

DIN-Rail 8-Channel Adaptive Phase Dimmer Operation and Configuration Guide



Introduction

The Control4® DIN-Rail 8-Channel Adaptive Phase Dimmer (C4-DIN-8APD-E) controls up to eight devices from one module in the Control4 system. It installs in a panelized backbox using typical wiring standards and communicates to the Control4 system using a Cat5 Ethernet connection.

Note: For optimal product and network security, we recommend using this product with Control4 OS 3.2.2 or newer.

Dimming mode configuration

Each channel on the 8-Channel Adaptive Phase Dimmer can be set to several different dimming modes:

- **Switch Mode**—Only allows the load to be set to 100% or off.
- **Autodetect Mode**—The dimmer will detect the load type and set forward- or reverse-phase dimming appropriately.
- **Forward Phase Mode**—Forces the channel into forward-phase (leading-edge) dimming.
- **Reverse Phase Mode**—Forces the channel into reverse-phase (trailing-edge) dimming.
- **SSL 7A Mode**—Forces the channel into forward-phase (leading-edge) dimming and sets dimming parameters complaint to NEMA SSL 7A.

Note: The Autodetect, Forward Phase, and Reverse Phase modes should only be used with dimmable loads.

Note: By default, all channels on the 8-Channel Adaptive Phase Dimmer are set to Switch Mode to prevent inadvertent dimming of non-dimmable loads.

The dimming mode can be configured for each channel using the buttons on the front of the module:

- 1 Press the **CH1** and **CH8** buttons simultaneously.
- 2 All channel LEDs will indicate the their current dimming mode:
 - Solid yellow—Switch Mode
 - Solid red—Autodetect Mode
 - Solid green—Forward Phase Mode
 - Solid blue—Reverse Phase Mode
 - Solid magenta—SSL 7A Mode
- 3 Press each channel button to cycle through the four dimming modes.
- 4 Once each channel is set as desired, press the **Module Override** button to initiate the autodetect sequence on any channels set to 'Autodetect Mode.' The channel being autodetected will blink Red. When the autodetect test is finished, the channel LED will go to one of the following states:
 - Blinking green—Autodetected forward phase
 - Blinking blue—Autodetected reverse phase
 - Solid red—Autodetect failed. Run the test again or set an alternate mode.

- 5 Exit the configuration mode by pressing and holding the Module Override button briefly. If any channels are still set to Autodetect (solid red), the autodetect sequence will run for those channels.

The previous procedure should be repeated anytime that a module is rewired or a load type changes.

Note: Once the module has been identified into a project, it is no longer possible to configure the dimming-mode from the module. The dimmable/non-dimmable load type and dimming mode settings in Composer must be used to configure the dimming mode.

Note: When first identifying a module into a project, if the dimming mode of the light in Composer conflicts with the dimming mode of the corresponding channel on the module, a warning will be presented forcing the user to choose the appropriate dimming mode.

Composer Pro configuration and reports

Use Composer Pro to define the properties of each 8-Channel Adaptive Phase Dimmer, its location in a panel, and the loads that are connected to it. Composer Pro can then be used to generate Panel Reports, Module Reports, and Load Schedule Reports. These reports are essential to ensuring that each 8-Channel Adaptive Phase Dimmer is properly installed in the correct location and wired to the appropriate loads. Please refer to the *Composer Pro User Guide* (ctrl4.co/cpro-ug) for detailed information.

LEDs

During normal operation, the indicator lights on the front of the 8-Channel Adaptive Phase Dimmer communicate the status of the device.

| Indicator | LED color | Status | Notes |
|-----------------|----------------|----------------------------|---|
| Module Override | Blue | Power on, normal operation | |
| | Black | Off | |
| | Red | Thermal overload | See "Faults" section below |
| Channels | Blue | Load on | |
| | Black | Load off | |
| | Red | Short circuit fault | See "Faults" section below |
| Channels | Flashing red | MOSFET Short Fault | See "Faults" section below |
| | Yellow | Over-Wattage Fault | " |
| | Cyan | No Power On Phase Fault | " |
| | Flashing green | Firmware updating | |
| | Green | Firmware update complete | |
| Link/Activity | Green | Link | |
| | Orange | Activity | |
| | Flashing green | Firmware updating | Flashing gets faster as update proceeds |
| | Flashing red | No link | |

Channel and Module Override buttons

During normal operation, the buttons on the front of the 8-Channel Adaptive Phase Dimmer behave in the following manner:

| Button | Action | Result |
|-----------------|-----------------------|--|
| CH1-CH8 | Click | Toggles the load on and off. |
| | Hold | Ramps/fades the load (if dimmable). |
| Module Override | Click | Toggles between the module override scene and all channels off. |
| | Hold for five seconds | Sets the module override scene to current channel levels. The Module Override LED will blink rapidly to indicate that the override scene has been saved. |

The following button tap sequences are available using the CH1 and CH8 buttons.

| Function | CH1 | CH8 | CH1 |
|---------------|-----|-----|-----|
| Identify | 4 | | |
| Reboot device | 15 | | |
| Factory reset | 9 | 4 | 9 |

Reset button

A single press of the Reset button is equivalent to powering the 8-Channel Adaptive Phase Dimmer off and back on. Additionally, certain special activities can be accomplished by pressing and holding a specific button while pressing the Reset button. Note that the same activity is possible by pressing and holding the designated button while power cycling the 8-Channel Adaptive Phase Dimmer.



Note: The Reset button is recessed and must be pressed using a paperclip or similar device.

| Hold button while clicking reset | Result |
|----------------------------------|---|
| CH7 | Disables DHCP and forces the IP address to 192.168.1.200. |
| CH8 | Toggles between Enable/Disable DHCP. |
| Module Override | Restores the factory image (do not perform unless directed to do so by Control4 Technical Support). |

Faults

The 8-Channel Adaptive Phase Dimmer is designed to protect itself and the attached load(s) through certain fault conditions. These fault conditions are indicated by the LEDs on the front of the device and are available through the driver for the device as properties and variables.

Overtemp fault

- Occurs if the module reaches an unsafe operating temperature.
- Is generally an indication that the device is over its load ratings.
- All loads attached to the module will turn off.
- The Channel LED and Module Override LED will turn red.
- The fault condition cannot be cleared nor loads turned back on until the device has reached a safe operating temperature. Once the device has reached a safe operating temperature, the fault will automatically clear.



Note: Loads will not automatically turn back on after the fault has cleared.

Overcurrent fault

- Occurs if a significantly large current spike happens on an individual channel. There are several reasons why this could occur:
 - A true short circuit occurs (for example, a nail hits the wires)
 - The attached load has an excessively high in-rush current
 - An attached incandescent bulb burns out creating a large current spike
 - A non-dimmable load is dimmed (particularly non-dimmable CFLs and LEDs)
- The load attached to the faulted channel will turn off.
- The Channel LED will turn red.
- To clear the fault, simply turn the load back on by pressing the appropriate channel button on the front of the module or by a keypad (or any other action) that has been programmed to control the load.
- If the same fault occurs within 10 seconds of clearing the fault, the fault condition is considered to be ongoing and must be addressed before proceeding. After addressing the underlying problem, the fault can be cleared by pressing and holding the Channel button for five seconds. Composer Pro can also be used to clear the fault condition.

Over-wattage fault

- Occurs if the wattage is over the allowed individual channel threshold of 1000W for 10 seconds.
- The load attached to the faulted channel will turn off.
- The channel LED will turn yellow.
- To clear the fault, simply turn the load back on via the appropriate channel button on the front of the module or via a keypad (or any other action) that has been programmed to control the load.

The fault can also be cleared by pressing and holding the channel button for five (5) seconds. Composer Pro can also be used to clear the fault.

MOSFET short fault

- Occurs when current leakage is detected on a channel when the load is off.
- When this fault occurs, the loads sharing the relay controlling the detected channel will turn off. (CH1-CH4 share a relay. CH5-CH8 share a relay)
- The channel LED will blink red on the channels detecting the short. The other channel LEDs that are on the same relay that turned off, but did not detect a short, will turn solid red.
- To clear the fault, one at a time press and hold the channel button on the channels that are blinking red for five (5) seconds. As soon as the last one of those channels are cleared, the other channels that were solid red will get cleared. Note that if a load on that relay is turned on again, it will probably fault again in the same way, since the shorted MOSFET would persist.

No power on phase fault

- Occurs if there is no zero cross detected on Line 2 (L and N).
- The channel LEDs will turn solid cyan on channels 5-8.
- The fault condition cannot be cleared until the Line 2 (L and N) are connected to the device.

Phase fault

- Occurs if all Line-Ins are not the same phase.
- All channel LEDs will blink white.

Manual overrides

Prior to installation of the control system, or in case a problem occurs with the control system or the network, it is possible to control the loads attached to the 8-Channel Adaptive Phase Dimmer through several methods:

- **Override scene**
 - The module override scene is stored in the module itself and does not require interaction from the control system.
 - The default setting for this override scene is all loads on at 100%.
 - The override scene settings can be changed using the buttons on the front of the module (see the “Channel and Module Override” section above) or Composer Pro.
- **Module Override button**
 - Pressing the Module Override button toggles the attached loads between the stored override scene and all loads off.
- **Auxiliary override contacts**
 - The Aux In and Aux Out terminals on the 8-Channel Adaptive Phase Dimmer can be wired to a standard line-voltage toggle switch installed in a hidden but convenient location, such as a closet.
 - Each time the attached switch is flipped, the 8-Channel Adaptive Phase Dimmer will toggle between the stored override scene and all loads off.
 - If desired, a single toggle switch can be wired to the Aux In contact on multiple Control4 Panelized Lighting modules, but all modules sharing an auxiliary override switch *must be on the same electrical phase*.
 - The desired location of the auxiliary override switch can be defined in Composer Pro for each module. This information will appear in the Module Report generated by Composer Pro.
- **Channel Override buttons**
 - The Channel Override buttons on the front of the module provide individual control of each load attached to the 8-Channel Adaptive Phase Dimmer. Click the specific Channel Override button to toggle the load between its preset level and off. Press and hold the specific Channel Override button to ramp/fade the load (if dimmable).

Troubleshooting

| Symptom | Possible solution |
|--------------------------|---|
| Module does not power on | Verify that the circuit breaker is on. |
| | Verify that Line 1 in is connected to the power. |
| Load does not turn on | Verify that the load is wired to the proper channel terminal. |
| | Verify that the channel is not in a fault condition (see “Faults” section above). |
| | Verify that the light bulb is not burned out. |
| Loads do not turn off | Verify that the jumpers that connect the black terminal block to the red terminal blocks have been removed. |
| Module overheats | Verify that the load ratings have not been exceeded. |
| | Verify that the module is receiving proper ventilation. |

Additional resources

The following resources are available for more support.

- Control4 Knowledgebase and forums
- Control4 Technical Support
- Control4 website at www.control4.com
- Composer Pro documentation in various formats available at ctrl4.co/docs

Warranty and legal information

Find details of the product’s Limited Warranty and other safety, patent, and legal resources at snapone.com/legal or request a paper copy from Customer Service at [866.424.4489](tel:866.424.4489).

More help

For the latest version of this document, open the URL below or scan the QR code.





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