

WHELEN[®]

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Installation Guide: PCCS9RW Switch Box

DANGER! Sirens produce extremely loud emergency warning tones! Exposure to these tones without proper and adequate hearing protection, could cause ear damage and/or hearing loss! The Occupational Safety & Health Administration (www.osha.gov) provides information necessary to determine safe exposure times in Occupational Noise Exposure Section 1910.95. Until you have determined the safe exposure times for your specific application, operators and anyone else in the immediate vicinity should be required to wear an approved hearing protection device. Failure to follow this recommendation could cause hearing loss!

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

⚠ WARNING: This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- Failure to use specified installation parts and/or hardware will void the product warranty.
- If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.
- Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.
- For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).
- If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.
- It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.
- FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!

**ACTIVATION OF THIS
SIREN MAY DAMAGE
UNPROTECTED EARS!**



CAUTION

Loud siren noise can cause hearing damage and/or loss. Refer to OSHA Section 1910.95 prior to putting ANY siren into service!

Congratulations on selecting the PCCS9RW power distribution control center. This unit offers a unique collection of features designed to allow the user to customize the operation to suit their individual needs. Features include:

- Nine Programmable Power Distribution Switches (one 3 position slide switch, and 6 momentary switches).
- Nine 20 Amp relay controlled outputs.
- All switches can be programmed to activate any combination of the relay outputs
- Any switch can be programmed to activate any other momentary switch.
- Momentary switches can be programmed to be activated as either a *push on push off, momentary, flashing, or timed* output.
- Any switch can be programmed to activate siren enable
- LED Backlighting
- Copy one units configuration to another unit.
- Easy reset to Factory default settings
- Power Distribution fuses included

Model PCCS9RW

IMPORTANT: It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment! Before returning the vehicle to active service, visually confirm the proper operation of this product.

Mounting:

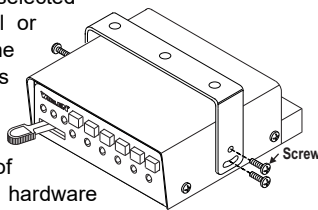
An aftermarket center console is recommended for the mounting location of the PCCS9RW. This not only allows the driver to reach the controls easily, but also keeps the unit safely out of the path of the vehicle's SRS air-bag. Follow the console manufacturer's instructions for mounting information. If a console-type mount is not possible, the PCCS9RW includes a bail strap mounting kit for over or under dash mounting.

WARNING: Regardless of the style selected, be sure to observe the air-bag warning on the cover of this manual.

WARNING: Mounting this unit will require drilling. It is absolutely necessary to make sure that no other vehicle components could be damaged in the process. Check both sides of the mounting surface before starting. If damage is likely, select a different location.

Bail Strap Mount:

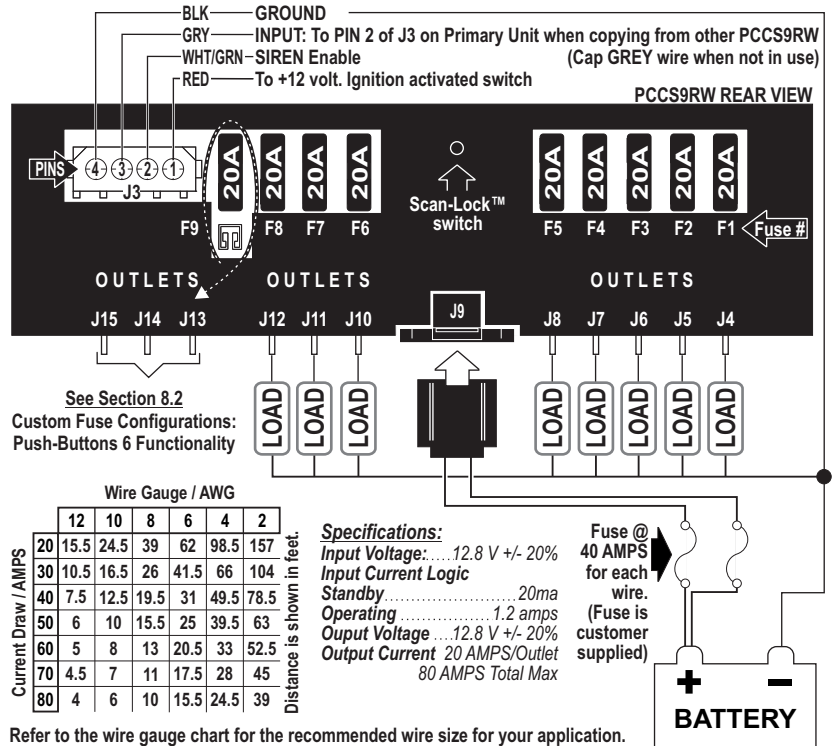
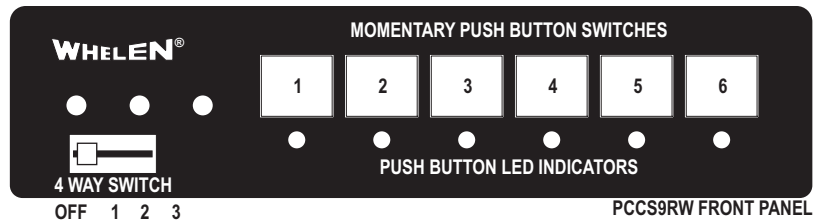
1. Position the bail strap in the selected mounting location. Using an awl or other suitable tool, scribe the surface where the mounting holes are to be drilled.
2. Drill the mounting holes (using a drill bit determined by the size of the "customer supplied" mounting hardware and the thickness of the mounting surface) and secure the bail strap to the mounting location.



Console Mount:

Console manufacturers offer mounting kits that include all the necessary hardware and brackets required to mount this unit into their console. The console mount brackets are secured onto the unit the same way the bail bracket is. Refer to the manual included with your console.

Function Labels: Take the supplied label kit and determine which label describes the function of each switch. Peel the labels off the backing and place them onto the switch buttons. Press the labels lightly into place.



Refer to the wire gauge chart for the recommended wire size for your application.

Wiring:

WARNING! All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and be **FUSED** at the battery to carry that load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

Programming the PCCS9RW:

WARNING: Never try to program the PCC9RW while it is wired to the vehicle. The unit must be removed from the vehicle before programming. **For programming, connect positive (+) 12 volts and ground to J3 only.**

The PCCS9RW switches include a slide switch and 6 momentary switches. The slide switch has one off position and three active positions, combined with the 6 momentary switches, makes a total of 9 switches.

For each of the 9 switches there are 9 corresponding relay outputs in the back of the unit. The PCCS9RW has the capability of customizing how the switches operate, and how they control the relay outputs as well as the siren enable output.

Any of the 6 momentary switches can be configured to operate in one of four switch types: *push on push off, momentary, flashing, or timed* output.

Any of the 9 switches can be configured to activate any combination of relay outputs.

Any of the 9 switches can be configured to remotely activate any of the 6 momentary switches.

Any of the 9 switches can be configured to activate the siren enable output.

One units configuration can be copied to another unit. The following sections describe how to reconfigure the PCCS9RW.

Programming uses the Scan-Lock™ switch located in the rear of the unit. This switch is pressed by inserting a pen or other suitable tool into the hole indicated (see wiring diagram) to push the momentary switch.

(1) Momentary Switch “Switch Type” Programming:

The six momentary switches can be configured to operate as one of four types. The four types are: Push On Push Off, Momentary, Flashing Output (60 FPM) and Timed Output (10 seconds).

Factory Default: SW1 - SW5 = push on-push off
SW6 = Momentary

To Configure a switch’s “Switch Type”:

1. Put the unit into “Switch Type” configuration Mode:

- Place the SLIDE SWITCH in the OFF position and turn all momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 1.
- Release the Scan-Lock™ switch.

To confirm entry into this configuration mode: The GREEN slide switch indicator light will turn on for 2 seconds.

2. Select a switch to be configured.

- Wait for the GREEN slide switch indicator light to turn off.
- Press and release the momentary switch that you wish to configure.

The selected switch’s indicator light will turn on steady. Slide switch indicator lights will display a pattern corresponding to the type of switch that has already been configured (table 2).

3. Choose a “Switch Type” for the selected switch.

- Press and release the Scan-Lock™ switch to cycle through the switch types (table 2).
- Stop when the indicator lights equal the pattern for the desired “switch type”.

GRN	YEL	Slide Switch Indicators
Off	Off	Push On Push Off
On	Off	Momentary
Off	On	Timed Output
On	On	Flashing Output

4. Store and activate the switch’s “switch type”.

- Move the SLIDE SWITCH to position 1.
- Move the SLIDE SWITCH to the off position.

All of the indicator lights will turn off and the data will be stored. This will put the unit back into normal operating mode, to configure another switch start back at step 1.

(2) Momentary Switch, Relay Output Programming:

Any of the 6 Momentary switches can be configured to activate any combination of the nine relay outputs.

Factory Default: See Section 8.1

To Configure a momentary switch’s relay outputs:

1. Put the unit into “Momentary Switch Relay Output” configuration mode.

- Place the SLIDE SWITCH in the OFF position and turn all Momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 2.
- Release the Scan-Lock™ switch.

To confirm entry into this configuration mode: The Yellow slide switch indicator light will turn on for 2 seconds.

2. Select a switch to be configured.

- Wait for the YELLOW slide switch indicator light to turn off.
- Press and release the momentary switch that you wish to configure.

All switch indicator lights whose corresponding relay output is already in the selected switch’s configuration will turn on steady.

3. Add or delete relay outputs activated by the switch:

- Press and release one of the six momentary switches to add or delete its corresponding output. This switches indicator light will turn on steady when its corresponding output is selected to be activated.

OR...

- Press and release the Scan-Lock™ switch to cycle through the SLIDE SWITCH’S corresponding outputs. Stop when indicator lights equal the desired output pattern.

4. Store and activate the switch’s relay output pattern.

- Move the SLIDE SWITCH to position 1.
- Move the SLIDE SWITCH to the off position.

All of the indicator lights will turn off and the data will be stored. This will put the unit back into normal operating mode, to configure another switch start back at step 1.

(3) Slide Switch, Relay Output Programming:

Any of the 3 active Slide Switch positions can be configured to activate any combination of nine relay outputs.

Factory Default: See Section 8.1

To configure a slide switch position’s relay outputs:

1. Select a switch position to be configured and put the unit into “Slide Switch Relay Output” configuration mode.

- Turn all Momentary switches off.
- Place the SLIDE SWITCH in the position that you wish to configure.
- Press and release the Scan-Lock™ switch.

All switch indicator lights whose corresponding relay output is already in the selected Slide Switch position’s configuration will turn on steady.

2. Add or delete relay outputs activated by the selected switch:

- Press and release one of the six momentary switches to add or delete its corresponding output. This switches indicator light will turn on steady when its corresponding output is selected to be activated.

OR...

- Press and release the Scan-Lock™ switch to cycle through the SLIDE SWITCH’S corresponding outputs. Stop when the indicator lights equal the desired output pattern.

3. Store and activate the switch’s relay output pattern.

- Move the SLIDE SWITCH to the off position.

All of the indicator lights will turn off and the data will be stored. This will put the unit back into normal operating mode, to configure another slide switch position start back at step 1.

(4) Re-Setting Factory Defaults:

To restore the factory defaults:

- Place the SLIDE SWITCH in the OFF position and turn all Momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 3.

To confirm that the factory defaults have been restored, The RED slide switch indicator light will turn on for as long as the Scan-Lock™ switch is pressed.

- Release the Scan-Lock™ switch.

All of the indicator lights will turn off and the factory defaults will be stored. This will put the unit back into normal operating mode.

(5) Activation of the Siren Enable Output:

Any of the nine switches can be configured to activate the siren enable output.

Factory Default: Slide Switch Position 3

To activate the siren enable output:

1. Put the unit into "Siren Enable Output Activation" mode.

- Place the SLIDE SWITCH in the OFF position and turn all Momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 4.
- Release the Scan-Lock™ switch.

To confirm entry into this configuration mode: The GREEN and YELLOW slide switch indicator light will turn on for 2 seconds, followed by.....

All switch indicator lights whose corresponding switch is already programmed to activate the Siren Enable Output will turn on steady.

2. Add or Delete switches:

To select a momentary switch....

- Press and release one or more of the six momentary switches to add or delete it from activating siren enable output. The switches indicator light will turn on steady when its corresponding switch is selected.

OR...

To select a slide switch position....

- Press and release the Scan-Lock™ switch to cycle through the slide switch indicators.
- Stop when the indicator lights equal the desired slide switch positions needed to activate the siren enable output.

3. Store and activate the selected switch's.

- Move the SLIDE SWITCH to position 1.
- Move the SLIDE SWITCH to the off position.

All of the indicator lights will turn off and the data will be stored. This will put the unit back into normal operating mode.

(6) Remote Activation of the six Momentary switches:

Any of the nine switches can be configured to remotely activate any of the other six momentary switches.

Factory Default: No momentary switches are remotely activated.

To activate Momentary Switches:

1. Put the unit into "Momentary Switch Activation Mode".

- Place the SLIDE SWITCH in the OFF position and turn all momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 5.
- Release the Scan-Lock™ switch.

To confirm entry into this configuration mode: The YELLOW and RED slide switch indicator light will turn on for 2 seconds.

2. Select a switch to be configured.

To select a momentary switch....

- Wait for the Yellow and red slide switch indicator light to turn off.
- Press and release the momentary switch that you wish to configure.

OR...

To select a slide switch position....

- Wait for the Yellow and red slide switch indicator light to turn off.
- Place the SLIDE SWITCH in the position that you wish to configure.
- Press and release the Scan-Lock™ switch.

All switch indicator lights whose corresponding switch is already in the selected Switch position's configuration will turn on steady.

3. Add or delete momentary switches activated by the selected switch:

- Press and release one of the six momentary switches to add or delete it from the selected switch positions configuration. This switches indicator light will turn on steady when its corresponding switch is selected to be activated.

4. Store and activate the selected switch's configuration.

For a selected momentary switch....

- Press and release the Scan-Lock™ switch.

OR...

For a selected slide switch....

- Move the SLIDE SWITCH to the off position.
- Press and release the Scan-Lock™ switch.

All of the indicator lights will turn off and the data will be stored. This will put the unit back into normal operating mode, to configure another switch start back at step 1.

(7) Copying a units configuration:

If there is more than one unit that needs to be configured to operate in the same manor, it is not necessary to configure each unit separately. Once one unit has been configured to operate as desired, it can now be used as the "primary" unit and its configuration can be copied to another unit that is set up as a "secondary" unit.

To copy a configuration to a second unit:

1. Wire the units as follows.

- Connect J3 on both units to a common power source (PIN1 to V BAT & PIN 4 to Ground).
- Connect pin 2 of J3 on the "primary" unit to PIN 3 of J3 on the "secondary" unit.
- Leave all other wiring unconnected.

2. Put the "SECONDARY" unit into "receive" mode:

- Place the SLIDE SWITCH in the OFF position and turn all Momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 6.
- Release the Scan-Lock™ switch.

The GREEN, YELLOW and RED slide switch indicator light will turn on for 2 seconds.

- When these indicator lights turn off press and release momentary switch 1 on the "secondary" unit.

To confirm entry into this configuration mode: The GREEN slide switch indicator light will turn on.

3. Put the "PRIMARY" unit into "transmit" mode.

- Place the SLIDE SWITCH in the OFF position and turn all Momentary switches off.
- Press and hold the Scan-Lock™ switch.
- Press and release momentary switch 6.
- Release the Scan-Lock™ switch.

The GREEN, YELLOW and RED slide switch indicator light will turn on for 2 seconds.

- When these indicator lights turn off press and release momentary switch 2.

To confirm entry into this configuration mode: The RED slide switch indicator light will turn on.

4. Transfer the configuration.

- When the green indicator on the "secondary" unit turns off and the yellow indicator turn on, proper communications has been established.
- Press and release momentary switch 1 on the "primary" unit to start the transfer.
- When the green indicator on both the "primary and secondary" unit turns on, the transfer is complete.

NOTE: If the RED slide switch indicator light on the "secondary" unit turns on, an error has occurred, start back at step 1.

5. Store and activate the configuration.

- Press and release the Scan-Lock™ switch on both the "primary and secondary" units.

All of the indicator lights will turn off and the data will be stored. This will put both units back into normal operating mode.

OR...

- Turn the power off on both the "primary and secondary" units.

To transfer the configuration to another unit start back at step 1.

(8) Terminal Operation

8.1 Terminal Specifications

This PCCS9RW contains 11 outlets (Faston connectors) located on the rear panel. They are designed to activate components that do not exceed specific current draw.

NOTE: It is important that any components connected to these terminals do not exceed the maximum current rating for that terminal.

Warning! Total power distribution current is not to exceed 80 AMPS.

Outlet	Max. Load	Fuse
J4	20 Amps	F1
J5	20 Amps	F2
J6	20 Amps	F3
J7	20 Amps	F4
J8	20 Amps	F5
J10	20 Amps	F6
J11	20 Amps	F7
J12	20 Amps	F8
J13 - J15	20 Amps (These outlets can not be activated simultaneously)	F9

The PCCS9RW factory default configuration terminal outputs are:

Slide Switch Positions:

- 0 = Outlets OFF
- 1 = Outlet J4 ON
- 2 = Outlets J4 & J5 ON
- 3 = Outlets J4, J5 & J6 ON
Siren Enable Output ON

Push-Button Switches:

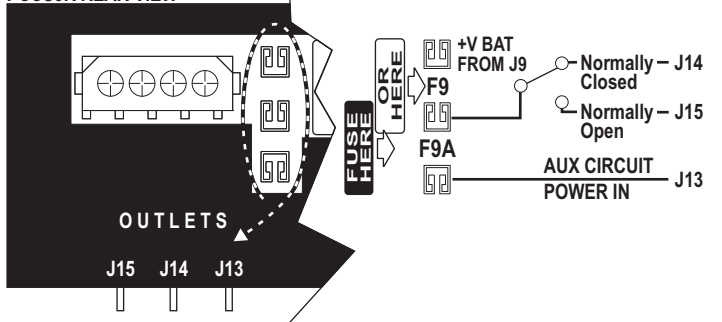
- 1 = Outlet J7 ON
- 2 = Outlet J8 ON
- 3 = Outlet J10 ON
- 4 = Outlet J11 ON
- 5 = Outlet J12 ON
- 6 = Outlets J13 - J15 (See section 8.2)

8.2 Custom Fuse Configuration: Push-Button 6 Functionality

Outlet #J13 does not function as an output terminal and is not used in the default configuration. By changing the position of fuse #9 this terminal can be configured to control an auxiliary circuit. This auxiliary circuit can not exceed 20 amps.

Moving Fuse #9 from its default position (F9) to its optional position (F9A) allows push-button 6 to control an auxiliary circuit. Connect *Power In* from the AUX circuit to Outlet J13 and *Load Out* to Outlet J14 or J15. Push-button 6 will now open and close this circuit.

PCCS9R REAR VIEW



PC Board Power Fuse:

Remove the 4 screws holding the cover on, remove the cover and replace the fuse. The internal fuse should be replaced with a 5 AMP fuse.

