

SCM-PD-PLUS shown with optional SCM-WC-SN wireless controller installed

SCM-Power Distribution PLUS-COMBO system, Installation and User Instructions:



SCM-PD-PLUS-COMBO

SCM-PD-PLUS-COMBO includes:

1ea	NEMA Box with Power distribution Board and 6 outputs
1ea	Box Lid and 6 screws
6ea	7.5 Amp Fuses (Installed)
4ea	SS 316 PH,#8 x1/2" Mounting Screw
1ea	Pre-wired Lighted, OFF/ON, Momentary Switch
1ea	2 Button Waterproof Key FOB
1ea	Wireless Receiver Stamp Electronics Board
1ea	Stubby 1/4 Wave Antenna
1ea	5" SMA to U.FL Coax Jumper
1ea	90 Degree Male to Female SMA Adapter
1ea	Shadow-Caster Lanyard

Tools Required: Phillips head screwdriver, wire strippers, .257"-.261" (F or G) Diameter Drill, and RTV for sealing the antenna bulkhead.

The Shadow-Caster Power Distribution PLUS (SCM-PD-PLUS) provides a convenient way to connect and control multiple Shadow Caster Lights. The incorporated Shadow-Net communications enables compatibility with Shadow-Caster's color changing and single color lights. The SCM-PD-PLUS-COMBO includes a wireless controller for remote control of Shadow-Caster lights.

The SCM-PD-PLUS has "on board" power switching, for 6 lights and up to 100 amps. Each light is individually switched and has its own fuse. The "on-board" power switching feature greatly simplifies installation by allowing the power to be taken locally from a main breaker, as opposed from the helm. The lights are controlled with a pre-wired waterproof switch.

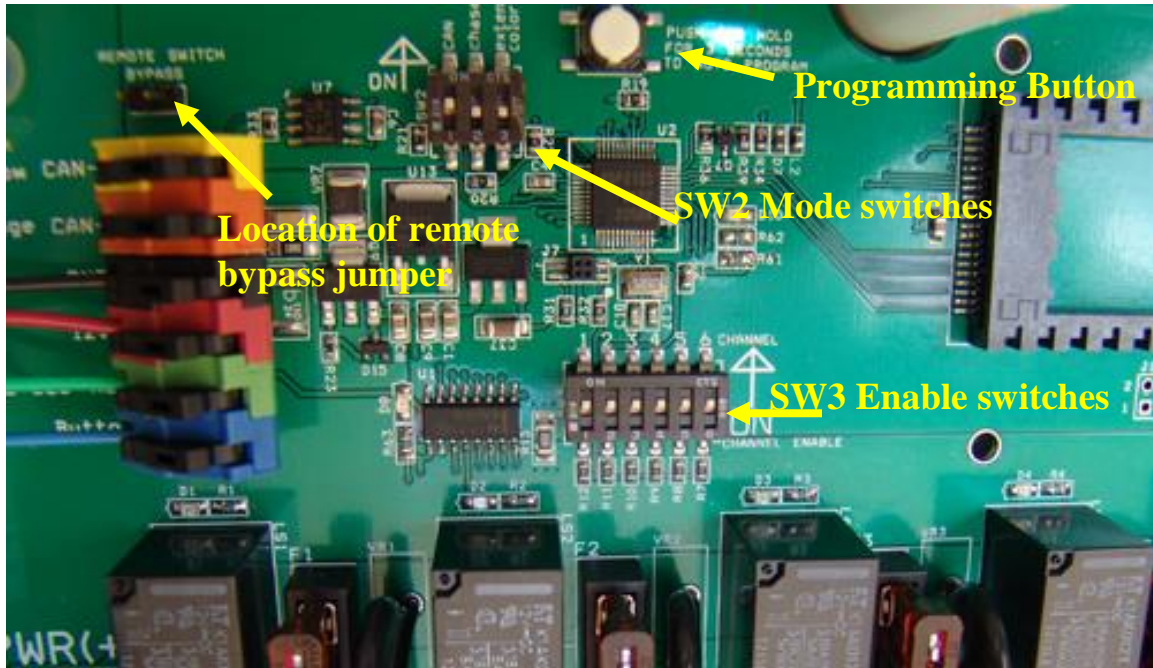
Shadow-NET is a communication protocol that allows the SCM-PD-PLUS to communicate with and coordinate the color changing feature of all Shadow-Caster color changing lights. The SCM-PD-PLUS is also fully compatible with Shadow-Caster single color lights. The SCM-PD-PLUS will support a full range of color changing, fading, strobing, flashing and chase modes.

Installation Steps

- 1. Configure the SCM-PD-PLUS:** Set the 6 position dip switch (SW3) and the 3 position switch (SW2). On SW3, each switch enables corresponding channels 1 through 6. The install locations do not have to be consecutive. SW2, (three position switch), functions are listed below. The SCM-PD-PLUS comes pre-configured with network communications enabled, "chase mode" disabled, and standard color range selected. See **Picture 1**.

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SW2, 3 Position Switch Settings		
Switch 1	Network Enable	Enables Shadow-Net
Switch 2	Chase Mode	Enables Chase Mode
Switch 3	Extended Colors	Moves Color Support from 4 to 12 (only works with Accent Lighting Controller and full color SC-40s)



Picture 1: PD-PLUS box showing locations of SW-2, SW-3, remote bypass and Programming button.

- 2. Find a suitable mounting location:** This box should be mounted in a dry location, such as high in the bilge area, below the deck or inside the console. It is preferred to not have the cable glands or the power wire connector facing up where moisture will drain into the box.
- 3. Select Antenna Mounting Location:** Once the power distribution box mounting location and orientation has been selected, a suitable location for the antenna should be determined. The ideal mounting option will have the Antenna mounted as high as possible, and as far as possible from large metal objects. Additionally, the antenna should be as far as possible from potential sources of electrical interference and oriented vertically. There is a right angle adapter included to increase mounting options.

If a suitable mounting position still cannot be found, or if there is poor performance, contact Shadow-Caster regarding the availability of a remote-mount extended range antenna. Part # **SCM-Antenna-Extended**

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4. **Mount Antenna in box:** Verify that the 5" SMA to U.FL Coax Jumper will reach from the Antenna PCB to the chosen location. Once Verified, drill a slightly larger than .25" diameter hole through the PD-PLUS box. **Exercise Caution to not damage any components on the PCB.** Install the SMA-bulkhead with included nut and washer. Use RTV or silicon to seal around the SMA bulkhead. Screw in stub antenna to the bulkhead.

5. **Insert Wireless Card into PD-PLUS:** Simply slide the Wireless Card as shown in Figure 1. If the U.FL connection to the board has become disconnected, simply press together to snap back on.

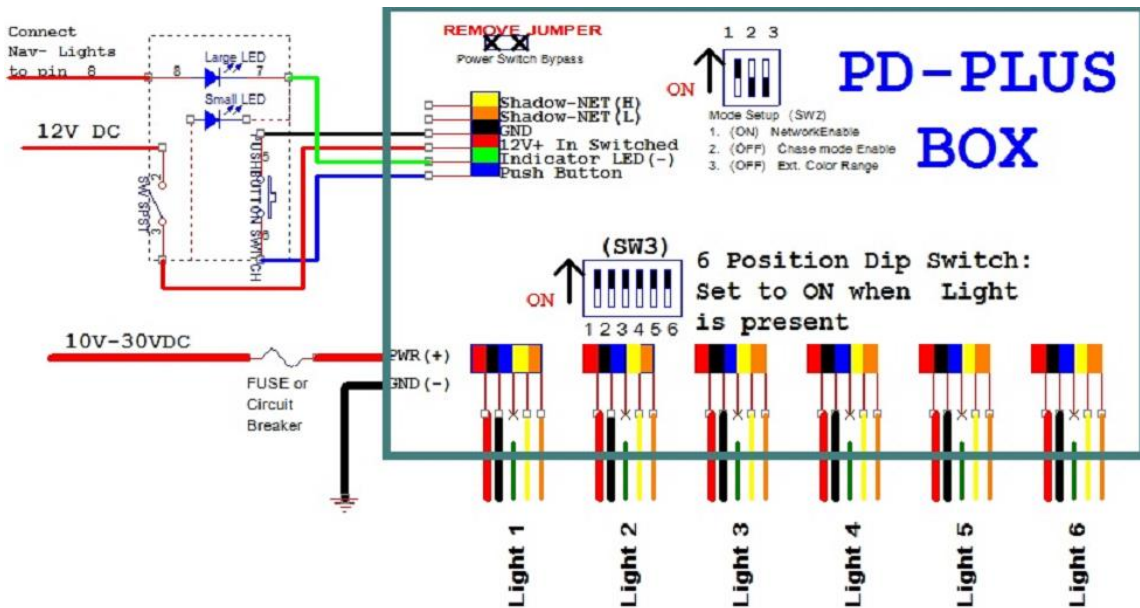


Diagram 1: Typical installation of SCM-PD-PLUS, shown with 6 Color Caster Lights. (Note that Green Wire from Color Casters are not connected)

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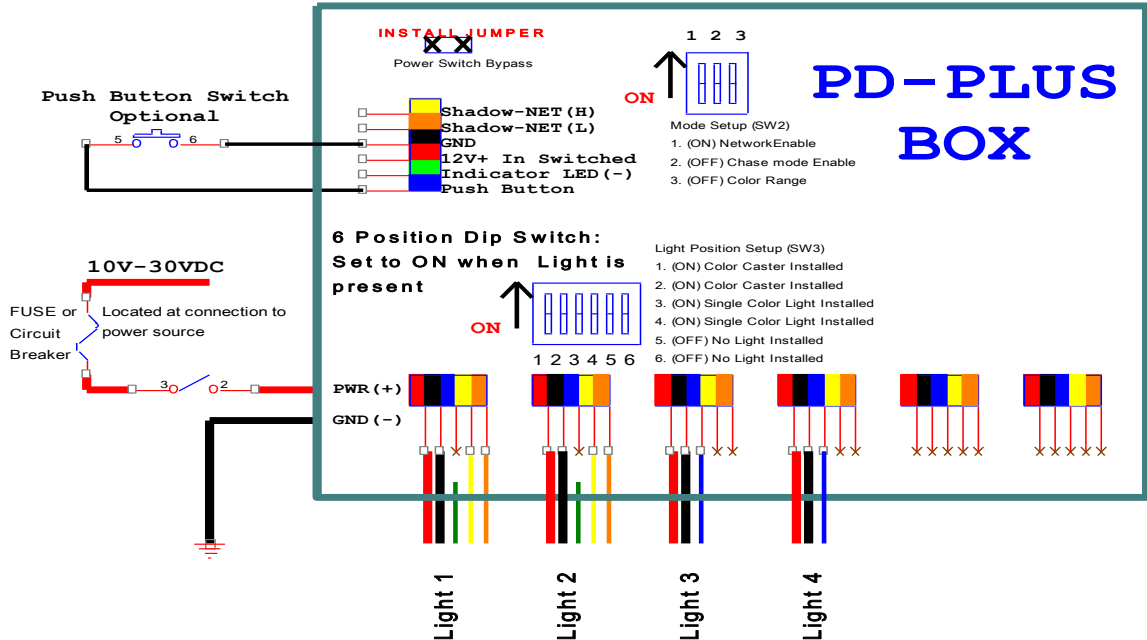


Diagram 2: Optional wiring Configuration for SCM-PD-PLUS shown with Color Caster Lights on locations 1 and 2, Single Color Lights on locations 3 and 4. Note that the jumper on the upper left corner of the board is installed for this power configuration.

- 6. Mount the Box:** The box can be mounted with the included #8 stainless steel pan head mounting screws.
- 7. Connect the Lights:** Loosen the cable glands and route the cable through. Strip the outer cable pack approximately 1.5 inches, and the ends of the wire back approximately .25 of an inch. The connectors are color coded. Insert each wire into the respective location and snap the connector down. Note that the green wire from the Color-Casters is left unconnected. The blue connector is for the blue wire on Shadow-Caster single color lights. Note that the lights should typically be connected consecutively for implementation of chase modes. (I.e. light moves from one light to the next in a linear pattern).
- 8. Connect Input Power:** Route power into the box directly from a breaker, or main fuse panel. See **Diagram 1**. The breaker and incoming wire should be sized appropriately to the number and current draw of the lights being connected. **Pwr(+)** and **Gnd(-)** are clearly marked on the printed circuit board. The power connector will accept from 2awg to 20awg wire. For installations where it is desired to switch the power directly, see **Diagram 2**. Installation of the blue jumper on the upper left hand corner of the board will be necessary for this configuration. See **Picture 1**.
- 9. Install the pre-wired switch:** **Diagram 1** shows the pre-wired switch configuration. The switch power can be taken from the same source as the lights or from a local source at the installation of the switch. The current draw for the

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switch circuit will be 250mA. See attached drawing for dimensions and schematic.



10. Cinch the cable glands: Hand tighten all cable glands. Verify that any unused cable glands have a nylon dowel inside so that a water-tight seal is maintained.

11. Configure Fuses: The Power Distribution box comes standard with 7.5Amp fuses to accommodate Color-Casters and SCM-10 size lights on a 12Volt power bus. If different size lights or installing on a 24Volt bus please see Chart 1 for appropriate fuse selection.

Chart 1: Fuse Recommendations

model	Suggested Fuse Size	
	12V system	24V system
SC-40	30	15
SC-10	7.5	3
SC-6	5	3
SC-4	3	3

12. Wireless Controller: If Installing Wireless Controller Model SCM-WC-SN, please see the documents included for installation and operating instructions.

13. Final Setup and Auto Programming: Power up the SCM-PD-PLUS box. Press and hold the “auto programming” button for three seconds and release. All of the lights will turn off, then cycle back on one at a time, starting with light one. The system will communicate with each light and determine what is present. Once this process completes, cycle the power to the box again. The system is now ready to use.

14. Install Cover: Install clear enclosure lid with 6 supplied screws.

Operation of PD-PLUS with switch:

1. Turn on the power switch and the lights will power up.
2. To change the color, simply press the **Momentary** switch and release.

Chart 2:

Press Momentary Button to Change Color

Normal Color setting	Extended Colors Enabled
Blue	Blue
White	White
Red	Red
Green	Green
Blue/White (fade mode only)	Super White (all LEDs On)
All colors (fade mode only)	Aqua
	Blue-Violet
	Violet
	Magenta
	Yellow
	Purple
	Orange
	Green Yellow
	Blue/White (fade mode only)
	All colors (fade mode only)

3. To Change the MODE press and hold the switch in for 2 seconds then release.

Chart 3:

Change Mode: Press and hold button for 2 seconds

Normal Mode Settings	Chase Mode Enabled
On Normal	On Normal
Fade	Fade
Flash/Strobe	Flash/Strobe
	chase between all lights

Operation and Use of Wireless Controller:



There are 4 commands issued from the remote control.

1. **MODE:** Press to go to next available color. See **Chart 2** above.
2. **CONTROL:** Changes the speed of a routine. (No effect when on solid color)
3. Holding **MODE** for 2 seconds: Moves to next routine, see **Chart 4** below.
4. Hold **CONTROL** for 2 seconds: Powers off all lights, and puts the system into standby.

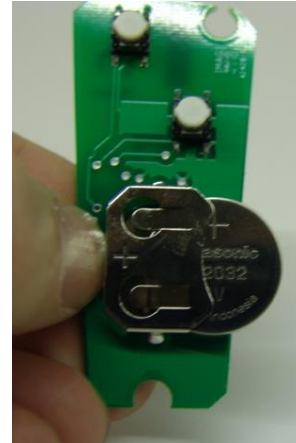
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Chart 4: Press and hold **MODE** button for 2 seconds

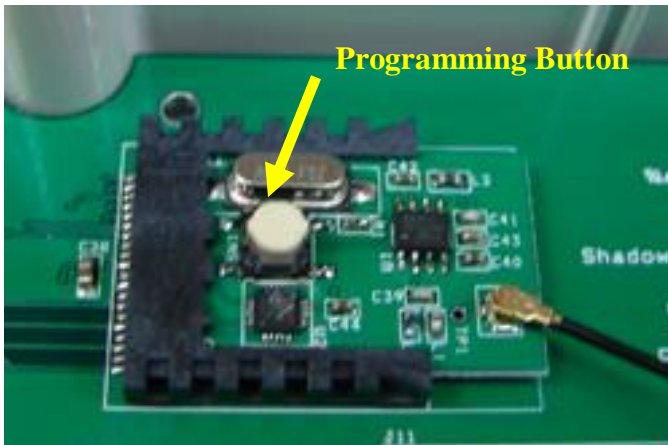
Normal Mode Settings	Chase Mode Enabled
On Normal	On Normal
Fade	Fade
Flash/Strobe	Flash/Strobe
	chase between all lights

Replacing the battery in the FOB:

The Key FOB transmitter uses a CR2032 lithium coin cell battery. These are commonly available where batteries are sold. To replace the battery, remove the two Phillips head screws on the back of the transmitter. The battery slides out as shown in figure 10. Be careful to have the “+” side of the battery facing as shown in figure 10. When reassembling the FOB case, exercise caution to verify that the watertight seal is properly seated on the perimeter of the case.



Programming a new remote FOB:



If the remote FOB must be replaced, the new one can easily be coded to the wireless receiver. To do this, power on the PD-PLUS system, then press the programming button on the receiver and release. Then press and release the MODE button on the wireless receiver, repeat this until the code is picked up by the receiver. This can be verified by seeing the Shadow-Caster Lights changing color. Note that the wireless controller will only support one remote at a time.

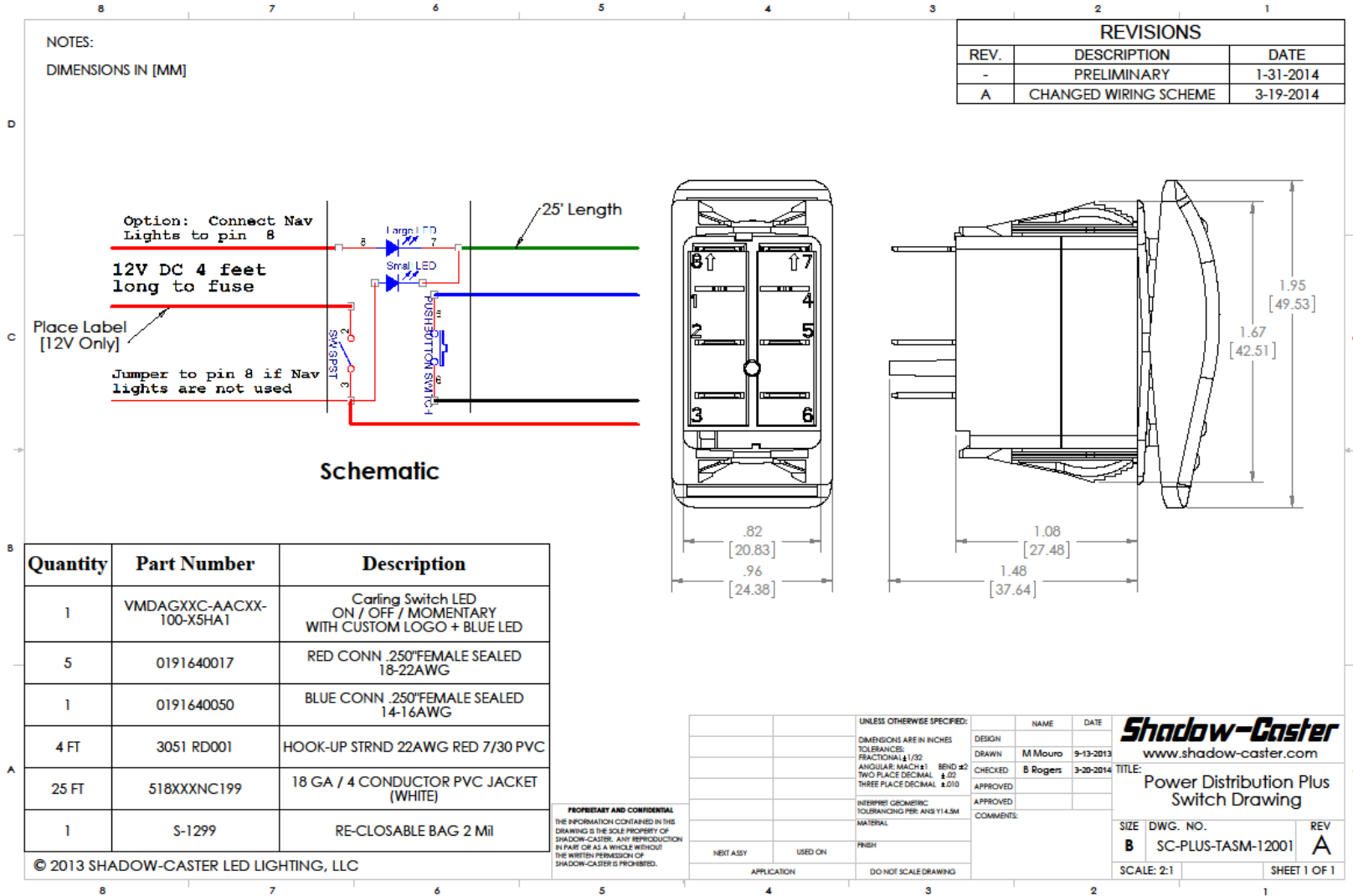
Please contact Shadow-Caster Lighting for additional support:

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Shadow-Caster

www.shadow-caster.com

TITLE:

Power Distribution Plus Switch Drawing

SIZE	DWG. NO.	REV
B	SC-PLUS-TASM-12001	A

