

DIN-Rail 8-Channel Adaptive Phase Dimmer Installation Guide



Introduction

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

Box contents

- 8-Channel Adaptive Phase Dimmer
- 8-Channel Adaptive Phase Dimmer Installation Guide (this document)
- 8-Channel Adaptive Phase Dimmer Wiring Guide (ctrl4.co/8chdim-wg)
- 8-Channel Adaptive Phase Dimmer Operation and Configuration Guide (ctrl4.co/8chdim-ocg)

Specifications and supported fixtures

Model number	C4-DIN-8APD-E		
Power requirements	100-277VAC, 50/60 Hz 240VAC, 50Hz		
Lines in (circuits)	1 or 2		
Power consumption	5W		
Supported load types	Incandescent, halogen, electronic low-voltage transformer (ELV), magnetic (iron core) low-voltage transformer (MLV)*, fluorescent, compact fluorescent (CFL), LED, motor		
Control communications	Ethernet		
Module load ratings in Control4 panel			
	120V	240V	277V
Module max with two lines in	3200W	6000W	6000W
Line 1 in max	1920W	3840W	3840W
Line 2 in max	1920W	3840W	3840W
Module max with one line in	1920W	3840W	4400W
Module load ratings in standard DIN rail panel			
	120V	240V	277V
Module max with two lines in	1920W	3840W	N/A
Line 1 in max	1000W	2000W	N/A
Line 2 in max	1000W	2000W	N/A
Module max with one line in	1920W	3840W	N/A

Individual channel load ratings				
		120V	240V	277V
Incandescent, tungsten, halogen,	Max dimmable	1000W	2000W	2300W
	Min	2W	2W	2W
ELV, MLV	Max dimmable	1000W	1000W	1000W
	Max non-dimmable	500W	500W	500W
	Min	18W	18W	18W
Fluorescent, CFL	Max dimmable	500W	500W	500W
	Max non-dimmable	250W	250W	250W
	Min	2W	2W	2W
LED	Max dimmable	200W	200W	200W
	Max non-dimmable	200W	200W	200W
	Min (except MLV)	2W	2W	2W
	Min (with MLV trans.)	18W*	18W*	18W*
Motor	Max dimmable	N/A	N/A	N/A
	Max non-dimmable	1/8 HP	1/8 HP	1/8 HP
	Min	N/A	N/A	N/A
*Important! When dimming MLV loads, each transformer must be loaded to at least 50% of its maximum load.				
Connections				
Line voltage push terminals	16 (Line 1, Line 1 Neutral, Earth Ground, Line 1 Out, Line 2 Neutral, Line 2, Loads 1-8, Aux In, Aux Out)			
Recommended wiring size	One 26 AWG to 12 AWG (0.12 mm ² to 2.5 mm ²) per terminal size			
RJ-45	2 ports—1 Ethernet in, 1 Ethernet passthrough			
Environmental				
Operational temperature	32°F to 104°F (0°C to 40°C)			
Humidity	5% to 95% non-condensing			
Storage	-4°F to 158°F (-20°C to 70°C)			
Heat dissipation	175 BTU/hr (51W)			
Dimensions				
H x W x D	8.6 x 4.5 x 2.2 in (219 x 115 x 57 mm)			
DIN module width	12M			
Weight	2.7 lbs (1.2 kg)			
Shipping weight	3.2 lbs (1.4 kg)			

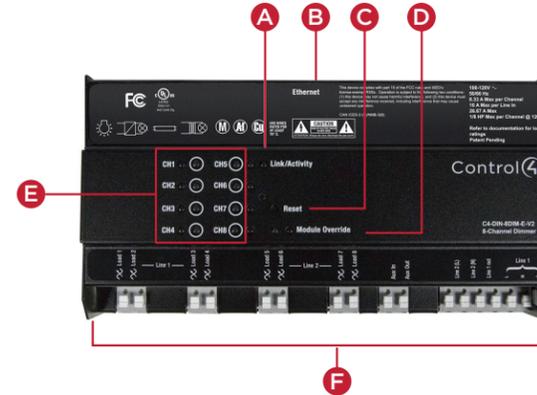
Warnings and considerations

- Warning!** Turn off electrical power to all circuit breakers feeding into the panel before installing or servicing this product. Improper use or installation can cause *serious injury, death, or loss/damage of property.*
- Attention!** Coupez le courant électrique pour tous les disjoncteurs d'alimentation dans le panneau avant d'installer ou de réparer ce produit. Une mauvaise utilisation ou installation peut entraîner des *blessures graves, décès, ou perte / dommages à la propriété.*
- Warning!** This device must be protected by a circuit breaker (20A max).
- Attention!** Cet appareil doit être protégé par un disjoncteur (20A max).
- Important!** Do not use this device with a GFCI breaker. Current leakage from the device can cause the breaker to trip.

- Warning!** Do not rely solely upon the device's contact with a metal panel for adequate grounding. Use the device's ground terminal to make a secure connection to the safety ground of the electrical system.
- Attention!** Ne comptez pas uniquement au contact de l'appareil avec un panneau métallique de mise à la terre. Utilisez la borne de mise à la terre de l'appareil pour d'établir une connexion sécurisée au système électrique.
- Important!** All Line-Ins MUST be the same phase.
- Important!** This device must be installed by a licensed electrician in accordance with all national and local electrical codes.
- Important!** The panel used with this device is air cooled. Install the panel in a location where the vented cover is not blocked. At least 12 inches (30 cm) clearance is required away from the front of the panel. Some local codes may require as much as 30 inches (76 cm) clearance.
- Important!** When dimming magnetic (MLV) loads, each transformer must be loaded to at least 50% of its maximum load.
- Important!** Only install this device indoors.
- 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 the "Troubleshooting" section of the *8-Channel Adaptive Phase Dimmer Operation and Configuration Guide* (ctrl4.co/8chdim-ocg).
- Important!** Changes or modifications not expressly approved by Control4 could void the user's authority to operate the equipment.
- Important!** When using AFCI breakers, refer to the Control4 Knowledgebase Article "Arc Fault Breaker Recommendations and Troubleshooting.pdf"
- Important!** 10/100 Ethernet port can only be used to chain together a total of six Control4 panelized devices in the same panel.

Features

Figure 1: Front view



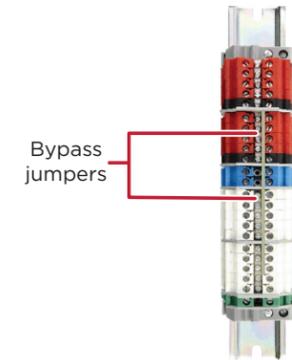
- A Link/Activity LED
- B Ethernet RJ-45 ports
- C Reset button (recessed)
- D Module status LED and override button
- E Channel status buttons and LEDs
- F Line voltage terminals

Installing the dimmer

Preparing to install the dimmer

- 1 Use Composer Pro to add the 8-Channel Adaptive Phase Dimmer to a project, define its location in a panel, and print the Panel, Module, and/or Load Schedule Reports. See the *Composer Pro User Guide* (ctrl4.co/cproug) for details.
- 2 Install the panel following the instructions in the *5-Slot and 2-Slot Panel Installation Guide* (ctrl4.co/panelinstall).
- 3 Install and wire the Terminal Block for the 8-Channel Adaptive Phase Dimmer (C4-DIN-TB-8DIM) following the instructions in the *Terminal Block Installation Guide* (ctrl4.co/blockinstall) and in the location defined by the Composer Pro Panel Reports.
- 4 Verify that all bypass jumpers are securely installed in the terminal block assemblies. Each 8-Channel Adaptive Phase Dimmer Terminal Block assembly should have four bypass jumpers installed, connecting each black terminal block to four red terminal blocks, and connecting each set of five white terminal blocks together.

Figure 2: Terminal block bypass jumpers



- 5 Turn on the circuit breaker(s) feeding the terminal block. Verify that the circuit breaker(s) do not trip. If a breaker trips, do not proceed with installation until the problem has been resolved.
 - 6 Turn off the circuit breakers for all lines coming into the panel.
 - 7 Remove the two bypass jumpers that connect each black terminal to four red terminals by unscrewing all five screws in each bypass jumper until the entire bypass jumper can be pulled out.
- Caution!** Store the bypass jumper for possible later use. The bypass jumper should be reinstalled any time the load will be serviced. Test the circuit with the jumper installed prior to removing the jumper again. Damage to the module caused by miswiring is not covered by the warranty.
 - Attention!** Conservez le cavalier pour un usage ultérieur. Le cavalier devra être réinstallé à tout moment pour effectuer un entretien. Veuillez évaluer le circuit avec le cavalier en place avant de le retirer à nouveau. Un dommage au module engendré par un mauvais branchement n'est pas couvert par la garantie de Control 4.

Before you install in a third-party panel

- 1 Install the third-party panel according to its instructions.
- 2 Install the panel in a well-ventilated area.

Caution! Test all wiring for short circuits before installing the module. Damage to the module caused by miswiring is not covered by the Control4 warranty.

Attention ! Testez tout le câblage pour les courts-circuits avant d'installer le module. Un dommage au module engendré par un mauvais branchement n'est pas couvert par la garantie de Control 4.

Important! These modules generate heat! Installing the 8-Channel Adaptive Phase Dimmer in a third-party DIN rail panel requires derating of the modules per the load ratings above. For best results, a ventilated DIN rail panel should be used.

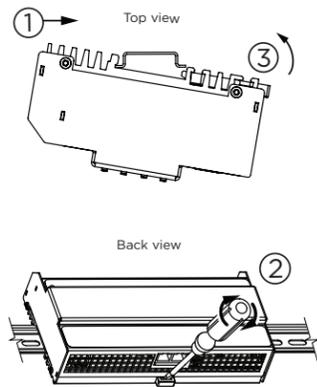
Installing the module in a Control4 panel

The dimmer should be installed in the panel next to the previously installed dimmer terminal block. The location of the device in the panel is defined by the Composer Pro Panel Report.

- 1 With the gray press terminals on the left side of the dimmer, hold the dimmer upright and angle it to the left so that the left side of the module fits onto the rail in the panel (see Figure 3).

Note: The dimmer installs with the line voltage connector on the left side and the Ethernet ports on the right side.

Figure 3: Snap on the dimmer—Control4 panels



- 2 With the left side already in place, use a flat blade screwdriver to move the latch.
- 3 While pressing forward on the right side of the dimmer, release the latch to secure it onto the rail.

Note: To remove the module, use a flat blade screwdriver to move the latch, pull it out from the right side, and remove it from the left side.

- 4 Wire the module according to the wiring diagrams in the 8-Channel Adaptive Phase Dimmer Wiring Guide (ctrl4.co/8chdim-wg) and the reports from Composer Pro.

Note: All wires between the terminal block and the dimmer must use the same gauge wire as the field wiring connected to the terminal block.

- 5 At the terminal block side, strip the wires 0.35 in (9 mm) and tighten to 7 lb-in (0.8 Nm).
- 6 At the module side, strip the wires 0.4 in (10 mm) and insert into the push block terminal.

- 7 On the right side of the dimmer, connect the Ethernet cable to one of the RJ-45 ports. (The second port can be used to pass through to another 10/100 Ethernet device).
- 8 Install the other modules in the panel as defined in their respective installation guides and the Panel Reports from Composer Pro.
- 9 Turn the circuit breakers back on and test all connected loads by clicking the channel override buttons.

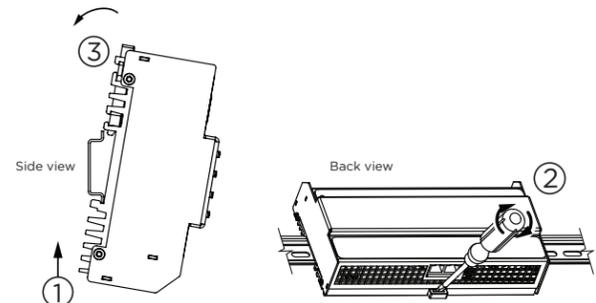
Installing the module horizontally in a third-party panel

Third-party DIN rails can be mounted in any orientation; however, these instructions assume a horizontal orientation.

- 1 With the gray press terminals facing down, hold the dimmer lengthwise and angle it down so that the bottom side of the module fits onto the rail (see Figure 4).

Note: The dimmer installs with the line voltage connectors facing down and the Ethernet ports facing up.

Figure 4: Snap the dimmer on a horizontal DIN rail



- 2 With the bottom side already in place, use a flat blade screwdriver to move the latch.
- 3 While rotating it upward, release the latch to secure it onto the rail.

Note: To remove the module, use a flat blade screwdriver to move the latch, pull it out from the top, and remove it from the bottom rail.

- 4 Wire the module according to the wiring diagram in the 8-Channel Adaptive Phase Dimmer Wiring Guide (ctrl4.co/8chdim-wg) and the reports from Composer Pro.
- 5 Strip the wires 0.4 in (10 mm) and insert into the push block terminal.
- 6 On the top of the dimmer, connect the Ethernet cable to one of the RJ-45 ports. (The second port can be used to pass through to another 10/100 Ethernet device).
- 7 Install the other modules in the panel as defined in their respective installation guides and the panel reports from Composer Pro.
- 8 Turn the circuit breakers back on and test all connected loads by pressing the Channel Override buttons.

Wiring diagrams

The wiring diagrams show the wiring details for Control4 8-Channel Dimmers. Refer to the 8-Channel Dimmer Wiring Guide (ctrl4.co/8chdim-wg) to view those diagrams.

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

Regulatory/safety Information

To review regulatory information for your Control4 products, see ctrl4.co/reg.

Patent information

Applicable patents are available at ctrl4.co/patents.

Warranty

See ctrl4.co/warranty for details.

More help

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