![echoflex Powered by ETC]

600 WATT DIMMER
Install Guide

This guide covers all models of the ER6CD lighting controller. The box contents includes the controller with lock nut and installation guide.

Overview

The ER6CD controller is a 600 Watt dimming controller.

The model ER6CD-AU-120 is phase adaptive and the model ER6CD-AU-277 provides reverse phase dimming control. They both 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 several 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 or other events

Controller and Wall Switches

Echoflex switches can also be used as dimmer switches – press and hold the ON or OFF side of a linked switch to modulate the dimming output up or down.

The controller works with the wireless single and dual rocker switches. A switch ON action will ramp the dimming output to the last dimmed level set by a switch. If a photo sensor is linked to the controller as well, the output ramps to full output over 2 seconds. A quick double-press ON will ramp up to maximum output and accelerate the fade period to ½ second. A press OFF action will fade the lights down over 2 seconds. A quick double-press OFF will accelerate the fade period to ½ second.

Controller and Timed Switches

The controller can be configured so the single and dual rocker switches become timed switches. An ON action turns the lights ON and a timer is set to count down. Once the timer expires, the lights fade to OFF.

The time period is configurable and has 5 settings: no timer (default), 5 minutes, 15 minutes, 30 minutes and 1 hour. Additionally, if the user presses the rocker switch ON multiple times (to a total of 5 presses), the timer interval is added for each ON press. If ON is pressed while the lights are on and the timer is counting down, an additional period of time is added to the timer total.

Example: if the timer setting is 1 hour and the user presses the switch ON twice, the total timer period is 2 hours. If there is 30 minutes left on the timer and ON is pressed again, the timer is extended to 1 hour 30 minutes before the lights will turn off.

The controller will ramp the light output down then up (flick-warn) 1 minute before the timer is due to expire to warn users of the pending OFF event.

To configure the time period, refer to the section on "Configuring the Controller".

Occupancy Based Lighting Applications

The controller will turn the lights OFF when there is no motion detected in the room indicated by a linked motion sensor. If the application requires the lights to remain ON during vacant periods but at a dimmed level (i.e. warehouse or stairwell applications), a configuration property accessible using Garibaldi software can enable this feature.

Occupancy sensors only: When only occupancy sensors are linked to the controller, the sensor will automate the lights both ON and OFF.

Occupancy sensors with switches: When switches and sensors are linked, the controller will assume manual-ON, auto-OFF operation referred to as Vacancy Sensor Mode.

The controller can also be configured to turn the lights ON immediately (Auto-ON) with motion, see the section titled "Configuring the Controller".

Photo Inhibit: This feature requires a linked photo sensor. When Photo Inhibit is enabled, the Auto-ON feature will be ignored when the natural light level measured by the light sensor is above the day-lighting set point. The photo inhibit feature will not turn lights OFF if the lights are ON.

Photo Inhibit Examples:

- Light level is < day-lighting set point – The lights do turn ON automatically when you enter the room.
- Light level is > day-lighting set point – The lights do not turn ON automatically when you enter the room.
- Lights are ON and the light level increases past day-lighting set point – The lights stay ON.
- Lights are OFF and the light level decreases past day-lighting set point – The lights will turn ON upon the next motion detected by the occupancy sensor.

Daylight Harvesting Applications

The controller will modulate the light intensity from a dimming fixture based on the ambient light level in the room. A wireless photo sensor monitors light levels and must be linked to the controller to provide the light level in the room.

The daylight control application has several variables:

- Maximum dimming level - the highest level the dimming output will reach.
- Minimum dimming level - the lowest level the dimming output will reach.
- Lighting set point - the daylight control set point serves two purposes, closed loop control and open loop control.

Closed Loop Control - When the controller is configured for daylight harvesting and set to closed loop control, the set point becomes the absolute value in percent of light the controller will try to attain.

Closed Loop Daylight Control example: A project specification item details that a certain value of light must be measured on a desktop. The dimming light fixture providing light to the desktop is controlled. The light sensor is located over the desk facing downwards. Place a hand-held light sensor on the desktop and using a linked switch, dim the lights up or down until the sensor matches the specification value. Use Simple Tap to capture the light level as the daylight control set point.

NOTE: This process is best performed when there is no natural light; either close the blinds or complete this step at night.

Open Loop Control - When the controller is configured for daylight harvesting and set to open loop control, the set point is where the dimming output begins to dim the fixture as the natural light increases.

NOTE: The TAP light sensor is designed to be mounted indoors to monitor reflected (not direct) natural light levels.

Open Loop Daylight Control example: A project requirement item details that the open area office lights shall dim down when sufficient natural light is present. Mount the wireless light sensor so it is facing downwards and monitoring reflected natural light. The Echoflex light sensor has two ranges; 0-512 lux (0-50 foot-candles) and 0-1024 lux (0-100 foot-candles). The lighting set point default value is 60% of the sensors Full Scale Range (FSR). If the range is set to 50FC (512 lux), the controller will begin dimming down when the sensor records 30FC (300 lux) and will reach the minimum dimming level at 100% or 50FC (512lux).

Setting the set point is covered later in this document under "Configuring the Controller".
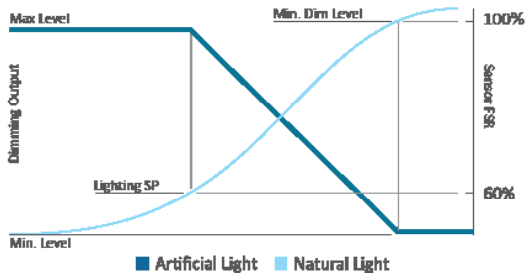
The daylight harvesting application can override the Auto-ON feature of occupancy sensors if the light level is sufficient and calls for the lights to be off.

The daylight harvesting application can be overridden by a manual wall switch when the light is dimmed to off by clicking the switch on. If the light level remains above the Light-OFF-Set point, the controller will turn the light off again after 250 seconds.

The daylight harvesting application does not affect the operation of the wall switch or motion sensor when the light is on. If the light is on, either the switch or motion sensor can override the light off.

See the section on Occupancy Based Lighting Application - Photo Inhibit for alternative functionality.

Radio Range Confirmation

The "F series" controllers includes patent pending technology that works with all Echoflex sensors equipped with the range confirmation feature to provide visual feedback of a linked sensors signal strength for optimal sensor placement.

To evaluate the radio signal strength, the sensor must be also support the test and be linked to the controller. Check the sensors documentation to find out if it supports radio range confirmation testing. Do not have any repeaters in the controllers vicinity enabled during the test.

The range confirmation test is invoked at the sensor and sends unique telegrams to the controller. The controller will evaluate the signal strength from the sensor and send back a unique telegram containing the strongest signal value received. This value is displayed at the sensor using color LEDs.

Consult the sensor installation guide for more details.

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 Dimmer 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

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.

Note: If the circuit will have an additional hard wired switch, wire the dimmer in series before the switch.

IMPORTANT SAFETY INSTRUCTIONS

WARNING

Risk of electric shock! This dimmer utilizes high voltage and should only be installed by a qualified installer or electrician. Follow all local codes for installation. Before terminating the AC power wiring verify the main breaker is in the off position and follow the proper lockout/tag out procedures per NFPA Standard 70E.

For indoor use only!

**Must install to an electrical junction box or wire way.**

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, gaining access to the high voltage wiring.
3. The dimmer mounts to the exterior of the junction box or panel with the 1/2" (13mm) threaded nipple.

Note: Follow all local code requirements for terminating wire.

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

a. Connect the green/yellow striped wire to the ground wire from the breaker panel and the ground wire from the lighting load.
b. Connect the white wire to the incoming neutral wire from the breaker panel and the neutral wire of the lighting load.
c. Connect the incoming hot wire (black for 120VAC or brown wire for 277VAC) to the line input feed wire (hot) from the breaker panel.
d. Connect the red output wire to the lighting load.

Wiring Diagram

Orange - Antenna

Black 120V
or
Brown 277V

ER6CD

Neutral

Dimmer

Green/
Yellow

White   Load   Red
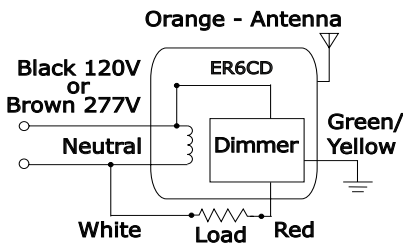
Power Up and Test

1. Restore power to the circuit. The dimmer will turn on to full output.
2. Test the circuit by linking a wireless switch (If factory pre-commissioning has been ordered a switch may be linked before delivery). To link a switch:
   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.
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.

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.

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

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.   **NOTE:** Linking a switch or sensor that is already linked to a controller, will remove or unlink it from the controller.

3. To exit link mode, press the LEARN button on the controller again for a half second. Link mode will also time out after no activity in 30 seconds.

CLEAR button

The CLEAR button erases all devices linked to the controller and resets the controller to factory default settings.

1. Press the CLEAR button (approximately 5 seconds) until the green LEARN LED blinks on.

LED Blink Codes and Operation

The table below describes the LED activity & associated mode of the controller.

Description	Learn LED	Power LED	Relay
LINK mode	ON	Toggle 2 sec.	Toggle
Storing ID	ON	ON 4 sec.	ON 4 seconds
Clearing ID	ON	OFF 4 sec.	OFF 4 seconds
CLEAR mode	ON 1 sec.	N/A	ON 1 sec.

Normal Operating Mode - number of long blinks indicates the linked device type followed by short blinks counting the number of devices linked.

Description	Learn LED	Power LED
Factory Default	OFF	ON Solid
with linked switch(es)	OFF	**1 long blink** followed by short blinks counting switches repeatedly
with linked occupancy sensor(s)	OFF	**2 long blinks** followed by short blinks counting sensors repeatedly
with linked photo sensor(s)	OFF	**3 long blinks** followed by short blinks counting sensors repeatedly
with central command	OFF	**4 long blinks** followed by short blinks counting sensors repeatedly

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.

Configuring the Controller

There are a few methods of configuring parameters in the controller. Simple Tap is a quick method of changing a parameters setting, one at a time. For accessing the complete set of configuration parameters, use the Smart Click process on the following pages.

There are three methods of configuring parameters in the controller.

1. Simple Tap
2. Smart Click
3. Garibaldi Commissioning Software (not covered in this guide)

Simple Tap Instructions

Simple Tap uses the switches and sensors that are linked to the controller to set the associated configuration parameters. You must be able to access the sensors teach button and switches to perform the Simple Tap process.

If the sensor is linked to multiple controllers and you do not want to make changes to all, turn the controllers relay off (lights off) to ignore the Simple Tap changes.

Simple Tap allows you to:

- Enable or disable the motion sensor Auto-ON feature

- Set the motion sensor Auto-OFF timer
- Select Daylight Harvesting or Photo Inhibit mode
- Set the Light ON/OFF dimming set points for closed loop or open loop

Disable/Enable the Auto-ON feature

1. With the light on, tap the occupancy sensors teach button followed by three quick consecutive clicks of a linked wall switch ON.
2. To enable Auto-ON, click once more ON; to disable click OFF. The light will blink dimming down then up once to confirm the change.

Set the Motion Sensor Auto-OFF Timer

1. With the light on, tap the occupancy sensors teach button to reset the timer period. There are 6 possible settings and the number of taps on the button counts the number according to the time period, see the table below. Level 1 (time out 0 seconds - demo mode) is set by tapping 3 times, consecutive taps up to a maximum of 8 taps is Level 6 (time out 25 minutes). The light will blink, dimming down then up once on the third tap and then begin counting the level set after 3 seconds.

Taps	Occ. Sensor Timer	Light Blinks
3 taps*	0 sec.	1 blink
4 taps	5 min.	2 blinks
5 taps	10 min.	3 blinks
6 taps	15 min.	4 blinks
7 taps	20 min.	5 blinks
8 taps	25 min.	6 blinks

* for demonstration purposes only

2. After the controller has completed responding to the change, press the sensors teach button once before exiting.

Daylight Harvesting or Photo Inhibit Mode

You can select daylight harvesting mode (default) or Photo Inhibit mode. For more information on these operating modes, see the sections at the beginning of this guide titled Occupancy Based Lighting Applications – Photo Inhibit and Daylight Harvesting Application.

A light sensor and wall switch must be linked to the controller before proceeding.

1. Press the photo sensors Teach button once followed by clicking the switch ON three times within 5 seconds.
2. Either:
   - click the switch once more ON to activate Photo Inhibit operating mode.
   - or click the switch once OFF to activate Daylight harvesting operating mode.

The set point values are a percentage of the full range of the linked photo sensor. The light will blink down then up to confirm the change.

Set the Lighting Set Point

The controller will modulate the dimming output based on the measured light level from the light sensor.

The lighting set point is used to adjust how the dimming output responds to the ambient light levels.

There are two methods of setting the set-point.

1. Closed Loop

You can use the light sensor to function as a closed loop sensor. When set as a closed loop sensor, the controller will dim the lights until the light level recorded at the sensor meets the set point value. For more information on this operating mode, see the section at the beginning of this guide titled Daylight Harvesting Application. A light sensor must be linked to the controller before proceeding.

NOTE: This process is best performed when there is no natural light; either close the blinds or complete this step at night.

1. With the light on, adjust the light level from the fixture using the switch until it matches the desired light level.
2. Tap the light sensors teach button 3 times to set the daylight harvesting parameters to a closed loop function. Move away from the sensor so your shadow does not affect the sensor reading. The light will blink once to acknowledge the change.

2. Open Loop

The lighting set-point can be set to an absolute value useful in open-loop sensor applications. The absolute value selected becomes the maximum dimming set-point.

1. With the light on, tap the light sensors teach button 4 times to set the set point to 20%.
2. Tap the button additional times incrementing the set point value by 20%. Five (5) taps would equal 40%, seven (7) taps would be 80%.
3. The light will blink once at three taps and then begin blinking according to the level set to confirm the change after 3 seconds.

Taps	Max. Dim SP	Min. Dim SP	Blinks
4 taps	20%	100%	2 blinks
5 taps	40%	100%	3 blinks
6 taps	60%	100%	4 blinks
7 taps	80%	100%	5 blinks

Using Smart Click to Configure the Controller

Configuring the controller requires that at least one wireless wall switch is linked to the controller.

The Smart Click menu includes these parameters:

Level 1 Learn Mode
Level 2 Clear Switch/Clear All
Level 3 Repeater Function
Level 4 Status Telegram Function
Level 5 Time out Periods
Level 6 Auto-ON with Motion Function
Level 7 Minimum Dimming Output Enable
Level 8 Lighting Set-point
Level 9 Maximum Dimming Output
Level 10 Minimum Dimming Output

Linking the First Switch

1. Press the Clear button until the green Learn led blinks ON, approximately 6 seconds.
2. With the controller cleared or in the factory default state, click the wireless switch ON three times, OFF three times and ON three times quickly within 5 seconds.

Using this method of linking a switch will only work on the first wireless switch. Use the learn button or Smart Click to link additional switches.

Entering Smart Click Configuration Mode

It is important to have feedback (attached light) from the controller during configuration. The switch used to configure a controller using Smart Click should only be linked to the controller you're configuring. Add an additional switch if necessary.

Entering Smart Click Configuration Mode

1. Using a linked switch (see above), turn the light OFF.
2. Click and hold the switch OFF until the light turns on, approximately 10 seconds.
3. Press ON until the light blinks, about 5 seconds. The light will repeatedly blink once every 5 seconds.

Level 1 - Linking an additional switch or sensor

1. Enter Smart Click configuration mode and with the light blinking once, press ON for 3 seconds. The light will begin dimming down + up every second.
2. Add additional wireless switches by clicking ON 3 times quickly. Add sensors by pressing the TEACH button on the sensor.
3. To continue with configuration, press the switch ON for 3 seconds, the light will resume dimming once. To exit Smart Click press OFF for 5 seconds.

Level 2 - Clear switches or sensors (restore defaults)

1. Enter *Smart Click configuration mode* and click the switch ON or OFF until the light is dimming down + up twice. Press ON for three seconds.
2. Click the switch ON 5 times to clear the switch, click ON 5 times again to clear ALL switches and sensors and reset the controller to defaults.
3. Press OFF for 5 seconds to complete clearing.

Level 3 - Repeater Function - repeats any telegram within range. Telegrams can be repeated once or twice (single or dual hop). The repeater function can be enabled/disabled by accessing the controller buttons.

1. Press the Clear button and hold, then quickly press the Learn button; once to disable, twice to enable single hop and three times to enable dual hop repeating.
2. The learn LED will blink the corresponding value of the button press.
3. Release the Clear button.

Use Smart Click to enable repeating mode. Enter **Smart Click configuration mode** and click the switch ON or OFF until the light is dimming down + up three times.

1. Press ON for 3 seconds. If the repeater function is enabled the light will turn ON, if disabled the light will be OFF.
2. Click ON to activate this function, OFF to deactivate.
3. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up three times. To exit Smart Click press OFF for 5 seconds.

Level 4 - Status Telegram - the controller can broadcast a status telegram per EEP: A5-11-01. The telegram will broadcast every 100 seconds. Refer to the table on page 15 for a detailed explanation of the telegram. If the controller has a wired occupancy sensor connected to the low voltage input, this sensor status can be shared with other controllers. The controller must be first linked with the receiving controllers.

Enabling the status telegram activates the shared occupancy feature and also sends the learn command to the other controllers for linking. The status telegram can be enabled/

disabled by accessing the controller buttons. Press the Learn button and hold, press the Clear button once to disable, twice to enable (this sends the learn telegram). Release the Learn button. The learn LED will blink once when disabling, twice when enabling this telegram.

If there is no access to the controllers buttons, follow these Smart Click steps.

1. Enter Smart Click configuration mode and click the switch ON or OFF until the light is dimming down + up four times
2. Press ON for 3 seconds. If the status telegram function is enabled the light will turn ON, if disabled the light will be OFF
3. Click ON to activate this function, OFF to deactivate
4. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up four times.
5. To exit Smart Click press OFF for 5 seconds

Level 5 - Timeouts - the controller can be configured to wait a period of time after an ON event from a wireless switch or occupancy sensor before turning the load OFF (auto off).

1. Enter *Smart Click configuration mode* and click the switch ON or OFF until the light is dimming down + up five times.
2. Press ON for 3 seconds. The light will turn OFF and then ON per the table settings below.
3. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up five times. To exit Smart Click press OFF for 5 seconds.

Light	Timed Switch	Occ. Sensor Timer
OFF	no auto-off	0 sec. (demo)
1 Blink	5 min.	5 min.
2 Blinks	15 min.	10 min.
3 Blinks	30 min.	15 min.
4 Blinks	60 min.	20 min.
5 Blinks	N/A	25 min.

Level 6 - Auto ON Function - use with an motion sensor to turn lights ON automatically when motion is detected. If a motion sensor is used with no switch then Auto-ON is enabled automatically. If a switch is linked later, Auto-ON is disabled.

1. Enter *Smart Click configuration mode* and click the switch ON or OFF until the light is dimming down + up six times.
2. Press ON for 3 seconds. If the auto-on function is enabled the light will turn ON, if disabled the light will be OFF.
3. Click ON to activate this function, OFF to deactivate.
4. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up six times.
5. To exit Smart Click press OFF for 5 seconds.

Level 7 - Minimum Dimming Output Enable -Enables or disables the minimum dimming output. Enable this feature when the light fixtures output flickers at low dimming levels. Use this enable flag together with the Minimum Dimming Output level to set the lowest level the output will reach when dimming.

1. Enter *Smart Click configuration mode* and click the switch ON or OFF until the light is dimming down + up seven times.
2. Press ON for 3 seconds. If the dimming output is enabled the light will turn ON, if

disabled the light will be OFF

3. Click ON to activate this function, OFF to deactivate.
4. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up seven times. To exit Smart Click press OFF for 5 seconds.

Level 8 - Lighting Set point - The set point is a single value that can affect how the controller manages the light output depending on if the controller is setup for daylight harvesting or photo inhibit applications.

When set for photo inhibit operation, the Auto-ON feature associated with a linked occupancy sensor will be ignored when the natural light level measured by the light sensor is above the lighting set point. The photo inhibit feature will not turn lights OFF if the lights are ON.

Photo Inhibit Examples:

- Light level is < day-lighting set point – The lights do turn ON automatically when you enter the room.
- Light level is > day-lighting set point – The lights do not turn ON automatically when you enter the room.
- Lights are ON and the light level increases past day-lighting set point – The lights stay ON.
- Lights are OFF and the light level decreases past day-lighting set point – The lights will turn ON upon the next motion detected by the occupancy sensor.

When set for daylight harvesting operation, the set-point is used with a photo sensor (light sensor) and will automatically turn lights on and off or modulate dimming fixtures depending on ambient light levels.

You can use the light sensor to function as a closed loop sensor. When set as a closed loop sensor, the controller will dim the lights until the light level recorded at the sensor meets the set-point value. For more information on this operating mode, see the section at the beginning of this guide titled Daylight Harvesting Application.

If the light from the fixture does not impact the light reading at the sensor then it is an open loop application. When the dimming output is enabled, the value selected becomes the maximum dimming set point. With the dimming output disabled, the value becomes the Light-ON set point.

Control Response

In the diagram below, the thick line indicates the dimming output. The output will begin lowering as the natural light level increases (thin line). The point where the light output begins dimming down is the lighting set point (default 60% sensor FSR). The minimum dimming level is set to 100% sensor FSR.
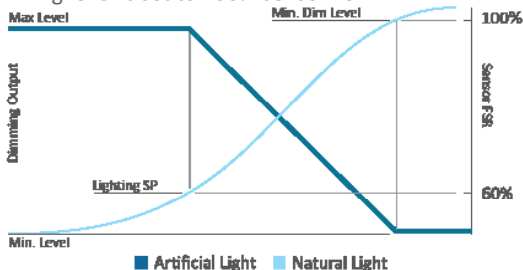
To adjust the light set-point:

- Enter Smart Click configuration mode and click the switch ON or OFF until the light is dimming down + up eight times.
- Press ON for 3 seconds. Default setting is 60% of the light sensors full scale range. There are 4 steps from 20% to 80%. The light will blink the step count. (see table below). Click

13

on to increase the set-point, off to decrease the set-point.

Taps	Max. Dim SP	Min. Dim SP	Blinks
4 taps	20%	100%	2 blinks
5 taps	40%	100%	3 blinks
6 taps	60%	100%	4 blinks
7 taps	80%	100%	5 blinks

3. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up eight times. To exit Smart Click press OFF for 5 seconds.

Level 9 - Maximum Dimming Output Level - sets the maximum level of the dimming output.

1. Enter Smart Click configuration mode and click the switch ON or OFF until the light is dimming down + up nine times.
2. Press ON for 3 seconds. Default setting is 100%. Adjust the maximum light level to the brightness level desired by clicking ON to increase and OFF to decrease in 2% increments.
3. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up nine times.
4. To exit Smart Click press OFF for 5 seconds.

Level 10 - Minimum Dimming Output Level - sets the minimum level of the dimming output.

1. Enter Smart Click configuration mode and click the switch ON or OFF until the light is dimming down + up ten times.
2. Press ON for 3 seconds. Default setting is 10%. Adjust the min. light level to the brightness level desired by clicking ON to increase and OFF to decrease in 2% increments.
3. To continue with configuration, press ON for 3 seconds, the light will resume dimming down + up ten times.
4. To exit Smart Click press OFF for 5 seconds.

This concludes the configuration directions for the controller.

Default Settings for Controller

Repeater	disabled
Status	disabled
Minimum Dimming Output	enabled
Motion sensor Time-out	15 minutes
Switch Time-out	no time out
Auto-ON Time-out	enabled with no linked switch, disabled with linked rocker switch
Light-ON-Set point	60% of sensor FSR
Light-OFF-Set point	100% of Light-ON Set point
Maximum Dimming Level	100%
Minimum Dimming Level	10%
Grace Timer	30 seconds

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