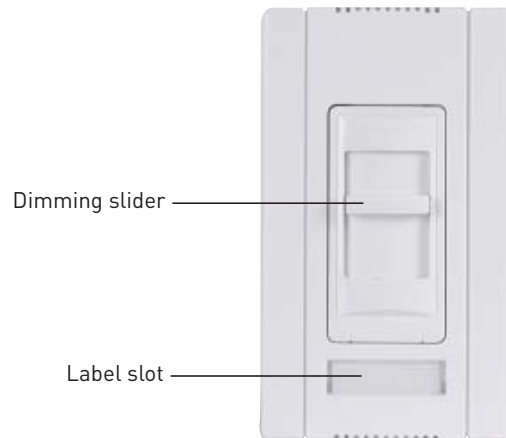


# ADF120277

## 0-10V Fluorescent Architectural Dimmer



### SPECIFICATIONS

|                                                                                       |                                       |
|---------------------------------------------------------------------------------------|---------------------------------------|
| Input Voltage .....                                                                   | 0-24VDC                               |
| Power Supply (for On/Off switching).....                                              | WattStopper Power Pack                |
| Maximum 0-10V control capacity.....                                                   | 60 ballasts                           |
| Minimum Load Rating.....                                                              | No minimum load requirement           |
| Load Type .....                                                                       | 0-10V dimming fluorescent             |
| For use with specific Advance, Lutron,<br>Osram /Sylvania, Universal, and GE ballasts |                                       |
| Environment.....                                                                      | Indoor use only                       |
| Operating Temperature .....                                                           | 0-25°C (32-77°F)                      |
| Humidity.....                                                                         | 93% RH, non-condensing                |
| Electrical Supply Wire Requirement:                                                   |                                       |
| Minimum temperature rating.....                                                       | 75°C (167°F)                          |
| Tools Needed.....                                                                     | Insulated Screwdriver, Wire Strippers |

**WattStopper®**

Santa Clara, CA 95050

Installation Instructions

## DESCRIPTION AND OPERATION

The ADF120277 Fluorescent 0-10V Architectural Dimmer is designed to provide 0-10V dimming control. When used in conjunction with a power pack, it also provides the ON/OFF control output. To dim the connected load move the slider down; to brighten the connected load move the slider up. Move the slider all the way to the bottom to turn OFF the connected load.

### Caution:

- Use only with dimming ballasts shown on the "List of Compatible Ballasts" on the other side of this page.
- To reduce the risk of overheating and possible damage to other equipment, do not install to control a receptacle, a motor-operated appliance, or a transformer-supplied appliance.

### Important Notes


1. Do not connect this control to line voltage. Connect to LOW VOLTAGE ONLY.
2. Use Class 2 wiring. Do not run Class 2 wires in the same conduit as line voltage conductors.
3. Must use with WattStopper BZ-50 power pack (or equivalent) for AC line switching. If dimmer is not connected to a power pack will only have dimming control, but not ON/OFF control.
4. Do not exceed 500 feet of total low voltage wiring (18 AWG) to the control. Use shielded cable for long wiring runs, or where electrical noise is present, to ensure proper performance of the dimmer and ballast.
5. A maximum of 60 ballasts can be connected to the 0-10V connection of a single ADF-120277.
6. Protect the dimmer from dust and dirt when painting or spackling.
7. Check new installations for short circuits prior to installing the dimmer.

### Derating


No derating required in multigang installations.

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## INSTALLATION AND WIRING



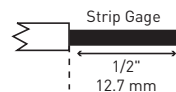
**WARNING**  
Disconnect power to the wall switch box by turning OFF the circuit breaker or removing the fuse from the circuit before installing the ADF120277, replacing lamps, or doing any electrical work.



**Caution** – For your safety: Connecting a proper ground wire to the dimmer provides protection against electrical shock in the event of certain fault conditions. If a proper ground is not available, consult with a qualified electrician before continuing installation.

### 1. Prepare the Wires

Make sure the insulation is stripped off of the wires to expose their copper cores to the length indicated by the “Strip Gage” in Fig. 1. (approx. ½ inch).



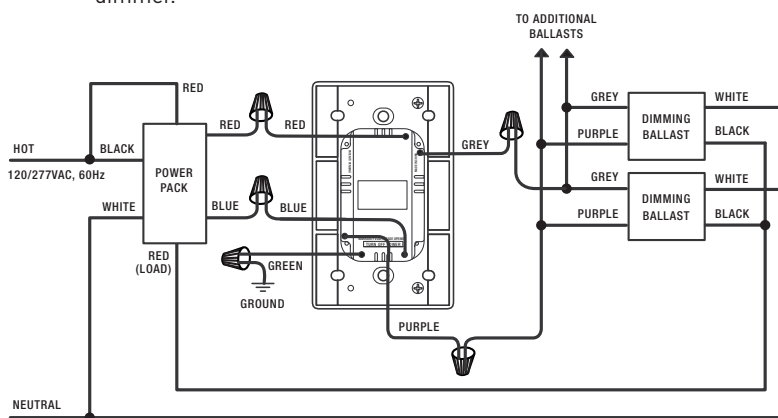
**Fig. 1 : Wire Stripping**

### 2. Wire the dimmer

Connect the wires to the flying leads on the ADF120277 dimmer(s) as indicated in either step 2a or 2b.

#### 2a. Dimming and ON/OFF control:

- Connect the green insulated GROUND wire from the dimmer to an appropriate GROUND.
- Connect the red wire on the power pack (+24V), to the red wire on the dimmer.



**Fig. 2: Wiring for 0-10V dimming with ON/OFF control**

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- Connect the blue wire on the power pack to the blue wire on the dimmer.
  - Connect the purple wire on the ballast to the purple wire on the dimmer.
  - Connect the gray wire on the ballast to the gray wire on the dimmer.
- 2b. Dimming control only (No ON/OFF control) (Fig. 3)
- Connect the green insulated GROUND wire from the dimmer to an appropriate GROUND.
  - Connect the purple wire on the ballast to the purple wire on the dimmer.
  - Connect the gray wire on the ballast to the gray wire on the dimmer.
  - Cap off the red wire.
  - Cap off the blue wire.
3. Remove the center part of the wallplate by placing a small flat head screwdriver into one of the four slots located at the top and bottom of the wallplate. Gently twist a half turn until the plate pops off.
4. **For single gang installations** put the new switch into the wall box. Position the dimmer with the word TOP in the correct orientation. Use the captive screws on the mounting strap to secure the switch to the wall box. Continue to step 5.
- For multi-gang installations** select the appropriate mounting configuration and install into the wallbox as explained in the multi-gang installation sections.
5. Restore power to the circuit. Turn ON the breaker or replace the fuse.
6. Attach the wallplates.

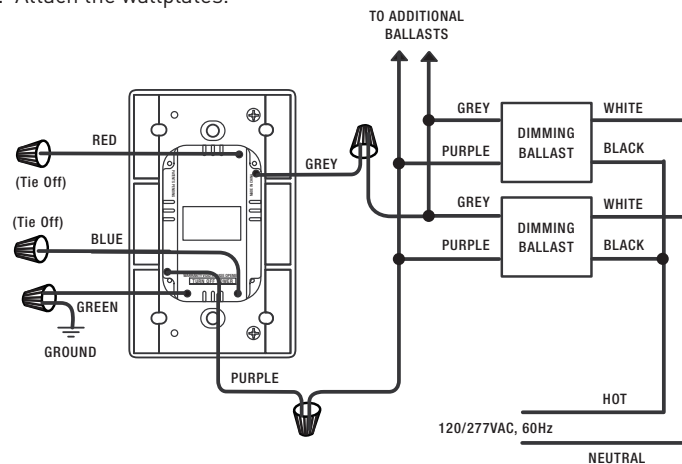


Fig. 3: 0-10V Control wiring with No ON/OFF control

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## MULTI-GANG INSTALLATION – FINS ARE NOT REMOVED

Multiple controls can be installed in a common wallbox or a series of inter-connected wallboxes. When ganging any combination of narrow and wide controls, place all narrow controls on one end and all wide controls on the other end.

Note: A 3-gang installation of narrow dimmers is shown in Fig. 6. Follow the same steps for any combination of narrow and wide dimmers.

1. Select the correct wall box size from the Table below.

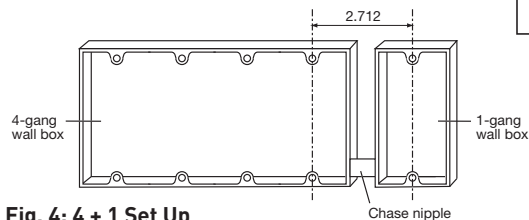
|              |   | Narrow Dimmers |    |      |    |      |    |      |
|--------------|---|----------------|----|------|----|------|----|------|
|              |   | 0              | 1  | 2    | 3  | 4    | 5  | 6    |
| Wide Dimmers | 0 | 0              | 1  | 1+1* | 4  | 4+1* | 7  | 7+1* |
|              | 1 | 1              | 3  | 5    | 6  | 8    | 9  | 11   |
|              | 2 | 4              | 5  | 7    | 8  | 10   | 11 | 13   |
|              | 3 | 6              | 8  | 9    | 11 | 12   | 14 | 15   |
|              | 4 | 9              | 10 | 12   | 13 | 15   | 16 | —    |
|              | 5 | 11             | 13 | 14   | 16 | —    | —  | —    |
|              | 6 | 14             | 15 | —    | —  | —    | —  | —    |

\* Wall box requirements for ganging an even number of narrow dimmers.

2.712

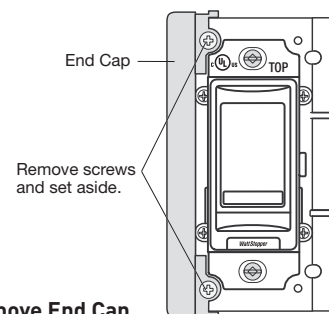
|        | Model #     |
|--------|-------------|
| Narrow | ADMLV-703   |
|        | AD-1103     |
|        | ADFM-8A     |
|        | ADFE-16A    |
|        | ADFE277-10A |
|        | ADF120277   |
|        | ADFC-6A     |
| Wide   | ADMLV-1603  |
|        | AD-2003     |
|        | ADFM-16A    |
|        | ADFM277-10A |

\* Wall box requirements for ganging an even number of narrow dimmers.



**Fig. 4: 4 + 1 Set Up**

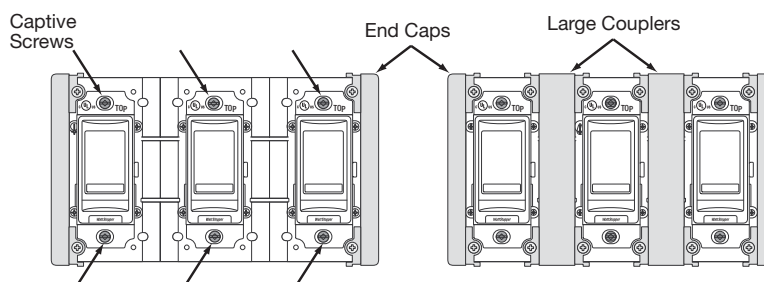
2. Remove the End Cap between adjacent dimmers (2 screws for each End Cap). Keep these screws.
3. Position the dimmer with the word "TOP" in the correct orientation. Install the dimmer in the wall box using the captive screws attached to the strap.



**Fig. 5: Remove End Cap**

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4. Attach the large couplers between the dimmers with the screws that were removed in step 2.
5. Tighten the captive screws, insert the label per instructions in the Wallplate Labeling section, attach the wallplate, and restore power to the circuit.



**Fig. 6: Install Dimmers and Attach Couplers**

## MULTI-GANG INSTALLATION - FINS ARE REMOVED

Multiple controls can be installed in a common wallbox or a series of inter-connected wallboxes. When ganging any combination of narrow and wide controls, place all narrow controls on one end and all wide controls on the other end.

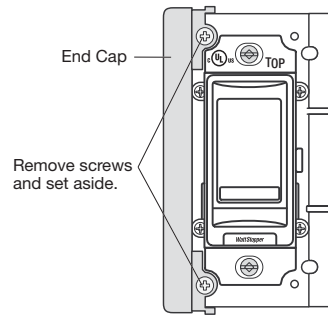
Note: A 3-gang installation of narrow dimmers is shown in Fig 8. Follow the same steps for any combination of narrow and wide dimmers. Before removing fins take into consideration derating requirements.

1. Select the correct box size from the table below.

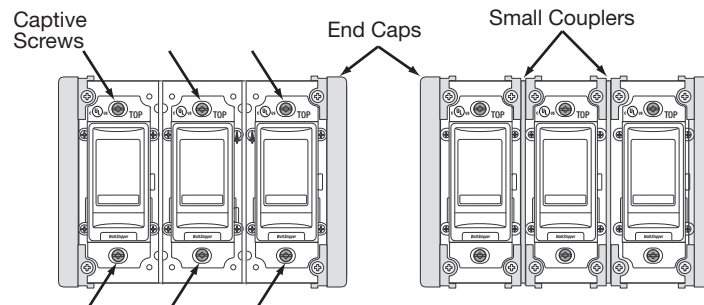
| Wide Dimmers | Narrow Dimmers |    |    |    |    |    |    |    |
|--------------|----------------|----|----|----|----|----|----|----|
|              | 0              | 1  | 2  | 3  | 4  | 5  | 6  |    |
|              | 0              | 0  | 1  | 2  | 3  | 4  | 5  | 6  |
|              | 1              | 1  | 3  | 4  | 5  | 6  | 7  | 8  |
|              | 2              | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
|              | 3              | 5  | 6  | 7  | 8  | 9  | 10 | 11 |
|              | 4              | 7  | 8  | 9  | 10 | 11 | 12 | 13 |
|              | 5              | 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 6            | 11             | 12 | 13 | 14 | 15 | 16 | 17 |    |

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2. Remove the end cap (2 screws for each end cap) and break the fins between adjacent dimmers.
3. Position the dimmer with the word "TOP" in the correct orientation. Install the dimmer in the wall box using the captive screws attached to the strap.
4. Attach the small couplers between the dimmers with the screws that were removed in step 2.
5. Tighten the captive screws, insert the label per instructions in the Wallplate Labeling section, attach the wallplate, and restore power to the circuit.



**Fig. 7: Remove End Cap**



**Fig. 8: Install Dimmers and Attach Small Couplers**

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## WALLPLATE LABELING

The wallplates contain a label holding slot. A 0.33" x 1.5" label can be printed from an Avery® standard template: Divider tab inserts 8-Tabs or equivalent.

Install the label following these steps:

1. Disconnect power to the circuit by removing the fuse or turning the circuit breakers OFF.
2. Remove the wallplate by placing a small flat head screwdriver into one of the four slots located at the top and bottom of the wallplate. Gently twist a half turn until the plate pops off.
3. Slide the label in from the back side of the wallplate.

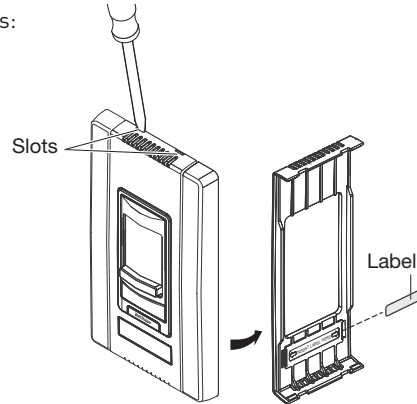


Fig. 9: Insert Label

## SETUP

The dimmer may need calibration to accommodate low end trim requirements in certain ballasts. When the slider is set to the lowest dimming level (all the way to the bottom before it clicks off) if the connected load turns OFF, you can calibrate the dimmer. Follow these steps.

1. Disconnect power from the circuit.
2. Remove the wallplate.
3. Use a small, insulated flat-tipped screwdriver to adjust the dial located on the right side of the dimmer.
4. Turn the dial up to increase the light level, turn the dial down to decrease the light level.
5. Replace the wallplate.
6. Turn the power back ON.

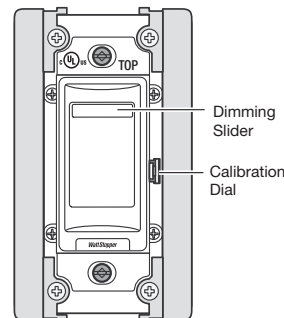


Fig. 10: Dimmer Calibration

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## TROUBLESHOOTING

### Lights are flickering

Lamp has a bad connection.

- Check wire connection to make sure they are secured firmly.
- There may be a circuit wiring issue. You should always use a separate neutral wire for the circuit connected to the dimmer. If two 120V or 277V hots from the breaker box share the same neutral and one of them has a very large load, it could cause a voltage drop on the other hot. This can cause flickering.

### Light does not turn ON

- Check to see if the circuit breaker or fuse has tripped.
- Check to see if the lamp is burned out.

| List of Compatible Ballasts |                                            |                            |
|-----------------------------|--------------------------------------------|----------------------------|
| Ballast Manufacturer        | Model                                      | Series                     |
| Advance Transformer         | Mark 7, Xitanium                           | IZT, RZT,VZT, LED120       |
| Lutron                      | Eco-10                                     | TVE                        |
| Osram /Sylvania             | Quicktronic Powersense, Helios, Optotronic | QTP, QT, OT                |
| Universal                   | SuperDim, Ballastar                        | ES, B132, B232, B332, B432 |
| GE                          | T8 Dimming Ballasts                        | B132, B232, B332           |


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## WARRANTY INFORMATION

WattStopper warrants its products to be free of defects in materials and workmanship for a period of five (5) years. There are no obligations or liabilities on the part of WattStopper for consequential damages arising out of, or in connection with, the use or performance of this product or other indirect damages with respect to loss of property, revenue or profit, or cost of removal, installation or reinstallation.

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