P3 PowerPort Family

P3 PowerPort 2000
P3 PowerPort 500 IP Rental
P3 PowerPort 500 IP Install

Installation, Safety and User Manual

P3 PowerPort 2000

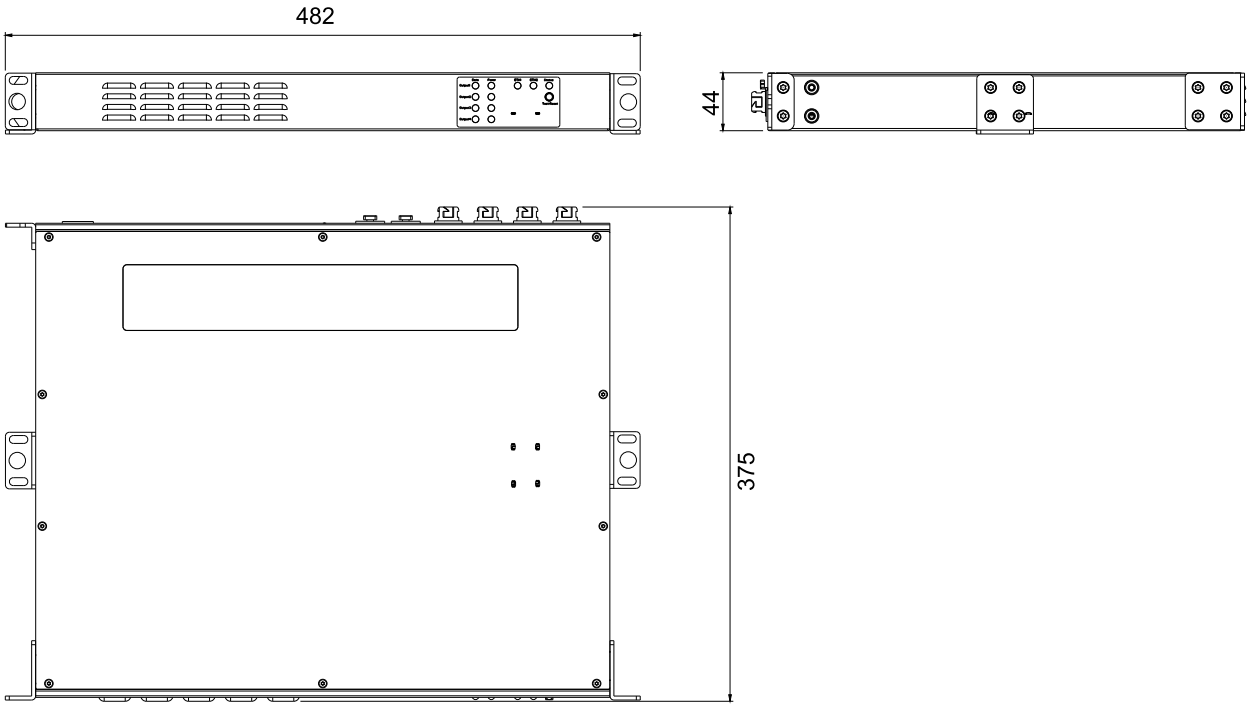
P3 PowerPort 500 IP Rental

P3 PowerPort 500 IP Install

Martin®

Dimensions

P3 PowerPort 2000



All measurements are in millimeters

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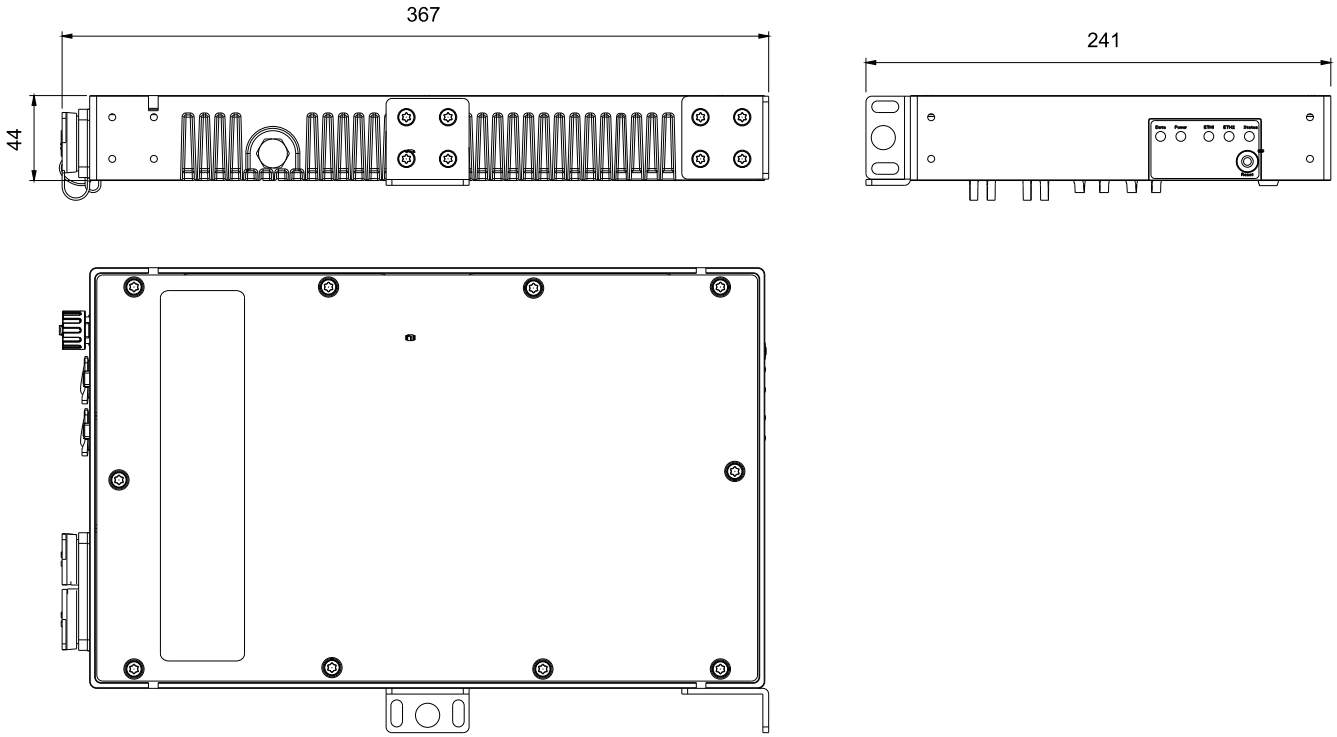
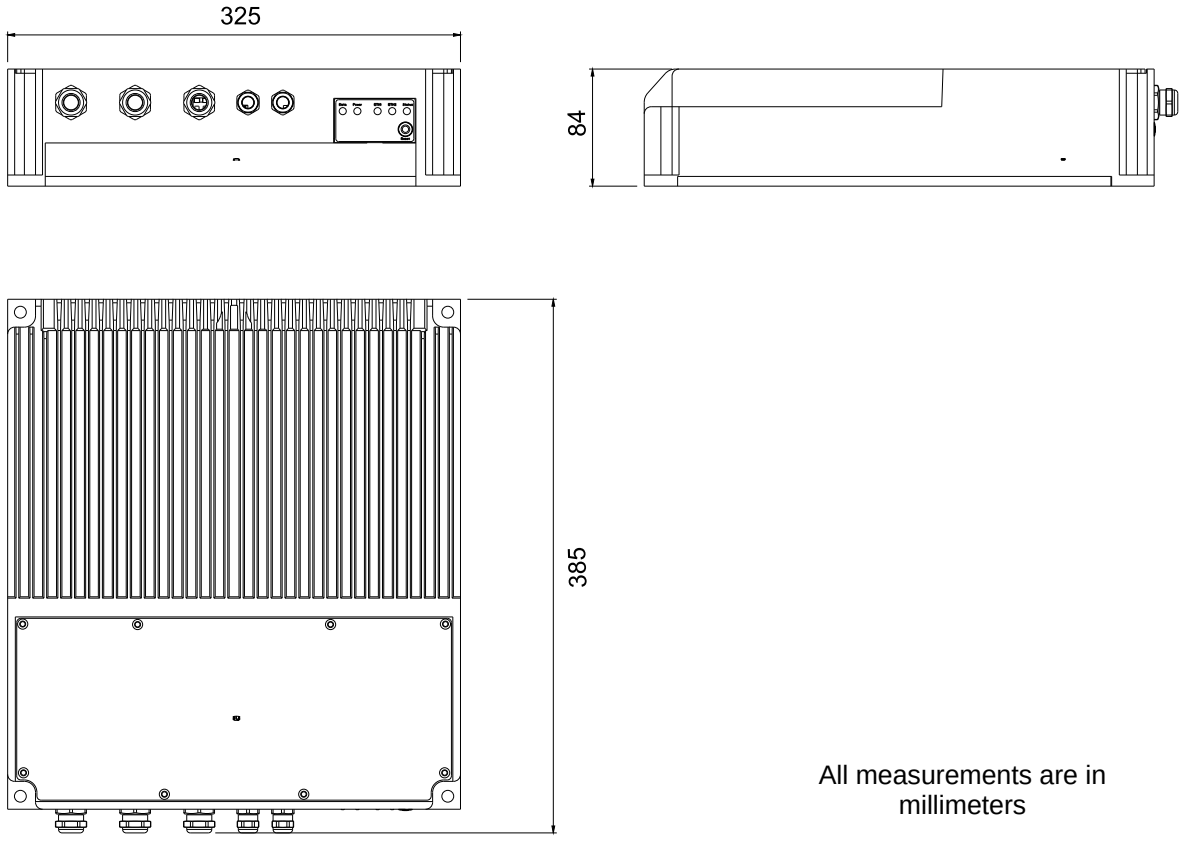
www.martin.com

P3 PowerPort 2000/500 IP Installation, Safety and User Manual English Rev. B

P3 PowerPort 500 IP Rental



P3 PowerPort 500 IP Install



All measurements are in millimeters

Contents

Safety information

WARNING!

Read the safety precautions in this section before installing, operating or servicing this product.

The following symbols are used to identify important safety information on the product and in this manual:

Warning!	Warning!	Warning!	Warning!	Warning!
Safety hazard. Risk of severe injury or death.	***Hazardous voltage. Risk of lethal or severe electric shock.***	***Fire hazard.***	***Burn hazard. Hot surface. Do not touch.***	***See user documentation.***

Warning! This product presents risks of severe injury or death due to fire and burn hazards, electric shock and falls if the safety precautions in this manual are not followed. Read this manual before installing, operating or servicing the product. Follow the safety precautions given not only in this user manual but also in the manuals of all the devices you connect to the product. Observe all warnings given in the manuals and printed on devices.

The products in the P3 PowerPort family are for professional use only. They are not for household applications. They must be installed and serviced by professional technicians only. Respect all locally applicable laws, codes and regulations when installing, operating or servicing the products.

Refer any service operation that is not described in this user manual to Martin® Service or an authorized Martin Service partner.

Install, operate and service Martin products only as directed in their user documentation, or you may create a safety hazard or cause damage that is not covered by product warranties.

Follow the safety precautions listed in the following section and observe all warnings in this manual and printed on the product.

The latest version of this User Manual is available for download from the Martin website at www.martin.com. Before you install, operate or service the product, check the Martin website and make sure that you have the latest user documentation for the fixture. Document revisions are indicated at the bottom of page 2.

Technical Support

If you have questions about how to install or operate the product safely, please contact Harman Professional Technical support:

For technical support in North America, please contact:
HProTechSupportUSA@harman.com
Phone: (844) 776-4899

For technical support outside North America, please contact your national distributor.

Protection from electric shock

Connect P3 PowerPort products to AC mains power within these ranges only:

- P3 PowerPort 2000 – 100-240 V~ (nominal), 50/60 Hz
- P3 PowerPort 500 IP Rental – 100-240 V~ (nominal), 50/60 Hz
- P3 PowerPort 500 IP Install – 100-277 V~ (nominal), 50/60 Hz

Ensure that each of these products is electrically connected to ground (earth).

Use only a source of mains power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

Follow your local AC mains power wire color coding system when connecting to AC mains power. In the USA and EU, mains power wiring is color coded as follows:

	Earth, **Ground** or ⏚	**Neutral** or **N**	**Live** or **L**
US system	Green	White	Black
EU system	Yellow/green	Blue	Brown

Socket outlets or external power switches used to supply these products with power must be located near the product and easily accessible so that the product can easily be disconnected from power.

Provide a means of locking out AC mains power so that power to the installation can be shut down and made impossible to reapply, even accidentally, during work on the installation.

Isolate the product from power immediately if the power plug or any seal, cover, cable, or other component is damaged, defective, deformed or showing signs of overheating. Do not reapply power until repairs have been completed.

Do not expose connectors or cable glands to stresses caused by lengths of cable hanging from them or by tight cable bends. Support the weight of cables running to and from products.

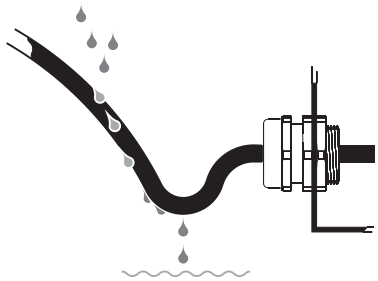
The P3 PowerPort 2000 is IP20-rated and is suitable for indoor installation only. Do not expose this device to rain or moisture. Isolate it from power immediately if the device or connections become wet.

The P3 PowerPort 500 IP Rental is IP65-rated and is suitable for temporary and permanent indoor installation and temporary outdoor installation only.

The P3 PowerPort 500 IP Install is IP66-rated and is suitable for temporary and permanent indoor and outdoor installation.

Do not expose an IP65- or IP66-rated product to high-pressure water jets from any direction.

When installing an IP65- or IP66-rated product, create a ‘drip loop’ in cables (see illustration on right) so that they arrive at cable glands or connectors from below.



Drip loop

Do not allow water to pool around the pressure equalization valve of an IP65- or IP66-rated product. Make a visual check of the pressure equalization valve periodically. If a valve appears to be dirty it may be blocked. Consult your Martin supplier for replacement.

Before using a P3 PowerPort or accessory device, check that all power distribution equipment and cables are in perfect condition and rated for the electrical requirements of all connected devices.

Disconnect products from AC mains power and ensure that power cannot be reconnected before carrying out any installation or maintenance work and when the product is not in use.

Do not connect products to mains power in a daisy chain that will exceed the electrical ratings of any device, cable or connector in the chain.

Check and respect the directions given in the user manuals of all the devices that you intend to connect to a P3 PowerPort or accessory product. Pay particular attention to the instructions and warnings that apply to:

- system layout,
- connections to other devices,
- specified cables,
- maximum cable lengths, and
- maximum number of devices that can be connected.

P3 PowerPort 500 and P3 PowerPort 2000 products can supply a safe maximum current of 10 A and safe maximum power of 480 W per hybrid (combined DC power and P3 data) output. Do not connect a device or a chain of devices to a hybrid output if this safe maximum current or power limit will be exceeded.

The external diameter of the cables used to connect P3 PowerPort 500 IP Install devices to power and data must be suitable for the cable glands provided, or water can enter the product and create a safety hazard or cause damage. The cables must have the following external diameter:

- AC mains power in, AC mains power THRU: 8-13 mm (0.32-0.51 in.)
- Hybrid (48 VDC power and P3 data) OUT: 6.5-10.5 mm (0.26-0.41 in.)
- P3 data IN, P3 data THRU: 5-8 mm (0.2-0.32 in.)

To connect P3 PowerPort and related devices to AC mains power in a chain, you must use 12 AWG or 2.5 mm^2 power input and throughput cable that is 16 A rated and temperature-rated to suit the application. In the USA and Canada the cables must be UL-listed, type SJT or equivalent. In the EU the cables must be type H05VV-F or equivalent. Suitable cable and loose Neutrik powerCON TRUE1 TOP connectors are available from Martin (see the P3 PowerPort product pages on the Martin website at www.martin.com)

Connect only Neutrik powerCON TRUE1 TOP cable connectors to the AC mains power sockets of P3 PowerPort products.

You can connect P3 PowerPort 500 IP Install and P3 PowerPort 500 IP Rental products to AC mains power in an interlinked daisy chain in which you connect one device's mains power THRU socket to the next device's mains power IN socket, but you must respect the following limits:

- When operating at 100-120 V~ do not interlink more than three (3) P3 PowerPort 500 IP devices in total in a daisy chain.
- When operating at 200-240 V~ do not interlink more than five (5) P3 PowerPort 500 IP devices in total in a daisy chain.
- The P3 PowerPort 500 IP Install can also be operated at 200-277 V~. Do not interlink more than five (5) P3 PowerPort 500 IP Install devices in total in a daisy chain when operating this device within this voltage range.
- Regardless of which devices you connect in a daisy chain using a P3 PowerPort 500 IP device's THRU socket, do not exceed a total current draw of 16 A for all the devices in the chain, including the first P3 PowerPort 500 IP device.

The voltage and frequency at the mains power THRU socket are the same as the voltage and frequency applied to the mains power IN socket. Only connect devices to the mains power THRU socket that accept this voltage and frequency.

Protection from burns and fire

Do not operate a device in this range of products if the maximum ambient temperature (T_a max.) exceeds the levels shown below:

- P3 PowerPort 2000: 40° C (104° F)
- P3 PowerPort 500 IP Rental: 40° C (104° F)
- P3 PowerPort 500 IP Install: 55° C (131° F)

When using rack-mounted products, make sure that the rack used is well ventilated. Provide fan cooling in the rack if the ambient temperature can exceed 40° C (104° F).

The surface of the products can reach the following maximum temperatures during operation.

- P3 PowerPort 2000: 62° C (144° F)
  at full load, ambient temperature 40° C (104° F)
- P3 PowerPort 500 IP Rental: 65° C (149° F)
  at full load, ambient temperature 40° C (104° F)
- P3 PowerPort 500 IP Install: 70° C (158° F)
  at full load, ambient temperature 55° C (131° F)

Avoid contact by persons and materials. Allow the product to cool for at least 15 minutes before handling.

Keep flammable materials well away from the product. Keep all combustible materials (e.g. fabric, wood, paper) at least 0.5 m (1.7 ft.) away from the product.

Ensure that there is free and unobstructed airflow around the product. Provide a minimum clearance of 0.5 m (1.7 ft.) around fans and air vents.

Protection from injury

Fasten the product securely to a fixed surface or structure when in use. The product is not portable when installed.

Ensure that any supporting structure and/or hardware used can hold at least six (6) times – or more if required by local regulations – the weight of all the devices and other items that they support.

Use rigging hardware and fasteners that are in perfect condition, approved for the weight that they will support, and suitable for their application and the installation environment. Do not use safety cables as the primary means of support.

If the product is installed in a location where it may cause injury or damage if it falls, install as directed in this manual a secondary attachment such as a safety cable that will hold the product if a primary attachment fails. The secondary attachment must be approved by an official body such as TÜV as a safety attachment for the weight that it secures, must comply with EN 60598-2-17 Section 17.7.4 and must be capable of bearing a static suspended load that is six (6) times – or more if required by local regulations – the weight of the product and all installed accessories.

Check that all external covers and rigging hardware are securely fastened.

Block access below the work area and work from a stable platform whenever installing, servicing or moving an overhead product.

Do not operate the product with missing or damaged covers.

In the event of an operating problem, stop using the product immediately and disconnect it from power. Do not attempt to use a product that is obviously damaged.

Do not modify the product in any way not described in this manual. Install genuine Martin parts only.

Refer any service operation not described in this manual to Martin Service or one of its authorized agents.

Introduction

Thank you for selecting a product from the Martin P3 PowerPort family. These units supply low voltage power and data to a wide range of Martin Creative LED fixtures. The following devices are available:

- **P3 PowerPort 2000 –** IP20, indoor use, 4 hybrid DCE outputs towards fixtures, rack/surface/truss-mount.
- **P3 PowerPort 500 IP Rental** – IP65, temporary outdoor use, 1 hybrid DCE output towards fixtures, rack/surface/truss-mount.
- **P3 PowerPort 500 IP Install** – IP66, permanent outdoor use, 1 hybrid output towards fixtures, surface-mount, features service compartment to terminate cables on site.

Additionally, two accessories are available for this ecosystem:

- **DCE PSU 240 IP** – for powering Martin Creative LED fixtures without the advanced features offered by the P3 PowerPorts listed above.
- **DCE Data Splitter/Booster IP** – for extending the distance between a P3 PowerPort and Martin Creative LED fixtures and/or split chains of fixtures.

See the separate user documentation for these two accessories.

P3 PowerPorts (and connected Martin Creative LED fixtures) are compatible with Art-Net, sACN and the Martin P3 protocol. They provide local status information via status LEDs and can test the connected fixtures via integrated test buttons. Additionally, the P3 PowerPorts are able to force the connected Creative LED fixtures into low-power mode, which enables longer daisy-chains with more fixtures to be created and reduces the number of P3 PowerPorts required in a given installation.

P3 PowerPorts incorporate a network switch with fail-safe bypass mechanism, enabling easy daisy-chaining of P3 PowerPorts with zero risk (a P3 PowerPort losing power will not interrupt the network connection to the P3 PowerPorts chained downstream of it).

P3 PowerPorts support full monitoring and control settings via P3 and RDM over Art-Net.

For possible system layouts when using the P3 PowerPorts with Martin Creative LED fixtures, please see the user documentation for those products. Martin user documentation is supplied with products and available for download from the Martin website at www.martin.com , where you can also find the latest specifications, software/firmware updates and support information for all Martin products.

Unpacking

This user manual is supplied with each product. The following items are also included:

P3 PowerPort 2000

- Safety Cable Attachment Bracket (screws included)
- 2 x Short Rack Mounting Ears (screws included)

P3 PowerPort 500 IP Rental

- Safety Cable Attachment Bracket (screws included)
- 2 x Short Rack Mounting Ears (screws included)
- Long Rack Mounting Ear (screws included)
- Coupling Plate (screws included)

P3 PowerPort 500 IP Install

- Blanking plugs in all pre-installed cable glands

Power input cable

For the P3 PowerPort 2000 and the P3 PowerPort 500 IP Rental, either a mains power cable complete with Neutrik PowerCON TRUE1 power input connector or a separate Neutrik PowerCON TRUE1 power input connector should be ordered separately from Martin. For the P3 PowerPort 500 IP Rental the

connector must be TOP (True Outdoor Protection) type. See the P3 PowerPort product pages on the Martin website at www.martin.com for details of cables and connectors available from Martin.

No input connector is required for the P3 PowerPort 500 IP Install power input cable, as this device is designed to be hard-wired using internal terminals during installation.

Accessories and related items

Martin can supply a comprehensive range of cables, connectors, rigging hardware and other accessories for the products in Martin P3 systems. The accessories listed in the **Specifications** sections of the related areas of the Martin website at www.martin.com give details. Your Martin supplier will also be happy to help if you would like assistance with assessing your needs and ordering.

Status LEDs and switchable options

The three P3 PowerPort devices covered by this manual have the following features:

Status LEDs

The status LEDs light when a signal is present and flash when data is being received or transmitted. They also give device status information. See ‘Status LEDs and Test/Reset button’ on page 22 for more details.

Switches

The two switches on or inside the device have the following functions:

- FRONT PANEL ON/OFF – disables all the status LEDs and disables the Test/Reset button (see ‘Status LEDs and Test/Reset button’ on page 22). Setting this switch to OFF reduces the visibility of the device in the installation and protects from accidental resets or tampering.
- POWER CONTROL/FULL/HALF – offers three settings that apply to all connected compatible Martin Creative LED fixtures:
  - FULL forces all fixtures to run in full-power mode, overriding any power mode commands from the P3 System Controller, Art-Net controller, sACN controller or RDM controller.
  - HALF forces all fixtures to run in half- or low-power mode, overriding any power mode commands from the P3 System Controller, Art-Net controller, sACN controller or RDM controller.
  - CONTROL allows the P3 System Controller, Art-Net controller, sACN controller or RDM controller to set the fixtures’ power modes.

  Setting fixtures to low power can be useful for nighttime or TV studio applications, for example, where full power is not needed or may be undesirable. The HALF setting also lets you connect a higher number of fixtures to the hybrid output, meaning that an installation will require fewer P3 PowerPort devices.

  Note that when the POWER CONTROL switch is set to FULL or HALF, it is not possible to adjust the power mode from the P3 System Controller, Art-Net controller, sACN controller or RDM controller.

P3 PowerPort 2000

Overview

Front panel

The front panel of the P3 PowerPort 2000 features status LEDs and a single button that runs test sequences or reboots the device (see ‘Status LEDs and Test/Reset button’ on page 22).

Rear panel

The rear panel of the P3 PowerPort 2000 features the following:

- Hybrid (48 VDC power and data) outputs (7-pin DCE connectors)
- Network data in/thru ports A and B (Neutrik etherCON connectors)
- Switch that disables status LEDs and Test/Reset button
- Switch that manages the power level of the fixtures on the hybrid links
- AC mains power in (Neutrik PowerCon TRUE1 TOP connector)

Installing

Read the ‘Safety Information’ section starting on page 5 before installing, applying power to or operating the device.

The P3 PowerPort 2000 is designed to be installed in a 19-inch rack, on a rigging truss or on a flat surface in any orientation.

Rack mounting

To mount the P3 PowerPort 2000 in a 19-inch rack:

1. Fasten the two supplied short rack ears to the front of the device as shown in the illustration above using the supplied screws. Do not fasten the supplied safety cable attachment bracket to the device.
2. Fasten the device into the rack. Bear in mind the need for good ventilation and the possible need for fan cooling.

Truss mounting

When installing the P3 PowerPort 2000 on a rigging truss, use half-coupler type rigging clamps (see Figure 1) that completely encircle the truss chord. Rigging clamps must be in perfect condition and approved for the weight that they will support.

Figure 1. Half-coupler rigging clamp

To mount the device on a rigging truss, see Figure 2:

1. Using the four screws supplied for each ear, fasten the two supplied short rack ears to the sides of the device at the edges of the top surface as shown in Figure 2.
2. Using both the supplied screws, fasten the safety cable attachment bracket to the back of the device as shown in Figure 2.
3. Using hardened steel fasteners with locking nuts, fasten two rigging clamps that are approved for the weight that they will support to the two short rack ears.
4. Install the device on the truss by fastening the rigging clamps onto the truss chord.
5. If there is any risk that the device may cause injury or damage if it falls, secure it by fastening an approved safety cable to the safety cable attachment bracket and looping it around the truss or other secure anchoring point. Remove as much slack as possible from the safety cable by looping it more than once around the truss chord, for example.

Figure 2. Truss mounting

Surface mounting

To mount the P3 PowerPort 2000 on a secure, flat surface:

1. See illustration on right. Using the four screws supplied for each ear, fasten the two supplied short rack ears to the device as shown. The safety cable attachment bracket is not required.
2. Fasten the device to the surface using suitable screws or bolts passed through the short rack ears and fastened into the mounting surface.

Figure 3. Surface mounting

Connecting the device

Use the connectors that are specified for the P3 PowerPort 2000 to connect to AC mains power, network data and the hybrid link. Connectors are labeled on the device and shown in ‘Rear panel’ on page 11.

Status LED and power mode settings

The two switches located on the rear panel let you manage the status LEDs and Test/Reset button on the front panel, and manage the power setting of connected fixtures (see ‘Switches’ on page 10).

Operating

When power is applied to the power input cable, the device carries out a short boot procedure and then becomes operational. There is no power on/off switch.

Status LEDs and Test/Reset button

You can monitor operation via the status LEDs on the front panel if they are activated using the switch on the rear panel.

You can send test patterns to connected Martin Creative LED fixtures and reboot the device using the Test/Reset button on the front of the device.

See ‘Status LEDs and Test/Reset button’ on page 22 for details of these two features.

P3 PowerPort 500 IP Rental

Overview

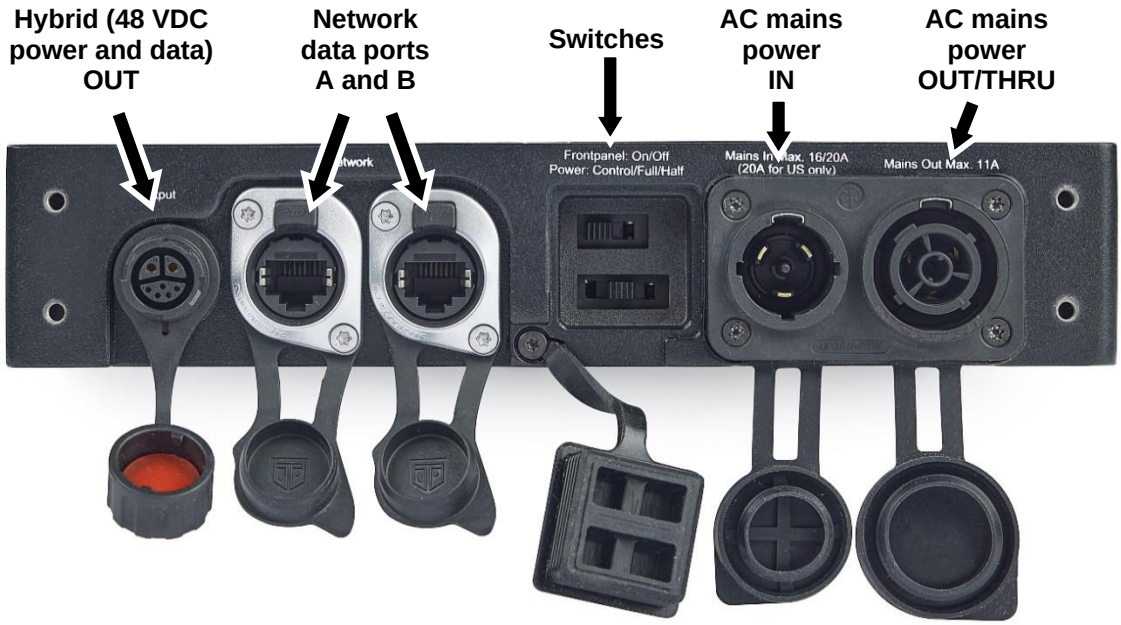
Front panel

The front panel of the IP65-rated P3 PowerPort 500 IP Rental features status LEDs and a single button that runs test sequences. If you push and hold this button, it resets the product.

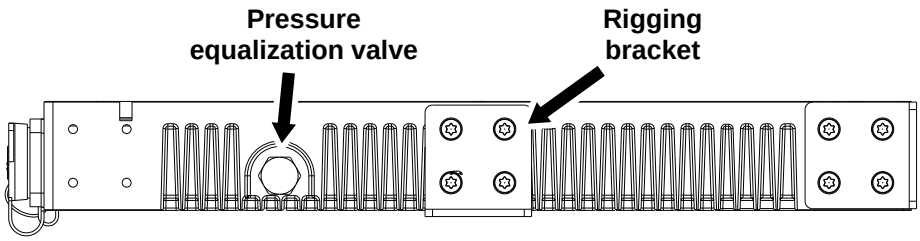
Rear panel

The rear panel of the P3 PowerPort 500 IP Rental features the following:

- Hybrid (48 VDC power and data) output (7-pin DCE connector)
- Network data in/thru A and B (Neutrik etherCON TOP connectors)
- Switch that disables status LEDs and Test/Reset button
- Switch that manages the power level of fixtures on the hybrid link
- AC mains power IN and OUT/THRU (Neutrik PowerCon TRUE1 TOP connectors)



Side panel



The P3 PowerPort 500 IP Rental has a pressure equalization valve on the side of the device (see illustration). Check this valve visually from time to time. If it appears to be dirty, consult Martin Service for possible replacement

Installing

Read the ‘Safety Information’ section starting on page 5 before installing, applying power to or operating the device.

The P3 PowerPort 500 IP Rental is designed to be installed in a 19-inch rack, on a rigging truss or on a flat surface in any orientation.

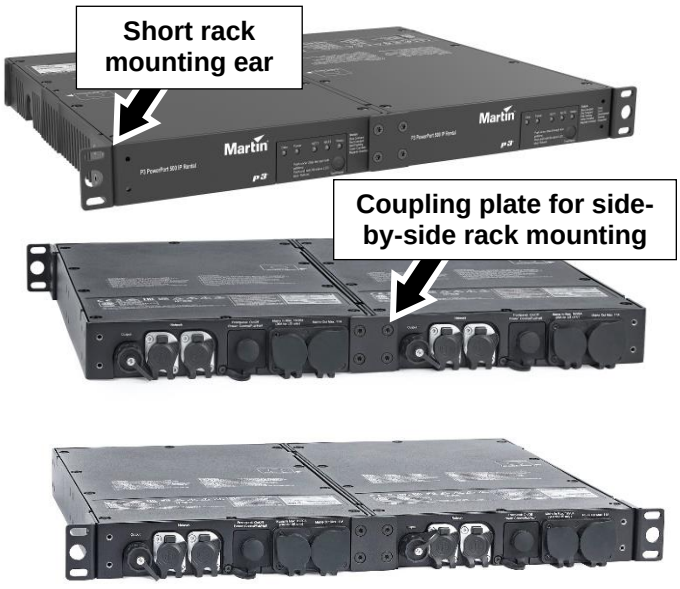
Rack mounting

To mount one single P3 PowerPort 500 IP Rental in a 19-inch rack:

1. Fasten one short rack ear (supplied) and one long rack ear (supplied) to the front of the device using the supplied screws. Do not fasten the supplied safety cable attachment bracket to the device.
2. Fasten the device into the rack. Bear in mind the need for good ventilation and the possible need for fan cooling.

To mount two P3 PowerPort 500 IP Rental devices side-by-side in a 19-inch rack:

1. See illustrations on right. Fasten the two devices together by fastening the two supplied coupling plates to the devices, one plate on the front and one plate on the rear, using the supplied screws.
2. Fasten the two supplied short rack mounting ears to the devices using the supplied screws. Note that you can rackmount the devices with the connections panel at the front or at the rear of the rack, but if you mount them at the front the status LEDs and Test/Reset button will be less accessible. Do not fasten the supplied safety cable attachment bracket to the devices.
3. Fasten the two devices into the rack. Bear in mind the need for good ventilation and the possible need for fan cooling.



Truss mounting

When installing the P3 PowerPort 500 IP Rental on a rigging truss, use half-coupler type rigging clamps (see Figure 1 on page 12) that completely encircle the truss chord. Rigging clamps must be in perfect condition and approved for the weight that they will support.

You can install the P3 PowerPort 500 IP Rental on a rigging truss either mounted horizontally or hanging vertically.

To mount the device horizontally on a rigging truss:

1. Using both the supplied screws, fasten the safety cable attachment bracket to the back of the device.
2. Using the four supplied screws for each ear, fasten the two supplied short rack ears to the sides of the device at the edges of the top surface.
3. Using hardened steel fasteners with locking nuts, fasten two half-coupler type rigging clamps that are approved for the weight that they will support to the two short rack ears.
4. Install the device on the truss by fastening the rigging clamps onto the truss chord.
5. If there is any risk that the device may cause injury or damage if it falls, secure it by fastening an approved safety cable to the safety cable attachment bracket and looping it around the truss or other secure anchoring point. Remove as much slack as possible from the safety cable by looping it more than once around the truss chord, for example.

Horizontal mounting **Vertical mounting**

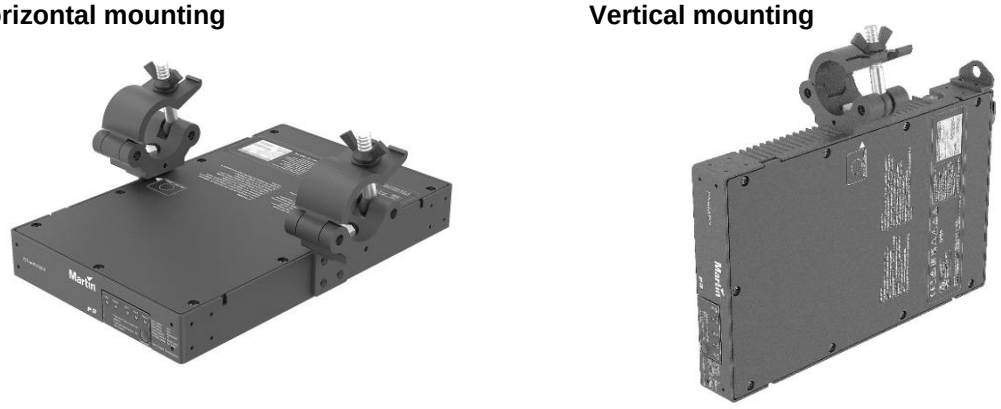
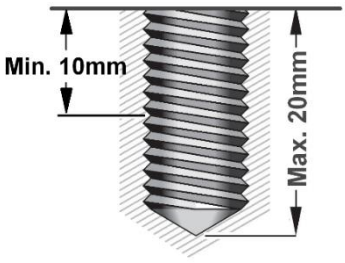


Figure 4. P3 PowerPort 500 IP Rental truss mounting options

To mount the device hanging vertically downwards on a rigging truss:

1. Using both the supplied screws, fasten the safety cable attachment bracket to the back of the device.
2. Using a hardened steel M10 bolt or screw, fasten a rigging clamp that is approved for the weight that it will support into the threaded hole in the side of the device. The bolt or screw must protrude minimum 10 mm (0.4 inches) and maximum 20 mm (0.75 inches) into the device (see illustration on right)



3. Install the device hanging vertically on the truss by fastening the rigging clamp onto the truss chord.
4. If there is any risk that the device may cause injury or damage if it falls, secure it by fastening an approved safety cable to the safety cable attachment bracket and looping it around the truss or other secure anchoring point. Remove as much slack as possible from the safety cable by looping it more than once around the truss chord, for example.

Surface mounting

To mount the P3 PowerPort 500 IP Rental on a secure, flat surface:

1. See illustration on right. Using the four supplied screws for each ear, fasten the two supplied short rack ears (arrowed) to the sides of the device as shown. The safety cable attachment bracket is not required.
2. Fasten the device to the surface using suitable screws or bolts passed through the short rack ears.

Connecting the device

To connect the P3 PowerPort 500 IP Rental, make connections on the rear panel using the markings on the panel and ‘Rear panel’ on page 13 for reference.

See illustration on right. All connectors are IP65-rated. The connectors and the switches are protected from water and dust by rubber sealing caps. Keep the rubber caps installed on all unused connectors and on the switches at all times.

Status LED and power mode settings

The two switches located on the rear panel let you manage the status LEDs and Test/Reset button on the front panel, and manage the power setting of connected fixtures (see ‘Switches’ on page 10).

Operating

When power is applied to the power input cable, the device carries out a short boot procedure and then becomes operational. There is no power on/off switch.

Status LEDs and Test/Reset button

You can monitor operation via the status LEDs on the front panel if they are activated using the switch on the rear panel.

You can send test patterns to connected Martin Creative LED fixtures and reboot the device using the Test/Reset button on the front of the device.

See ‘Status LEDs and Test/Reset button’ on page 22 for details of these two features.

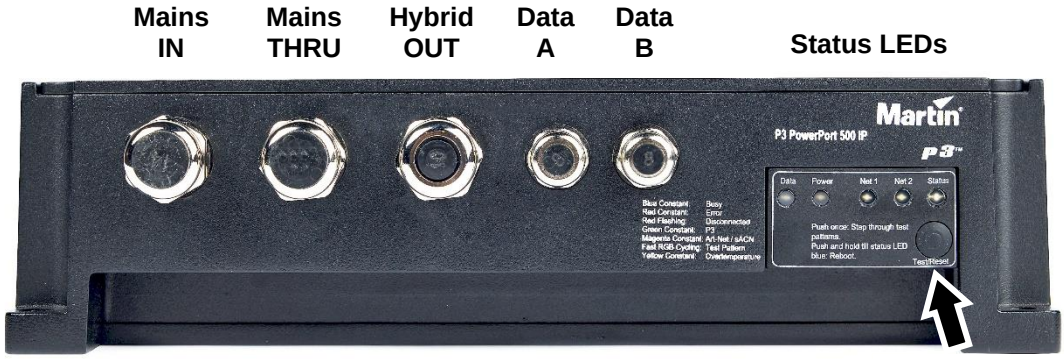
P3 PowerPort 500 IP Install

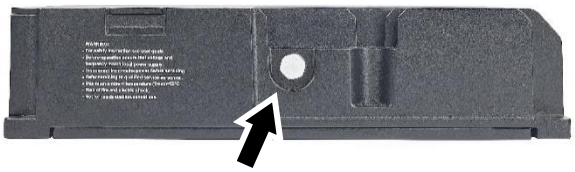
Overview

The front panel of the IP66-rated P3 PowerPort 500 IP Install has cable glands that accept the following diameter cables:

- AC mains power input cable with external diameter 8-13 mm (0.32-0.51 in.)
- AC mains power throughput cable with external diameter 8-13 mm (0.32-0.51 in.)
- Hybrid (48 VDC power and data) output cable with external diameter 6.5-10.5 mm (0.26-0.41 in.)
- Data cable A (in or thru) with external diameter 5-8 mm (0.2-0.32 in.)
- Data cable B (in or thru) with external diameter 5-8 mm (0.2-0.32 in.)

The front panel also features status LEDs and a single button that runs test sequences. If you push and hold this button, it resets the product.





Pressure equalization valve

See illustration on left. The P3 PowerPort 500 IP Install has a pressure equalization valve (arrowed) on the side of the device. Check this valve visually from time to time. If it appears to be dirty, consult Martin Service for possible replacement.

Installing

Read the ‘Safety Information’ section starting on page 5 before installing, applying power to or operating the device.

To install the P3 PowerPort 500 IP Install, see illustration on right. Pass high-tensile steel fasteners that are suitable for the application and the installation environment through the four holes (arrowed) in the corners of the device and tighten them into the installation surface.

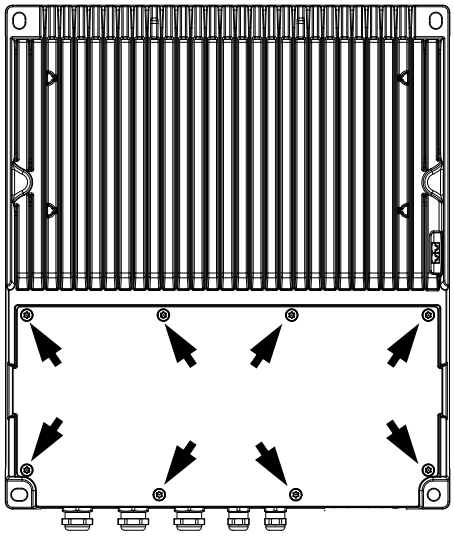
Cables and cable glands

Support the weight of cables to ensure that no length of cable is left hanging from a cable gland. Create ‘drip loops’ so that cables arrive at cable glands from below.

Instructions on correct installation of cables in cable glands are given on the following pages with reference to the cable gland illustration in Figure 6 on page 19.

Opening the connections compartment

See illustration on right. For access to the connections compartment, remove the eight screws (arrowed) from the connections compartment cover on the top of the device, then remove the cover.



Connecting and setting up the device

To connect the P3 PowerPort 500 IP Install to AC mains power, network data and the hybrid link of daisy-chained Martin Creative LED fixtures, first check that the installation is isolated from mains power and that power cannot be reapplied, then use the instructions on the following pages.

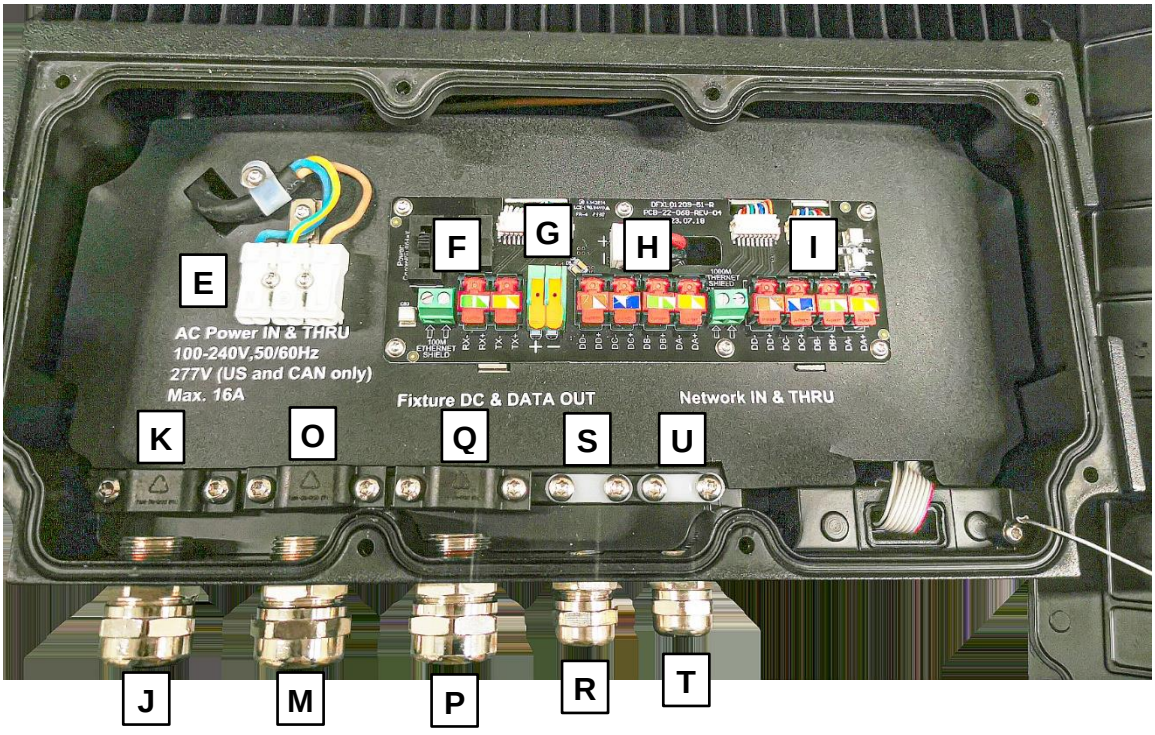


Figure 5. P3 PowerPort 500 IP Install connections compartment

Connecting AC mains power IN

To connect the mains power **input** cable:

1. Ensure that the installation is isolated from power.
2. The mains power IN cable gland is on the left of the connections panel (see **J** in Figure 5). See Figure 6. The cable entry **A** is glued into the housing, so do not try to turn it. Loosen the compression nut **B** on the mains power IN cable gland.
3. Pass the AC mains power input cable through the cable gland and into the connections box. See Figure 5. Loosen the cable clamp **K** on the left in front of the mains power quick connectors **E** and pass the cable through it.

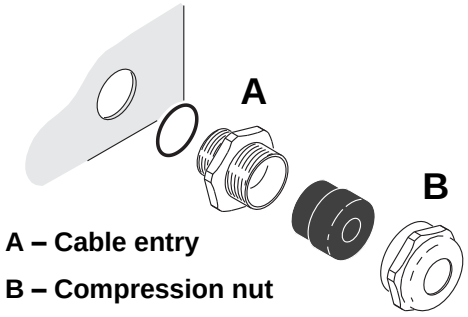


Figure 6. Cable gland

4. Strip enough insulation from the wires in the power input cable to ensure correct conductivity inside the quick-connectors without leaving any bare copper visible outside the connectors. Fasten the wires into the quick-connectors **E** by pushing down on each connector, inserting the bare end of the wire and then releasing the connector. Check that the wire is held securely in the connector. Fasten the mains power wires into the connectors **E** as follows:
   - Live wire to **L** (Live, brown).
   - Neutral wire to **N** (Neutral, blue).
   - Ground/earth wire to ⏚ (Protective Earth, green/yellow).
5. Tighten the cable clamp **K** onto the mains power input cable so that it holds the cable firmly.
6. Tighten the compression nut **B** of the mains power IN cable gland **J** until the cable is clamped securely in the cable gland.

Connecting AC mains power THRU

If you are installing a mains power **throughput** cable to continue mains power to another P3 PowerPort 500 device:

1. The mains THRU cable gland is immediately to the right of the mains IN cable gland on the connections panel (see **M** in Figure 5). See Figure 6. The cable entry **A** is glued into the housing, so do not try to turn it. Loosen the compression nut **B** on the mains power THRU cable gland.
2. Pass the AC mains power throughput cable through the cable gland **M** and into the connections box. See Figure 5. Loosen the cable clamp **O** in front of the mains power quick connectors **E** and pass the cable through it.
3. Strip enough insulation from the wires in the power throughput cable to ensure correct conductivity inside the quick-connectors without leaving any bare copper visible outside the connectors. Fasten the wires into the quick-connectors **E** by pushing down on each connector, inserting the bare end of the wire and then releasing the connector. Check that the wire is held securely in the connector. Fasten the mains power wires into the connectors **E** as follows:
   - Live wire to **L** (Live, brown).
   - Neutral wire to **N** (Neutral, blue).
   - Ground/earth wire to ⏚ (Protective Earth, green/yellow).
4. Tighten the cable clamp **O** in front of the mains power quick connectors so that it holds the mains power throughput cable firmly.
5. Tighten the compression nut **B** of the mains power THRU cable gland **M** until the cable is clamped securely in the cable gland.

If you have finished making connections, check that the connections compartment seal is dry and in perfect condition, then reinstall the seal and cover on the connections compartment so that the box is sealed against the entry of water and moisture. Otherwise continue as described below.

Connecting the hybrid link to fixtures

To connect the hybrid (combined data and 48 VDC power) cable:

1. If the connections compartment is not already open, open it as described in the previous section.
2. The hybrid OUT cable gland is immediately to the right of the two mains power cable glands (see **P** in Figure 5). The cable entry (**A** in Figure 6) is glued into the housing, so do not try to turn it. Loosen the hybrid OUT cable gland's compression nut **B**.
3. Take the hybrid cable that is connected to the chain of lighting fixtures and pass it through the hybrid OUT cable gland **P** and into the connections box. Loosen the hybrid cable clamp **Q** and pass the cable through it.
4. Strip enough insulation from the thick red and black DC power wires in the power cable to ensure correct conductivity inside the quick-connectors without leaving any bare copper visible outside the connectors. Fasten the DC power wires into the DC power quick-connectors **G** as follows:
   - Red, positive (+) wire to the connector marked **48V+**
   - Black, negative (-) wire to the connector marked **48V-**.

   Lift up the orange lever on each quick-connector, put the stripped wire into the connector, then push the orange lever back down and check that the wire is held securely in the connector.
5. There are four data wires colored orange, orange/white, green and green/white in the hybrid cable. Do not strip insulation from these wires.
6. Untwist the data wires, lift the levers in the orange hybrid cable data connectors **F** and slide the wires into the connectors, respecting the color coding of the wires and the connectors (green to green, green/white to green/white etc.). Push the levers on the orange connectors all the way down firmly and check that the wires are held securely.
7. Twist the strands in the data wire shield together to form one twisted wire, loosen one of the screws in the green screw terminal block at **F** in Figure 5 and insert this wire into that hole in the terminal block. Insert the shield from the direction indicated by the arrow next to the terminal. Tighten the screw and check that the shield is held securely in the terminal block. One hole in this green terminal block can be left empty.
8. Tighten cable clamp **Q** onto the hybrid OUT cable until the cable is held tightly.
9. Tighten the compression nut **B** on the hybrid OUT cable gland **P** until the cable is held tightly in the cable gland.

Connecting network data cables

P3 PowerPort devices have two network data ports: port A and port B. It makes no difference which port you use for data IN from the controller and which port you use for data THRU to other compatible devices.

To connect a network data input cable:

1. If the connections compartment is not already open, open it as described earlier.
2. The data A and B cable glands are immediately to the right of the hybrid cable gland at **R** and **T** in Figure 5. The cable entries (**A** in Figure 6) are glued into the housing, so do not try to turn them. Loosen the compression nut **B** of cable gland **R**.
3. See Figure 5. Take the data input cable and pass it through the cable gland **R** and into the connections box. Loosen the data cable clamp **S** and pass the cable through it.
4. There are eight data wires colored orange, orange/white, green, green/white, blue, blue/white, brown and brown/white in the network cable. Do not strip insulation from these wires.
5. Untwist the data wires, lift the levers in the orange network cable data connectors **H** and slide the wires into the connectors, respecting the color coding of the wires and the connectors (green to green, green/white to green/white etc.). Push the levers on the orange connectors all the way down firmly and check that the wires are held securely.
6. Twist the strands in the data wire shield together to form one twisted wire, loosen one of the screws in the green screw terminal block between **H** and **I** in Figure 5 and insert this wire into that hole in the terminal block. Insert the shield from the direction indicated by the arrow next to the terminal. Tighten the screw and check that the shield is held securely in the terminal block.
7. Tighten the cable clamp **S** onto the data cable until the cable is held tightly.

8. Tighten the compression nut **B** on the network data cable gland **R** until the cable is held tightly in the cable gland.

To connect a network data throughput cable, follow the same procedure as for the network data input cable (see above), using the remaining data cable gland, cable clamp, quick-connectors and screw terminal.

Status LED and power mode settings

The two switches located inside the connections compartment let you manage the status LEDs and Test/Reset button on the front panel (switch marked ‘Front Panel On/Off’) and manage the power setting of connected fixtures (switch marked ‘Power Control/Full/Half’). See ‘Switches’ on page 10 for more details.

Closing the connections compartment

When you have finished making connections and/or setting the two switches (see above), check that the connections compartment seal is clean, dry and in perfect condition, then reinstall the cover on the connections compartment to protect against the entry of water, moisture and dirt.

Operating

When power is applied to the power input cable, the device carries out a short boot procedure and then becomes operational. There is no power on/off switch.

Status LEDs and Test/Reset button

You can monitor operation via the status LEDs on the front panel if they are activated using the switch inside the connections compartment.

You can send test patterns to connected Martin Creative LED fixtures and reboot the device using the Test/Reset button on the front of the device.

See ‘Status LEDs and Test/Reset button’ on page 22 for details of these two features.

Status LEDs and Test/Reset button

Status information

P3 PowerPort devices give status information via LEDs on their front panels. A key to the status information given by the LEDs is printed on the device and given below.

For each output:

- The **Data** LED lights when data is being transmitted at that output.
- The **Power** LED lights when 48 VDC power is present at that output.
- **NET1** and **NET2** LEDs light to indicate traffic at the corresponding network data port.
- The **Status** LED gives the information in the table below**:**

Color	Output	Indication	Suggested action
Blue	Constant	Busy (e.g. booting up or writing to flash memory).	Wait a moment for normal operation to be resumed.
Green	Constant	P3 protocol detected.	
Magenta	Constant	Art-Net or sACN detected.	
Red	Flashing	No control source detected (no protocol detected on Ethernet).	Connect a P3 System Controller, Art-Net controller or sACN controller to the network.
Yellow	Constant	Overtemperature.	Allow the device to cool. Clean the device and improve ventilation. Press Test/Reset button to restore functionality.
Red	Constant	Error. The P3 PowerPort has encountered a fatal error and cannot run.	Perform a factory reboot. If the problem persists, carry out a firmware upload.
Fast RGB	Cycling	Test pattern being sent to connected products.	

Test/Reset button functions

P3 PowerPort devices have test sequences stored in internal memory that you can call up using the Test/Reset button. The test sequences let you check that the connected creative LED products are set up correctly without the need for a controller. Note that test patterns can also be called up on P3 system controllers and on any individual system components that have a test/control button.

The Test/Reset button also lets you reboot the device and restore its factory default firmware if you suspect that the firmware has been corrupted.

If an output on a P3 PowerPort has been disabled because of an overload or short circuit, pressing the Test/Reset button will re-enable the output.

The functions of the P3 PowerPort's single Test/Reset button are printed on the device and given below:

Button action	Function
Repeated short press	Display the following test patterns on all Martin Creative LED display products that are correctly connected (one short press scrolls to next pattern): Calibrated mixed White → Full Red → Full Green → Full Blue → Full White
Press and hold until status LED lights blue	Reboot the P3 PowerPort.
Press and hold until status LED lights white	Return the P3 PowerPort to its default factory firmware.

Service and maintenance

Warning! Read *"Safety Information" on page 4* before carrying out service or maintenance work.

Disconnect all devices from AC mains power before servicing.

Refer any service operation not described in this user manual to Martin Service or an authorized Martin service agent.

Important! Excessive dirt buildup causes overheating and will damage the product. Damage caused by inadequate cleaning is not covered by the product warranty.

The user will need to clean the device periodically. The user can also install firmware in P3 PowerPort 2000 and 500 devices. All other service operations must be carried out by Martin Professional or an authorized Martin service agent.

Installation, on-site service and maintenance can be provided worldwide by the Martin Professional Global Service organization and its approved agents, giving owners access to Martin's expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product's lifetime. Please contact your Martin supplier for details.

Cleaning

Cleaning schedules vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for devices in the P3 PowerPort family. Cooling fans suck in airborne dust and smoke particles, and in extreme cases, the product and its air filters may require cleaning after surprisingly few hours of operation. Environmental factors that may result in a need for frequent cleaning include:

- Use of smoke or fog machines.
- High airflow rates (near air conditioning vents, for example).
- Presence of cigarette smoke.
- Airborne dust (from stage effects, building structures and fittings or the natural environment in outdoor locations, for example).

If one or more of these factors is present, inspect products within their first 25 hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation. If in doubt, consult your Martin dealer about a suitable maintenance schedule.

To clean a product in the P3 PowerPort family:

1. Shut down power to the device and allow it to cool for at least 15 minutes.
2. Use a vacuum cleaner or low-pressure compressed air to gently remove dust and loose particles from the outside of the device, paying special attention to fan grills and air vents. Take care not to direct the vacuum or air jet at cooling fan blades because this can spin the fan too fast and cause damage that is not covered by the product warranty. You can avoid this problem by holding fans still with a screwdriver while you are working.
3. Wipe the outside of the device with a cloth lightly moistened in a mild detergent solution. Do not splash with water. You can rinse an IP66-rated device with water, but do not direct a high-pressure water jet at the device. Do not use any product that contains abrasives or solvents.
4. Dry the device with a soft cloth before reapplying power.

Pressure equalization valves

Each P3 PowerPort 500 IP device has a pressure equalization valve (see illustrations for each device earlier in this manual). Check this valve visually from time to time. If it appears to be dirty, consult Martin Service for possible replacement.

Installing firmware

It may be necessary to upload new firmware to a P3 PowerPort device if it appears to have a firmware - related fault or if you want to update to a newer firmware version.

You can check the P3 PowerPort's currently installed firmware version using an RDM tool such as Martin Companion or a Martin P3 System Controller.

Firmware updates are available from the Martin website and can be downloaded automatically from within the Martin Companion software suite on a PC connected to the Internet. You can install firmware updates using a P3 system controller or Martin Companion connected to the devices.

Important! Do not switch the P3 PowerPort off or disconnect the source of the firmware during an update, or the firmware will be corrupted.

Installing using a PC running Martin Companion

The following are required in order to install firmware using a PC:

- A Windows PC running the latest version of the Martin Companion application (available for download free of charge from the Martin website at www.martin.com).
- The P3 PowerPort firmware file (the Martin Companion application will download this file automatically when you run Martin Companion on a PC with an Internet connection).
- A network cable with RJ45 connectors to connect the PC running Martin Companion to the P3 PowerPort(s).

To install the P3 PowerPort firmware:

1. Connect your PC to the Internet and launch the Martin Companion application. The application will automatically download the latest device firmware from the Martin cloud.
2. Read the firmware release notes carefully to check for any instructions or warnings.
3. Connect the PC running Martin Companion to the P3 PowerPort(s) using a standard network cable with RJ45 connectors:
    - You can connect this cable to the Ethernet ports on the P3 PowerPort 2000 and P3 PowerPort 500 IP Rental devices directly or connect it to the control data link at some convenient point upstream of these devices.
    - Since the P3 PowerPort 500 IP Install does not have Ethernet ports, it is easiest if you connect your PC to the control data link at a convenient point upstream of the device. For workshop use, you can connect a network cable temporarily to the terminals inside the connections compartment following the instructions in 'Connecting network data cables' on page 20.
4. Carry out a firmware upload from within the Martin Companion application (see the application's help files if necessary). Do not disconnect the Martin Companion network cable until the upload is complete.

Installing from a P3 System Controller

To install firmware in the P3 PowerPort from a Martin P3 System Controller, you must first download the latest P3 PowerPort firmware file automatically from the Martin cloud using the Martin Companion application running on a PC connected to the Internet. You must then import the firmware into the P3 System Controller. Once imported, you can use the P3 System Controller to upload the firmware to all the P3 PowerPort devices on the network that are powered on.

When you import new firmware into a P3 System Controller, it will automatically recognize old firmware in P3 PowerPort devices and suggest a firmware update.

When carrying out firmware updates, the P3 System Controller must be connected to devices via Ethernet cable as normal. Updating the firmware is a fairly intuitive process using the commands available in the controller interface. Any P3 PowerPort devices that are powered on will recognize that the P3 System Controller is offering a firmware update and prepare to receive the firmware.

Troubleshooting

Problem	Probable cause(s)	Remedy
Status LED lights constant red	Error has occurred	Check that system is correctly connected, set up and running. Hold TEST/RESET button pressed in until it turns blue, then release. This will reboot the P3 PowerPort device. Restart P3 system controller.
Product is completely dead	No power to product	Check that power is switched on and cables are plugged in.
	Fuse blown	Disconnect from power. Check – and if necessary replace – fuses following the instructions in this user manual. If a fuse blows repeatedly, disconnect from power and contact Martin Service or an authorized Martin service partner for assistance.
	Internal fault	Disconnect from power. Do not try to repair the device yourself. Contact Martin Service or an authorized Martin service partner for assistance.
Devices connected to one of the hybrid outputs are completely dead	Controller incorrectly setup	Check controller settings and rectify any problems.
	Poor connections	Check connections and rectify any faults.
	Circuit breaker has tripped (if this happens, the Power status LED for that output will not light)	Reset circuit breaker by sending command from controller or pressing multi-function button on front panel. If circuit breaker trips again: • Output may be overloaded. See user manuals of all connected devices. Check that devices are connected as specified and that the number of connected devices does not exceed the maximum permitted limit. • Output may be short-circuited. Check wiring and rectify any faults. If a circuit breaker trips repeatedly and you cannot find the cause, disconnect from power and contact Martin Service or an authorized Martin service partner for assistance.
	Internal fault	Disconnect from power. Do not try to repair the device yourself. Contact Martin Service or an authorized Martin service partner for assistance.
Creative LED products do not behave as intended	Bad DC power transmission	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Bad data transmission	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Incorrect device addressing	Check device addresses and settings at controller.
	Product in installation is defective and is disturbing data transmission	Substitute known good products one at a time until normal operation is regained. Have faulty product serviced by qualified technician.

Table 4: Troubleshooting

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Supplier's Declaration of Conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Interference-Causing Equipment Regulations

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Règlement sur le Matériel Brouilleur du Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

EU Declaration of Conformity

An EU Declaration of Conformity covering this product is available for download from the product's area of the Martin website at www.martin.com.

Disposing of the product

Martin products are supplied in compliance with Directive 2012/19/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), where applicable.

Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of Martin products