

PDS-60ca

Power/data supply for indoor
and outdoor applications

Product Guide

PDS-60ca

Power/data supply for indoor and outdoor applications

PDS-60ca is a versatile power/data supply designed for indoor and outdoor LED luminaires using low voltage Color Kinetics luminaires.



Take a closer look

- PDS-60ca is available in 7.5 V and 24 V versions to meet the power requirements of a variety of luminaires. Both 7.5 V and 24 V versions communicate control data via Ethernet and DMX networks, allowing for compatibility with the full range of Color Kinetics and third-party controllers.
- **PDS-60ca DMX/Ethernet** versions are compatible with both DMX and Ethernet networks, and feature on-board indicators show the status of the data connection.
- **PDS-60ca Pre-Programmed** versions have configurable, on-board effects in lieu of receiving controller data. They can also send data to downstream power/data supplies and connected luminaires.
- Features a NEMA 4 (IP66) enclosure, PDS-60ca installs in dry, damp, and wet locations.
- Accommodates input voltages ranging from 100 VAC to 240 VAC. Short circuit protection prevents device failure due to incorrectly wired luminaires.
- Offers multiple standard-size conduit entries to accommodate 1/2 in and 3/4 in US trade-sized conduit.
- PDS-60ca Pre-Programmed functions as a master controller, delivering data to the other power/data supplies in the run. Use one PDS-60ca Pre-Programmed unit per run, and standard additional power/data supplies. A downstream power/data supply does not have to be a PDS-60ca, but can be any DMX- or Ethernet-based power/data supply.
- Instead of attaching luminaires to a Pre-Programmed PDS-60ca, you could use it as an outdoor-rated light show controller for DMX- or Ethernet-based power/data supplies and their luminaires.

Specifications and information

Due to continuous improvements and innovations, specifications may change without notice.

General information

Electrical

Input Voltage	100 to 240 VAC, auto-ranging, 50/60 Hz	
Maximum Input Current	1.7 A at 100 VAC, 1.5 A at 120 VAC, 0.75 A at 240 VAC	
Power Output	PDS-60ca 7.5 V	7.5 VDC, 62 W maximum
	PDS-60ca 24 V	24 VDC, 62 W maximum
Fuse Rating	PDS-60ca 7.5 V	(2) 5 A, 5 x 20 fast blow fuses
	PDS-60ca 24 V	(2) 4 A, 5 x 20 fast blow fuses

Connections

Data Output	RJ45 input and output connectors	
Data Input	PDS-60ca 7.5 V DMX/Ethernet	Color Kinetics full range of controllers, third-party DMX controllers, or KiNET-compatible* third-party Ethernet controllers
	PDS-60ca 24 V DMX/Ethernet	
	PDS-60ca 7.5 V Pre-Programmed	Internal
	PDS-60ca 24 V Pre-Programmed	
Power Input	Line-neutral-ground cable, flying leads	
Power Output	(2) 4-pin output receptacles	

Physical

Dimensions (Height x Width x Depth)	91 x 140 x 224 mm (3.6 x 5.5 x 8.8 in)
Weight	2 kg (4.5 lb)
Finish	Cast aluminium enclosure
Housing	Powder-coated gray matte
Mounting	Slots for surface mounting
Startup Temperature Operating Temperature Storage Temperature	-10 to 50 °C (14 to 122 °F) -10 to 40 °C (14 to 104 °F) -40 to 80 °C (-40 to 176 °F)
Humidity	0 to 95%, non-condensing
Cooling	Convection
Airflow	Front panel input, back panel output
Heat Dissipation	25% of total power input at maximum load

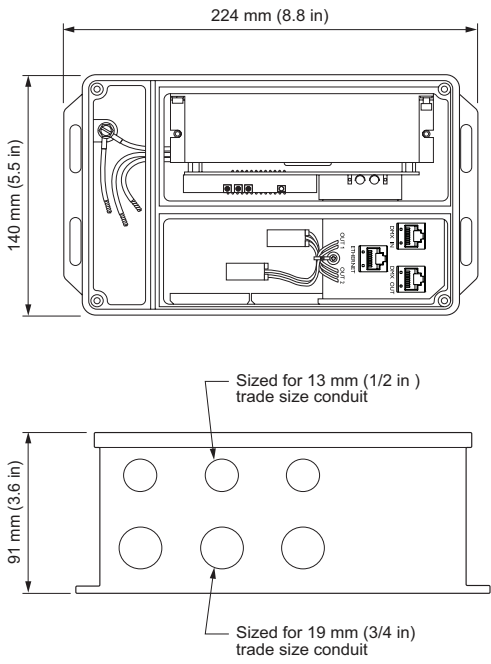
Certification and Safety

Certification	UL/cUL, CE, PSE
Classification	UL Class 2 power supply
Environment	Dry/Damp/Wet Location, IP66

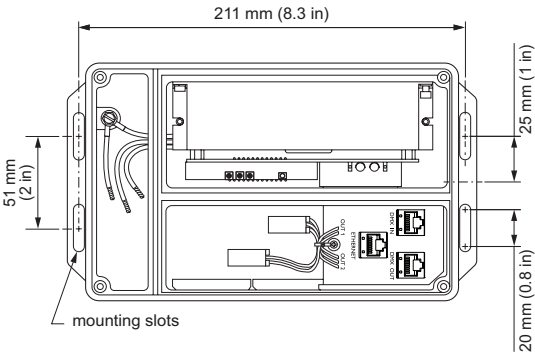
* KiNET is the Ethernet lighting protocol from Color Kinetics.

Dimensions

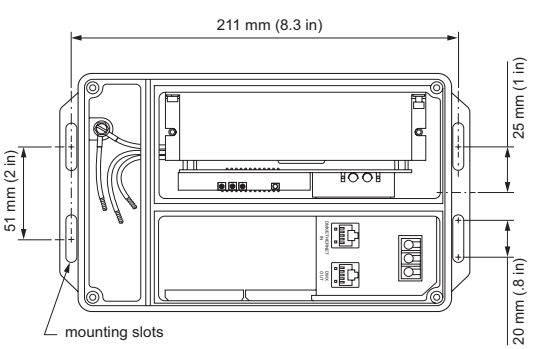
PDS-60ca



DMX/Ethernet



Pre-programmed



Part Numbers

Use Item Number when ordering in North America.

	Item Number	Item 12NC
PDS-60ca 7.5 V DMX/Ethernet	109-000015-03	910503700094
PDS-60ca 7.5 V Pre-Programmed	109-000015-00	910503700093
PDS-60ca 24 V DMX/Ethernet	109-000016-04	912400133526
PDS-60ca 24 V Pre-Programmed	109-000016-00	910503700095

For further information

PDS-60ca details including Installation Instructions, Specification Sheets, and product drawings, can be found at the specific product pages.



PDS-60ca 7.5 V
Power/Data Supply



PDS-60ca 24 V
Power/Data Supply

Configuration and planning

Multi-language installation instructions can be found at: www.colorkinetics.com/global/products/pds/pds60ca7 or www.colorkinetics.com/global/products/pds/pds60ca24

Installation

PDS-60ca is a power/data supply designed for low-voltage linear DMX and Ethernet lighting installations. PDS-60ca provides power and data to up to 30 low-voltage luminaires from Color Kinetics and delivers 60 watts of low-voltage output via two ports. It features a NEMA 4 (IP66) enclosure, and can be installed in dry, damp, and wet locations. It automatically accommodates input voltages ranging from 100 VAC to 240 VAC.

Owner / User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate PDS-60ca in such a manner as to comply with all applicable codes, state and local laws, ordinances, and regulations. Consult with the appropriate electrical inspector to ensure compliance.

Plan the Installation

To streamline installation and ensure accurate configuration, start with a layout or a lighting design plan that shows the physical layout of the installation and identifies the locations of all lighting luminaires, power/data supplies, controllers, switches, and cables.

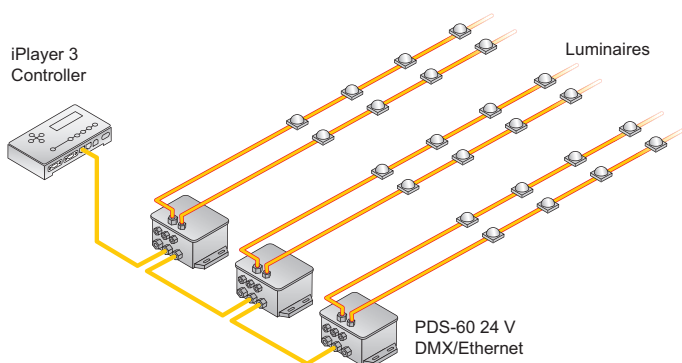
DMX, Ethernet, and Pre-Programmed Configurations

PDS-60ca DMX/Ethernet can be used in either DMX or Ethernet networks. Pre-Programmed versions cannot receive controller data, but can send light show data to DMX or Ethernet power/data supplies using the pre-programmed device's OUT port.

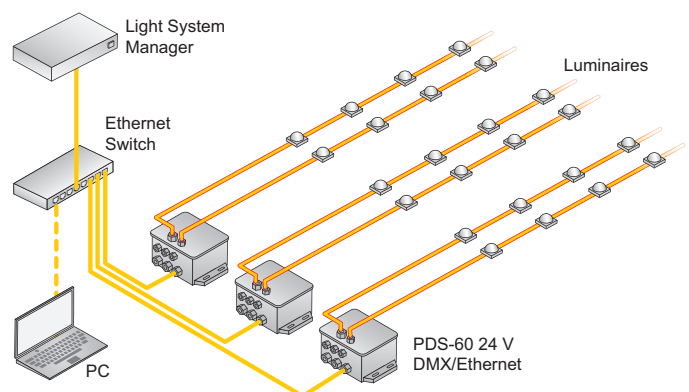
DMX is appropriate for relatively simple installations, or for installations in which groups of lights operate in unison (for example, for accent lighting, perimeter lighting, or cove lighting applications). Typical DMX installations with luminaires from Color Kinetics use a controller such as iPlayer 3, a Controller Keypad for turning lights on and off and triggering light shows, and one or more PDS-60ca devices. PDS-60ca devices can be connected in series to deliver DMX data from a single controller to all connected lights. Note that the maximum for DMX data run lengths is 305 m (1,000 ft).

Because it is not subject to the DMX addressing limitations, Ethernet is the preferred environment for large-scale, color-changing light shows and video displays, both of which require large numbers of unique addresses.

DMX Installation



Ethernet Installation

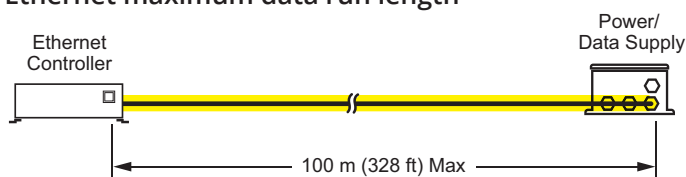


Typical Ethernet installations with LED luminaires from Color Kinetics use an Ethernet switch, an Ethernet controller (such as Light System Manager, ColorDial Pro or Video System Manager Pro), one or more Ethernet Controller Keypads (for light show triggering), and one or more PDS-60ca devices. For additional devices in a network, use additional Ethernet switch ports.

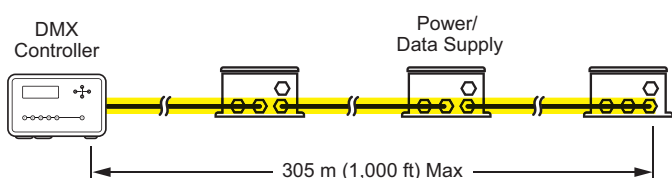
In an Ethernet environment, each Color Kinetics power/data supply has a unique IP address. Each luminaire connected to the device is automatically assigned unique identifiers that controllers use to identify and manage each luminaire.

Maximum data cable lengths are 100 m (328 ft) between Ethernet devices without a repeater.

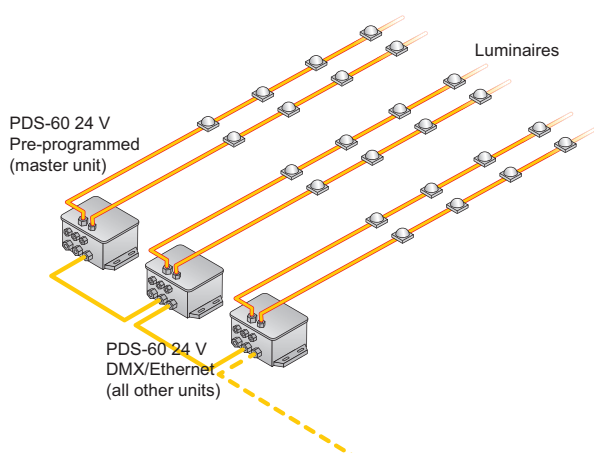
Ethernet maximum data run length



DMX maximum data run length



Typical Pre-Programmed Installation



Electrical Configuration Guidelines

The number of luminaires that each PDS-60ca unit can support depends on the power requirements of the specific luminaires that you are using. Refer to the table on the right for quantities of each luminaire that you can connect per PDS-60ca device. Refer to the luminaire product guides for information on electrical configuration for luminaires.

When installing in damp or wet locations, seal all points of possible moisture ingress with electronics-grade RTV silicone sealant so that water or moisture cannot enter or accumulate.

Assemble Additional Items

The following items are required to mount and connect the PDS-60ca:

- 3-conductor copper wire for power connections, as required. Standard 3.31 mm² (12 AWG) stranded wire is recommended.
- Three wire connectors
- CAT 5e or better data cable, as required
- The included black magnetic EMI suppression core (for the power cable)
- The included two white magnetic EMI suppression cores (for Flex strands or luminaire leader cables)
- Power screwdriver (for mounting)
- Four screws suitable for the mounting surface
- Phillips screwdriver
- 8 mm hex wrench or adjustable wrench
- The included four 1/2 and 3/4 NPT sealing plugs and rings
- Electronics-grade RTV silicone for installations in damp and wet locations
- Cable strain relief and other connectors as needed
- Water-tight conduit, connectors or fittings (as required by installation and local codes)
- Wire strippers and other tools as needed

Configuration

QuickPlay Pro 2 enables discovery, configuration, testing and demonstration of all luminaires and devices, including PDS-60ca Control Modules, on your lighting network.

You can commission PDS-60ca devices using **QuickPlay Pro 2 software**. Automatically discover luminaires, PDS-60ca devices, and power supplies using QuickPlay Pro 2 with a computer connected to your lighting network.

The **Quick Start Guide** is a comprehensive guide to help you start using QuickPlay Pro2. It contains everything from Device Configuration through to Live Demonstration.

Updating Firmware PDS-60ca firmware is periodically updated to improve system performance and functionality. We recommend confirming that your devices are running the most recent firmware version at: www.colorkinetics.com/global/support/downloads/firmware

After downloading firmware, you can use QuickPlay Pro 2 to update your PDS-60ca devices.

Addressing and Controlling Luminaires

PDS-60ca devices use DMX addresses to communicate with connected luminaires. Each node receives three sequential DMX addresses, one for the red channel, one for the green channel, and one for the blue channel. When using a PDS-60ca device in a DMX or an Ethernet network, you assign luminaires start DMX addresses using QuickPlay Pro 2.

Ethernet is the preferred environment for installations requiring large numbers of individually controllable nodes, such as video displays and dynamic light shows with intricate effects. In Ethernet networks, each PDS-60ca device comes pre-programmed with a unique IP address, so it effectively functions as its own DMX universe. In an Ethernet network, you can discover all PDS-60ca devices in an installation using QuickPlay Pro 2, then you can assign them start DMX addresses.

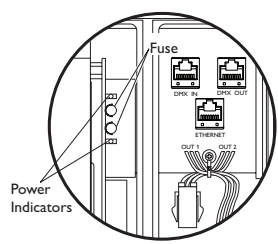
In DMX network, you address PDS-60ca devices by assigning start DMX addresses to luminaire serial numbers in QuickPlay Pro 2.

Pre-programmed PDS-60ca devices cannot receive input from controllers, but they can send light show data to other DMX power/data supplies connected to the Pre-Programmed device's DMX OUT port. No address programming is required for a PDS-60ca Pre-Programmed device. However, you will need to address

luminaires connected to downstream PDS-60ca devices in the same way you would address luminaires in an ordinary DMX network.

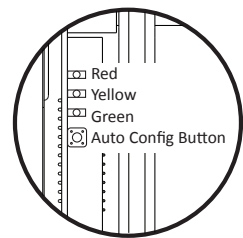
Power Indicators (All Devices)

The PDS-60ca power/data supply listens for data on both of the input ports. When a valid connection is detected, PDS-60ca switches to the appropriate mode. Three indicator lights show the mode (Ethernet or DMX) and if applicable, the status of the Ethernet connection.



Ethernet/DMX Mode and Status Indicators

Each PDS-60 has between two and five status indicators, depending on the version of the device. All indicators are located inside the luminaire's housing.



PDS-60 24 V Ethernet/DMX

The PDS-60 24 V Ethernet/DMX power/data supply listens for data on both the DMX and Ethernet input ports. When a valid connection is detected, PDS-60 24 V Ethernet/DMX switches to the appropriate mode. Three indicator lights show the mode (Ethernet or DMX) and if applicable, the status of the Ethernet connection:

Status Indicators: PDS-60 24 V Ethernet / DMX

Color	Indicator	Mode	Meaning
Red	DMX/ Ethernet Mode Status	Continuous Red	PDS-60ca is operating in DMX mode
		Blinking Red (once per second)	PDS-60ca is operating in Ethernet mode
Yellow	Ethernet Data Status	Flickering Yellow	Blinks for every Ethernet packet received
Green	Ethernet Link Status	Continuous Green	A valid Ethernet link is detected
		Off	No Ethernet link is detected

Display Light Effects (Pre-Programmed Only)

If you have the pre-programmed version of the PDS-60ca, you are able to display effects on your luminaires without a controller. Pre-programmed controllers cannot receive signals from external controllers. But they can send light show data to other downstream devices via the DMX OUT port, thereby effectively playing the role of a controller. (Refer to the Make Data Input Connections section for instructions on how to link other power/data supplies via DMX OUT ports.)

To achieve the effects you want, you can use the controls inside the device, which consists of a toggle switch and three buttons. Once you have set the mode, speed, and options for effects using the control button, PDS-60ca stores settings and records them, even after you have cycled the power on the device.

To display effects:

1. With the PDS-60ca cover removed and the power off, use the toggle switch inside the housing to select the type of luminaires that are attached to the device. (See the luminaire type switch settings table on the right.)
2. Power the device on. (For chasing comet shows, hold down the MODE button during power up to run a blink scan of attached nodes to determine the run length.)
3. Use the Mode button to select an effect. Press and release the Mode button to cycle through each effect described in the Lighting Effects Settings table on the next page.
4. If desired, use the Options button to modify the effect you chose with the mode button.
5. Use the Speed button to change the speed of the effect. Hold down the Speed button to change the color for the Fixed Color effect.

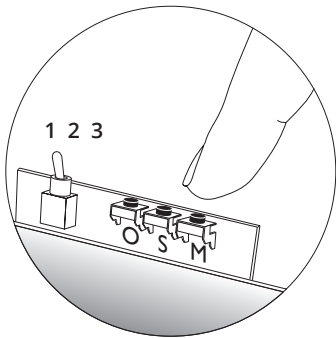
Effect setting changes are immediate.

Note: Before connecting to line power, set the luminaire type using the toggle switch. If the luminaire type is changed after power is engaged, the power supply must be powered off and turned back on to recognize the toggle switch change.

Luminaire Type Toggle Switch Settings

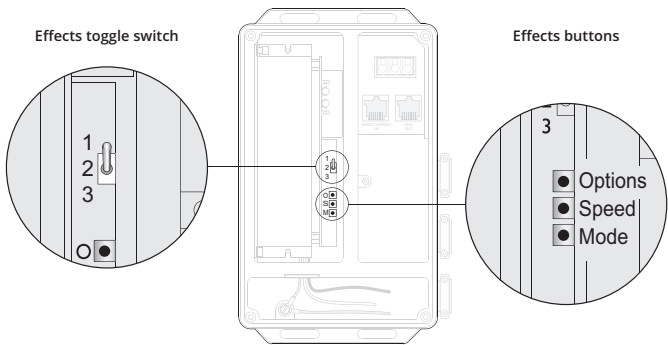
Position	Setting	Luminaires
1	Linear RGB Effects	Flex Compact, and Flex Micro, RGB or iW
2	Monochromatic Effects	Best used with eW Flex

Pre-programmed effects buttons and toggle switch



PDS-60ca Pre-Programmed has four controls located inside the device’s housing:

- The toggle switch selects the luminaire type.
- The lowest button (farthest from the toggle switch) sets the Mode, which cycles through the different available effects
- The middle button sets the Speed for most effects, and sets the color for Fixed Color effects (hold the button down to cycle through the spectrum)
- The highest button (nearest to the toggle switch) sets the Options, which cycles through effect properties



Pre-Programmed Light Effect Settings (Flex Compact, RGB and Flex Micro RGB)

Mode Button		Description	Speed Button	Options Button
1. Rainbow		Produces a smooth transition through the color spectrum. Colors appear to follow each other from luminaire to luminaire	Cycles through four effect speed settings	Cycles through four width settings, then reverses direction and decreases widths
2. Random		Produces a sequence of randomly generated solid colors simultaneously on all luminaires		Toggles between immediate and fade changes
3. Colorwash		Produces a smooth hue transition on all luminaires simultaneously, progressing through the color spectrum		Reverses effect direction
4. Fixed Color		A static display of one solid color, with a configured color and intensity level	Press and hold the speed button to change the color	Not Applicable

Pre-Programmed Monochromatic Effects (Best used with Flex eW)

Mode Button		Description	Speed Button	Options Button
1. Alternating On/Off		A display of alternating on and off nodes, which appear to follow each other in a way similar to lights on a marquee	Cycles through four effect speed settings	Cycles through four width settings, then reverses direction and decreases widths
2. White Chasing Comet		Displays a band of light that appears to move across a dark background		Toggles between immediate and fade changes
3. Dark Chasing Comet		Displays a dark band that appears to move across a light background		Reverses effect direction
4. Random Sparkle		Produces a series of light flashes at regular intervals on random nodes		Not Applicable
5. White Fixed Color		A static display of solid white color	Not Applicable	Not Applicable

