



# Adaptive Phase Dimmer Installation Guide

## Supported models

- C4-APD240 Adaptive Phase Dimmer, 240V

## Introduction

The Control4® Adaptive Phase Dimmer operates independently or as part of a Control4 home automation system. It installs in a standard back box using typical wiring standards and communicates to the Control4 system using a wireless connection.

## Box contents

- Adaptive Phase Dimmer
- Terminal block
- Warranty card
- Adaptive Phase Dimmer Installation Guide* (this document)

## Specifications and supported load types

The specifications are described below.

Model numbers	C4-APD240-xx		
Power requirements	220VAC-240VAC +/-10%, 50/60Hz		
	This device can function with or without a neutral AC connection depending on load type. Wiring with a neutral is always the preferred wiring method (if possible). See load types and "Sample Wiring Configurations" below. When wired without a neutral, loads may appear dimmer.		
Power consumption	1.94W		
Load types and ratings			
Supported load types	Incandescent, halogen, electronic (solid state) low voltage (ELV) transformers, magnetic (iron core, inductive) low voltage (MLV) transformers, phase-dimmable fluorescents, compact fluorescents, and LEDs. <b>Important:</b> Do <i>not</i> use with non-dimmable loads.		
Reverse phase max. load	1 Gang	2 Gang	3+ Gang
Incandescent (tungsten)	800W	700W	600W
Halogen	800W	700W	600W
Fluorescent*	500W	500W	500W
Compact fluorescent (CFL)*	500W	500W	500W
LED*	160W	160W	160W
Forward phase max. load	1 Gang	2 Gang	3+ Gang
Incandescent (tungsten)	400W	400W	400W
Halogen	400W	400W	400W
Fluorescent*	400W	400W	400W
Compact fluorescent (CFL)*	400W	400W	400W
LED*	160W	160W	160W

Minimum load (with neutral)	
All load types	1W
Minimum load (without neutral)	
Incandescent (tungsten)	7W
Halogen	7W
Fluorescent*	N/A
Compact fluorescent (CFL)*	N/A
LED*	N/A
Environmental	
Operational temperature	32°F - 104°F (0°C - 40°C)
	All load ratings are based on an ambient temperature of 77°F (25°C).
Humidity	5% to 95% non-condensing
Storage	-4°F - 158°F (-20°C - 70°C)
Miscellaneous	
Control communications	ZigBee, IEEE 802.15.4, 2.4 GHz, 15-channel spread spectrum radio
Wallbox volume	5.75 cubic inches (94.2 cubic centimeters)
Weight	0.12 lb. (0.05 kg)
Shipping weight	0.18 lb. (0.08 kg)

- \* NOTES:**
- The maximum load requirements for fluorescent, CFL and LED loads can vary greatly depending upon the specific fixture and/or bulb being used. These load types have significant in-rush current which can trip the protection circuitry on the device.
  - The quality and performance of these load types varies greatly from manufacturer to manufacturer. When using these load types, we recommend testing in advance. If problems are found, simply changing to a different bulb manufacturer may solve the problem.
  - Additionally, we do not recommend the use of fluorescent, CFL, or LED loads without a neutral wire connected to the dimmer due to the capacitive nature of these load types.
  - Wiring with a neutral is always the preferred wiring method (if possible).

## Warnings and considerations

- WARNING!** Turn OFF electrical power before installing or servicing this product. Improper use or installation can cause SERIOUS INJURY, DEATH or LOSS/DAMAGE OF PROPERTY.
- WARNING!** This device must be protected by a circuit breaker (20A max).
- WARNING!** Ground this device in accordance with the National Electric Code (NEC) requirements. DO NOT rely solely upon the yoke plate's contact with a metal wallbox for adequate grounding. Use the device's ground wire to make a secure connection to the safety ground of the electrical system.

- IMPORTANT!** This device must be installed by a licensed electrician in accordance with all national and local electrical codes.
- IMPORTANT!** For wiring the dimmer, we recommend always using a neutral wire when possible. See Figure 6.
- IMPORTANT!** If you are unsure about any part of these instructions, consult a qualified electrician.

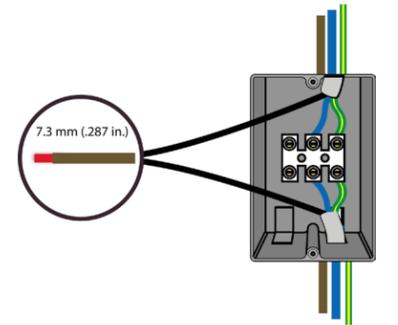
- IMPORTANT!** Use this device only with copper or copper-clad wire. Do not use aluminum wiring. This product has not been approved for use with aluminum wiring.
- IMPORTANT!** To reduce the risk of overheating and possible damage to other equipment, do not install to control a receptacle or a motor operated appliance.
- IMPORTANT!** This product generates heat during normal operation.
- IMPORTANT!** Using this product in a manner other than outlined in this document voids your warranty. Further, Control4 is NOT liable for any damage incurred with the misuse of this product. See "Troubleshooting."
- IMPORTANT!** Do NOT use a power screwdriver to install this device. If you do, you may overtighten the screws and strip them. Also, overtightening the screws may interfere with proper button operation.
- IMPORTANT!** This is an electronic device with intricate components. Handle and install with care!
- IMPORTANT!** Control4 does not guarantee the performance of any bulb or lamp/fixture in your environment. CUSTOMER ASSUMES ALL RISKS, INCLUDING ANY DAMAGE TO CONTROL4 PRODUCTS, ASSOCIATED WITH (i) THE TYPE, LOAD RATING AND QUALITY OF THE BULB AND LAMP/FIXTURE, OR (ii) ANY USE OR INSTALLATION NOT IN ACCORDANCE WITH THE DOCUMENTATION FURNISHED BY CONTROL4, EITHER WITH THE CONTROL4 PRODUCT OR AT WWW.CONTROL4.COM.
- IMPORTANT!** When used in conjunction with an Auxiliary Keypad (C4-KA-xx), the wire connecting the Auxiliary Keypad to the dimmer must not exceed 100 feet (30 m) at 240VAC.

## Installation instructions

- Ensure that the location and intended use meet the following criteria:
  - Do not exceed the load capacity requirements of the dimmer. In multi-gang installations, a reduction of the dimmers' capacity is required to allow the dimmers to be installed side-by-side. Refer to the load ratings in the specifications above for details.
  - Install in accordance with all national and local electrical codes.
  - The range and performance of the wireless control system is highly dependent on the following: (1) distance between devices; (2) layout of the home; (3) walls separating devices; and (4) electrical equipment located near devices.
- If installing in a multi-gang scenario, use pliers to remove the inner-side breakaway tabs. Bend each tab forward first, and then back and forth until it breaks off. Remove the inner-side tabs ONLY on any device side that will be adjacent to another device. DO NOT remove tabs on any side that will become the outer side of a group of devices. Handle the device with care after removing the tabs, as the broken edge can be sharp.
- Turn off the mains electrical power at the consumer unit. To ensure the wires do NOT have power running to them, use an inductive voltage detector.
- Prepare each wire. Wire insulation should be stripped back 7mm from the wire end (see Figure 1).

**NOTE:** The back box wiring shown in this document is an example. Your wire colors and functions may differ. If you are not sure which wires are the Line In/Hot, Neutral, Load, Traveler, and Earth Ground wires, have a trained electrician perform the installation.

Figure 1. Strip wire insulation



- Identify your wiring application, and then see the appropriate wiring diagram in the "Sample Wiring Configurations" section below.
- IMPORTANT!** Not grounding this product, as described in the "Warnings and Considerations" section, may result in an installation less immune to damage caused by electrical disturbances, such as ESD or lightning, and may void the warranty.
- Identify and connect the dimmer wires to the back box wires using the terminal block.
- IMPORTANT!** The yellow wire is not a traditional traveler. It cannot directly power a lighting load. It must be used only to connect to a Control4 Auxiliary Keypad. See "Sample Wiring Configurations."
- TIP:** If you are using a Control4 push-on (screwless) faceplate in a multi-gang installation, attach the black faceplate subplate to all of the devices that will be installed into the back box prior to attaching the devices to the back box. This will help ensure that all the devices are properly aligned and on the same plane after installation.
- Fit the wires into the back box. Bend the wires in a zigzag pattern so that they easily fold into the back box.
- Align the dimmer to the back box (the load rating label should be at the bottom) and fasten it with screws. Tighten the screws until the back side of the yoke plate is even with the wall surface, but no further. Overtightening can warp the dimmer and cause mechanical malfunction.
- Install the Control4 Faceplate following the instructions in the *Faceplate Installation Guide* or attach a standard Decora-style faceplate.
- Turn ON mains electrical power at the consumer unit.

**NOTE:** If the dimmer flickers, adjust its max/min settings in Composer (e.g. min 15W, max 85W). See [ctrl4.co/dimmersettings](http://ctrl4.co/dimmersettings).

## Operation and configuration

On initial power up, all status LEDs on the dimmer will illuminate green, indicating that the device has power. To set up this dimmer for use with a Control4 system, refer to the *Composer Pro User Guide*.

- To operate this dimmer as a stand-alone device:
- Click the **top button** to turn the light on.
  - Click the **bottom button** to turn the light off.
  - Press and hold the **top button** to ramp the light up. Release the button at the desired light level.
  - Press and hold the **bottom button** to fade the light down. Release the button at the desired light level.



Button tap sequences

Function	Button tap sequence (either top button only, or top-bottom-top)
Identify	4
ZigBee channel	7
Reboot	15
Factory reset	9-4-9
Leave mesh and reset	13-4-13

Troubleshooting

- If the light does not turn on:
- Ensure that at least one (1) LED on the face of the dimmer is lit.
  - Ensure that the light bulb is not burned out and is screwed in tightly.
  - Ensure that the circuit breaker is not turned OFF or tripped.
  - Check for proper wiring (see "Sample Wiring Configurations").
  - For help on the installation or operation of this product, email or call the Control4 Technical Support Center. Please provide your exact model number. Contact support@control4.com or see the web site www.control4.com.

Care and cleaning

- Do NOT paint the dimmer or its wall plate.
- Do NOT use any chemical cleaners to clean the dimmer.
- Clean surface of the dimmer with a soft damp cloth as needed.

Regulatory/Safety information

To review Regulatory information for your particular Control4 products, see the information located on the Control4 website at: <http://www.control4.com/regulatory/>.

Patent information

Applicable patents are available at <http://www.control4.com/legal/patents>.

Warranty

For complete warranty information, including details on consumer legal rights as well as warranty exclusions, review the Warranty card or visit [www.control4.com/warranty](http://www.control4.com/warranty).

Sample wiring configurations

Figure 2. Single device location, with neutral connection (recommended)

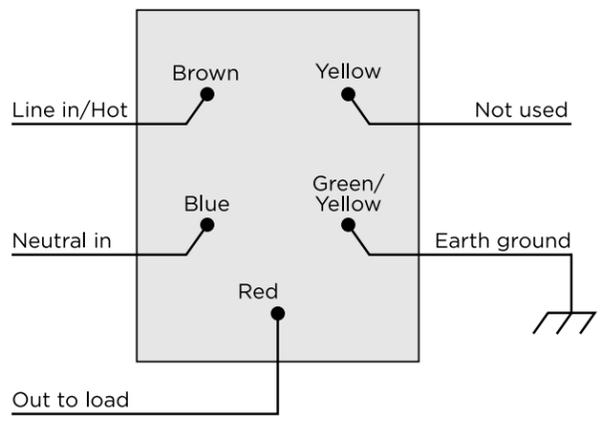


Figure 3. Single device location, without neutral connection

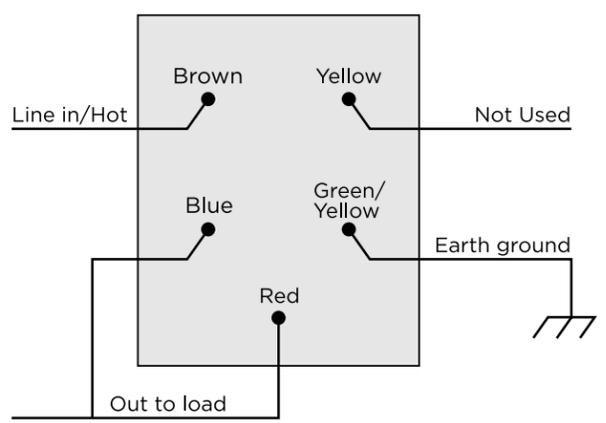


Figure 4. Multiple device location using Auxiliary Keypad, with neutral connection (recommended)

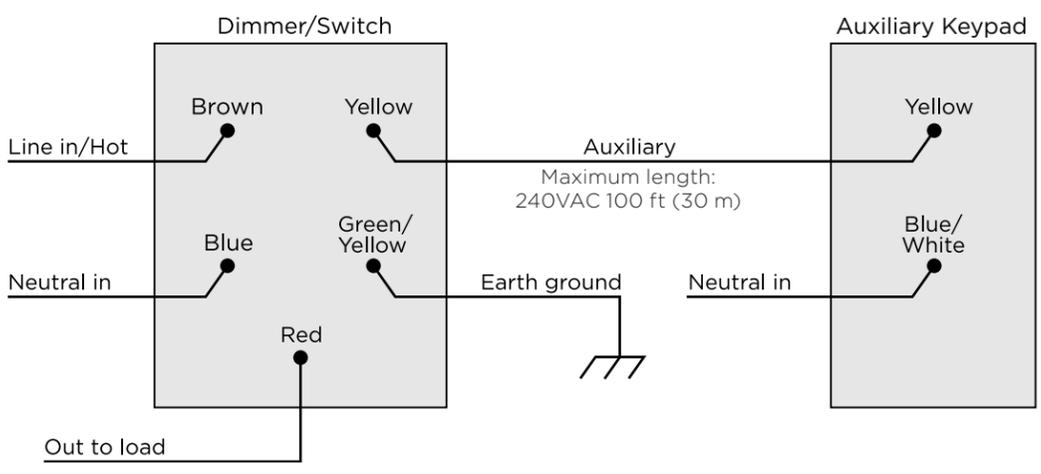
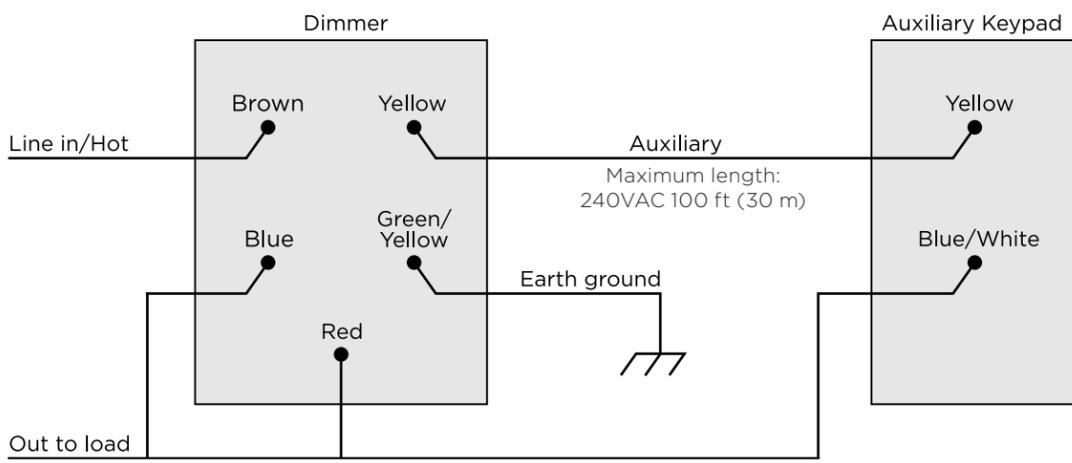


Figure 5. Multiple device location with Auxiliary Keypad, without neutral connection



**IMPORTANT!** When used in conjunction with an Auxiliary Keypad (C4-KA-xx), the wire connecting the Auxiliary Keypad to the dimmer must not exceed 100 feet (30 m) at 240VAC.

Figure 6. Multiple device location using Configurable Keypad, neutral required

