattern 32.

STANDARD

If STANDARD is chosen, no special functions are activated. Standard is the default setting.

SAVE

Press SAVE when the desired function is selected to return to the MAIN MENU.

Always leave the Slide Switch OFF while programming.

SIREN FUNCTION 17	HORN RING TRANSFER TONE 18					PRIORITY TONE DISABLE 19	H/L TONE DISABLE 20
SLIDE SWITCH SIREN ENABLE 9	SIREN POWER-UP SETTINGS				HORN RING NO SIREN ACTIVE TONE MAN OR A/H		
		10	11	12	13	14	15
SAVE 4		PUSH BUTTON SIREN ENABLE				5	6
OFF 1 2 3		7		8			

GENERAL

LEVEL 4 is used to configure the siren functions.

SIREN FUNCTION

The siren function is chosen by pressing key 17.

When key 17 is on, the siren keys activate the siren tone only if the siren is armed by one of the bottom row keys. The sirens are dependent on the bottom row.

When key 17 is off, the siren tones don't require the siren to be armed by the bottom row, and will activate as soon as pressed. They are independent of the bottom row.

H/L and PRIORITY DISABLE

If key 19 is on, then H/L will be nonfunctional. If key 20 is on, then PRIORITY will be nonfunctional.

HORN RING TRANSFER TONE

The horn ring transfer tone is selected by pressing key 18.

If key 18 is off, the tone will be YELP. That is, when WAIL is the operating tone and the Horn Ring is pressed and transferred, the tone will transfer to YELP.

If key 18 is on, the tone will be PRIORITY. That is, when WAIL, YELP, or H/L is the operating tone and the Horn Ring is pressed and transferred, the tone will transfer to PRIORITY.

HORN RING - NO TONE

Press key 15 if you want Peak & Hold from the Horn Ring when no sirens are active. Press key 16 if you want Air Horn from the Horn Ring when no sirens are active.

SIREN POWER-UP

Keys 10 through 14 can be configured to turn on automatically during power-up. Simply turn on the key(s) you wish to be active when the system powers up. (This is basically used to decide the selected siren tone when Sirens are configured to be dependent on the bottom row.)

SIREN ENABLE

Siren enable, or Siren armed, keys are used when sirens are to be dependent on the bottom row for activation. Choose which keys (5 through 8) you wish to enable, or arm, the selected siren tone. To enable sirens on the slide switch, press key 9 until the desired slide switches are chosen.

SAVE

Press the SAVE key when you have LEVEL 4 configured the way you want. This will return you to the MAIN MENU.

CONFIGURATION MODE DISABLE/ENABLE.

A. *Disable.*

After the warning system is configured and fully tested, it may be desirable to disable the configuration mode and prevent reconfiguration by unauthorized individuals. To disable the configuration mode, proceed as follows:

1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Cut J2 on the Amplifier/Relay Unit's relay circuit board to disable the configuration mode.

3. Replace the case and secure with the previously loosened hexagon head screws.

B. *Enable.*

If the warning system was previously installed, configured, and the configuration mode was disabled, enable the configuration mode as follows:

1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Place a jumper across J2 on the Amplifier/Relay Unit's relay circuit board and perform the configuration as required. If desired, remove the jumper across J2 to disable the configuration mode.

3. Replace the case and secure with the previously loosened hexagon head screws.

PARK-SIREN DEACTIVATOR DISABLE/ENABLE.

A. *Disable.*

To **disable** the **park-siren deactivator** and **enable** the **pursuit function**, proceed as follows:

1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Cut J3 on the Amplifier/Relay Unit's relay circuit board.

3. Replace the case and secure with the previously loosened hexagon head screws.

B. *Enable.*

To **enable** the **park-siren deactivator** and **disable** the **pursuit function**, proceed as follows:

1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Solder a jumper across J3 on the Amplifier/Relay Unit's relay circuit board.

3. Replace the case and secure with the previously loosened hexagon head screws.

FUNCTION INDICATOR SOUND ENABLE/DISABLE.

A. *Enable.*

To enable the function indicator sound, proceed as follows:

1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Cut J4 on the Amplifier/Relay Unit's relay circuit board.

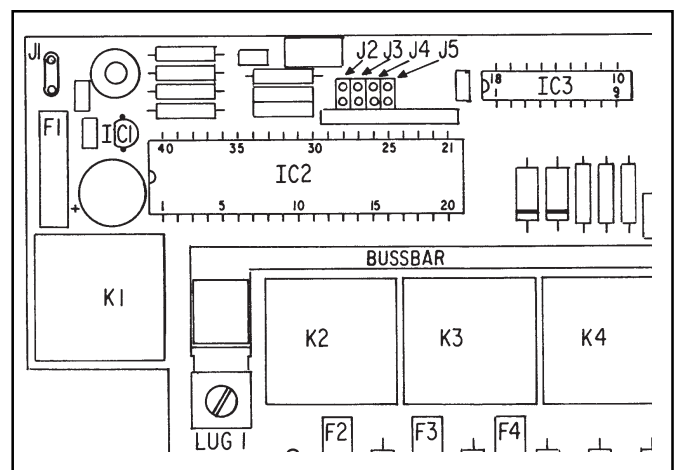
3. Replace the case and secure with the previously loosened hexagon head screws.

B. *Disable.*

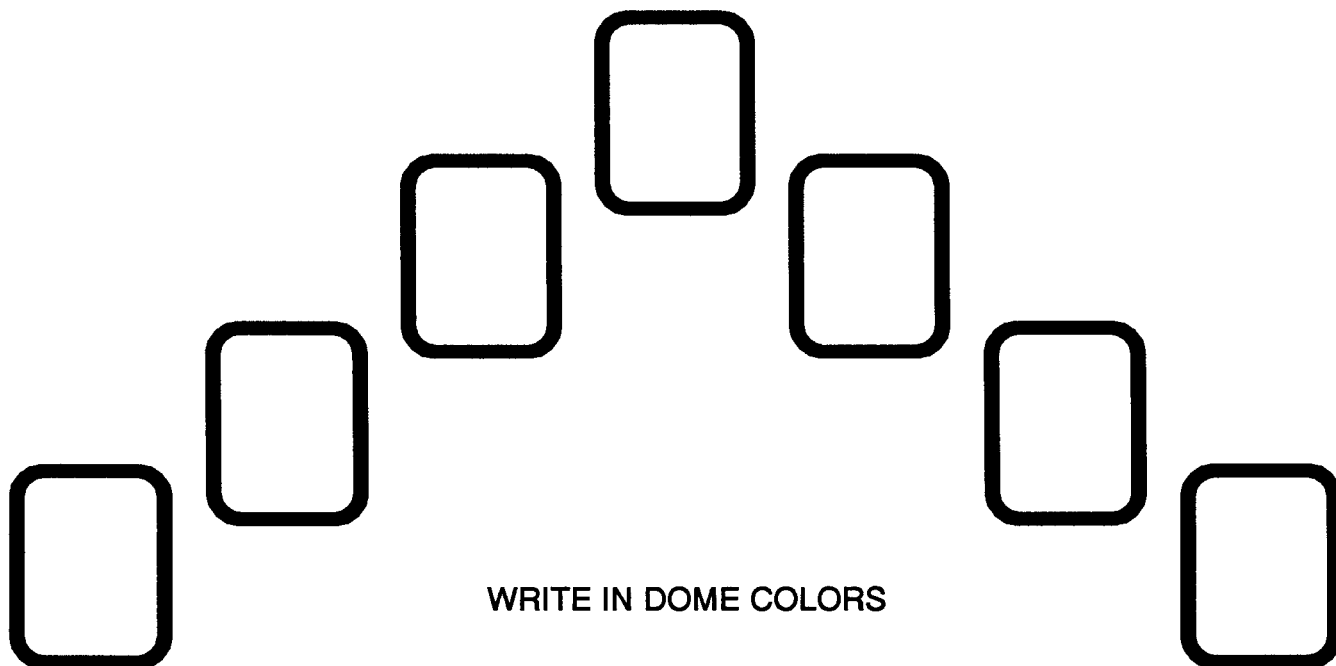
1. Loosen the two hexagon head screws on the underside of the Amplifier/Relay Unit, near the front edge of the unit. Slide the chassis out of the case.

2. See the figure below. Solder a jumper across J4 on the Amplifier/Relay Unit's relay circuit board.

3. Replace the case and secure with the previously loosened hexagon head screws.



VISION PREMIUM SLIDE-SWITCH CONFIGURATION WORKSHEET



17		18						19		20					
9 RAD		10		11 WAIL		12 YELP		13 H/L		14		15 MAN		16 A/H	
 OFF 1 2 3				4 RESET		5		6		7		8			

WRITE IN LEGEND NAMES

INDIVIDUAL KEYS - LEVEL 2

Keys 2 thru 8, 17 thru 20 and HORN are the individual keys that can be extensively customized. Each key can control a Vision Bar Pattern, a SignalMaster Pattern, Relays A,B,C,D and Activate a previously selected Steady Red Pod. Each of these keys can also function as Push On/Push Off, Momentary, 8 second timeout, or a Security 8-Second timeout. (HORN can only function as a Push On/Push Off or 8 second time-out). In addition, buttons 2 thru 8 can activate the Horn Ring Transfer Relay and a Siren.

Use INDIVIDUAL KEYS table to assist you in deciding what combination of these functions you need for each key. The following are descriptions of each column in the worksheet.

Key# - The number listed on the control head on the first page of the worksheet.

Pattern # - The number corresponding to the Vision bar pattern listed on the back of the Work Sheet.

SignalMaster - The description of the type of SignalMaster Pattern you want.

Left Arrow (LEFT)
Right Arrow (RIGHT)
Center Out Arrow (C-OUT)
2 lights alternating (2-ALT)
4 lights alternating (4-ALT)
8 lights alternating (8-ALT)
Step Through - Left, Right, Center
Out, Off (LRC O)

Relays - Circle any combination of relays you wish to activate with the key. (Hint- determine what each relay will control before deciding)

Operation - Circle one of these. O=Push On/Push Off, M = Momentary, T = 8 Second Time Out, S=Security Timer.

HRTR - Horn Ring Transfer Relay. Circle "Y" if you want this key to Activate the HRTR or "N" if you don't.

RED - Circle "Y" if you want the SPECIAL FUNCTION red light to turn on with this key.

RELAY ASSIGNMENTS

Write in these spaces which auxillary devices will be activated by which relays.

SPECIAL FUNCTIONS

Special functions are for those areas that have specific codes or requirements.

Circle "Standard" if you have no need for one of the special functions.

Circle "No White Light" if you can't have white light shining to the front. (Takedown domes are not activated for primary and secondary patterns.)

If you require a Steady Red to the Front, Circle which Red Pod(s) number you want to activate when a key programmed for red is selected.

SIRENS - LEVEL 4

There are just a few things that must be specified to the siren portion of the Vision Premium System. They are as follows:

Siren Operation - If you want the siren to only activate when one of the buttons (probably a pattern button) on the bottom row are activated, circle **Dependent**. If you want the siren to activate any time a siren button is selected, circle **Independent**.

Horn Ring Tone - When lights, sirens, and HRTR are active, and the Horn is pressed, the siren can transfer to one of two tones. **Yelp or Priority**.

High Low Tone Disabled - If you want to completely disable HighLow tone, all the time, circle **Yes**.

Priority Tone Disabled - If you want to completely disable Priority tone, all the time, circle **Yes**.

Horn Ring No Siren Tone - If HRTR is active, but no sirens are, the press of the Horn will produce one of two tone, **Peak&Hold or AirHorn**.

Siren Power Up Settings - When power is applied to the system, you can have it automatically select a siren function. PA can always be selected, but only one of the following can be selected at a time: RAD, WAIL, YELP, HighLow, Priority. Circle the tone you wish selected on power up and/or the PA button.

Siren Enable Bottom Row - When sirens are dependent on other keys to activate, you must choose which key(s) will activate the siren. Your choice extends from key SS1 to key 8. You can have just key SS3 enable sirens or all 8 keys enable sirens. (you will probably just want your mode 2 and mode 3 to enable the siren) The Horn "key" will always enable the siren. Circle which keys you wish to enable sirens.

Programming Hints

Make sure to use the same Pod(s) for Alleys and Takedown.

Only Jogs or relays should be programmed as Momentary.

A key programmed with a pattern will turn off all other keys with patterns when activated. Only one pattern key can be active at a time.

Slide switches must be configured with a pattern.

Emphasize one button operation. Put a pattern, SignalMaster, Relays, Siren Activation, and Horn Ring Transfer on your highest priority key.

INDIVIDUAL KEYS - LEVEL 2

Key#	Pattern#	SignalMaster	Relays	Operation	HRTR	Red
SS1	_____	_____	A B C D	O M T S	Y/N	Y/N
SS2	_____	_____	A B C D	O M T S	Y/N	Y/N
SS3	_____	_____	A B C D	O M T S	Y/N	Y/N
4	RESET	N/A	N/A	O	N/A	N/A
5	_____	_____	A B C D	O M T S	Y/N	Y/N
6	_____	_____	A B C D	O M T S	Y/N	Y/N
7	_____	_____	A B C D	O M T S	Y/N	Y/N
8	_____	_____	A B C D	O M T S	Y/N	Y/N
17	_____	_____	A B C D	O M T S	N/A	Y/N
18	_____	_____	A B C D	O M T S	N/A	Y/N
19	_____	_____	A B C D	O M T S	N/A	Y/N
20	_____	_____	A B C D	O M T S	N/A	Y/N
HORN	_____	_____	A B C D	O T	YES	Y/N

RELAY ASSIGNMENTS

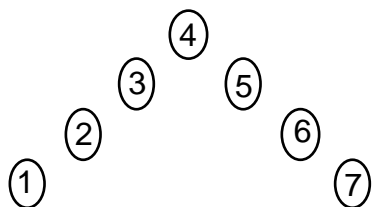
A _____ B _____
C _____ D _____

SPECIAL FUNCTIONS - LEVEL 3

Standard / No White Light / Red 2 / Red 3 / Red 4 / Red 5 / Red 6 / Red 2&6 / Red 3&5

SIRENS - LEVEL 4

Siren Operation Dependent/Independent
Horn Ring Tone Yelp/Priority
High Low Tone Disabled Yes/No
Priority Tone Disabled Yes/No
Horn Ring No Siren Tone Peak&Hold/AirHorn
Siren PowerUp Settings..... RAD / PA / WAIL / YELP / HighLow / Priority
Siren Enable Bottom Row SS1/SS2 /SS3 / 4 / 5 / 6 / 7 / 8



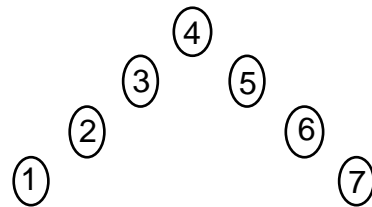
PATTERN

25	(90)	(175)	(90)	(175)	(90)	(175)	(90)	(A)
26	(90)	∇	(90)	∇	(90)	∇	(90)	
27	(90)	(90)	(90)	(90)	(90)	(90)	(90)	
28	(90)	↘	↙	∇	↗	↖	(90)	
32	(175)	(175)	(175)	(175)	(175)	(175)	(175)	(A)
34	(90)		(90)	∇	(90)		(90)	
35	(90)	(120)	(175)	∇	(175)	(120)	(90)	
36	(90)	(90)	(90)	∇	(90)	(90)	(90)	(B)
54	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(C)
56	(90)	(90)	(90)	(90)	(90)	(90)	(90)	(D)

**PRIMARY
PATTERNS**

37	↓	↓	↓	↓	↓	↓	↓	(E)
48	↓	↓	↓	↓	↓	↓	↓	(F)
57	↓	↓	↓	↓	↓	↓	↓	(G)
58	↓	↓	↓	↓	↓	↓	↓	(H)
62	↑	↑	↑	↑	↑	↑	↑	(E)
63	↑	↑	↑	↑	↑	↑	↑	(F)
64	↑	↑	↑	↑	↑	↑	↑	(G)
65	↑	↑	↑	↑	↑	↑	↑	(H)
68								(I)

**AUXILIARY
PATTERNS**



PATTERN

38		∧				∧	
42	∧	∧				∧	∧
43	∧	∧		(90)		∧	∧
45	↓			(90)			↓
46	↓	↑				↑	↓
47	↓						↓
52	(90)						(90)
53	∧		∧		∧		∧

**SECONDARY
PATTERNS**

72						RA	
73					RA		
74				RA			
75				LA			
76			LA				
78		LA					
82				TD			
83			TD		TD		
84		TD				TD	
85	FL	FL	FL	FL	FL	FL	FL
86	JL	JL	JL	JL	JL	JL	JL
87	JR	JR	JR	JR	JR	JR	JR

**UTILITY
PATTERNS**

NOTES:

- A. SYNC CENTER OUT.
- B. SYNC SPECIAL.
- C. SYNC RIGHT ARROW.
- D. SYNC LEFT ARROW.
- E. RIGHT ARROW.
- F. LEFT ARROW.
- G. CENTER-OUT.
- H. ALTERNATE
1,2,6,7 WITH 3,4,5.
- I. NULL (All pods deactivated).

LEGEND

- ROTATE (nn = SPEED)
- FLASH TO FRONT
- FLASH TO REAR
- OSCILLATE (Direction)

- RA RIGHT ALLEY
- LA LEFT ALLEY
- TD TAKEDOWN
- FL FLOODLIGHT
- JL JOG LEFT
- JR JOG RIGHT

SECTION III

MICROPROCESSOR INSTALLATION

NOTE

It is necessary to perform the procedures in this section **ONLY** if a field software upgrade is performed.

3-1. GENERAL.

Four microprocessors are necessary for Premium Vision® warning system operation. They **MUST** be changed as a set. Each microprocessor in a set has a specific function, and **MUST** be installed in the correct circuit board.

The microprocessor's part number denotes its function. The fourth and fifth character in the part number indicates its function as follows: CP = Control Head (Premium), RB = relay circuit board in Amplifier/Relay Unit, AB = amplifier circuit board in Amplifier/Relay Unit, BC = Bar Controller. Ensure that the correct microprocessor is installed in its corresponding circuit board.

3-2. INSTALLATION.

CAUTION

The CMOS microprocessors and the Vision's circuitry can be destroyed, or damaged, by static discharge. Observe anti-static procedures when installing or handling CMOS devices or any of the Vision's circuit boards.

A. Control Head.

1. Disassemble the control head as described in the Service and Maintenance section of the Premium Vision Hardware Installation and Maintenance Instructions (Part No. 255274).
2. Gently pry the microprocessor (U6) out of its socket with a small screwdriver.
3. See figure 3-1. Insert the new microprocessor IC ("CP" in the part number) in the empty socket. Ensure that the notch on the new microprocessor IC is facing the same direction as the old one (near IC4) and that all IC pins are properly inserted in the socket—not bent under.
4. Reassemble the control head.

B. Amplifier/Relay Unit.

1. Disassemble the Amplifier/Relay Unit as described in the Service and Maintenance section of the Premium Vision Installation and Maintenance Instructions (Part No. 255274).
2. Gently pry the relay circuit board microprocessor (IC2) out of its socket with a small screwdriver.

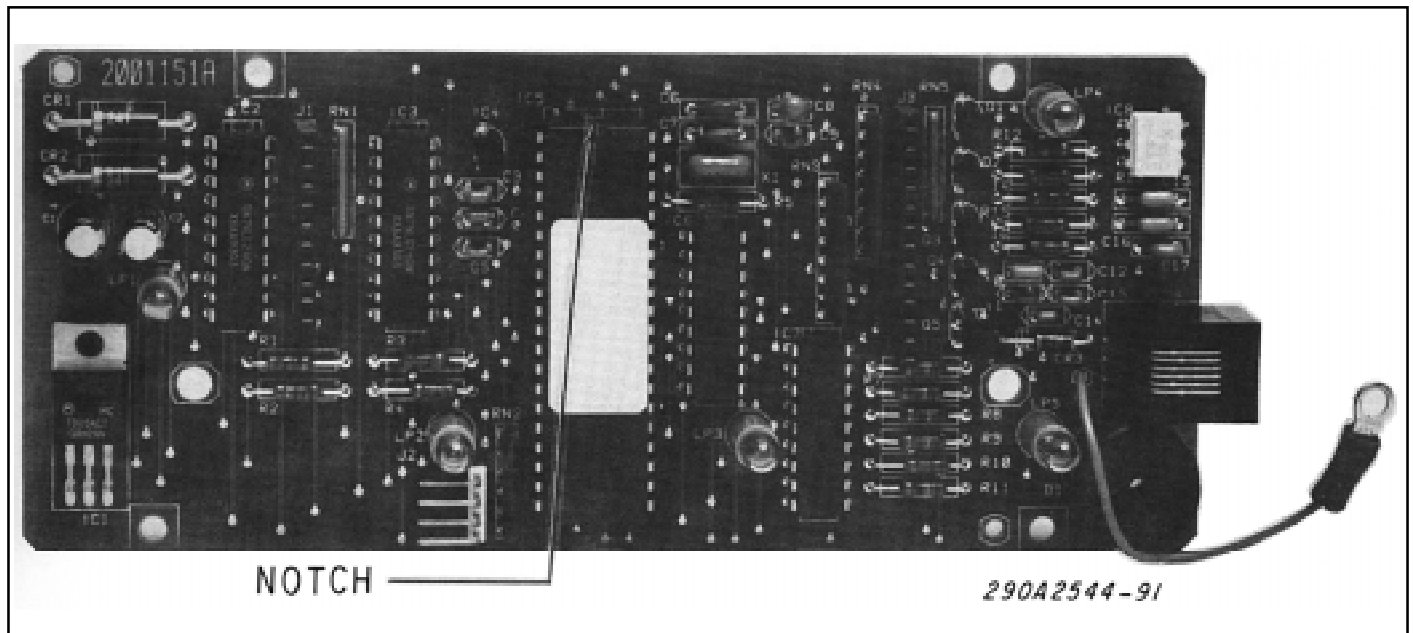


Figure 3-1. Control Head Microprocessor.

3. See figure 3-2. Insert the new microprocessor IC ("RB" in the part number) in the empty socket. Ensure that the notch on the new microprocessor IC is facing the same direction as the old one (toward F1—20-ampere fuse) and that all IC pins are properly inserted in the socket—not bent under.

4. Remove the relay circuit board as described in the Premium Vision Hardware Installation and Maintenance Instructions.

5. Gently pry the amplifier circuit board microprocessor (IC2) out of its socket with a small screwdriver.

6. See figure 3-3. Insert the new microprocessor IC ("AB" in the part number) in the empty socket. Ensure that the notch on the new microprocessor IC is facing the same direction as the old one (toward the circuit board mounted transformer—T1) and that all IC pins are properly inserted in the socket—not bent under.

7. Reassemble the Amplifier/Relay Unit.

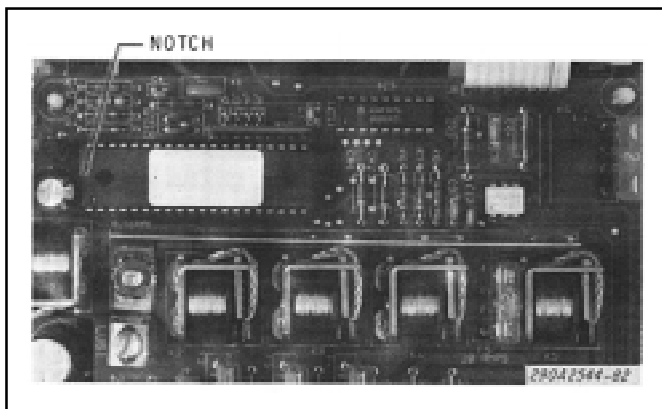


Figure 3-2. Relay Circuit Board Microprocessor.

C. Bar Controller.

1. Disassemble the Premium Vision lightbar as described in the Service and Maintenance section of the Premium Vision Hardware Installation and Maintenance Instructions (Part No. 255274).

2. Locate the bar control circuit board.

3. Remove the screws which retain the circuit board.

4. Disconnect the modular connector. Carefully lift the circuit board just enough to disconnect the 14-pin connector (J9) which connects the bar control circuit board to the lamp driver circuit board. The microprocessor IC should now be accessible.

5. Gently pry the microprocessor (IC10) out of its socket with a small screwdriver.

6. See figure 3-4. Insert the new microprocessor IC ("BC" in the part number) in the empty socket. Ensure that the notch on the new micropro

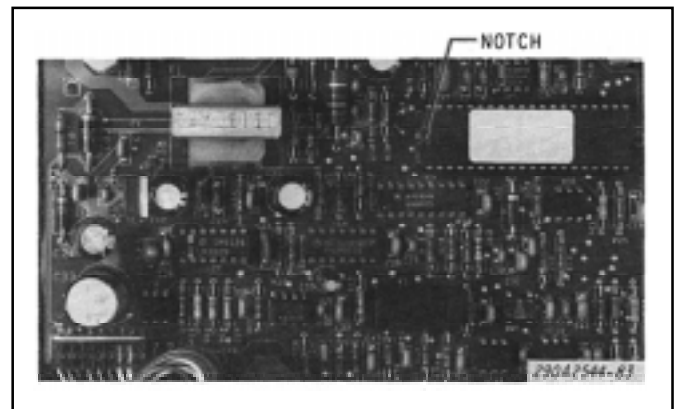


Figure 3-3. Amplifier Circuit Board Microprocessor.

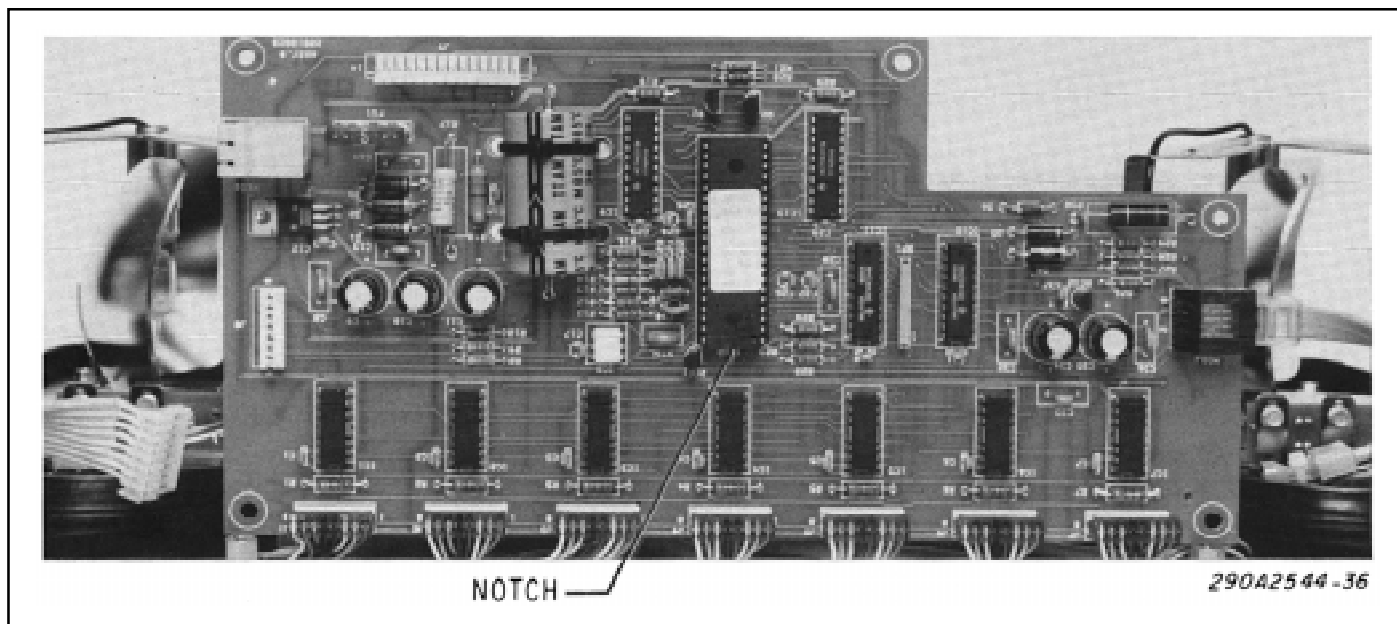


Figure 3-4. Bar Control Microprocessor.

cessor IC is facing the same direction as the old one (toward the seven pod connector cables) and that all IC pins are properly inserted in the socket—not bent under.

7. Reassemble the lightbar.

3-3. SOFTWARE REVISION LABEL INSTALLATION.

In addition to the four microprocessors, labels indicating the software type and revision are also included. The labels are to be installed on the control head, Amplifier/Relay Unit, and the lightbar.

After the microprocessors are installed as described above, install the labels as follows:

NOTE

If old labels are installed, remove them or cover them with the new labels.

- A. Place the label marked with a “CP” on the control head housing near the modular jack.
- B. Place the label marked with an “AB” on the bottom of the Amplifier/Relay Unit housing. Also, place the label marked with an “RB” on the bottom of the Amplifier/Relay Unit housing.
- C. Install the label marked with a “BC” inside the dome of pod 1 (first pod on driver’s side). Place the label near the rear of the metal motor support.

