

Model SS2000SS Series

ELECTRONIC SIREN AND LIGHT CONTROL 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.

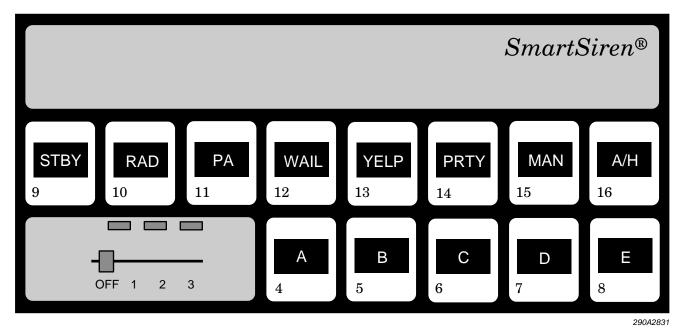
This warranty does not extend to any unit which has been subjected to abuse, misuse, improper installation or which has been inadequately maintained, nor to units which have problems relating to service or modification at any facility other than the Federal factory or authorized warranty service centers.

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 Emergency Products

OPERATION



Although it is extremely versatile, the Smart Siren w/ Slide Switch is operational right out of the box. It comes preconfigured according to the chart to the right. All operation instructions on this page will be in reference to the default configuration.

Many of these functions, as well as some not listed, can be changed to meet the user's specific needs. Make sure to take the time to read through this manual to understand the full versatility of this product.

All warnings and cautions that appear in the SS2000SS hardware installation and maintenance manual also apply to information given in this manual.

Make sure you are aware of these warnings and cautions before you begin using this manual and reconfiguring the SS2000SS system.

DEFAULT CONFIGURATION

Slide Switch Position 1 - Activates relay 1.

Slide Switch Position 2 - Activates relay 1& 2 and the Horn Ring Transfer Relay.

Slide Switch Position 3 - Activates relay 1,2, & 3, and the Horn Ring Transfer Relay and enables the Siren.

Auxiliary relay keys A-E activate the corresponding relays and are all Push On/Push Off type functions.

STBY - Turns off sirens

RAD-Turns on Radio Rebroadcast.

PA (Key 11) - Turns on the user supplied common mic relay to enable the transfer of the radio microphone to the siren speaker.

WAIL - Wail tone will activate only the when siren is enabled. In the default configuration, only mode 3 enables the siren.

YELP - Yelp tone will activate only when the siren is enabled.

PRTY - Priority tone will activate only when the siren is enabled.

MAN - Will produce peak & hold tone when no other sirens are active. If wail or yelp are active, the tone will change to priority for 8-seconds then revert back to the previous tone. Horn Ring will do the same if it is transferred to the siren.

A/H - Will produce Air Horn tone any time it is pressed.

PARK SIREN DEACTIVATOR -

When the pursuit input is held low, sirens will be deactivated.

SS2000SS Features

- Sirens can be configured to be independent of switches.
- There is now a program mode disable.
- Each slide switch position can be configured to operate any combination of all eight relays plus Key 11, Horn Ring Transfer and Siren Enable.
- Each Aux Relay can be configured as Push On/Push Off, Momentary, Eight Second Timeout, or Security Timeout.
- Any key on the siren row, except STBY, can be disabled or enabled.
- What was previously the H/L key on the SS2000 can now be configured as H/L or Priority.
- Key 11 (PA) can now be configured to activate the Horn Ring Transfer Relay or an external relay such as the Common Mic Relay.
- The remote pursuit switch can now toggle between Modes 3 & 2 or Modes 3 & 0.
- You can now select any keys, except MAN & A/H to turn on automatically when the system is powered up.
- Your Horn Ring transfer tone can be YELP or PRIORITY.
- You can now select Peak & Hold or Air Horn to activate with the horn ring.
- The configuration mode is more similar to the Vision and Premium Vision Configuration mode.
- Relays sequence on and off to minimize power surges.
- Park Siren Deactivator.
- Function Indicator Sound.

CONFIGURATION

A WARNING

Property damage, serious injury, or death to you or others may result if the SS2000SS is improperly configured. Configuration, if required, is to be performed at the time of installation. It is NOT intended for operators to "customize" the SS2000SS's operation for their individual preferences. It is the USER's responsibility to determine compatibility, suitability, and ensure proper configuration of the SS2000SS.

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

Before proceeding, read and understand the Safety Message to Operators on page 5.

The SS2000SS system is an extremely versatile system. It is even more versatile than its predecessor, the SS2000. Because of this versatility, it is very important to know how you want the system to function before you begin configuration. Therefore, be sure to read the directions before you begin configuration so that you may understand the capabilities of the SS2000SS system.

To help in determining how your system will function, a worksheet outlining all the capabilities of the system is included at the back of this manual. Use this worksheet to determine exactly how your system should function, then begin the reconfiguring process. You will find that filling out the worksheet will help greatly reduce the time needed to configure your system to your requirements.

Once you have determined how your system should operate, use this manual to guide you through the configuration process.

On page 3 is an overview of the different levels of configuration. Similar functions are grouped together. Notice that level two is broken down into specific functional areas separated by arrows. These arrows represent a change into a "deeper" layer of level 2.

These deeper layers are only accessible from the previous layer. There is only one way into each layer and only one way out.

Example: If you want to change the functionality of Slide Switch position 3, you must follow the "flow" of the arrows.

1. Select Level 2 from the MAIN MENU.

2. Select "Slide Switches" to drop into the Slide switch layer.

3. Select Slide Switch position 3 to drop into the "Slide Functions" layer.

4. Make your changes for Slide Switch 3 in the Slide Functions layer.

*We have just completed "one way in." We must now come out the same way by use of the SAVE key.

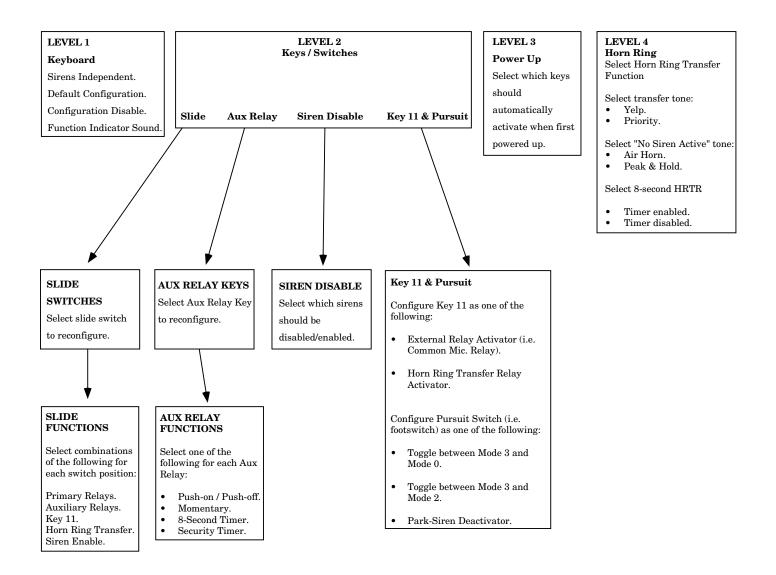
5. Press SAVE. This will bring you back up to "Slide Switches"

6. Press SAVE again to bring yourself back up to Level 2.

7. Press SAVE again to bring yourself back up to the MAIN MENU.

This is the extreme case as you will notice not all levels have sub-layers. Be aware that if we also wanted to reconfigure Slide Switch 2, we could have selected Slide Switch 2 in step 6 above without going all the way back to the MAIN MENU. This will reduce the number of key hits needed to configure your system.

CONFIGURATION TREE



-4-

SECTION IV OPERATION

SAFETY MESSAGE TO OPERATORS OF FEDERAL SIGNAL ELECTRONIC SIRENS AND 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 an electronic siren and speaker(s): 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 (120 dB) that may cause permanent hearing loss. Always minimize your exposure to siren sound, roll up your windows and wear hearing protection. Do not sound the siren indoors or in enclosed areas where you and others will be exposed to the sound. Only use the siren for emergency response situations.

Sound Limitations

- Before using the vehicle, check to see if the siren speakers are concealed from view. If the siren speaker is not in clear view on the front of the vehicle, use extra caution when operating the vehicle. A concealed siren speaker installation is less effective at warning others.
- 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. This can also occur when you raise your hood or trunk lid. If these situations occur, be especially careful.

Driving Limitations

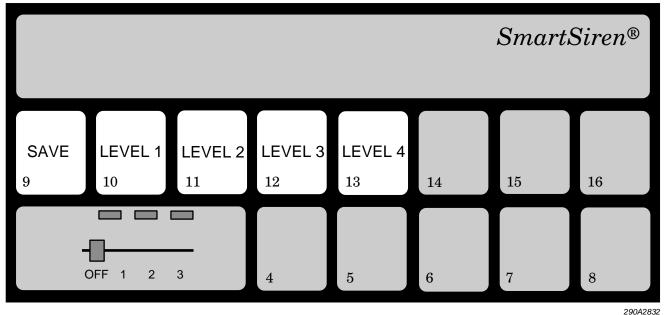
- At the start of your shift, you should ensure that the light/sound system is securely attached to the vehicle and operating properly.
- If the unique combination of emergency vehicle equipment installed in your vehicle has resulted in the siren controls being installed in a position that does not allow 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 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.

MAIN MENU



Entering Configuration Mode

To enter configuration mode, simply execute the following steps:

1. Power up the system and wait for startup to finish.

2. Unplug control head.

3. Press SAVE and continue to hold.

4. Plug control head back in while continuing to hold SAVE.

5. Release the SAVE key.

Always leave the Slide Switch **OFF** while reconfiguring. The "MAIN MENU" will come up on the keyboard as soon as you enter configuration mode. Keys 10, 11, 12, and 13 buttons will be solidly illuminated.

At this point you have five choices:

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

Pressing "SAVE" (Key 9) will save the present configuration to permanent memory, end the configuration session, and put the system into operation mode.

LEVEL 1

Pressing "LEVEL 1" (Key 10) will enter LEVEL 1 (Keyboard). If LEVEL 1 is selected, go to page 7, LEVEL 1 (Keyboard).

LEVEL 2

Pressing "LEVEL 2" (Key 11) will enter LEVEL 2 (Keys). If LEVEL 2 is selected, go to page 8, LEVEL 2 (Keys).

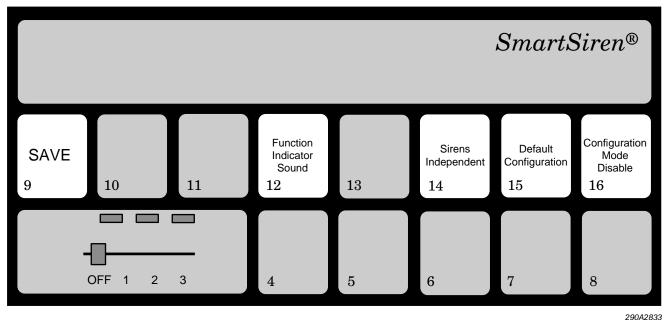
LEVEL 3

Pressing "LEVEL 3" (Key 12) will enter LEVEL 3 (Power Up). If LEVEL 3 is selected, go to page 15, LEVEL 3 (Power Up).

LEVEL 4

Pressing "LEVEL 4" (Key 13) will enter LEVEL 4 (Horn Ring). If LEVEL 4 is selected, go to page 16, LEVEL 4 (Horn Ring).

LEVEL 1 (Keyboard)



LEVEL 1 (Keyboard) is where options are chosen that affect the entire keyboard. These options are whether you want the siren keys to act independently of the rest of the keyboard, whether you want the default, factory settings, configuration, or whether you want configuration mode disabled after this configuration session.

SAVE

Save displayed LEVEL 1 settings and *return to MAIN MENU*, page 6.

Function Indicator Sound

If key 12 is on, a double beep tone will be heard from the control head approximately every 10-seconds to indicate a function is activated. (A function refers to any switch on the bottom row, or key 11.)

Always leave the Slide Switch **OFF** while reconfiguring. If key 12 is off, the Function Indicator Sound will be disabled.

Sirens Independent

If key 14 is on, then the sirens will act independently of the slide switches. That is, in operation mode, if a siren key is pressed, the siren tone will be produced immediately.

If key 14 is off, the sirens, in operation mode, will require that one of the slide switches be activated before the siren tone will be produced. Which slide switch will turn on the sirens is optional and will be discussed in Level 2 - Slide Switch -Function, on page 10.

Default Configuration

If key 15 is on, then the keyboard is configured according to the factory default settings. (see OPERATION, page 1)

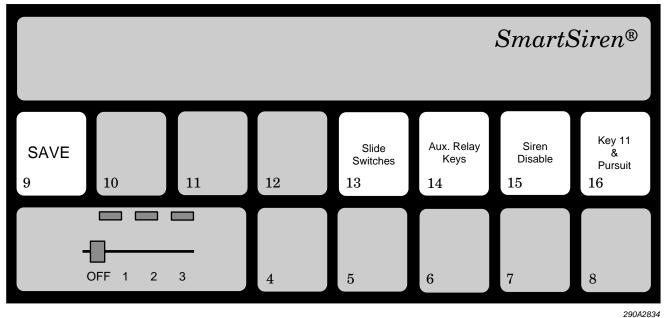
If key 15 is off, then the present configuration does not match the factory default settings.

To put the system back in factory default configuration, turn key 15 on. Remember, this will erase all previous configuration information.

Configuration Mode Disable

If key 16 is turned on, you will not be able to re-enter configuration mode once you exit this session. To re-enter configuration mode at a later date, the "Push To Talk" button on the microphone for the siren system must be on while the SAVE key is pressed to enter configuration mode as referred to on page 6. The Push to Talk button must be held until you re-enter level 1 and turn off key 16. Once this is accomplished you can release the Push to Talk button on the microphone and proceed with reconfiguration as normal.

LEVEL 2 (Keys)



Level 2 (Keys) is used to specifically configure each key or switch. Level 2 allows you to change how each Slide Switch, Auxiliary Relay Key, Siren Key, and Key 11/Pursuit Switch functions.

SAVE

Save LEVEL 2 settings and *return* to MAIN MENU, page 6.

Slide Switches

Pressing "Slide Switches" (Key 13) will enter LEVEL 2 - Slide Switches. If Slide Switches is selected, go to page 9, Level 2 - Slide Switches.

Aux Relay Keys

Pressing "Aux Relay Keys" (Key 14) will enter LEVEL 2 - Aux Relay Keys. If Aux Relay Keys is selected, go to page 11, Level 2 - Aux Relay Keys.

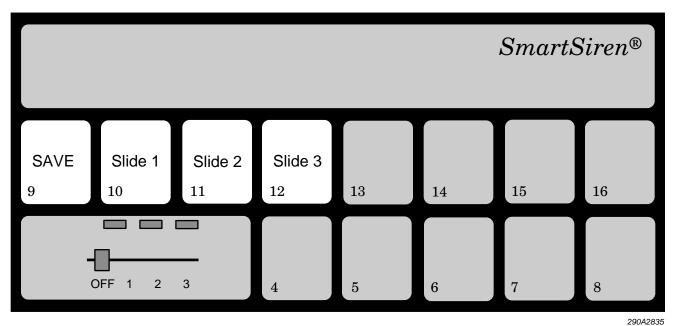
Siren Disable

Pressing "Siren Disable" (Key 15) will enter LEVEL 2 - Siren Disable. If Siren Disable is selected, go to page 13, Level 2 - Siren Disable.

Key 11

Pressing "Key 11 & Pursuit" (Key 16) will enter LEVEL 2 - Key 11 & Remote. If Key 11 is selected, go to page 14, Level 2 - Key 11 & Pursuit.

LEVEL 2 - Slide Switches



Level 2 Slide Switches determines which Slide Switch position to reconfigure.

SAVE

Save LEVEL 2 - Slide Switch settings and *return to LEVEL 2 (Keys)*, *page 8*.

Slide 1

Press "Slide 1" to reconfigure how Slide Switch, position 1, functions. If Slide 1 is selected, go to Level 2 -Slide Switch - Function, page 10, to reconfigure Slide Switch 1.

Slide 2

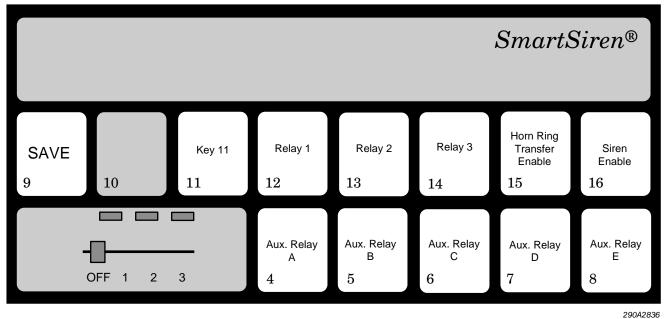
Press "Slide 2" to reconfigure how Slide Switch, position 2, functions.

If Slide 2 is selected, go to Level 2 -Slide Switch - Function, page 10, to reconfigure Slide Switch 2.

Slide 3

Press "Slide 3" to reconfigure how Slide Switch, position 3, functions. If Slide 3 is selected, go to Level 2 -Slide Switch - Function, page 10, to reconfigure Slide Switch 3.

LEVEL 2 - Slide Switch - Function



Level 2 - Slide Switch - Function, is where the slide switch position just selected is configured. All relays can be configured to come on with the switch, as well as Key 11, Horn Ring Transfer and Siren Enable.

SAVE

Pressing the SAVE key will save what is displayed and you will *return to Level 2 - Slide Switches, page* 9.

Aux Relays

Any combination of Auxiliary relays can be configured to activate with the Slide Switch position being reconfigured. Simply turn on (or turn off) the desired Aux Relay Keys as labeled above.

Key 11

If you wish Key 11 to activate with the slide switch position being reconfigured, just turn on Key 11. If you don't, turn Key 11 off.

Relays 1, 2, & 3

Any combination of Relays 1, 2, and/ or 3 can be configured to activate with the Slide Switch position being reconfigured. Simply turn on (or turn off) the desired Relay Keys as labeled above.

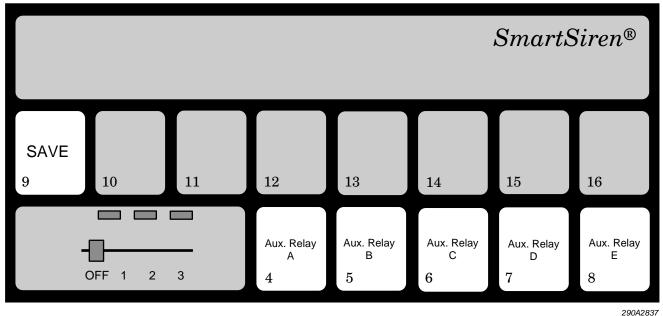
Horn Ring Transfer

The Horn Ring Transfer can be configured to automatically turn on with the Slide Switches. To do so, turn on Key 15, Horn Ring Transfer.

Siren Enable

If sirens are configured to be dependent on the slide switch, this is where you enable the siren. If you want the siren to be enabled for the slide switch position you are configuring, just turn on the Siren Enable key, key 16.

LEVEL 2 - Aux Relay Keys



Level 2 - Aux Relay Keys determines which Aux Relay Key to reconfigure.

SAVE

Save LEVEL 2 - Aux Relay Key settings and *return to LEVEL 2 (Keys)*, *page 8*.

Aux Relay A

Press "Aux Relay A" to reconfigure how Aux Relay A, key 4, functions. If Aux Relay A is selected, go to Level 2 - Aux Relays - Function, page 12, to reconfigure Aux Relay A.

Aux Relay B

Press "Aux Relay B" to reconfigure how Aux Relay B, key 5, functions. If Aux Relay B is selected, go to Level 2 - Aux Relays - Function, page 12, to reconfigure Aux Relay B.

Aux Relay C

Press "Aux Relay C" to reconfigure how Aux Relay C, key 6, functions. If Aux Relay C is selected, go to Level 2 - Aux Relays - Function, page 12, to reconfigure Aux Relay C.

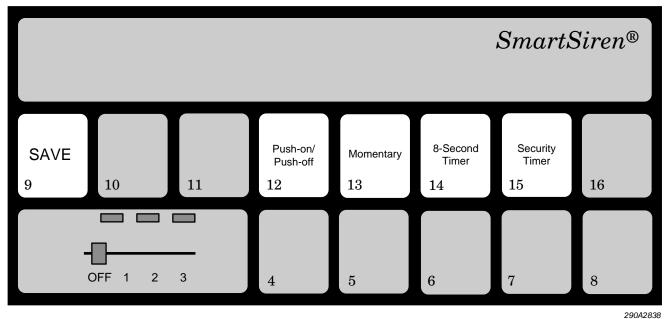
Aux Relay D

Press "Aux Relay D" to reconfigure how Aux Relay D, key 7, functions. If Aux Relay D is selected, go to Level 2 - Aux Relays - Function, page 12, to reconfigure Aux Relay D.

Aux Relay E

Press "Aux Relay E" to reconfigure how Aux Relay E, key 8, functions. If Aux Relay E is selected, go to Level 2 - Aux Relays - Function, page 12, to reconfigure Aux Relay E.

LEVEL 2 - Aux Relays - Function



Level 2 - Auxiliary Keys - Function is where you decide how the Auxiliary Relays are going to function.

SAVE

Save LEVEL 2 - Aux Relays - Function key settings and *return to LEVEL 2 - Aux Relays, page 11.*

Push On / Push Off

Select "Push On / Push Off" (Key 12) if you want the Aux Relay you are

configuring to act as a standard Push On / Push Off switch.

Momentary

Select "Momentary" (Key 13) if you want the Aux Relay you are configuring to act as a Momentary Switch.

8-Second Timer

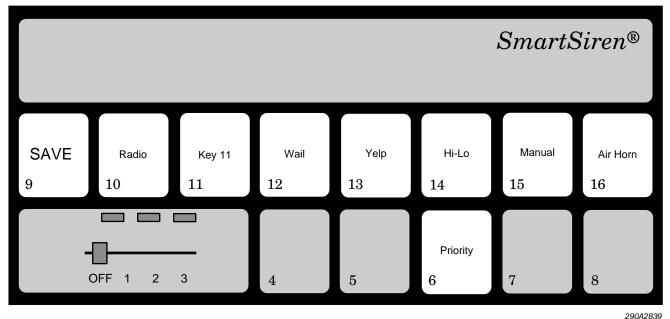
Select "8-Second Timer" (Key 14) if you want the Aux Relay you are configuring to automatically turn itself off after 8 seconds.

Security Timer

Select "Security Timer" (Key 15) if you want the Aux Relay you are configuring to require security operation to turn on and automatically turn itself off after 8 seconds.

When operating, the security timer requires two key hits to operate. When the security key is first hit, it will not turn on. It will not turn on until the SAVE key is hit immediately following the security key hit. This gives you your two key press security timer.

LEVEL 2 - Siren Enable/Disable



Level 2 - Siren Enable/Disable is where you can enable or disable siren tones, key 11, and radio rebroadcast.

This is also where you choose between the High Low tone or the Priority tone, or neither, for key 14.

SAVE

Save LEVEL 2 - Siren Enable/Disable settings and *return to LEVEL* 2 (Keys), page 8.

RAD	
Key 11	
WAIL	
YELP	
MAN	
A/H	

H/L or PRIORITY

Key 14 can be configured to activate either the High Low tone or the Priority tone, or neither.

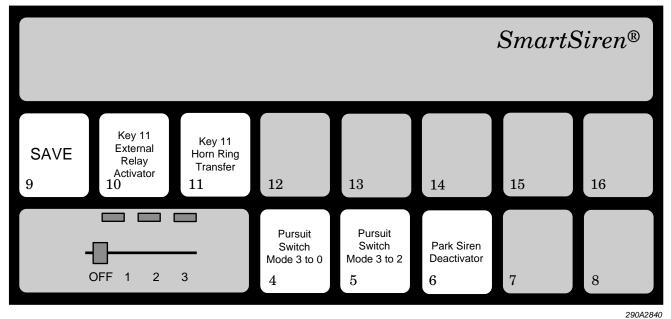
Turn on key 14 if you want High Low to activate on key 14.

Turn on key 6 if you want PRIOR-ITY to activate on key 14.

Turn both off if you want neither to be activated by key 14.

Always leave the Slide Switch **OFF** while reconfiguring. Turn on the key to enable one of the above tones/key. Turn off the key to disable one of the above tones/key.

LEVEL 2 - Key 11 & Pursuit



Level 2 - Key 11 and Pursuit is where you configure what key 11 will do and how the pursuit switch functions.

SAVE

Save LEVEL 2 - Key 11 & Pursuit Switch settings and *return to LEVEL 2 (Keys), page 8.*

Key 11

Key 11 can be configured to operate an external relay (such as a common mic relay) or operate the horn ring transfer relay.

Turn on key 10 to configure "Key 11" as an external relay activator.

Turn on key 11 to configure "Key 11" to control the Horn Ring Transfer.

Pursuit Switch

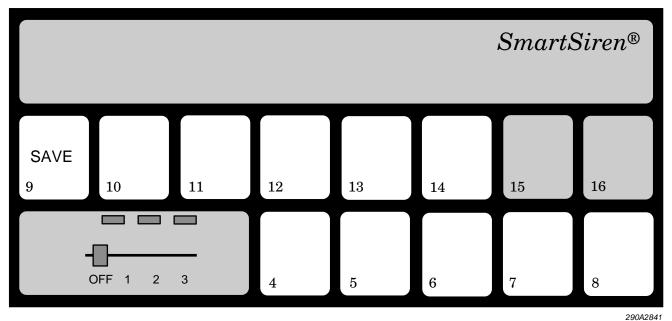
The pursuit switch can be configured to function two ways. It can toggle between mode 3 and mode 0 or it can toggle between mode 3 and mode 2.

Turn on key 4 to make the pursuit switch toggle between modes 3 and 0.

Turn on key 5 to make the pursuit switch toggle between modes 3 and 2.

Turn on key 6 if you wish the Siren to deactivate when the vehicle is put in PARK. (This requires the pursuit wire (grey) to be tied to the PARK circuitry in the vehicle. The pursuit input is ground activated and it is the responsibility of the installer to determine an appropriate place to access the PARK circuitry of the vehicle.)

LEVEL 3 (Power Up)



Level 3 - Power Up is where you decide what keys should turn on automatically when the system is turned on.

SAVE

Save LEVEL 3 - Power Up settings and *return to MAIN MENU page 6.*

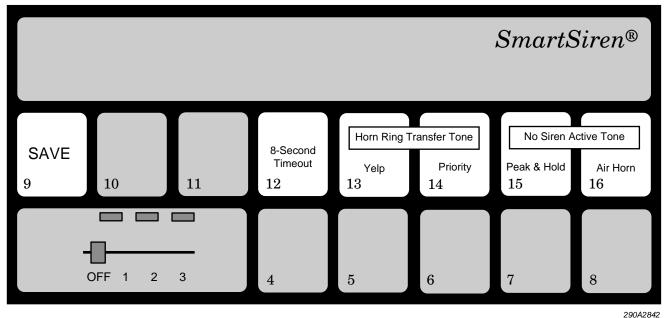
Turn on the keys you want to turn on automatically when the system is powered up.

Remember, only one siren or the RAD key can be selected at a time. If no sirens or RAD is selected, the system will power up in stand-by.

Note

If the sirens are configured to be independent of the slide switch, make sure no sirens are selected on power up.

LEVEL 4 (Horn Ring)



Level 4 - Horn Ring is where you decide how you want the horn ring to function when it is transferred to the siren.

SAVE

Save LEVEL 4 - Horn Ring settings and *return to MAIN MENU page 6.*

8-Second Timeout

Activate key 12 if you want the Horn Ring Transfer tone to revert back to the original tone after 8 seconds.

Horn Ring Transfer Tone

The Horn Ring transfer tone is the tone that will be produced when you have a less urgent tone (such as wail) already active, the horn is transferred, and you press the horn.

If the tone cannot transfer to a more urgent tone, the Air Horn will momentarily sound. Activate key 13 if you want YELP to be this tone. Activate key 14 if you want PRIORITY.

No Siren Active Tone

The no siren active tone is the tone that will be produced when you have no sirens active, the horn is transferred, and you press the horn.

Activate key 15 if you want this tone to be Peak & Hold. Activate key 16 if you want this tone to be Air Horn.

Worksheet

Level 1 Sirens independent of slide switch Yes	No	Function Indicator Sound Yes N
Level 2 - Keys/Switches		
Slide Switch (Circle any combination for	each slide switch	position.)
Relays Auxiliary Relays	Misc.	
Position 1 1 2 3 A B C D E	Key 11 HRTR	SIREN
Position 2 1 2 3 A B C D E	Key 11 HRTR	
Position 3 1 2 3 A B C D E	Key 11 HRTR	
Auxiliary Relays (Circle one of the follow	ing for each relay	.)
A Push-on/Push-off Momentary	-second timeout	Security timeout
B Push-on/Push-off Momentary	-second timeout	Security timeout
C Push-on/Push-off Momentary	-second timeout	Security timeout
D Push-on/Push-off Momentary	-second timeout	Security timeout
E Push-on/Push-off Momentary	-second timeout	Security timeout
Siren Enable (Circle the tones/switches	o be enabled.)	
	-	MAN A/H
Switch 11 and Pursuit Switch (Circle on	for each of the fol	lowing)
Switch II and I disuit Switch (Circle on	TOT Each of the for	liowing.)
Switch 11 External Relay Horn Rin	g Transfer	
Pursuit Switch Toggle between Mode 3 - 2	Toggle between M	Iode 3 - 0Park - Siren Deactivator
Level 3 - Power-up (Circle which switche		ed upon power-up.)
	AIL YELP	H/L or PRIORITY
RELAY A RELAY B RELAY C RI	LAY D RELAY E	
Level 4 - Horn Ring		
8-Second Timeout Yes No		
Transfer Tone YELP PRIORI	ſΥ	
No Siren Active Tone PEAK & HOLD	Air Horn	

Relay/Device Assignments

List below which controlled devices are connected to which relay.

Relay 1 (20-amperes max.)
Relay 2 (20-amperes max.)
Relay 3 (40-amperes max.)
Whay 5 (To ampores max.)
Relay A (10-amperes max.)
Relay A (10-amperes max.)
Relay B (10-amperes max.)
Relay C (10-amperes max.)
Relay D (10-amperes max.)
Trendy D (10-amperes max.)
Relay E (10-amperes max.)

Is Horn Ring Transfer used?	Yes	No
Is the Park Siren Deactivator/Pursuit Switch used?	Yes	No
Is the Radio Rebroadcast Switch used?	Yes	No
Is the External Relay Switch used?	Yes	No

Additional Notes: