



# Smart Switch

**SS1L/S, SS1F/S, SSR**

**SceneMaster Version 2.0**



## INSTALLATION AND OPERATING INSTRUCTIONS

### For Models:

**SS1L/S-600**

**SS1F/S-5**

**SS1L/S-1000**

**SS1F/S-8**

**SSR**

**19215 Parthenia St., Suite H  
Northridge, CA 91324**

**Tel: (818) 701-9831 Fax: (818) 701-1506**

**Email: [sales@pcslighting.com](mailto:sales@pcslighting.com)**

**[www.pcslighting.com](http://www.pcslighting.com)**

**Congratulations! You have just purchased the best quality powerline carrier remote control switch available. Powerline Control Systems' Smart Switch is a high quality, X-10 compatible product that is a low cost alternative to hard-wired lighting systems. The Smart Switch can be retrofitted in existing homes to allow remote control capability.**

**This booklet covers all PCS models SS1L/S, SS1F/S, and SSR. Please call with any questions, comments, or suggestions you have on our products.**

## **CAUTION!!**

### **READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING DEVICE.**

This device is intended for installation in accordance with the National Electric Code and local regulations. It is recommended that a qualified electrician perform this installation. **Retain these instructions for future reference.**

To reduce the risk of overheating and possible damage to other equipment, do not install to control a receptacle, a motor-operated appliance, a fluorescent lighting fixture, or a transformer-supplied appliance. This product is for indoor use only. Connect only copper or copper clad wire to this device.

Pour re'duire le risque d'augmenter la chaleur des diffe'rents equipments, ne pas installer une piece de control, une machine `a moteur, une fixture fluorescente or un transformateur.

## **INSTALLATION**

### **Installation Notes**

- a) Be sure that power to the load being controlled has been disconnected by turning circuit breaker off. Installing the SS1 Smart Switch or a remote with power on may expose you to dangerous voltages and may damage the device.

### **Installation Procedures**

1. Remove faceplate from existing device.
2. Unscrew and pull device out of wall box.
3. Disconnect wires from device. Using a wire tester, identify and mark the "Hot", the "Load", the "Neutral" and the "Traveler" wires connected to device.
4. Install device per the following important note:

*Be sure device is in the "System Off" position by firmly pressing the Rocker Bottom until you click the airgap switch to the open position or you see the "System Off" label on top of the Rocker.*

5. After all connections have been made be certain all wire connectors are firmly attached and there is no exposed copper.
6. Gently place wires and switch into wall box (with LED at top of device) and screw in place.
7. Before installing faceplate, restore power to circuit, and firmly press top of device until it snaps out of "System Off" position.
8. After testing device for proper operation install faceplate onto the device.



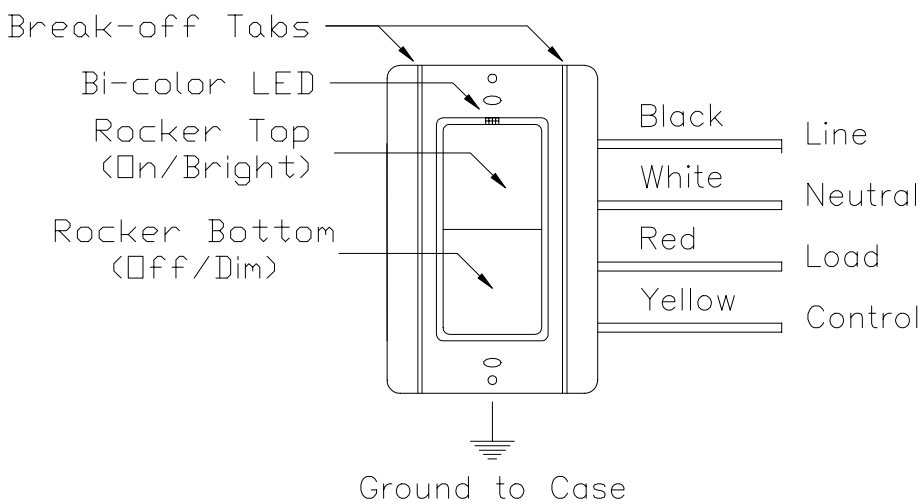
## Smart Switch Wiring Diagram

### • Wiring Notes:

1. Refer to diagrams to determine the wire colors of the hook-up.
2. All PCS wall switches require a neutral (white) connection.
3. Remote switches require that the Line (black) wire is accessible.
4. The black wire of the remote switch should be connected to the same phase of the house transformer as the SS1 switch. If the remote is connected to line of the wrong leg of the house transformer the action of the switch will be opposite of what is expected. Top will be OFF and bottom will be ON. You may correct this by reversing the black and yellow wires to obtain correct operation but then the LED will not go on.
5. Grey wire on remote switch can be connected to earth ground or neutral. The grey wire serves only to light the red LED in the remote. This LED does not indicate anything except that power is applied and to serve as a night-light.

## LOCAL OPERATION – SS1 and REMOTE SWITCH

Turning the Lighting Circuit On	Tap the Rocker Top once.
Turn On to Full Bright	Tap the Rocker Top twice.
Brightening the Lighting Circuit	Press and Hold the Rocker Top down until the right lighting level is achieved.
Turning the Lighting Circuit Off	Tap the Rocker Bottom once.
Dimming the Lighting Circuit	Press and Hold the Rocker Bottom down until the right lighting level is achieved
System Off. Removing all power for safe bulb replacement.	Firmly press the Rocker Bottom until you click the air gap switch to the open position or you see the “System Off” label on top of the rocker.



## **LED INDICATION (except on Remote Switch SSR)**

Normal Operation	Red Continuous (Green for 2 sec after reset)
Receive valid X-10 Command with primary or any valid scene address (if scenes are turned on)	Blink GREEN for ½ second
Receive valid X-10 Command w/ any other address	Blink OFF for ½ second
Receive corrupted X-10 Command or noise	Blink ORANGE for ½ second
Programming modes 1 ~ 5.	Steady continuous blinking on / off of any color indicates switch is in programming mode.

# **SMART SWITCH PROGRAMMING**

## **X-10 Addressing**

The X-10 protocol allows units to have a unique address made up of any combination of a House Code (a letter from A to P) and a Device Code (a number from 1 to 16). Usually X-10 controlled devices within one area (i.e. a room) are given the same House Code, but different Device Codes.

## **Modes of Programming**

In addition to **Normal Operation**, there are five programming modes used to set the **Primary Address**, the **Scene Addresses**, the **Scene Enables**, the **Scene Ramp Rates** and the **Advanced Programming Options**.

**Normal Operation** - this is the normal operating state.

**Mode 1** - mode used to set primary address of the channel(s).

**Mode 2** - mode used to set scene addresses to the scene numbers.

**Mode 3** - mode used enable or disable individual channels to scenes.

**Mode 4** - mode used to set ramp rates to the scene numbers.

**Mode 5** - mode used to set the Advanced Programming Options.

**Scene Number** - A number from 1 to 16 representing each scene and holds settings for scene address, channel enable, ramp rate and lighting level.

**Channel Number** - A number representing the lighting channel of product. The LM4 have 4 channels (Channel Numbers 1 to 4). The MM2 have 2 channels (Channel Numbers 1 to 2). The SS1 has only one channel (Channel Number 1).

### **NOTE:**

- Elementary programming can be performed using this instruction manual. To fully understand the scene features of the PCS system, please **read the SceneMaster Programming Manual (SPM-2)** which covers the complete programming of this device. This is available free from your distributor, dealer, representative or PCS.
- The SceneMaster system will provide visual feedback while in programming mode. **Lights will flash and the LED pattern will change** during the course of programming to give the installer feedback that his actions are being entered.
- The **Maxicontroller is the simplest controller** that can program the PCS SceneMaster system. This hand-held controller was chosen because it was cost-effective, it contained the full set of X-10 addresses and the addresses can be transmitted without an automatic following command. For details of this controller, please contact PCS.
- This PCS product comes from the factory with the Master Scene system disabled. It will function normally responding to ON, OFF, Bright, Dim, Preset Dim and MicroStep commands.

## To Enter any Mode:

- 1) **Firmly press the bottom of the Rocker Bottom.** Click the airgap switch to the open position or when you can see the "SYSTEM OFF" label on top of the rocker.
- 2) **Press the top of the rocker until the switch clicks back on. Within one second press and hold down both the top and bottom of the switch rocker simultaneously and release when the LED goes off. The LED will start blinking green.** You are now in Mode 1 (Setting New Primary Address).
- 3) **Tap the rocker top button once. The LED is blinking red.** You are in Mode 2 (Setting New Scene Addresses).
- 4) **Tap the rocker top button once. The LED is blinking orange.** You are in Mode 3 (Setting Channel Enables).
- 5) **Tap the rocker top button once. The LED is alternating green and red.** You are in Mode 4 (Setting Ramp Rates).
- 6) **Tap the rocker top button once. The LED is alternating green and orange.** You are in Mode 5 (Setting Advanced Programming Options).

## LED Color Indicator

Program Mode	Mode Name	LED Pattern
	Normal Operation	Solid Red
Mode 1	Setting New Primary Address	Blinking Green
Mode 2	Setting New Scene Addresses	Blinking Red
Mode 3	Setting Channel Enables	Blinking Orange
Mode 4	Setting Ramp Rates	Alternating Green and Red
Mode 5	Advanced Programming Options	Alternating Green and Orange

## Mode 1 Programming - Setting the Primary Address

- 1) **Enter Mode 1.** See To Enter any Mode section.
- 2) **Transmit X-10 address.** This address will be the new Primary Address.
- 3) **Press All-Lights-On key.** The product stores new Primary Address into memory.
- 4) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## **Mode 2 Programming - Setting Scene Addresses**

- 1) **Enter Mode 2.** See To Enter any Mode section.
- 2) **Press Scene Number.** A number between 1 and 16 representing scene of product.
- 3) **Press All-Lights-On key.** Product confirms Scene Number is entered.
- 4) **Transmit X-10 address.** Address will be the address of the scene number selected.
- 5) **Press All-Lights-On key.** The product stores new Scene Address into memory.
- 6) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## **Mode 3 Programming - Setting Channel Enables**

- 1) **Enter Mode 3.** See To Enter any Mode section.
- 2) **Press Scene Number.** A number between 1 and 16 representing scene of product.
- 3) **Press All-Lights-On key.** Product confirms Scene Number is entered.
- 4) **Press all applicable Channel Numbers.** SS1s have only channel number 1, so press the "1" key.
- 5) **Press the ON key or OFF key.** Pressing ON or OFF key will determine if the channel will respond or not respond to the Scene Address.
- 6) **Press All-Lights-On key.** The product stores new Channel Enables into memory.
- 7) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## **Mode 4 Programming - Setting Ramp Rates**

- 1) **Enter Mode 4.** See To Enter any Mode section.
- 2) **Press Scene Number.** A number between 1 and 16 representing scene of product.
- 3) **Press All-Lights-On key.** Product confirms Scene Number is entered.
- 4) **Press Ramp Rate number.** A number between 1 and 16 representing the ramp rate duration. The "1" key is an instant-on, "2" is 3 seconds, "3" is 6 seconds, "7" is 20 seconds, "12" is 7 minutes, "15" is 13 minutes, "16" is the security flashing mode.
- 5) **Press All-Lights-On key.** The product stores new Ramp Rate into memory.
- 6) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## **Mode 5 Programming - Setting Advanced Programming Options**

The Advanced Programming Options are given the following table. The sequence of programming is different for these options, so we will separate them as follows.

### **Advanced Programming Options 1 through 7**

- 1) **Enter Mode 5.** See To Enter any Mode section.
- 2) **Press Advanced Programming Option number.** A number between 1 and 7 as defined in the following table.
- 3) **Press All-Lights-On key.** Product confirms Option Number is entered.
- 4) **Press all applicable Channel Numbers.** SS1s have only channel number 1, so press the "1" key.
- 5) **Press the ON key or OFF key.** Pressing ON or OFF key will determine if the channel will respond or not respond to the Scene Address.
- 6) **Press All-Lights-On key.** The product stores new setting into memory.
- 7) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

### **Advanced Programming Options 8 and 10**

- 1) **Enter Mode 5.** See To Enter any Mode section.
- 2) **Press Advanced Programming Option number.** Number 8 or 10 as defined in the following table.
- 3) **Press All-Lights-On key.** Product confirms Option Number is entered.
- 4) **Press the ON key or OFF key.** Pressing ON or OFF key will determine if the channel will respond or not respond to this option.
- 5) **Press All-Lights-On key.** The product stores new setting into memory.
- 6) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## **Advanced Programming Option 9**

- 1) **Enter Mode 5.** See To Enter any Mode section.
- 2) **Press Advanced Programming Option 9.** Number 9 is defined in the following table.
- 3) **Press All-Lights-On key.** Product confirms Option Number is entered.
- 4) **Press the Receive Level.** A number between 1 and 16 representing the voltage receive level of the product. The default is "4" (50mV). The "1" key is 5mV, "7" is 125mV, "11" is 225mV, "14" is 300mV, and "16" is 350mV.
- 5) **Press All-Lights-On key.** The product stores new setting into memory.
- 6) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

<b>Numbered Key on Transmitter/Controller</b>	<b>Advanced Programming Option</b>	<b>Default Setting</b>
1	Soft Start	Enabled
2	All Lights On	Enabled
3	All Lights Off	Enabled
4	All Units Off	Enabled
5	Universal All Lights On	Disabled
6	Universal All Lights Off	Disabled
7	Universal All Units Off	Disabled
8	Master Scene Enable	Disabled
9	Receive Level	4
10	Remote Access	Disabled

### **ADVANCED PROGRAMMING OPTIONS**

## **RESET TO DEFAULT SETTINGS**

The following steps will return this product to its default settings as given on the next page.

- 1) **Enter Mode 1.** See To Enter any Mode section.
- 2) **Press All-Units-Off key 3 times.** This will reset to factory defaults.
- 3) **Press All-Lights-On key 3 times.** The product is transferred out of programming mode and into normal operation.

## Default Settings

The default settings for the four channel modules (i.e. LM4s, LM1s) are shown in the tables below. Single and dual channel modules (i.e. SS1s, LM1s, MM2s) are the same except for the absence of channels 2, 3 and 4.

### Primary Address Defaults

	Channel 1	Channel 2	Channel 3	Channel 4
Primary Address	A1	A2	A3	A4

### Scene System Defaults

SCENE NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
SCENE ADDRESSES	B1	B2	B3	B4	P5	P6	P7	P8	H1	H2	H3	H4	H5	H6	H7	H8		
RAMP RATES	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	16		
CHANNEL 1 ENABLE	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On		
CHANNEL 2 ENABLE	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On		
CHANNEL 3 ENABLE	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On		
CHANNEL 4 ENABLE	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On		
XCHAN NO.	CIRCUIT NAME	PRIME ADDR	LIGHTING LEVELS															
Ch 1	Channel 1	A1	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	100%
Ch 2	Channel 2	A2	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	100%
Ch 3	Channel 3	A3	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	100%
Ch 4	Channel 4	A4	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	20%	100%	70%	40%	100%

### Advanced Programming Defaults

CHANNEL ADVANCED PROGRAMMING			1 Soft Start	2 All Lts ON	3 All Lts OFF	4 All Uts OFF	5 Univ Lts ON	6 Univ Lts OFF	7 Univ Uts OFF	8 MstrScn Enable	9 Receive Level	10 Rmt Acs Enable
CHAN NO.	CIRCUIT NAME	PRIME ADDR	OPTION SETTINGS									
Ch 1	Channel 1	A1	On NOTE 1	On NOTE 2	On NOTE 2	On	Off	Off	Off	Off	4	Off
Ch 2	Channel 2	A2	On NOTE 1	On NOTE 2	On NOTE 2	On	Off	Off	Off			
Ch 3	Channel 3	A3	On NOTE 1	On NOTE 2	On NOTE 2	On	Off	Off	Off			
Ch 4	Channel 4	A4	On NOTE 1	On NOTE 2	On NOTE 2	On	Off	Off	Off			

NOTE 1: Advanced Programming Option 1 does not apply to appliance (relay) modules.

NOTE 2: This setting is off for the SS1F/S modules.

## SPECIFICATIONS

Model Number	SS1L/S-600	SS1L/S-1000	SS1F/S-5	SS1F/S-8
<b>Operation</b>	Dimming	Dimming	Non-dimming	Non-dimming
<b>Max Total Load</b>	600W / 600VA	1000W / 1000VA	5 A	8 A
<b>Standard Load Types</b>	Incandescent	Incandescent	Fluorescent	Fluorescent
<b>Input Power</b>	125 VAC, 5A	125 VAC, 8A	125 VAC, 5A	125 VAC, 8A
<b>Min Load</b>	60 W	60 W	60 W	60 W
<b>Min Receive Level</b>	5 mV	5 mV	5 mV	5 mV
<b>Max Noise Rejection</b>	350 mV	350 mV	350 mV	350 mV
<b>Connections</b>	16 AWG (min)	16 AWG (min)	16 AWG (min)	16 AWG (min)
<b>LED Indicator</b>	Yes	Yes	Yes	Yes
<b>Dimensions</b>	4.25 X 1.65 X 1.9 in <sup>3</sup>	4.25 X 2.38 X 1.9 in <sup>3</sup>	4.25 X 1.65 X 1.9 in <sup>3</sup>	4.25 X 2.38 X 1.9 in <sup>3</sup>
<b>Weight</b>	0.3 lb.	0.3 lb.	0.3 lb.	0.3 lb.
<b>Mounting</b>	Standard J box	Standard J box	Standard J box	Standard J box
<b>Operating Temp</b>	-40 °F to 104 °F	-40 °F to 104 °F	-40 °F to 104 °F	-40 °F to 104 °F

### LIMITED WARRANTY

Seller warrants this product, if used in accordance with all applicable instruction, to be free from original defects in materials and workmanship for a period of five years from the date on serial number or purchase date if no S/N date is given. If the product should prove defective in material or workmanship within that period, Seller will repair or replace the product, at its sole discretion. Service under this warranty can only be obtained by delivering or shipping the product (with all shipping or delivery charges prepaid) to: Powerline Control Systems, 19215 Parthenia St., Suite H, Northridge, CA 91324. Seller will pay return shipping charges.

This warranty does not apply to normal wear or to damage resulting from accident, misuse, abuse or neglect. Seller makes no express warranties other than those expressly set forth herein. Except to the extent prohibited by applicable law, all implied warranties, including all warranties of merchantability or fitness, are limited in duration to the warranty period set forth above; and this warranty expressly excludes all incidental and consequential damages. (Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from jurisdiction to jurisdiction.)

### Returns for Repair/Exchange/Refund

You must call for a Return Material Authorization number (RMA #). This number should be written on the package exterior and on any enclosed paperwork. Please include a note explaining the problem so that we may more quickly improve the product design if the problem is caused by something inherent in the design.