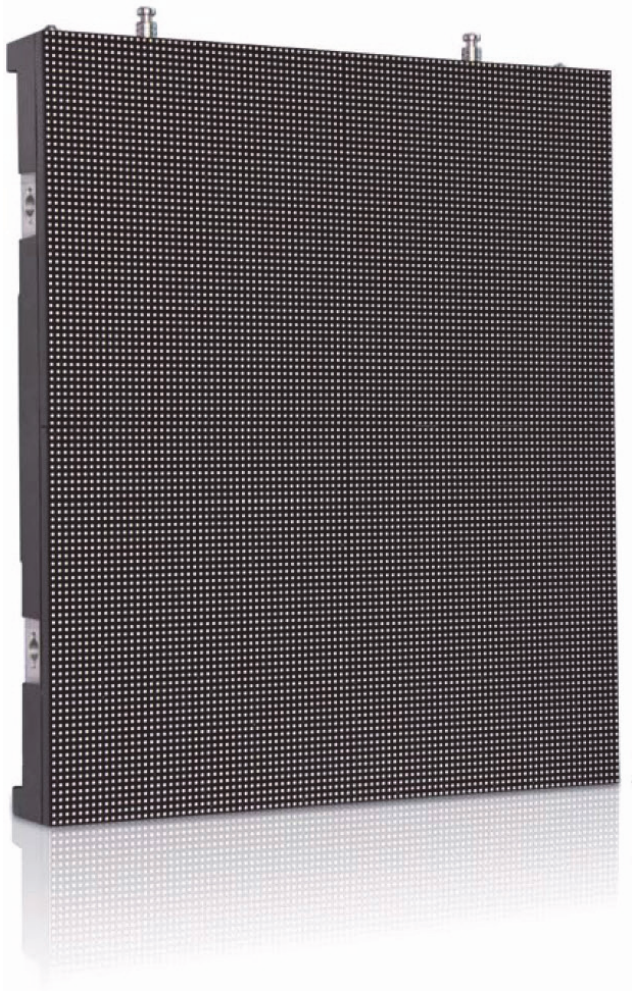
VDO Face 5™ Video Panel

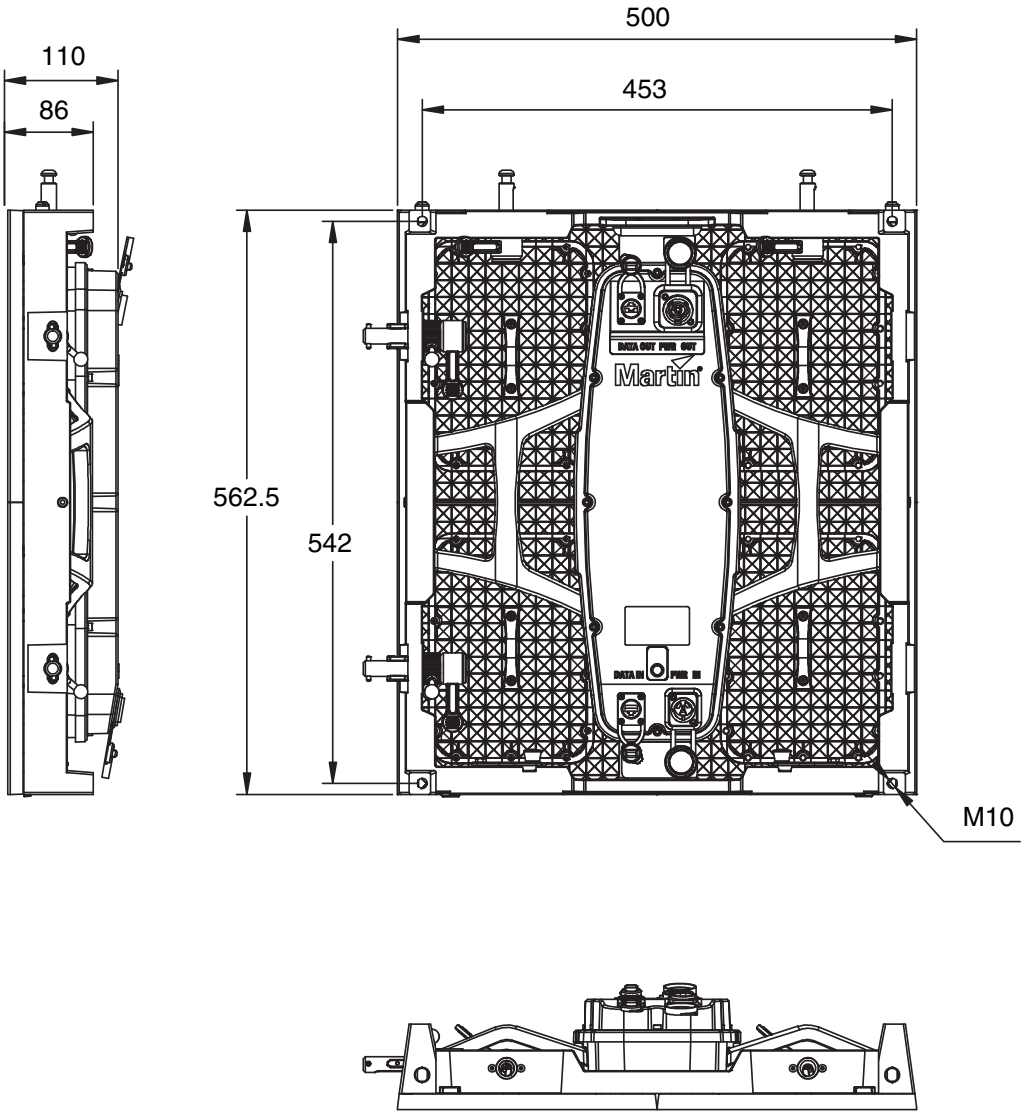
User Manual



Martin® by HARMAN

Dimensions

All dimensions are in millimeters



Martin Professional • Olof Palmes Allé 18 • 8200 Aarhus N • Denmark • www.martin.com

VDO Face 5 User Manual: P/N 5079793 Rev. B

Safety Information

WARNING!
Read the safety precautions in this section before installing, powering, operating or servicing VDO Face 5™ products.

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

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

Warning! Refer to manual before installing, powering or servicing.

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

Warning! Hot surface. Do not touch.

Warning! Fire hazard.

Warning! Emission hazardous to eyesight.

This product is for professional use only. It is not for household use.

This product presents risks of severe injury or death due to fire hazards, electric shock and falls.

A revised version of this user manual will become available each time we can improve the quality of the information we provide in it. Please check that you have the latest revision of the user manual for this product before installing, operating or servicing the product. Martin™ user manual revisions are identified at the bottom of page 2. You can download the latest user documentation from the product's Product Support / Tech Docs page on the Martin™ website at www.martin.com.

The instructions and safety limits given in this user manual are provided to make sure that installers comply with the *safety standards that apply to stage and studio environments*. Follow these instructions carefully and do not exceed the limits given, or you may create an installation that is dangerous and does not meet required safety standards.

Read this manual before installing, powering, operating or servicing this product, follow the safety precautions listed below and observe all warnings given in this manual and printed on the product.

If you have questions about how to install or operate the VDO Face 5™ system 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

- Connect the product to AC mains power within the range 100-240 V nominal at 50 or 60 Hz only.
- Disconnect the entire installation from power and ensure that power cannot be reconnected, even accidentally, before carrying out any installation or maintenance work.
- Disconnect the product from power when not in use.
- Always ground (earth) the product electrically.
- Use only a source of power that complies with local building and electrical codes. Power distribution circuits must be fitted with a current overload fuse or circuit breaker with a maximum rated current of 20 A and ground-fault (earth-fault) protection of high breaking capacity (≥1500 A).
- Make power connections between VDO Face 5™ panels using only the cables supplied by Martin for this purpose.
- Protect power connections from water and rain.
- Keep the attached rubber caps installed on any unused power and data connectors at all times. Reinstall caps over connectors as soon as a video wall is disassembled.

- Connect a VDO Face 5™ installation to power using only 20 amp-rated industrial Type B power plugs and socket outlets that comply with IEC 60309 (or a comparable national standard) and provide an electrical connection to ground (protective earth).
- When using AC mains power at 100-120 V, connect a maximum of ten (10) VDO Face 5™ panels in total to AC power in one chain using the power IN and OUT connectors in the back of the panels. When using AC mains power at 200-240 V, connect a maximum of twenty (20) VDO Face 5™ panels in total to AC power in one chain using the power IN and OUT connectors in the back of the panels.
- Before using the product, check that all power distribution equipment and cables are in perfect condition and rated for the current requirements of all connected devices.
- Do not use the product if the panel, a power cable, a power connector or a seal around a multi-connector in the back of a panel is in any way damaged, defective or showing signs of overheating.
- Do not attempt to open the product.
- Refer any service operation not described in this manual to an authorized Martin™ service agent.

PROTECTION FROM FIRE AND BURNS

- Provide a minimum clearance of 10 cm (4 in.) around the front and back of the panel.
- Ensure good ventilation around the panel, controller, power supply and all other devices in the installation.
- Do not stick filters, masks or other materials directly onto LED modules.
- Do not modify the product in any way not described in this manual.
- Install only genuine Martin parts and parts described in this manual in or on the product.
- Do not operate the product if the ambient temperature (T_a) exceeds 45° C (113° F).
- The cover on the back of the product can become hot, up to 72° C (162° F) if running constantly at full intensity, full white. Avoid accidental skin contact.

PROTECTION FROM INJURY

- Make sure that any structure used for support can hold at least ten (10) times the weight of all supported devices and equipment.
- Make sure that each and every item of rigging hardware (chain, cable, shackle, etc.) can hold at least ten (10) times the total weight of the header, panels, hardware, cables etc. that are suspended under that item. For example, if a header and all the panels, hardware, cables etc. hanging from it weigh 100 kg in total, each and every item that is used to suspend that 100 kg load must be capable of supporting 1000 kg. This requirement applies to single and double headers. The requirement also applies regardless of whether a header is supported by one, two or three chains or cables: if the 100 kg load in the example above is suspended from three chains, then each chain must be capable of supporting 1000 kg.
- Make sure that there is no slack in any item of rigging hardware: all cables, chains, etc. used for suspension must be equally tight.
- Make sure that each eyebolt that is used to suspend or secure a column of panels is fastened to the supporting structure with its own cable or chain. Do not loop one cable or one chain through more than one eyebolt.
- Check that all panels, rigging hardware and other elements in the installation are securely fastened and cannot fall, causing injury or damage.
- Do not suspend VDO Face 5™ panels at any other angle than hanging vertically downward.
- Do not suspend VDO Face 5™ panels using any other method or any other equipment than those described in this manual.
- Do not suspend more than fourteen (14) VDO Face 5™ panels in one column.
- Create an installation by installing headers and then panels at the top and working downwards. Disassemble an installation by removing panels at the bottom and working upwards.
- Block access below the work area and work from a stable platform whenever installing, servicing or moving the product.
- Do not look at lit LEDs from a distance of less than 1 m (3 ft. 4 in.) without suitable protective eyewear.
- Be prepared for panels to light up suddenly if they receive a video signal.
- Do not view lit LEDs with optical instruments that may concentrate the light output.

PROTECTION FROM INJURY CAUSED BY WIND

In any location where a wall of VDO Face 5™ panels may be exposed to the wind, ensure that professional technicians:

- are in attendance at the installation at all times,
- constantly monitor weather forecasts and local wind speed, and
- remove all panels from the installation immediately if constant or gusting wind that exceeds Force 8 Beaufort (wind speed 17.2-20.7 m/s or 39-46 mph) is forecast for, or present at, the installation location.

Contents

Introduction

Thank you for selecting the Martin™ VDO Face 5™ modular LED-based video display panels from Martin™. The VDO Face 5™ features:

- 5.208 mm (0.205 inch) pixel pitch and 96 x 108 pixels per panel image resolution
- 5000 nits performance (HB models)
- 3000 nits performance (HC models)
- Rich RGB with color resolution of 16 bits per color
- Weatherproofing to IP65: suitable for indoor and non-permanent outdoor installation
- Integrated quick-locking vertical and side-to-side panel attachment system
- Silent convection cooling
- Dual power supply design for maximized protection from data throughput interruption
- Auto-sensing 100 - 240 V, 50/60 Hz switch mode power supply

For information about installing and using a P3 System Controller, see the user documentation supplied with the Controller.

All Martin™ video display and P3 controller user documentation is available for download from the Product Support / Tech Docs pages at www.martin.com

Comments or suggestions regarding this document may be e-mailed to service@martin.dk or posted to: Technical Documentation, Martin Professional A/S, Olof Palmes Allé 18, DK-8200 Aarhus N, Denmark.

Warning! Read 'Safety Information' starting on page 3 before installing, powering, operating or servicing VDO Face 5™ products.

A VDO Face 5™ panel is an ITE Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take appropriate measures.

Panels and flightcases

VDO Face 5™ panels are ordered as single panels that are supplied in cardboard boxes.

To transport panels, pack them in the six-unit VDO Face flightcases available from Martin™ (see "Accessories" on page 27) to ensure that they can withstand the shocks that normally occur while panels are in transit.

See Figure 1. Flightcases have space for storing cables and installation hardware.

Figure 1: VDO Face™ flightcase

Avoiding damage to panels

Important! ***VDO Face panels and LED blocks have LEDs at their edges. This makes LEDs liable to damage if panels and LED blocks are not handled with care. See Figure 2. Protect the edges of panels and LED blocks from shocks at all times.***

Keep panels in Martin™ flightcases to protect them during transport and storage.

Damage caused to panels that are exposed to shocks or incorrectly packed is not covered by the product warranty.

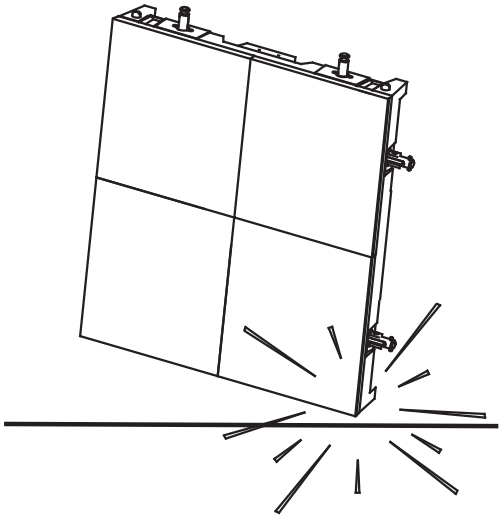


Figure 2: Protect edges from shocks

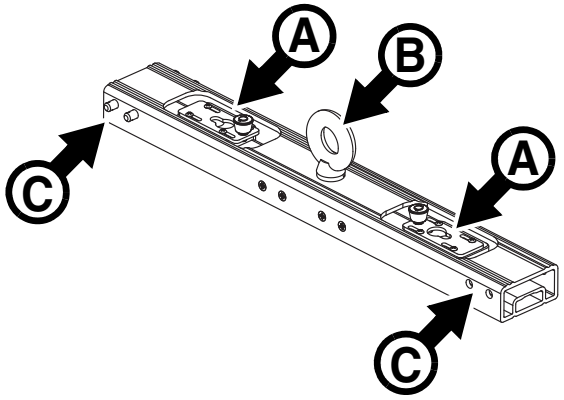
Using for the first time

Before applying power to the panel:

- Carefully review “Safety Information” on page 3.
- Check that the local AC power voltage is within the ranges listed on the product’s serial number label and in “AC power” on page 24.
- With reference to this user manual, make sure that you have enough VDO Face 5™ Headers (including any additional eyebolts required) to suspend panels vertically, all required rigging hardware, and enough cables for power and data input and daisy-chaining.

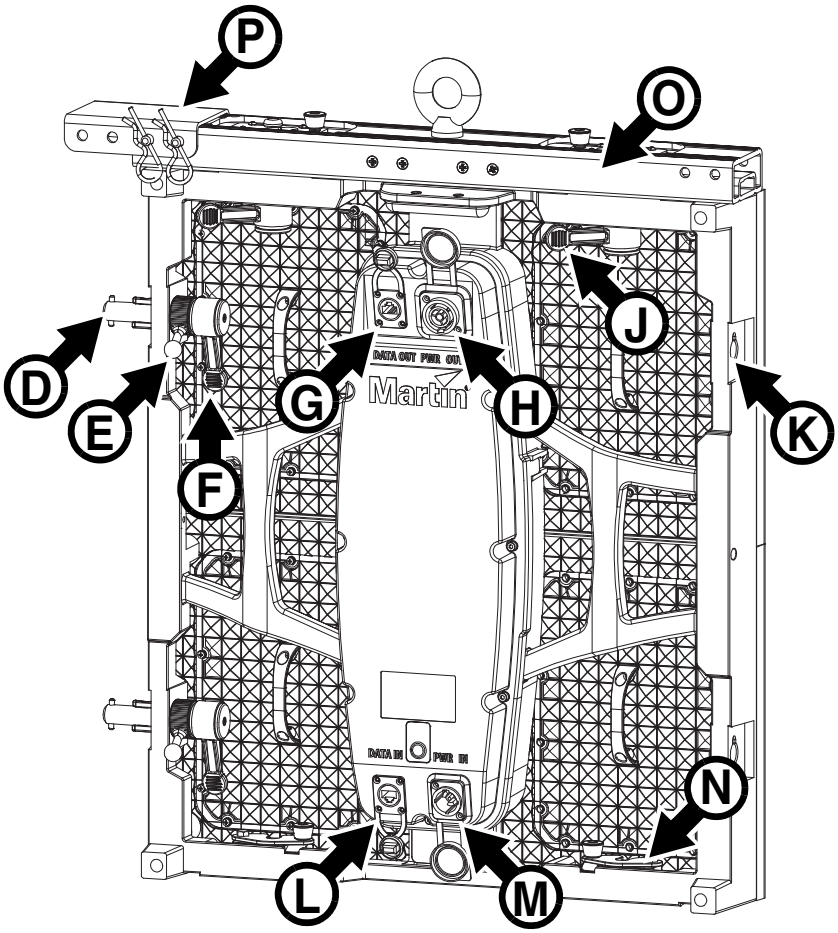
Overview

Header



Single Header illustrated

Panel



A - Vertical fastener plate (in header)
B - Primary attachment eyebolt
C - Mounting points for eyebolt brackets or header side attachment brackets
D - Side-to-side fastener bar
E - Side-to-side fastener lever
F - Side-to-side locking lever
G - Data OUT (THRU) connector
H - Power OUT (THRU) connector
I - Vertical fastener post
J - Vertical fastener post locking lever
K - Side-to-side fastener receptacle
L - Data IN connector
M - Power IN connector
N - Vertical fastener locking plate (in panel)
O - Single header
P - Header side attachment bracket

Figure 3: Product overview

Physical installation

Warning! Read 'Safety Information' starting on page 3 before installing VDO Face 5™ products.

The safety and suitability of lifting equipment, installation location, anchoring method, mounting hardware, suspension structures and electrical installation is the responsibility of the installer. Observe all local safety regulations and legal requirements when installing and connecting VDO Face 5™ panels. Installation must be carried out by qualified professionals only. Contact your Martin™ supplier for assistance if you have any questions about how to install this product safely.

VDO Face 5™ video panels meet the safety requirements of stage and studio environments when suspended in vertical columns a maximum of fourteen (14) panels high as directed in this user manual.

An unlimited number of correctly supported columns of panels may be attached side-by-side to form a video wall.

It is possible to connect different Martin™ LED video products to a Martin™ P3 System Controller in an installation. The System Controller will recognize the different products.

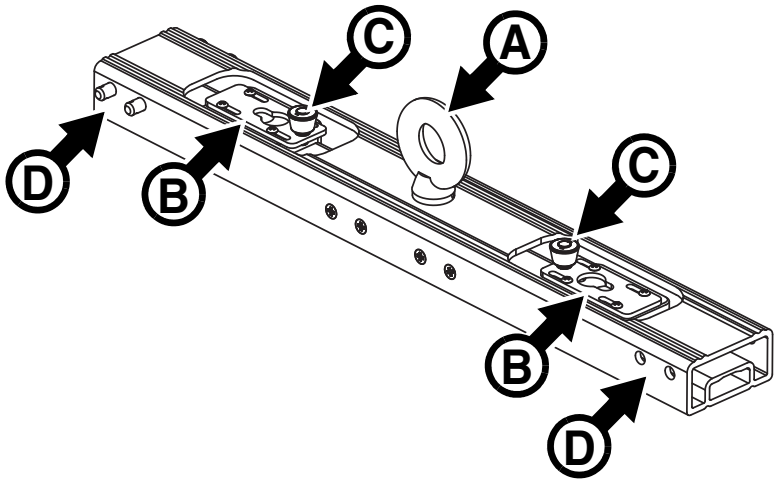
Before installing

Before creating an installation with VDO Face 5™ panels:

1. Read "Protection from injury" on page 4 and take special note of the precautions that are relevant for installing products.
2. Check that supporting structures will not flex under the weight of the panels. Hanging panels from a structure that is not straight or not rigid enough will place a strain on panels and attachment hardware. Damage caused to headers or panels by mechanical stress is not covered by the product warranty.
3. Check that circuits in the installation are isolated from power and that power cannot be applied accidentally.
4. Block access under the work area.

VDO Face Headers

To suspend an array of VDO Face 5™ video panels in a vertical column, you must use a VDO Face system header. See below (Single Header illustrated):



A - Suspension eyebolt (primary attachment point)

B - Panel fastener plate

C - Panel fastener plate locking button

D - Mounting points for extra suspension eyebolts or header connection brackets.

Figure 4: VDO Face Single Header

VDO Face system headers are available in two versions:

- **Single Headers** have one suspension eyebolt and holes at each end of the header for mounting either side connection brackets or brackets for two further eyebolts. You can support one column of panels from one Single Header.
- **Double Headers** have three suspension eyebolts and holes at each end of the header for mounting side connection brackets. You can suspend two columns of panels from one Double Header.

All headers have holes ready for installing the header side-to-side connection brackets supplied with the headers.

Header side connection brackets

Before you install columns of VDO Face™ panels side-by-side, install headers and fasten them together using the header side connection brackets that are supplied with headers.

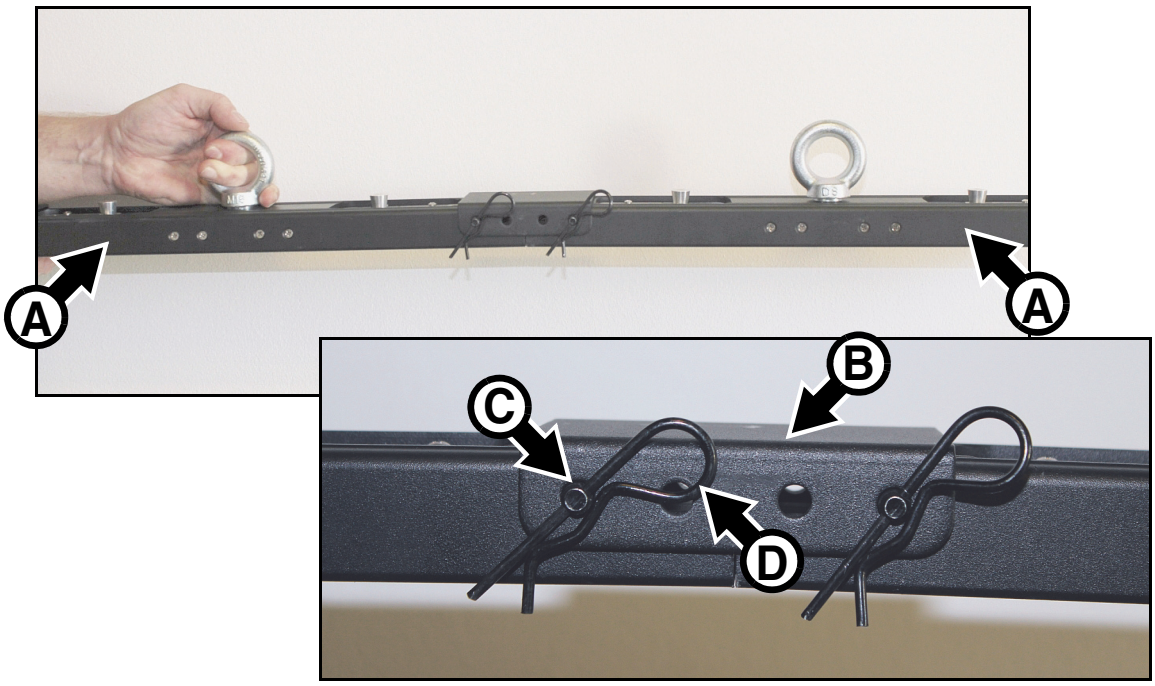


Figure 5: VDO Face Side Connection Brackets

To install a header side connection bracket:

1. See Figure 5. Each time you install two headers **A** beside each other, place a side connection bracket **B** over the ends of the headers and pass the locking pins **C** supplied with the brackets through both the bracket and the headers.
2. Secure the locking pins **C** with spring clips **D**.

Corner connection plates

VDO Face™ corner connection plates have both a load-bearing and a stabilizing function. You must fasten the corners of VDO Face™ panels together by installing corner connection plates on the rear face of VDO Face 5 panels in the following three situations:

1. Single columns

In any column of panels that is that is not joined to other panels at one or both sides and that is more than five (5) panels high, corner connection plates must be installed at all times on all four corners of every panel that is above the five (5) lowest panels in the column. See also Figure 7 on page 14.

2. Multiple columns

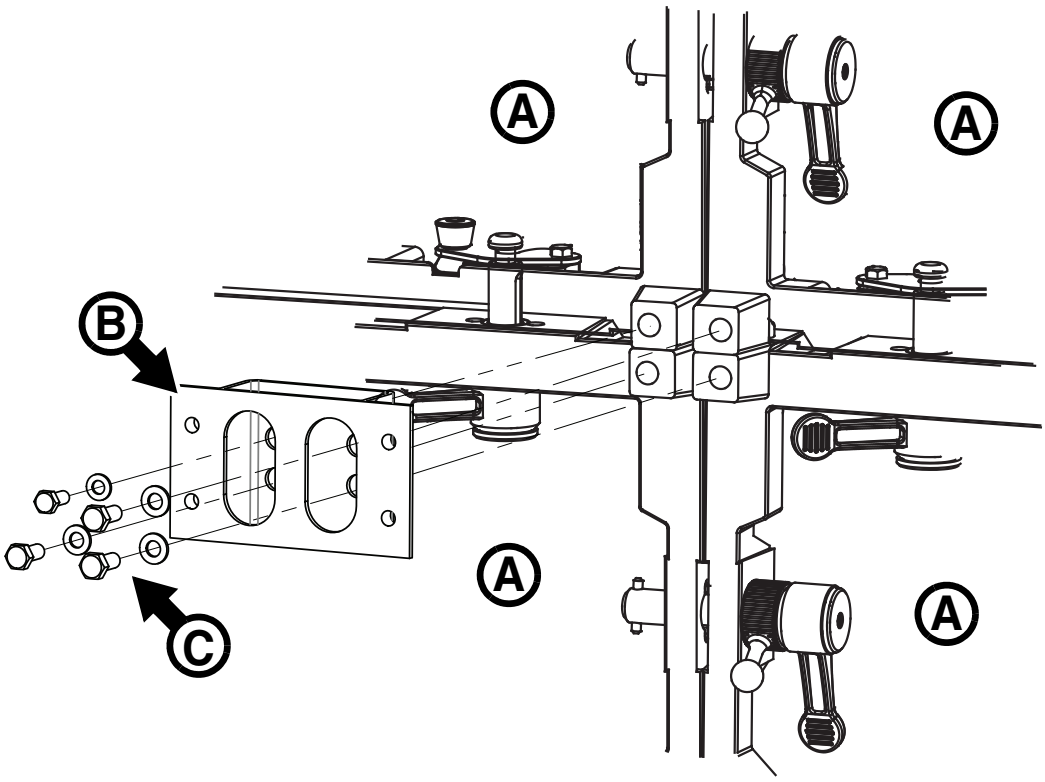
In an installation consisting of multiple columns hanging side by side that are fastened to each other using their integral side-to-side fasteners, in any column that is more than ten (10) panels high, corner connection plates must be installed at all times on all four corners of every panel that is above the ten (10) lowest panels. See also Figure 8 on page 16 and Figure 9 on page 18.

3. Columns that need to be stabilized

Where extra stabilization is required because of movement or vibration of the supporting structure or because of wind pressure, corner connection plates must be installed on all four corners of every panel in the installation.

To install connection plates:

1. Read the guidelines above and plan the use of connection plates in your installation so that you know where you will need to install them. See Figure 6. You will need one connection plate **B** for each corner where two ore more panels meet and one M10x15 bolt with washer **C** per corner. Bolts must be steel, grade 8.8 minimum. Connection plates and suitable Allen bolts are available from your Martin™ supplier.
2. As soon as you have fastened a panel into the installation using the panels' integral fastening mechanisms, fasten connection plates **B** to the panels **A** using bolts with washers as shown in Figure 6. Fasten all adjacent corners together. Install connection plates continuously while you work so that you never exceed the limits (given under '1. Single columns' and '2. Multiple columns' above) for the number of panels that can hang freely without connection plates. Do not overtighten bolts.
3. When tearing down an installation, remove panels starting from the bottom and do not remove connection plates until you are ready to remove the panels that the plates are fastened to.



A - VDO Face 5 panel

B - Connection plate

C - Connection plate fasteners (one M10 x 15 Allen head bolt per panel)

Figure 6: VDO Face™ corner connection plate

Anchoring the bottom of columns

Warning! Anchor the bottom of columns of panels to make it impossible for the columns to swing or snake if a primary attachment fails or if panels are exposed to air pressure.

Tighten anchoring straps at the bottom of columns gently by hand, and only enough to remove any slack. Do not tighten straps hard, or you may add to the downward force acting on columns and suspension hardware, creating a danger of failure.

To anchor the bottom of a column, fasten an M10 eyebolt or VDO Face 5™ corner connection plate to the hole in the bottom corner of the panel at the bottom of the column, then loop a strap such as nylon webbing through the eyebolt or connection plate and around an anchoring point. Make sure that there is no slack in the strap, but tighten the strap gently by hand only.

Always anchor both sides of a single column that is hanging alone.

Always anchor both sides of a multiple array of columns.

Possible configurations

If suspension points are provided as directed in this user manual, vertical columns of VDO Face 5™ panels can be suspended side-by-side to form a display surface of unlimited width, but in any location that can be regarded as stage/studio environment no column may be no more than fourteen (14) panels high.

The following sections and diagrams explain the different installation options available.

Single-column arrays

See **A** and **B** in Figure 7. You may suspend a single column of panels maximum fourteen (14) panels high from a single header. The column can hang alone without panels being fastened at the sides to other panels. In this type of installation:

- No column may be more than 14 panels high.
- You must install connection plates on all four corners of every panel above the lowest 5 panels in a column.
- You can install columns up to 5 panels high in an array without corner connection plates.
- The header must be suspended from three cables or chains. This means that you must install on the header two of the additional eyebolt brackets available from Martin™ as accessories for the VDO Face 5™ and you must install suitable eyebolts on the brackets.

To create an array consisting of a single column of VDO Face 5™ panels hanging from a single header:

1. With reference to Figure 7, obtain enough corner connection plates available from Martin™ to stabilize the column You will need two connection plates for each panel above the lowest five panels. The lowest five panels can hang from their integral fastening posts without connection plates.
2. Install two additional eyebolt brackets on the single header using the mounting holes (see **D** in Figure 4 on page 10) at each end of the header.
3. Suspend the header by fastening all three eyebolts to a safe structure using three separate cables or chains. Each individual cable or chain must be approved to support ten times the total weight of the column. Each eyebolt must have its own cable: do not loop one cable through more than one eyebolt. Make sure that there is no slack in cables: all cables must be equally tight.
4. Install panels one by one under the Single Header as described in “Suspending panels” on page 19. Each time you add a panel, fasten it using both its vertical fastener posts, then immediately install corner connection plates to fasten the panel securely to the panel above it. Add corner connection plates until you reach the lowest five panels, which do not need the plates.
5. Attach the column to anchoring points at its lower corners to make it impossible for the bottom of the column to move. Do not apply downward force to the column when attaching it.

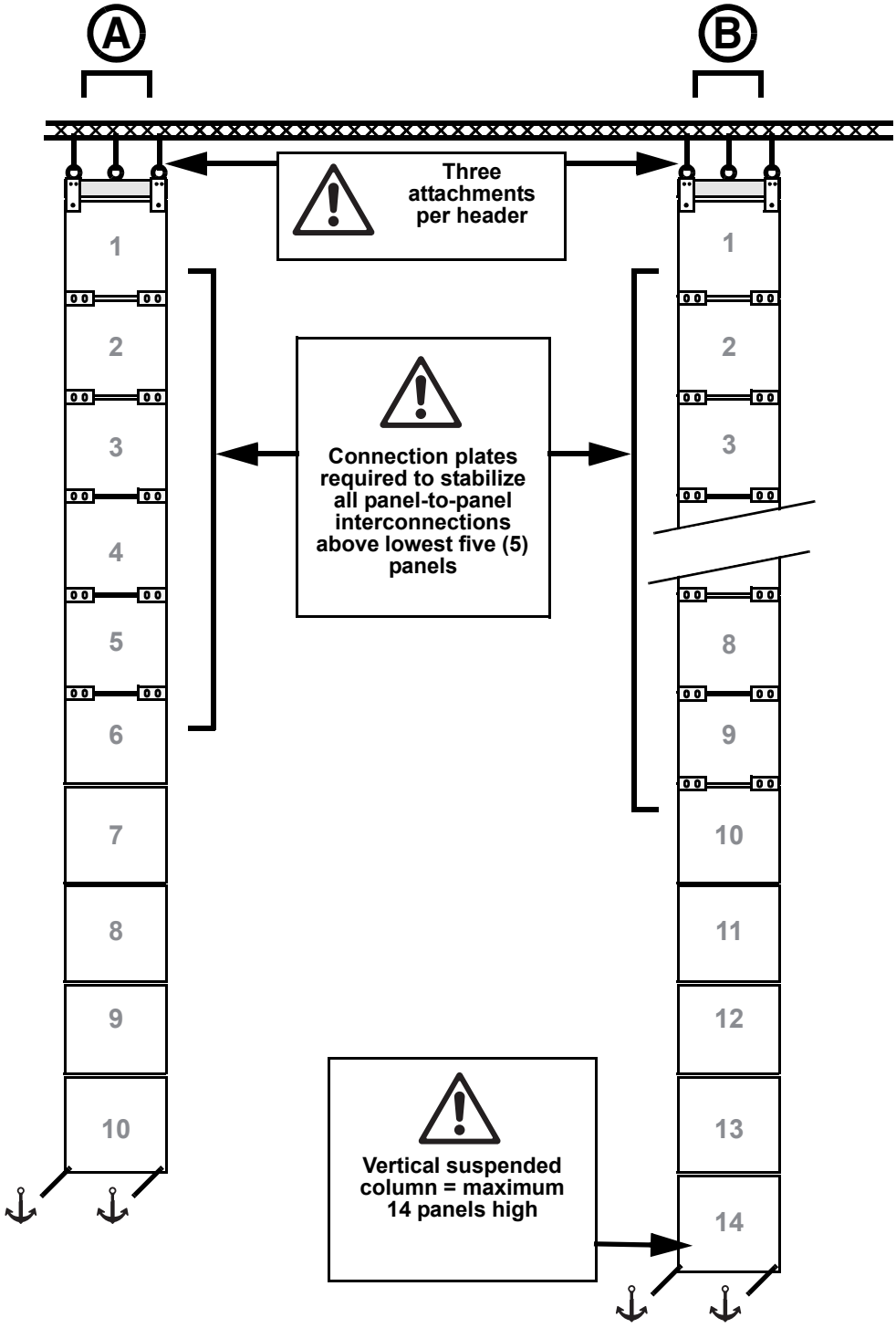


Figure 7: Single-column configurations

Arrays of 2 - 5 columns

You can create an array consisting of two or four columns of panels hanging from double headers. You can also add a column hanging from a single header to create an array consisting of three or five columns. In this type of installation:

- No column may be more than 14 panels high.
- All headers and panels must be fastened side-to-side.
- You must install connection plates on all four corners of every panel above the lowest 10 panels in a column.
- You can install columns up to 10 panels high in an array without corner connection plates, provided that the panels are connected side-to-side.
- Each header must be suspended from minimum two cables or chains.

Two-column arrays

- If you hang two columns of panels from a double header without fastening them side-to-side to other panels (see **C** in Figure 8), you must suspend the header using three cables or chains: one cable or chain per eyebolt on all three eyebolts on the double header.

Four-column arrays

- If you hang four columns of panels from two double headers without fastening the four-column array side-to-side to other panels (see **D** in Figure 8), you must suspend the double headers using minimum four cables or chains: one cable or chain per eyebolt on minimum two eyebolts per double header.

Three- and five-column arrays

- If you add a single column of panels to one of the above to create an array of three or five columns of panels, the same guidelines apply as for larger multiple-panel arrays:
  - If you want to add a single column of panels that is not fastened to other panels at ***both*** sides (as in **H** in Figure 9), you must obtain a single header and install on it an additional eyebolt available from Martin™. Then you must suspend the single header from two cables or chains before you hang the single column from it.
  - If you want to install a single column that is fastened to other panels at both sides (as in **G** in Figure 9), you may use a single header without and additional eyebolt and suspend it from one cable or chain.

To create an array consisting of 2 - 5 columns of panels:

1. See Figure 8. Obtain enough headers for all the columns, and obtain enough corner connection plates available from Martin™ to stabilize the column. You will need two connection plates for each panel above the lowest 10 panels.
2. Suspend the headers in a row from the truss or other supporting structure. Suspend each header from its central eyebolt using a cable or chain that is approved to support ten times the total weight of the header and all the items that will hang from it. Each eyebolt must have its own cable: do not loop one cable through more than one eyebolt. Make sure that there is no slack in cables: all cables must be equally tight. Each time you add a header, fasten it to the previous header with a header side connection bracket.
3. Install panels one by one in rows under the headers as described in “Suspending panels” on page 19. Each time you add a panel, fasten it using both its vertical fastener posts, then fasten it side-to-side immediately. Install corner connection plates on all four corners of every panel that will have 10 panels or more hanging below it.
4. Attach the array to anchoring points at its lower corners to make it impossible for the bottom of the array to move. Do not apply downward force to the array when attaching it.

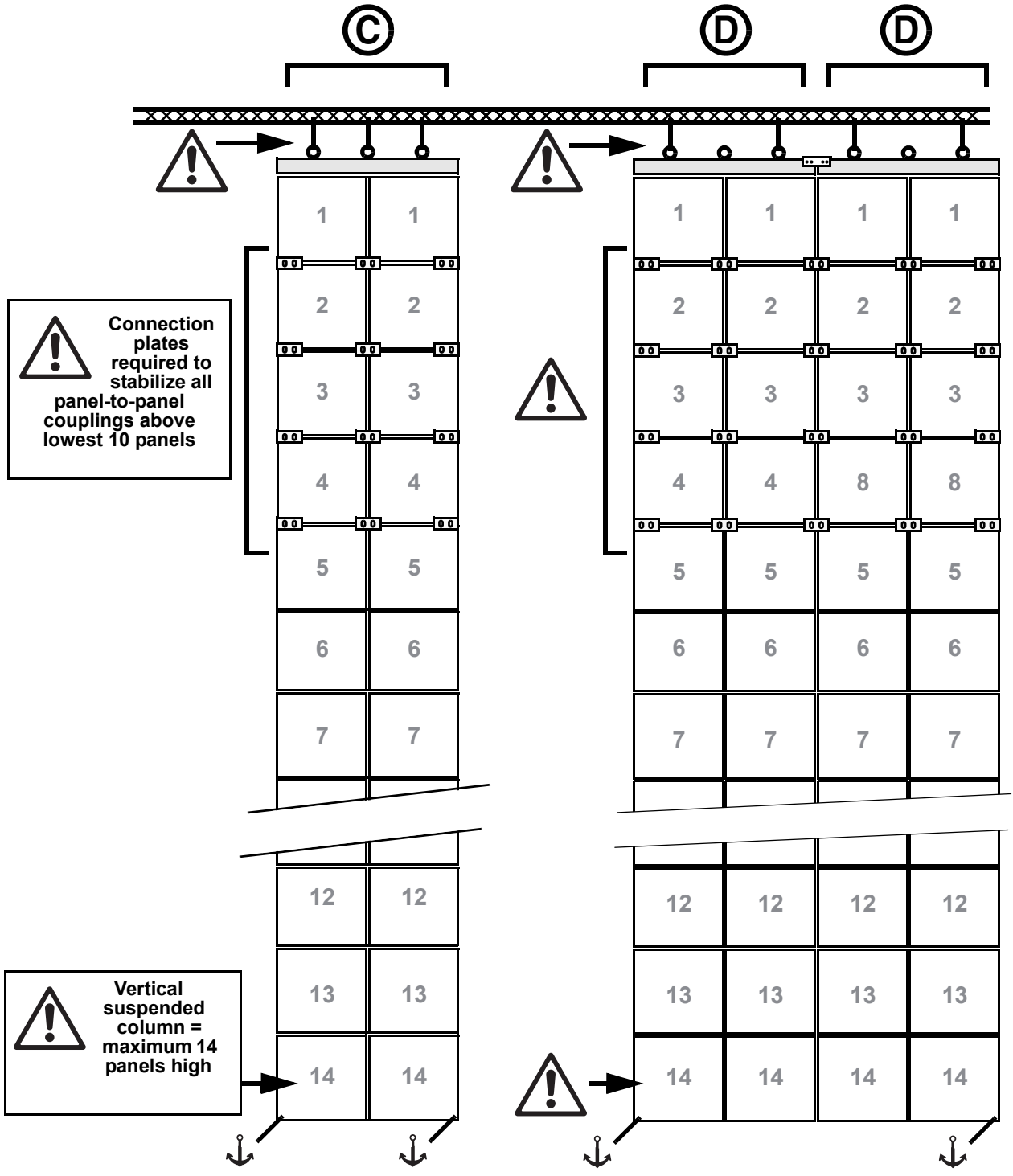


Figure 8: Two-column and four-column configurations

Larger multiple-column arrays

Besides the configurations described above, you can create an array consisting of multiple columns of panels hanging from single and/or double headers. In this type of installation:

- No column may be more than 14 panels high.
- All headers and panels must be fastened side-to-side.
- You must install connection plates on all four corners of every panel above the lowest 10 panels in a column.
- You can install an unlimited number of columns up to 10 panels high in an array without corner connection plates, provided that the panels are connected side-to-side.
- Each header in the middle of a multiple-column array (see **F** and **G** in Figure 9) must be suspended from minimum one cable or chain.
- Each header at the edge of a multiple-column array (see **E** and **H** in Figure 9) must be suspended from minimum two cables or chains:
  - If you install a *double* header at the edge of a multiple array (see **E** in Figure 9), you must use minimum two of the header's three eyebolts so that you can suspend the header from two cables or chains.
  - If you install a *single* header at the edge of a multiple array (see **H** in Figure 9), you must install one additional eyebolt so that you can suspend the header from two cables or chains.

To create an array consisting of multiple columns of panels:

1. See Figure 9. Obtain enough single or double headers for all the columns, and obtain enough corner connection plates available from Martin™ to stabilize the column. You will need two connection plates for each panel above the lowest 10 panels.
2. Suspend the headers in a row from the truss or other supporting structure. Suspend each header from its central eyebolt using a cable or chain that is approved to support ten times the total weight of the header and all the items that will hang from it. Each eyebolt must have its own cable: do not loop one cable through more than one eyebolt. Make sure that there is no slack in cables: all cables must be equally tight. Each time you add a header, fasten it to the previous header with a header side connection bracket.
3. Install panels one by one in rows under the headers as described in "Suspending panels" on page 19. Each time you add a panel, fasten it using both its vertical fastener posts, then fasten it side-to-side immediately. Install corner connection plates on all four corners of every panel that will have 10 panels or more hanging below it.
4. Attach the array to anchoring points at its lower corners to make it impossible for the bottom of the array to move. Do not apply downward force to the array when attaching it.

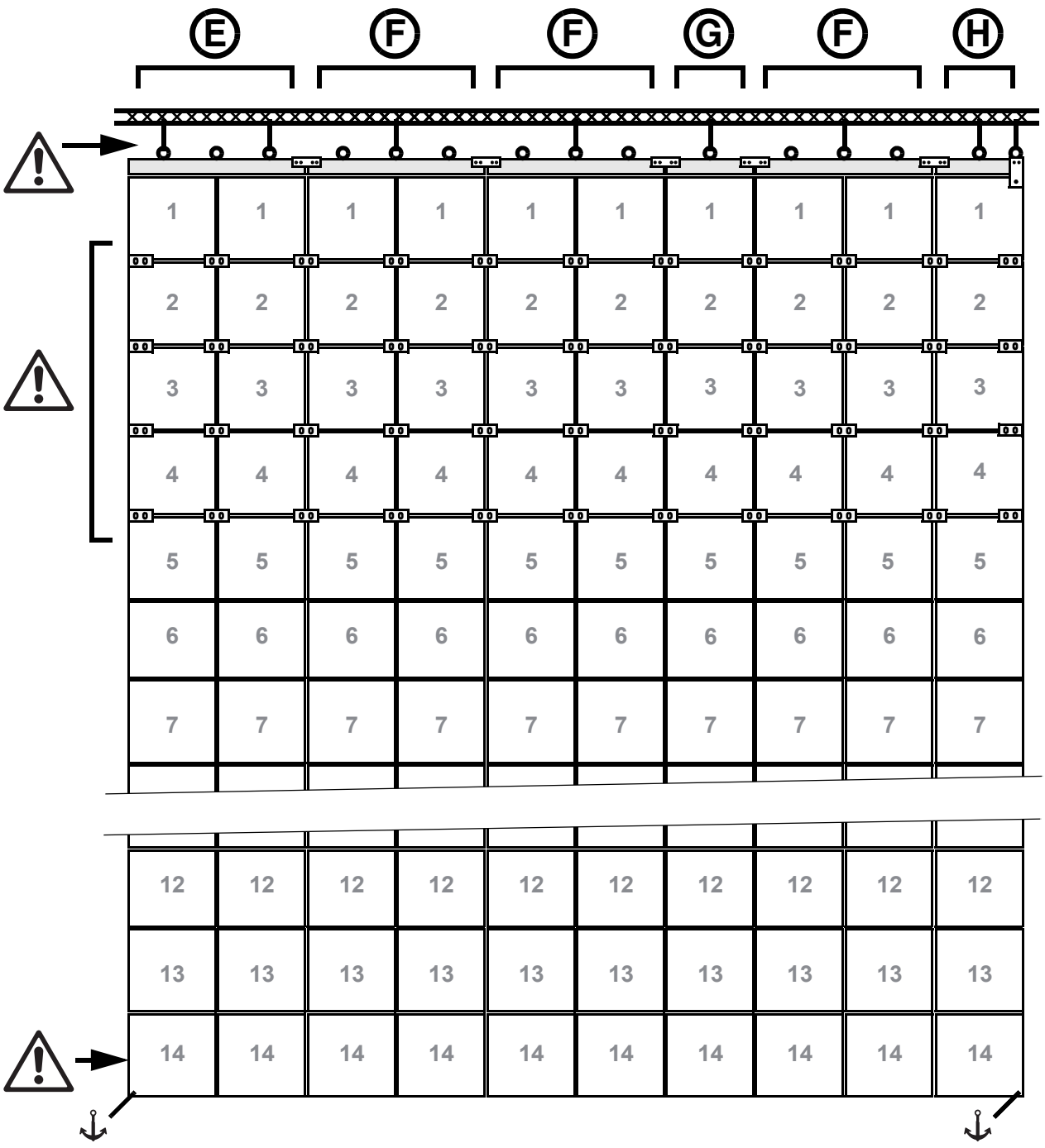


Figure 9: Larger multiple-column configurations

Suspending panels

Each time you add a panel to a column, fasten it to any panels beside it immediately after you have suspended the panel vertically. See “Fastening panels side by side” on page 21 for instructions.

To suspend VDO Face 5™panels:

1. Install headers as described under “VDO Face Headers” on page 10.

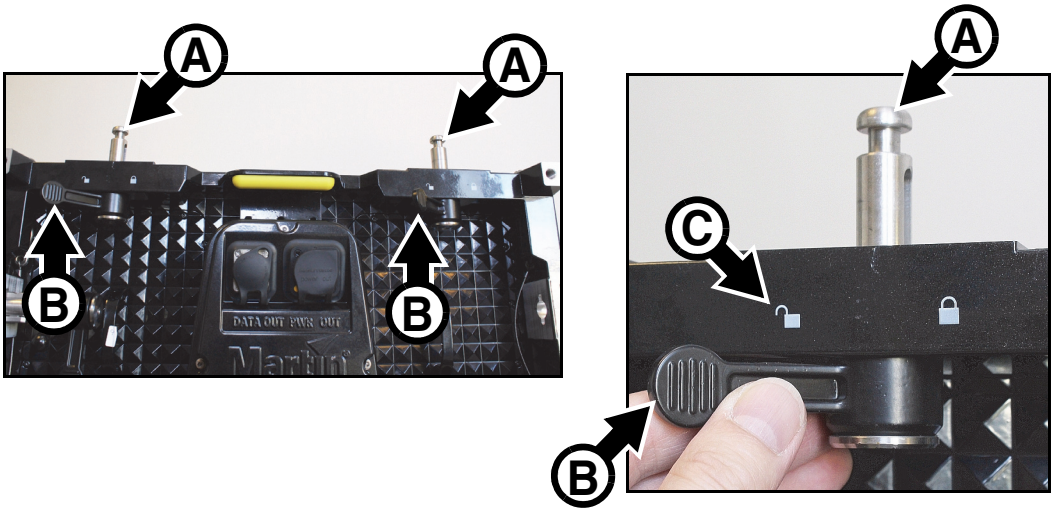


Figure 10: Vertical connection posts

2. See Figure 10. On the first panel, push both vertical connection posts **A** up through the top rail of the panel. Turn both locking levers **B** to the **Unlocked** position **C**.

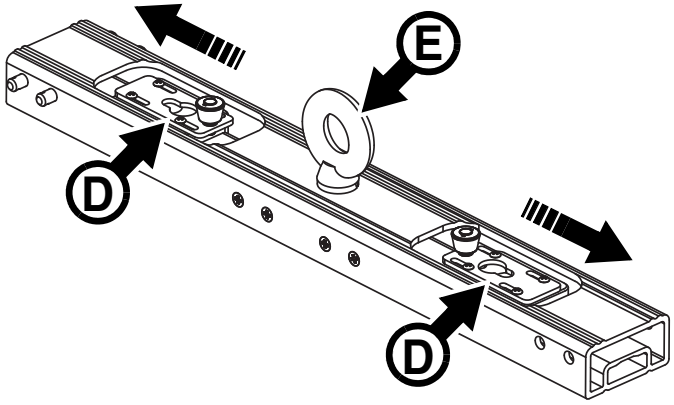


Figure 11: Opening locking plates in Single Header

3. See Figure 11. On the header, slide the locking plates **D** *away from* the suspension eye **E**.
4. Lift the first panel up to the header and pass the vertical connection posts **A** in the top of the panel up through the locking plates **D** in the header.

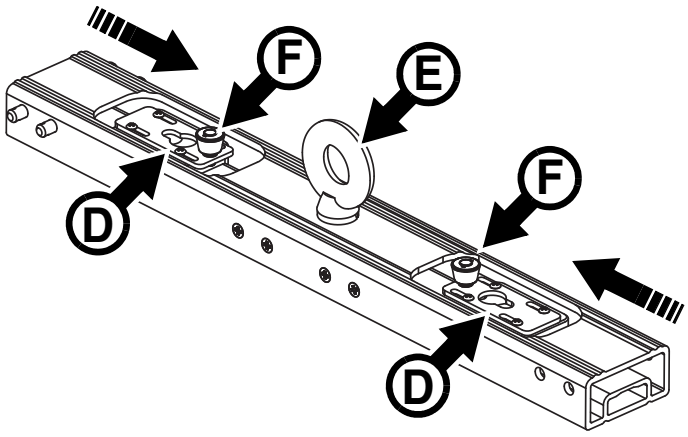


Figure 12: Closing locking plates in Single Header

5. See Figure 12. While supporting the panel, slide the locking plates **D** in the header *towards* the suspension eye **E** so that the locking plates engage in the grooves in the vertical connection posts **A**. Make sure that the locking plate knobs **F** click into the locked position so that the locking plates are no longer able to slide from side to side. Check that both locking plates are now latched onto the vertical connection posts.
6. See Figure 13. In the top of the panel, turn the locking levers **B** on both the vertical connection posts **A** to the **Locked** position **G**.

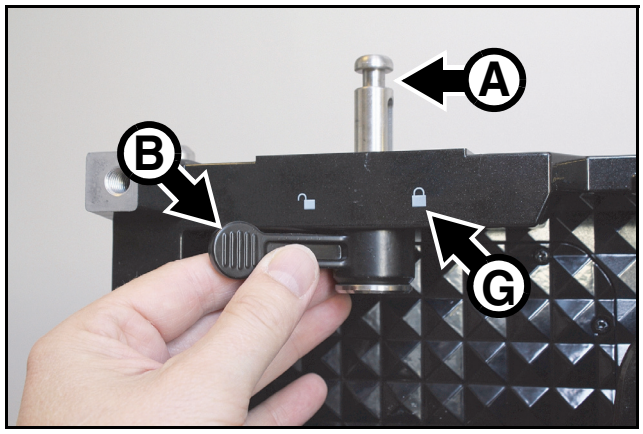


Figure 13: Locking vertical connection posts

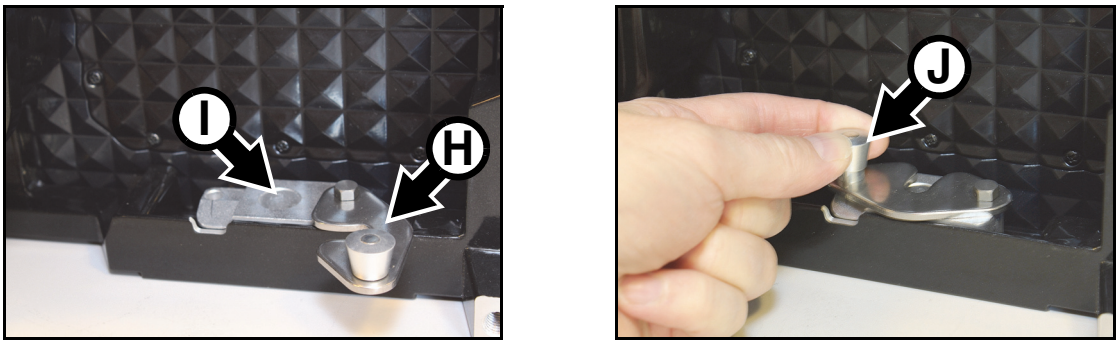


Figure 14: Closing lower locking plates

7. See Figure 14. Open the lower locking plates **H** in the bottom rail of the first panel.
8. Move the vertical connection posts **A** in the second panel to the **Unlocked** position **C**. Lift the second panel up to the first panel and pass its vertical connection posts through the holes **I** in the bottom of the first panel.
9. Push the locking plates **H** in the bottom of the first panel to the locked position **J** so that the plates engage in the grooves in the vertical connection posts. Make sure that the locking knob at **J** clicks into place so that the locking plates can no longer be opened. Check that the second panel is securely attached to the first panel.
10. See Figure 13. In the top of the second panel, turn the locking levers **B** on the vertical connection posts **A** to the **Locked** position **G**.
11. Continue fastening panels together in a vertical column, using the procedure described above to guide you. Make sure that all panels are securely and tightly locked together, and that locking plates cannot move to the open position.

Fastening panels side by side

To fasten VDO Face panels side by side when building a video wall:

1. See Figure 15. Note the position of the hole **O** in the side of the panel that acts as a receptacle and accepts the side-to-side locking bar.
2. **Warning! Check that the weight of the panels to be fastened together is supported vertically. Do not use side-by-side fasteners to support the weight of panels.**

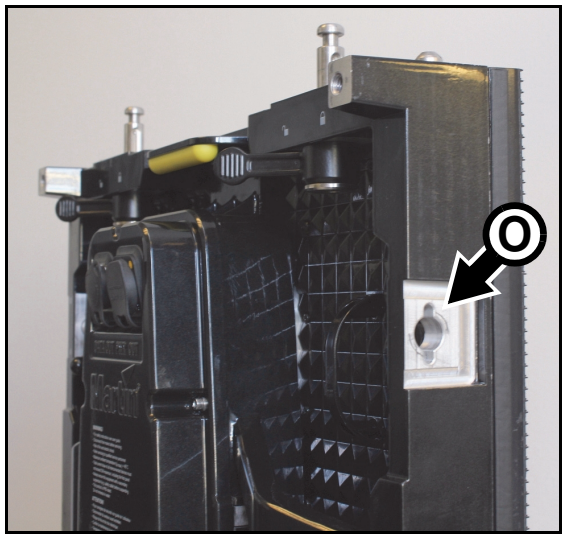


Figure 15: Hole for side-to-side locking bar

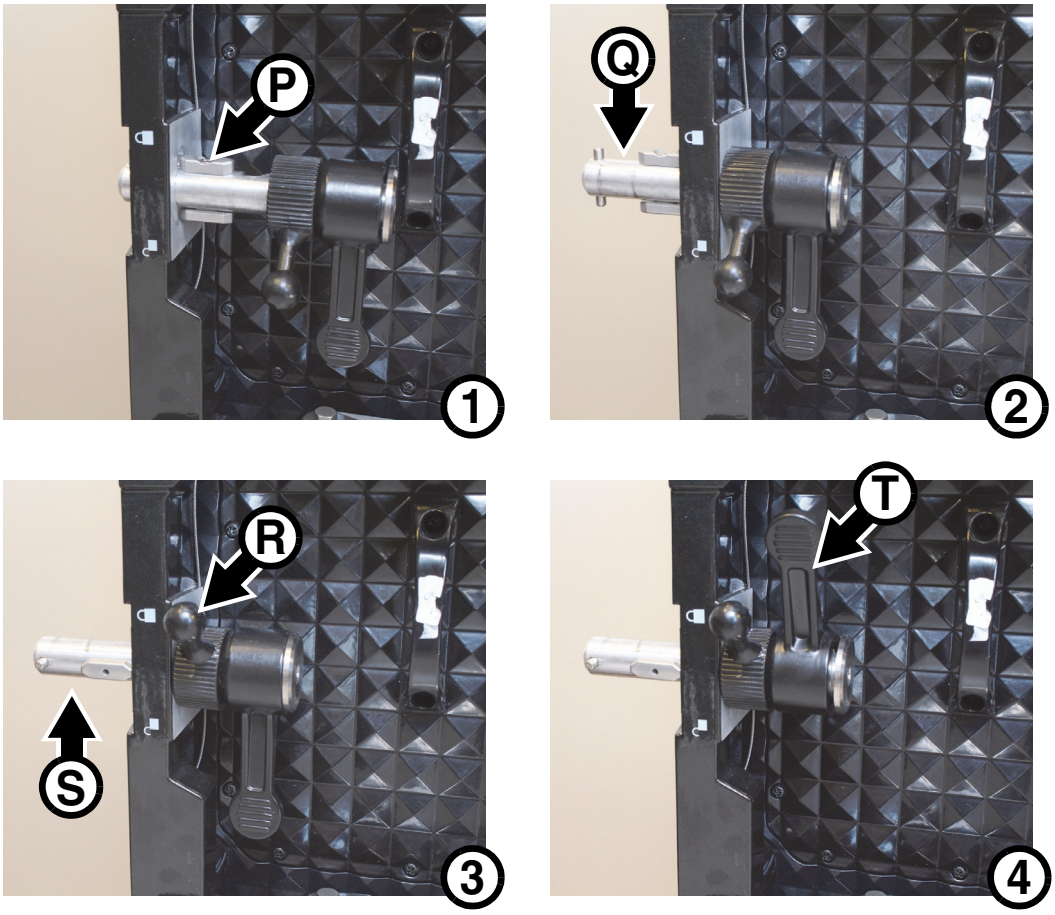


Figure 16: Side-to-side panel fastening

3. See Figure 16. with the two panels in position beside each other, push the first panel's side-to-side locking bar **P** out through the panel side rail and into the hole **O** in the second panel so that it is at position **Q** in photo **2** (the second panel is not shown in the photos so that the locking bar bayonet mechanism can be seen more clearly).
4. Turn the side-to-side locking lever **R** up to the **Locked** position to lock the bayonet mount **S** into the hole in the second panel.
5. Turn the side-to-side tightening lever **T** up to the **Locked** position to tighten the bayonet mount and lock the panels tightly together.

Securing the bottom of columns against lateral movement

After installing columns of panels, secure them against lateral movement by passing sturdy cable, straps or webbing through the holes in the bottom of the bottom row of panels and fastening to a fixed anchoring point.

Warning! Do not stress the panels or increase the load on supporting hardware by applying downwards tension to the bottom row of panels.

Dismantling an installation

Warning! When dismantling a suspended column of panels, start at the bottom and work upwards, removing one panel at a time. Make sure that each panel is supported vertically before you release its side-to-side fasteners. Support the weight of each panel so that it cannot fall before you release its vertical fasteners.

Important! Avoid shocks to the edges of panels.

When tearing down an installation, remove single panels one at a time starting at the bottom of the column and working upwards.

To unfasten panels from each other, follow the instructions for fastening in reverse, but respect the following guidelines:

- Release each panel's side-to-side fasteners before you release the panel's vertical fasteners.
- Support the weight of each panel by hand before you release its vertical fasteners.
- Lift up locking buttons on vertical fastening plates before moving them to release vertical fastening posts.
- Reinstall rubber caps over connectors immediately when you disconnect a panel. This will protect connectors from moisture and damage.

Wind force precautions

Wind can create a risk of serious or lethal injury and damage due to falling panels. If video panels are to be installed in a location where panels can be exposed to wind force, take these precautions:

- Observe all locally applicable laws, regulations and codes regarding safety of structures and installations.
- Suspend panels from a structure that is capable of holding the panels securely without any safety risk when panels are exposed to wind pressure.
- Secure panels against any swinging, snaking or other lateral movement that might occur when panels are exposed to wind pressure.
- Ensure that weather forecasts and local wind speed are constantly monitored while the installation is in place.
- Ensure that all panels are removed from the installation immediately if constant or gusting wind speed exceeding Force 8 Beaufort is forecast or present.

AC power

Warning! The safety of the installation is the responsibility of the installer. Read 'Safety Information' starting on page 3 before creating an installation or connecting an VDO Face 5™ panel to AC mains power. Disconnect the entire installation from power before working on it.

Warning! Connect to AC mains power at 100-240 VAC, 50/60 Hz only.

Warning! When you connect VDO Face 5™ panels using power input and throughput connectors to form one chain that draws power via the first panel's input connector, you must not exceed a total current draw of 20 A for the chain. If you do not respect this limit you will overload cables and components and create a serious safety hazard. If you reach the maximum permitted current draw for a chain of panels and you want to supply more panels with power, you must create a new chain that draws power from a separate power outlet.

Warning! For protection from electric shock, the panel must be grounded (earthed). Power distribution circuits must be fitted with a current overload fuse or circuit breaker with a maximum rated current of 20 A and ground-fault (earth-fault) protection of high breaking capacity (≥1500 A).

Warning! The rubber caps attached to connectors must remain installed at all times on any unused power and data connectors.

Important! Connect the panels in the installation and the P3 System Controller to AC mains power at the same outlet point in the power distribution circuit, or you may experience ground/earth loop problems or create differences in potential that can damage devices. Damage caused by differences in potential if devices are incorrectly connected to power is not covered by the product warranty.

Voltage range

VDO Face 5™ panels feature an auto-sensing switch-mode power supply that accepts 100-240 V nominal AC mains power at 50 or 60 Hz. Connect the panel to AC mains power that is within this voltage range only.

The VDO Face 5™ can be supplied with AC mains power by connecting to one of the following three-wire systems:

- a single-phase 100-240 V system (live, neutral, ground/earth), or
- two phases of a 3-phase delta or split-phase mid-point neutral system (phase, phase, ground/earth) to obtain 200-240 V

Power figures are given under "Electrical" on page 33. Allow a sensible safety margin when calculating the current headroom required on AC mains power distribution circuits for an VDO Face 5™ installation.

Power connections

The VDO Face 5™ panel has Neutrik PowerCON TRUE1 connectors for power input and power throughput to the next panel in a chain.

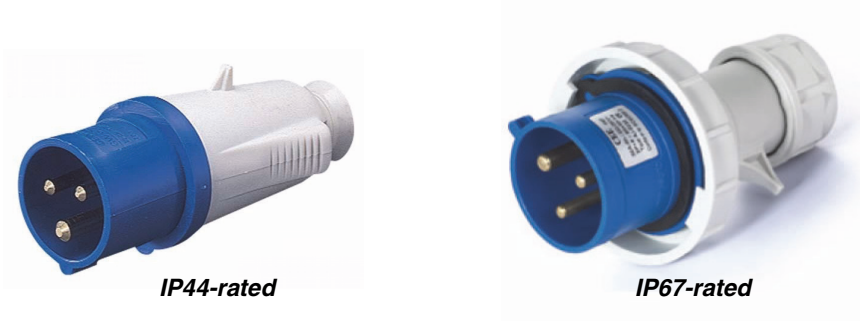
Power input connectors are located at the bottom of panels and power throughput connectors at the top of panels (see "Overview" on page 9).

We recommend that you shut down power to the installation before connecting or disconnecting the system when possible, but if a power shutdown is not possible or difficult, the TRUE1 power connectors used in the VDO Face system are designed to withstand hot-plugging.

Power plugs and power outlet sockets

A power plug can be installed on the installation's power input cables to make it easier to connect panels to AC mains power outlets. If you choose to install a power plug, use an industrial grounding-type (earthed) 3-prong type B plug (see Figure 17) that complies with IEC 60309 or a comparable national standard and is rated 250 V, 20 A minimum. For outdoor or humid location use, the plug must also be IP67-rated. For indoor use, the plug may be IP44-rated.

Use corresponding power outlet sockets. Follow the plug and socket manufacturer's instructions and all locally applicable laws and electrical safety codes.



IP44-rated *IP67-rated*

Figure 17: Industrial 20 A, 250 V IEC 60309 type B power plugs

When installing a power plug on the power input cable for connection to a single-phase system at 100 - 240 VAC, 50/60 Hz:

- Connect the green/yellow ground (earth) conductor to the terminal marked ⏚ or ⏚ for connection to ground (earth)
- Connect the blue conductor to the terminal marked **N** for connection to neutral
- Connect the brown conductor to the terminal marked **L** for connection to live

When installing a plug on the power input cable for connection to two phases of a 3-phase delta or split-phase mid-point neutral system to obtain 200-240 VAC, 50/60 Hz:

- Connect the green/yellow ground (earth) conductor to the terminal marked ⏚ or ⏚ for connection to ground (earth).
- Connect the blue conductor to the terminal marked **N** or **Phase 1** or **L1** for connection to one of the three phases in the system
- Connect the brown conductor to the terminal marked **L** or **Phase 2** or **L2** for connection to another of the three phases in the system

Table 1 gives details of standard wiring color codes and common pin identification symbols. If you have any doubts about proper installation, consult a qualified electrician.

Wire color (EU)	Wire color (US)	Pin (single-phase system)	Pin (3-phase system)	Symbol
blue	white	neutral	phase 1	**N**
brown	black	live	phase 2	**L**
yellow/green	green	ground (earth)	ground (earth)	⏚ or ⏚

Table 1: Wire colors and pin identification

Inrush current

Inrush current peaks are unlikely to occur at exactly the same time in multiple panel installations and only have a duration of a few microseconds, but bear in mind that inrush current when powering on may cause unintentional tripping of circuit-breakers, especially if these have low resistance to current transients.

Fuses

Warning! Fuses are not user-replaceable. Contact a Martin™ authorized service agent for assistance if you suspect that a fuse has blown.

P3™ communication link

VDO Face 5™ panels communicate using the Martin™ P3™ signal format (Ethernet Martin™ P3™ Protocol). The P3 signal contains both video data and command signals.

VDO Face 5™ panels have integral P3 data input and throughput connectors on the back of panels (see “Overview” on page 9).

It is possible to mix and interconnect different Martin™ LED video products in an installation. The P3 System Processor will recognize the products in the installation, display them correctly in the user interface, and control the different products correctly.

Cable and connector types

Use good-quality CAT 5e or better STP (shielded twisted pair) Ethernet cable for the P3 link. Cable must be suitable for the installation environment. RJ-45 connectors should be shielded type, with the shield around the connector terminals electrically connected to the cable shield.

The Ethernet socket on each panel has a sealing cap and accepts IP65-rated Neutrik EtherCON Cat 6 push-pull connectors. We recommend use of the IP65-rated Neutrik EtherCON CAT 6 cables supplied by Martin™ for the VDO Face 5™ (see “Data cable” on page 33).

In an indoor environment only, you can use non-IP-rated standard RJ-45 Ethernet connectors. It is possible to make your own cables with Neutrik EtherCON Cat 6 connectors.

Unused connectors on panels must be sealed with their supplied rubber caps at all times.

Planning the P3 link

Figure 18 on page 27 shows an example of a P3 system layout.

Martin P3 System Controllers accept a wide variety of video signal types. Please refer to product documentation for details.

P3 link requirements in large installations

A single P3 network can contain up to 500 000 pixels, corresponding to maximum of 48 x VDO Face 5™ panels. Please see the P3 System Controllers documentation for details of how many P3 networks and pixels each of the various P3 System Controllers can control.

If an installation consists of more than 48 x VDO Face 5™ panels, it can be split into two and two P3 System Controllers used in tandem. An even easier solution is to use a P3-300 System Controller. This controller has four P3 network outputs, each of which can drive up to 500 000 pixels.

Using Ethernet switches to split the link into chains

To make cabling more convenient, you can run the P3 signal output from the P3 System Controller to a 1 GB Ethernet switch, then use the outputs from the Ethernet switch to send the P3 signal to groups of panels. You can insert an Ethernet switch at any point on the link to branch the link into separate daisy chains.

Using Ethernet switches to extend the link

See Figure 18. The maximum permitted cable length between any two devices on the P3 link before a signal amplifier is required is 100 m (328 ft.) if good quality Ethernet cable is used for the link. A 1 GB Ethernet switch on the P3 link is an ideal signal amplifier. If the P3 link will exceed the 100 m cable length limit at any point in the installation, insert an Ethernet switch to boost the signal. If necessary, more switches can be added each time the link reaches the 100 m limit.

Figure 18 shows the 1 GB Ethernet switch inserted between two panels on the P3 link as an example only: the switch can be inserted in any position on the link where the cable length between any two devices would exceed 100 m.

Important! **More expensive, sophisticated switches tend to carry out additional processing that can cause latency. You should therefore choose a relatively cheap *unmanaged* 1GB Ethernet switch.**

P3 system layout: schematic overview

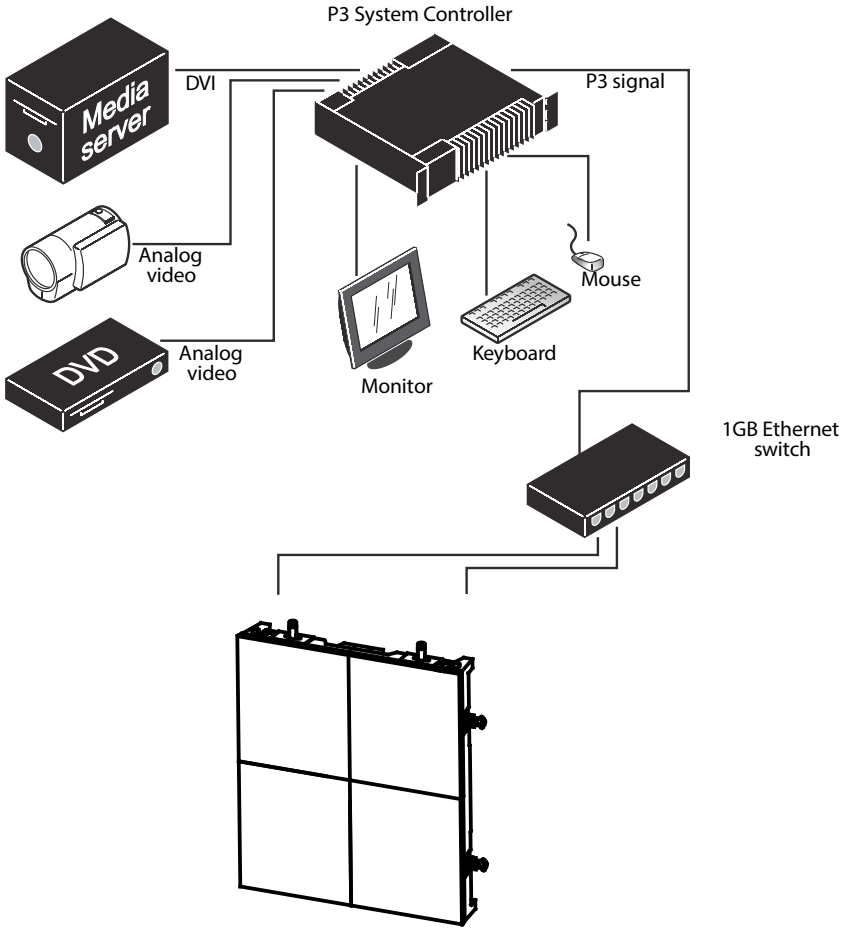


Figure 18: Schematic diagram of P3 system connections

Connecting the P3 link

Warning! In outdoor or humid environments, use only Neutrik EtherCON Cat 6 connectors for P3 signal connections, or panels will not be weatherproof to IP65. We recommend use of the cables supplied by Martin™ for the VDO Face 5™ (see "Data cable" on page 33).

To connect the P3 link:

1. Run an Ethernet cable from the P3 System Controller's P3 signal output to an input on a 1GB Ethernet Switch.
2. Run an Ethernet cable from the Ethernet Switch to the Data IN connector on the first panel in the chain.
3. Run an Ethernet patch cable from the first panel's Data THRU connector to the Data IN connector of the next panel in the chain and continue connecting panels, Data THRU to Data IN in a daisy-chain. A maximum of 48 panels may be connected in one chain.
4. If necessary, connect additional chains to the P3 System Controller, running Ethernet patch cables from the Ethernet Switch outputs to the data input of the first panel on each chain. Respect the layout and guidelines given earlier in this section.
5. Keep all unused panel connectors sealed with their rubber caps at all times.
6. The system is now ready for power to be applied.
7. Set up the panels to display video as described in the P3 System Controller's user manual.

Operation

Warning! Read 'Safety Information' starting on page 3 before operating an VDO Face 5™ system. Note in particular that panels must be removed from an installation under certain wind conditions.

This section explains the options available for testing and resetting VDO Face 5™ panels, but it does not explain how to position panels in the video image or video display options. For details of these, see the user documentation supplied with the P3 System Controller or available for download from www.martin.com

When repacking panels in a Martin™ flightcase after operation, follow the instructions in the flightcase (see "Avoiding damage to panels" on page 8).

Monitoring status and testing

Status indicator and test/reset button

See Figure 19. Status can be checked, panels can be tested and panels can be reset without a P3 System Controller using the test/reset button and status indicator LED on the back of the panel.

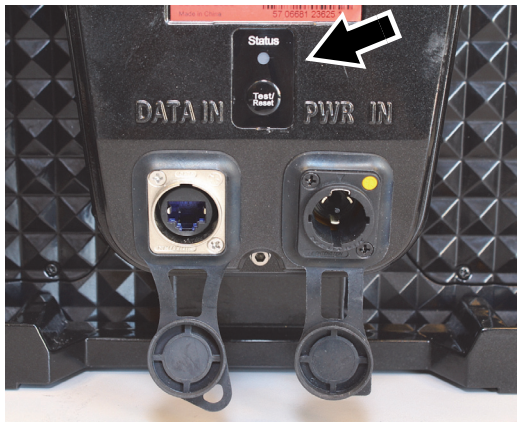


Figure 19: Test/reset button and status indicator LED

Testing LEDs and panels

Press the test/reset button once briefly. The panel will display a test pattern so that you can check for correct LED operation. Press the test/reset button once briefly again to display the next test pattern in the test sequence. Continue until all test patterns have been displayed.

RGB status indicator LED

The RGB status LED gives an indication of panel status. This LED indicates the following states:

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 panel has encountered a fatal error and can not run.	Perform a factory reboot, followed by a firmware upload.
Red	Flashing	Disconnected. A system controller could not be found.	Connect a system controller to the network.
Green	Flashing	Ready. A system controller is present on the network.	Configure the system controller to use this panel.
Green	Constant	Running. A system controller is using this panel.	None.

Table 2: RGB status LED

Resetting and rebooting panels

If it becomes necessary to reset an VDO Face 5™ panel, it is possible to force a 'normal reboot' (which causes the panel to reset and start up as it normally would when power is applied), or a 'factory reboot' (which causes the panel to start up the original factory-programmed firmware). The factory reboot is a fail-safe way to ensure the panel can be started up if there is a problem with the most recently uploaded firmware. It should not be required during normal operation.

Normal reboot: Press the test/reset button for approx. 3 seconds until the status LED lights blue. Release the button. The panel will boot normally as though power has just been applied.

Factory reboot: Press the test/reset button for approx. 8 seconds until the status LED lights white. Release the button. The panel will then boot using the original factory-programmed firmware.

Note that performing a factory reboot will only cause the panel to boot the factory firmware once. At the next power cycle (or reset), a normal reboot will be carried out.

Service and maintenance

Warning! Disconnect the panel from power or isolate the entire distribution circuit from power and ensure that all unused connectors are sealed with the supplied rubber caps before cleaning.

Warning! Refer any service operation not described below to a service technician approved by Martin Professional™. Removing any cover may cause a safety risk or unsatisfactory performance and will invalidate the product warranty.

Important! If you need to put VDO Face 5™ panels LED-side down, place them on a soft, flat surface only.

The user will need to carry out periodic cleaning, it is possible for the user to update the VDO Face 5™ firmware from the P3 System Controller, and the user may replace LED modules. All other service operations 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. This type of partnership will ensure the highest level of performance throughout the product's lifetime. Please contact your Martin™ supplier for details.

It is Martin™ policy to apply the strictest possible calibration procedures and use the best quality materials available to ensure optimum performance and the longest possible component lifetimes. However, LEDs are subject to wear and tear over the life of the product, resulting in gradual changes in color and overall brightness over many thousands of hours of use. The extent of wear and tear depends heavily on operating conditions and environment, so it is impossible to specify precisely whether and to what extent LED performance will be affected. To compensate for changes in LED performance, Martin™ has developed the P3 Fixture Adjuster. Please contact Martin™ for details and training.

The LEDs will not be affected by weather conditions as they are sealed inside modules. However, the outer surfaces of LED modules will be exposed to the elements, dirt, dust, etc.

Cleaning

Do not use abrasive, caustic or solvent-based products for cleaning, as they can cause surface damage.

To clean a VDO Face 5™ panel:

1. Vacuum or gently blow away dust and loose particles from the panel with low-pressure compressed air.
2. Wipe the outside of the LED modules with a soft, lint-free cloth dampened with a solution of water and detergent or auto shampoo. Apply gentle pressure only.

Installing new software

It may be necessary to upload new software to an VDO Face 5™ panel if the product appears to have a software-related fault or if you want to update to a newer software version.

Software updates are available from Martin and can be installed from the P3 System Controller over the P3 link.

See the P3 System Controller user manual for software installation instructions.

Replacing an LED block

Important! ***Take care to avoid damage to LED blocks. Do not place panels LED-side down unless for service and on a soft, flat surface. Take particular care to avoid shocks to the edges of LED blocks during removal, storage and installation.***

Important! ***LED blocks that fit the left and right-hand side of VDO Face 5™ panels are different.***

VDO Face 5™ video panels use a modular block LED system that allow modules to be removed and replaced for artistic or repair purposes. Modules are held in position by magnets and are hot-pluggable, so they can be replaced in a a matter of seconds in the middle of a show, even if power is applied and a P3 signal is present.

Blocks are supplied as either Left or Right (as viewed from the front, audience side) units and are marked LEFT or RIGHT to identify them. Install only the correct type of block on each side of the panel.

Removing an LED block

There are two methods for removing an LED block from a panel. See (A) and (B) below.

(A) If you have access to the back of the panel:

1. See Figure 20. Take hold of the handle on the back of the LED block and push the block towards the front of the panel until it is disconnected from its multiconnector and released from its magnetic holders.

Figure 20: Replacing an LED block, rear access

2. Unclip the carabiner hook (arrowed) on the LED block safety wire and lift the block away from the panel.

(B) If you do not have access to the back of the panel:

1. Obtain a VDO Face LED Block Removal Tool available from Martin™ (see “Accessories” on page 33).
2. See Figure 21. Screw the prongs (arrowed) on the ends of the Removal Tool into the corresponding holes in the front of the LED block, then lift the block away from the panel.
3. Unclip the carabiner hook on the LED block safety wire and lift the block away from the panel.

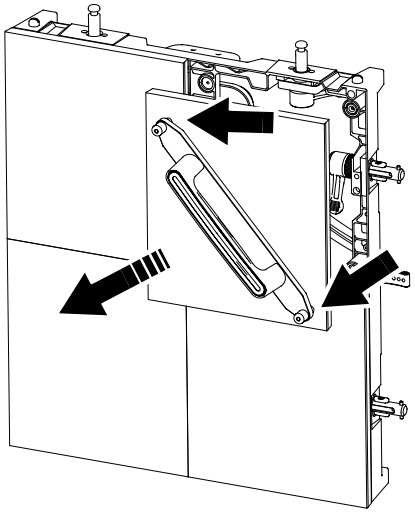


Figure 21: Replacing an LED block, front access

Installing an LED block

To install an LED block:

1. Align the block so that the safety cable attachment bracket is pointing upwards and the multi-connector on the back of the block is pointing in towards the center of the panel.
2. Fasten the safety wire in the panel to the attachment bracket at the top of the LED block.
3. Depending on whether you have access to the front or rear of the panel, use the removal tool shown in Figure 21 or the handle shown in Figure 20 to reinstall the block. You will need to use a little pressure to reconnect the LED block’s multi-connector, but do not use excessive force.

Troubleshooting

Problem	Probable cause(s)	Remedy
Panel is completely dead.	No power to panel.	Check power and connections.
	Fuse blown.	Disconnect panel from power. Contact Martin Professional for service.
	Defective PSU (power supply unit).	Disconnect panel from power. Contact Martin Professional for service.
One or more panels displays video incorrectly or does not display video at all.	Incorrect panel settings on P3 System Controller.	Check settings (display addresses, panel Device Properties, etc.).
	Fault on P3 link.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Panel defective.	Have faulty panel serviced by Martin service technician.
	Other device (e.g. Ethernet switch) on P3 link defective.	Replace with a device known to be operating correctly. Have faulty device tested and serviced.
All panels and/or monitor screen display video incorrectly or do not display video at all.	Incorrect video input or panel settings on P3 System Controller.	Check settings (PAL/SECAM/NTSC selection, overall panel intensity setting, etc.)
	Unusable video signal or defective video source.	Check video source.
	Fault on P3 link.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Device on P3 link defective.	Have faulty panel or device tested and serviced by Martin service technician or supplier.
Display cuts out intermittently.	Panel is too hot.	Ensure free airflow around spine. Clean spine. Check that ambient temperature does not exceed max. permitted level. Contact Martin for service.
	Fault on the P3 link.	Inspect connections and cables. Correct poor connections. Repair or replace damaged cables.
	Device on P3 link defective.	Have faulty panel or device tested and serviced by Martin service technician or supplier.
One LED module cuts out.	LED module incorrectly installed and connected. LED module faulty.	Check module. Replace LED module.

Table 3: Troubleshooting

Specifications

Physical

VDO Face 5™ LED Video Panel

Width . . . . . .500 mm (19.7 in.)
Height . . . . . 562.5 mm (22.2 in.)
Depth . . . . . .105 mm (4.2 in.)
Weight . . . . . 10.5 kg (23.2 lbs.)

VDO Face Single Header

Width . . . . . .500 mm (19.7 in.)
Height . . . . . .36 mm (1.5 in.)
Depth . . . . . .69 mm (2.8 in.)
Weight . . . . . 2.4 kg (5.3 lbs.)

VDO Face Double Header

Width . . . . . .1000 mm (39.4 in.)
Height . . . . . .36 mm (1.5 in.)
Depth . . . . . .69 mm (2.8 in.)
Weight . . . . . 5.0 kg (11.1 lbs.)

VDO Face 6-panel Flightcase

Length . . . . . .1200 mm (47.3 in.)
Width . . . . . .580 mm (22.9 in.)
Height (including wheels). . . . . .767 mm (30.2 in.)
Weight (empty). . . . . .61 kg (134.5 lbs.)

Control and Programming

Addressing and status . . . . . Via Martin™ P3 System Controller
Mapping . . . . . Via Martin™ P3 System Controller
Firmware update . . . . . Via Martin™ P3 System Controller

Control/User Interface

Device status . . . . . Multicolor LED
Device testing and reset . . . . . .Pushbutton

Optics

Pixel pitch (LED center-to-center) . . . . . 5.208 mm (0.205 in.)
Viewing angle (horizontal x vertical) . . . . . 160° x 140°
LED refresh rate . . . . . 3400 Hz
Color resolution . . . . . .16 bits per color (48 bits per pixel)
Resolution, one panel . . . . . .96 x 108 pixels
Pixels per panel 10 368
Color and intensity calibration . . . . . .Pixel-level

LED type

VDO Face 5™ HB . . . . . .SMD, RGB, black housing, white reflector
VDO Face 5™ HC . . . . . SMD, RGB, black housing, black reflector

Photometric Data

VDO Face 5 HB

Brightness, calibrated mode . . . . . 5000 Nit

VDO Face 5 HC

Brightness, calibrated mode . . . . . 3000 Nit

Video Processing

Video signal processor . . . . . .External processor from Martin™ P3 System Controller range
Latency between first and last device . . . . . None
Brightness control . . . . . Via Martin™ P3 System Controller
Gamma correction and control . . . . . Via Martin™ P3 System Controller
Color temperature control . . . . . Via Martin™ P3 System Controller
Color space control . . . . . Via Martin™ P3 System Controller
Calibration processing . . . . . Via Martin™ P3 System Controller
Synchronization . . . . . Via Martin™ P3 System Controller

For full video processing and performance data, see relevant P3 System Controller specifications

P3 Signal Protocol

Signal type . . . . . Gigabit Ethernet
Protocol . . . . . Proprietary Martin™ P3
Hot pluggable . . . . . Yes, electrically insulated at all connections
Cable type . . . . . Ethernet, Cat 5e or better
Cable length . . . . . Up to 100 m (328 ft.) between any 2 devices, extendable with Ethernet switch
Max. number of devices per chain . . . . . 48 (split and multiple chains possible with Ethernet switch)

Construction

Panel frame . . . . . Die-cast aluminum
LED modules per panel . . . . . 4 quick-install LED blocks
Color . . . . . Matt black
Protection rating . . . . . IP65, NEMA 4
RoHS compliant

Installation

Orientation . . . . . Any
Location . . . . . Indoor or non-permanent outdoor installation
Mounting . . . . . Vertical columns via headers, creative layouts via panel clamps
Max. suspended vertically from header . . . . . 10 panels (safety factor 10) or 16 panels (safety factor 6)
Max. suspended from panel clamp (any orientation) . . . . . 1 panel
Wind pressure safety limit . . . . . Up to Beaufort Force 8
Panel interlocking . . . . . Quick-lock mechanism

Connections

Power in, power thru . . . . . Neutrik PowerCON TRUE1
Data in, data thru . . . . . Neutrik EtherCON Cat 6

Electrical

AC power . . . . . 100-240 V nominal, 50/60 Hz
Power supply unit . . . . . Integrated, auto-sensing multi-voltage

VDO Face 5 HB

Peak power consumption (approx., at full intensity, full white) . . . . . 191 W per panel, 679 W per m^2
Typical power consumption (with typical video content) . . . . . 64 W per panel, 226 W per m^2

Thermal

Cooling . . . . . Convection
Maximum ambient temperature (T_a max.), full intensity, full white . . . . . 45° C (113° F)
Minimum ambient temperature (T_a min.) . . . . . -20° C (-4° F)

VDO Face 5 HB

Typical total heat dissipation (calculated, per panel, with typical video content) . . . . . 220 BTU/hr.

Approvals

EU safety . . . . . EN 60950-1, EN 62311, EN 62471
EU EMC . . . . . EN 55024, EN 55032, EN 61000-3-2, EN 61000-3-3
US safety (pending) . . . . . ANSI/UL 60950-1
US EMC . . . . . FCC Title 15, Subpart B, Class A, ANSI C63.4
Canadian safety (pending) . . . . . CSA C22.2 No. 60950-1-03
Canadian EMC . . . . . ICES-003 Class A
Australia / NZ . . . . . RCM

Accessories

Service accessories

VDO Face LED Block Front Removal Tool . . . . . P/N 91616067

Data cable

Data Cable, Cat 6 EtherCON-EtherCON 0.45 m (1.4 ft.) . . . . . P/N 91611781
Data Cable, Cat 6 EtherCON-EtherCON 1.2 m (3.9 ft.) . . . . . P/N 91611782
Data Cable, Cat 6 EtherCON-EtherCON 5 m (16.4 ft.) . . . . . P/N 91611783
Data Connector, Cat 6 EtherCON . . . . . P/N 91611787

Power cable

Power Input Cable, H07RN-F, 2.5 mm2, 14 AWG, bare ends to Neutrik TRUE1 NAC3FX-W (female), 1.5 m (4.9 ft.) . . . . . P/N 91611797
Power Input Cable, H07RN-F, 2.5 mm2, 14 AWG, bare ends to Neutrik TRUE1 NAC3FX-W (female), 5 m (16.4 ft.) . . . . . P/N 91611786
Power Relay Cable, H07RN-F, 2.5 mm2, 14 AWG, Neutrik TRUE1 to TRUE1, 0.45 m (1.5 ft.) . . . . . P/N 91611784
Power Relay Cable, H07RN-F, 2.5 mm2, 14 AWG, Neutrik TRUE1 to TRUE1, 1.2 m (3.9 ft.) . . . . . P/N 91611785
Power Relay Cable, H07RN-F, 2.5 mm2, 14 AWG, Neutrik TRUE1 to TRUE1, 2.5 m (8.2 ft.) . . . . . P/N 91611796

Power connectors

Cable Connector, Neutrik PowerCON TRUE1 NAC3FX-W (female, power IN at device) . . . . . P/N 91611789
Cable Connector, Neutrik PowerCON TRUE1 NAC3MX-W (male, power THRU from device) . . . . . P/N 91611788

Spare Parts

VDO Face 5 HB LED Block, Left . . . . . P/N 91616063
VDO Face 5 HB LED Block, Right . . . . . P/N 91616064
VDO Face 5 HC LED Block, Left . . . . . P/N 91616065
VDO Face 5 HC LED Block, Right . . . . . P/N 91616066

Related Items

Martin™ P3-050 System Controller . . . . . P/N 90721090
Martin™ P3-100 System Controller . . . . . P/N 90721010
Martin™ P3-150 System Controller . . . . . P/N 90721015
Martin™ P3-200 System Controller . . . . . P/N 90721020
Martin™ P3-300 System Controller . . . . . P/N 90721060
Martin™ P3-PC License on One-Key™ USB stick . . . . . P/N 90721030
Martin™ P3-PC License Only . . . . . P/N 39808028
Martin™ P3 Fixture Adjuster License and Training . . . . . P/N 90721100

Ordering Information

Panels

VDO Face 5™ HB Panel, calibrated, in cardboard box . . . . . P/N 90354660
VDO Face 5™ HC Panel, calibrated, in cardboard box . . . . . P/N 90354670

Headers

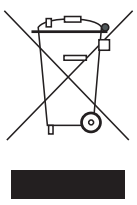
VDO Face Single Header in cardboard box . . . . . P/N 91616061
VDO Face Double Header in cardboard box . . . . . P/N 91616062

Flightcases

Flightcase for 6 x VDO Face Panels . . . . . P/N 91515038
Flightcase for 6 x VDO Face Double Headers . . . . . P/N 91515040
Flightcase Extender for 6 x VDO Face Double Headers . . . . . P/N 91515041

Specifications are subject to change without notice.

All VDO Face and P3 System Controller user documentation is also available for download free of charge from the Product Support / Tech Docs pages at www.martin.com



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.

www.martin.com • Olof Palmes Allé 18 • 8200 Aarhus N • Denmark
Tel: +45 8740 0000 • Fax +45 8740 0010