Functional Summary

The CLS-EXP-DIMFDB expands the Crestron iLux® Integrated Lighting System (CLS-C6 Series) and other Crestron® lighting dimmers for control of 3-wire electronic fluorescent dimming ballasts. A single model supports 120, 230, or 277 volt loads up to 16 amps. The CLS-EXP-DIMFDB can dim a fully loaded circuit by using any output channel of the iLux system.

- Works with Crestron iLux, CLW-,[1] DIN-, and CLX-Series[2] dimmers
- Emulates the dimmer that is controlling it
- Up to five expansion modules can be connected to a single iLux dimmer channel
- Supports 120, 230, and 277 volt 3-wire dimmable fluorescent loads
- Can be installed in an air-handling space[3]
- Includes threshold adjustment for setting the minimum fluorescent dimming level
- Built-in air gap relay at the output
- Mounts to a wall or above a suspended ceiling
- Conduit knockouts provided on the bottom and lower sides
- All connections made via screw terminals behind the front cover

CLS-EXP-DIMFDB Physical View

1. CLW-Series devices must have a dedicated neutral.
2. Compatible only with forward-phase dimming modules.
3. Must be oriented upright, mounted to a vertical surface, with 6 in (153 mm) minimum spacing above and below for proper ventilation and heat dissipation.

Specifications

CLS-EXP-DIMFDB Specifications

SPECIFICATION	DETAILS
Load Ratings	
Dimmer Channels	1
Load Rating	16 A
Minimum Load	15 W @120 V, 25 W @ 230 V, and 30 W @ 277 V
Load Type	3-wire electronic fluorescent dimming ballasts (Lutron® Hi-Lume® or equivalent)
Maximum Modules per Dimmer Output	5
Input Voltages	
Line Power	120-277 Vac, 50/60 Hz
Control Input	120-230 Vac, 50/60 Hz, phase independent of line power and load, presents 25 W load to the controlling device
Electrical Terminals	Captive screw type; Accommodates two 22-12 AWG (0.34-4.0 mm^2) wires
Enclosure	Surface mount* module with (2) integral mounting flanges, galvanized steel with gray matte powder coat front panel, extruded aluminum heat sink, (4) 1/2 in (13 mm) or 3/4 in (19 mm) conduit knockouts provided on bottom and lower left and right sides
Environmental	
Temperature	32° to 104°F (0° to 40°C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	70 Btu/h at maximum load, 16 A
Dimensions	
Height	8.82 in (224 mm)
Width	6.39 in (163 mm)
Depth	3.18 in (81 mm)
Weight	3.3 lb (1.5 kg)
Compatible Control Devices	
CLS(I)-C6	iLux Integrated Lighting System
CLW-DIM Series	Wall Box Dimmers
CLX(I)-1DIM4	4-Channel Dimmer Module, 1 Feed
CLX-1DIM8	8-Channel Dimmer Module, 1 Feed
CLX(I)-2DIM2	2-Channel Dimmer Module, 2 Feeds
CLX(I)-2DIM8	8-Channel Dimmer Module, 2 Feeds

* Must be oriented upright, mounted to a vertical surface, with 6 in (153 mm) minimum spacing above and below for proper ventilation and heat dissipation.

Installation Guide – DOC. 6678D
(2020715)
07.14
Specifications subject to
change without notice.

Regulatory Compliance

This product is Listed to applicable UL Standards and requirements by Underwriters Laboratories Inc.

Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:
(1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna

- Increase the separation between the equipment and receiver

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

- Consult the dealer or an experienced radio/TV technician for help

Application

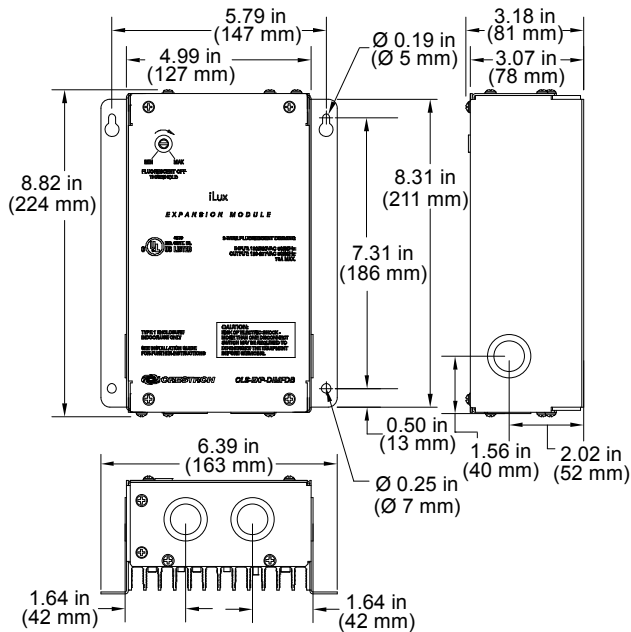The following diagram shows several CLS-EXP-DIMFDB modules in a lighting application.
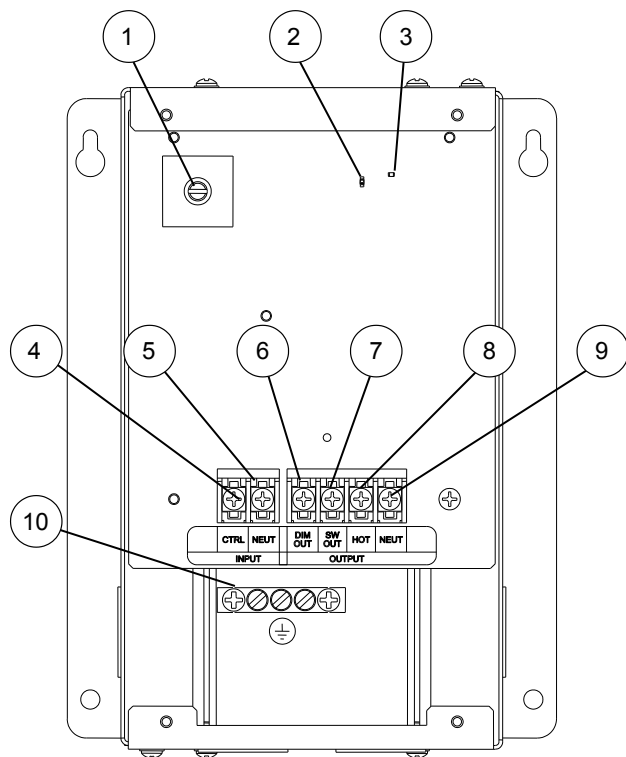
CLS-EXP-DIMFDB Modules in a Typical Application
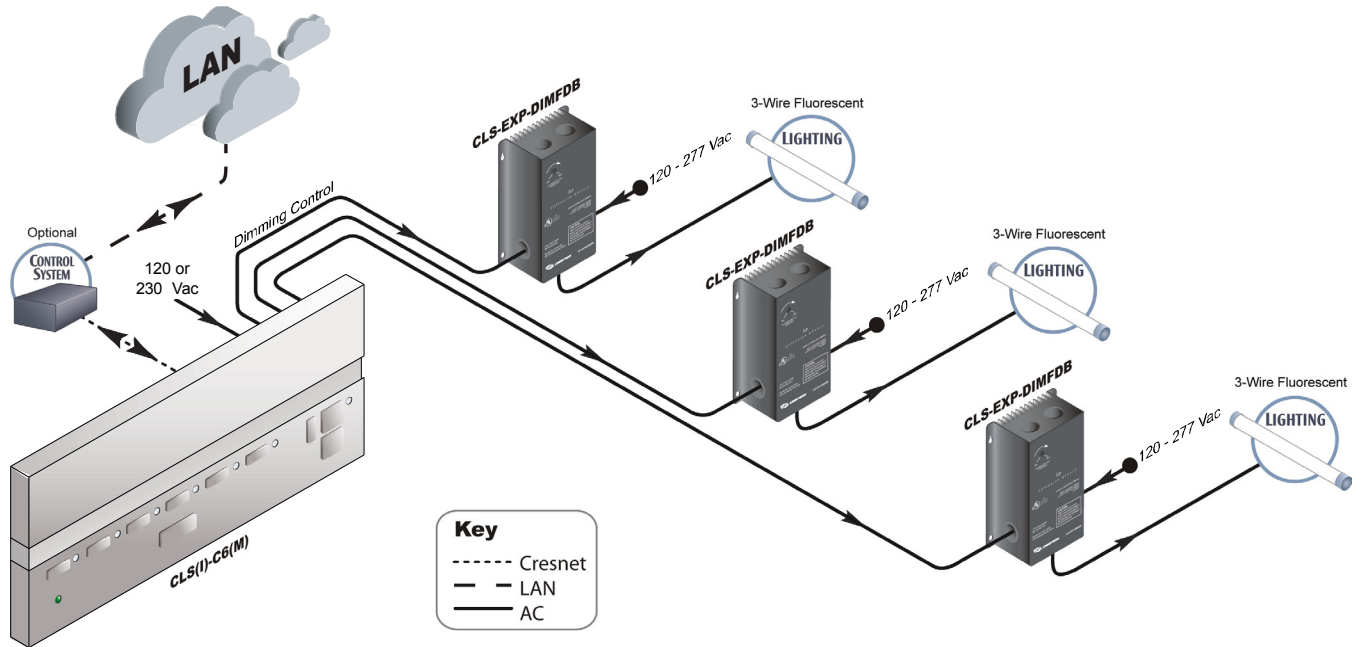
Physical Description

This section provides information on the connections, controls, and indicators available on the CLS-EXP-DIMFDB.

CLS-EXP-DIMFDB Overall Dimensions

CLS-EXP-DIMFDB (Cover Removed)

Connectors, Controls, and Indicators

#	CONNECTORS, CONTROLS, AND INDICATORS	DESCRIPTION
1	FLUORESCENT OFF THRESHOLD	(1) Recessed screwdriver-adjustable trim pot behind removable cap, adjusts minimum brightness level
2	Status Indicator	(1) Red LED behind front panel, illuminates when load output is on
3	Power Indicator	(1) Green LED behind front panel, indicates power is applied to the HOT terminal
4	INPUT–CTRL	(1) Captive screw terminal,[1] control input from CLS(I)-C6 Series, CLW-DIM Series,[2] CLX(I)-DIM Series, GLX-DIM6, GLXX-2DIM8, or DIN-Series dimmers
		NOTE: Presents a 25 W load to the controlling dimmer; A maximum of five CLS-EXP-DIMFDB modules may be connected to the controlling dimmer, which cannot be wired to control any other loads besides the CLS-EXP-DIMFDB modules.
5	INPUT–NEUT	(1) Captive screw terminal,[1] neutral connection for control input
6	OUTPUT–DIM OUT	(1) Captive screw terminal,[1] dimmed load output
7	OUTPUT–SW OUT	(1) Captive screw terminal,[1] switched load output
8	OUTPUT–HOT	(1) Captive screw terminal,[1] line power input
9	OUTPUT–NEUT	(1) Captive screw terminal,[1] neutral connection for line power input and load
10	Ground	(1) 3-terminal chassis ground bus bar

1. Captive screw terminals accept up to two 22 to 12 AWG (0.34 to 4.0 mm^2) wires per terminal.

2. CLW-Series device must have a dedicated neutral.

# Setup

Important Notes

Read before installation.

Wiring: Use 75°C copper wire only.

Installation

The CLS-EXP-DIMFDB can be installed vertically on a wall and can also be installed in a space used for environmental air as defined in NEC® Article 300.22(C). Refer to the following diagram when installing a CLS-EXP-DIMFDB module.

Module Installation

Mounting Surface

CLS-EXP-DIMFDB Module

Mounting Screw, #8
Quantity 4 Total
(Not Supplied)
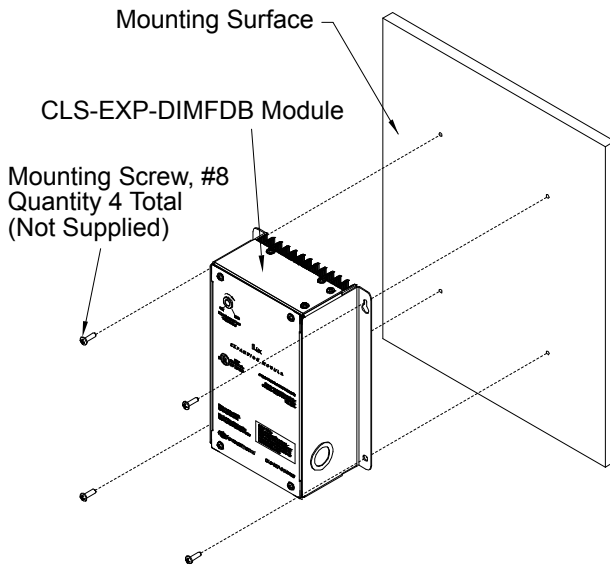
Adhere to the following instructions to ensure proper ventilation:

- Install the device vertically on a vertical surface.

  NOTE: To prevent potential heat damage to drywall, do not mount the CLS-EXP-DIMFDB directly onto drywall. Mount a 1/2 in (13 mm) piece thick (minimum) plywood between the CLS-EXP-DIMFDB and the drywall.

- Install device with 6 in (152 mm) of clearance from the top and bottom of the device

Hardware Hookup

WARNING: RISK OF SERIOUS PERSONAL INJURY. Turn off power at the circuit breaker(s) prior to installation. Installing with power on can result in serious personal injury and damage to the device.

1. Use a #2 Phillips screwdriver to remove the cover screws, as shown in the following diagram, and remove the cover.

Remove Cover Screws

Cover Screws
(x4)
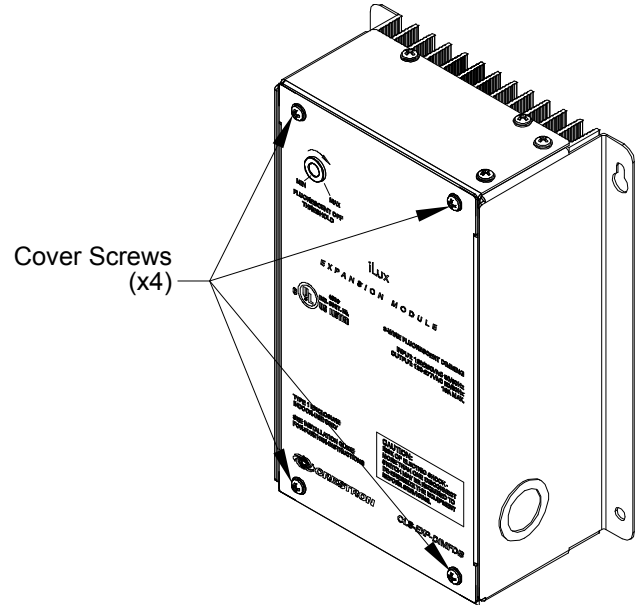
2. Depending on the module's application, select the appropriate configuration from one of the wiring diagrams on the next page and connect the CLS-C6 and load(s) as shown.

- Do not connect wires of differing gauge to a single terminal.

- Wires should be stripped to 7/16 in (11 mm).

- Tighten terminal screws to 7 in-lbs (0.79 Nm).

NOTE: Dimmers controlling one or more CLS-EXP-DIMFDB modules must not be wired to control any other type of load.

NOTE: While these diagrams show a CLS-C6 as the controlling source, other Crestron products such as CLW-Series wall dimmers (Cresnet® and infiNET™) and CLX-Series dimming modules can be used as well. Refer to the specific dimmer's installation guide for detailed information.

NOTE: When using a CLW-Series wall dimmer, the wall dimmer must be wired with a dedicated neutral wire.
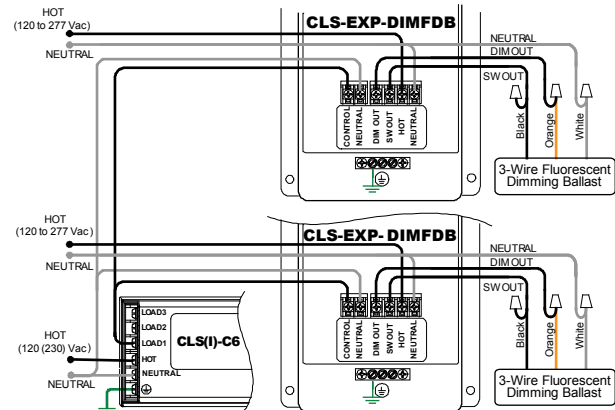
CLS-EXP-DIMFDB with Separate Feeds
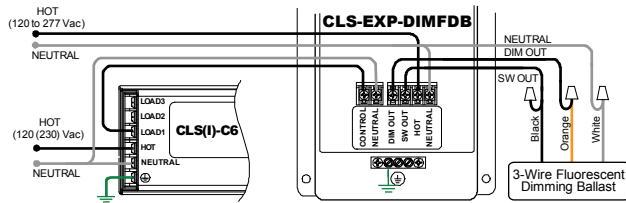
CLS-EXP-DIMFDB with Shared Feed
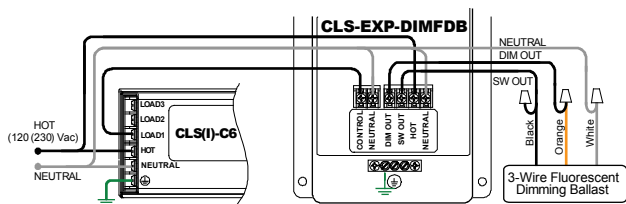
Multiple CLS-EXP-DIMFDB Modules

3. Apply power to the line or load and turn on the controlling device. The power indicator LED lights, indicating that power is supplied to the module.

4. Replace the cover and cover screws.

Set the Minimum Dimming Level

Certain types of loads can flicker when dimmed too low. Adjust the FLUORESCENT OFF THRESHOLD to prevent the CLS-EXP-DIMFDB from attempting to dim the load below a certain level.

NOTE: Some fluorescent ballasts may require that voltage levels be maintained above a specified minimum level to prevent premature lamp failure. Be sure to set the minimum dim level so that the minimum voltage is met at all times when the load is on. Consult the ballast manufacturer's documentation for details.

Do the following to adjust the minimum dimming level:

1. Remove the cap from the FLUORESCENT OFF THRESHOLD adjustment from the inside of the cover (requires removal of cover as shown on the previous page).

2. Using a flat-head screwdriver, turn the FLUORESCENT OFF THRESHOLD adjustment counter-clockwise until it stops.

3. Set the CLS-C6 so that the light output is on but is below the desired minimum level.

4. Turn the FLUORESCENT OFF THRESHOLD adjustment clockwise until the light output is at the desired minimum level.

5. Replace the cap.

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

CLS-EXP-DIMFDB Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
The load does not turn on.	The controller is not working.	Make sure the controller is powered on and is one of the compatible dimmers listed in "Specifications" on page 1.
	No power is applied to the HOT terminal.	Check the circuit breaker. Check that the green POWER LED on the inside of the unit is lit.
The load turns on and off but does not dim.	The controlling unit is either not a dimmer or has been set to non-dim.	Verify that the dimmer is compatible with the CLS-EXP-DIMFDB (refer to "Specifications" on page 1). Verify that the controlling channel has not been programmed as non-dim.
	FLUORESCENT OFF THRESHOLD has been set too high.	Refer to "Set the Minimum Dimming Level" on page 6.
The lights do not dim properly.	An incompatible dimmer is being used.	Make sure that the dimmer is one of those listed in "Specifications" on page 1.
The lights are noisy when dimmed.	There is an unsupported load type.	Refer to the list of supported load types. Change the load type or use a CLS-EXP-DIMU.
The lights flicker when at certain dimming levels.	Some types of loads cannot be dimmed below a certain level.	Refer to "Set the Minimum Dimming Level " on page 6.
The lights cannot be dimmed below a certain level.	The FLUORESCENT OFF THRESHOLD has been set too high.	Refer to "Set the Minimum Dimming Level" on page 6.

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or, for assistance within a particular geographic region, refer to the listing of Crestron worldwide offices at www.crestron.com/offices.

To post a question about Crestron products, log onto Crestron's Online Help at www.crestron.com/onlinehelp. First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the CLS-EXP-DIMFDB, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.

2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.

3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.