

# UniSee and LCD

Service Manual

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## **Warranty Statement**

Please refer to <http://www.barco.com/en/aboutbarco/Warranty%20policy>



# System overview

# 1

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## 1.1 Introduction

UniSee View is a modular designed professional display available as standard and high brightness version. The LCM is completed by a power supply solution (redundancy option) and an input board solution.

The input boards and power supplies of the Barco UniSee system have been designed to be extremely reliable, and easily upgradable.



Input board option and power supply option and/or the power redundancy option are delivered with the LCM but in separate packages. They need to be plugged to the LCM at customer site.

## 1.2 UniSee View

UniSee View comprises the LCM completed by the input board and the power supply.

The LCM features dedicated interfaces for plugging in the input board and the power supply.

Hence these components are installed in the Barco UniSee mount. Later, when mounting the LCM to the UniSee mount, the input board and the power supply dock to the interfaces of the LCM.

With UniSee mounts, there is no need to pre-assemble the components.

### LCM

The LCM features interfaces for easy connection of the input board and the power supply.

It comes with 4 handles, one at each corner.

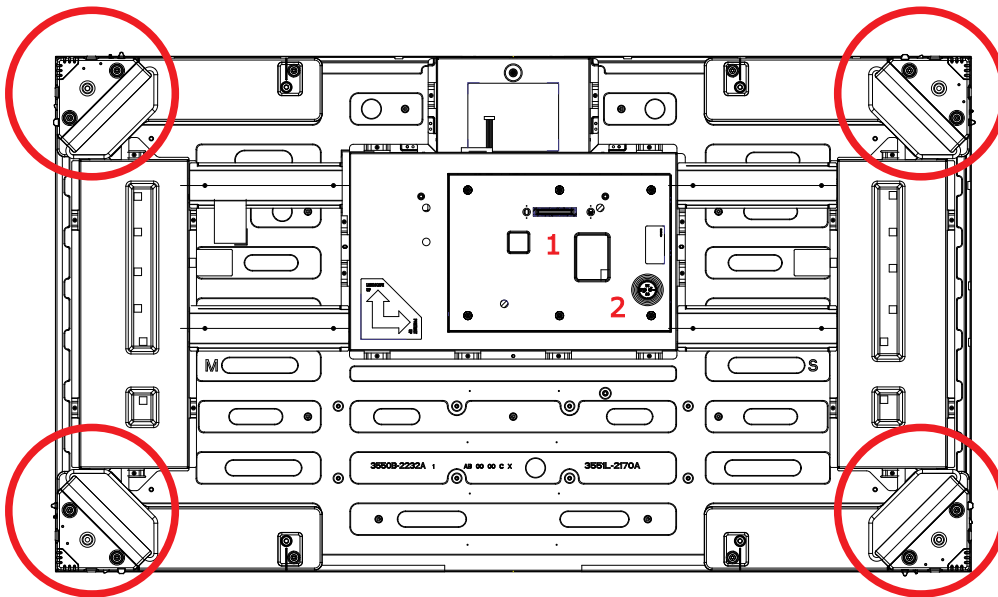


Image 1-1

- 1 Interface for input board connection
- 2 Interface for power supply connection (RoPD connector)

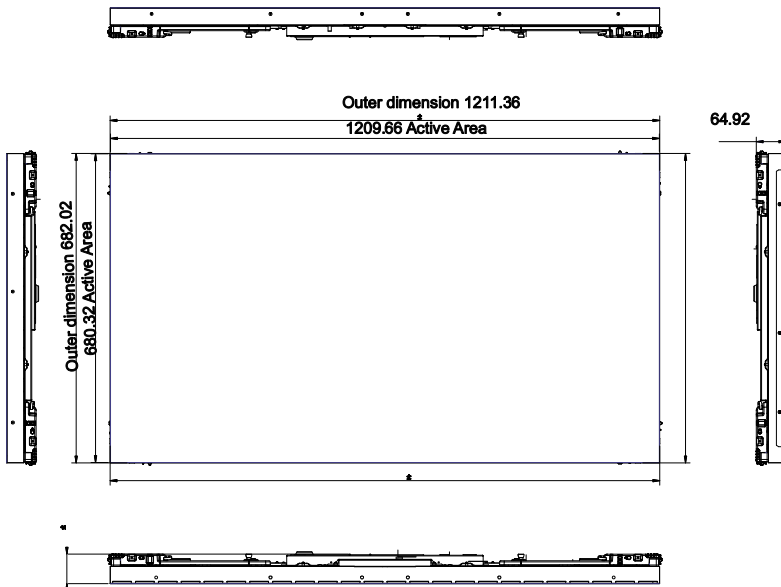


Image 1-2 Dimensions of the LCM

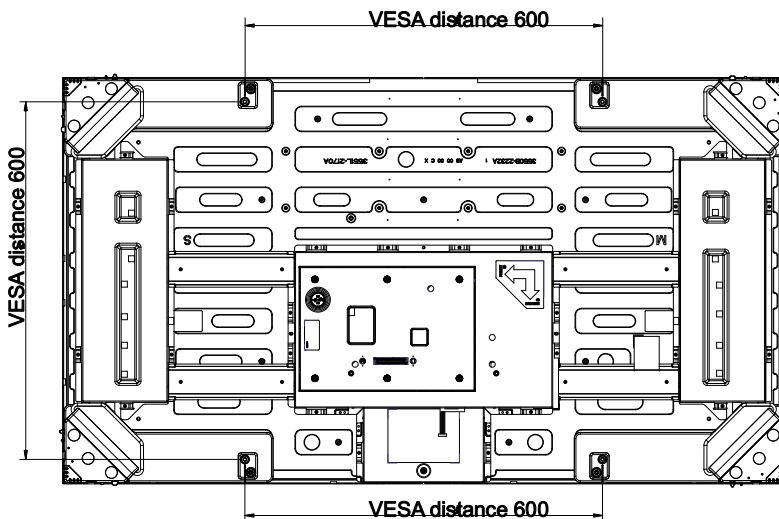


Image 1-3

## Input Board

The input board has 2x HDMI 2.0 inputs and 2x DP1.2 inputs, max. resolution 4kx2k @60Hz., and a DP 1.2 output.

Each of these inputs has a 4k loop-through connection to the DP1.2 output. Loop-through connection is established as soon as the input is the active input. The max. length of the loop equals 16 for signals without HDCP protection and a resolution of 1920x1080@60Hz.

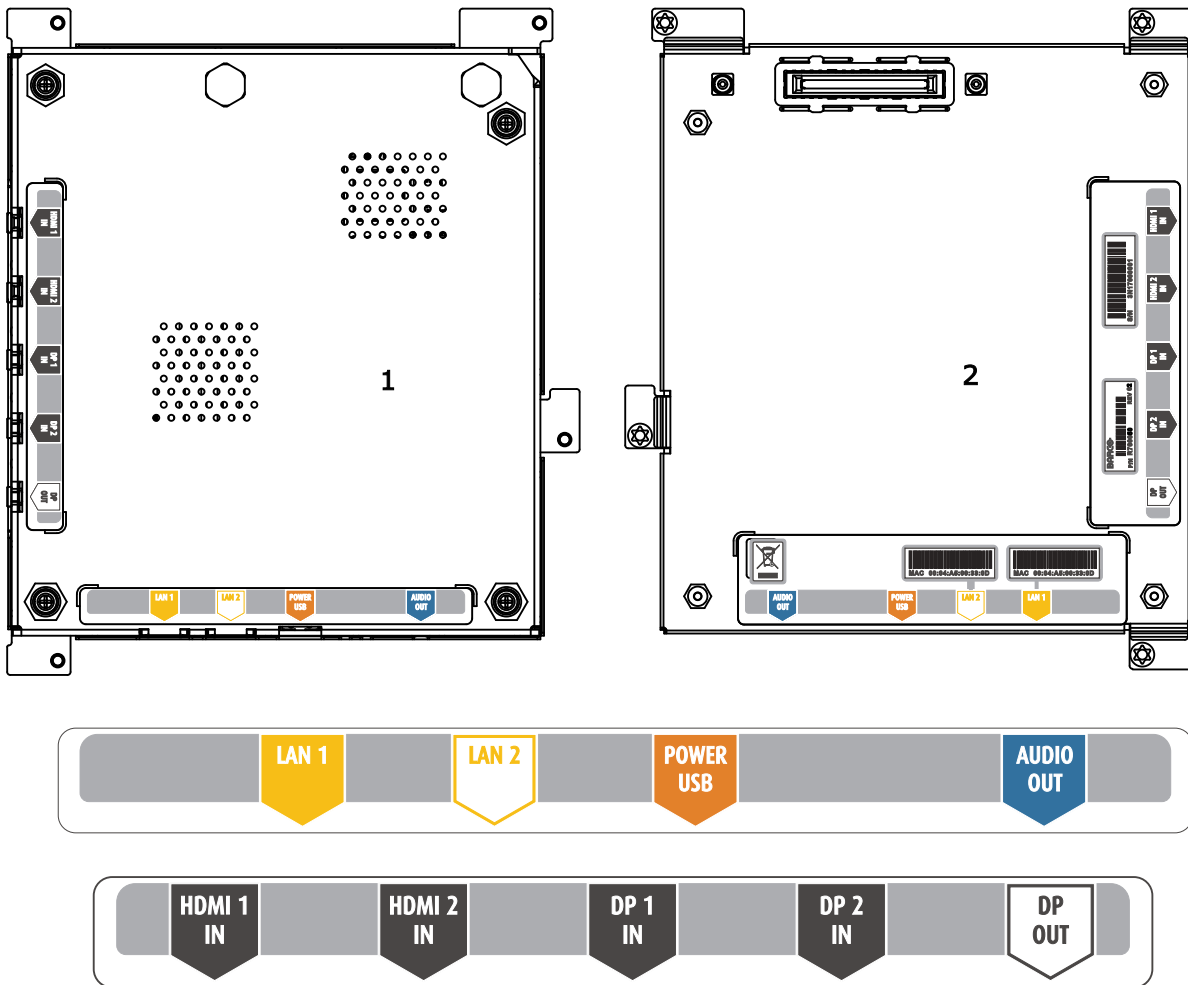


Image 1–4

- 1 DP1.2/HDMI 2.0 Input board top
- 2 DP1.2/HDMI 2.0 Input board bottom

#### Interfaces of the DP1.2/HDMI 2.0 input board

- HDMI 1 IN / HDMI 2 IN: HDMI 2.0 inputs
- DP 1 IN / DP 2 IN: DP1.2 inputs
- DP OUT: DP1.2 output
- LAN 1: RJ45 interface, LAN IN for network connection
- Lan 2: RJ45 interface, configured as LAN OUT
- AUDIO OUT: 3.5 stereo jack
- POWER USB: two USB interfaces for power supply of f.i. optical cables

Each of the HDMI/DP inputs has a loop-through connection to the DP output. Up to 16 display can be connected in loop-through chain (content without HDCP protection and input resolution up to 1920x1080). When displaying content with HDCP protection, the following restrictions apply:

Input	repeater functionality for signals with HDCP2.2	loop length
HDMI 2.0	no repeater functionality	Signal protected with HDCP 2.2 will be shown on receiving display but not on loop-out.
DP 1.2	Support of repeater functionality. Need to be configured on the display web app. On last display in the loop, HDCP repeater functionality needs to be disabled	HDCP 1.3: max. 1+7 HDCP 2.2: max. 1+4





Use shielded signal interface cables with a ferrite core to maintain standard compliance for the product.

## Internal power supply

The power supply comes with a power cable with C14 / RoPD interfaces to connect to the displays. The power cord for connection to the wall outlet features a C13 plug and, depending on the region, a plug of type B, F, G, I, respectively.

## 1.3 UniSee Mount



Although the LCM is VESA compliant, it is strongly recommended to use the Barco UniSee Mount which perfectly foresees installation places for the power supply and input board options.

It is only the Barco UniSee Mount that unleashes all sophisticated features of the UniSee View displays

The UniSee Mount is a sophisticated mechanical innovation that uses the power of gravity to keep the panels perfectly in place, ensuring the precise alignment of the panels. The corners of the LCM ensure that the panels' edges are not damaged.

UniSee Mount comprises following features:

- Interface parts to mount the structure against carrying wall and to adjust structure elements against each other.
- Hosting input electronics module.
- Hosting single or dual power supplies including redundancy unit.
- Cable guiding for video, network and AC mains cabling.
- Hosting the LCM with board to board docking mechanism between power supplies, input module and LCM.
- Full front access setup and servicing.
- Diagonal motion for easy service access to any display of a display wall.
- Gravity balancing spring mechanism to reduce load to stacked displays.

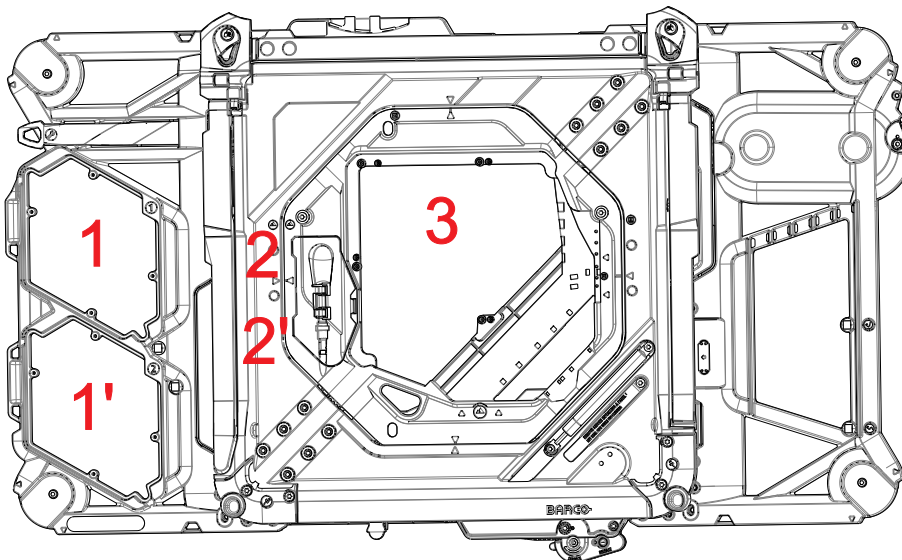
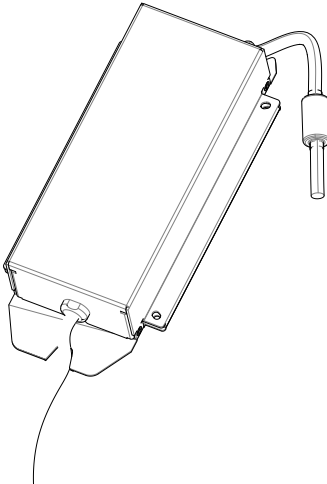
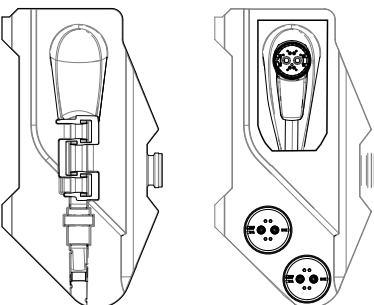
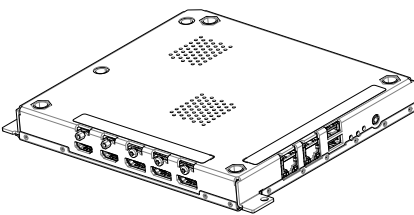


Image 1-5

<p>1, 1'</p>	<p>Position of the internal power supply, 1: single power supply (AC), 1+1': redundant power supply (AC)</p>	
<p>2, 2'</p>	<p>Position of the power supply connector, 1: single power supply (AC or DC) 2: power share box for redundant power supply (AC or DC)</p>	
<p>3:</p>	<p>Position of the input board</p>	



Installation of the LCM to UniSee Mount is just opening the moving frame and hanging in the LCM.



**WARNING:** The Barco UniSee Mount uses springs to compensate gravity of the LCMs: Actually an LCM will only feel 1/10 of the weight of the LCM on top of it. Thus in landscape mode, display walls with up to 10 rows in height are possible without damaging the LCM of the bottom row. In portrait mode, display walls with up to 6 rows are possible.

# Service and maintenance

# 2

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## 2.1 Required Tools

- Torx key size 20, 25, 30
- Wrench key size 13, 17, 24
- Adjustable wrench
- Torque key
- Allen key size 4
- Allen key size 5
- Allen key size 6

## 2.2 Important warnings

### Health protection

Do not disassemble or modify the LCD module to avoid the possibility of electric shock, damage of electronic components, scratch at display surface and invasion of foreign particles. In addition, such activity may result in fire accident due to burning of electronic component



**WARNING:** The LCM disassembled or modified by customer is out of warranty

Please be careful in handling of display with broken glass. When the display glass breaks, please pay attention not to injure your fingers. The display surface has the plastic film attached, which prevents dispersion of glass pieces; however, touching broken edge will injure your fingers.



**WARNING:** If the fluid should get in your eyes, wash your eyes immediately with pure water for more than 15 minutes and then consult the doctor

Operating the product

- Take a rest from time to time to protect your vision
- Take a regular break when working with the product for a long time.
- Keep the proper distance from the product. Your vision may be impaired if you look at the product too closely.
- Using headsets (earphones) for a long time or listening loudly can cause damage to your hearing.



**WARNING: LED inside!**  
**Class 1M laser (LEDs) radiation when open.**  
**Do not open while operating!**



**WARNING: The device has magnetic self location connectors. Caution! Magnets can impact the function of pace makers and implantable cardioverter-defibrillators (e.g. actuation of reed switch) Keep a minimum distance of 0.2m (20cm) between the magnetic connector and the implanted devices to prevent malfunction and danger to health.**

### Product care

#### ESD Protection

Electronic discharge will damage the device! Therefore remember the following precautions:

- Use a grounded workplace
- Wear a ground wrist strap
- Discharge your body's static electricity by touching a grounded surface.

#### Mechanical stress

Please be careful not to apply strong mechanical stress (shock, drop) to the LCM module. Such stress may cause break of screen glass or may be the cause for failure

#### Pressure to screen surface

Be careful not to apply strong pressure to the screen surface. Such pressure may cause scratches at the surface or may be the cause of failure

### Protection against scratch

Be careful not to hit, press or rub the screen surface with hard material like tools. In addition, please do not put heavy or hard material on the screen surface, and do not stack displays. Polarizer at the front surface can be easily scratched. Temperature dependence of the display

### Temperature dependence of the display

Response speed (optical response) of the LCM is dependent on temperature. Under low temperature, response speed is slower. Also brightness and chromaticity change slightly depend on temperature.

### Image retention

Displaying the same pattern for a long time may cause image sticking, vertical dark lines or other forms of image artifacts. This is a common phenomenon of all LCD displays. It disappears after some time if the pattern is changed, or the display is switched off. However, image retention is not subject of warranty.

## 2.3 De-mounting of an LCM

In case an LCM needs to be replaced or the cabling needs to be changed, the LCM has to be de-mounted from the structure.

Due to the sophisticated design, every LCM can be de-mounted without the need to de-mount adjacent LCMs.

Next to the physical replacement of the display, the device also needs to be changed in the logical setup of the display wall..



Swap and replace always comprises two parts: the physical swapping/replacing of the device, and swapping/replacing the device in the user interface of WallConnect



**CAUTION:** Consult the user manual of WallConnect for information how to swap/replace the device in the user interface.

## 2.4 Swap and replace of the physical display

### De-mounting of a display

1. Insert the tool into the service release drive on the bottom of the MOST RIGHT column (column n) (position service).

*Tip:* The service tool KEY THAN HEX L D5 X L200 (B383384) to operate the service release drive is included in the installation kit.



Image 2-1

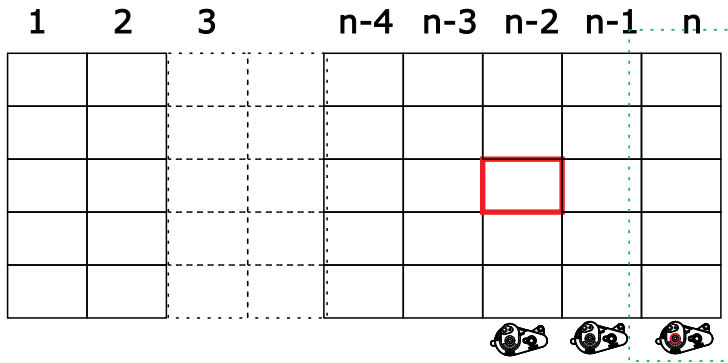


Image 2-2

- On the most right column (column n) turn the service tool clock wise to the highest possible position: the column will slide up (45° angle)

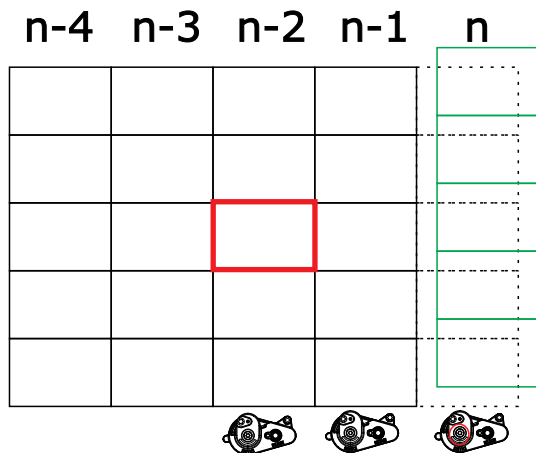


Image 2-3

- In case you listen to the “click” of the service gear: you should hear 7 clicks! In case you hear only 6 clicks, there might be two reasons for this:

Reason 1: The adjustment of the LCM results in the position of the LCM “above the first click” (the distance between the lower part of the adjustment device and the head of the adjustment screw is approx.. 55mm) In this case only 6 clicks can be heard; however the functionality is not affected.

Reason 2: During installation of the service gear the synchronization had not been done correctly. In this case the system will not reach the target position and you will not be able to pull the service lever. You will have to re-do synchronization of the service gear

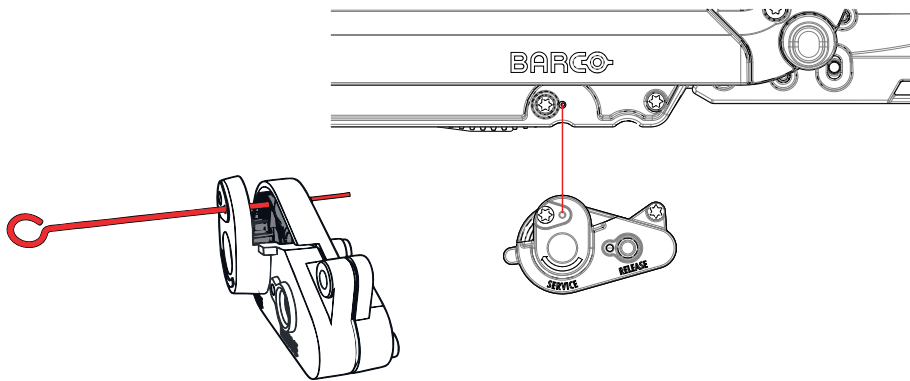
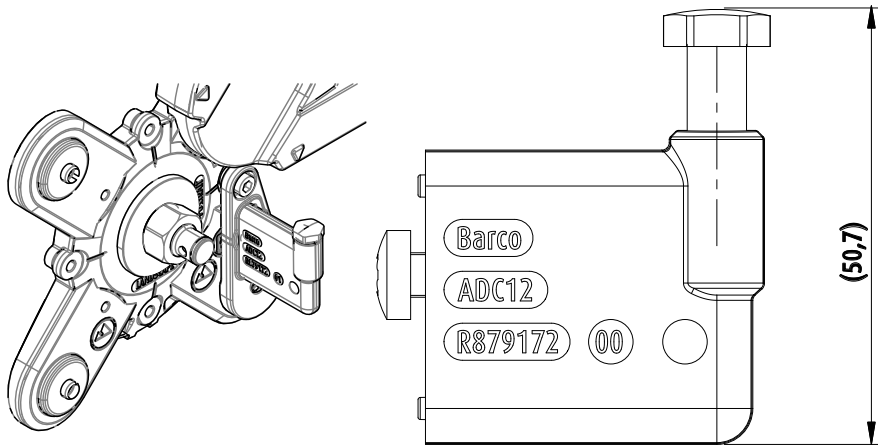


Image 2-4

4. Insert the tool into the service release drive on the bottom of the column (n-1) (position service).

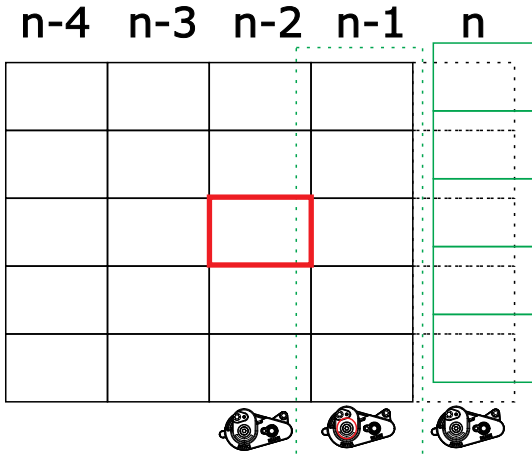


Image 2-5

5. On the column (n-1) turn the service tool clock wise: the column will slide up and to the right (45° angle)

n-4 n-3 n-2 n-1 n

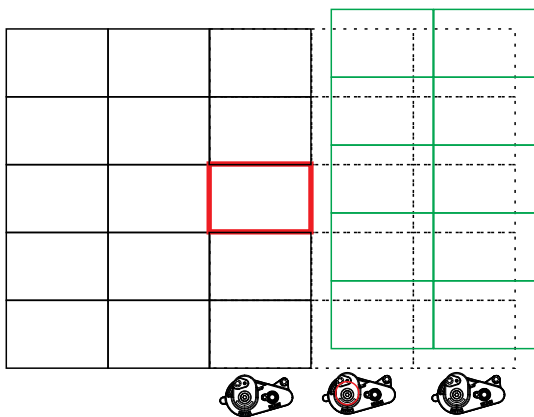


Image 2-6

- Proceed accordingly until the column of the LCM to be removed and all columns RIGHT to this have been shifted up.

n-4 n-3 n-2 n-1 n

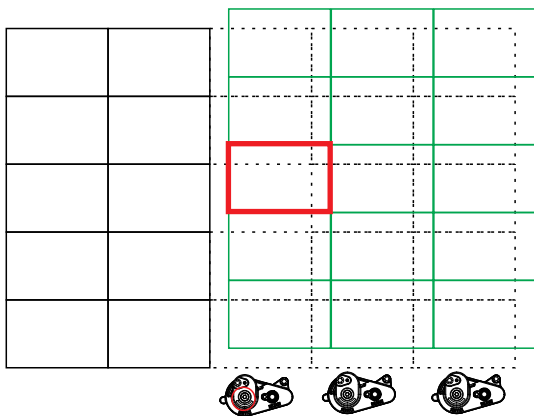


Image 2-7

- Landscape:** Now you see the service lever (red) of the meta frame. This lever needs to be pulled left for the LCM to be removed!

**Portrait:** You have direct access the strap of the meta frame. Insert your finger and pull it left! Please note: Perform ONLY for the LCM to be removed.

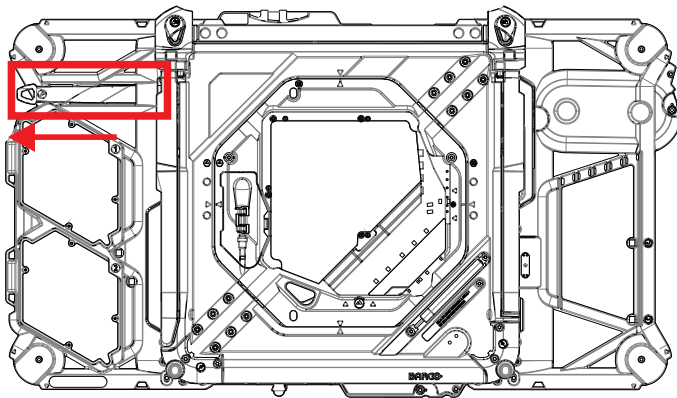


Image 2-8



*Tip:* In case the service lever cannot be pulled left, synchronization of the gear has not been done correctly! Drive the column down, and re-do the synchronization!



8. When the service lever has been pulled left, use the service tool KEY THAN HEX L D5 X L200 (B383384) and push the button (release). The column will slide down.

n-4 n-3 n-2 n-1 n

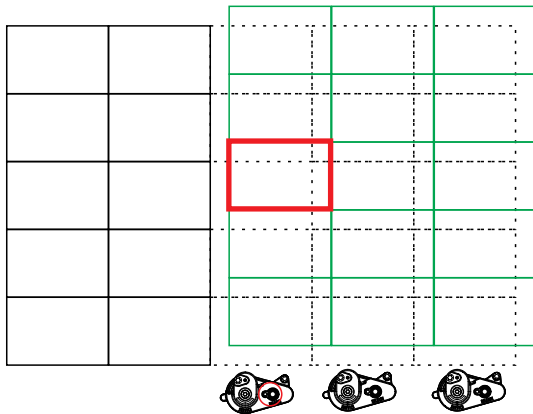


Image 2-9

9. When the service lever has been pulled left, use the service tool KEY THAN HEX L D5 X L200 (B383384) and push the button (release). The column will slide down. Keep the button pushed until the column with the LCM to be removed has been moved to the bottom. The LCM to be replaced will be in an intermediate position with a gap all around the panel

n-4 n-3 n-2 n-1 n

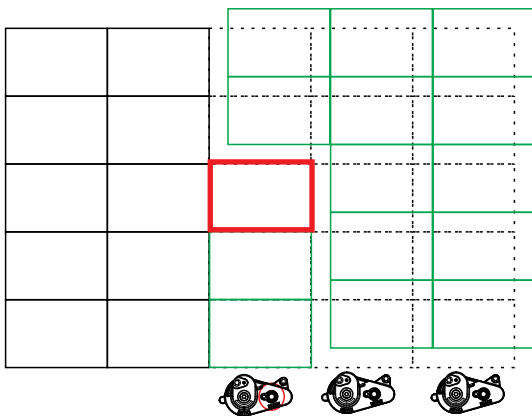


Image 2-10

10. Now you can open the Vesa arm on the on the moveable frame and remove the LCM. LEAVE THE FRAME OPEN! NEVER CLOSE THE VESA ARM WITHOUT LCM!! Otherwise the moving frame will lift up and release the upper LCMs on the mount which will drive down. If this happens, all LCMs on top needs to be lifted up manually without the drive unit in the bottom row. This may damage the LCMs!

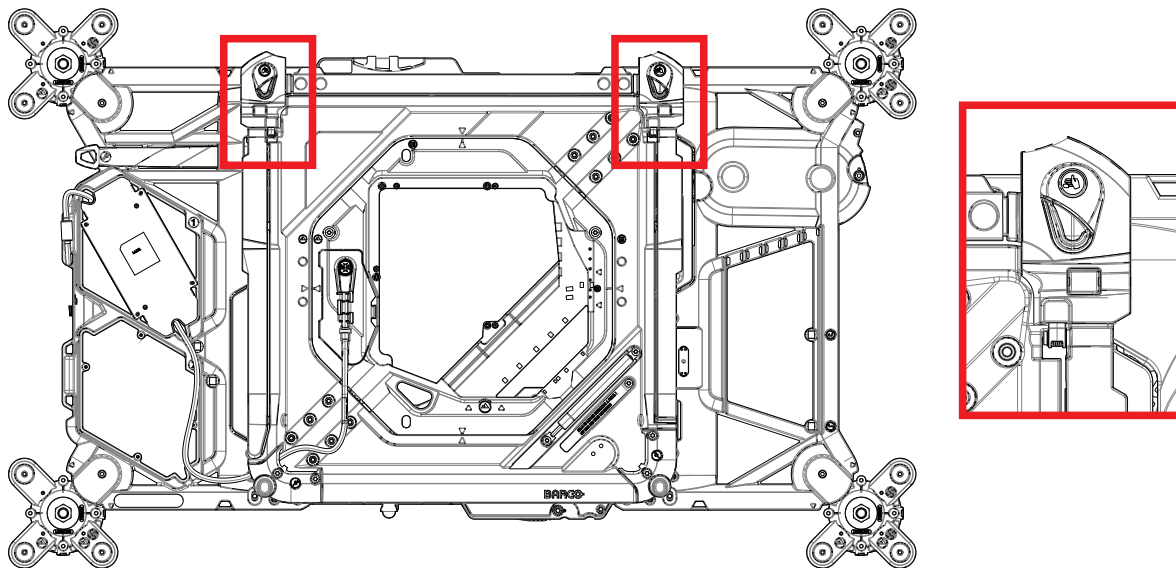



Image 2-11

 **Tip:** In case of loop-through of network and/or signals, all displays which are following the display being served in the chain will lose network connectivity and/or signal connectivity!

11. When the work is completed, install the LCM and close the VESA arm.
12. When the frame is closed, the LCM slides down and to the left. Use the service tool KEY THAN HEX L D5 X L200 (B383384) and insert it into position service. Turn the service tool clockwise to lift the column. The panel slides up. During this movement, watch the upper panels: they will start coming done. When you see them coming down, pause the turning of the service gear to reduce the risk of damage. Once the panels are in contact, proceed with turning the service gear. Turn it to the highest possible position: This will “dock” the just served LCM to the LCMs above.

n-4 n-3 n-2 n-1 n

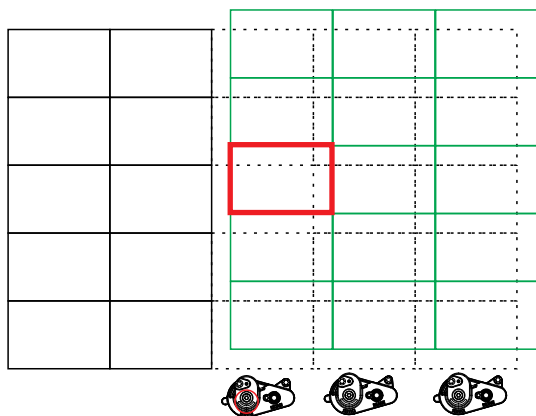


Image 2-12

13. Subsequently use the service tool KEY THAN HEX L D5 X L200 (B383384) and push the button (release). The column will slide down.

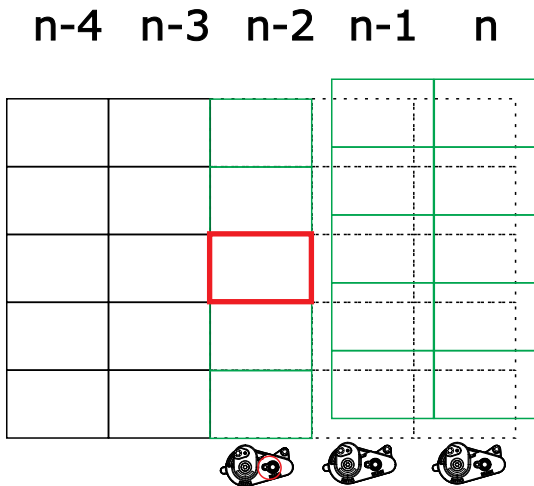


Image 2-13

14. After you raise and lower a column of panels the panels might not always settle back to their previous position. In order to get them back and to get the wall re-aligned, carefully push each panel at the backcover of the LCM or the corner where the handle is fixed to the left and pull the column down. Do this for every column which is lowered!
15. When the column has completely moved down and thus aligned on top with the columns to the right: On the adjacent column to the right, use the service tool KEY THAN HEX L D5 X L200 (B383384) and push the button (release). The column will slide down.

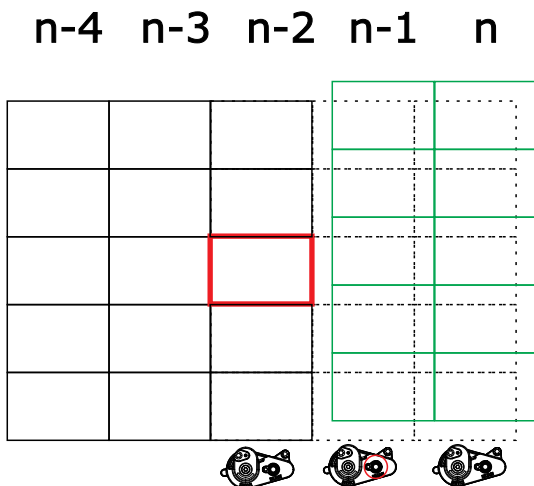


Image 2-14

16. From left to right, proceed until all columns are moved down.

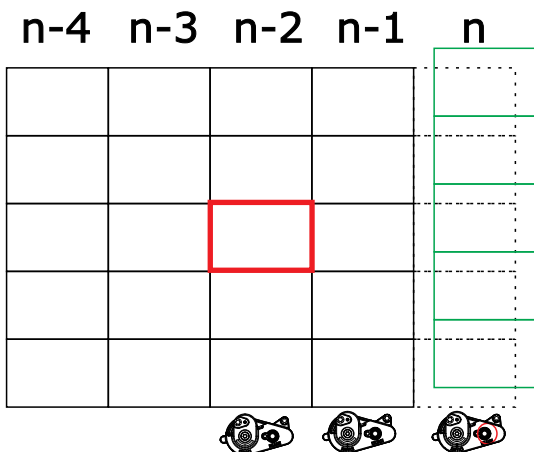


Image 2-15

17. Complete the physical replacement by the actions required in WallConnect software

## 2.5 Replacement of the power supply and the input board module

### Replacement instruction



Make sure to de-mount the respective LCM as described in the previous chapter.

**DO NOT CLOSE THE VESA ARM!**

Once the LCM has been demounted, de-tach the cables from the component which needs to be replaced.

Remove the broken component. Subsequently install the new one!

### Installation of the input board, power supply, and cabling

1. Landscape:

Mount the power supply.

Use 4x SCR \$7985ZM 4 X 20 STZN (B362771) and fix the power supply to the meta frame. Torque: 3Nm.

Make sure that the mains connection is guided on the meta frame, don't push it behind the meta frame.

Please note: The package also includes 4x SCR D7985TXM 3 X 10 STZN (B362737). These screws are not needed for installing the power supply on the meta frame.

In case of redundancy option: also install the second power supply.

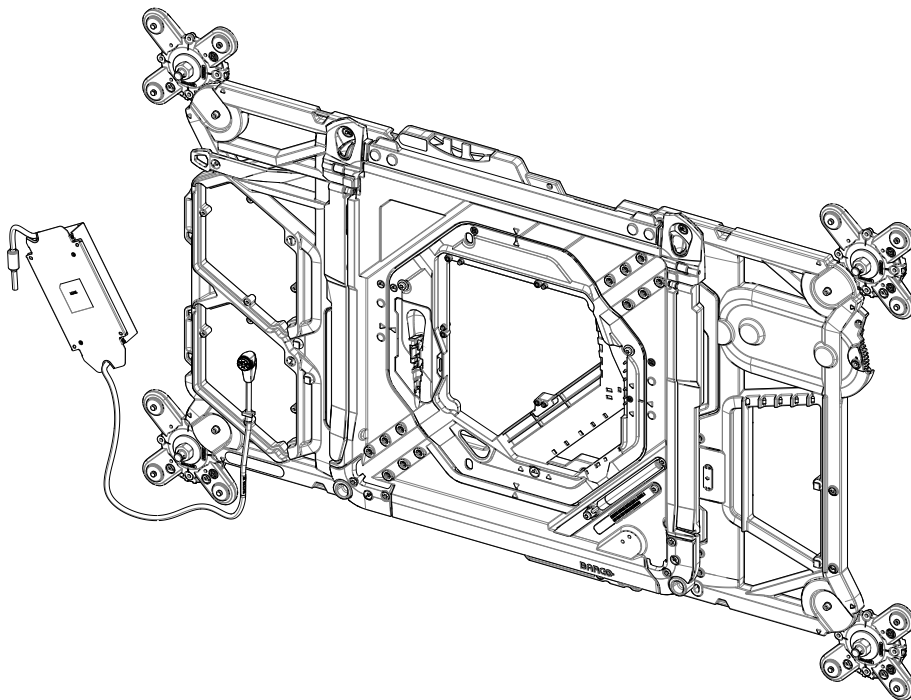


Image 2-16

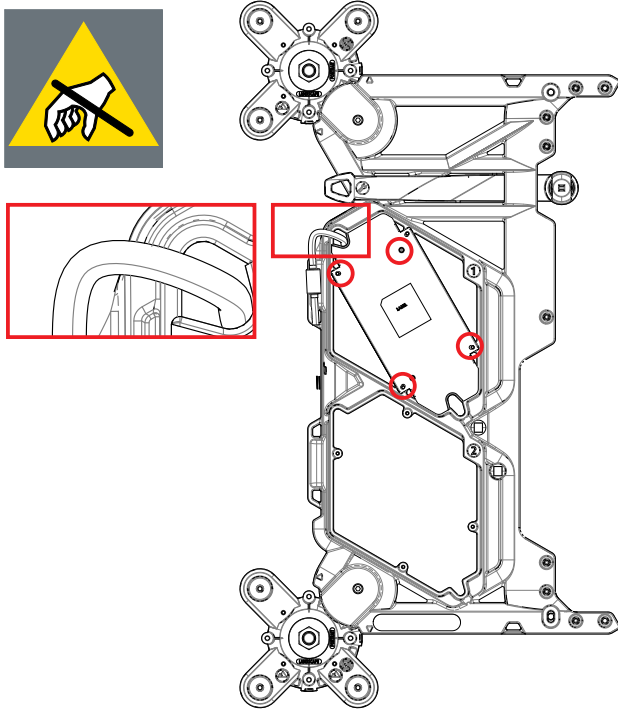


Image 2-17

*Tip:* The UniSee mount allows to be equipped with two power supplies.  
In case of none redundant power supply (1 power supply only): mount it to the upper position (marked 1). (Landscape and portrait)

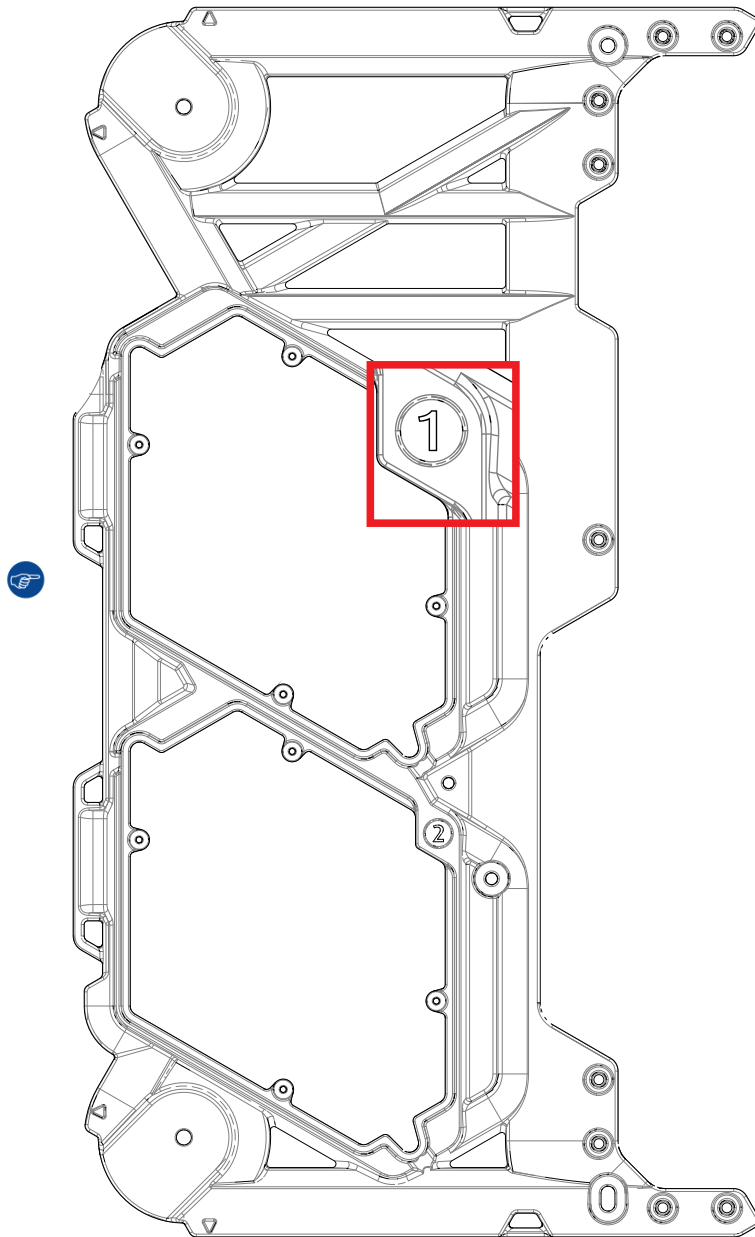


Image 2-18

*Tip:* The power supply is installed and fixed with 4 screws.

For each screw, proceed like this:

Insert the screw, and fix it by two turns.

When all screws are in, tighten them “in a diagonal sequence” (1-3-2-4), see picture.

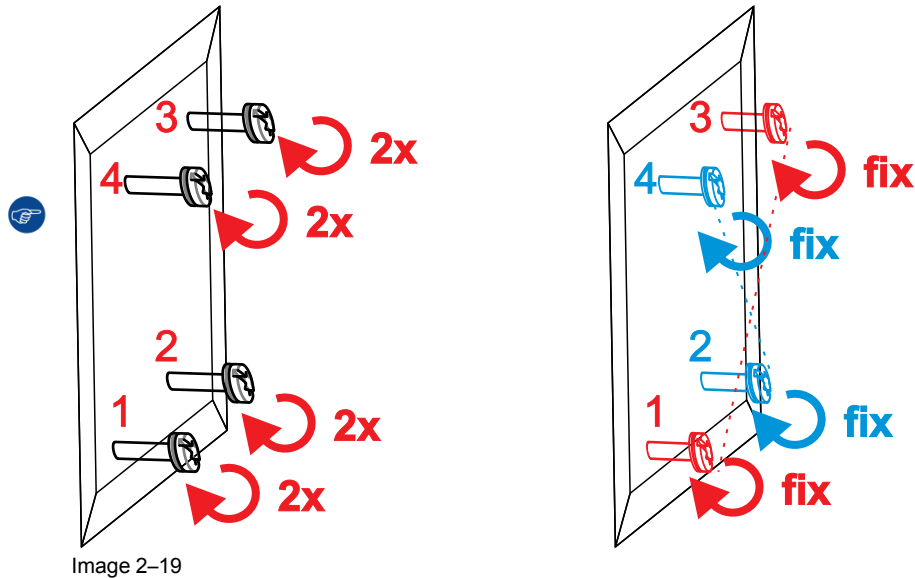


Image 2-19

## 2. Portrait:

Mount the power supply. Use 4x SCR \$7985ZM 4 X 20 STZN (B362771) and fix the power supply to the meta frame. Torque: 3Nm.

Make sure that the mains connection is guided behind the meta frame and guided through the hole in the meta frame to be connected to the cable holder.

Please note: The package also includes 4x SCR D7985TXM 3 X 10 STZN (B362737). These screws are not needed for installing the power supply on the meta frame.

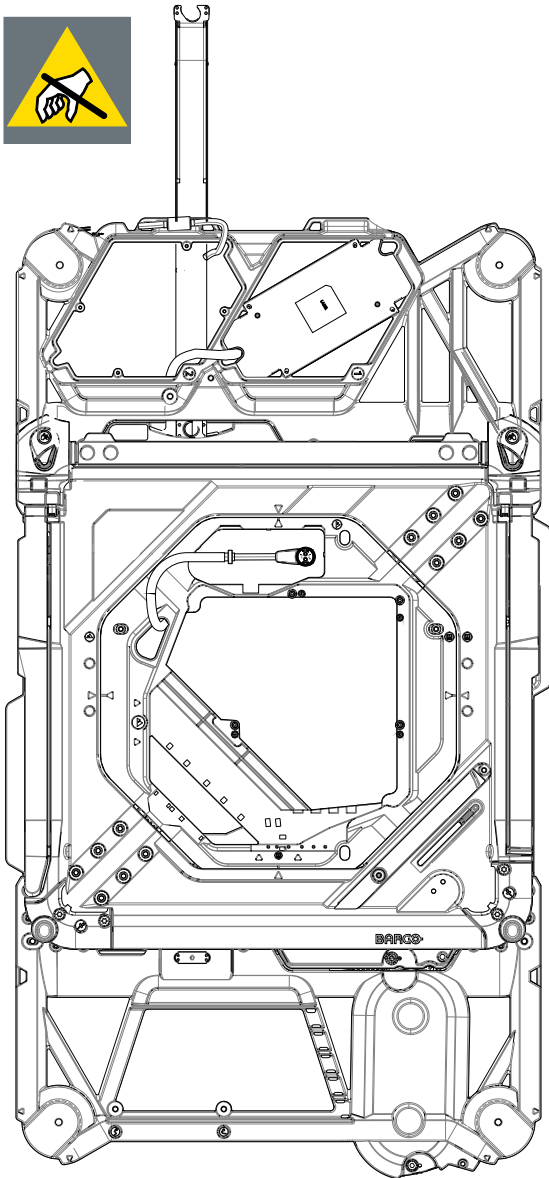


Image 2-20

**3. Single power supply:**

Remove the holder from the frame.

Insert the cable.

Clip the connector of the power supply into the connector holder.

Make sure to click it completely into the snap feature!

Make sure that the RoPD connector is perfectly positioned: later, when mounting the LCM, closing the meta frame moving plate will press the cable into the power interface of the LCM.

Check that the connector holder is correctly clicked in the meta frame! A square rubber on the power cable helps finding the correct position. Take care that the connector is not rotated. Also the cable must be fully inserted near the bottom of the holder.



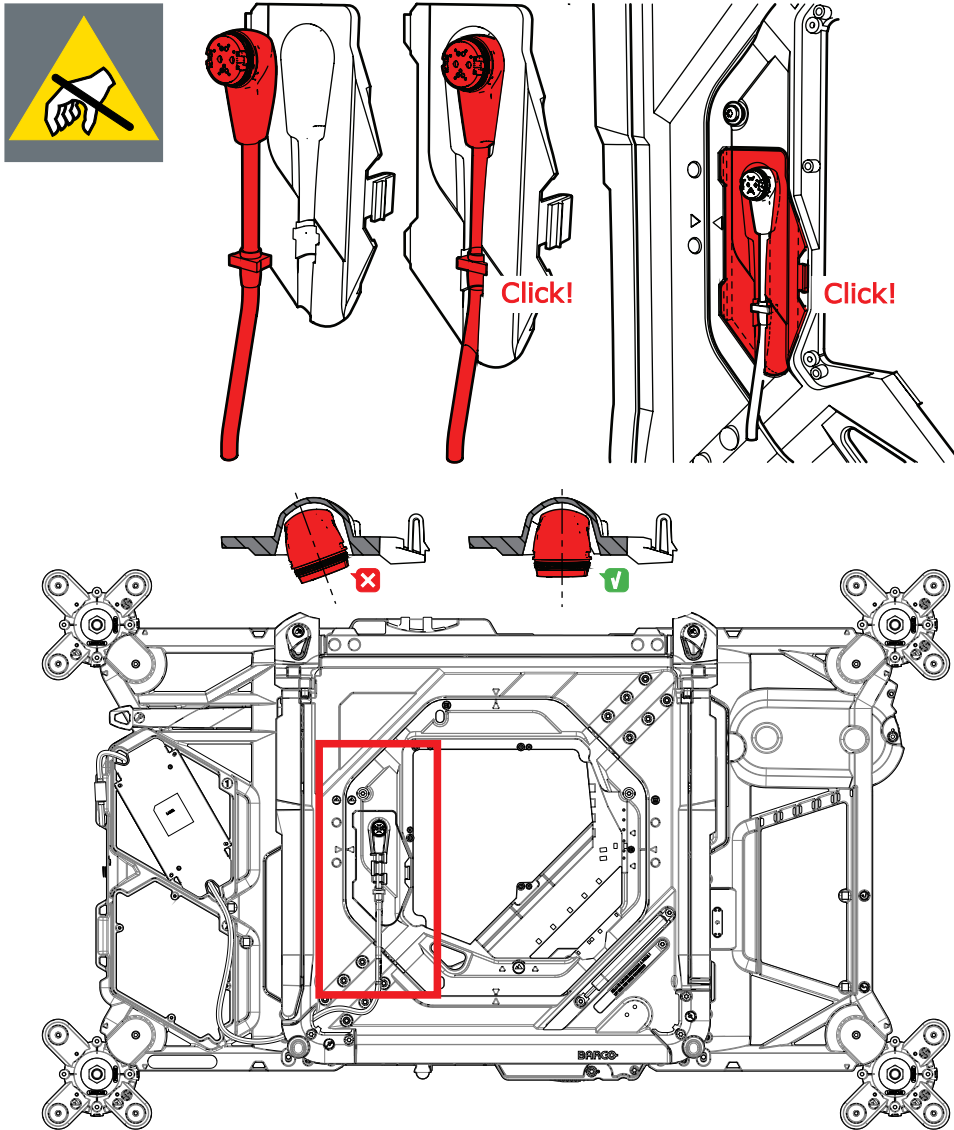


Image 2-21

4. In case of redundancy option: Remove the cable holder and click in the power share box.

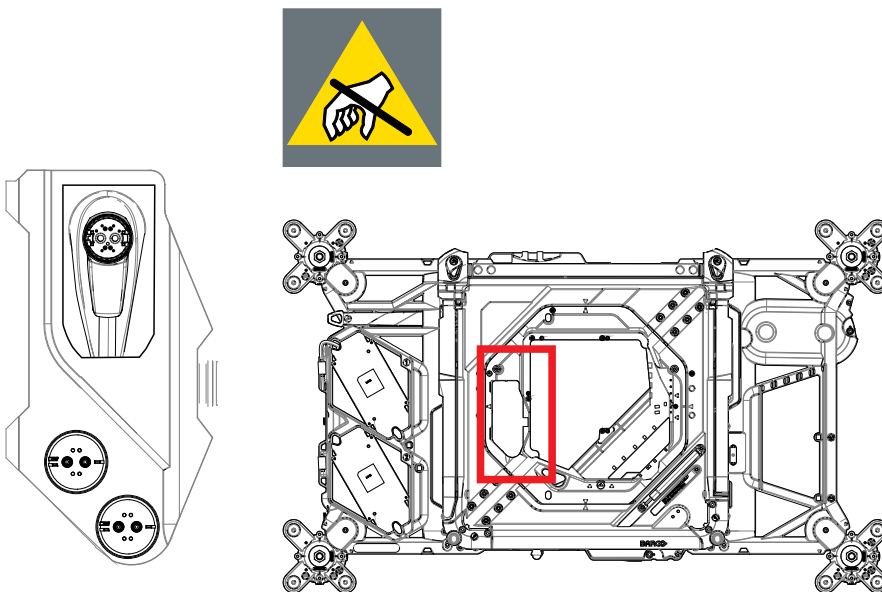


Image 2-22

5. In case of redundancy option: Connect both RoDP connectors to the power share box.  
Care for flat cabling, see picture.

Please note: the power cable of the redundant power supply is guided below the current frame, see picture. This might look strange, but it is correct!

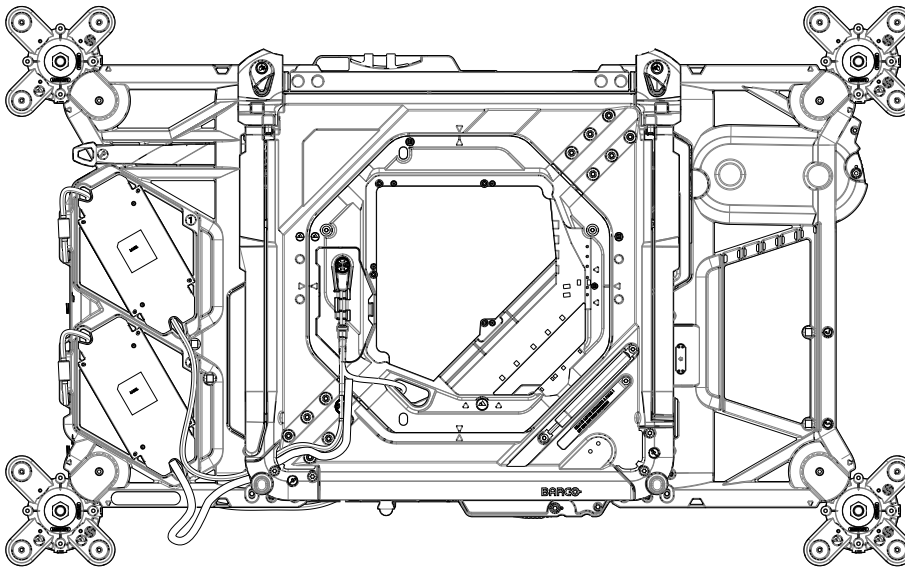


Image 2-23

6. External power supply:  
For the installation of the external power supply, please refer to the respective chapter.  
Once the RoPD adapter has been installed and connected, routing of the DC cable follows the routing of the AC cable.
7. De-mount the meta frame cable guide on the bottom left (remove two screws SCR D7500CM 6 X 12 STZN (B3690715))

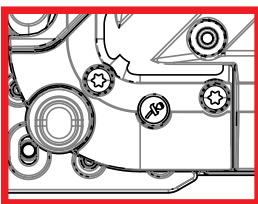
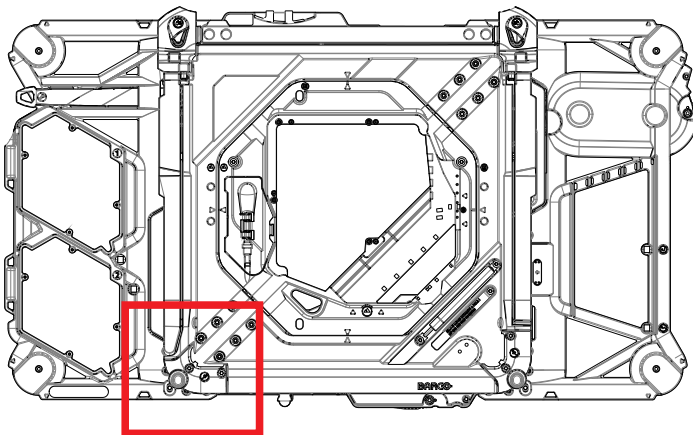


Image 2-24

8. Guide the cable as shown in the picture.  
Re-apply the meta frame cable guide and fix it with the two screws removed in the previous step.

Apply a cable tie for further stabilization.

Make sure that the plane of entire cable route is behind the plastic cable guide – else later the cable will interfere with the LCM.

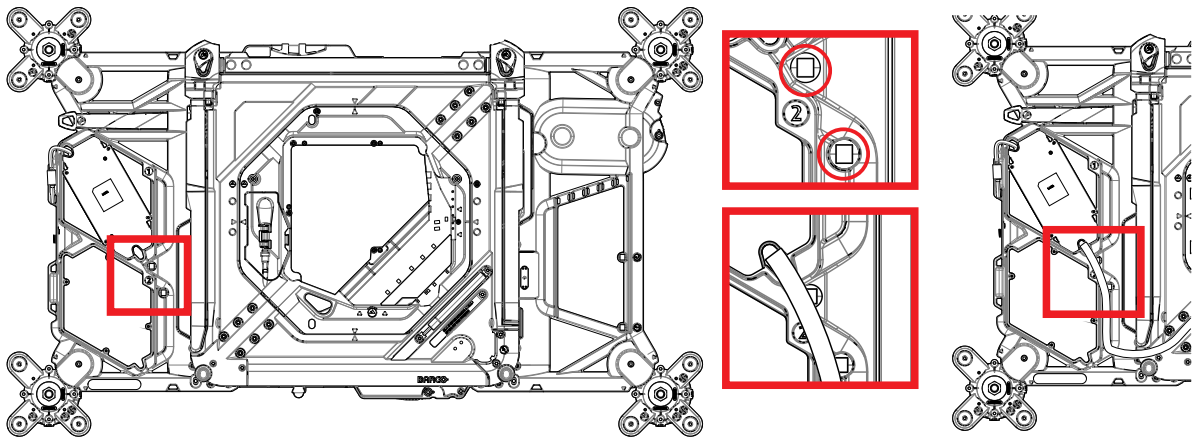


Image 2-25

**9.** Portrait mode:

The power cable goes around the back and through the hole in the moveable frame.

**10.** Check the input board.

The input board has EMC springs. These springs must follow the shape like the red indicated ones and should not be deformed else there is no proper connection of the input board to the LCM.

Make sure that the springs are straight and not deformed! If required, use pincers and straighten them according to the red indicated shape!

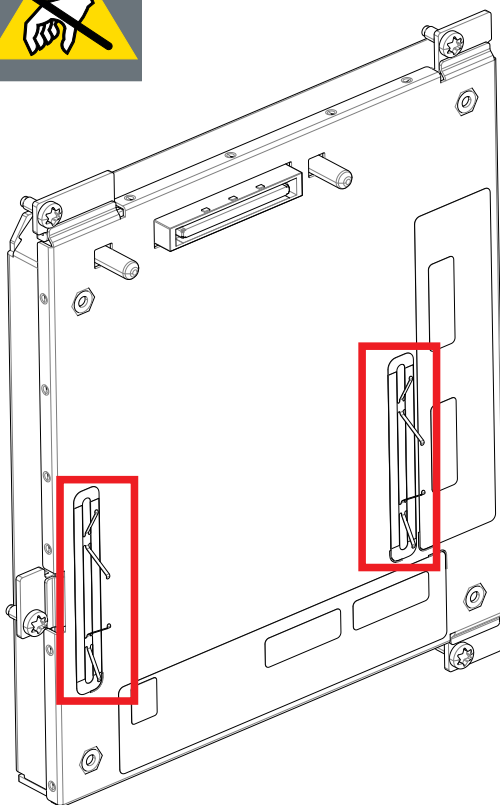


Image 2-26

*Tip:* The input board is installed with 4 screws R8789546 (SCR \$7985TXM 4 X 12 STZN). For each screw, proceed like this: insert the screw, and fix it by two turns. Only when all screws are in, tighten them.

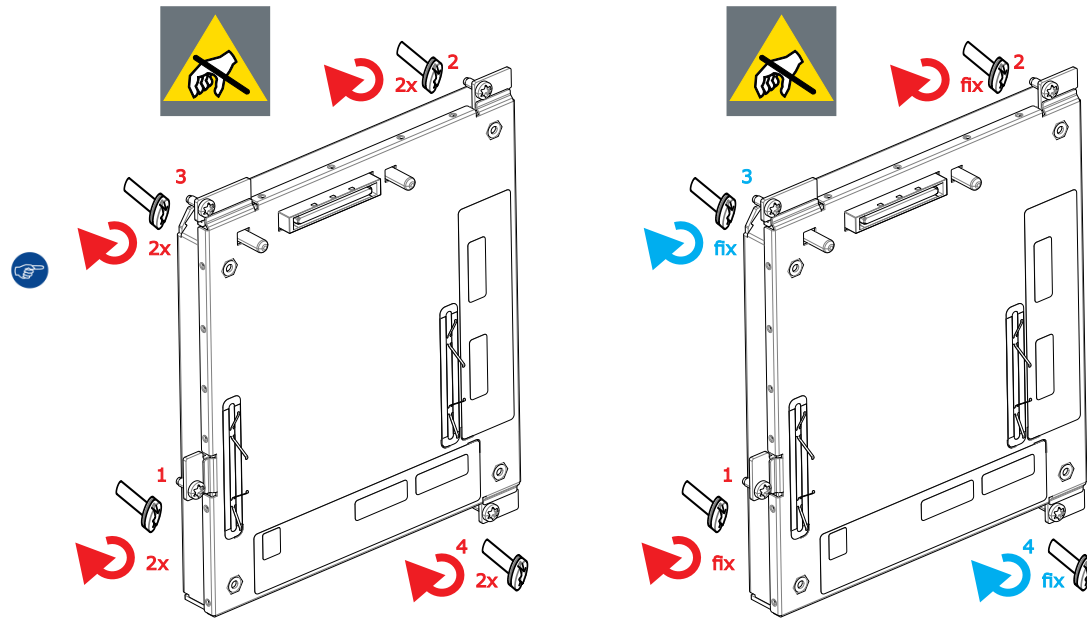


Image 2-27

**11.** Check the input board.

The input board is spring loaded! Check that the springs are in place and that they are not dislocated! If the springs are missing, there won't be proper connection of the input board!

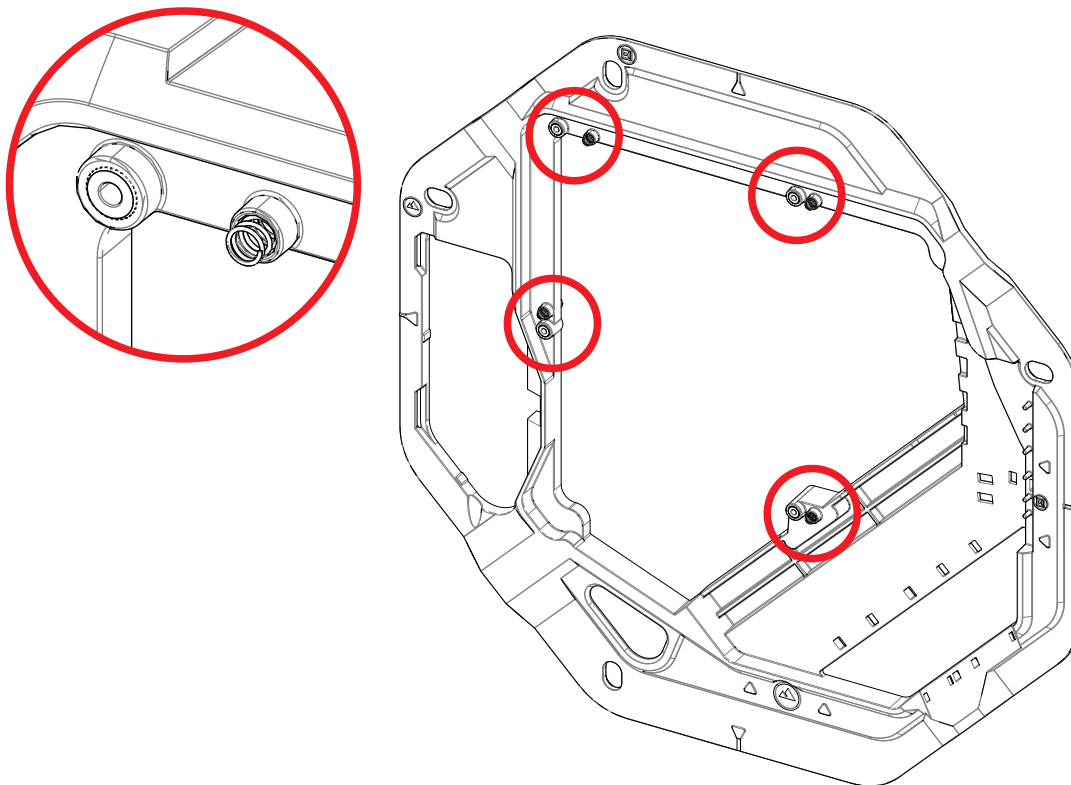


Image 2-28

**12.** Mount the input board. Use 4 screws R8789546 (SCR \$7985TXM 4 X 12 STZN) and fix the input board to the meta frame. Use the holes which allow sinking the head of the screws! Lightly screw in all 4 screws (2 turns), when all 4 of them are in, tighten them.

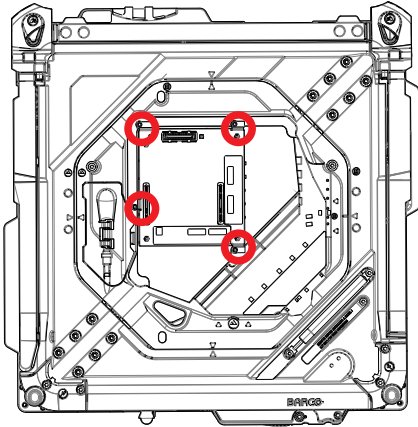


Image 2-29

**13.** Tighten the screws.

**Warning:** When done, open them by 2 (2.5) turns/revolutions: the mechanism underneath is spring loaded! (If the screws are fully tightened this mechanism does not work.)

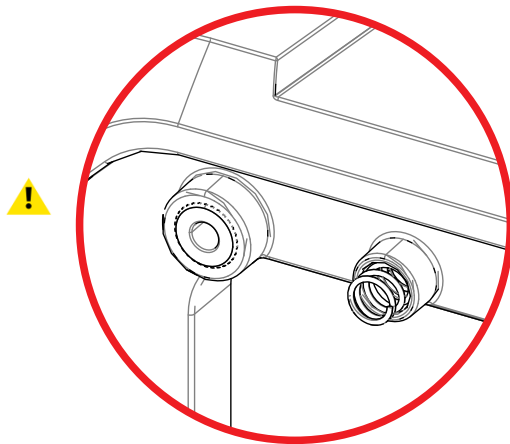


Image 2-30

**14.** Connect the mains cable to the power supply.

Depending on the height/row, use extension cords. Use a cable tie and fix the power cable to the left the frame.

Make sure to follow the instructions given in the following tips!

**Warning:** Please note: The correct guiding of cabling is mandatory for operating the product! Carefully follow the instructions! It is recommended to first read all infos and steps about cabling (power cabling, LAN cabling, data cabling to have a clear overview and understanding about the rules!

*Tip:* When all power supplies and input boards are installed, start with the cabling. Power cabling is routed on the left. LAN and data cabling is routed on the right. It is mandatory that the cables are carefully guided and that all instructions are followed. With portrait installation, the power cabling is on the left and LAN/DATA cabling on the bottom of the meta frame.

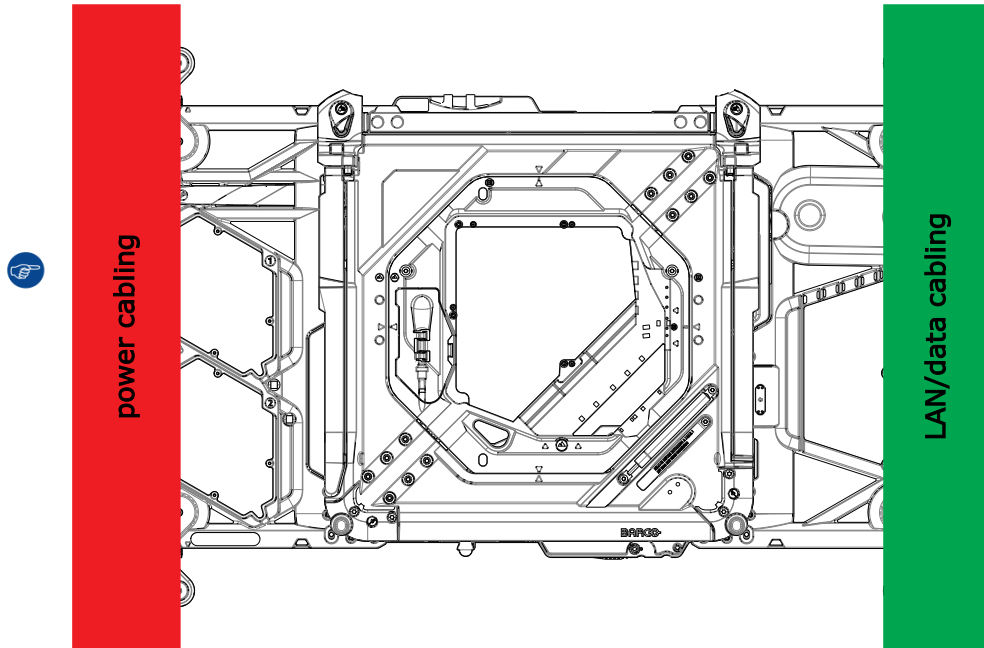


Image 2-31

*Tip:* The power cables are routed on the left side behind the wall crosses (between the wall of the building and the wall crosses). For video walls up to 5 rows in height: the power cables are routed to the bottom. For video walls with more than 5 rows: The cabling of rows > 5 is routed to the top.

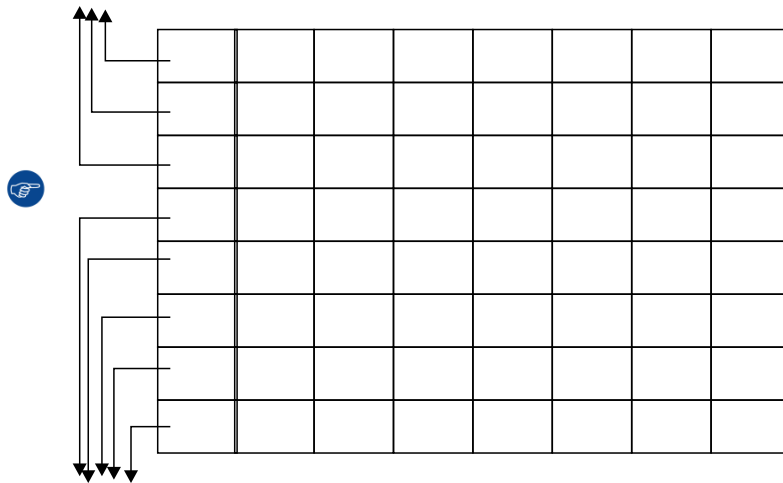


Image 2-32

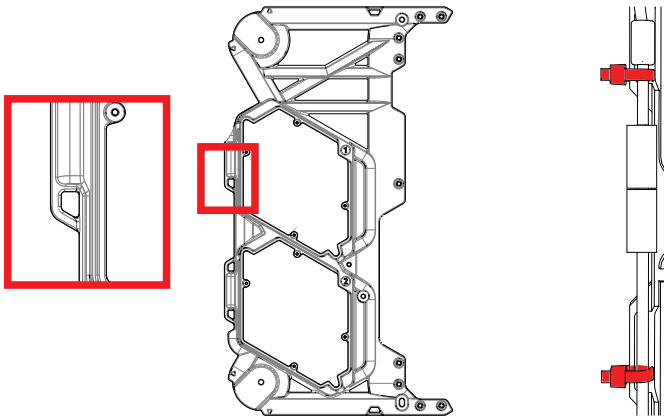


Image 2-33

**15.** Rows  $\leq 5$ : Power cabling is done from top to bottom.

The cables are routed behind the wall cross.

Care for a flat cable loom.

The cable of the system below is always in front of the cables of the system(s) above.

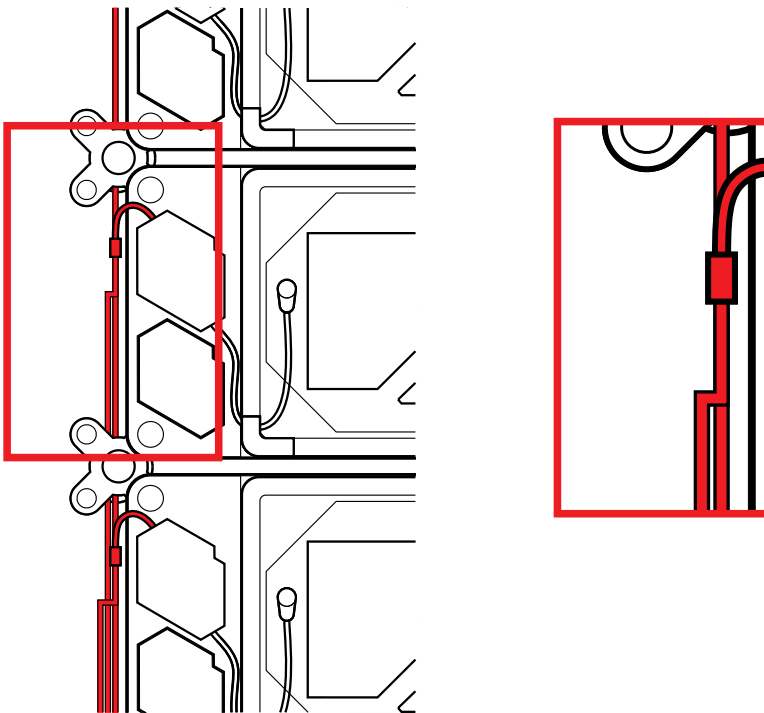


Image 2-34

**16.** LAN Cabling:

Please note: the moving frame needs to be able to slide up. Therefore: "IN" cables are guided in an S-curve. "OUT" cables (loop-through cabling) are guided in a simple curve.

When guiding the cable up, make a loop to "shorten" the cable and fix it with a cable tie

Landscape: Loop-through cabling goes column-wise.

Portrait: Loop-through cabling goes row-wise.

Connect the respective cables to the input board.

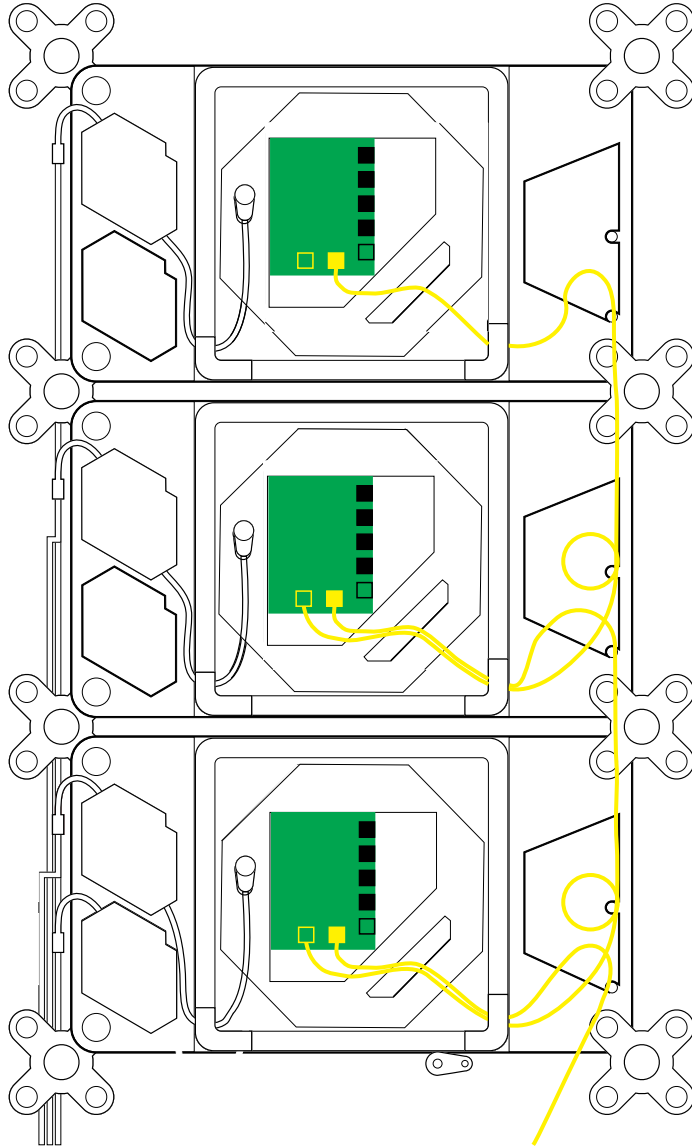


Image 2-35



*Tip:* The LAN and data cables need to be connected to the input board module.

Please note: These cables are then guided to the right (landscape) or to the bottom (portrait)!

LAN cabling: The product has been designed for loop-through of the LAN cabling.

Connect LAN1 of the bottom system with the network. LAN 2 is configured as LAN OUT for loop-through connection.

Up to 16 systems can be connected in a loop-through daisy chain. In case the display wall has more than 16 displays, use a network switch (1 Gbit, unmanaged, Mac address table range  $\geq$  number of displays + 2).



DATA cabling (HDMI cables, DP cables)

The input board has 4 interfaces for input. All of them have a loop-through connection to DP OUT. Since changing a cable during operation will always require to de-mount the LCM, it is highly recommended to make use of the loop-through functionality and connect the DP OUT interface of the previous system with DP IN (HDMI IN) of the following system. In case loop-through will not be used there is no impact on the system.

Carefully guide the cables. Make sure to follow the bend radius indicated by the mechanic design. Bundle them using a cable tie. It is essential that the bundle of cables is flat! Otherwise later, when mounting the LCM, the meta frame moving plate will not close properly and the LCM sticks out.

*Tip:* Please note the loops! These are required to allow sliding up the moving frame!

S-loop (extended cable length): Required for “in” cables, coming from below.

Simple loop: Required for “out” cables, these are going up anyhow, so the movement of the frame requires less cable length.

Circle-loop when guiding the cables up: Required for shortening the cable length.

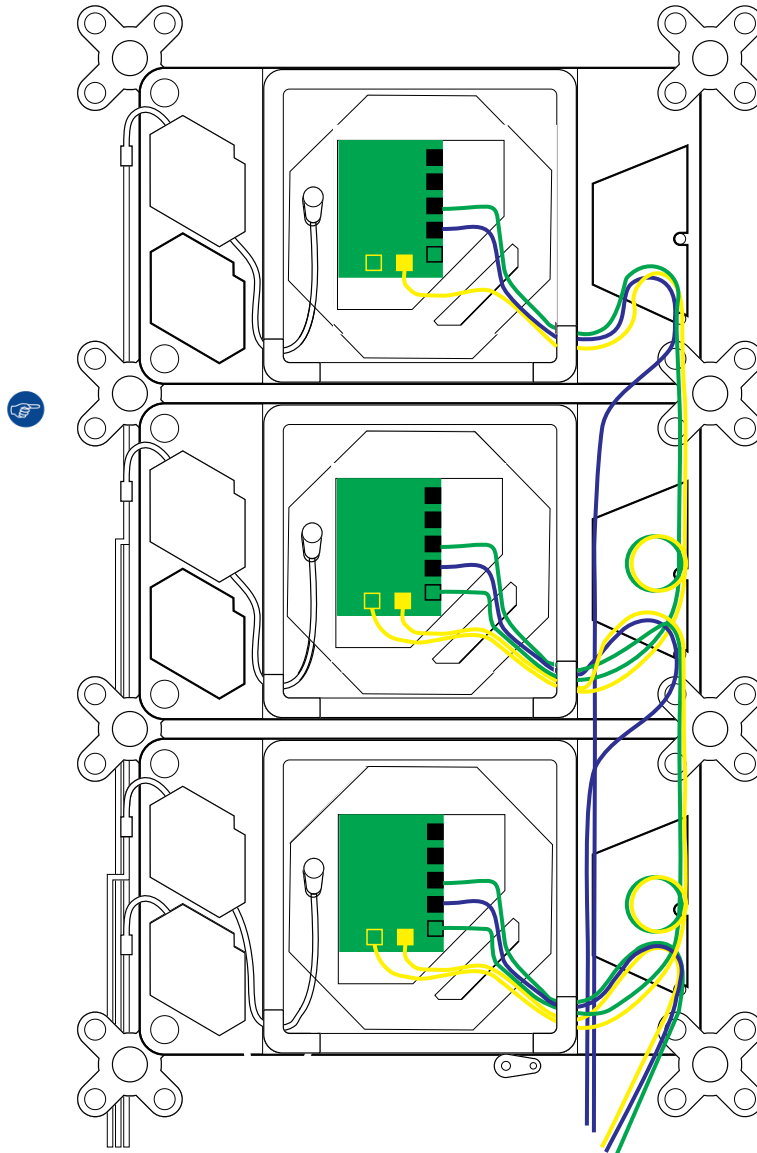


Image 2-36

*Tip:* Also the cable fixations indicate if they are used to fix the S-loop or the simple loop. Please note the icon next to the fixation point! S-loop (extended cable length) is fixed to the bottom cable fixation (2). Simple loop is fixed to the top cable fixation (1).

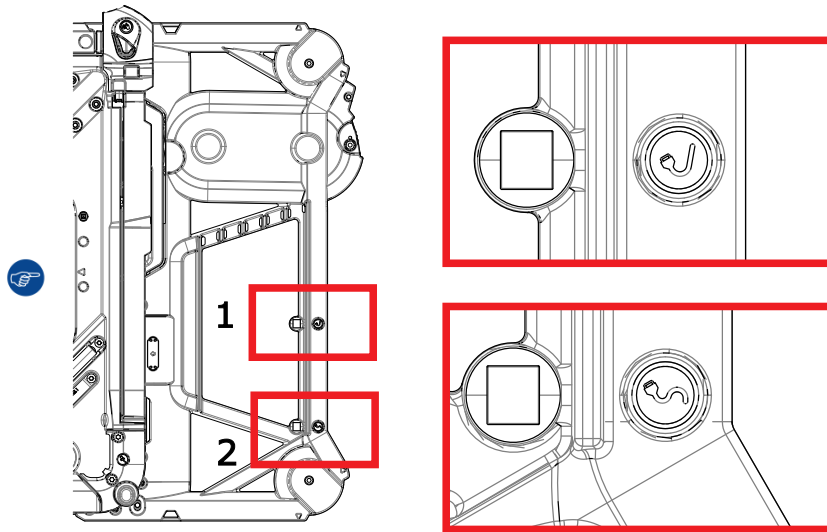


Image 2-37

- 1 Single loop, fixation point for cables going up
- 2 S-loop, fixation point for cables coming from below

*Tip:* Please refer to the quick installation guide!

*Tip:* Use the cables included in the delivery. Video cables or adapters with heavy ferrite close to the connector as well as thick cables might mechanically not fit into a UniSee wall. The meta frame moving plate might not close and/or sliding is blocked.

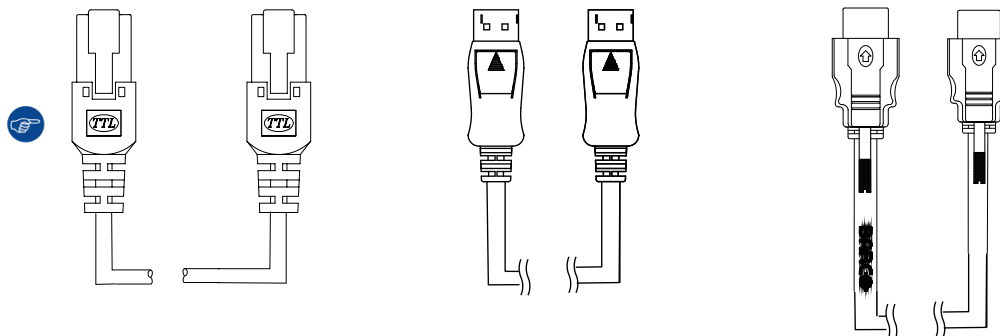


Image 2-38 left: LAN cable, mid: DisplayPort cable, right: HDMI cable

## 17. DATA cabling.

Landscape: Loop-through cabling goes column-wise.

Portrait: Loop-through cabling goes row-wise.

Please note: the moving frame needs to be able to slide up. Therefore: "IN" cables are guided in an S-curve. "OUT" cables (loop-through cabling) are guided in a simple curve.

Connect the input board of every system to the respective signal source via HDMI IN 1, HDMI IN 2, DP IN 1 or DP IN 2, accordingly. Even with loop-through of the signal, you should pro-actively connect one or more interfaces: every change in cabling later will require de-mounting the LCM.

Connect DP OUT of the previous system to DP IN (HDMI IN) of the following system.

18. Apply a cable tie and strap the cables together. Guide the cables via the sunken plastic part of the cable frame.



Image 2-39

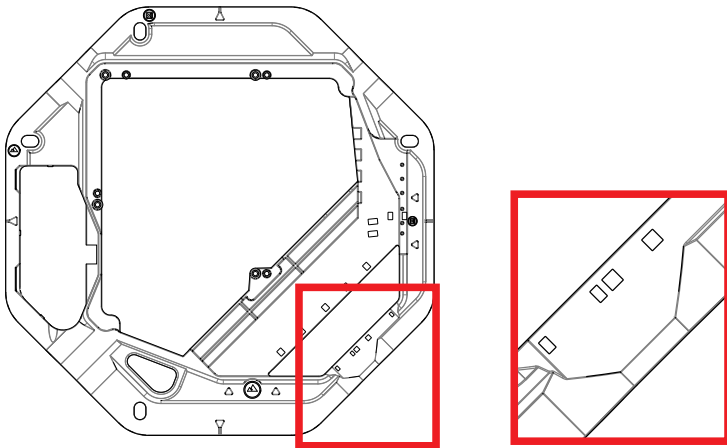


Image 2-40

*Tip:* To make guiding cable ties easier, the fixation positions have guiding rails. Hence the position where to loop the cable tie from behind again to the front can easily be found.

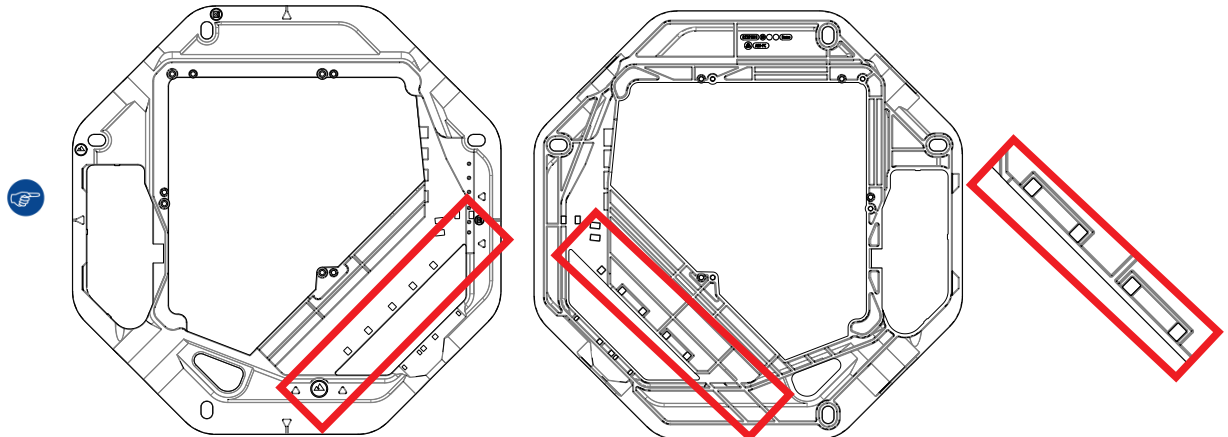


Image 2-41

- 19.** De-mount the meta frame cable guide on the bottom right (remove two screws SCR D7500CM 6 X 12 STZN (B3690715)).

Guide the cables as flat as possible and fix the meta frame cable guide again.

Make sure that the plane of the entire cable route is behind the plastic cable guide – else later the cable will interfere with the LCM.

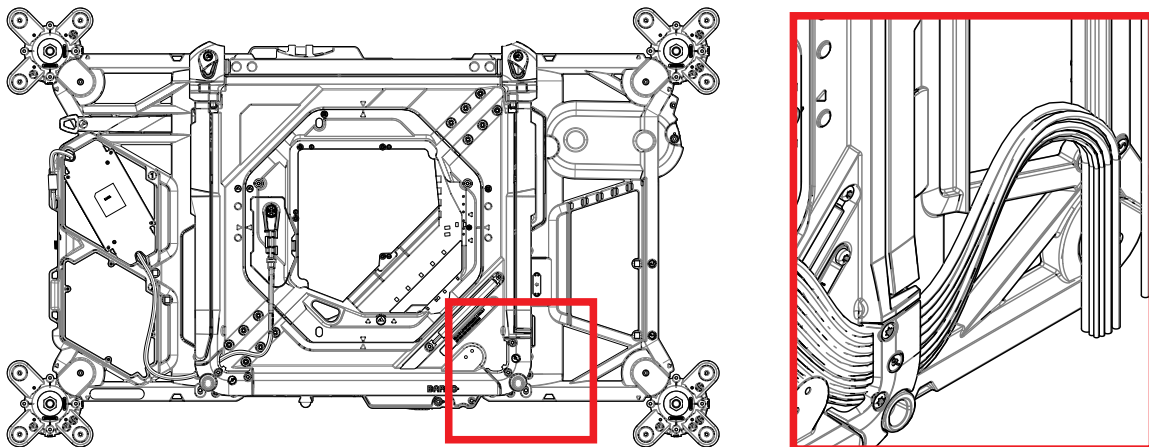


Image 2-42

*Tip:* The moving frame needs to move freely up and down and must not be blocked by the cabling. Therefore the cables need to be guided in a curve to allow motion of the frame. They are fixed with one cable tie.

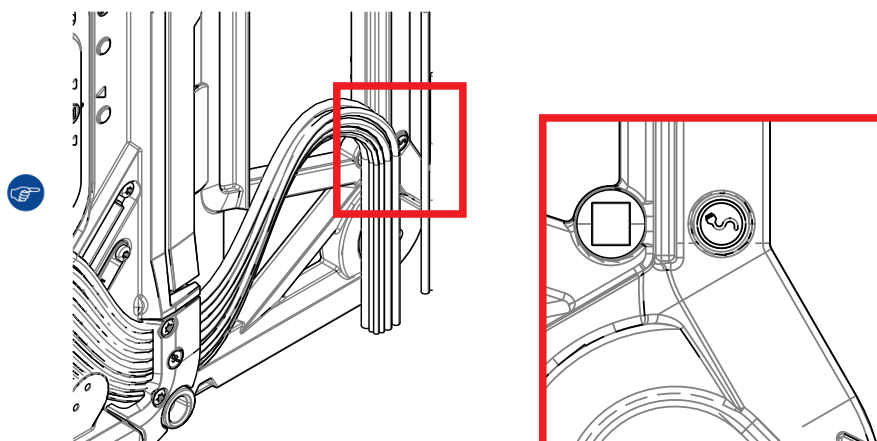


Image 2-43

**20.** Cabling is done to allow sliding up and down the moving frame.

“IN” cables are guided in an S-curve.

“OUT” cables (loop-through cabling) are guided in a simple curve.

The picture shows the principle.

The LAN connection is done via loop-through (yellow).

Signal on DP IN 1 is connected to all systems via loop-through (green).

In addition every system is connected directly to a source on DP2 IN 2 (cyan).

The cables actually are guided in layers.

Front layer: all “IN” cables (data/Lan) of the current system (“S-curve”).

Mid layer: “OUT” cables (cables which go to the system above), (loop-through cabling, “standard curve”, guided and fixed on the outer part of the cable frame).

Back layer: signal cables going to system(s) above (straight, guided and fixed on the inner part of the cable frame).

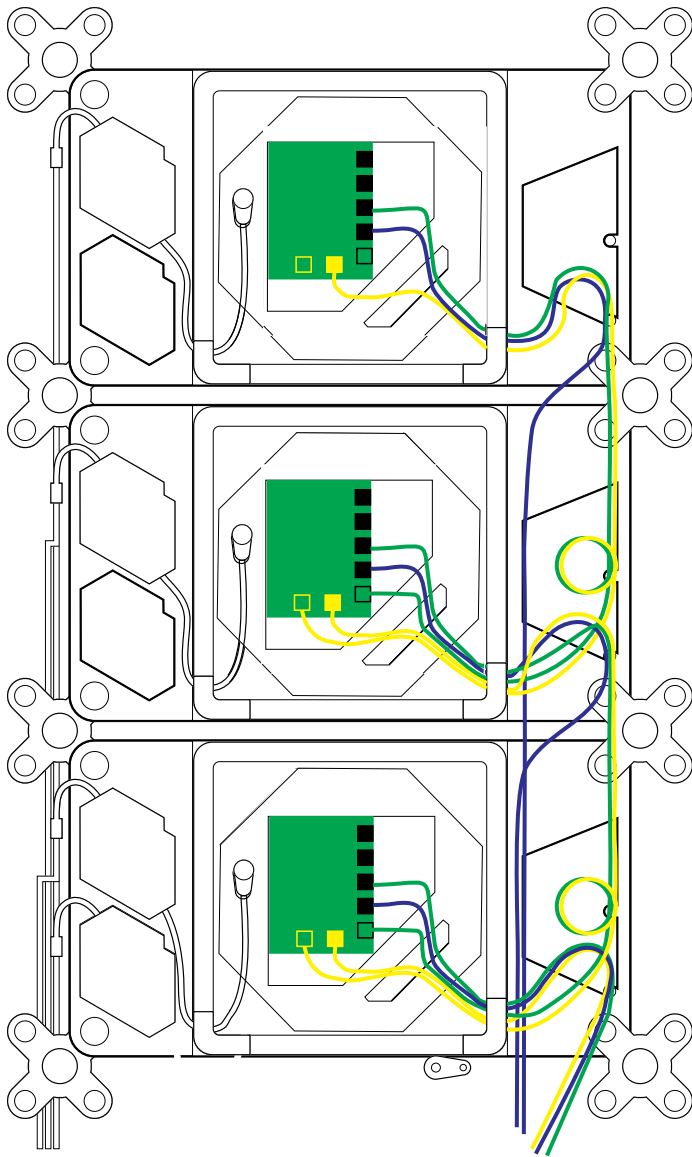


Image 2-44

- 21.** Check that the moving frame is not blocked by the cabling!!  
(If required, adjust the cabling!)

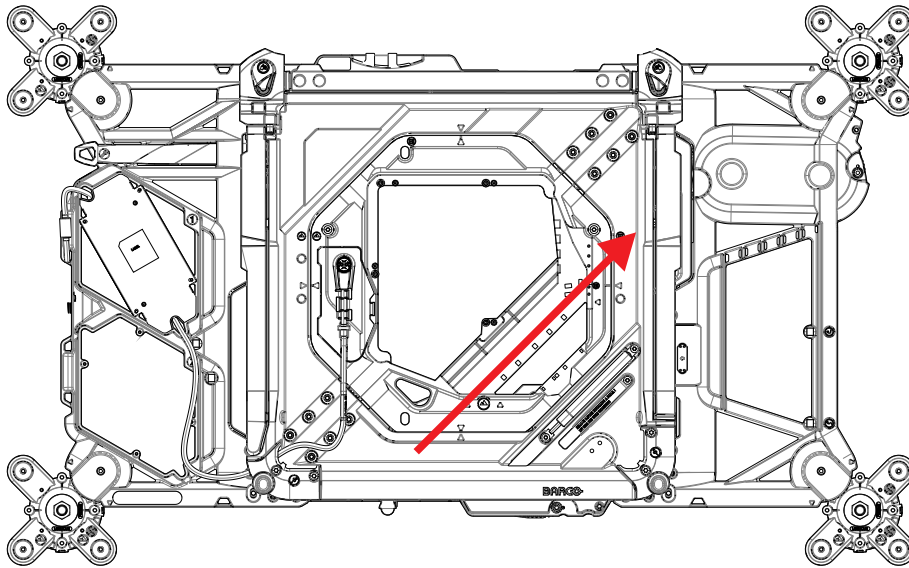


Image 2-45

**22.** Re—install the LCM

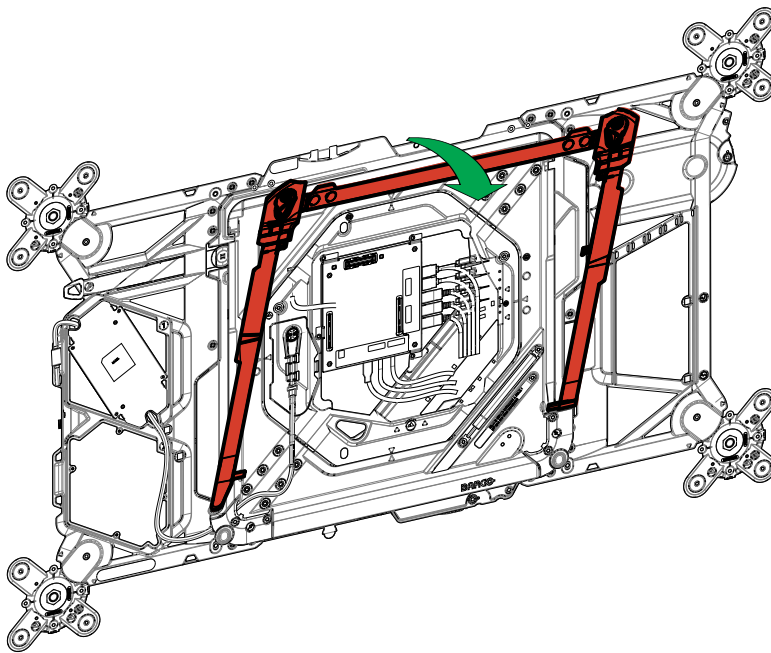


Image 2-46

**23.** The LCM is mounted using the upper VESA interfaces. These interfaces slide into the mounting fixture of the VESA arm.



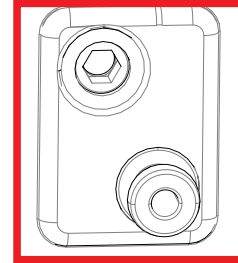
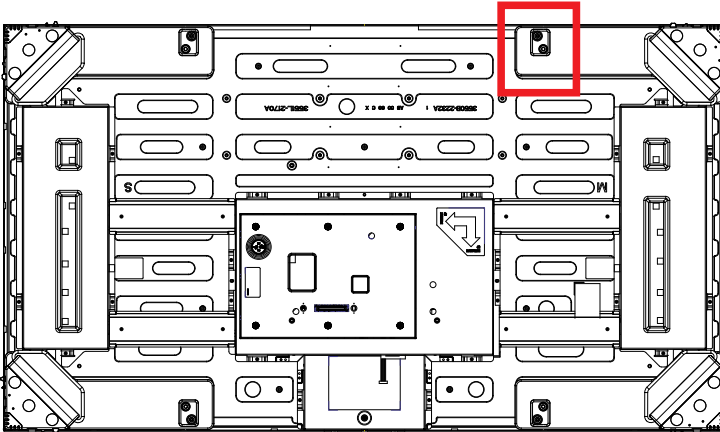


Image 2-47

## 2.6 Cleaning

### Cleaning

Do not use chemicals or solvents! Dry cleaning only! Use soft microfiber cloth suitable for LCD display cleaning (as per declaration of the cloth vendor). Improper cleaning scratches the display surface!



Barco is not liable for scratches due to improper cleaning (unsuitable cleaning cloth, inappropriate cleaning procedure)!

- Switch off the display.
- Only use soft microfiber cloth suitable for LCD display cleaning (e.g. 3M Scotch Brite 2010 was successfully tested with UniSee).
- Make sure to have always fresh cloth on hand!
- Wiping direction is always horizontally in linear movements!
- If the display is heavily dusted first wipe off the dust (do not apply pressure). Put this cloth aside.
- Use a fresh(!) cloth and remove dirt which is heavier, f.i. finger prints. Apply gentle pressure (at max. 10N). Take care to work only in horizontal direction!



# External power supply

# 3

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## 3.1 Connection of the displays via DC power cables

**WARNING:** Only use cable kits supplied by Barco:

Only use cable kits supplied by Barco:



R766229 (Z3472701 + Z3472648 (10m),

R766230 (Z3472701 + Z3472649(20m),

R766231 (Z3472701 + Z3472650 (50m)

R766232 (Z3472701 + Z3472651(100m).

Other cables might violate local regulations and **MUST NOT** be used!



**WARNING:** Cables **MUST NEVER** be cut to a different length!

### Connection of the cables

The adapter RoDP to Neutrik (Z3472701) needs to be installed into the UniSee mount structure. This adapter cable is then guided to the left where it is connected with the respective DC cable (Z3472648/49/50/51). The cables Z3472648/49/50/51 are designed for occasional flexible use and fixed installation subject to normal mechanical load conditions. They are suitable for non-continuously recurring movement without tensile load. Continuous operational movements, restricted guidance, usage of these cables in moving cable carriers or on motor drum guidance or under a strain of more than 15 N/mm<sup>2</sup> are not allowed.

When guiding the cables please note that there are considerable thermal losses and therefore it is mandatory to care for appropriate distances between the cables and for proper ventilation. Only use these cables when they are completely unwound! Operation is not allowed with wound up cables! Please mind the min. bending radius and the allowed temperature range, see table below!

Outer diameter		7.4mm
Min. bending radius	Occasional flexing	15x outer diameter
	Fixed installation	4x outer diameter
Temperature range	Occasional flexing	-15°C up to +70°C max. conductor temperature
	Fixed installation	-40°C up to +75°C max. conductor temperature

The adapter RoDP to neutric (Z3472701) consists of the cable and the coupler. The cable is installed to the UniSee mount and guided. Subsequently the coupler is attached and fixed with Velcro.

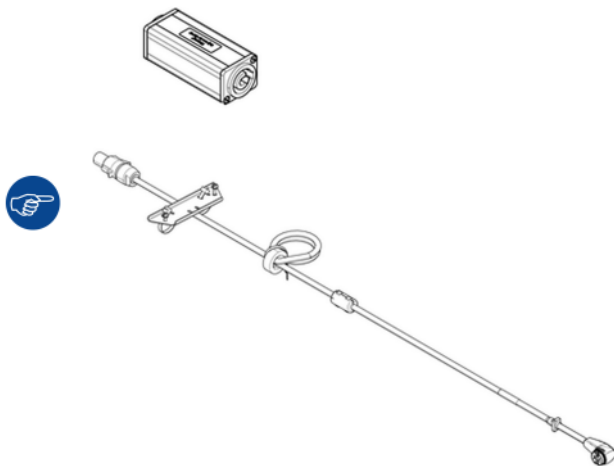


Image 3-1

## 3.2 Connection

### Connection

1. Use 2x SCR \$7985ZM 4 X 12 STZN (B360869) and fix the connection plate R879378 to the meta frame. Torque: 3Nm.

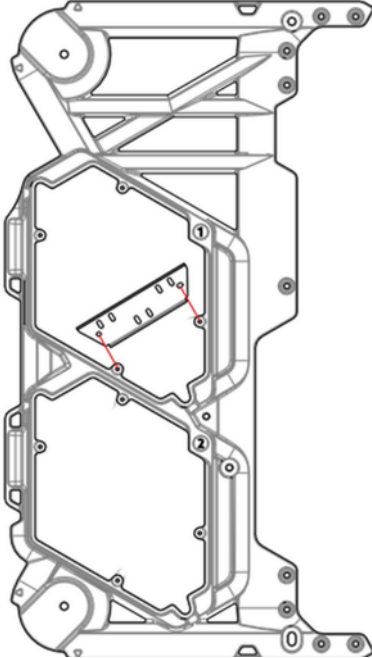


Image 3-2

2. Place the loop of the DC cable behind the bracket. Use 2 cable ties and fix the loop of the DC cable to the bracket.

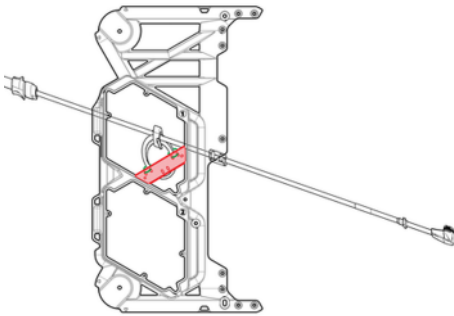


Image 3-3

3. Guide the cable as shown in the picture. On the left, connect the coupler to the neutric connector. Plug the DC cable into the coupler, and fix the parts with a Velcro. (Now guide the DC cable as explained with the AC cable.)



Image 3-4

4. Clip the RoDP connector into the connector holder.

Make sure to click it completely into the snap feature!

Make sure that the RoPD connector is perfectly positioned: later, when mounting the LCM, closing the meta frame moving plate will press the cable into the power interface of the LCM.

Check that the connector holder is correctly clicked in the meta frame! A square rubber on the power cable helps finding the correct position. Take care that the connector is not rotated. Also the cable must be fully inserted near the bottom of the holder.

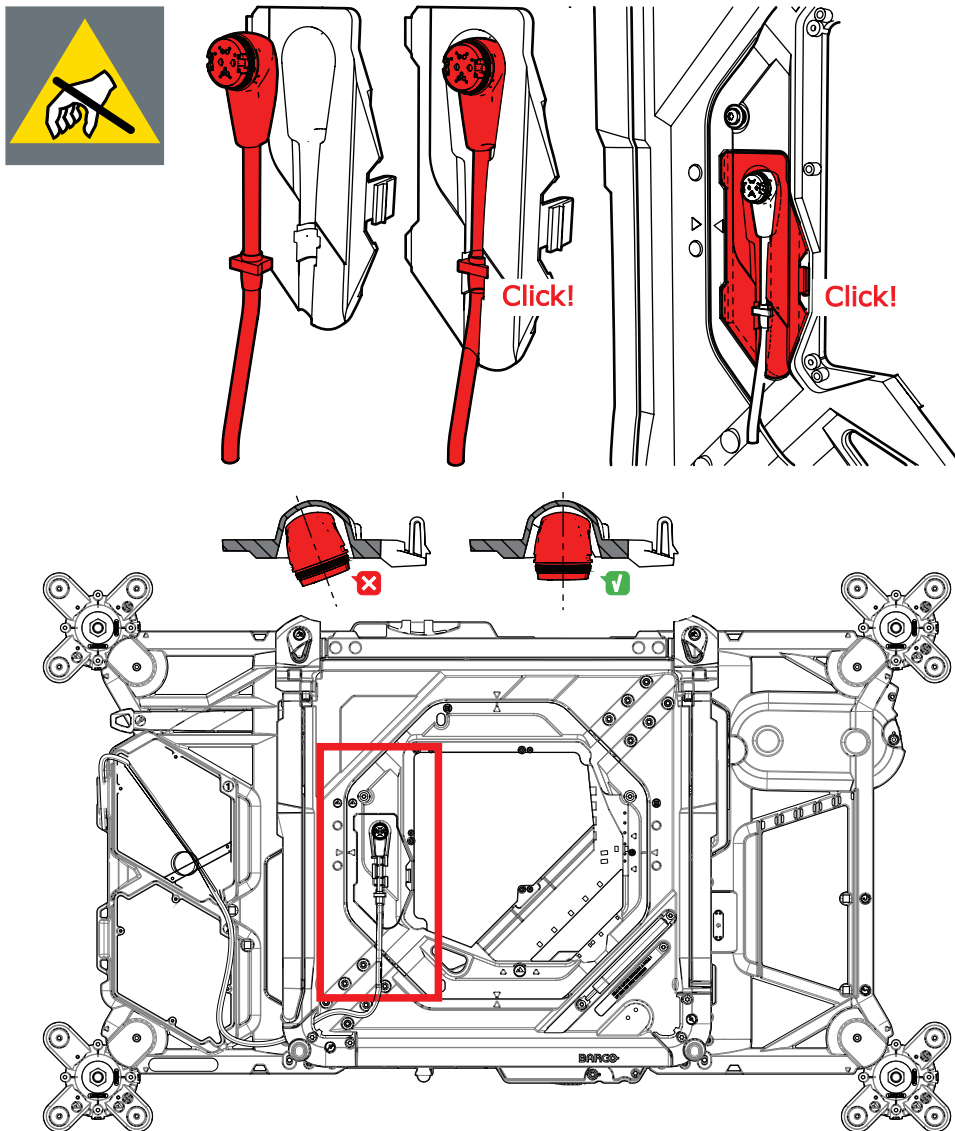


Image 3-5

## 3.3 Power module 19 inch

### Power module 19 inch



For UniSee, the external power supply solution comprises the power module 19", which needs to be equipped with in total 3 power bricks or – for redundancy – with 4 power bricks. This material serves for connecting up to 6 UniSee view displays. Connection is done via a kit consisting of a DC power cable (available in lengths of 10m, 20m, 50m, and 100m) and an adapter RoPD to Neutrik. This kit is required once per UniSee view display.

The Power Module 19 inch comes with a blind cover which must always be installed to ensure cooling and ventilation. Both, the Power Module 19 inch and the blind cover are 1U in height, thus a Power Module actually makes up 2U. The Green 19 inch ONOFF cover completes the Power Module 19 inch.

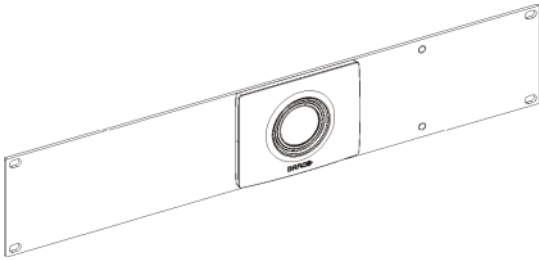


Image 3-6

- Install the 19 inch ONOFF cover into a 19" rack.
- Plug in the SMPS power supplies into the Power Module 19 inch.
- Never push objects of any kind into the power supply slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock
- The SMPS power supplies is a 1200 W, (nominal) AC to DC power-factor-corrected power supply unit that converts standard AC mains power into DC output and can be used in hot-swap redundant systems. With 110V power nets, it runs at reduced power level (approx.. 700W) The power units are pushed into the Power Module 19 inch.



Image 3-7

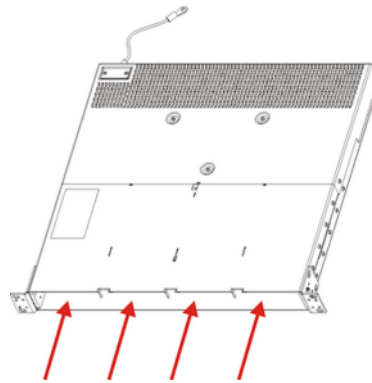


Image 3-8

Once plugged into the Power Module 19 inch, the SMPS power bricks are locked and need to be unlocked before removal!

SMPS power supply 1200W

Use a screw driver and press the yellow lock down.

Subsequently open the lock on the left and on the right and pull out the power unit.

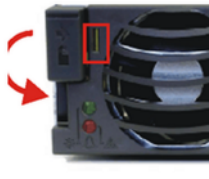


Image 3-9

Mount the Power Module 19 inch into a 19 inch rack. Make sure that there is 1U free space above the Power Modules 19 inch: Mount the blind cover!!



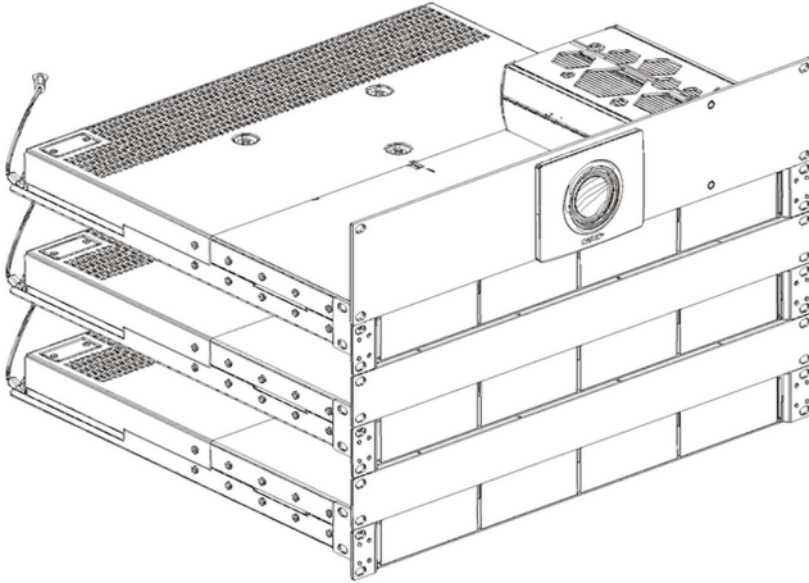


Image 3-10

## 3.4 Cabling within the responsibility of a qualified electrician

The manufacturer assumes no liability for incorrect, inadequate, irresponsible or unsafe assembly of systems.



**WARNING:** The following connections have to be made by a qualified electrician (mandated by the customer): Grounding of the Power Modules 19inch! For leakage current reason it is mandatory to connect the Power Module 19inch to the equipotential bus bar! Connecting the power lines to the connection terminals of the Power Module 19inch. Cables have to be selected according the power ratings listed on the product label of the Power Module 19inch and the regional power ratings.



**CAUTION:** Qualified electrician only:  
Use a screw driver 0.6x3.5 and remove the screws of the cover of the terminal connection.  
Connect grounding, neutral and live cable according the labeling of the terminal connector and fix the connection screw.  
Re-mount the cover of the terminal connection.

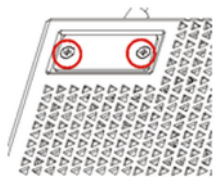


Image 3-11



**WARNING:** Make sure to apply the strain relief! For the first version of the Power Module 19inch, this is a cable tie.

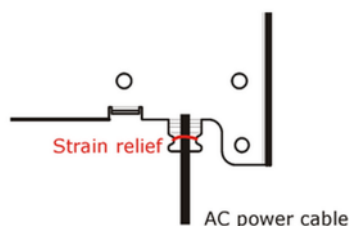


Image 3-12

External power supply



**WARNING:** Avoid sharp edges for the cable routing! Position the primary wires or cabling so that it cannot be pulled or contact hot surfaces. It is recommended to apply an additional strain relief!

# Replacement of input board on KVD5521B / LVD5521B/UniSee (Vesa mounts)

# 4

## 4.1 Replacement procedure

### Installation kit R9867801 (ADAPT INPUT DP1.2/HDMI2.0 TO VESA KIT)

Contents of the kit

Material	Description	Qty
R8794528	FRM ADAPTER SPIKE	1
B362738	SCR D7985TX M 4 X 6 STZN	3
B362635	SCR D916 M 4 X 40 ST (grub screw)	3
R366103	NUT D934 M 4 STZN	6



This kit is not required for LCDs installed with Barco Mount  
Grub screws and nuts (B362635, R366103) are only required for UniSee 800 and UniSee 500 (UNI-5000) installed with VESA mounts

### KVD5521B and LVD5521B

1. Fix the input module R760050 to the adapter plate R8794528 with 3 screws B362738 (SCR D7985TX M 4 X 6 STZN)

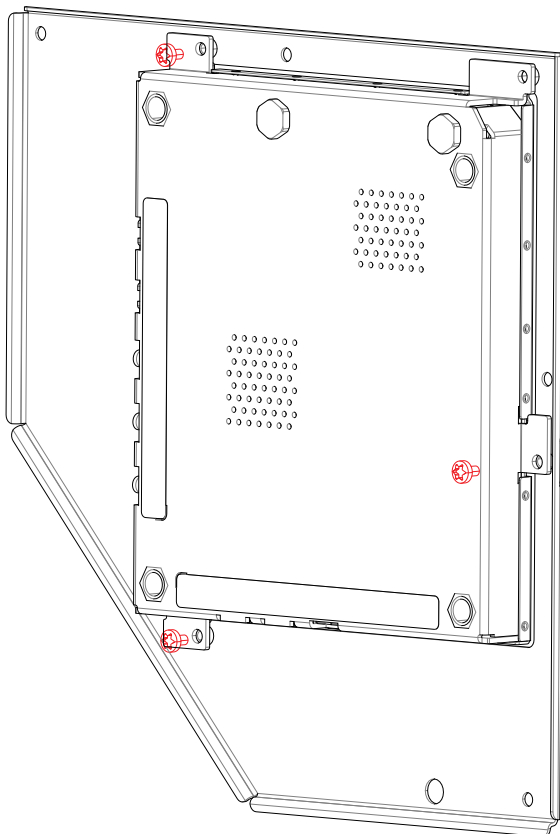


Image 4-1

2. Fix this assembly to the LCD with 3 screws SCR \$7985TXM 4 X 12 STZN (R8789546). These screws are included in the input board module R760050.

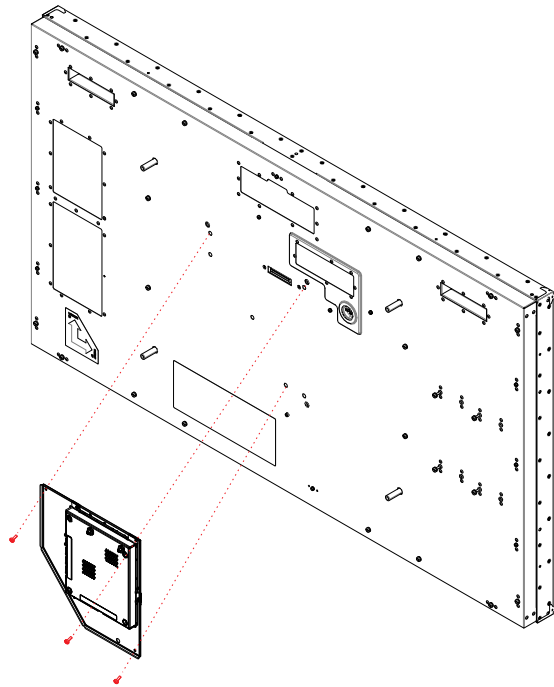


Image 4-2



For each screw, proceed like this: insert the screw, and fix it by two turns. Only when all screws are in, tighten them

### UniSee 500 (UNI-5000) and UniSee 800 installed with Vesa mounts

1. Fix the input module R760050 to the adapter plate R8794528 with 3 screws B362738 (SCR D7985TX M 4 X 6 STZN)

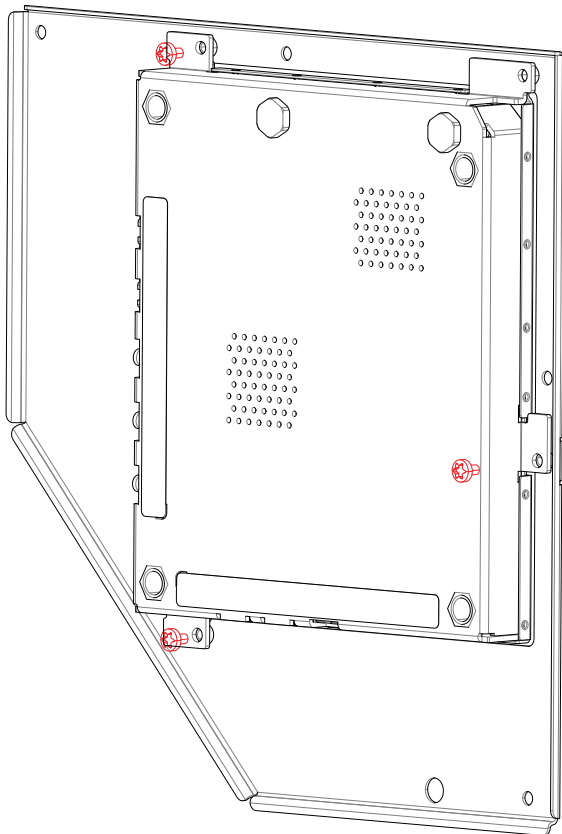


Image 4-3

2. Fix this assembly to the UniSee LCD with 3 screws SCR \$7985TXM 4 X 12 STZN (R8789546). These screws are included in the input board module R760050.

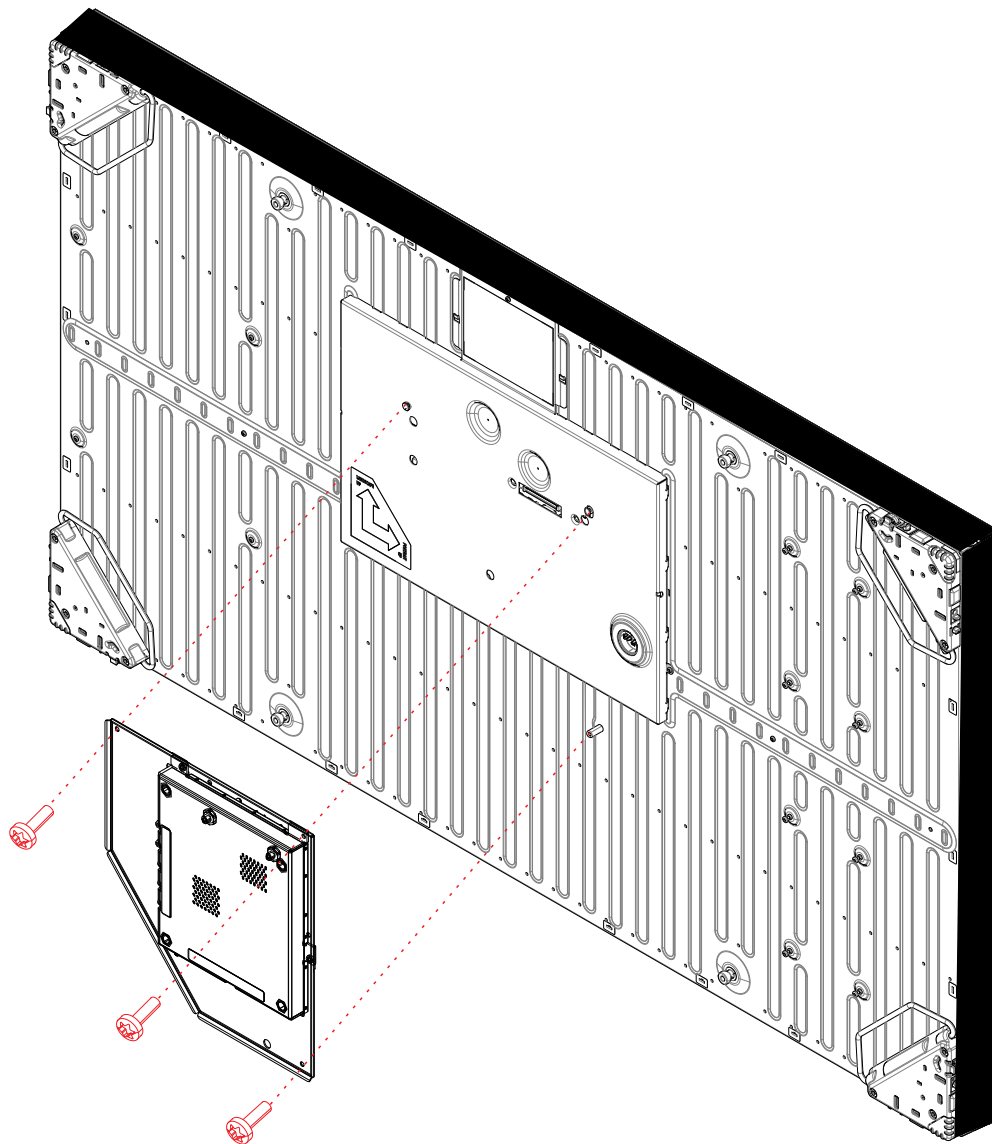


Image 4-4



For each screw, proceed like this: insert the screw, and fix it by two turns. Only when all screws are in, tighten them

# Replacement of input board on UniSee 500 (UNI- 5000) and UniSee 800 (Barco mounts)

# 5

## 5.1 Replacement procedure

### Installation kit R986782 (ADAPTER SPIKE TO SMT MNT KIT)

Contents of the kit:

Material	Description	Qty
R8794528	FRM ADAPTER SPIKE	1
B362738	SCR D7985TX M 4 X 6 STZN	3
R7251811	FRM SMRTMNT COMP FRAME SPIKE	1

### Adaptation of the Barco Mount

1. Remove the respective LCM (see De-mounting of an LCM above)
2. Unplug the cables and unmount the input board
3. Unclick the cable holder.
4. Unscrew the plastic center frame.

Make sure to keep the screws (2x SCR PT \_R 6 x 16 STZN, R879366)

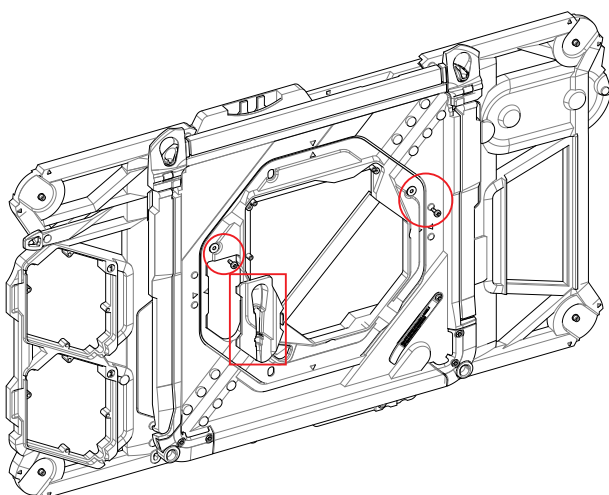


Image 5-1

5. Install the plastic frame included in the installation kit and fix it with the 2 screws removed in the previous step (SCR PT \_R 6 x 16 STZN, R879366)

**!** **Warning:** These screws are self-cutting screws. When unscrewed and inserted again, the previous thread needs to be found! This is can be achieved by first turning the screw in the opposite direction (as if you want to un-screw it). Once the thread is found, fix the screw.

6. Click in the cable holder
7. Check the input board.

The input board has EMC springs. These springs must follow the shape like the red indicated ones and should not be deformed else there is no proper connection of the input board to the LCM.

Make sure that the springs are straight and not deformed! If required, use pincers and straighten them according to the red indicated shape!



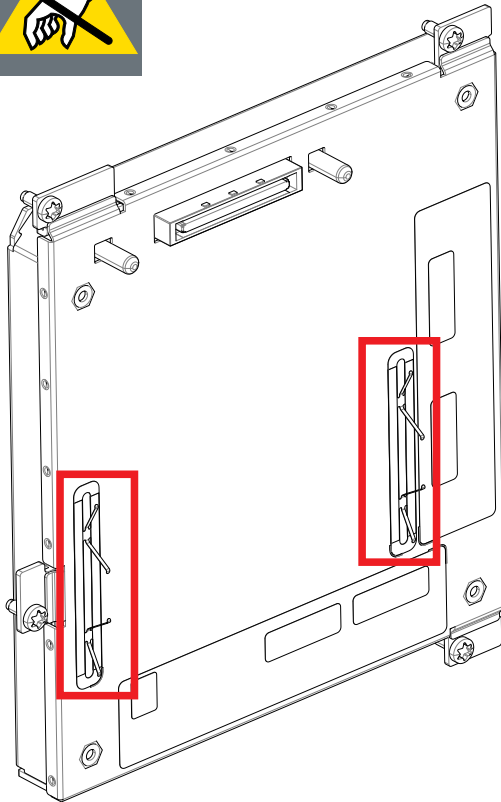


Image 5-2

**8. Check the input board.**

The input board is spring loaded! Check that the springs are in place and that they are not dislocated!  
If the springs are missing, there won't be proper connection of the input board!

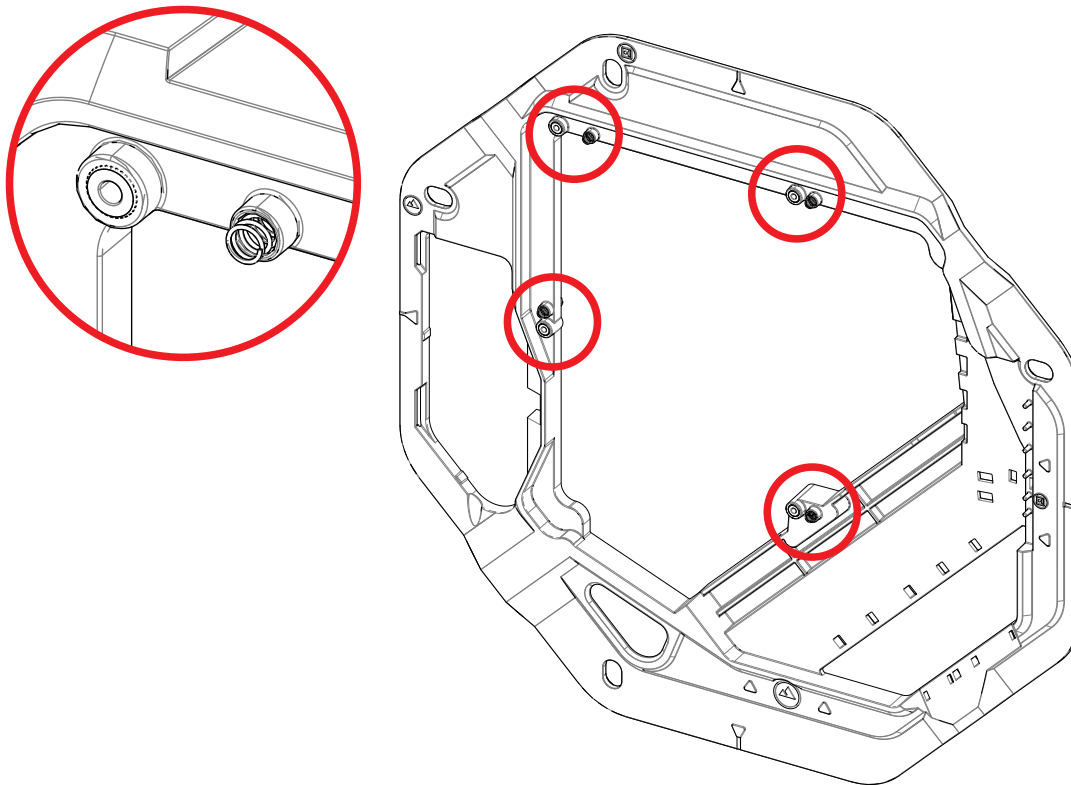


Image 5-3

9. Mount the input board. Use 4 screws R8789546 (SCR \$7985TXM 4 X 12 STZN) and fix the input board to the meta frame. Use the holes which allow sinking the head of the screws! Lightly screw in all 4 screws (2 turns), when all 4 of them are in, tighten them.

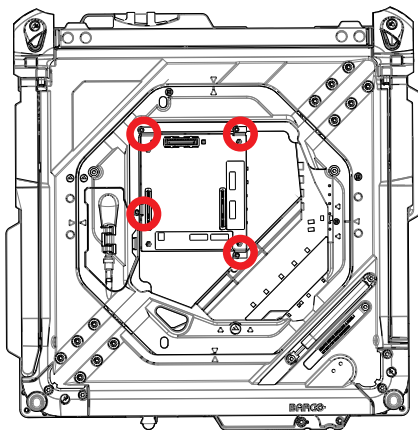


Image 5-4

10. Tighten the screws.

For each screw, proceed like this: insert the screw, and fix it by two turns. Only when all screws are in, tighten them

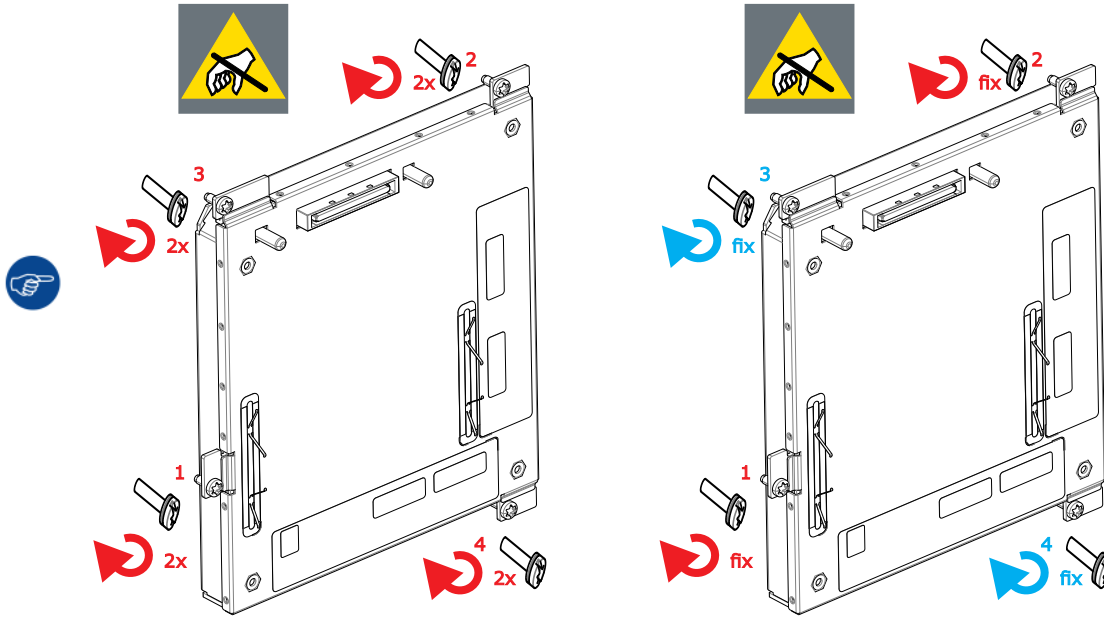


Image 5-5

**WARNING:** When the screws are fixed, open them by 2 (2.5) turns/revolutions: the mechanism underneath is spring loaded! (If the screws are fully tightened this mechanism does not work.)

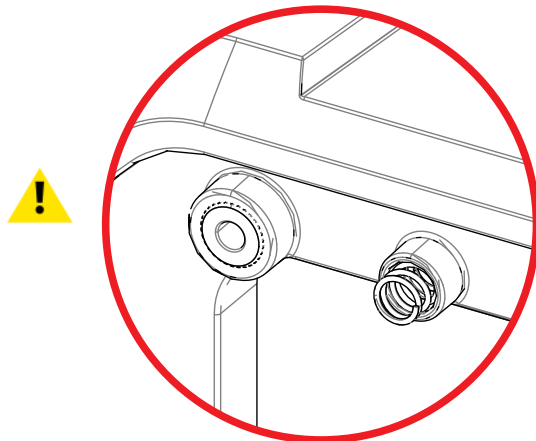


Image 5-6



# Installation/ Replacement of input board on UniSee 500 (UNI- 0005) (Vesa mounts)

# 6

## Installation kit R9867801 (ADAPT INPUT DP1.2/HDMI2.0 TO VESA KIT)

Contents of the kit

Material	Description	Qty
R8794528	FRM ADAPTER SPIKE	1
B362738	SCR D7985TX M 4 X 6 STZN	3
B362635	SCR D916 M 4 X 40 ST (grub screw)	3
R366103	NUT D934 M 4 STZN	6

For installation of the adapter plate for the input board on UniSee 500 (UNI-0005) with VESA mount, it is required to mount three grub screws on the rear side of the LCM. Each grub screw is completed by two nuts: the first nut defines the position of the adapter plate, the second nut fixes the adapter plate to this position. Basically the lower nuts of the grub screw assemblies define the installation plane for the adapter plate and basically “enlarge” the sheet metal on the rear (colored blue) to have a plane installation surface on the LCM for the adapter plate.

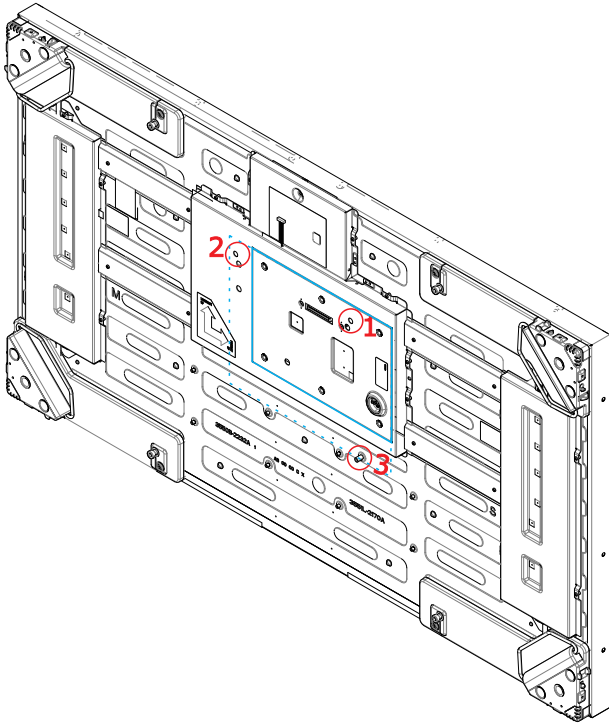


Image 6-1

## 6.1 Installation procedure

### Installation / replacement of the input board

1. Install the grub screw (1). Insert the grub screw to the end of the tapping on the LCM and tighten it. Insert the nut and fix it so that it flushes with the surface of the sheet metal = position z1

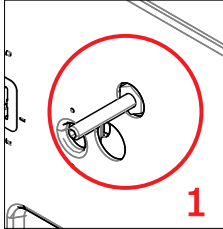


Image 6-2

2. Install the grub screw (2). Insert the grub screw to the end of the tapping on the LCM and tighten it. Insert the nut and fix it at the same z-position z1 (you might put the adapter plate already on grub screw 1, nut 1 and make sure that it is perfectly levelled when placed on the nut of grub screw 2).

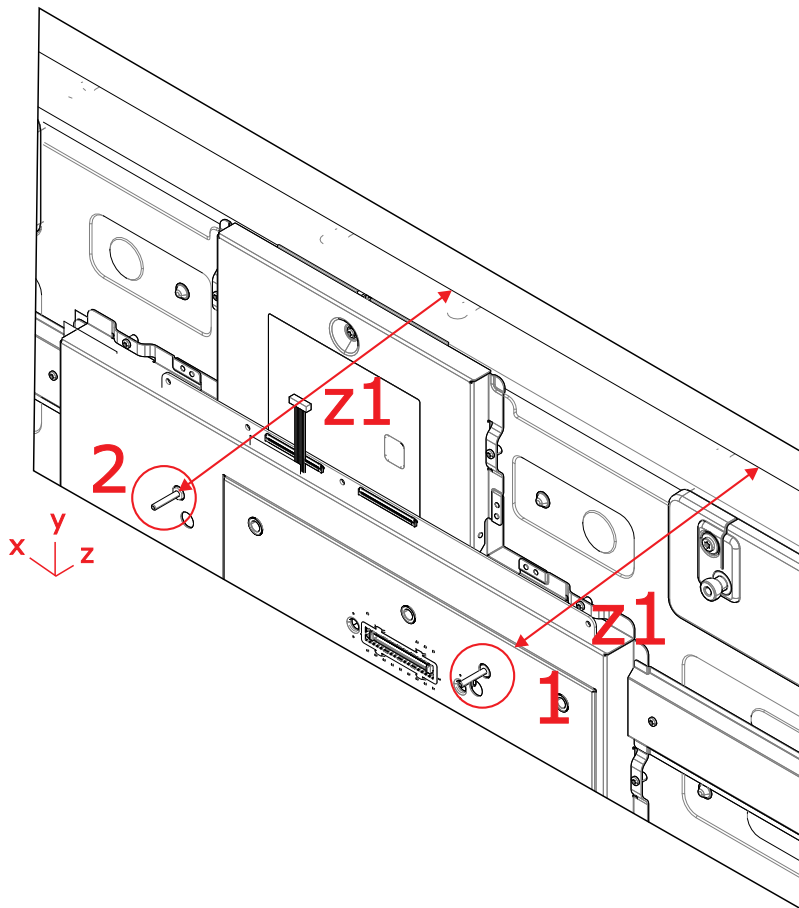


Image 6-3

3. Install the grub screw (3). Insert the grub screw to the end of the tapping on the LCM and tighten it. Insert the nut and fix it at the same z-position z1 (you might put the adapter plate already on grub screw 1 and 2 and make sure that it is perfectly levelled when placed on the nut of grub screw 3).

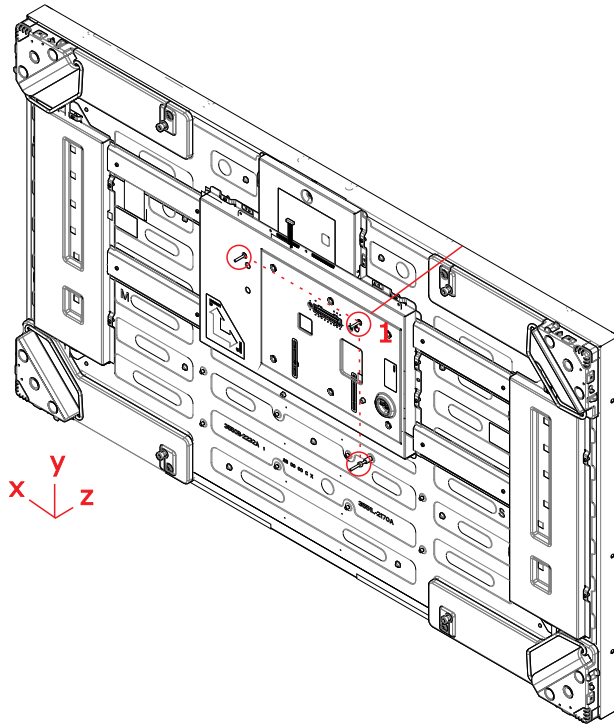


Image 6-4

4. Position the adapter plate on the grub screws.  
Make sure that it is perfectly levelled.  
On grub screw 2, insert a nut and fix the adapter plate.  
On grub screw 3, insert a nut and fix the adapter plate.

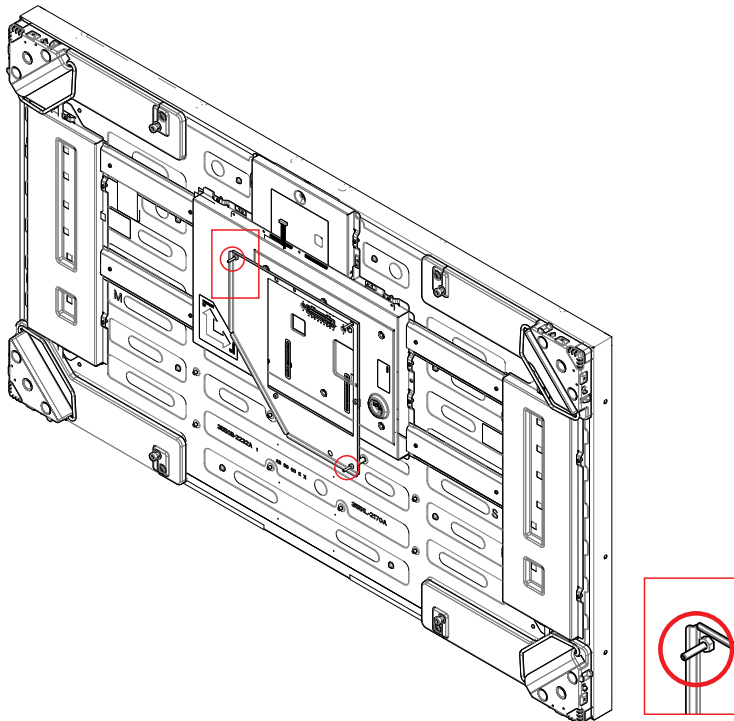


Image 6-5

5. Once the adapter plate is fixed to the LCM, apply the input board. Slide the top right ear of the input board module onto grub screw (1). Mount the input board module to the adapter plate using 3 screws SCR D7985TX M 4 X 6 STZN (B362738).



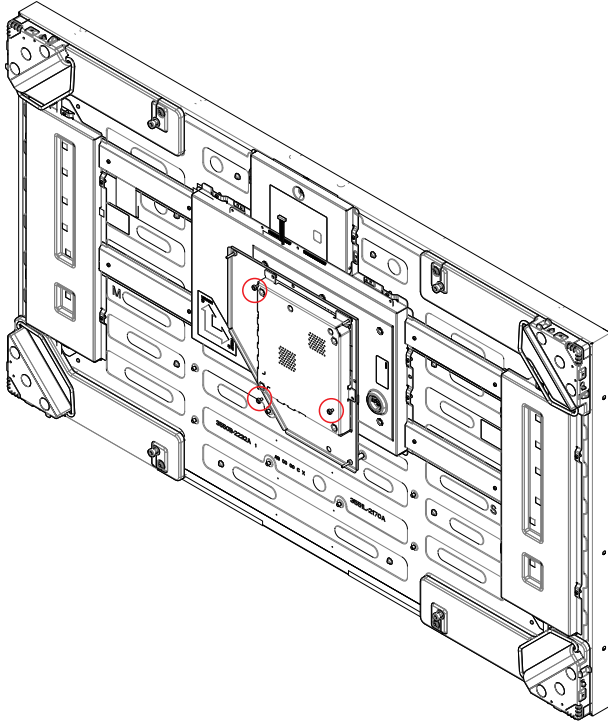


Image 6-6

6. On grub screw 1, insert a nut and fix the assembly of input board and adapter plate to the LCM.

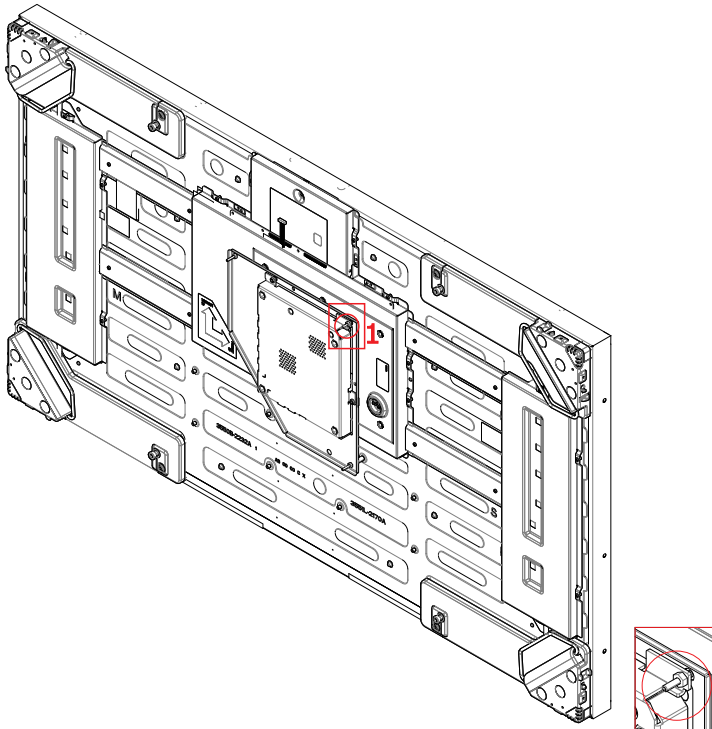


Image 6-7

LCM with mounted input board. Zoom in the picture to see the grub screws, nuts, and fixation screws.

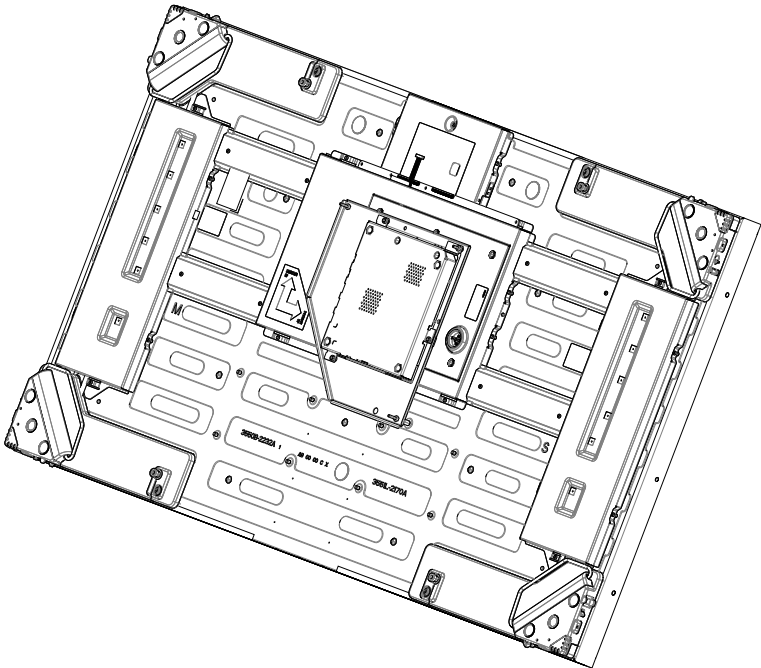


Image 6-8

# Technical specification

# 7

## 7.1 Technical data input board DP 1.2/HDMI 2.0

### Input

Input			Specification		
			Min.	Typ.	Max.
DP1/DP2/ HDMI1/HDMI2	Signal				
	Frequency	H (kHz)	30.0	-	68.0
		V (Hz)	49	-	61
	Separate (H,V) Sync (TTL)	High (V)	2.0	-	3.3
		Low (V)	0	-	0.8
	HDMI (PC to MNT) (m)		Max. length: 15m		
	DP(Set1 to Set2) (m)		Max.length : 3.5m with Barco DP1.2 cable		
HDCP 2.2		HDMI, DP Support			
Control	Ethernet voltage (V)		-2.2 ~ 0		
	Ethernet current (mA)		-90 ~ 0		
	Ethernet (SW to MNT) (m)		Max length : 100m		
	Ethernet (MNT to MNT) (m)		Max length : 5m		

### Output

Output			Specification		
			Min.	Typ.	Max.
DP 1.2	Signal	DP			
	Frequency	H (kHz)	30.0	-	68.0
		V (Hz)	49	-	61
	Separate (H,V) Sync (TTL)	High (V)	2.0	-	5.0
		Low (V)	0	-	0.8
	HDMI (PC to MNT) (m)		Max. length: 15m		
	DP(Set1 to Set2) (m)		Max.length : 3/3.5m with Barco DP1.2 cable		
HDCP 2.2		HDMI, DP Support			
Audio	3.5mm stereo				
Max DP output number of sets (HDCP 1.4/HDCP 2.2 / no HDCP content!) (HDCP loop-through is supported only for signals connected to DP1/DP2)			1+7/1+4/12 at 1920x1080 60Hz		
Max Ethernet daisy chain sets			16		

### Pin assignment HDMI interface

Pin	signal assignment	pin	signal assignment
1	TMDS Data 2+	11	TDMS Clock Shield
2	TMDS Data Shield	12	TDMS Clock -
3	TMDS Data 2-	13	CEC
4	TMDS Data 1+	14	Reserved
5	TMDS Data Shield	15	Clock
6	TMDS Data 1-	16	Data
7	TMDS Data 0+	17	DDC/CEC Ground
8	TMDS Data 0 Shield	18	+5 V Power
9	TMDS Data 0-	19	Hot Plug Detect
10	TMDS Clock +		

### Pin assignment DP interface

1	DP Lane 3-	11	DP Lane 0 Shield
2	DP Lane 3 Shield	12	DP Lane 0+
3	DP Lane 3+	13	DP Config 1
4	DP Lane 2-	14	DP Config 2
5	DP Lane 2 Shield	15	DP AUX +
6	DP Lane 2+	16	DP AUX Shield
7	DP Lane 1-	17	DP AUX -
8	DP Lane 1 Shield	18	DP Hot Plug Detect
9	DP Lane 1+	19	GND
10	DP Lane 0-	20	DP Power 3.3V

### Supported timings

Input / Output Signal	Horizontal Range		30.0 – 68.0 KHz
	Vertical Range		50 +/- 1Hz, 60Hz +/- 1Hz (25-30 double Genlock)
	Pixel Clock		HDMI: 25.2MHz-297MHz, DP: 25.2MHz – 540MHz
	HDMI 2.0	Connector	HDMI IN
Resolution		1920x1080 @60Hz 1920x2160 @60Hz 1920x3240 @60Hz 3840x1080 @60Hz 3840x2160 @60Hz 1920x1080 @50Hz 1920x2160 @50Hz 1920x3240 @50Hz 3840x1080 @50Hz	

			3840x2160 @50Hz 1920x2160 @30Hz 1920x3240 @30Hz 3840x1080 @30Hz 3840x2160 @30Hz 3840x3240 @30Hz 1920x3240 @25Hz 3840x2160 @25Hz 3840x3240 @25Hz
	DP 1.2	Connector	Display port IN
		Resolution	1920x1080 @60Hz 1920x2160 @60Hz 1920x3240 @60Hz 3840x1080 @60Hz 3840x2160 @60Hz 1920x1080 @50Hz 1920x2160 @50Hz 1920x3240 @50Hz 3840x1080 @50Hz 3840x2160 @50Hz 1920x2160 @30Hz 1920x3240 @30Hz 3840x1080 @30Hz 3840x2160 @30Hz 3840x3240 @30Hz 1920x3240 @25Hz 3840x2160 @25Hz 3840x3240 @25Hz
Control Signal			2 x 1Gbit Ethernet (RJ45)
Firmware update			over Ethernet

### HDMI Interface

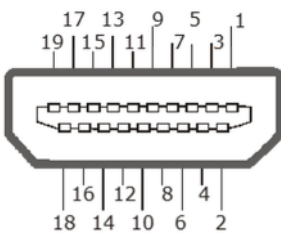


Image 7-1

## DP Interface

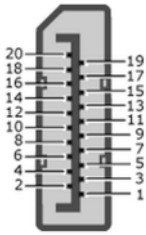


Image 7-2

## DP cables

We suggest to only using cables compliant to DP 1.2 VESA standard.

Display port cable “positive list”, types that have passed qualification tests:

(using other type of cables may create instability to the system)

- B558285 DP1.2 cable, 2m
- B558295 DP1.2 cable, 3m
- Z3472713 DP1.2 cable, 3.5m
- R9845613010 DP AOC hybrid cable, 10M
- R9845613020 DP AOC hybrid cable, 20M
- R9845613030 DP AOC hybrid cable, 30M
- R9845613050 DP AOC hybrid cable, 50M

## Progressive mode only



Only progressive mode is supported.  
Custom DDC files can be uploaded.

## 7.2 Power supply 250W

### Power supply 250 W

Description	Conditions	Min	Nom	Max
Input Voltage (VAC)	AC	90	100-240	264
Input Frequency (Hz)	50 -60 Hz	47	50-60	63
Input Current (A)	@115 VDC@230 VDC		35.0	
Inrush Current (A)	Cold start, 25°C ambient, full load, 264VAC		20	
Fusing	2x Time Lag 6.3A,		6.3	
Output Voltage (VDC)	V1	47.8	48	48.2
Output Current (ADC)	I1		5.2	
Output Power (W)			250	
Output Voltage (VDC)	V2	4.5	5	5.5

Output Current (VDC)	I2		0.5	
Output Power (W)	$P2=V2*I2$		2.5	
Dimensions (mm)		Height max. 47.5 mm (final housing) Width max. 110 mm Length max.246 mm (customized with IEC plug 240 mm)		
Input Connector (pins)	IEC C14		3	
Output Connector (pins)			6	
Cooling	Cooling type	passive type		
Mounting Holes			4	

## 7.3 External power solution

### Mechanics 19" power box

Width	19inch
Height	2 U (1 U + 1U blind cover)

### Mechanical and thermal properties DC power cables

Outer diameter		7.4 mm
Min. bending radius	Occasional flexing	15x outer diameter
	Fixed installation	4x outer diameter
Temperature range	Occasional flexing	-15°C up to +70°C max. conductor temperature
	Fixed installation	-40°C up to +75°C max. conductor temperature

### SMPS Power Unit 1200W

Width	101.6mm  4in.
Height	40.6mm   1.6in.
Depth	230mm   9.0in.
Weight	1.1kg  2.2lbs
Input	90-275VAC, 47-63Hz
Nominal Output Power	1200W
Nominal Output Voltage	48VDC
Nominal Output Current	25 ADC



# Addresses

# 8

## 8.1 Contact

Feel free to contact us if you have any further questions!

Barco N.V.

President Kennedypark 35,

8500 Kortrijk (Belgium)

RPR Kortrijk - BE0473191041

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