DS710-10Z

Decora Slide Dimmer for 0-10V Power Supplies, 1200VA/1500VA Fluorescent, 10A LED, 120/277VAC

Decora Slide Preset Electro-Mechanical 0-10V Slide Dimmer for use with LED or Fluorescent Ballasts and Power Supplies, suitable for use with Class 1 or Class 2 wiring, 1200VA @ 120VAC and 1500VA @ 277VAC Fluorescent, 10A LED/Electronic Ballast 120/277VAC, 60Hz, 50mAmps maximum sinking current, single pole or 3-way control when used with 3-way switch - White, Ivory & Light Almond

- INNOVATIVE – Designed for use with LED fixtures using 0-10V power supplies
- ADVANCED – No power pack required for switching
- EXCEPTIONAL – Superior quality and dimming performance
- FLEXIBLE – Can be used in a single-pole or 3-way installation (with a 3-way switch, sold separately)

Technical Information

Product Features

Action: Rocker Switch for ON/OFF, slide bar for lighting level control
Color: White, Ivory, Light Almond
Frequency: 60 Hz
Load Rating: 1200VA-120VAC, 1500VA-277VAC, 10A LED 120VAC & 277VAC
Load Type: Electronic 0-10VDC Fluorescent
Ordering Notes: Included White, Ivory and Light Almond Color Kit
Preset: Slide bar preserves desired lighting level

Protection: Radio/TV Filter
Standards and Certifications: cCSAus, NOM
Style Name: Decora
Switch Type: Single-Pole & 3-Way
Type: Dimmer
Voltage: 120 VAC
Wallplate: Order Separately
Warranty: 5-Year Limited

Features and Benefits

- Use only with appropriate LED 0-10V dimmable power supplies/drivers, Advance Transformer 120/277V
- Aesthetically pleasing design with rocker switch and slender dimmer control slide bar
- Dual voltage 120V/277V; 50mAmps maximum sink current
- Integrated linear full-range slide control for easy, precise operation
- Single pole or 3-way operation (when using 3-way switch); packaged with White, Ivory, and Light Almond color change kits
- Additional color change kits available in Black, Brown, Red and Gray
- Slim, compact housing fits easily into a standard wallbox and is suitable for multi-gang installations with other Decora products
- The slide bar location preserves the selected brightness level when the dimmer is switched OFF
- No fins for multi-gang installation
- Wired using leads, a Neutral wire is not required for operation
- Built-in radio/TV interference filter
Decora LED Dimmer Frequently Asked Questions

What are the benefits of using the Universal LED/CFL compatible dimmer?
The benefits of using this dimmer include smooth operation for precise dimming, low level starting and flicker-free operation when used with incandescent and compatible dimmable LED/CFL bulbs. It is designed to provide optimal performance when used with dimmable LED or dimmable CFL bulbs. Even if you are currently using incandescent bulbs, you can future proof by installing the Universal Dimmer to ensure compatibility in the future with dimmable LED/CFL bulbs. For quality assurance the Universal Dimmers have been evaluated and listed specifically for use with dimmable LED and dimmable CFL loads in addition to incandescent.

What types of bulbs can be used with the Universal Dimmers?
Universal dimmers are designed to work with dimmable LED, dimmable CFL, incandescent and halogen bulbs. Some universal dimmers are also designed for Magnetic Low Voltage (MLV) and Electronic Low Voltage (ELV) loads. Leviton recommends only LED and CFL bulbs that are labeled as DIMMABLE be used with the Universal Dimmer. The packaging on the bulb should identify it as dimmable.

Will I save energy if I dim LED and CFL bulbs?
Yes, dimming any bulb reduces energy consumption. Below is an example of the energy savings realized when you dim incandescent, dimmable LED or dimmable CFL bulbs.

<table>
<thead>
<tr>
<th>Relative Light Output (% Dimmed)</th>
<th>75W Incandescent (Wattage)</th>
<th>26W CFL (Wattage)</th>
<th>17W LED (Wattage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>75W</td>
<td>26W</td>
<td>17W</td>
</tr>
<tr>
<td>75%</td>
<td>56W</td>
<td>19W</td>
<td>13W</td>
</tr>
<tr>
<td>50%</td>
<td>41W</td>
<td>13W</td>
<td>17W</td>
</tr>
<tr>
<td>25%</td>
<td>34W</td>
<td>7W</td>
<td>8W</td>
</tr>
</tbody>
</table>

Can I use an incandescent-ONLY dimmer on dimmable LED/CFL bulbs?
No. Agency listings associated with Universal LED/CFL dimmers have specific test requirements to safely control and operate dimmable LED and CFL bulbs. We cannot recommend the use of an incandescent dimmer with dimmable LED/CFL bulbs.

Can I use an Electronic Low Voltage dimmer on dimmable LED/CFL bulbs?
Electronic Low Voltage (ELV) dimmers incorporate reverse-phase dimming control, which tends to provide enhanced performance with dimmable LED bulbs. Before using an ELV dimmer with LED/CFL bulbs, ensure the dimmer indicates that it is listed for use with these bulb types. These dimmers do require connection to a neutral wire, which is often not available in older construction. In addition, Electronic Low Voltage dimmers are typically a more expensive solution.

Is a neutral wire required with the Leviton Universal Dimmers?
No, the Universal Dimmers are two wire devices that can replace any standard electrical switch.

What makes dimming a dimmable LED/CFL bulb different than dimming an incandescent bulb?
Dimmable LED/CFL bulbs contain electronic circuitry not present in incandescent bulbs. Therefore, it can be difficult to achieve the same smooth start and complete dimming range as one sees with incandescent bulbs. The Universal Dimmer is designed to interact with the electronic circuitry, providing smooth low level dimming on many bulbs offered by the major manufacturers.

What colors do the Universal Dimmers come in?
The SureSlide® model is available in white, ivory and light almond. The IllumaTech® and Decora® Rocker/Slide models have changeable faceplates and come packaged with up to three colors in a box: white, ivory and light almond. Additional colors and packaging options are available. Visit Leviton.com/universal for details.

What are the LED load ratings for the Decora Rocker Slide Dimmer?
The Decora Rocker Slide Dimmer DSL06 is available with a 300W (2.5A) LED load rating. The DSM10 Decora Dimmer has a 450W (3.75A) load rating.

Does the Decora Rocker Slide Universal Dimmer have a locator light?
Yes. The locator light is a small light on the device that illuminates when the device is off. This light is helpful in locating the dimmer in the dark.

How do I turn the Decora Rocker Slide dimmer locator light ON or OFF?
A LED on/off selector is located under the rocker switch. Simply remove the color change kit face and turn the switch to the desired position.

Why are my lights still on, or glowing, when the dimmer is in the OFF position?
When the locator light is in the ON position, a very small amount of current is passed through the LED bulb. Very sensitive LED bulbs may appear to glow from this current. To fix, turn the locator light to the OFF position.

Why do the Universal Dimmers have a lower rating for LED and CFL bulbs than they have for incandescent bulbs?
LED and CFL bulbs require an “in-rush” current to start, which is not required on incandescent bulbs. The Universal Dimmers are designed to handle this “in-rush” current as long as the total wattage does not exceed the LED/CFL rating of the dimmer. An interesting fact is that even 150 watts of dimmable LED/CFL bulbs will give more light output than 600 watts of incandescent bulbs.

The packaging indicates that the Universal Dimmers are suitable for single pole and 3-way applications, what does that mean?
Single pole means controlling one or more lighting fixtures from one location. 3-way is the ability to control one or more lighting fixtures from two separate switch locations. An example of a 3-way is the ability to control the same fixture from a switch at the top of a staircase and from another switch at the bottom of the staircase. The Decora Rocker Slide Universal Dimmer can only be dimmed from a single location and turned ON and OFF from the second location (to the current dim level). If you require the ability to dim from multiple locations please see the Decora Digital line of controls.

Are there any adjustments I will need to make to the Universal Dimmer based on the bulb I choose?
The universal dimmer is preset to the LED/Incandescent mode. Under most conditions, the dimmer can be used with all compatible bulb types in this mode. If you experience flicker in the low end range of dimming, the low end trim adjustment can be used to improve performance. Some
0-10V Dimmers (IP710, DS710, DD710) Frequently Asked Questions

What load types do the 0-10V dimmers control?
The 0-10V dimmers can be used with LED fixtures using 0-10V dimmable power supply or drivers, Advanced Transformer Mark 7®, OSRAM Sylvania Quicktronic® Helios™, or equivalent dimmable ballast as well as dimmable fluorescent ballasts. IMPORTANT: These dimmers should only be used with LED fixtures rated for 0-10V dimming. They ARE NOT compatible with standard LED screw-in lamps.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Load Ratings (60Hz)</th>
<th>Max Sink Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP710</td>
<td>1200VA (120VAC) Fluorescent</td>
<td>50mA</td>
</tr>
<tr>
<td></td>
<td>1500VA (277VAC) Fluorescent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10A (120/277VAC) LED/Electronic Ballast</td>
<td></td>
</tr>
<tr>
<td>DS710</td>
<td>1200VA (120VAC) Fluorescent</td>
<td>50mA</td>
</tr>
<tr>
<td></td>
<td>1500VA (277VAC) Fluorescent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10A (120/277VAC) LED/Electronic Ballast</td>
<td></td>
</tr>
<tr>
<td>DD710</td>
<td>950VA (120VAC) Fluorescent</td>
<td>50mA</td>
</tr>
<tr>
<td></td>
<td>1350VA (277VAC) Fluorescent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10A (120/277VAC) LED/Electronic Ballast</td>
<td></td>
</tr>
</tbody>
</table>

How do 0-10V dimmers work?
0-10V dimmers work in different ways depending on the application.
When used to directly control a lighting fixture, the switch within the device will apply or cut power directly to the load. The violet and gray dimmer lead wires provide a signal between 0-10V to the ballast/driver on the lighting fixture, instructing it to dim to a certain level.
These dimmers can also be used in conjunction with a power pack (OPP20). Power packs have a higher rating than the 10V dimmers and can be used in applications where the number of fixtures exceeds the product rating. Power packs can also be used when incorporating a 0-10V dimmer into a 0-10V lighting system (including occupancy sensors or daylight sensors). In this application, the switch within the device will apply or cut a signal to the power pack, instructing it to turn the lighting fixture on or off. The violet and gray dimmer lead wires provide the same 0-10V signal to the lighting fixture in these applications.

What are the wiring options for 0-10V dimmers?
There are different wiring options for the IP710 and DS710 dimmers based on your application:
1. Dimmer directly to the fixture for dimming and switching
2. Dimmer to the fixture for dimming ONLY (may be part of larger lighting system)
3. Dimmer to the fixture through a power pack (may be part of a larger lighting system)
As previously mentioned in the second FAQ, when the IP710 is used with the OPP20, there may be an incorporation into a larger lighting controls system. Please refer to the OPP20 “application cookbook” for more details on using multiple 0-10V sensors in conjunction with the IP710. Additionally, these dimmers can be wired in single pole or 3-way applications with a standard 3-way switch. See the instruction sheet for 3-way wiring diagrams.

Can the 0-10V dimmers be used with screw-in LED lamps?
No. These dimmers must only be used with LED fixtures that are rated for 0-10V dimming.

Can the 0-10V dimmers be used on a Low Voltage circuit?
Yes, the IP710 and DS710 dimmers can be used on a low voltage circuit with the OPP20 power pack. The power pack will provide the low voltage signal to the 0-10V dimmer. The dimmer is then either connecting or disconnecting to that signal with the switch, indicating if it should be ON or OFF. The DD710 requires a line voltage connection for operation.

Is a power pack required for switching?
No, a power pack is not required, which is one of the advantages of the 0-10V dimmers. They can connect directly to line voltage to switch the load ON/OFF (up to the product ratings). For any loads greater than the product ratings, a power pack will be required.

Do I need power going to the switch portion (line voltage on Black lead) to control dimming?
The DD710 dimmer does require line voltage due to some of the additional functionality with this device. However, the IP710 and DS710 dimmers do not require line voltage. The switch and dimming circuit are completely separate within these devices. The 0-10V dimming circuit will still provide a dimming signal to the ballast/driver even without line power. This wiring is generally applicable with the use of a power pack (OPP20), and potentially a larger lighting system including additional 0-10V sensors.

What is the sink rating for the IP710, DS710, DD710 Dimmers?
50 mAmps maximum sink current.

What is the difference between sinking and sourcing?
Dimmers that dissipate current from a source are current sink type and are commonly used in commercial and residential applications. In this scenario, the ballast/driver is “sourcing” the current and the dimmer is “sinking” the current. The ballast/driver is providing the source of power and the dimmer is providing the dimming signal between 0-10V.

Are there low voltage wiring distance limitations?
Performance will vary based on application (i.e. wire type, wire gauge, shielding). Leviton recommends limiting the distance to 100’ for best performance.

Are the 0-10V dimmers capable of dimming down to 1%; or what is the minimum dimming level (percentage)?
With 0-10V dimming, the ballast/driver is physically dimming the lighting fixture, and the dimmer is providing a 0-10V signal for the dimming level
dimmable CFL bulbs may require an additional "kick start\(^*\), or automatic adjustment, to turn on. In this case, it is necessary to adjust the dimmer to CFL mode.

What is the selector/programming switch and how does it work?
Leviton Universal Dimmers feature an easy to use selector switch for choosing bulb applications. It is pre-configured to the LED/Incandescent mode which is optimized for a wide range of LED applications. In CFL mode the dimmer provides a "kick start" feature for harder to start bulbs. In CFL mode, the dimmer’s “kick start” feature maximizes the usable dimming range for many bulbs by allowing the user to turn on the light at the lowest possible position.

The selector switch has an optional programming mode. The programming mode option is used to change the factory settings for minimum light level. For example, the dimmer settings can be changed to eliminate any noticeable flicker or users can re-calibrate the pre-set to ensure the bulb starts at the lowest light level.

\* "Kick start" = a precise boost of energy applied to difficult to start CFLs to initiate smooth start up and prevent flickering. This feature maximizes the usable dimming range by allowing the user to start at the lowest possible dim/bright bar position.

Why is there no light from the LED bulbs when the dimmer is ON at the lowest dim setting?

The universal dimmers have been designed to function with a variety of LED bulbs. Some LED bulbs are more sensitive than others, and need a higher voltage to "turn on". In order to fix this, raise the low-end trim adjustment until the LED bulb turns ON.

What if I use dimmable LED bulbs when the dimmer is set to CFL mode?

This is perfectly acceptable, especially if you encounter LED bulbs that are difficult to start at the low preset dimmer level. In CFL mode the dimmer will provide increased energy or a "kick start" to start the bulb. I have some LED bulbs that seem to have a slight delay before they turn on, is this to be expected?

It may depend on the bulb. If your dimmer has a soft on and off feature where it fades the lights on and off as opposed to abruptly turning them on like a regular switch, there could be a slight delay before some bulbs will turn on. While most will operate fine with the soft on and off changes to dimmer settings, there are some bulbs that have a built-in delay during those events and it may take a moment or so before they will turn on or respond to changes in dimmer settings.

What will happen if I mix bulb types with the Universal Dimmer?

We strongly recommend you use the same light source to achieve consistent performance from bulb to bulb. If you choose to mix bulb types on the same dimmer, it is possible that you will experience a variation in dimming performance and start up characteristics. My lights sometimes turn off before the dimmer slide is at its lowest level. Why does that happen and can I fix that?

Some LED and CFL bulbs will turn off at different voltages. Leviton’s Universal dimmers have a low-end trim adjustment so you can have the full range of the slider match the full range of the bulb. See instructions for details on how to adjust for your specific dimmer.

s de-rating required when installing more than one Universal Dimmer in the same wallbox?

De-rating may be required when you have two or more dimmers sharing a wallbox. If you install more than one dimmer next to each other and are using incandescent bulbs, it is required that you reduce the load that each dimmer can control (de-rating). No de-rating is required when using dimmable LED or dimmable CFL bulbs in multi-dimmer installations. Refer to the de-rating chart in the instructions for maximum load per dimmer.

Universal De-Rating Chart:

<table>
<thead>
<tr>
<th>Model</th>
<th>1 Dimmers</th>
<th>2 Dimmers</th>
<th>3 Dimmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPL06, 6672, 6674, RNL06, RDL06.</td>
<td>600W incandescent 150W dimmable LED/CFL Per dimmer</td>
<td>500W incandescent 150W dimmable LED/CFL Per dimmer</td>
<td>400W incandescent 150W dimmable LED/CFL Per dimmer</td>
</tr>
<tr>
<td>DSL06, TSL06</td>
<td>600W incandescent 300W dimmable LED/CFL</td>
<td>500W incandescent 300W dimmable LED/CFL</td>
<td>500W incandescent 300W dimmable LED/CFL</td>
</tr>
<tr>
<td>DSM10 (also suitable for Magnetic Low Voltage)</td>
<td>1000W incandescent 450W dimmable LED/CFL</td>
<td>600W incandescent 450W dimmable LED/CFL</td>
<td>700W incandescent 450W dimmable LED/CFL</td>
</tr>
</tbody>
</table>

Since the ballast/driver is performing the actual dimming, the dimming performance is dependent on the ballast/driver. The IP710 and DS710 dimmers are capable of providing dimming signals to 1% or lower, but again are dependent on the ballast/driver for results.

What 0-10V product options are available?

<table>
<thead>
<tr>
<th>Product Family</th>
<th>Product Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decora® Slide</td>
<td>DS710-10Z</td>
<td>Non-NAFTA, no locator light</td>
</tr>
<tr>
<td>IllumaTech®</td>
<td>IP710-LF-Z</td>
<td>NAP TA version, no locator light</td>
</tr>
<tr>
<td></td>
<td>IP710-UL-Z</td>
<td>Non-NAFTA, locator light</td>
</tr>
<tr>
<td></td>
<td>IP710-U0Z</td>
<td>Non-NAFTA, no locator light</td>
</tr>
<tr>
<td>Decora Digital®</td>
<td>D710-B10Z</td>
<td>Non-NAFTA, locator light</td>
</tr>
</tbody>
</table>

ALL products listed above are rated for and perform well with 10A LED/Electronic ballasts. Leviton recommends using a product with No Locator Light for optimal performance.

Is there a special requirement of how the wires need to be run from the dimmer wallbox to the fixture box since there is line voltage and low voltage?

Are there special wiring requirements for the 0-10V dimmers?
Leviton 0-10V dimmers feature wire leads that are rated for line voltage applications. This eliminates the need to have separation between the line voltage and low voltage within the wallbox.

For wiring techniques between the dimmer wallbox and ballast/driver, please refer to the relevant NEC® or to your Authority Having Jurisdiction (AHJ) guidelines. Generally, low voltage CANNOT be run in the same conduit as line voltage if class 1 or class 2 wiring is used. If line voltage rated wires are used throughout, the low voltage wires can be run through the same conduit (given that conduit/conductor fill requirements are
## Specification Submittal

<table>
<thead>
<tr>
<th>JOB NAME:</th>
<th>CATALOG NUMBERS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>JOB NUMBER:</td>
<td></td>
</tr>
</tbody>
</table>

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