

600 WATT PHASE DIMMER

Installation Guide



This guide covers all models of the ER6CD lighting controller. The ER6CD is equipped with a 902 MHz radio. The box contents includes the controller with lock nut and installation guide.

A programming guide with detailed features of the controller is available for download on www.echoflexsolutions.com. (Scan QR code)



Overview

Scan QR code for link to programming guide

The ER6CD controller is a 600 Watt phase dimming controller.

The model ER6CD-AU-120 is phase adaptive and model ER6CD-AU-277 provides reverse phase dimming control. Both controllers provide dimming control for line voltage tungsten lamps, 2-wire fluorescent ballasts and line voltage LED drivers. The ER6CD-AU-120 also controls 120V electronic low-voltage transformer loads. Neither of these controllers can accommodate magnetic, or step-down transformer loads.

These controllers have a single channel dimming output and uses wireless technology to monitor any rooms environment, eliminating much of the wiring normally required for distributed lighting control. This translates into quick installations with less disruption to occupants, allowing facilities to accelerate retrofit schedules and start saving money sooner.

The controller supports two methods of configuration making it easy for installers and facility operators to manage these settings without extra tools reducing call-backs and installation expense.

Controller Operation

The controller automatically adjusts lighting levels from received input from the following wireless devices:

- ambient light levels monitored by a wireless photo sensor
- occupancy state monitored by a wireless occupancy sensor
- switch action from a wireless wall switch
- gateway control implementing scheduled events or demand response activation

Preparing To Install The Controller

The controller should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel. The controller is mounted using the conduit nipple for mounting the controller to electrical junction boxes or panels. You will require hand tools and supplies (not provided) to install the controller.

- Screwdrivers, pliers, wire cutters, wire insulation stripping tool
- Appropriately sized wire nuts
- Small cable ties

Specifications

Ambient Environment

For indoor use only.

- United States only: 32°F to 122°F (0-50 °C) operating temperatures in 5-95% non-condensing humidity.
- Canada only: 0°C to 40°C (32-104 °F) operating temperatures in 5-95% non-condensing humidity.

Electrical Specification

Two models are available including:

- 120 VAC, +/- 10% at 50/60 Hz, maximum load 600 Watts (5A)
- 277 VAC, +/- 10% at 50/60 Hz, maximum load 600 Watts (2.17A)



Note: The controller has an idle draw of 4 watts.

Load Types (all voltages)

- Tungsten lamps
- 2-wire Fluorescent ballasts
- Line voltage LED drivers

Load Types (ER6CD-AU-120 model ONLY)

- 120V Electronic low voltage transformer



Note: For any drivers, lights or fixtures that are dimmable by line voltage triac, de-rate the ER6CD wattage by 50% to 300W maximum.

Placement and Radio Range

The controller is intended for use with Echoflex wireless sensors and switches. Consideration should be made for locating the controller based on the construction materials and furniture that may disrupt transmissions. Fire doors, elevator shafts, stairwells, storage areas and any large metal objects can create radio shadows and disrupt wireless transmissions.

It is recommended that switches and sensors be placed within 75 feet (22m) of the dimmer for optimal performance.

Typical Radio Range

Material	Range - Typical
Line of sight	80 feet (24m) corridors
Line of sight	330 feet (100m) open halls
Plasterboard	80 feet (24m) through 5 walls
Brick	33 feet (10m) through 1 wall
Concrete	33 feet (10m) through 1 wall
Ferro Concrete	33 feet (10m)
Ceiling	Not recommended

Signal Loss

Material	Attenuation
Wood/Plaster/Glass	0-10%
Brick/MDF	5-35%
Metal	90-100%

Installation

The controller is mounted directly to an electrical junction box or panel at the electrical lighting load or before the load in the circuit.



WARNING:

ELECTRICAL SHOCK HAZARD - THE CONTROLLER USES HIGH VOLTAGE AND SHOULD ONLY BE INSTALLED BY A QUALIFIED INSTALLER OR ELECTRICIAN. BEFORE INSTALLING THE CONTROLLER, INSURE THE ELECTRICAL POWER IS OFF. FOLLOW THE APPROPRIATE LOCKOUT/TAG-OUT PROCEDURES AS DESCRIBED IN NFPA STANDARD 70E



Note: This controller is for indoor use only!

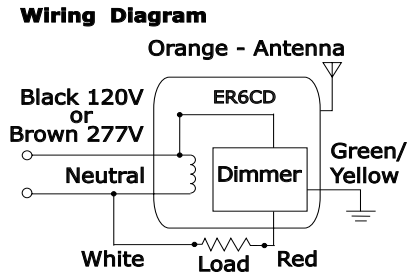


Note: Follow all NEC and local code requirements when terminating wires.

Mounting

1. Locate the circuit breaker panel and turn off the power to the lighting circuit.
2. Remove the face plates and other hardware from the junction box accessing the high voltage wiring.
3. The dimmer mounts to the exterior of the junction box or panel with the 1/2" (13mm) threaded nipple.

Controller Wiring



The dimmer is supplied with a wire harness that is specific to the input voltage, either 120VAC or 277VAC.

1. Connect the green/yellow striped wire to the ground wire from the breaker panel and the ground wire from the lighting load.
2. Connect the white wire to the incoming neutral wire from the breaker panel and the neutral wire of the lighting load.



Note: Do not share the neutral wire between the ER6CD controller and other loads. Use a dedicated neutral conductor back to the electrical panel.

3. Connect the incoming hot wire (black for 120VAC or brown wire for 277VAC) to the line input feed wire (hot) from the breaker panel.
4. Connect the red output wire to the lighting load.

Power Up and Test

1. Restore power to the circuit. The dimmer will turn on.
2. If the controller was pre-commissioned you can use one of the prelinked devices to test the controller operation. To link a switch when no other devices have been linked (Power LED will be On solid):
 - a. Within radio range of the controller, press the switch paddle up (On) three times consecutively.
 - b. Press the paddle down (Off) three times consecutively.
 - c. Press the paddle up again, three times consecutively. (The power LED will blink)
3. Test the controller response.
 - a. Press the switch down (Off) once. The controlled lighting should respond by dimming off.
 - b. Press the switch up (On) once. The controlled lighting should respond by

dimming on.

4. Press and hold the paddle down or up switch to manually dim the circuit down or up.



Note:

The linking method described in “Step 2” will link the switch to any controllers that are within radio range that do not already have switches or sensors linked to them.



Note:

Linking a switch or sensor that is already linked to a channel, will remove or unlink it from the channel.

Diagnostic LED's and buttons

LEARN button

The LEARN button is used to link switches or sensors to the controller.

1. Press the button marked LEARN for a half second. In link mode the LEARN LED will stay ON and the POWER LED will toggle every 2 second.
2. Using the switch that will be linked to the controller, press the wall switch ON three times. If linking a sensor, press the sensors TEACH or LINK button, refer to the sensor documentation. The POWER LED will remain lit for 4 seconds while it links the new device. It will resume toggling allowing you to link another device up to a total of 20 devices. To exit link mode, press the LEARN button on the controller again for a half second.



Note:

Link mode will time out after no activity in thirty seconds.

CLEAR button

Using the CLEAR button can reload the controller to the factory pre-commissioned settings with linked devices OR it can load the factory default parameters and remove all linked devices.

- To return the controller to the factory pre-commissioned state, press the CLEAR button until the red POWER and green LEARN LEDs start blinking, approximately 5 seconds. Release the button and the red POWER LED will begin blinking indicating the factory commissioned pre-linked devices.
- To completely clear the controller returning it to factory default settings removing all linked devices, press the CLEAR button until the red POWER and green LEARN LEDs come on solid, about 15 seconds, then release. The POWER LED will stay ON solid indicating the factory default state.

LED Blink Codes and Operation

If the controller was factory pre-commissioned, upon power up it will immediately begin blinking the red POWER LED based on the type and count of linked devices. The type is indicated by long blinks followed by short blinks counting the number of devices linked. This pattern will repeat after a short pause.

The table below describes the number of LED blinks for each device type.

POWER LED Blink Codes

Channel 1 links appear in red. Channel 2 links appear in green. Channel 3 links appear in blue.

factory default (links only)	ON Solid
switches	1 long blink followed by short blinks counting switches
occupancy sensors	2 long blinks followed by short blinks counting sensors
photo sensor	3 long blinks followed by a short blink counting one sensor
central command	4 long blinks followed by short blinks counting devices
demand response	5 long blinks followed by short blinks counting devices

Operating Mode and LED Activity

Mode	LEARN LED	POWER LED	Relay/Light
link mode	ON	toggle	toggle
storing ID	ON	ON 4 seconds	ON 4 seconds
clearing ID	ON	OFF 4 seconds	OFF 4 seconds
factory default	Off (flash on power up)	ON solid	ON

Manually Configure Dimming Mode

The dimming mode for the ER6CD-AU-120 Phase Adaptive Dimmer is detected automatically by default. The dimming mode for the ER6CD-AU-277 is reverse phase by default. At the device, you can change the dimming mode manually, entering forward phase, reverse phase, or automatic phase dimming.

1. Simultaneously, press and hold the “Learn” and “Clear” buttons for five seconds, then release. The CLR/LRN and Status LEDs will begin to flash. The LEDs indicate which dimming mode is active.
 - Both Green: Forward Phase dimming
 - Both Red: Reverse Phase dimming
 - If the dimmer is in Automatic dimming mode, the Status LED will flash amber, and the CLR/LRN LED will indicate the current mode with specific LED colors. (red is Reverse Phase dimming mode and green is Forward Phase dimming mode).
2. To change the current mode, press and hold the “Learn” and “Clear” buttons until the LEDs change to the desired dimming mode according to the LEDs state.



Note: The device will return to normal operation, exiting the dimming mode menu, 10 seconds after the last interaction.

Listings

CEC Title 24 compliant

ETL Listed Component

Conforms to UL Standard 508

Certified to

CAN/CSA Std C22.2 No.14

UL 2043 Plenum rated



FCC Part 15.231

Contains FCC ID: SZV-STM300U



The enclosed device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(i.) this device may not cause harmful interference and

(ii.) this device must accept any interference received, including interference that may cause undesired operation.

IC RSS-210

Contains IC: 5713A-STM300U

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