

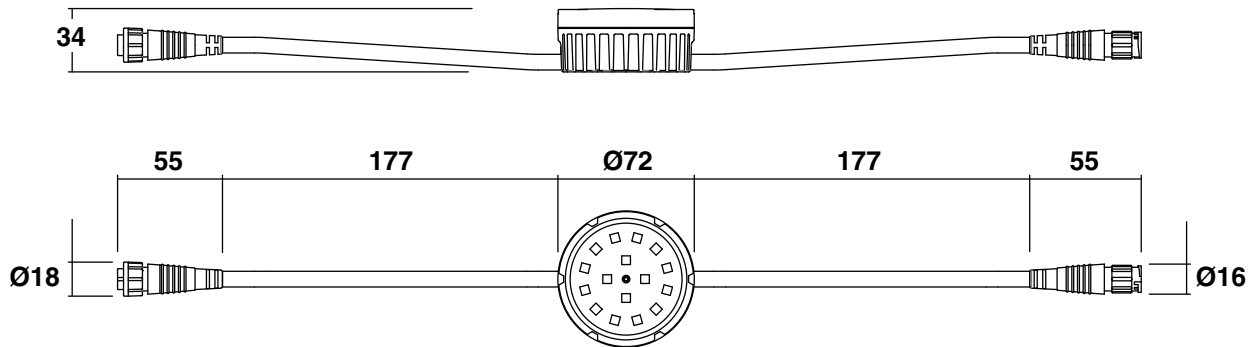
VDO Dotron

User Manual

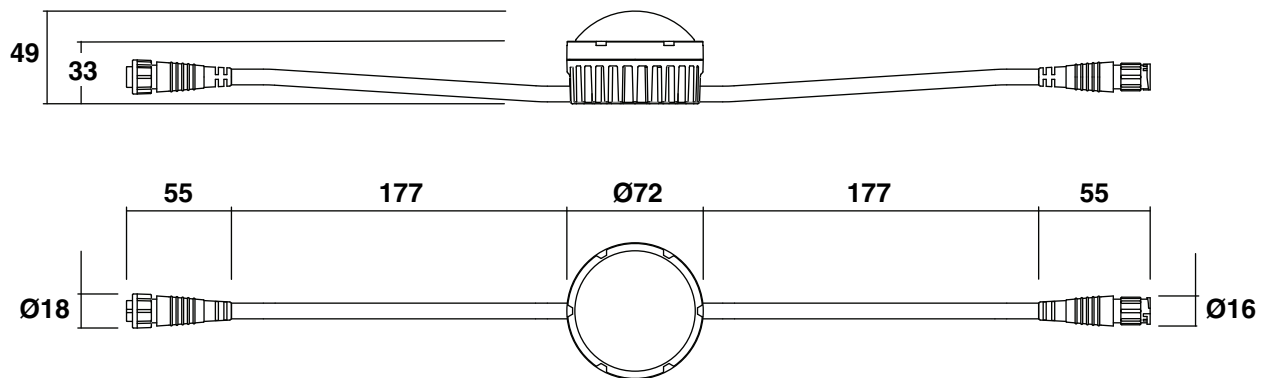


Dimensions

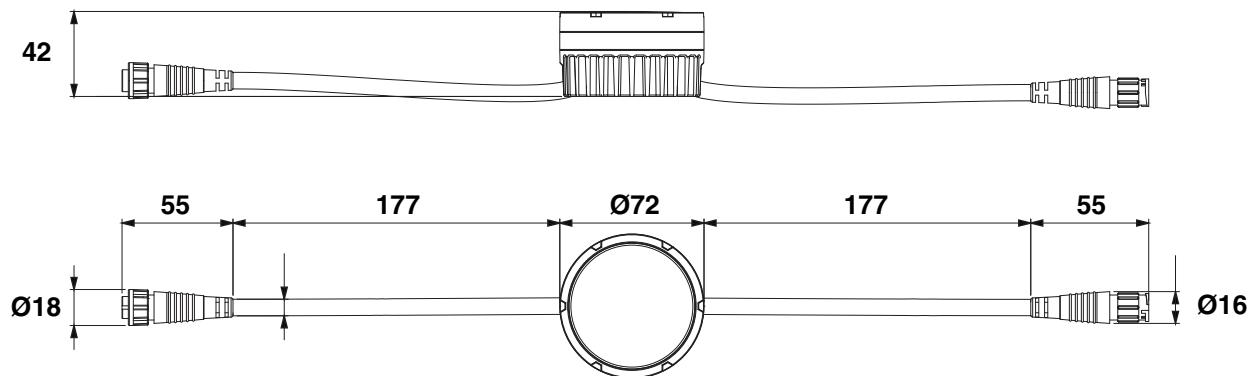
VDO Dotron, no diffuser / flat diffuser



VDO Dotron, diffuser dome front



VDO Dotron, directional lens array front



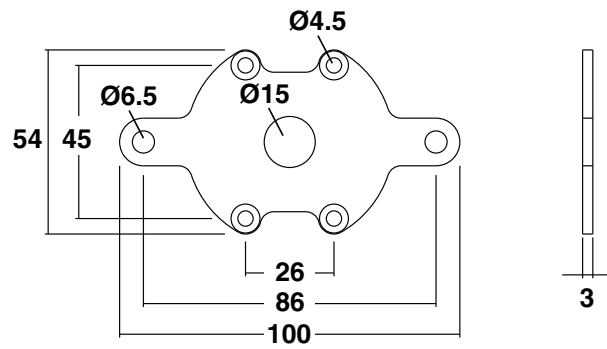
Direct dot-to-dot connection allows up to 0.5 m (19.6 in.) pixel pitch

All dimensions are in millimeters

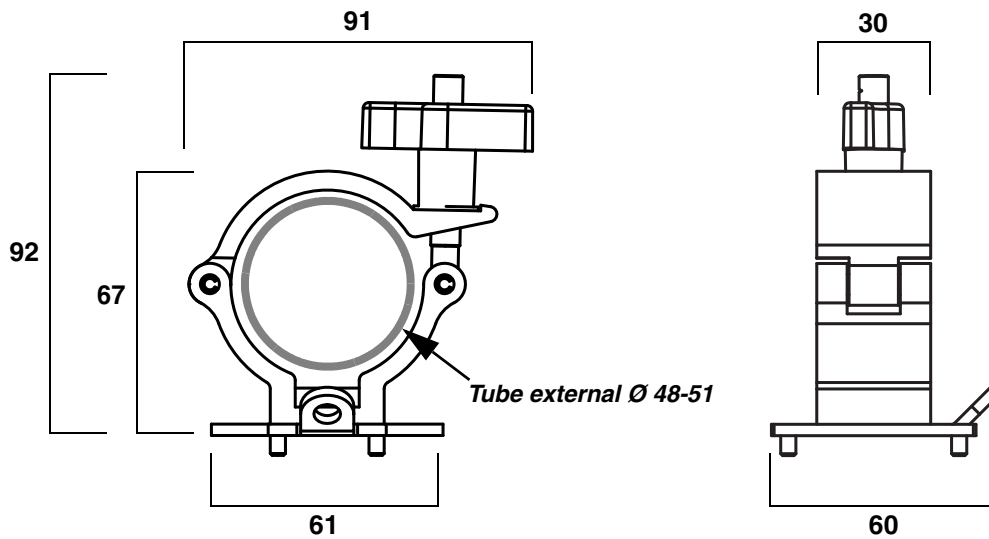
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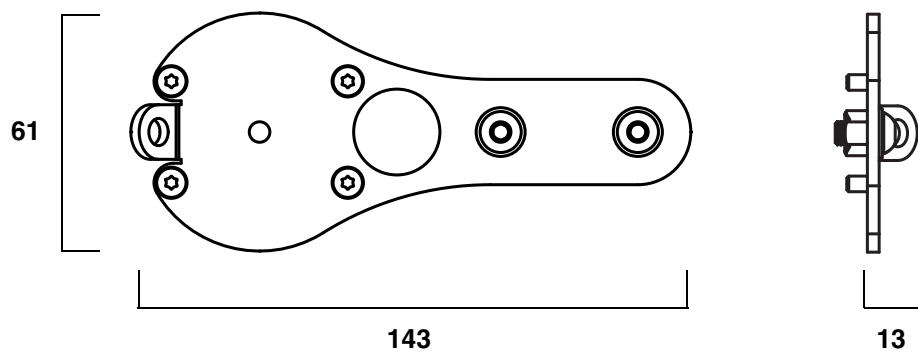
VDO Dotron Flange Bracket



VDO Dotron Half-coupler Rigging Clamp

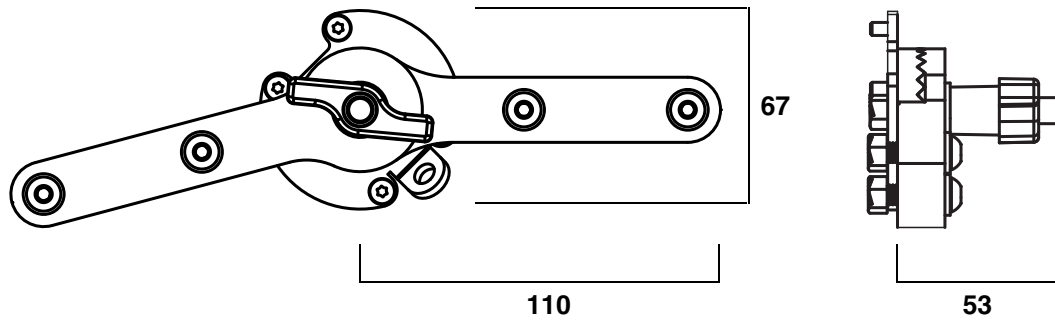


VDO Dotron to VDO Sceptron End Coupler



All dimensions are in millimeters

VDO Sceptron to VDO Dotron Pivot Coupler



All dimensions are in millimeters

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Safety information



WARNING!

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

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



Warning!
Safety hazard.
Risk of severe
injury or
death.



Warning!
Hazardous
voltage. Risk
of severe or
lethal electric
shock.



Warning!
Fire hazard.



Warning!
Burn hazard.
Hot surface
with risk of
burns.



Warning!
Refer to user
manual.



Warning!



- **Check the VDO Dotron Product Support / Tech Docs page on the Martin® website at www.martin.com and make the sure that you have the latest user documentation for the product. Martin® user manual revisions are identified at the bottom of page 2.**
- **Read the latest revision of the user manual before installing, operating or servicing the Martin® VDO Dotron.**
- **Follow the safety precautions given in this user manual and in the manuals of all the devices you connect to the product. Observe all warnings given in manuals and printed on devices. Make sure that everyone who is involved in working on or using the product has read and understood these safety precautions and warnings.**
- **Install, connect, operate and service devices only as described in this user manual and in connected devices' user documentation and only in accordance with local laws and regulations. All Martin® user documentation is supplied with devices and available for download from www.martin.com.**
- **This product is not for household use. It presents risks of severe injury or death due to fire and burn hazards, electric shock and falls. It must be installed by qualified technicians only.**
- **This product does not have user-serviceable parts. Refer any operation not described in this manual to Martin® Global Service or a Martin® authorized service agent.**

If you have any questions about how to operate this product safely, please contact your Martin® supplier or call the Martin® 24-hour service hotline on +45 8740 0000, or in the USA on 1-888-tech-180.



PROTECTION FROM ELECTRIC SHOCK

- Read and respect the directions given in the user documentation of all the devices that you intend to connect to the VDO Dotron, particularly the instructions, warnings and limits that apply to:
 - system layout,
 - connections to other devices,
 - specified cables,
 - maximum cable lengths, and
 - maximum number of devices that can be connected.
- Use only the cables specified in this manual and on the Martin® website at www.martin.com to interconnect devices in the installation. If the specified cables are not long enough for an intended cable run, consult Martin® for assistance in finding or creating a safe alternative solution.
- 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.
- Shut down power to the installation during service and when it is not in use.
- Before applying power to the installation, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.
- Isolate the installation from power immediately if any product, power cable or power plug is in any way damaged, defective, or if it shows signs of overheating.
- Do not immerse the VDO Dotron in water. Do not allow water to collect around the VDO Dotron or connectors.
- If you supply a chain of VDO Dotron dots with DC power from a **generic 48 VDC external PSU** and the DC output used does not have constant overcurrent protection that limits current to 7.5 A, install an inline fuseholder with a 7.5 A fuse on the circuit that you connect to that DC output.
- Do not allow the total number of dots in a linked chain of VDO Dotron dots to exceed the safe limits given in the tables in the following section of this manual.

Safety limits for connecting devices

Do not exceed the maximum safety limits given below and in the following tables.

- **The maximum permitted total length of a chain of VDO Dotron dots is 50 m (164 ft.).** When you calculate the total length of the chain, include the cable tails on dots (2 x 25 cm or 2 x 10 ins. per dot) plus the lead-in cable (cable between the DC power source and the first VDO Dotron dot), plus all extension cable added between dots.
- The maximum number of VDO Dotron dots that you can connect in one chain depends on the type of device used as DC power source. Do not exceed the limits given in the following sections.

Martin® P3 PowerPort 1500 safety limits

If you supply VDO Dotron dots with DC power from a Martin® P3 PowerPort 1500:

- Do not connect more than **one linked chain of VDO Dotron dots to one DC output** on the P3 PowerPort 1500. Since the P3 PowerPort 1500 has four DC outputs, you can connect a maximum of four chains of dots to one P3 PowerPort 1500.
- Do not connect more than **60 VDO Dotron dots maximum per DC output** on the P3 PowerPort 1500.

Martin® P3 PowerPort 1000 IP safety limits

If you supply VDO Dotron dots with DC power from a Martin® P3 PowerPort 1000 IP:

- Do not connect more than **one linked chain of VDO Dotron dots to one DC output** on the P3 PowerPort 1000 IP. Since the P3 PowerPort 1000 IP has four DC outputs, you can connect a maximum of four chains of dots to one P3 PowerPort 1000 IP.
- Do not connect more than **40 VDO Dotron dots maximum per DC output** on the P3 PowerPort 1000.

Martin® IP66 PSU 240W safety limits

If you supply VDO Dotron dots with DC power from a **Martin® IP66 PSU 240W external power supply unit**:

- Do not connect more than **one linked chain of VDO Dotron dots to the DC power output** of the Martin® IP66 PSU 240W.
- Do not connect more than **40 VDO Dotron dots maximum to the DC power output** of the Martin® IP66 PSU 240W.

Generic 48 VDC external PSU safety limits

If you supply a chain of VDO Dotron dots with DC power from a **48 VDC external PSU (power supply unit) that is not manufactured by Martin®**, you must not exceed the **maximum power rating of the output from the PSU** or **40 VDO Dotron dots**, whichever limit you reach first. Follow these instructions:

- Allow a power consumption of **5 watts per dot**. Calculate the total power consumption in watts of the dots in each chain you plan to create. Do not create a chain that will exceed the **maximum power rating of the PSU output** used to supply that chain with power. Each time the total power consumption in watts for one chain reaches the PSU output's maximum power rating, you must create a new chain of dots that is connected to a new 48 VDC power output. For example, if the PSU output is rated 100 W, do not connect more than 20 VDO Dotron dots to that output.
- Even if the maximum power rating of the PSU output is higher than 195 W, do not connect more than **40 VDO Dotron dots maximum per DC output** of the 48 VDC external PSU.
- This means that, each time you reach (a) the maximum total length of 40 fixtures in one chain, or (b) 50 m (164 ft.) total length of the chain, or (c) the PSU output's maximum power rating – **whichever you reach first** – you must create a new chain of fixtures that is connected to a new 48 VDC power output



PROTECTION FROM BURNS AND FIRE



- The VDO Dotron is cooled by convection. Provide free airflow and a minimum clearance of 10 mm (0.4 in.) around the product.
- Do not operate the VDO Dotron if the ambient temperature (Ta) exceeds 55° C (131° F).
- The surface of the product can become hot when in use. Take precautions to avoid accidental skin contact.
- Do not modify the VDO Dotron in any way not described in this manual or install other than genuine Martin® parts. Use only accessories approved by Martin®.



PROTECTION FROM INJURY

- Read carefully the chapter “Physical installation” on page 12 and respect the limits and instructions given in that chapter.
- Ensure that the installation hardware and supporting surface or structure can hold at least 10 times the weight of all the devices they support.
- Block access below the work area and work from a stable platform whenever installing, servicing or moving the VDO Dotron.
- Make sure that all items are securely installed, taking into consideration all possible environmental conditions including temperature variation and wind. Make sure that it is impossible for items to fall and cause injury or damage.
- Use grade 8.8 (or equivalent strength) fasteners that are suitable for their purpose and for the installation environment.
- Fasten VDO Dotron products to the supporting surface or structure with a minimum of two fasteners (screws, bolts, etc.) per product.
- Either use self-locking nuts or use lockwashers with standard nuts on all machine screws and bolts.

Introduction

Thank you for selecting a product from the Martin® VDO Dotron family. These compact LED-based display fixtures are designed to integrate into a Martin® P3 video system, where they can display video from a variety of sources. Each fixture forms one pixel in the video display. As well as video, the VDO Dotron can be controlled using a DMX lighting controller. Use of an RDM-compliant DMX controller such as the Martin® M-PC also allows two-way communication and remote management of VDO Dotron fixtures from the controller.

The VDO Dotron has an array of LEDs in a circular cast aluminum housing with a front cover that screws onto the unit to give a rugged IP65-rated dot.

Dots are supplied with a Diffuser Dome mounted, but the domes can be removed and replaced by any of the other optical accessories that can be ordered from Martin®: Flat, Flat Smoked, Dome, Dome smoked and Lens Array Narrow Fronts (see “Accessories” on page 35). For instructions for installing optical accessories, see “Service and maintenance” on page 28.

A hybrid (combined power and data) cabling system allows VDO Dotron dots to be daisy-chained for easy setup and minimal cabling.

The VDO Dotron system offers the following features:

- IP65-rated dots and connectors
- Fast, flexible mounting options
- Range of optical accessories that can be installed in seconds without tools
- Built-in FX with individual pixel control
- High-quality 16-bit per color image processing technology
- Pixel-level brightness and color calibration for optimal image quality
- P3 video and DMX lighting control with automatic protocol detection
- Intuitive pixel mapping and addressing using a controller from the Martin® P3 system controller range
- Single hybrid cable carrying both power and data
- External power and data processor from the Martin® P3 PowerPort range and simple cabling system
- Black anodized finish

For detailed dimensions drawings in various file formats of all the products in the VDO Dotron family, please see the VDO Dotron Tech Docs / Product Support pages on the Martin® website at www.martin.com

Martin® user documentation is supplied with products and available for download from www.martin.com, where you can also find the latest specifications, firmware updates and support information for all Martin® products. Before you install or use the VDO Dotron, please check www.martin.com and make sure that you have the latest user documentation for this product. Martin® user documentation revisions are identified at the bottom of page 2.

At Martin® we welcome input from users. Comments or suggestions regarding this manual can be e-mailed to service@martin.dk or posted to: User Documentation, Martin Professional ApS, Olof Palmes Allé 18, DK-8200 Aarhus N, Denmark.

Precautions to avoid damage

Important! To obtain the best performance from the VDO Dotron and avoid causing damage that is not covered by the product warranty, make sure that everyone who is involved in installing, working on or using the VDO Dotron has read and understood the following information.

Cleaning

Excessive dirt buildup causes overheating and may lead to damage that is not covered by the product warranty. Clean the product at regular intervals (see “Installing optical accessories” on page 28).

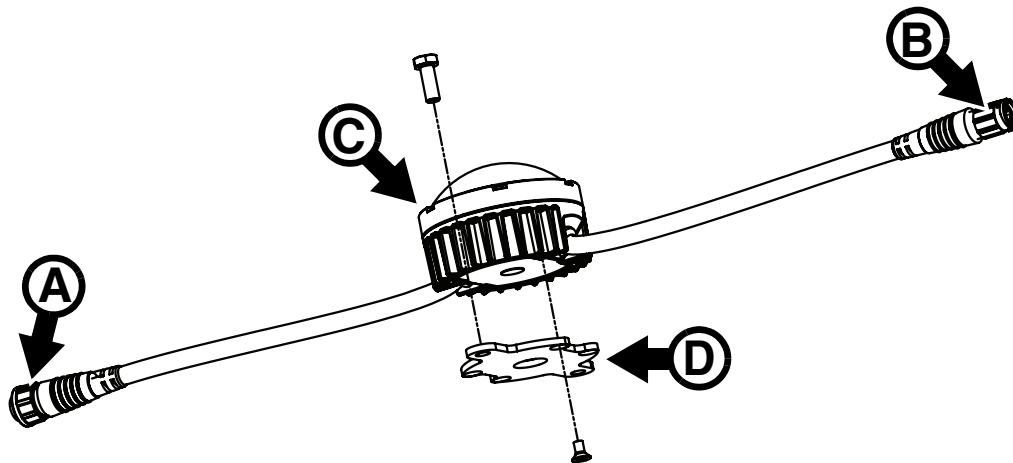
Operating temperature precautions

- Exposing the VDO Dotron to direct sunlight, or operating it in an ambient temperature that exceeds the specified maximum of 55° C (131° F) that applies while showing average video content, may reduce the lifetime of the product.
- When using a Martin® P3 System Controller, a Thermal Throttling feature is available. This feature gradually dims all the fixtures in the installation if one or more fixtures approaches maximum operating temperature. If you do not activate Thermal Throttling, the VDO Dotron's internal thermal protection will shut down the fixture if the fixture exceeds maximum operating temperature. The fixture will light again when its temperature has fallen to a safe level. To avoid blackouts due to thermal shutdowns, we therefore recommend that you activate Thermal Throttling.
- When using DMX control, VDO Dotron fixtures automatically begin to reduce their light output when the ambient temperature reaches 45° C in order to control their internal temperature. Output is reduced gradually as the ambient temperature rises above 45° C. Fixtures will still light at the maximum ambient temperature of 55° C, but output will be considerably reduced. This feature avoids blackouts due to protective thermal shutdowns.

Sealing unused connectors with blanking caps

Blanking caps for female BBD connectors can be ordered separately in sets of 10 (see “Connectors” on page 36). Install blanking caps on all unused female BBD connectors to seal them against water and dirt, otherwise short-circuits and damage may occur.

VDO Dotron overview



A - DC power + data male BBD-type input connector

C - Dot fixture

B - DC power + data female BBD-type output (thru) connector

D - Flange Bracket (optional accessory)

Figure 1: Overview

Physical installation



Warning! Read “Safety information” on page 6 before installing the VDO Dotron and read all of this ‘Physical installation’ chapter before starting work.

You can install VDO Dotron dots on a surface or structure using one of four methods:

- You can mount dots on VDO Dotron Flange Brackets and then fasten the Flange Brackets to the surface or structure.
- You can mount dots on VDO Dotron Half-Coupler Rigging Clamps and then fasten them to a rigging truss.
- You can mount dots on VDO Sceptron/Fatron End Couplers and fasten them to the end of VDO Sceptron or VDO Fatron creative video fixtures from Martin®.
- You can mount dots on VDO Sceptron/Fatron Pivot Couplers and fasten them between the ends of VDO Sceptron or VDO Fatron creative video fixtures from Martin®. The pivot couplers let you quickly lock the VDO Sceptron or VDO Fatron fixtures at an angle.

The VDO Dotron can be installed in any orientation.

Allow free airflow around dots and at least 10 mm (0.4 in.) of clearance around the front surface.

The VDO Dotron is designed to withstand water projections such as rainfall and low-pressure water jets and can be installed outdoors, but do not submerge it and do not install it in a location where water can build up around the dot or under the base of the dot. If necessary, provide drainage at the installation location.

Avoiding damage

Avoid causing damage that is not covered by the product warranty by following these instructions carefully.

Keeping connections dry

Moisture on connectors can cause short circuits and damage to products. Check that all connectors are perfectly dry before you connect them. Do not install the VDO Dotron during wet weather conditions or if condensation is visible on any surfaces.

Avoiding shocks and stress

Do not expose the VDO Dotron to physical shocks (by dropping onto a hard surface, for example).

Do not apply pressure to or otherwise stress diffusers or lenses.

Do not stress cables (by bending them sharply, for example). Protect cables from sharp edges.

Mounting on a surface

Mounting on a surface using Flange Brackets

The Flange Bracket available from Martin® as an optional accessory for the VDO Dotron (see “Accessories” on page 35) is a mounting plate that is recommended for installing dots on a flat surface.

All fasteners must be suitable for the application and environment. Steel fasteners must be grade 8.8 strength minimum. Stainless steel fasteners must be grade 304 (A2) or better. In marine environments, stainless steel fasteners must be grade 316 (A4) or better.

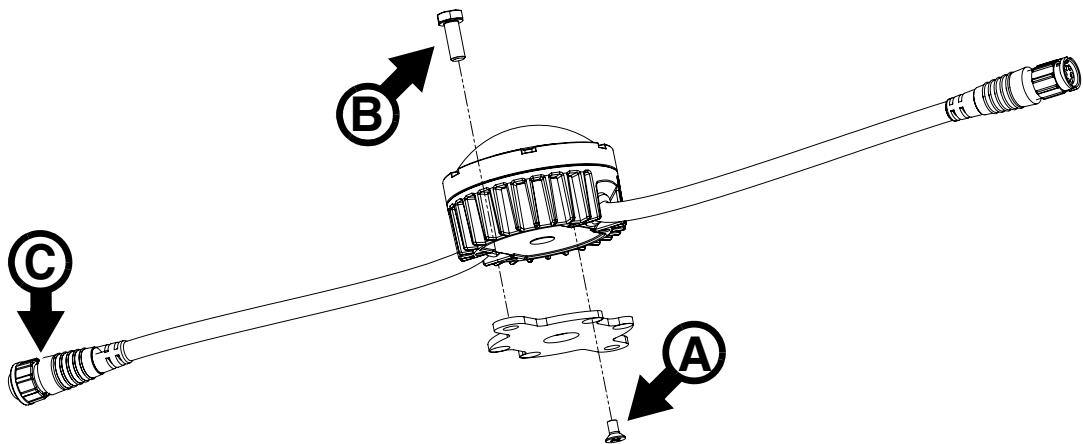


Figure 2: Installing using a Flange Bracket

To install an VDO Dotron using a Flange Bracket:

1. See Figure 2. Fasten the Flange Bracket to the base of the dot using the supplied M4 x 8 mm countersunk Torx screws **A** supplied with the Flange Bracket. Use a torque driver to tighten the screws to a torque of 2.5 Nm.
2. For each dot, obtain two grade 8.8 (or equivalent strength) M6 (or quarter-inch) fasteners (screws, screwbolts, etc.) **B** and screw plugs. You can use M6 machine screws and self-locking nuts if you have access to the back of the installation surface. Check that fasteners are suitable for the application and have appropriate corrosion resistance.
3. With reference to the dimensions drawings at the beginning of this manual, prepare two holes with centers 86 mm (3.4 in.) apart in the installation surface to accept two fasteners **B** passed through the holes in the Flange Bracket. Use screw plugs if necessary to ensure a secure installation.
4. Fasten the VDO Dotron and Flange Bracket assembly securely to the surface using two fasteners **B** per Flange Bracket.
5. Connect the dot's input connector **C** to the output connector of the previous device on the link, either directly or via a patch cable. Make sure that all connectors are correctly fastened together with locking rings twisted to ensure a seal.
6. Check that the dot is held securely before you leave it.

Installing directly on a surface

It is also possible to install the VDO Dotron directly on a flat surface if you have access to the back of the surface.

To install an VDO Dotron on a surface:

1. See Figure 3 (dimensions are in millimeters).
Pre-drill the surface with four holes to accept mounting screws.
2. Obtain four grade 8.8 (or equivalent strength) M4 x 8 mm machine screws or bolts for fastening into the back of the dot.
3. Apply a small amount of Loctite to the threads of the screws or bolts, then pass them through the surface and fasten them into the back of the dot. Use a torque driver to tighten to a torque of 2.5 Nm.
4. Connect the dot's input connector to the output connector of the previous device on the link, either directly or via a patch cable. Make sure that all connectors are correctly fastened together with locking rings twisted to ensure a seal.
5. Check that the dot is held securely before you leave it.

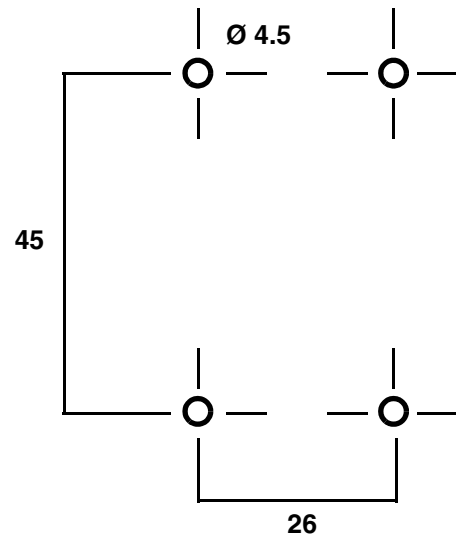


Figure 3: Dimensions for pre-drilling holes

Mounting on a rigging truss

You can mount VDO Dotron dots on a rigging truss or similar bar with a diameter of 48 - 51 mm using the VDO Dotron Half-coupler Rigging Clamp available from Martin® (see "Accessories" on page 35).

To mount a VDO Dotron on a rigging truss:

1. See Figure 5. Pass four grade 8.8 (or equivalent strength) non-countersunk M4 x 8 mm machine screws or bolts through the four holes **A** in a Dotron Half-Coupler Clamp and fasten the screws or bolts into the back of the dot. Use a torque driver to tighten to a torque of 2.5 Nm.
2. Loosen handle **B**, open the clamp and pass it around the chord of a rigging truss. Close the clamp and fasten handle **B**. Make sure that handle B is tight, but do not use tools: fasten by hand only.
3. Attach a safety cable or similar secondary attachment to attachment point **C** and to a secure anchoring point so that the safety cable will catch the VDO Dotron if the primary attachments fail.
4. Connect the dot's input connector to the output connector of the previous device on the link, either directly or via a patch cable. Make sure that all connectors are correctly fastened together with locking rings twisted to ensure a seal.
5. Check that the dot is held securely before you leave it.

VDO Dotron Half-coupler Rigging Clamp, P/N 91611802

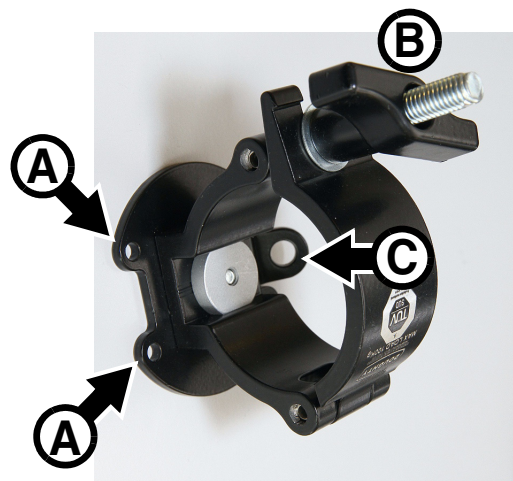


Figure 4: VDO Dotron Half-coupler Clamp

Installing with other Martin® creative video products

VDO Dotron dots can be fastened to other Martin® creative video products using coupler brackets available from Martin® (see “Accessories” on page 35).

Fastening to the end of a VDO Sceptron or VDO Fatron

To fasten a VDO Dotron to the end of a VDO Sceptron or VDO Fatron fixture:

1. See Figure 5. Pass four grade 8.8 (or equivalent strength) M4 x 8 mm countersunk screws through the four holes **A** in a Dotron to Sceptron End Coupler and fasten them into the back of the Dotron. Use a torque driver to tighten to 2.5 Nm.
2. Slide the two nuts **B** into the channel in the back of a Martin® Sceptron or Fatron fixture and tighten the two Allen bolts **C** into the nuts **B** to fasten the coupler to the fixture.
3. Attach a safety cable or similar secondary attachment to attachment point **D** and to a secure anchoring point so that the safety cable will catch the VDO Dotron if the primary attachments fail.

VDO Dotron to Sceptron End Coupler, P/N 91616071

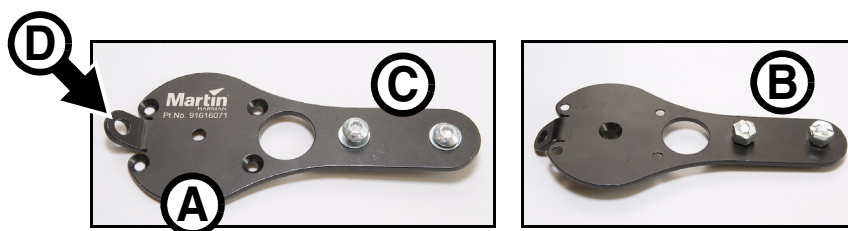


Figure 5: VDO Dotron to Sceptron End Coupler

4. Connect the dot's input connector to the output connector of the previous device on the link, either directly or inserting a relay cable. Make sure that all connectors are correctly fastened together with locking rings twisted to ensure a seal.
5. Check that the dot is held securely before you leave it.

Fastening between two VDO Sceptron or VDO Fatron fixtures

To fasten a VDO Dotron between the ends of two VDO Sceptron or VDO Fatron fixtures:

1. See Figure 6. Pass four grade 8.8 (or equivalent strength) M4 x 8 mm countersunk screws through the four holes **A** in a Dotron to Sceptron Pivot Coupler and fasten them into the back of the Dotron. Use a torque driver to tighten to 2.5 Nm.
2. Slide the nuts **B** into the channel in the back of a Martin® Sceptron or Fatron fixture and tighten the two Allen bolts **C** into the nuts **B** to fasten the coupler to the fixture.
3. Attach a safety cable or similar secondary attachment to attachment point **C** and to a secure anchoring point so that the safety cable will catch the VDO Dotron if the primary attachments fail.

VDO Dotron to Sceptron Pivot Coupler, P/N 91611793

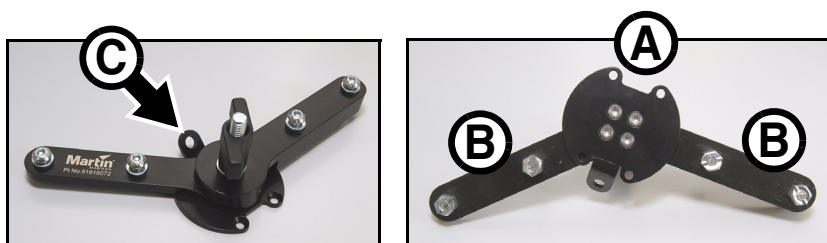


Figure 6: VDO Dotron to Sceptron Pivot Coupler

4. Connect the dot's input connector to the output connector of the previous device on the link, either directly or inserting a relay cable. Make sure that all connectors are correctly fastened together with locking rings twisted to ensure a seal.
5. Check that the dot is held securely before you leave it.

System installation



Warning! Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10 carefully before installing an VDO Dotron system.

Warning! Connect the VDO Dotron only to the devices and using only the Martin® cables specified in this manual.

Warning! Do not exceed the maximum numbers of devices that can be connected in chains and maximum cable lengths specified in “Protection from electric shock” starting on page 7 and in the manuals of the other devices in the system.

Important! If using DMX, make sure that the DMX console and DC power source are at the same earth (ground) potential, or the data signal may become saturated.

The VDO Dotron is designed to display either Martin® P3 video or DMX-controlled lighting effects. It automatically recognizes and responds to either a Martin® P3 or a DMX data signal. The next sections explain how to create an VDO Dotron installation to display P3 video data or DMX-controlled lighting effects.

Installing a P3 system

See Figure 8 for an overview of the elements and layout of a Martin® P3 video display system.

To install a system that displays P3 video on VDO Dotron dots, see the overview in Figure 8 and follow these directions:

1. Make sure that no devices in the installation can be connected to AC mains power until all installation work is complete.
2. Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10.
3. Connect VDO Dotron dots together in chains either directly using the dots’ cable tails and BBD connectors or by adding Martin® hybrid cables with BBD connectors (see “Cables” on page 35).
Warning! Do not exceed the maximum number of dots per chain given in “Safety limits for connecting devices” on page 7.
4. Install a blanking cap (see “Connectors” on page 36) on the output connector of the last dot on each chain to protect from water, dirt etc.
5. Connect each chain of VDO Dotron dots to one of the four 4-pin female XLR hybrid (48 VDC power + P3 data) outputs on a P3 PowerPort 1500 using a Martin® hybrid 4-pin male XLR to BBD adapter cable, P/N 91616046 (see Figure 7). Alternatively, connect each chain of VDO Dotron dots to one of the 4 outputs on a P3 PowerPort 1000 IP.

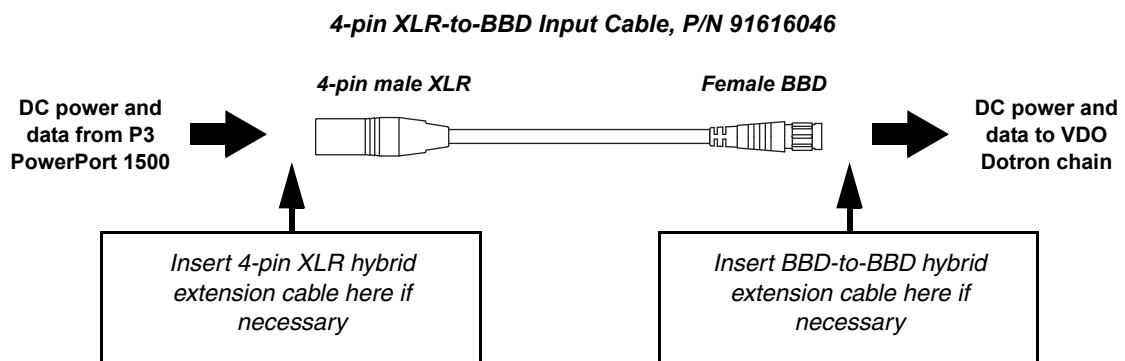


Figure 7: Power and P3 video data input

6. If necessary, add a BBD-to-BBD extension cable between the first dot and the P3 PowerPort. Suitable extension cables are available from Martin® in various lengths. See “Cables” on page 35.
7. Create a P3 video data link from a Martin® P3 system controller such as the P3-150, P3-150, P3-300 or P3 PC to the P3 PowerPort 1500 or P3 PowerPort 1000 IP (see the products’ user manuals for details).
8. It is possible to connect P3 PowerPort devices in daisy-chains in a P3 network, but if you are using multiple P3 PowerPorts in a fixed installation we recommend that you distribute the P3 signal by

connecting an unmanaged Gigabit Ethernet switch to the P3 System Controller and then connecting each P3 PowerPort directly to the switch. This eliminates the risk of one P3 PowerPort signal failing and causing loss of signal to the P3 PowerPorts daisy-chained behind it.

9. Connect the P3 PowerPort to AC mains power at 100 - 240 V, 50/60 Hz as described in its user manual.
10. connect the P3 system controller to AC mains power and power the controller on.

You can now configure the system at the P3 controller. See "System setup" on page 23.

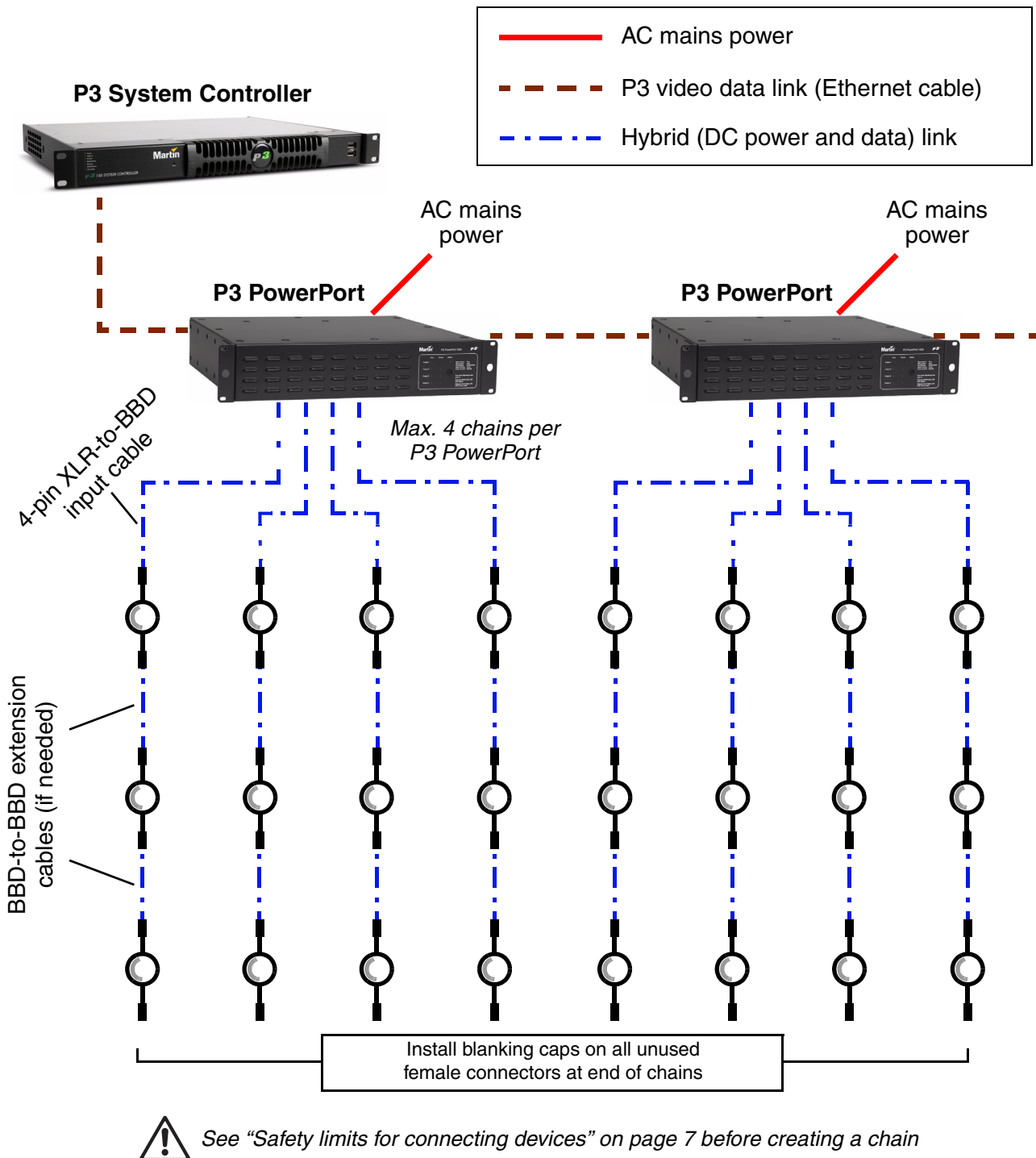


Figure 8: P3 system layout

Installing a DMX-controlled system

In a DMX-controlled system, an RDM-compliant DMX lighting controller sends a DMX control data signal over a DMX link to the installation, and then over the hybrid link to the VDO Dotron dots.

The DMX link requires DMX cable. It can be maximum 300 m (1000 ft.) in length and must run in one single daisy-chain, but it can be extended or split into branches using an RDM-compliant amplifier/splitter such as the Martin® RDM 5.5 Splitter (P/N 90758150). Alternatively, you can run the DMX signal from the controller over Ethernet cable using Art-Net protocol and convert it to a DMX-compliant signal with an Art-Net to DMX converter.

If you would like assistance with creating a DMX link, your Martin® supplier will be glad to advise.

The number of VDO Dotron dots that you can control on one DMX link is limited by the number of DMX channels the dots will use and the 512 DMX channels available in one DMX universe at the DMX controller. Each time you have used 512 channels, you must create a new DMX link that is connected to a new DMX universe on the controller. Note that this limit applies to the *DMX link*. The maximum safety limits that apply to the chain of dots and cable (see “Safety limits for connecting devices” on page 7) take priority and must be respected in all cases.

If you need to take the DMX signal from the end of a chain of VDO Dotron dots, connect a DMX Lead-out Cable (see “Cables” on page 35) to the output connector of the last dot on the chain. The Lead-Out Cable has a 5-pin female XLR connector with standard DMX pinout (pin 1 = shield, pin 2 = data cold/negative, pin 3 = data hot/positive, pins 4 and 5 are not used) that lets you draw off the DMX signal.

DC Power options in DMX installations

A DMX-controlled VDO Dotron installation can be supplied with DC power from the Martin® IP66 PSU 240W external power supply unit (previously called the Martin® Tripix Power IP66) or from a generic external PSU (the Mean Well SP-480 48, for example).

The hardware and cables required are slightly different depending on which type of PSU you use to supply the installation with DC power. The two different types of installation are covered in the next two sections:

- If you are using a Martin® IP66 PSU 240W, see “Installing a DMX system using the Martin® IP66 PSU 240W” on page 19.
- If you are using a generic 48 VDC PSU, see “Installing a DMX system using a generic external 48 VDC PSU” on page 21.

Installing a DMX system using the Martin® IP66 PSU 240W

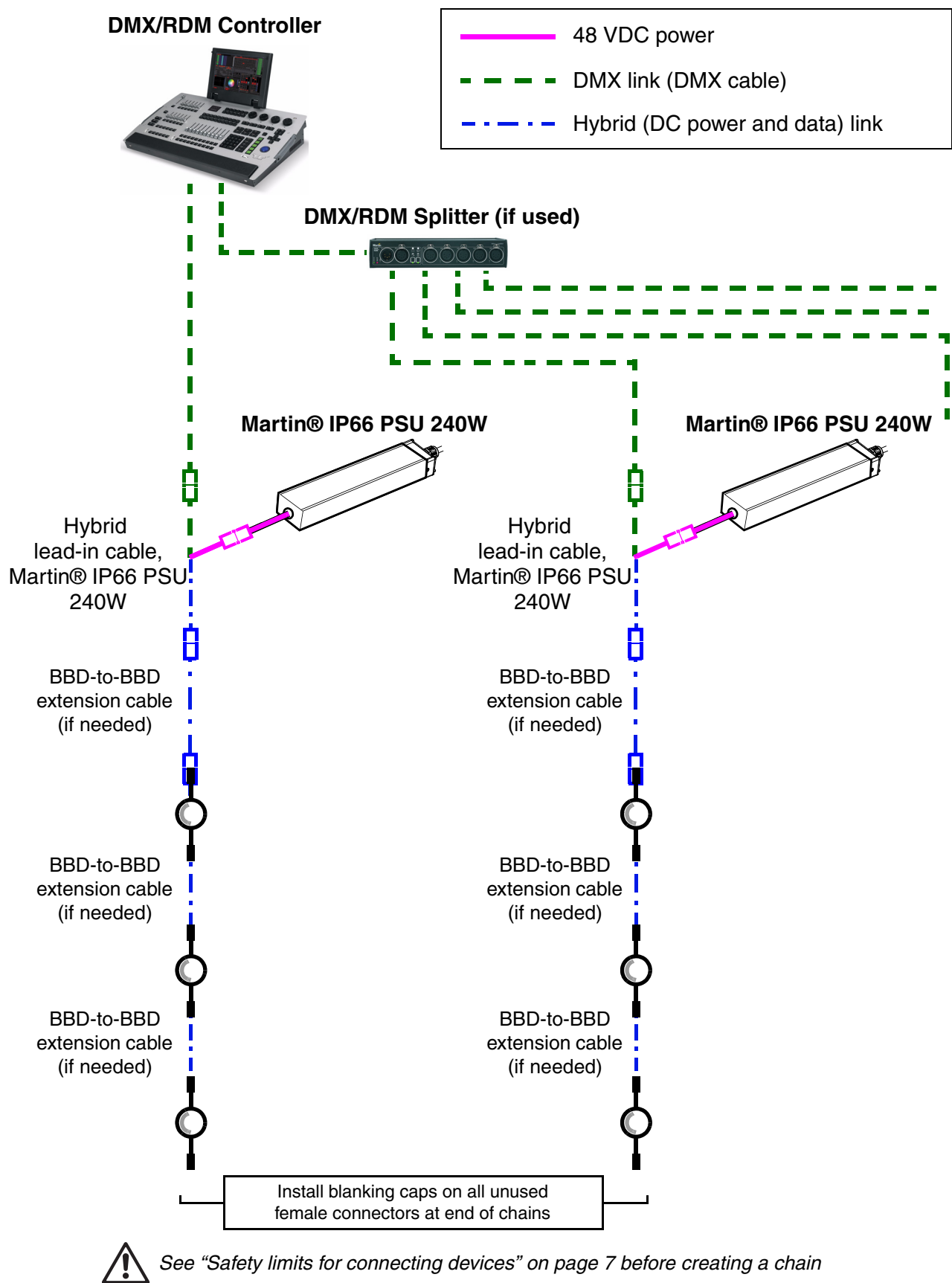


Figure 9: DMX-controlled system using the Martin® IP66 PSU 240W

To create a DMX-controlled installation that draws DC power from the Martin® IP66 PSU 240W external power supply unit:

1. See Figure 9 on page 19 for an overview of this type of installation
2. Make sure that no devices in the installation can be connected to AC mains power until all installation work is complete.
3. Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10.
4. Connect VDO Dotron dots together in chains either directly using the BBD connectors on the dots’ cable tails or by adding Martin® hybrid BBD-to-BBD extension cables (see “Cables” on page 35).

Warning! Do not exceed the maximum number of dots per chain given in “Martin® IP66 PSU 240W safety limits” on page 7.

5. Install a blanking cap (see “Connectors” on page 36) on the output connector of the last dot on each chain to protect from water, dirt etc. There is no need to install DMX termination plugs, as dots have integral DMX termination.
6. See Figure 10. Connect a Martin® 5-pin XLR and Martin® IP66 PSU to BBD adapter cable (P/N 91616050) to the start of each chain.
 - Connect the 5-pin male XLR connector on the adapter cable to a DMX link that carries a DMX signal from an RDM-compliant DMX controller such as the Martin® M-PC.
 - Connect the male Martin® IP66 PSU connector on the adapter cable to the DC output of a Martin® IP66 PSU 240W external power supply unit.
 - Connect the female BBD connector on the adapter cable to the male BBD connector at the start of the chain of VDO Dotron dots.

XLR5+Martin® IP66 PSU-to-BBD Input Cable, 0.25 m, P/N 91616050

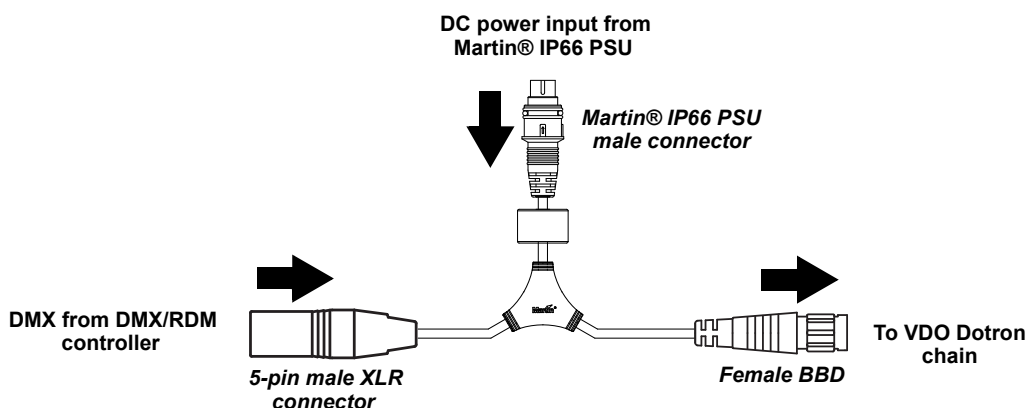
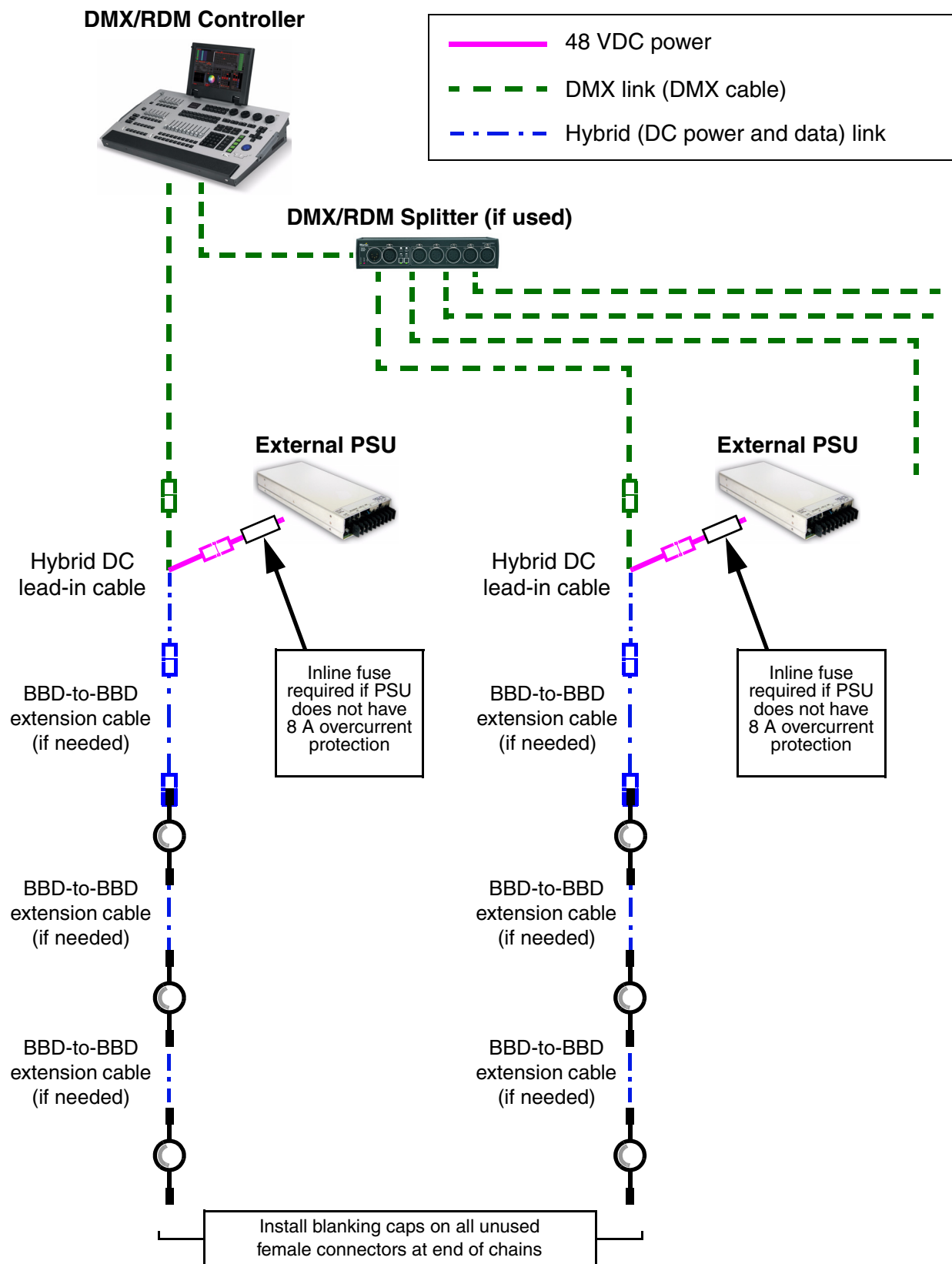


Figure 10: Martin® IP66 PSU and DMX connections to an VDO Dotron chain

7. Install a mains power cable on the Martin® IP66 Power Supply Unit and connect it to AC mains power.
8. Apply AC mains power to the DMX controller.

You can now configure the system. See “System setup” on page 23.

Installing a DMX system using a generic external 48 VDC PSU



See "Safety limits for connecting devices" on page 7 before creating a chain. Do not exceed PSU output rating.

Figure 11: DMX-controlled system using a generic PSU

Warning! If you decide to use any other external PSU than the Martin® devices listed earlier in this section, you must verify that the combination of equipment used is compliant with all applicable safety and electromagnetic compatibility regulations.

To create a DMX-controlled installation that draws DC power from a generic PSU:

1. See Figure 11 on page 21 for an overview of this type of installation.
2. Make sure that no devices in the installation can be connected to AC mains power until all installation work is complete.
3. Read "Safety information" starting on page 6 and "Precautions to avoid damage" on page 10.
4. Connect VDO Dotron dots together in chains either directly using the BBD connectors on the dots' cable tails or by adding Martin® BBD-to-BBD hybrid extension cables (see "Cables" on page 35).

Warning! Check the PSU's DC output power rating in watts and the power consumption figures in watts for VDO Dotron dots with reference to "Generic 48 VDC external PSU safety limits" on page 8. Do not create a chain of VDO Dotron dots that will exceed the power rating of the DC output on the PSU.

5. Install a blanking cap (see "Connectors" on page 36) on the output connector of the last dot on each chain to protect from water, dirt etc.
6. See Figure 12:
 - If the PSU does not have constant overcurrent protection that will limit current to 8 A on the DC output used, install an inline fuseholder with a 7.5 A fuse on the white (+ve) power wire of a Martin® Power and Data Adapter Cable, XLR5 + power - BBD, 0.25 m (P/N 91616048). You can use a 30 amp automotive-type inline fuseholder with a 7.5 A blade fuse.
 - Connect the 5-pin male XLR connector on the power and data adapter cable to a DMX link that carries a DMX signal from an RDM-compliant DMX controller such as the Martin® M1 or M-PC.
 - Connect the power wires on the power and data adapter cable to a DC output on the PSU. Connect the white wire to positive (+ve) and the black wire to negative (-ve).
 - Connect the female BBD connector on the adapter cable to the male BBD connector at the start of the chain of VDO Dotron dots.

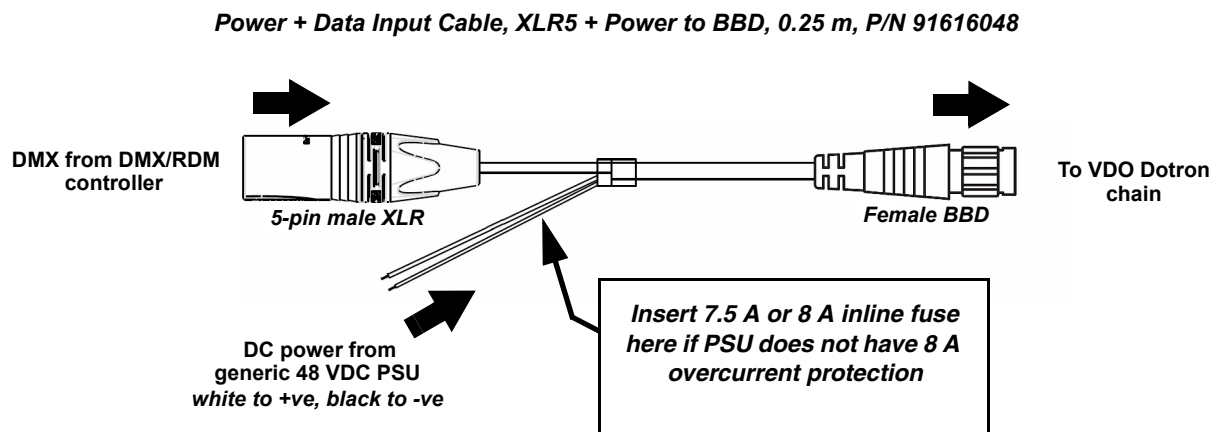


Figure 12: Generic PSU and DMX connections to an VDO Dotron chain

7. Apply AC mains power to the external PSU.
8. Apply AC mains power to the DMX controller.

You can now configure the system. See "System setup" on page 23.

System setup



Warning! Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10 before applying power to an VDO Dotron installation.

Setting up for P3 display

A Martin® P3 system allows video to be displayed on an installation that consists of or includes VDO Dotron dots. When a P3 controller is connected to the data link and the installation is powered on, you can set up all the devices on the link from the P3 controller. See the P3 controller user manual for details.

Setting up for DMX control

A DMX system gives 0 - 100% variable intensity control. Varying the intensity of red, blue and green LEDs in RGB products gives RGB color mixing.

You can set up and control an VDO Dotron installation over the data link using an RDM-compatible DMX controller such as the Martin® M-PC Windows application (running on a PC connected to a USB/DMX interface such as the Martin® M-DMX Interface Box) or the Martin® M1 DMX/RDM control console. The interface on the Martin® M1 monitor screen is basically identical to the Martin® M-PC interface.

DMX control channels

DMX controllers send control data to devices over DMX control channels in DMX universes. One DMX universe has 512 channels available. Multiple dots can share the same DMX channels if you want grouped control and identical dot behavior.

The VDO Dotron can be controlled using two DMX modes (see under “DMX protocols” on page 31):

- In RGB mode, each dot uses three DMX channels.
- In Basic mode, each dot uses ten DMX channels.

Different modes can be mixed freely in an installation. For example, some VDO Dotron dots can be set to RGB mode and others to Basic mode. All you need to do is set up dots, DMX addresses and DMX channel allocation correctly.

DMX addresses

To prepare an installation for DMX control, you set it up using an RDM-compliant DMX controller so that dots or pixels receive instructions from the controller on their own DMX channels. The DMX address (also known as the control address or start channel) is the first of these channels. An VDO Dotron dot or pixel uses more than one channel, so it uses the DMX address channel and the channels immediately above it. For example, one VDO Dotron dot set to RGB mode and set to DMX address 1 will use DMX channels 1 - 3. Channel 4 will be available for use as a DMX address for the next device.

RDM

Using an RDM-compliant DMX controller such as Martin® M-PC, you can communicate with the VDO Dotron dots on the DMX data link via RDM. You can:

- Retrieve data from dots
- Set the DMX addresses of the dots and set their DMX mode
- Reset dots

To use Martin® M-PC, connect a PC running this application to the data link using the Martin® M-DMX USB/DMX interface box.

The VDO Dotron responds to the RDM parameter IDs listed in Table 1.

RDM parameter IDs	GET allowed	SET allowed
Category – Network Management		
DISC_UNIQUE_BRANCH		
DISC_MUTE		
DISC_UN_MUTE		
Category - Product Information		
DEVICE_INFO	✓	
DEVICE_MODEL_DESCRIPTION	✓	
MANUFACTURER_LABEL	✓	
DEVICE_LABEL	✓	✓
SOFTWARE_VERSION_LABEL	✓	
Category - DMX512 Setup		
DMX_PERSONALITY	✓	✓
DMX_PERSONALITY_DESCRIPTION	✓	
DMX_START_ADDRESS	✓	✓
SLOT_DESCRIPTION	✓	
Category - Control		
IDENTIFY_DEVICE	✓	✓
RESET_DEVICE		✓

Table 1: RDM communication with the VDO Dotron

Using the VDO Dotron



Warning! Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10 on before applying power to the VDO Dotron.

Do not use the VDO Dotron if the ambient temperature exceeds 55° C (131° F) or falls below -20° C (-4° F).

Thermal regulation

The VDO Dotron dot has a protective thermal shutdown feature that blacks out the dot if it exceeds its permitted maximum operating temperature.

To avoid unexpected blackouts due to thermal shutdowns but also avoid overheating that may damage the product, the VDO Dotron offers various options for managing temperature:

- During P3 video operation, you can enable the thermal regulation feature available in the software of all Martin® P3 system controllers. When this feature is active, VDO Dotron dots begin to reduce their light output when the ambient temperature reaches 45° C in order to control dot temperature. Output is reduced gradually as the ambient temperature rises above 45° C. Dots will still light at the maximum ambient temperature of 55° C, but output will be considerably reduced. This option avoids blackouts due to protective thermal shutdowns.
- During P3 video operation, you can disable the P3 controller thermal regulation feature. If you choose to do this, VDO Dotron dots will not reduce their light output when the ambient temperature reaches 45° C, but if you drive dots hard when the ambient temperature approaches or exceeds 55° C, dots may black out completely due to protective thermal shutdown.
- During DMX operation, the VDO Dotron dots begin to reduce their light output when the ambient temperature reaches 45° C in order to control dot temperature. Output is reduced gradually as the ambient temperature rises above 45° C. Dots will still light at the maximum ambient temperature of 55° C, but output will be considerably reduced. This option avoids blackouts due to protective thermal shutdowns.

P3 display

The VDO Dotron can display video from all common video sources. The video signal must be sent to a Martin® P3 controller and then distributed to dots. The P3 controller lets you map, configure and control an installation containing VDO Dotron dots (and other Martin® P3 video display products if you have them). See the P3 controller documentation for details.

DMX control

The VDO Dotron can display effects controlled by DMX. Three DMX modes are available:

- **RGB mode** uses three DMX channels and gives RGB color mixing of all the pixels on a dot.
- **Basic mode** uses ten DMX channels and gives RGB color mixing, strobe effects and pre-programmed dynamic effects.

See “DMX protocols” on page 31 for full details of DMX control.

An RDM-compatible DMX controller is required so that you can address and configure the dots. See the DMX/RDM controller documentation for details.

Magnetic ‘control button’

A magnetic sensor is embedded inside the VDO Dotron behind the label on the back of the dot (see **C** in Figure 1 on page 11). The sensor acts as a control button. To activate the sensor, swipe a magnet past the side of the dot near where the input cable tail enters the dot.

You may find it convenient to use the Martin® Test Tool (see “Accessories” on page 35), which contains a magnet.

Activating the magnetic sensor lets you display the product’s status, test the LEDs and reset the VDO Dotron as explained in the following table.



Figure 13: Test Tool with magnet

Status display

To display a VDO Dotron dot’s status, swipe the magnet over the sensor once. The LEDs on the dot will give one of the indications listed in the tables below for a few seconds.

Color	Output	Indication	Action required
Blue	Constant	Busy (e.g. booting up or writing to flash memory).	Wait a moment for normal operation to be resumed.
Red	Constant	Error. The VDO Dotron has encountered a fatal error and can not run.	Perform a factory reboot, followed by a firmware upload if necessary.
Red	Flashing	No control source detected.	Connect a P3 system controller or DMX controller to the network.
Green	Flashing	Ready. VDO Dotron connected to P3 controller but not mapped onto the canvas.	Set up the P3 controller to use the VDO Dotron.
Green	Constant	Running normally in P3 mode.	None.
Cyan	Flashing	Ready. VDO Dotron in DMX mode but not receiving valid DMX data signal.	Send DMX data (if flashing cyan continues although you are sending data, check that DMX controller is connected and configured with dot’s DMX address).
Cyan	Constant	Running normally in DMX mode.	None.

Table 2: Status information

Testing, rebooting and returning to defaults

The table below lists the functions of the magnetic 'control button' on each VDO Dotron dot.

Test patterns are stored in onboard memory. This lets you test the LEDs without an external controller, but test patterns can also be called up on P3 system controllers, the P3 PowerPort 1500 and the P3 PowerPort 1000 IP.

Action	Function
Quick swipe	The first swipe displays status as shown in Table 2 for a few seconds. The next swipes display the following test patterns on the LEDs (each swipe scrolls to the next pattern): <ul style="list-style-type: none">- Calibrated white- Full red- Full green- Full blue- Scrolling gradient- Dimmed (20% raw white)
Hold magnet over 'button' until LEDs light blue	Reboot the VDO Dotron.
Hold magnet over 'button' until LEDs light white	Return the VDO Dotron to its default factory firmware.

Table 3: Magnetic 'control button' functions

Service and maintenance



Warning! Read “Safety information” on page 6 and “Precautions to avoid damage” on page 10 before carrying out service on the VDO Dotron.

Warning! Lock out AC mains power to the installation before servicing.

Warning! Refer any service operation not described in this manual to a qualified service technician.

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

The user will need to clean the VDO Dotron periodically. All other service operations on the VDO Dotron must be carried out by Martin Professional or its approved service agents.

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.

Installing optical accessories

Installing one of the optical accessories available from Martin® for the VDO Dotron takes a few seconds. No tools are required.

Install optical accessories in dry conditions only.

To install an optical accessory:

1. If dots have been in use, allow them to cool.
2. Unscrew the VDO Dotron's front cover and lift it off the dot.
3. Remove any existing accessory and install the new accessory. If installing a Lens Array accessory, see below.
4. Screw the front cover back onto the dot. Make sure that the cover is tight but do not use tools: use hand force only to tighten.

Installing a Lens Array Front

To install an Lens Array accessory:

1. If dots have been in use, allow them to cool.
2. Unscrew the VDO Dotron dot's front cover **A** and lift it off the dot.
3. Remove any optical accessory that is already fitted over the LEDs.
4. See Figure 14. Note the position of the three locating posts in the Lens Array **C** and the three corresponding locating lugs in the top of the dot **B**. This will ensure that each lens in the array sits directly over an LED in the dot. Place the Lens Array onto the dot with its flat side facing upwards and rotate it so that each locating post in the Lens Array fits around a lug in the top of the dot.
5. Without disturbing the position of the Lens Array, screw the front cover back onto the dot. Make sure that the cover is tight but do not use tools: use hand force only to tighten.

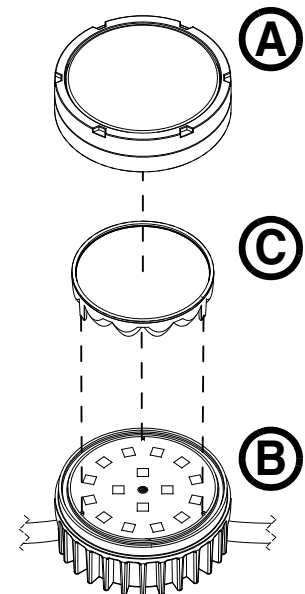


Figure 14: Installing a Lens Array Front

Cleaning

Cleaning schedules vary depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the VDO Dotron. Environmental factors that may result in a need for frequent cleaning include airborne dust and pollution.

Inspect products frequently to see whether cleaning is necessary. If in doubt, consult your Martin® dealer about a suitable maintenance schedule.

To clean the product, use warm water and a soft brush or a low-pressure or medium-pressure water jet. Use car shampoo to help remove dirt and grease. If possible, dry with a soft cloth to avoid streaking. Do not use a stiff brush or scouring pad. Do not use solvents or abrasives.

LED performance

Martin® use the best components available, but the characteristics of all LEDs change gradually over many thousands of hours of use. Not all colors change at the same rate, and rates of change vary depending on factors such as temperature and how intensively a particular color is used. Because of the changes, overall light output and the exact hues obtained from specific color mixes in all LED-based products can be expected to shift slightly over time.

To help you obtain consistent output despite these changes, Martin® P3 software from version 4.1.0 contains the P3 Fixture Adjuster tool. This feature lets you compensate for changes in LED characteristics and restore initial output and color authenticity levels. Please contact Martin® for more details.

Installing new software

It may be necessary to upload new software (i.e. device firmware) to the VDO Dotron if it appears to have a software-related fault or if you want to update to a newer software version.

Software for Martin® products is available from the Martin® website. The VDO Dotron software can be installed from the P3 System Controller over the P3 data link. You will need a Martin® P3 PowerPort 1500 or a Martin® P3 PowerPort 1000 IP for this. See the P3 System Controller user manual for software installation instructions.

Troubleshooting

Problem	Probable cause(s)	Remedy
Control is lost and activating magnetic 'control button' causes VDO Dotron to show constant or flashing red status indication.	Error has occurred.	Check that system is correctly connected, set up and running. Hold magnet over 'control button' until LEDs 1 - 4 turn blue, then move magnet away, to reboot VDO Dotron. Restart P3 or DMX controller.
Product seems completely dead.	Product has gone into thermal protection shutdown.	Check product temperature readouts on P3 system controller. Reduce ambient temperature by providing ventilation or fan cooling, for example.
	No DC power to product.	Check 48 VDC power supply and cables
	Internal fault.	Disconnect from power. Do not attempt repairs yourself. Contact Martin® Service or an authorized Martin® service partner for assistance.
VDO Dotron does not display as intended.	Fault in 48 VDC power transmission.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Fault in data transmission.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables. If using DMX, check that DMX console and DC power supply unit are at same earth (ground) potential.
	Incorrect mapping or addressing of products.	Check product address and controller settings.
	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 Martin® Service.

Table 4: Troubleshooting

DMX protocols

RGB Mode

Channel	DMX Value	Function
1	0 - 255	Red 0 → 100%
2	0 - 255	Green 0 → 100%
3	0 - 255	Blue 0 → 100%

Table 5: DMX Protocol, RGB Mode

Basic Mode

Channel	DMX Value	Function
1	0 - 65535	Dimmer fade (MSB) 8-bit coarse control, closed 0% → open 100%
2		Dimmer fade (LSB) 16-bit fine adjustment, closed → open
3	0 - 49 50 - 200 201 - 210 211 - 255	Strobe No strobe Strobe, slow → fast No strobe Random strobe, slow → fast
4	0 - 255	Strobe duration 0 → 1 second
5	0 - 7 8 - 255	FX selection No FX: output controlled on RGB channels FX selection (see “Pre-programmed FX” on page 32)
6	0 - 126 127 - 128 129 - 255	FX speed / modifier (depending on effect) Fast → slow Stop Slow → fast
7	0 1 2 3 - 34 35 36 37 - 100 101 - 120 121 - 140 141 - 255	FX synchronization No sync Dot offset 10° Dot offset 10° ... Dot offset 350° Synchronized <i>No function (reserved for future use)</i> Random start Random duration <i>No function (reserved for future use)</i>
8	0 - 255	Red 0 → 100%
9	0 - 255	Green 0 → 100%
10	0 - 255	Blue 0 → 100%

Table 6: DMX Protocol, Basic Mode

Pre-programmed FX

Select the FX in this table on channel 5 in Basic Mode.

Set FX execution speed on channel 6.

Synchronize and set offsets between dots on channel 7.

Channel	DMX Value	Function
5	0	No FX
		Intensity FX
	1	Wave
	2	Step
	3	Pulse
	4	Blackout strobe
	5	2x strobe
	6	3x strobe
	7	4x strobe
	8	Up, down flash
	9	Up, flash, down, flash
	10	Random levels
	11	Pixel killer
	12	Noise overlay
	13	Random pixel buildup / breakdown
	14	In / out wave
	15	In / out step
	16	In / out pulse
	17 - 19	No function (reserved for future use)
	20	Movie flicker
	21	Electric arc
	22	Atomic lightning
	23	Thunderstorm
	24	Sonar (1 pixel)
	25	Sonar (2 pixels)
	26	Sonar (3 pixels)
	27	Sonar (6 pixels)
	28	Sonar (9 pixels)
	29	Pie slice chase
	30	Random chase
	31	Water drop
	32 - 50	No function (reserved for future use)
		Color FX
	51	Rainbow wave
	52	Rainbow step
	53	Rainbow pulse
	54	RGB wave
	55	RGB step
	56	RGB pulse
	57	CMY wave
	58	CMY step
	59	CMY pulse
	60	Random mix wave
	61	Random mix step
	62	Random mix pulse
	63 - 68	No function (reserved for future use)
	69	Solid
	70	Spectrum shifter
	71	RGB to white wave
	72	RGB to white step
	73	RGB to white pulse
	74	RGB to white strobe
	75	Normal to white wave
	76	Normal to white step
	77	Normal to white pulse
	78	Normal to white strobe
	79 - 86	No function (reserved for future use)

Table 7: Pre-programmed FX

Channel	DMX Value	Function
	87	Normal to inverted color in / out wave
	88	Normal to inverted color in / out step
	89	Normal to inverted color in / out pulse
	90 - 100	<i>No function (reserved for future use)</i>
		Special FX
	101	Police chase
	102	Nightrider
	103	Stars
	104	Fiberoptic white
	105	Fiberoptic mix
	106	Plasma
	107	Starfield
	108	Colorwave
	109	Noise
	110	Snowflakes
	111	Rain
	112-255	<i>No function (reserved for future use)</i>

Table 7: Pre-programmed FX

Specifications

Physical

Diameter	72 mm (2.9 in.)
Height	34 mm (1.4 in.) not including front
Weight	0.3 kg per meter (0.7 lbs. per ft.)

Control and Programming

Control options	Martin® P3 System Controller (via Martin® P3 PowerPort 1500 or P3 PowerPort 1000 IP) and/or DMX/RDM
Protocol detection	Automatic
Control modes	RGB, basic
DMX channels	3/10
Setting and addressing	Martin® P3 System controller or RDM-compliant controller
Control resolution	16-bit (P3) or 8-bit (DMX) control of each color
Calibration	Color and intensity for each Dot
DMX compliance	USITT DMX512-A
RDM compliance	ANSI/ESTA E1.20
Firmware update	Via Martin® P3 System controller

Control/User Interface

Device status	Multi-color visual indication
Device test and reset	Magnetic pushbutton to call up dot status and reset dot

Optics

Minimum LED lifetime	50 000 hours (to >70% luminous output)*
Color resolution	16 bits per color (48 bits per pixel)

Options

No Front
Flat Diffuser
Flat Smoked Diffuser
Dome Diffuser
Dome Smoked Diffuser
Lens Array Narrow

Viewing angle

No front	103° x 103° (FWHM)
Dome front	125° x 125° (FWHM)
Lens Array Narrow	TBA

**Figure obtained under manufacturer's test conditions*

Photometric Data

Total output

No front	100 lumens
Dome front	70 lumens
Lens Array Narrow	TBA

For full photometric data, see the Martin® website at www.martin.com

Video Processing

Brightness control
Gamma correction and control
Color temperature control
Color space control
Calibration processing
Synchronization

Signal Protocol

Martin® P3 system (via Martin® P3 PowerPort) or DMX/RDM

Construction

Base	Cast aluminum
Color	Black
Protection rating	IP65
RoHS compliant	

Installation

Orientation	Any
Mounting options	Direct surface mount, optional Martin® Flange Bracket, Half-Coupler or Coupler

Connections

Power and data input	6-pin custom BBD-type IP66-rated
Power and data thru	6-pin custom BBD type IP66-rated
Hot-plugging compatible	

Electrical

Nominal input voltage	48 VDC +/- 4%
Power supply options	Martin® P3 PowerPort 1500, Martin® P3 PowerPort 1000 IP, Martin® IP66 Power Supply Unit or generic 48 VDC PSU

Power Consumption

Typical total power consumption	5 W at full intensity, full white
<i>Allow for +/-10% variation in power consumption figures</i>	

Thermal

Cooling	Convection
Maximum ambient temperature (Ta max.) for typical video content	55° C (131° F)
Minimum ambient temperature (Ta min.)	-20° C (-4° F)
Max. total heat dissipation, calculated, +/- 10%	20 BTU/hr.

Approvals



EU safety	EN 60950-1, EN 60950-22
EU EMC	EN 55024, EN 55032 (Class A), EN 61000-3-2, EN 61000-3-3
US safety	UL 60950-1, UL 60950-22
US EMC	CFR Title 47 Part 15 Class A
Canadian safety	CSA C22.2 No. 60950-1, No. 60950-22
Canadian EMC	ICES-003 Class A
Australia/NZ	RCM

Accessories

Magnetic Test Tool, set of 10	P/N 91610139
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Mounting hardware

VDO Dotron Flange Bracket	P/N 91611803
VDO Dotron Half-coupler Rigging Clamp	P/N 91611802
VDO Dotron to Sceptron Pivot Coupler	P/N 91616072
VDO Dotron to Sceptron End Coupler	P/N 91616071
VDO Dotron MultiRig Bar, 1000 mm	P/N 91616100

Optical Accessories

VDO Dotron Flat Diffuser	P/N 91611804
VDO Dotron Flat Smoked Diffuser	P/N 91611805
VDO Dotron Dome Diffuser	P/N 91611806
VDO Dotron Dome Smoked Diffuser	P/N 91611807
VDO Dotron Lens Array Narrow	P/N 91611808

Cables

Power + data input cables

Power + Data Input Cable, 4-pin male XLR (for P3 PowerPort) to female BBD, 0.25 m (9.8 in.)	P/N 91616046
Power + Data Input Cable, 5-pin male XLR (for DMX) + wire tails (for PSU) to female BBD, 0.25 m (9.8 in.)	P/N 91616048

Power + Data Input Cable, 5-pin male XLR (for DMX) + 4-pin male XLR (for P3 PowerPort) to female BBD, 0.25m (9.8 in.)	P/N 91616049
Power + Data Input Cable, 5-pin male XLR (for DMX) + male Tripix type (for Martin® IP66 PSU 240W) to female BBD, 0.25 m (9.8 in.)	P/N 91616050

Power + data extension cables

Power + Data Extension Cable, Rental Type, BBD to BBD, 1 m (3.4 ft.)	P/N 91616041
Power + Data Extension Cable, Rental Type, BBD to BBD, 2.5 m (8.2 ft.)	P/N 91616024
Power + Data Extension Cable, Rental Type, BBD to BBD, 5 m (16.4 ft.)	P/N 91616042
Power + Data Extension Cable, Rental Type, BBD to BBD, 10 m (32.8 ft.)	P/N 91616043
Power + Data Extension Cable, Rental Type, BBD to BBD, 25 m (82.1 ft.)	P/N 91616044
Power + Data Extension Cable, Rental Type, 100 m (328 ft.) bulk without connectors	P/N 91616045

Power + data lead-out cables

Power + Data Output Cable, male BBD to 4-pin female XLR, 0.25m (9.8 in.)	P/N 91616047
DMX Lead-out Cable, male BBD to 5-pin female XLR, 0.25 m (9.8 in.)	P/N 91616051

Connectors

Power + Data Cable Connector, BBD, Male.	P/N 91611750
Power + Data Cable Connector, BBD, Female	P/N 91611751
Blanking Caps for sealing unused female BBD connectors, set of 10.	P/N 91616052

Related Items

Martin® P3 PowerPort 1500	P/N 90721040
Martin® P3 PowerPort 1000 IP, Rental Model	P/N 90721070
Martin® IP66 PSU 240W external power supply unit (was Tripix Power IP66)	P/N 90760330
Martin® P3-050 System Controller	P/N 90721090
Martin® P3-150 System Controller	P/N 90721015
Martin® P3-300 System Controller	P/N 90721060
Martin® P3-PC System Controller.	P/N 90721030

Ordering Information

VDO Dotron in cardboard box	P/N 90357690
Flightcase for 24 X VDO Dotron	P/N 91515043
Flightcase Extender for 24 X VDO Dotron.	P/N 91515044

Specifications subject to change without notice. For the latest product specifications, see www.martin.com

FCC Compliance

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 - *Règlement sur le Matériel Brouilleur du Canada*

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

EU EMC

Warning! Class A ITE product. Operation of this equipment in a residential environment could cause radio interference.

Not for use in a computer room as defined in the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.
Ne peut être utilisé dans une salle d'ordinateurs telle que définie dans la norme ANSI/NFPA 75 Standard for the Protection of Information Technology Equipment.



Disposing of this product

Martin® products are supplied in compliance with Directive 2002/96/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), as amended by Directive 2003/108/EC, 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.



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