

INSTRUCTION/INSTALLATION SHEET POWERLINE CARRIER LIGHTING CONTROL SWITCHES

301 Fulling Mill Road, Suite G
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Phone (800) 321-2343 / Fax (717) 702-2546
www.onqlegrand.com

IS-0305 REV. O

1. INTRODUCTION

The On-Q Powerline Carrier (PLC) Switch products provide enhanced powerline carrier system lighting control:

- P/N 364798, PLC 600W Dimmer Switch - for local and programmable dimming control of lighting loads up to 600W
- P/N 364799, PLC 900W Dimmer Switch - for local and programmable dimming control of lighting loads up to 900W
- P/N 364802, PLC 900W Non-Dimming Switch - for local On/Off control and programmable dimming control of lighting loads up to 900W
- P/N 364800, PLC Auxiliary Switch - for multi-way local control of PLC Dimmer and Non-Dimming Switches

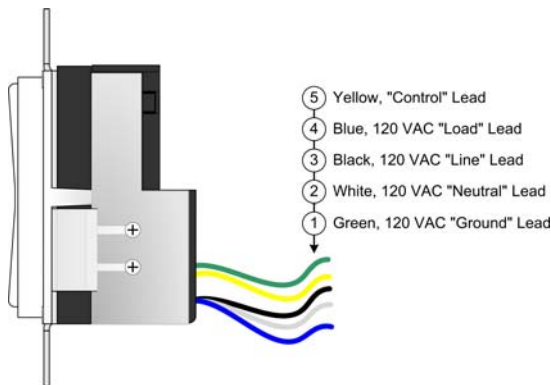


Figure 1. PLC Switch Lead Connections

2. INSTALLATION

An uninterrupted source of 120 VAC must be present at each switch location.

DANGER: To avoid risk of fire or shock, turn off the power at the circuit breaker or fuse. Test to be sure the power is off before wiring.

NOTE: PLC Switches must be installed and operated in accordance with all electrical codes and regulations.

Installation Procedure

- Step 1: Remove electrical power from the 120 VAC power circuit.
- Step 2: Remove the faceplate from the existing switch.
- Step 3: Unscrew and pull existing switch out of the wallbox.
- Step 4: Disconnect wires from the existing switch.
- Step 5: Remove pre-cut insulation from the switches' 120 VAC leads.
- Step 6: Connect switch leads to the 120 VAC source, lighting load and Auxiliary switches as required for the specific application. PLC Dimmer and Non-Dimming switches always require neutral (white) connection.

- Step 7: Place the switch and wires in the wall box
- Step 8: Fasten the switch into the wallbox with the screws provided.
- Step 9: Install decorator style switch cover plate.
- Step 10: Apply power to the 120 VAC lighting/power circuit.

CAUTION: Verify all wiring connections and terminations prior to applying 120 VAC power to the PLC Switch. Excessive loading and electrical shorts will result in destruction of the switch. Misapplication will void the product warranty

900W Dimmer and Non-Dimming Switch Derating

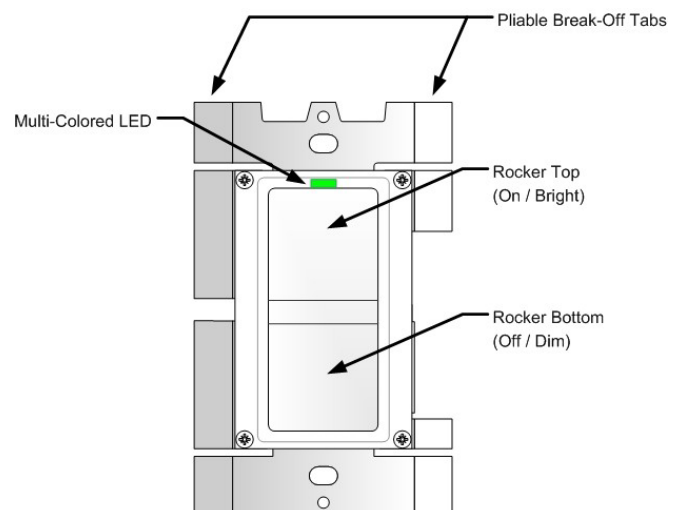
In many installation scenarios it is necessary to mount more than one Dimmer or Non-Dimming Switch at a wallbox location. When this occurs, side sections of each module's metal yoke must be removed in order to physically permit the devices to fit within the same switchbox. Removal of these side sections, however, reduces the ability of each module to dissipate heat. To ensure that each module can continue to operate within specified design parameters, the load capacity must be derated. Remove the yoke side sections by using pliers to carefully bend the tabs up and down several times until each tab breaks off.

Switch P/N	Single-Gang	End-of-Gang	Middle-of-Gang
364798	600 W	600 W	600 W
364799	900 W	700 W	600 W
364802	900W	700W	600W

Table 1. PLC Dimmer and Non-Dimming Switch Derating

CAUTION: To avoid overheating and possible damage to the switches and other equipment, do NOT use the PLC Dimmers or Non-Dimming Switches to control receptacles. Do NOT use the switches to control fluorescent lighting, motor operated appliances or transformer-supplied loads.

Figure 2. PLC Switch Derating



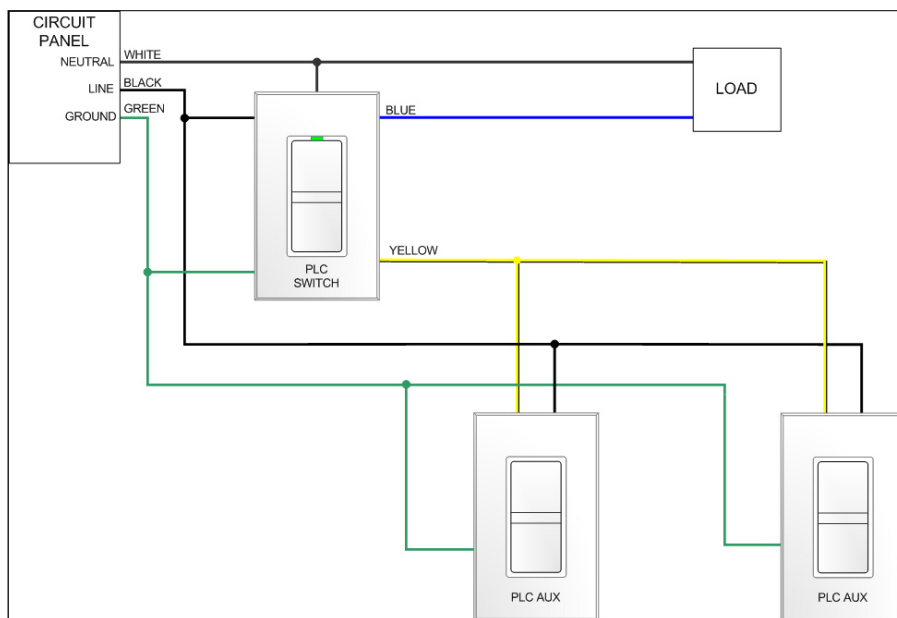


Figure 3. On-Q PLC Switch Wiring Diagram

Multi-way Switching Control

For multi-way On/Off and dimming control, the PLC Dimmers and Non-Dimming Switches can be controlled by one or more Auxiliary switches. See Figure 3 for wiring connections

Multi-way control makes it possible for a group of switches to control the same lighting circuit. Figure 3 depicts how to wire a PLC Dimmer or Non-Dimming Switch and their associated Auxiliary Switches for multi-way lighting circuit control.

The Auxiliary Switches' black lead should be connected to the same 120 VAC leg of the electrical service as its associated Dimmer or Non-Dimming Switch. If the Auxiliary Switch is connected to the opposite leg of the 120 VAC electrical service, the action of the switch will be opposite to that expected. That is, the top will function as Off/Dim and bottom will function as On/Bright. This may be corrected by reversing the black and yellow wires to obtain correct operation. Alternatively, the Auxiliary Switch may be rotated and installed with the Off/Dim end at the top.

3. NORMAL OPERATING MODE

Dimmer Switch Local Operation

- From the lighting Off setting, tap the top of the Dimmer's rocker to set the lighting load to the Preset Dim Level.
- From the lighting Off setting, double tap the top of the Dimmer's rocker to set the lighting load to the full On level.
- From the lighting Off setting, tap the top of the Auxiliary switches' rocker to set the lighting load to the Preset Dim Level.
- From the lighting Off setting, double tap the top of the Auxiliary switches' rocker to set the lighting load to the full On level.

- From any intermediate lighting setting, tap the top of the Dimmer's rocker to set the lighting load to full On.
- From any intermediate lighting setting, tap the top of the Auxiliary switches' rocker to set the lighting load to full On.
- From the Off or any intermediate lighting setting, press the top of the Dimmer's rocker to set the lighting load to a brighter level. The new lighting level will be stored in memory as the Preset Dim level.
- From the Off or any intermediate lighting setting, press the top of the Auxiliary Switches' rocker to set the lighting load to a brighter level. The new lighting level will be stored in memory as the Preset Dim level.
- From the full On or any intermediate lighting setting, press the bottom of the Dimmer's rocker to set the lighting load to a dimmed level. The new lighting level will be stored in memory as the Preset Dim Level.
- From the full On or any intermediate lighting setting, press the bottom of the Auxiliary Switches' rocker to set the lighting load to a dimmed level. The new lighting level will be stored in memory as the Preset Dim Level.
- From the full On or any intermediate lighting setting, tap the bottom of the Dimmer's rocker to turn the lighting load Off.
- From the full On or any intermediate lighting setting, tap the bottom of the Auxiliary Switches' rocker to turn the lighting load Off.

Non-Dimming Switch Local Operation

- From any lighting setting, tap the top of the Switches' rocker to set the lighting load to the full On level.
- From any lighting setting, tap the top of the Auxiliary Switches' rocker to set the lighting load to the full On level.
- From any lighting setting, tap the bottom of the Dimmer's rocker to turn the lighting load Off.
- From any lighting setting, tap the bottom of the Auxiliary Switches' rocker to turn the lighting load Off.



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Dimmer and Non-Dimming Switch Remote Operation

- From any lighting setting, transmit an X-10 On to the Dimmer's address to set the lighting load to the Preset Dim level.
- From any lighting setting, transmit an X-10 Off to the Dimmer's address to turn the lighting load Off.
- From any lighting setting, transmit an X-10 Bright to the Dimmer's address to set the lighting load to a new Preset Dim level. The new lighting level will be stored in memory as the Preset Dim level.
- From any lighting setting, transmit an X-10 Dim to the Dimmer's address to set the lighting load to a new Preset Dim level. The new lighting level will be stored in memory as the Preset Dim level. Exception: If the lighting setting is dimmed to Off, a Preset Dim level of full On will be stored in memory.
- From any lighting setting, transmit an X-10 All-Lights-On to the Dimmer's address to set the lighting load to the Preset Dim level.
- From any lighting setting, transmit an X-10 All-Lights-Off to the Dimmer's address to turn Off the lighting load.
- From any lighting setting, transmit an X-10 All-Units-Off to the Dimmer's address to turn Off the lighting load.
- Transmit an X-10 Preset Dim level to the Dimmer's address, to set the lighting level to a new Preset Dim level. The new lighting level will be stored in memory as the Preset Dim level.

4. CONFIGURING SWITCH OPERATION SETTINGS

There are two Configuration Modes used to set the Primary Address and Advanced Configuration Options.

Configuration Mode No. 1 – used to configure the switch address or reset the switch to factory default settings

Configuration Mode No. 2 – not used

Configuration Mode No. 3 – not used

Configuration Mode No. 4 – not used

Configuration Mode No. 5 – used to configure Advanced Configuration Options

The switch will provide visual feedback while in Configuration Mode. The connected lighting load will flash and the integral LED indicator pattern will change to provide visual feedback to the installer as configuration settings are being entered.

On-Q's SceneTech Software provides the features necessary to configure and operate the switches. Common X-10 controllers may also be used to configure the switches as long as they are capable of transmitting all 16 device addresses as well as X-10 On, Off, All-Lights-On and ALL-Units-Off without an automatic following command. In Normal Operating Mode, the On-Q PLC Switches will respond to X-10 Device ON, OFF, Bright, Dim, All-Lights-On, All-Units-Off and Preset Dim.

To Enter Configuration Mode:

1. Firmly press the bottom of the Dimmer or Non-Dimming Switch rocker. This will cause the airgap to lock open, thus removing power from the switch.
2. Press and hold the top of the rocker to unlock the airgap and restore power to the switch. Within 1 second, simultaneously press and hold the bottom of the rocker. The LED will turn red. Continue to press the top and bottom of the rocker until the LED goes off, then release the rocker.

3. The LED will now blink red to indicate that it is in Configuration Mode 1 – Addressing Mode.
4. To advance to Configuration Mode 5, tap the top portion of the rocker 4 times. With each tap, the LED indicator will change color: blinking green – blinking orange – alternating green/red – alternating red/orange. The LED will alternate red-orange to indicate that it is in Configuration Mode 5.

Reset to Factory Default Settings:

1. Enter Configuration Mode 1.
2. Transmit an X-10 All-Units-Off 3 times. This will reset switch configuration settings to factory defaults.
3. Transmit an X-10 All-Lights-On 3 times. The switch will transfer out of Configuration Mode and into Normal Operating Mode.

Setting the Switch Address:

1. Enter Configuration Mode 1.
2. Transmit an X-10 Device number 1 through 16.
3. Transmit an X-10 All-Lights-On. This will cause the address to be stored into memory.
4. Transmit an X-10 All-Lights-On command 3 times. The switch will transfer out of programming mode and into Normal Operating Mode.

Setting the Advanced Configuration Options

The Advanced Configuration Options are provided in the following table:

No. to Transmit	Configuration Option	Factory Default
1	Soft Start	On (Note 1)
2	All-Lights-On	On
3	All-Lights-Off	On
4	All-Units-Off	On
5	Universal All-Lights-On	Off
6	Universal All-Lights-Off	Off
7	Universal All –Units-Off	Off
9	Signal Receive Threshold	4 (50mV)
11	Dimming	On (Note 2)

Note 1: Advanced Configuration Option 1 does not apply to a Dimmer Switch configured for non-dimming operation

Note 2: Advanced Configuration Option 11 is unaffected when the Dimmer Switch is reset to factory default settings.

Table 2. Advanced Configuration Options

Advanced Configuration Options 1 through 7 or 11

1. Enter Configuration Mode 5.
2. Transmit the desired Advanced Configuration Option number; an X-10 Device number 1 through 7 or 11.
3. Transmit an X-10 All-Lights-On. The switch will blink its attached lighting load to acknowledge.
4. Transmit an X-10 Device 1.
5. Transmit an X-10 On to enable the option or transmit an X-10 Off to disable the option.
6. Transmit an X-10 All-Lights-On. This will cause the new option setting to be stored in memory.
7. Transmit an X-10 All-Lights-On 3 times. This will cause the switch to transfer out of Configuration Mode and back into Normal Operating Mode.



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Advanced Configuration Option 9

1. Enter Configuration Mode 5.
2. Transmit an X-10 Device 9.
3. Transmit an X-10 All-Lights-On. The PLC switch will blink its attached lighting load to acknowledge.
4. To set the Signal Receive Threshold level. Transmit an X-10 Device 1 (5 mV), 4 (50 mV = default), 7 (125 mV), 11 (225mV), 14 (300mV) or 16 (350mV).
5. Transmit an X-10 All-Lights-On. This will cause the level to be stored into memory.
6. Transmit an X-10 All-Lights-On 3 times. This will cause the switch to transfer out of Configuration Mode and back into Normal Operating Mode.

5. Warranty

On-Q/Legrand warrants to the end-user, each new switch to be free of defects in materials or workmanship for a period of one year from the date of original purchase from On-Q/Legrand or its authorized reseller or installer. Each product is deemed warrantable under conditions of normal use and when installed and operated within On-Q/Legrand specifications and in accordance with the applicable National Electrical Code and Safety Standards of Underwriters Laboratories. When determined to be warrantable, On-Q/Legrand shall at its option and expense, replace any defective product with a new or reconditioned product. On-Q/Legrand will continue to warrant any replaced product for a period of ninety (90) days from shipment, or through the end of the original warranty period, which ever is longer.