

DPC-12 and DPC-24



Control Retrofit for CD80 Portable Dimmer Packs

“The Professional Choice in Dimming Retrofit Technology”



Digital Pack Controllers (DPC's) are a next generation retrofit electronics package designed specifically for upgrading Strand CD80 12 channel and 24 channel portable dimmer packs, as well as 48 channel compact rolling racks. This direct plug-in replacement control module supersedes all previous generations of OEM and aftermarket controllers in both reliability and features.

“Basic Mode”, on power up, was designed specifically at the request of major U.S. studios and rental houses. Advanced features for the more selective user allow customization of over 30 additional features. Advanced next generation “3000 Series” hardware and software designs reduce stand-by power consumption to less than 1 Watt. Exclusive “lamp warming” techniques extends lamp life considerably.

- ✦ Directly replaces existing OEM or after-market control module(s) with superior “brains”!
- ✦ LCD display and intuitive user interface make operation fast and simple.
- ✦ “Basic Mode”, on power up, simplifies set up for standard DMX users.
- ✦ 12 or 24 buttons selectable for either “Bump” or “DMX Snapshot/Preset” with LED intensity adjust.
- ✦ Unique “lamp warming” feature lowers the current inrush/shock to cold lamp filament by up to 70% resulting in significantly increased lamp filament life and lower cost of ownership.
- ✦ Hi-resolution digital outputs with individual dimmer profile selection.
- ✦ Dual opto-isolated DMX512 inputs with built-in protocol manager.
- ✦ Removable memory module permits remote and/or off site backup of configuration data and ease of future firmware upgrades.
- ✦ Up to 10 year product warranty available!



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



JOHNSON SYSTEMS INC.

“PROFESSIONAL LIGHT CONTROL PRODUCTS”

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SPECIFICATIONS

1.0 Digital Pack Controllers (DPC's) – GENERAL

- 1.1 On power up, DPC's shall default to "Basic Mode" of operation permitting access to only three menus; DMX Address, DMX A Termination and DMX B Termination. DPC's advanced features access shall require a specific button push sequence in order to protect all programmed system configuration/data from accidental or unauthorized access.
- 1.2 DPC's shall employ a unique "lamp warming" feature that extends lamp life by limiting the in-rush current from the dimmer to cold lamp filaments by up to 70%.
- 1.3 An LCD user interface for ease of set up and monitoring. All programming shall be via a user-friendly, intuitive and self-prompting menu structure. No PC or special software will be required.
- 1.4 Modular design of the unit shall permit "direct plugging" into the existing OEM rails and connectors.
- 1.5 Hi-resolution dimmer control outputs shall be designed for precise and reliable control of the existing CD80 dimmers. It shall never be necessary to adjust ramp circuits for proper dimmer output.
- 1.6 The DMX512 input ports shall accept two independent sources of DMX512 data protocol simultaneously from the system control console(s) or architectural control unit(s). The DMX inputs shall comply with USITT DMX512-A (ANSI E1.11 - 2008), standard protocol for digital data control.
- 1.7 An infrared LED link shall be provided on the control module face panel. This interface will permit hard copy printouts of all programmed data via an optional hand held infrared printer.
- 1.8 Thermal protection shall be employed to interface with the existing dimmer pack over-temp sensors and wiring. An active over-temp input shall illuminate a red warning LED. An internal processor temperature of 75°C (135°F) shall immediately disconnect all dimmer control outputs.

2.0 CONTROL PCB

- 2.1 DPC-12 control electronics shall be capable of controlling 6 or 12 dimmers and DPC-24 up to 24 dimmers in the respective CD80 dimmer packs. Advanced state-of-the-art voltage regulation hardware and software will ensure >1% accuracy on all dimmer outputs. The DPC's will operate with a voltage input range of 85-264VAC at 50 or 60Hz with selective menu for 120V or 230V use.
- 2.2 DPC's shall employ 12 or 24 buttons selectable for either "Bump" or "DMX Snapshot/Preset" with adjustable LED intensity. DPC-12 and DPC-24 shall be capable of memorizing and storing up to 12 or 24 presets, respectively, in the form of a DMX "snapshot" or individually programmed via the keypad. Scene playback shall be seamless on loss of DMX as well as allowing high resolution fades between all scenes. Each scene shall have a selectable fade time from 0-99 seconds.
- 2.3 Both DMX inputs ports shall be opto-isolated from all other control circuitry, as well as from the DMX thru ports. An internal protocol manager shall allow priority management, offset start addressing, or merging of both DMX inputs.
- 2.4 DPC's will offer compliance with the International Energy Agency's "One Watt Initiative" on stand-by power requirements (please refer to U.S. Executive Order #13221). Standby power shall not exceed 1 Watt.
- 2.5 DPC's shall permit "back up" of all system configuration data. All data shall be protected from power failure by EEPROM for a minimum of 100 years.
- 2.6 DPC's shall contain a removable memory module to facilitate remote or off site back up of all system configuration and ease of future firmware upgrades. Control module swaps will be easy and fast with no loss of programming or system parameters.
- 2.7 Each individual dimmer output shall be capable of being assigned one of four dimmer curves: incandescent square law curve, direct curve, linear curve, or non-dim (50% threshold with a ±5% hysteresis).

- 2.8 DPC's shall support the following menu items:

Basic Menus (power up default access only)

- 1. **ADDRESS** Set the DMX start address.
- 2. **DMXA TRM** Enable or disable termination on the DMX A input.
- 3. **DMXB TRM** Enable or disable termination on the DMX B input.

Advanced Menus

- 4. **SCENESET** Enable and setup 12 or 24 different backup scenes.
 - 5. **FADETIME** Set the fade time for each of the 12 or 24 scenes from 0 to 99 seconds.
 - 6. **SNAPSHOT** Record DMX levels into the backup scenes.
 - 7. **DIM TEST** Test the dimmer outputs one at a time, or all at once.
 - 8. **MONITOR** View the control level to each dimmer output.
 - 9. **DMX MODE** Configure the mode of the on-board DMX protocol manager.
 - 10. **2 RM SET** Set the two room assignment for each of the dimmer outputs.
 - 11. **SH TIME** Set the DMX status hold time from 0 to 99 minutes or infinite.
 - 12. **DC PATCH** Configure the dimmer to channel patch for the dimmer pack.
 - 13. **DIM CURV** Configure the dimmer curve for each output.
 - 14. **VOUT LIM** Set the maximum RMS output voltage for each dimmer.
 - 15. **REGULATE** Enable or disable the dimmer output voltage regulation.
 - 16. **STANDBY** Enable or disable the power savings standby mode.
 - 17. **TEST INC** Set the test increment units to percent or hexadecimal.
 - 18. **L-BUTTON** Set the mode of the 12 or 24 local buttons to scene, bump or disabled.
 - 19. **Ø-PATCH** Set the zero-cross phase reference for each dimmer control output circuit.
 - 20. **V-RANGE** Set the supply voltage range for 120 Volts or 230 Volts operation.
 - 21. **LINE V** View the RMS line voltage for each power phase.
 - 22. **LINE F** View the line frequency of phase A.
 - 23. **CTL TEMP** View the temperature of the microcontroller.
 - 24. **RTIME** View the total run time of the microcontroller.
 - 25. **HARD-KEY** View the microcontroller's unique six-character hard-key code.
 - 26. **SERIAL#** View the microcontroller's unique six-character silicone serial number.
 - 27. **VERSION** View the microcontroller's firmware version.
 - 28. **EEPROM** View the type of EEPROM memory module plugged in.
 - 29. **FW-LOAD** Load new firmware into the microcontroller via the EEPROM memory module.
 - 30. **RESTORE** Restore parameters saved in the EEPROM memory module.
 - 31. **BACKUP** Backup parameters and save them in the EEPROM memory module.
 - 32. **PRINTOUT** Print various system configuration settings using a hand held infrared printer.
 - 33. **DEFAULTS** Set various system configuration settings to the factory default.
 - 34. **LED INT** Set the LED intensity for the programming switches.
 - 35. **LCD VIEW** Adjust the contrast of the LCD Display for optimum viewing.
- 2.9 The DPC face panels shall include a green LED indicator for power supply and microprocessor status. The LED, when illuminated, shall indicate normal operation, and when flashing shall indicate a hardware fault. A power supply or power failure, shall cause the LED to extinguish.
 - 2.10 The DPC face panels shall include three green LED's for phase detect and two yellow LED's for data receive indication. Loss of accurate phase detect signal and/or invalid DMX512 data shall cause the corresponding LED to extinguish.
 - 2.11 The DPC face panels shall include two red LED's for active alarm status or dimmer rack over temperature. Active inputs shall cause these cause the corresponding LED to illuminate.
 - 2.12 A reset push-button shall be included on the face panel of the DPC's. Resetting the unit, whether by the reset button or power-up shall not affect any stored parameters or presets, and dimmer outputs shall automatically return to their former status.
 - 2.13 All face panel buttons shall be blue LED back-lit with adjustable intensity.
 - 2.14 All printed circuit boards (PBC's) shall be FR4/G10 with a UL 94V-0 Flame Class Rating.

Specifications subject to change without notice.



Model	Description
DPC-12	CD80 12 x 2.4kW, 6 x 6kW and 6 x 12kW Portable Dimmer Packs.
DPC-24	CD80 24 x 1.2kW and 24 x 2.4kW Portable Dimmer Packs CD80 48 x 2.4kW Compact Rolling Racks (requires 2 per rack, not compatible with OEM controllers).



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