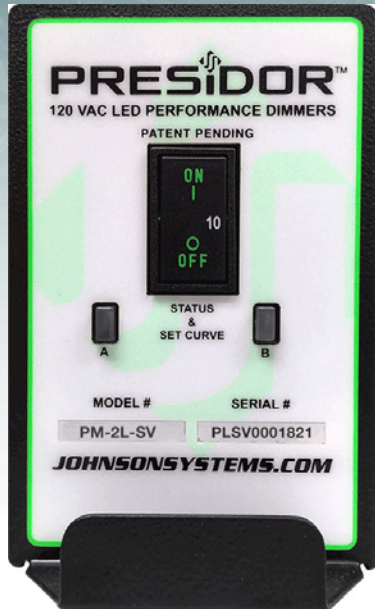


PRESIDOR™

Retrofit LED Dimmer Modules



120VAC LED Dimmers for Strand CD80 Supervisor and C21 Dimmer Racks. Employing next-generation MOSFET power devices, these Dimmer Modules are designed for direct plug into any dual 2.4KW rack slots. These modules provide a fast conversion to state-of-the-art LED dimming boasting dimming efficiency of $\geq 99\%$. Leveraging the same intelligent control circuitry as used in the Presidor™ Panels, these modules are controlled with our CD-3000+ processors for state-of-the-art dimming. Each dimmer module contains two isolated, reverse phase controlled dimmers rated at 600 Watts and will dim both LED and incandescent loads over a full range of dimming (1-100% DMX). Unique digital curve selection allows for user selectable low end curve setting. Sensing protection on each dimmer includes overload, short-circuit, temperature, over-voltage, inductive load and more. RGB LED indication permits fast diagnosis of any load error events.



These products are energy efficient and consume less than 1/4 watt. Compliance with the International Energy Agency's "One Watt Initiative".

Module Types



PM-2L-SV Rear View



PM-2L-C21 Rear View

Features

- Each module contains two 600 Watt reverse phase dimmers.
- Chokeless MOSFET power outputs for unsurpassed dimming efficiency ($\geq 99\%$).
- Dims both LED and Incandescent loads from 1-100% DMX.
- Intelligent load sensing.
- Instant software load shut-off for short-circuit, overload, over-temp, inductive load, and more.
- Ultra-low standby power for "Green" compliance.
- RGB LED feedback for fast diagnosis of load.
- UL489 10 Amp Breaker.

Ordering Information

Model	Description (Dimmers)
PM-2L-C21	Dual 600 Watt LED Dimmer Module for C21 Dimmer Racks
PM-2L-SV	Dual 600 Watt LED Dimmer Module for CD80 Supervisor Dimmer Racks
PM-2L-DE90	Dual 600 Watt LED Dimmer Module for Strand Digital Environ Racks

NOTE: Designed for use with 120VAC dimmable ballast LED loads. LED lamp performance can vary widely depending on manufacturer, model and quality of the lamp and/or its internal power supply. It is recommended that a live test of a LED lamp type is performed prior to volume purchase to assure the low end dimming performance is suitable for application. Lamp types should not be mixed on the same dimmer circuit. JSI will not assume any responsibility for poor low end lamp performance associated with some lower cost/quality products. De-rating may be necessary with tungsten and other loads.



JOHNSON SYSTEMS INC.

"PROFESSIONAL LIGHT CONTROL PRODUCTS"

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LED DIMMER MODULE CHARACTERISTICS

Environment

Temperature Range: 23°F (-5°C) to 104°F (40°C) ambient.
Humidity Range: 0% to 90% non-condensing.

Load Type

Dual 120V single phase 50/60 Hz circuits for ballasted dimmable LED or resistive loads up to 600 Watts each.

Switch Type

Dual Power MOSFET's per dimmer circuit protected by a 10 Amp UL489 Rated Magnetic Circuit Breaker.

Isolation

4,000 Volts minimum per circuit.

Physical

Model #PM-2L-SV and PM-2L-C21: 15.52" x 5.08" x 3.29"
(39 cm x 13 cm x 8 cm) handle excluded.

PM-2L-DE90: 19.04" x 4.71" x 3.50"
(48.4 cm x 12 cm x 8.9 cm).

Weight

3.86 lbs. (1.75 Kg).

Filler Modules = 3 lbs. (1.35 Kg).

Material

18-gauge steel CRS.

Finish

Hammer texture black powder coat.

SPECIFICATIONS

1.0 LED RETROFIT DIMMER MODULE - GENERAL

- 1.1 Designed to work exclusively with the CD-3000 or CD-3000+ control electronics. Modules must see control data in a "Direct Digital Drive" format for proper operation, performance and warranty.
NOTE: Warranty void if used with any controls electronics other than CD-3000 or CD-3000+.
- 1.2 LED Dimmers shall be capable of dimming ballasted dimmable LED, standard incandescent, tungsten and quartz lamps and fixtures up to 600 Watts.
- 1.3 LED Dimmers shall be powered by 120 VAC single phase supply. Each module shall be protected by a 10 Amp UL489 Rated magnetic circuit breaker. Each dimmer shall be capable of sustained load at 600 Watts (1200 Wats total per module). Module shall operate with a supply voltage range of 85-140 VAC.
- 1.4 Thermal protection shall be employed internally in the CPU. An active over-temp input shall illuminate a solid red warning LED when an internal temperature of 70°C is sensed and shall immediately disconnect all dimmer control outputs.

2.0 CONTROL PCB

- 2.1 LED Dimmers shall employ state-of-the-art "system-on-a-chip" digital technology. Advanced voltage regulation hardware and software will ensure >1% accuracy on all dimmer outputs when curved for the same control input.
- 2.2 LED Dimmer input shall be DDD (Direct Digital Drive) PWM (Pulse Width Modulation) from a CD-3000 or CD-3000+ only.
- 2.3 The Control PCB will contain and easily accessible SET CURVE/RUN Switch. When selected to SET CURVE will permit the end user to select their desired low end DMX 2% light level. When set to RUN mode the dimmer shall remember the SET CURVE level and output the pre-selected AC voltage at DMX 2% control.
- 2.4 Each LED dimmer shall employ intelligent load sensing permitting user feedback on a variety of conditions. Each LED dimmer shall contain multi-purpose translucent face panel switch to perform "CURVE SET" and allow for visual multi-color feedback of run status and/or errors. The following color condition will permit full reporting of the dimmer operation status:

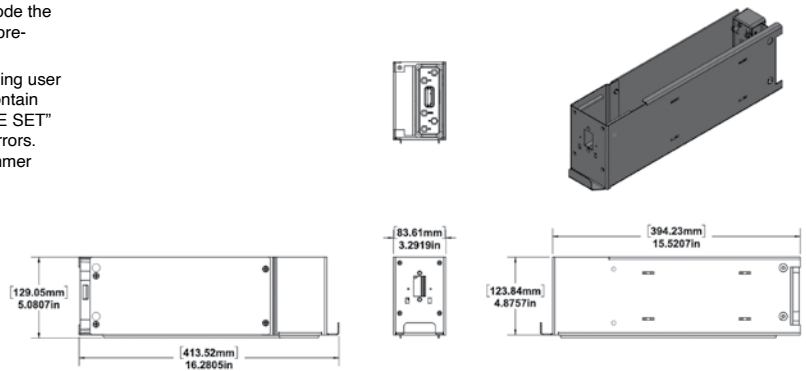
COLOR	FUNCTION
GREEN	Normal Operation
SLOW FLASHING GREEN	Fault Recovery
FLASHING GREEN	ZCD Fault (blown fuse)
FLASHING YELLOW	Over Power
FLASHING RED	Short-circuit
RED	Over-Temp
FLASHING MAGENTA	Inductive Load
FLASHING WHITE	Curve Set Activated
CYAN	Curve Set Locked

Each LED dimmer shall be capable of "Self-Healing" during a fault recovery. LED dimmers not capable of advanced intelligent operation shall not be considered acceptable.

- 2.5 LED dimmers shall employ state-of-the-art dual Power MOSFETS rated at 80 Amps each. Dimmer employing lower wattage power devises shall not be considered acceptable.
- 2.6 Each LED dimmer shall meet compliance with the International Energy Agency's "One Watt Initiative" stand-by power requirement. Please refer to U.S. Executive Order #13221. Processor standby power shall not exceed 1 Watt.
- 2.7 All data shall be protected from power failure by EEROM for a minimum of 100 years.
- 2.8 All printed circuit boards (PBC's) shall be FR4/G10 with a UL 94V-0 Flame Class Rating.
- 2.9 Presidor LED dimmers shall comply fully with UL 508 and CSA 22.2 safety approvals.

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Specifications subject to change without notice.



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