

# **User's manual**

## **GREEN BCM SOLUTION**

R591346

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## R591346 , Current Version

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## Barco standard warranty

*In case of any contradiction or inconsistency to the Barco Terms and Conditions of Sale the latter will prevail!*

This warranty is granted to end users owning a Barco product.

Barco warrants that its products, when delivered in new condition, in original packaging, sold directly or through a Barco authorized partner and used in normal conditions, is free from any defects in manufacturing, materials and workmanship.

The warranty shall apply only to the extent that the products or any parts thereof have been installed and serviced by skilled personnel certified by Barco.

The Warranty shall only apply if the mandatory preventive maintenance actions as described in the technical documentation have been executed.

Warranty starts on the shipment date of products. If Barco is responsible for onsite acceptance (OSAT), warranty starts upon sign off of OSAT or when product is taken into use, whatever starts first.

For software, repairs and purchased spare parts 3 months warranty apply, unless specified otherwise.

Any third party product or any part thereof which Barco merely resells with its products or services is subject to the original manufacturer's warranty unless specified otherwise.

The warranty does not apply to consumables (lamps, liquids, filters, reflectors, fans, pumps, batteries, etc...)

This warranty does not cover defects resulting from improper or unreasonable use or maintenance, failure to follow operating instructions as mentioned in the technical documentation.

This warranty does not cover defects resulting from accident, unauthorized alteration or modification of the original condition, or product being connected to or used in combination with other equipment, products or systems (hardware and/or software) not compatible with the product or not respecting the installation requirements as defined in the installation manual (such as high temperatures, humidity, dust, power surges...).

In no event shall Barco be liable for any defects, failures, loss of or damage caused by or resulting from wear and tear, any external cause or event out of Barco's control, use or operation of the product prior to acceptance, any act or negligence of customer or any third party, or any phenomena inherent to the technology used such as image retention, burn-in, vibrations, etc...

The warranty is void if serial numbers, warning labels or original seals are removed, changed or tampered with.

During the warranty period, Barco will, at its sole discretion, repair (at Barco's own or at a Barco certified service center), or replace (using new or refurbished replacement parts) any defect within a reasonable period of time and free of charge. The replaced product, parts and/or components shall become the property of Barco and shall, at our request, be returned to Barco, otherwise invoiced.

Upon request of the customer Barco can send a service engineer onsite to repair the product. The travel time and the travel and living expenses of the service engineer shall be payable by the customer in accordance with Barco's then applicable rates and procedures.

Barco will not pay shipping, insurance or transportation charges from you to us (Barco's own or a Barco certified service center), or pay any import fees, duties and taxes.

To obtain the Standard warranty service, return the product or part using the following procedures:

- (i) Contact your Barco partner or Barco help desk in your country/region (visit [Barco.com/support](http://Barco.com/support)) for specific return and shipping informations.
- (ii) Label and ship the product to the address provided by Barco in your country/region. You shall pack the products correctly in the original packaging so as to protect them from transport damage.
- (iii) Place the necessary return material authorization number (RMA number) prominently on the outside of the box. Shipments not bearing a RMA number will be refused.

Please ensure that a backup of any customized data or configurations is made prior to returning the product for repair/replacement. During the repair or replacement process products are reset to their factory configurations and all customized data and configurations will be lost.

The remedies specified in this warranty document shall constitute customer's sole and exclusive remedy and Barco's sole and exclusive liability for Barco's breach of the warranty hereunder.

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## Revision sheet

To:

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From: \_\_\_\_\_

Date: \_\_\_\_\_

Please correct the following points in this documentation (**R591346**):

page	wrong	correct

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# 1 Introduction

This chapter explains the structure of the manual itself and the used typographic styles and symbols. Safety information is provided concerning the operation of devices from Barco.

This manual explains the devices and function of the Green BCM Solution. The Green BCM Solution comprises the following functional components:

Green BCM Box (mandatory)

Green Power Switch (optional, requires displays with AC power module)

Green On/Off button (mandatory with Power Module 19inch, else optional)

Power Module 19inch (optional, requires displays with DC power module)

## 1.1 Styles and Symbols

The typographic styles and the symbols used in this document have the following meaning:

<b>Bold</b>	Labels, menus and buttons are printed in <b>Bold</b> font.
Condensed	Links to both other chapters of this manual and to sites in the Internet are printed <b>condensed</b> . In the on-line version of this manual all hyperlinks appear <b>teal</b> .
Courier	Names of files and parts from programs are printed in the <b>Courier</b> font.
<b>Courier bold</b>	Inputs you are supposed to do from the keyboard are printed in <b>Courier bold</b> font.



If you do not heed instructions indicated by this symbol there is a risk of damage to the equipment!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de dommage de l'équipement !



If you do not heed instructions indicated by this symbol there is a risk of electrical shock and danger to personal health!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de décharge électrique et sera source de danger pour la santé du personnel !



If you do not heed instructions indicated by this symbol there is a risk of damage to parts, which are sensitive toward electrostatic charge!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de dommage de pièces sensibles à la charge électrostatique !



If you do not heed instructions indicated by this symbol there is a risk to get harmed by sharp objects!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de blessure dû à des objets tranchants !



If you do not heed instructions indicated by this symbol there is a risk that parts may explode!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque d'explosion de pièces !



If you do not heed instructions indicated by this symbol there is a risk that hot parts impact persons or objects!

Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de contact de personnes ou d'objets avec des pièces chaudes !



The sheet icon indicates additional notes.

Cette icône représentant une feuille indique des remarques supplémentaires.



Next to this icon you find further information.

Cette icône est suivie d'informations plus détaillées.



This hand marks tips.

Cette icône attire l'attention sur des conseils.



Next to this icon you find important notes.

Cette icône est suivie de remarques importantes.

## 1.2 Safety Instructions

This section describes safety precautions, which must be observed when installing and operating a product from BARCO.

### 1.2.1 Standards

The devices are built in accordance with the requirements of the international safety standards EN 60950-1 and IEC 60950-1. The device conforms to UL std. UL 60950-1 and is certified to CSA std. C22.2 No. 60950-1. The Power Module 19inch is also certified to China Compulsory Certification CCC. All these safety standards are the information technology equipment standards, including electrical business equipment.

These safety standards impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against the risk of electric shock and energy hazard, and having access to live parts.

Safety standards also impose requirements to the internal and external temperature variations, radiation levels, mechanical stability and strength, enclosure construction and protection against risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

### Electromagnetic Interference

Green BCM Solution complies with the following EMC standards:

Electromagnetic compatibility - emission:	EN 55022 (2010)/AC :2011
	EN 61000-3-2 (2006) + A1 (2009) + A2 (2009)
	EN 61000-3-3 (2008)
Electromagnetic compatibility - immunity:	EN 55024 (2010)



**Make sure to use cables with shielding of type S-FTP or S-STP when connecting the display to the network!**

**Assurez vous d'utiliser des câbles avec un blindage de type S-FTP ou S-STP lors de la connexion de l'écran au réseau!**

### EN55022/CISPR22 Class A ITE (Information Technology Equipment)

All the products within the Green BCM solution are products of class A ITE. ITE means Information Technology Equipment. ITE is subdivided into two categories denoted class B ITE (products intended primarily for use in domestic environment) and class A ITE (all other ITE which satisfies the class A ITE limits but not the class B ITE limits).



**This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

**Ce est un produit de classe A. Dans un environnement domestique, ce produit peut causer la radio inter-conférence auquel cas l'utilisateur peut être tenu de prendre les mesures adéquates.**

## FCC Compliance statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### 1.2.2 Precautions



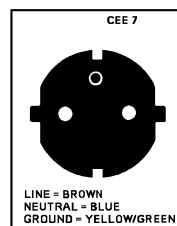
**For your own protection, observe the following safety precautions when installing, operating and servicing your device!**

**Pour votre propre sécurité, respectez les consignes de sécurité suivantes lors de l'installation, l'exploitation et l'entretien de votre appareil!**

- Before operating the units please read this manual thoroughly and retain it for future reference!
- Observe all warnings and instructions printed on the devices!
- Servicing not explicitly mentioned in this manual should never be carried out by unauthorized personnel! Never open the case of the unit without first disconnecting the power supply cord!
- To prevent fire or electrical shock hazard, do not expose this unit to rain or moisture!
- The Green BCM Box and the Green Power Switch should be operated from an AC power source!
- Check that the voltage and frequency of your power supply match those printed on the device label with the rated electrical values!
- If you are not sure of the type of AC power available, consult your dealer or local power company!
- The Green BCM Box and the Green Power Switch are equipped with a 3-wire grounding plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug!
- Green BCM Box and the Green Power Switch must be grounded (earthen) via the supplied 3 conductor AC power cable. (If the supplied power cable is not the correct one, consult your dealer.)

#### Mains lead (AC Power cord) with CEE 7 plug:

The wires of the mains lead are colored in accordance with the following code:

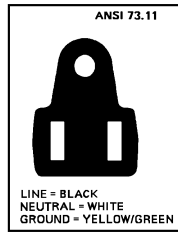


**yellow + green**  
**blue**  
**brown**

Earth (Ground)  
Neutral  
Line (Live)

**Power cord with NEMA 5-15 plug:**

The wires of the power cord are colored in accordance with the following code.

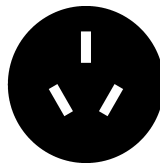


<b>Green or Green/Yellow:</b>	Earth (Ground)
<b>White or Blue:</b>	Neutral
<b>Black or Brown:</b>	Line ( Live)

- The cord set must be UL-approved and CSA-certified.
- The minimum specification for the flexible cord is No. 18 AWG Type SVT or SJT, 3-conductor.
- The cord set must have a rated current capacity of at least 10A.
- The attachment plug must be an Earth-grounding type with a NEMA 5-15P (10 A, 125 V) configuration.

**Power cord with GB 2099 plug:**

The wires of the power cord are colored in accordance with the following code.



<b>yellow + green</b>	Earth (Ground)
<b>blue</b>	Neutral
<b>brown</b>	Line ( Live)

- Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.

The Power Box 19inch comes with connection terminals for field wiring. The terminal block has 3 connections (green-yellow, neutral, live; connection method: screw connection). The customer is responsible for providing the correct connecting cables based on local power net and the electric specification on the product ID label.

### 1.2.3 Intended use

The Green BCM solution is intended for professional use only in Barco Control Room applications.

The Green BCM solution is not for household use!

### 1.2.4 Storage and transportation

All components of the Green BCM Solution have to be stored and transported in the original packaging in accordance with the non-operating conditions, [7.4 Environmental Conditions](#)

### 1.2.5 Unpacking of Devices

Note advises on the packaging for unpacking!

Only unpack for immediate installation!

### 1.2.6 Importers contact information

To find your local importer, contact Barco directly or one of Barco's regional offices. Use the contact information given on the official Barco web site <http://www.barco.com>.

#### 1.2.6.1 Made in information

- For the country the product has been manufactured in, please check the product ID label on the product itself

#### 1.2.6.2 Production date

- For month and year of production, please check the product ID label on the product itself

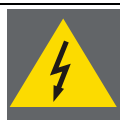
### 1.2.7 Certifications (Green BCM Box)



See the product label for additional approval marks.

### 1.2.8 Servicing

Mechanical or electrical modifications others than described in this manual must not be made to the devices. Barco is not liable for damages resulting from modified devices.



**Only authorized personnel should carry out other maintenance work not explicitly mentioned in this manual!**

**Never open the case of any component without disconnecting all power supply cords! Measurements and tests with the opened device may be carried out only in the factory or by specially trained personnel, due to the dangers of electrical shock.**

**Seul le personnel autorisé devrait effectuer d'autres travaux d'entretien ne sont pas explicitement mentionné dans ce manuel! Ne ouvrez jamais le cas de tout composant sans débrancher tous les cordons d'alimentation! Mesures et essais avec le dispositif ouvert peuvent être effectués que dans l'usine ou par un personnel spécialement formé, en raison des dangers de choc électrique.**



**The Power Module 19inch is a multiple power source! Always disconnect all power sources before servicing! Servicing is restricted to qualified personal!**



**High leakage current! Grounding is mandatory prior connecting the displays!  
The surface might be very hot!**

**Le 19 pouces Power Module est une source d'alimentation multiples! Toujours débrancher toutes les sources d'alimentation avant l'entretien! L'entretien est limité à un personnel compétent!  
Courant de fuite élevé! Mise à la terre est obligatoire avant de connecter les écrans!  
La surface peut être très chaud!**

Keep the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your set as it was originally packed at the factory.

### 1.2.1 Environmental information: disposal information

This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service. For details, please visit the Barco website at:

<http://www.barco.com/en/AboutBarco/weee>



#### Disposal of batteries

This product contains batteries covered by the European Directive which must be collected and disposed of separately from municipal waste.

If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.

By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.



#### Turkey RoHS compliance

Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur

[Republic of Turkey: In conformity with the WEEE Regulation]







## 2 Summary

This manual describes the Green BCM Solution for Barco OVD/KVD/IVD/HVD video walls.

The Green BCM Solution has been introduced to fulfill the EnergyStar 6.0 requirements. To achieve these requirements, all displays of an OVD/KVD/IVD/HVD video wall, all power switches and also the Green BCM Box has to be switched off in standby. It is only a small controller in the control unit which stays alive and which is able to power up the entire wall again from standby. The control unit will start up or shut down the complete wall in a controlled way by controlling each device using the wall internal Ethernet interface.

The Green BCM Solution comprises the following functional components:

- Green BCM Box (mandatory)
- Power Box 19inch (optional) (requires displays with DC power supplies)
- Power switch boxes (optional) (requires displays with AC power supplies)
- Green ONOFF button (mandatory with Power Box 19inch, else optional)

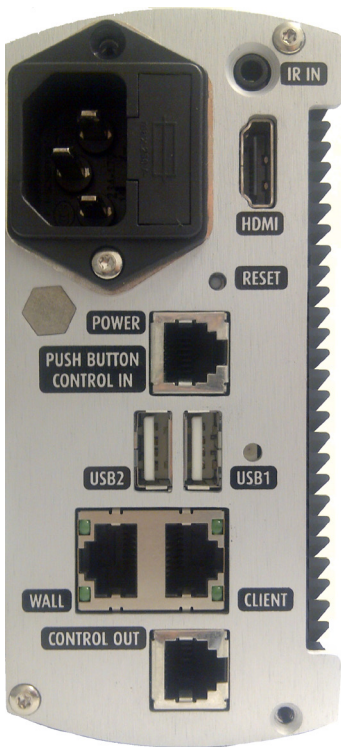
For functional setup of the Green BCM Solution, the mandatory Green BCM Box and one of the optional components is required.

Each display needs to be connected to either a power switch box (AC power supply) or an exit of the power module on the Power Box 19 inch (DC power supply)



## 3 Components of the Green BCM Solution

### 3.1 Green BCM Box



The Green BCM Box is the mandatory component of the Green BCM solution.

The Green BCM Box serves as both, as switch controller and as Barco Wall Control Manager.

In its role as switch controller, the Green BCM Box together with one of the optional components (Green Power Switch Box, Power Module 19inch) provides not only energy efficiency in standby mode but also low inrush currents:

When switching the entire display wall on, the command is executed with minimal delays on all display: it is only during the zero crossing that the display is switched on. Thus the inrush current of the entire display wall is rather low and does not require special safeguarding.

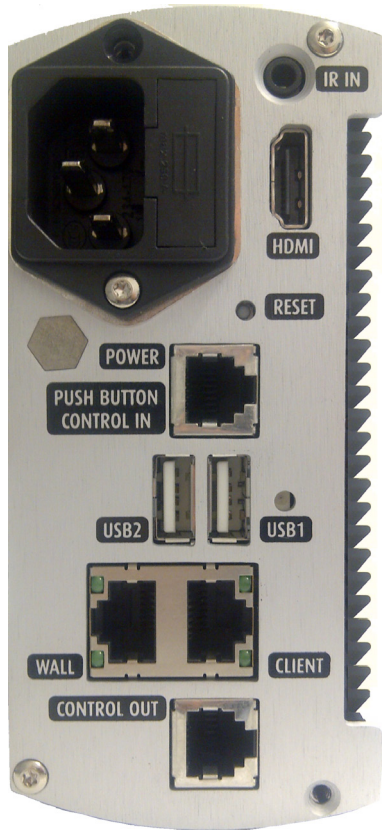
The green power switch is always looking for a zero crossing on the phase of the power net. If no power net is connected, the Green Power Switch will not switch to on mode.

In standby mode, all displays of an OVD/KVD/IVD/HVD video wall, all power switches and also the BCM controller are switched off. It is only a small controller in the control unit which stays alive and which is able to power up the entire wall again from standby.

The command to power up is available on the web site of the Green BCM Box. The command can also be triggered via API or the Green ONOFF Button.

In its role as Barco Wall Control Manager, the Green BCM Box manages and controls the displays of an OVD/KVD/IVD/HVD display wall in terms of color and brightness. Please refer to the user manual of Barco Wall Control Manager for detailed description.

## 3.1.1 Position and function of the control elements on the front

**POWER LED**

When Green BCM Box is up and running, the green power LED is on.

**Interfaces CLIENT, IR IN, PUSH BUTTON CONTROL IN**

These interfaces are used by Green BCM Box as switch controller:

Green BCM Box can bring the display wall in ON/STANDBY mode by any of the following controls:

- Command on the Green BCM web page (interface labeled CLIENT)
- IR
- Green ON/OFF button (interface labeled PUSH BUTTON CONTROL IN)

**Interfaces WALL, CLIENT**

These interfaces are used by Green BCM Box as wall router running Barco Wall Control Manager service:

Green BCM Box is operated via LAN and controls the displays also via LAN. Therefore the LAN interfaces Wall and Client are required for operating Green BCM Box as wall router.

**Interfaces USB1, USB2, (HDMI)**

The device does not require to be connected to a keyboard and a monitor. It can be configured remotely using a web browser. Please refer to the user manual of Barco Wall Control Manager Software.

The HDMI interface is for servicing only!



**For Firmware upgrade of the Green BCM Box use the USB2 interface only!!**

**Pour la mise à niveau du micrologiciel de la BCM Green Box utiliser l'interface USB2 seulement !!**

**Interface CONTROL OUT**

Used to connect to CONTROL IN of the first Green Power Switch in the chain, cf. [4.1.1 Control cabling](#)

## Power connection



**The Green BCM Box is designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.**

**Le BCM Green Box est conçu pour fonctionner avec les systèmes d'alimentation monophasée possédant un conducteur neutre à la terre. Pour réduire le risque de choc électrique, ne branchez pas dans ne importe quel autre type de système d'alimentation.**

## 3.2 Green Power Switch

For displays with AC power supply, use the Green BCM Box with the Green Power Switch for energy efficiency. This solution allows switching of the displays when switching into standby mode; no power will be consumed.



### 3.2.1 Position and function of the control elements on the front

#### **POWER IN, POWER OUT**

The Green Power Switch is the main switch of the displays with AC power supply. The displays are connected to the interface POWER OUT.

The Green Power Switch is connected to the wall outlet using POWER IN interface.



**The Green Power Switch is designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.**

**Le Green Power Switch est conçu pour fonctionner avec les systèmes d'alimentation monophasée possédant un conducteur neutre à la terre. Pour réduire le risque de choc électrique, ne branchez pas dans ne importe quel autre type de système d'alimentation.**

**CONTROL IN, CONTROL OUT**

The CONTROL OUT interface of the Green BCM Box is connected to the CONTROL IN interface of the first Power Module 19inch.

The CONTROL OUT interface of the first Power Module 19inch. is connected to the CONTROL IN interface of the following Power Module 19inch.

Always connect the CONTROL OUT interface of the previous Power Module 19inch. to the CONTROL IN interface of the following Power Module 19inch.

A shortening plug needs to be plugged into CONTROL OUT interface of the last Power Module 19inch.

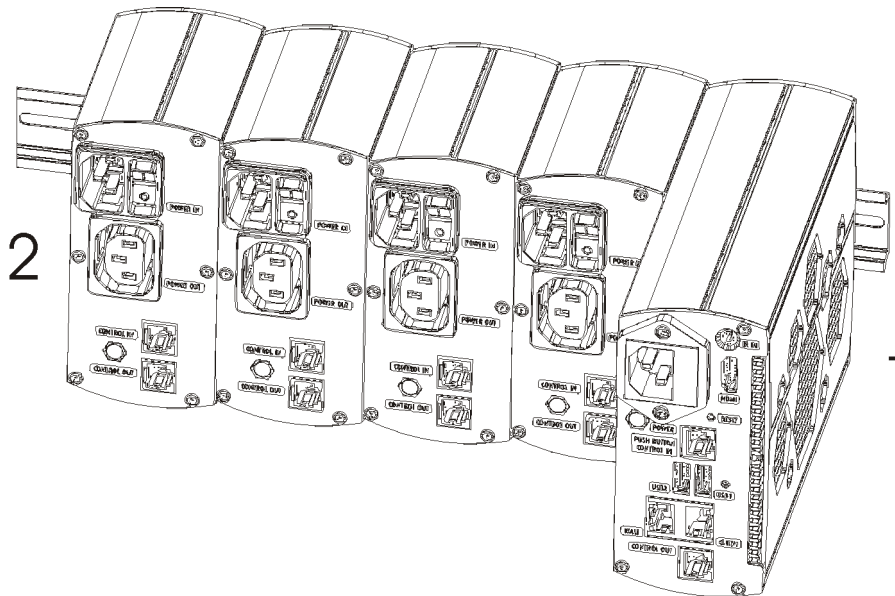


**The green power switch is always looking for a zero crossing on the phase of the power net. If no power net is connected, the Green Power Switch will not switch to on mode.**

**L'interrupteur d'alimentation vert est toujours à la recherche d'un passage à zéro sur la phase du filet de puissance. Si aucun filet d'alimentation est branché, le Green Power Switch ne se allume pas.**

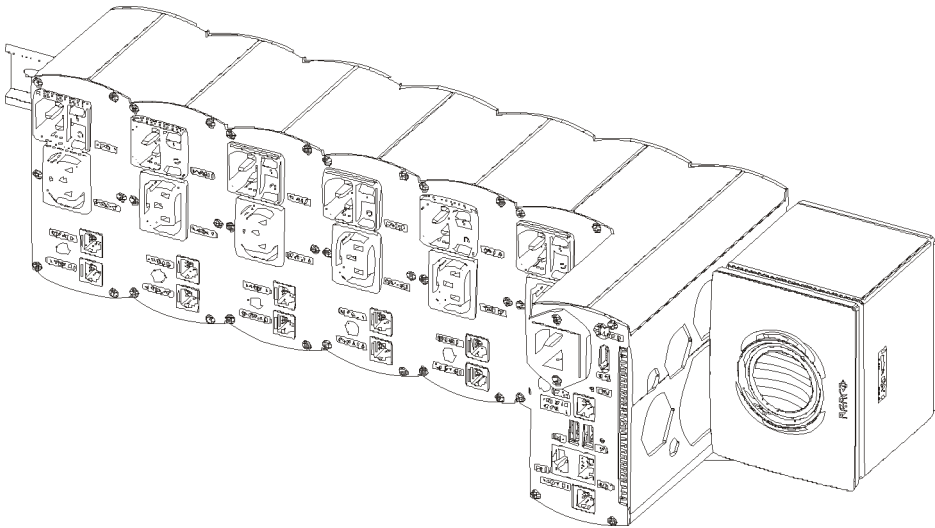
**3.3 Complete solution**

The Green Power Switches (2) will be installed on a DIN RAIL next to Green BCM Box (1).

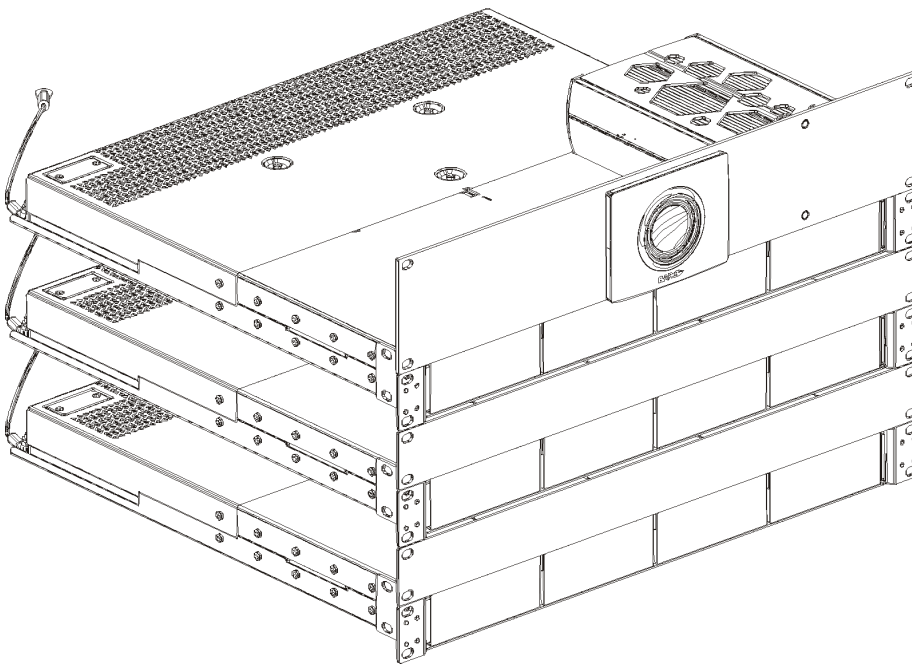


This solution is completed by the Green ONOFF button to switch the display wall from standby into operation and vice versa and also mounted to the DIN RAIL.

The max. distance between Green ONOFF button the Green BCM BOX is 5m.



### 3.4 Power Module 19inch



The remote power supply serves for the DC versions of the KVD/IVD/HVD displays. The DC power supplies of these displays need to be connected to a Power Module 19inch which can be located in a distance up to 100m! The Power Module 19inch is 1U in height. For cooling and ventilation requirements, it needs to be completed by a blind cover, also 1U in height.

One Power Module can be equipped with up to 4 SMPS power supplies ("Bricks", AC-DC converter). The SMPS power supply is available as 800W version or as 1200W version. The SMPS power supplies are hot pluggable. Every operator is allowed to exchange a SMPS power supply, cf. [6.1 Replacing the SMPS power unit](#)



**For countries with 100-110 power net, only the 800W version is available!  
The 1200W version is restricted to countries with 220-240V power net!**

Depending on the overall configuration (number of displays, with/without OPS (Open pluggable specification "Mini-PC" to be plugged into the display), number and type of power units) the design of the Power Module 19inch provides redundancy on SMPS failure, cf. 7.6 Module configurations .

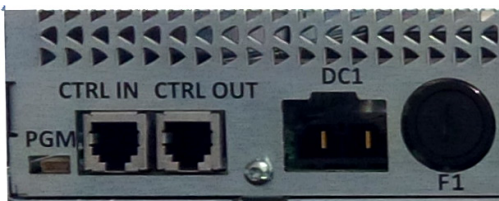
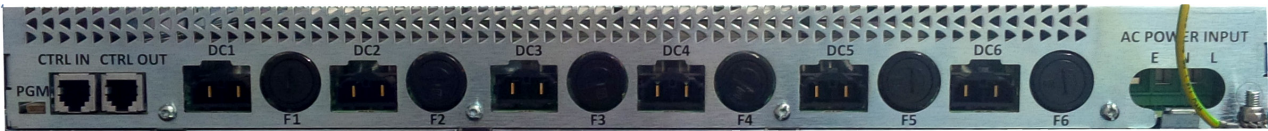
The Power Module 19inch is completed by the Green BCM Box and the Green ONOFF button.



**Connecting the Power Module 19inch to the power net needs to be done by a qualified electrician, cf. 4.2.3 Cabling within the responsibility of a qualified electrician! The manufacturer assumes no liability for incorrect, inadequate, irresponsible or unsafe assembly of systems.**

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.

### 3.4.1 Position and function of controls



#### PGM interface

This interface is used for servicing only!

#### DC connectors

The back plane features 6 exits (connection to the displays), labeled DC1 to DC6; each of them is safeguarded with a fuse (F1 to F6).

#### CTRL IN, CTRL OUT

The CONTROL OUT interface of the Green BCM Box is connected to the CONTROL IN interface of the first Power Module 19inch.

The CONTROL OUT interface of the first Power Module 19inch. is connected to the CONTROL IN interface of the following Power Module 19inch.

Always connect the CONTROL OUT interface of the previous Power Module 19inch. to the CONTROL IN interface of the following Power Module 19inch.

A shortening plug needs to be plugged into CONTROL OUT interface of the last Power Module 19inch.



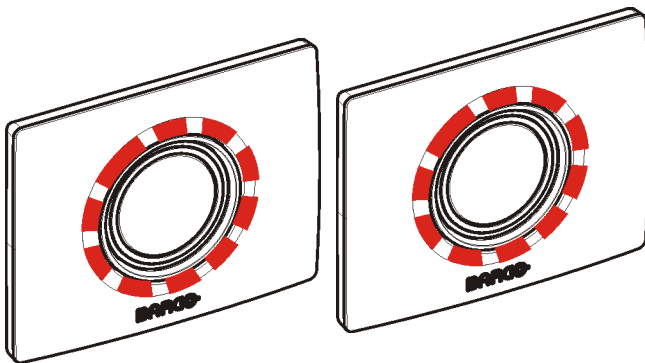
### 3.5 Green ONOFF Button

The Green ONOFF Button completes the Green BCM solution. It is available for use with Green Power Switches and for use with the Power Module 19inch.

It is used to switch the entire display wall to standby / into operation. When switching to standby, the displays are actually switched off for zero energy consumption.

The Green ONOFF Button shows the status of a display wall:

Flashing/turning red	Display wall is in standby
Red	Display wall is on





## 4 Installation

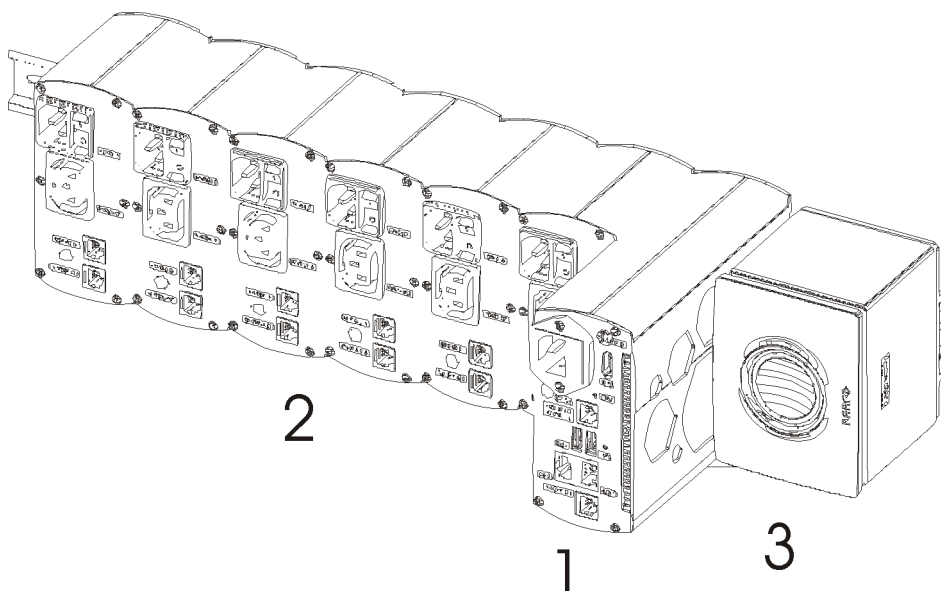
### 4.1 Installing Green BCM Box and the Green Power Switches (AC power supply)

Green BCM Box has been constructed for use in enclosed rooms. It should not be exposed to any excessive coldness, heat, dampness, or dirtiness. For safety reasons, the environmental conditions indicated in the 'Technical Data' must be observed.

Do not forget that the temperature inside a cabinet may be well above that of the temperature outside. It is possible to improve conditions by arranging the components accordingly. One should by all means make sure that once assembled, the specified temperature limit is not exceeded.

Please make sure that there is sufficient room for the connections, and that there are no protruding sharp edges. Such edges could damage the connection cables, which in turn would affect the function and safety.

If the OVD/KVD/IVD/HVD displays run with AC power modules, the Green Power Switch Boxes (2) and the Green BCM Box (1) and the Green OnOFF button are mounted to a DIN Rail. The picture shows the arrangement for a display wall consisting of 6 displays.A



However the Green BCM Box can be installed and located anywhere, provided the ambient conditions are met and provided the LAN cables and control cables are sufficient in length.

### 4.1.1 Control cabling

The control lines are set up using 6wire cable (6P6C) and RJ25 connectors.

The Green ONOFF button is connected to the CONTROL IN interface of the Green BCM Box.

The CONTROL OUT interface of the Green BCM Box is connected to the CONTROL IN interface of the first Green Power Switch Box.

The CONTROL OUT interface of the first Green Power Switch Box is connected to the CONTROL IN interface of the following Green Power Switch Box.

Always connect the CONTROL OUT interface of the previous Green Power Switch Box to the CONTROL IN interface of the following Green Power Switch Box.

A shortening plug needs to be plugged into CONTROL OUT interface of the last Green Power Switch Box.



**One Green BCM Box can control up to 50 displays.**

**One Green BCM peut contrôler jusqu'à 50 écrans.**



**The power switch on the Green Power Switch Box disconnects the AC OUT interface of the Green Power Switch Box from the AC IN interface.**

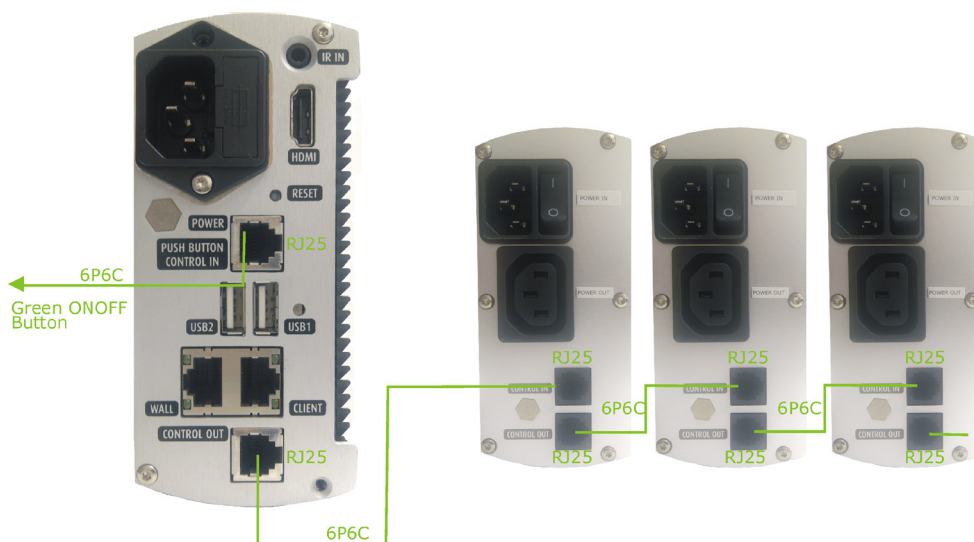
**If a display is in operating mode, switching off the power switch will switch off the display.**

**If a display is in Standby mode/Sleeping mode, switching the power switch ON connects the display to the mains. However the operating state of the display follows the internal software setting: in case the software settings are "off" the display remains dark although connected to the mains.**

**L'interrupteur d'alimentation sur le Green Power Switch Box déconnecte l'interface AC OUT de la Green Power Switch Box de l'AC IN interface.**

**Si un affichage est en mode de fonctionnement, actionner l'interrupteur de mise hors tension se éteint l'écran.**

**Si un affichage est en mode de veille / mode de couchage, de commutation de l'interrupteur ON relie l'écran au secteur. Cependant l'état de l'affichage d'exploitation suit la configuration du logiciel interne: au cas où les paramètres du logiciel sont "off", l'écran reste sombre bien connecté au réseau.**



## 4.1.2 Power cabling



**Check the power rating on your outlet before connecting the devices to the wall outlet or to a power strip. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.**

**Vérifiez la puissance sur votre prise avant de brancher les périphériques à la prise murale ou à une bande de puissance. Contactez votre gestionnaire des installations ou un électricien qualifié si vous n'êtes pas sûr de ce type d'alimentation est fourni dans votre bâtiment.**



**The Green BCM Box is designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.**

**Le BCM Green Box est conçu pour fonctionner avec les systèmes d'alimentation monophasée possédant un conducteur neutre à la terre. Pour réduire le risque de choc électrique, ne branchez pas dans ne importe quel autre type de système d'alimentation.**

Please make sure that the voltage provided on the wall outlet is within the power specification of Green BCM Box, cf. [7 Technical specifications](#)

The Green BCM Box is connected to the AC wall outlet.

There are two flavors of displays, an AC version and a DC version.

The AC version of the display is connected to the AC OUT of a Green Power Switch Box.

The AC IN of the Green Power Switch Box is connected to the wall outlet.

## 4.1.3 Switching on



**The green power switch is always looking for a zero crossing on the phase of the power net. If no power net is connected, the Green Power Switch will not switch to on mode.**

**L'interrupteur d'alimentation vert est toujours à la recherche d'un passage à zéro sur la phase du filet de puissance. Si aucun filet d'alimentation est branché, le Green Power Switch ne se allume pas.**

In case a Green Power Switch is not connected to the mains, and the display wall is switched on, the display connected to this Green Power Switch will remain dark (quite obviously, since the Green Power Switch is not connected to the mains.) However even after connecting its Green Power Switch to the mains the display will not start up since the Green Power Switch does not get a trigger to look for the zero crossing! You need to shut down and restart the entire display wall to trigger the retroactively connected Green Power Switch to look again for the zero crossing and to be able start up.



**Prior switching on, make sure that all Green Power Switches are connected to the mains and the line switch of the power inlet is in ON position!**

**Avant la mise en marche, assurez-vous que tous les interrupteurs d'énergie verte sont connectés au réseau et le commutateur de ligne de l'entrée de puissance est en position ON!**

## 4.2 Installing Green BCM Box and Power Module 19inch

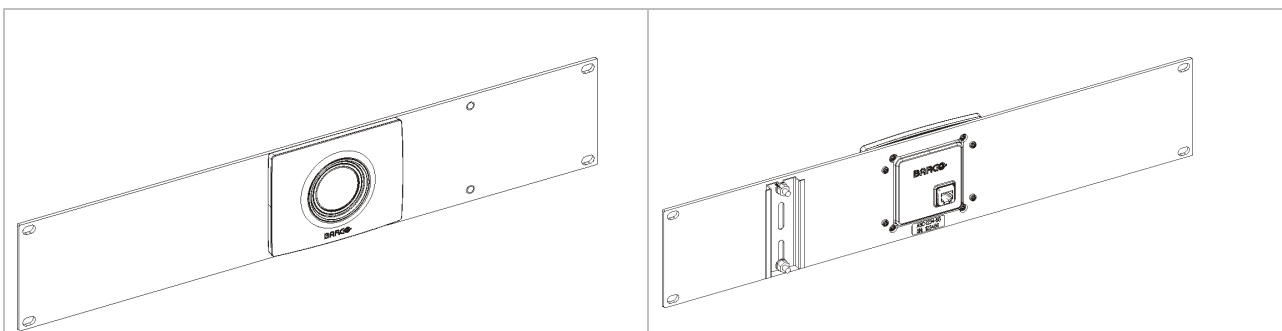


**The Power Module 19inch and the related components are restricted to be used with Barco DC LCD displays of type / KVD/IVD/HVD. Use with other equipment is not allowed!**

**Le 19 pouces Power Module et les composants liés sont limités à être utilisé avec DC écrans LCD de Barco Type KVD/IVD/HVD. Utilisation avec d'autres appareils ne est pas autorisé!**

The Power Module 19inch comes with a blind cover which must always be installed to ensure cooling and ventilation.

Both, the Power Module 19inch 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 19inch with the Green ONOFF button and the installation facility for the Green BCM Box: the Green BCM Box is fixed to the DIN RAIL on the rear of the Green 19inch ONOFF cover.



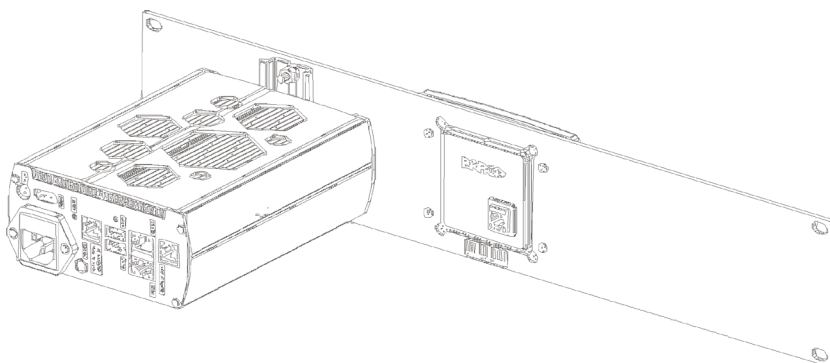
Click the Green BCM Box to the DIN RAIL of the 19inch ONOFF cover.

The Green BCM Box is installed between the 2 screws. The screws are working as end stoppers to prevent the unit from slipping off the DIN rail.



**Make sure that the ventilation slots show up!**

**Assurez-vous que les fentes d'aération apparaissent!**



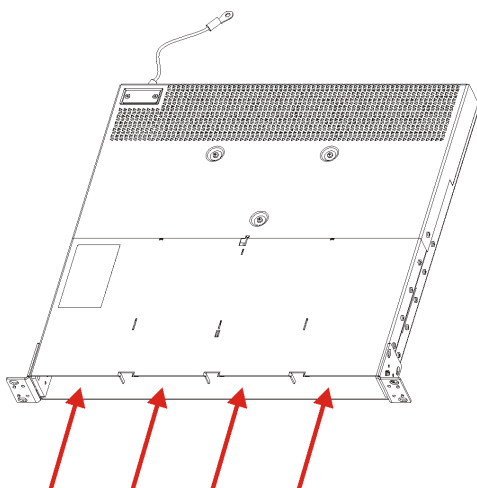
Install the 19inch ONOFF cover into a 19" rack.

Plug in the SMPS power supplies into the Power Module 19inch.

**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.**

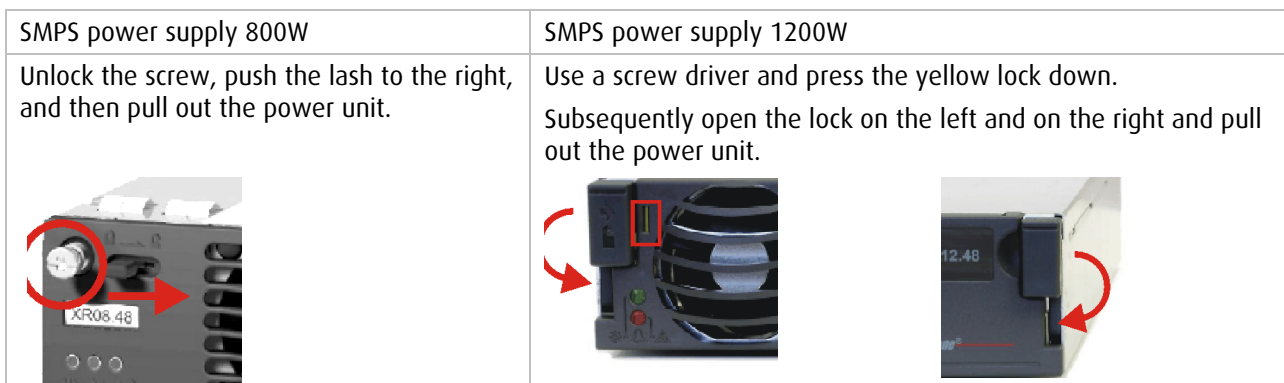
The SMPS power supplies is a 800 W (or 1200W, respectively) (nominal) AC to DC power-factor-corrected power supply unit that converts standard AC mains power into DC output and can be used in hot-swap redundant systems.

The power units are pushed into the Power Module 19inch. For locking the 800W power supply, fix the respective screw:

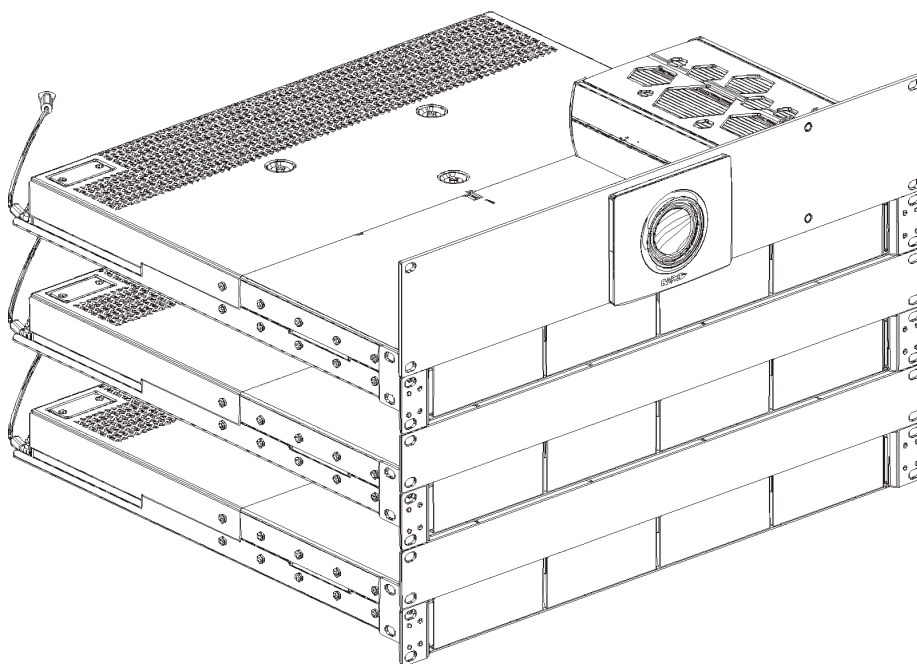


Please note:

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



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



#### 4.2.1 Control cabling

The control lines are set up using 6wire cable (6P6C) and RJ25 connectors.

The Green ONOFF button is connected to the CONTROL IN interface of the Green BCM Box.

The CONTROL OUT interface of the Green BCM Box is connected to the CONTROL IN interface of the first Power Module 19inch.

The CONTROL OUT interface of the first Power Module 19inch. is connected to the CONTROL IN interface of the following Power Module 19inch.

Always connect the CONTROL OUT interface of the previous Power Module 19inch. to the CONTROL IN interface of the following Power Module 19inch.

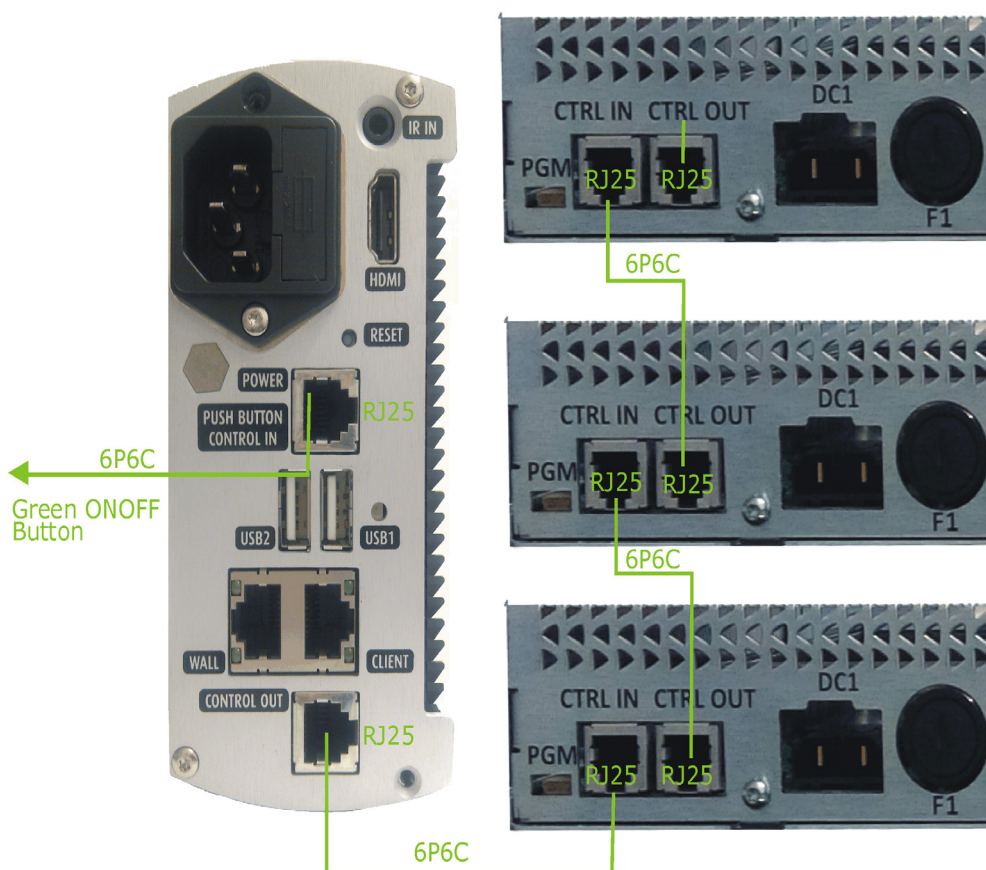
A shortening plug needs to be plugged into CONTROL OUT interface of the last Power Module 19inch.



**One Green BCM Box can control up to 50 displays.**

**One Green BCM peut contrôler jusqu'à 50 écrans.**





#### 4.2.2 Power cabling

Connect the Green BCM Box to the wall outlet.

Connect the DC cable of the displays to the exits of the Power Module 19inch.



**The entire equipemnt (cable + display) connected to an exit of the Power Module 19inch must not exceed 500W!**

**L'ensemble equipemnt (câble + affichage) connecté à une sortie de la 19inch Power Module ne doit pas dépasser 500W!**



**Up to 4 SMPS power bricks can be plugged into a Power Module 19inch.**

**There is no relationship between the position of an SMPS power brick and the exit on the back plane: the power of all installed SMPS bricks is collected and distributed to the exit requesting power for a display.**

**You do not need to switch to a different exit even in case one of the SMPS power bricks fails: As long as the remaining amount of power is sufficient, all displays are powered..**

**Jusqu'à quatre blocs d'alimentation SMPS peut être branché sur un 19 pouces Power Module.**

**Il n'y a aucune relation entre la position d'une puissance brique SMPS et la sortie sur le plan de retour: la puissance de toutes les briques installées SMPS est recueilli et distribué à la sortie demandant puissance pour un affichage.**

**Vous ne avez pas besoin de passer à une sortie différente, même dans le cas où l'un des blocs d'alimentation SMPS échoue: Tant que la quantité restante de puissance est suffisante, tous les écrans sont alimentés.**

## 4.2.3 Cabling within the responsibility of a qualified electrician

## 4.2.3.1 Connection to the power net

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



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.

Les connexions suivantes doivent être réalisés par un électricien qualifié (mandaté par le client):

**Mise à la terre de la 19inch Power Modules!**

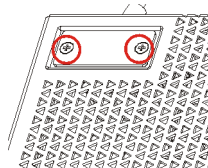
Pour des raisons de courant de fuite, il est obligatoire de connecter le module d'alimentation 19 pouces à la barre de bus équipotentielle!

Raccordement des lignes électriques sur les bornes de connexion de la 19inch Power Module. Câbles doivent être sélectionnés selon les puissances figurant sur l'étiquette du produit de la 19inch Power Module et les puissances régionales.



**Qualified electrician only:**

Use a screw driver 0.6x3.5 and remove the screws of the cover of the terminal connection.

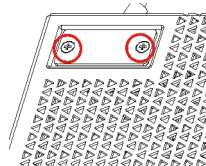


Connect grounding, neutral and live cable according the labeling of the terminal connector and fix the connection screw.

Re-mount the cover of the terminal connection.

**Électricien qualifié seulement:**

Utilisez un 0.6x3.5 de tournevis et enlever les vis du couvercle de la borne de connexion.



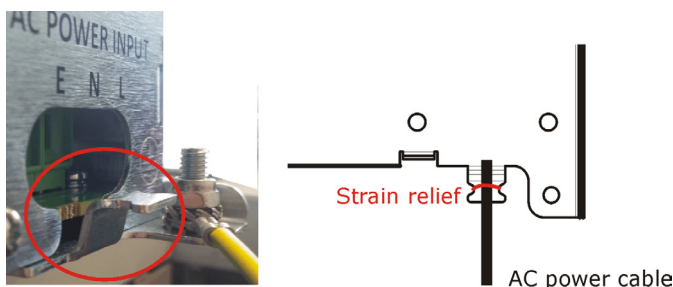
Connectez terre, câble neutre et en direct selon l'étiquetage du connecteur terminal et fixer la vis de connexion.

Re-monter le couvercle de la borne de connexion.



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

Assurez-vous d'appliquer la décharge de traction! Pour la première version Power Module 19inch, ce est une attache de câble.



#### **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!**

#### **Évitez les angles vifs pour l'acheminement du câble!**

**Positionez les fils primaires ou câblage de sorte qu'il ne peut être tiré ou de contact des surfaces chaudes.**

**Il est recommandé d'appliquer une décharge de traction supplémentaire!**

#### 4.2.3.2 Connection of the displays via DC power cables

OVD, KVD and IVD displays with a DC power supply are connected to the Power Module 19inch via cables of 10m, 20m, 50m or 100m, respectively!



**Only use cables supplied by Barco:  
Z3472648 (10m), Z3472649(20m),  
Z3472650 (50m) Z3472651(100m).**

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

**Ne utilisez que des câbles fournis par Barco:  
Z3472648 (10m), Z3472649 (20m),  
Z3472650 (50m) Z3472651 (100m).**

**Autres câbles pourraient enfreindre les règlements locaux et ne doit être utilisé!**

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!

#### **Mechanical and thermal properties:**

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

## 4.2.4 Disconnection and reconnection of a DC power cable / hard display reboot



**Connection/disconnection of a DC power cable is only allowed when the entire display wall is OFF!**

There is no possibility to switch off a dedicated power module 19inch, that's why the entire display wall needs to be switched off.

Use the Green ONOFF button of the 19inch rack to switch off the wall, or use the command **Standby** on the web interface of the Green BCM Box:

barco.com logout

**Admin**  
R766134 Green BCM R330613 v1.5.1.24

**Tasks**

Green BCM Services	<a href="#">Show</a>
Shutdown	<a href="#">Reboot</a> <a href="#">Standby</a>

**Download**

Logfiles	<a href="#">Download All</a>
Configuration	<a href="#">Download</a>

**Firmware**

Current Version	00.079
Upgrade File	<input type="text" value="GbcmcController_00_92.bin"/>

**Barco Green BCM**

- Home
- BCM Client
- BCM Services
- Admin
- ▾ System
  - Settings
  - NTP Server
- Network
- Wall DHCP
- Devices
- Remote Power Supply

**BARCO**  
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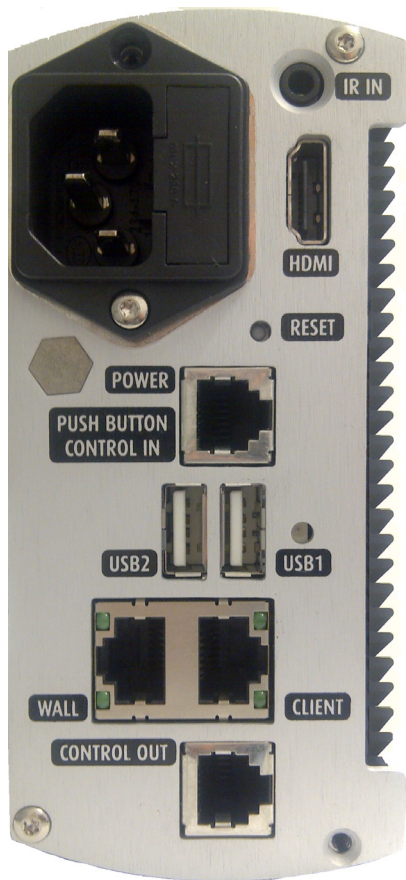
**Please note that switching a panel to idle (push button on the panel) or switching the wall to idle (button in BCM client application) is NOT sufficient. Only disconnect a DC power cable when the wall is in StandBy.**

## 5 Network setup

Every display is connected to a LAN switch. Depending on the number of displays in a display wall there are one or multiple cascaded LAN switches.

The (set of) LAN switch(es) is connected to the Green BCM Box. The Green BCM Box comes preinstalled with and hosts the Barco Wall Control Manager server application.

The Green BCM Box features two LAN interfaces, one labeled Wall, the other labeled Client. The Wall interface is configured as DHCP server and has a fixed IP address 172.29.1.1.



### Benefits of DHCP server configuration with fixed IP address:

**Any device connected to the DHCP server automatically gets a (short term) IP address.**

**A PC connected to the DHCP server (i.e. the network cable is plugged into one of the LAN switches of the video wall) can connect to and launch the Green BCM Box web page. This allows easy configuration of the devices of the display wall.**

### Avantages de la configuration du serveur DHCP avec une adresse IP fixe:

**Tout dispositif connecté au serveur DHCP obtient automatiquement un (court terme) adresse IP.**

**Un PC connecté au serveur DHCP (ce est à dire le câble réseau est branché sur l'un des commutateurs LAN du mur vidéo) peut se connecter à et de lancer la page Web BCM Box Vert. Cela permet une configuration facile des dispositifs de mur d'affichage.**

The Barco Wall Control Manager software enables communication to the WALL network via the CLIENT interface.

The Client interface comes with the fixed IP address 192.168.10.1 and is set for manual configuration. For controlling the display wall, please refer to the user manual of Barco Wall Control Manager software.

Connect the LAN interface labeled WALL to the LAN switch of the display wall. The WALL interface is configured as DHCP server and has the fixed IP address 172.29.1.1. Provided the displays feature still their default settings (DHCP enabled), they will receive an automatic IP address from the Green BCM Box

Connect the LAN interface labeled CLIENT to the operator workstation connected to the customer's LAN.

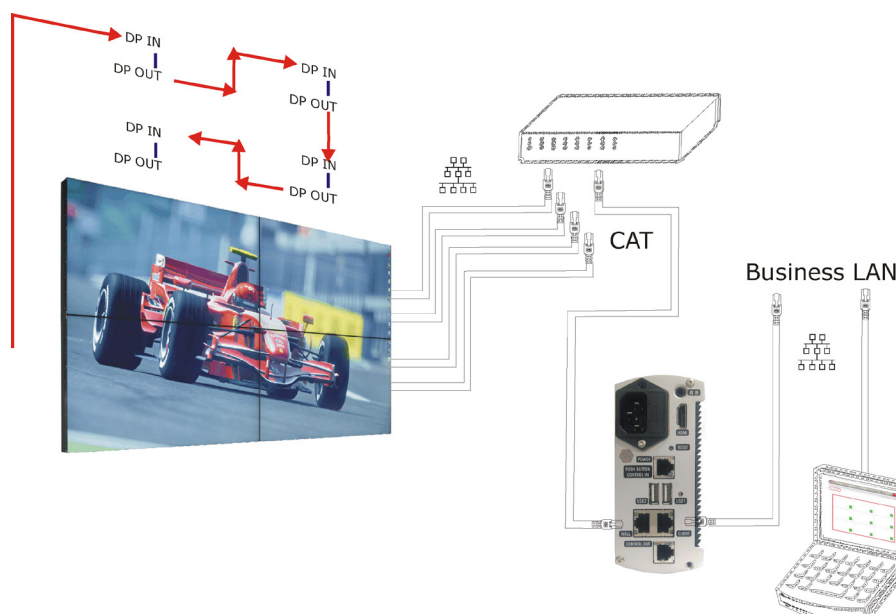
In case the displays, Green BCM Box and the operator workstation are an independent network no more interaction is required.



**Make sure to use cables with shielding of type S-FTP or S-STP**

**Assurez vous d'utiliser des câbles avec un blindage de type S-FTP ou S-STP.**

Connect one or all of the switch controls: LAN, IR, push button.



**LAN1 of the display is connected to the WALL interface of the Green BCM Box! This is the only supported configuration!**

**A display MUST NOT be connected via LAN1 to WALL interface of Green BCM Box and via LAN2 to CLIENT interface of Green BCM Box!**

**A display MUST NOT be connected via LAN1 to WALL interface of one Green BCM Box and via LAN2 to WALL interface of a second Green BCM Box!**

**In case you think of additional ways of connecting a display be aware that these are NOT supported!**

## 5.1 Test Green BCM Box

Make sure that the mains cable is connected, and connect the Green BCM Box to the mains. Switch on Green BCM Box by one of the following controls: LAN; IR; push button.



**In case none of the controls is available, push the RESET button: This will reboot the box!**

**En cas aucun des contrôles est disponible, appuyez sur le bouton RESET: Ce redémarre la boîte!**

When Green BCM Box is up and running, the green power LED is on.

Each time Green BCM Box switches on, the processor will initially test the basic functions (POST). Finally, the processor will boot the operating system from the hard disk and start Barco Wall Control Manager service.

The Barco Wall Control Manager client application can be downloaded from the homepage of the Green BCM BOX. Please refer to the user manual of Barco Wall Control Manager software.

## 5.2 Switching off Green BCM Box, Stand-by Mode

Switch off Green BCM Box by one of the following controls: LAN; IR; Green ONOFF Buton.

If shut down, Green BCM Box will switch off automatically thereby changing to the standby mode in which all components of intensive performance are shut down completely.

Switch On Green BCM Box again by one of the following controls: button SwitchON on the web site; IR Remote Control; Green ONOFF button. The processor will start up again. The green power LED will once again light up continuously.



**Please note that the Green ONOFF button requires to be pushed several seconds before the system starts up / goes to standby. This behavior is by default to prevent switching the wall on and off by accident. So keep in mind that short pushes are ignored!**

**Se il vous plaît noter que le bouton vert ONOFF nécessite d'être poussé plusieurs secondes avant que le système démarre / se met en veille. Ce comportement est par défaut pour éviter la mise sous tension et hors du mur par accident. Donc, gardez à l'esprit que pressions courtes sont ignorées!**



**When switched to standby, the BCM wall service is also stopped. It is only a small controller in the control unit which stays alive and which allows accessing the BCM via its IP address. When accessed, a web site is launched with a button to switch on the entire system.**

**Please note: after clicking the SwitchOn button, it takes several minutes until all displays are running again.**

**In case you clicked the SwitchOn button by mistake, cancel the command by clicking SwitchOff.**

**En position de veille, le service de la paroi BCM est également arrêté. Ce est seulement un petit contrôleur dans l'unité de commande qui reste en vie et qui permet d'accéder à la BCM via son adresse IP. Lorsque l'on accède, un site web est lancé avec un bouton pour passer sur l'ensemble du système.**

**Se il vous plaît noter: après avoir cliqué sur le bouton SwitchOn, il faut plusieurs minutes jusqu'à ce que tous les affichages sont à nouveau en cours d'exécution.**

**Dans le cas où vous avez cliqué sur le bouton SwitchOn par erreur, annulez la commande en cliquant déconnexion.**

Green BCM Box can be completely disconnected form the power supply by pulling the mains plug. The green power LED will extinguish completely within a few seconds.





## 6 Maintenance



**These products must not be serviced by the operator!**

**All maintenance work has to be done by authorized service personnel.**

**Ce produits ne doit pas être réparé par l'opérateur!**

**Tous les travaux d'entretien doit être fait par du personnel de service autorisé.**

The devices are not repaired in the field but replaced by a new one. The only service work in the field is replacing the fuse(s) of the AC power entry module (Green BCM Box, Green Power Switch) or of the DC connection (Power Module 19inch).



**Replacing the fuse is explained in the service manual and needs to be done by authorized service personal.**

**Remplacement du fusible est expliqué dans le manuel de service et doit être fait par du personnel de service autorisé.**



**For continued protection against risk of fire, replace only with same type and rating of fuse.**

**Pour une protection continue contre les risques d'incendie, ne remplacer avec le même type et calibre du fusible.**

<b>Component</b>	<b>Type of Fuse</b>
Green BCM Box	F 5x20 T 5A H UL
Green Power Switch	F 5x20 T 5A H UL
Power Module 19inch	F 5x20 T 16A H UL

## 6.1 Replacing the SMPS power unit


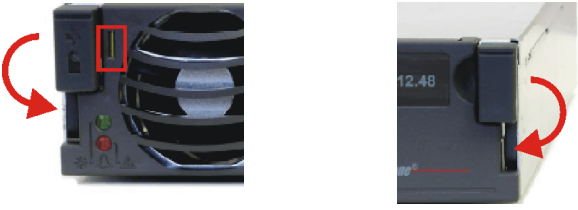
The SMPS power units are hot swappable. Any operator can replace the SMPS power unit.



**Only replace by power units provided by Barco for the Power Module 19inch! Don't use any other power units!**

**Ne remplacer par des unités d'alimentation fournis par Barco pour le 19 pouces Power Module! Ne pas utiliser d'autres unités de puissance!**

The SMPS power units are locked and need to be unlocked prior replacement!

SMPS power supply 800W	SMPS power supply 1200W
<p data-bbox="156 819 655 882">Unlock the screw, push the latch to the right, and then pull out the power unit.</p> 	<p data-bbox="683 819 1412 925">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.</p> 

## 6.2 Upgrading Firmware of Green BCM Box

To upgrade firmware of Green BCM Box you need an USB stick with the required firmware file.

Green BCM software USB upgrade has been tested successfully with following USB sticks:

- Transcend Jet Flash (8 GB)
- HP V210 w (8GB)
- SanDisk Cruzer Blade (8 GB, 16 GB)
- Kingston DTSE9 (16GB)

Step 1: Prepare your USB stick on your PC or Laptop :

- Plug in the USB stick into a Windows PC
- Open Windows Explorer
- Navigate to and right-click on the USB stick
- From the context menu, select Format... (this will erase the contents of the USB stick)
- From the File system drop down, select FAT32.
- Click Start to format the USB stick.

Step 2:

- Download the gBCM upgrade package R330613\_<Rev no>\_Flash.zip to your Windows PC.

Step 3:

- When formatting (see Step 1) has been completed, unzip the gBCM upgrade package to the USB stick. The upgrade package includes all files to enable booting from the USB stick. Make sure the directories \boot, \img, \log are in the root directory of the USB stick drive.

Step 4:

- Unplug the power cable from Green BCM Box.
- Insert the USB stick in USB2 slot (USB1 slot cannot be used for booting from USB)
- Wait for 20 seconds
- Plug in the power cable  
After few seconds LED in Green Box starts flashing faster (2 Hz)  
The upgrade system will check the consistency of the USB stick image (check sums). If these checks fail the upgrade will stop and LED on Green BCM box will stop blinking
- The upgrade procedure checks the versions of the Green Box controller and of the USB stick image.  
If both have the same version the upgrade is cancelled.  
If versions are different then upgrade system collects configuration data of the box and saves it to the stick.  
Next, the disk image on the USB stick is copied over the internal flash disk.  
Once the upgrade is completed, LED on Green BCM box stops blinking.  
Finally, configuration data is copied back to the system.  
LED on Green BCM box stops blinking
- When the LED blinking stops on the Green BCM Box,  
Unplug the power cable from Green BCM Box.  
Remove the USB stick  
Wait for 20 seconds.  
Re-plug the power cord to start-up the new system.
- Connect to the Green BCM Box by entering its IP address into a web browser.

- When the web page pops up, navigate to Admin page and log in as admin user. Admin page shows version like "R766134 Green BCM R330613 v1.4.1.16".



### Controller FMW upgrade needs to be done via the web interface of the Green BCM Box, page Admin

The screenshot shows the Admin page of the Barco Green BCM web interface. At the top left, there is a 'barco.com' logo. A red navigation bar at the top right contains a 'logout' link. Below the logo is a navigation menu with items: Home, BCM Client, BCM Services, Admin, System, Network, and FMW Upgrade. The main content area is titled 'Admin' and displays the current version: 'R766134 Green BCM R330613 v1.5.1.24'. Under the 'Tasks' section, there are links for 'Green BCM Services' (Show), 'Shutdown' (Reboot, Standby). The 'Download' section has links for 'Logfiles' (Download All) and 'Configuration' (Download). The 'Firmware' section is currently empty.

- Check if the version meets your expectations.
- If the "Current Version" is lower and/or you would like to upgrade then chose the correct file from the "Upgrade File" combo box  
Press **Upgrade** button  
A confirmation dialogue appears – press "Yes" to continue.  
Wait for couple of minutes for upgrade to complete  
After upgrade is complete, Green BCM Box will shut down automatically  
Unplug the power cable from Green BCM Box  
Wait for 20 seconds  
Re-plug the power cable to start-up the system.



### After plugging out power, you need to wait for approx. 20 seconds before plugging it again.

- Insert the USB stick in your PC or Laptop computer, navigate to \log and check gbcm-upgrade.log for error messages. Your upgrade was successful if the log file looks like this:
 

```
Starting LED blinking at 2Hz.
Green BCM Box upgrade started:  Thu Jan 1 00:00:08 UTC 1970
USB medium is OK, continuing...
Starting upgrade from 1.4.1.16 to 1.4.1.17...
Green BCM-upgrade completed (0):  Thu Jan 1 00:17:21 UTC 1970
```
- On the BCM client machines, clear the browser cache to completely remove the BCM UI used with the previous Green BCM version.
- Wait for 10 minutes and start the BCM client:  
Navigate to the page BCM client on the web interface of the Green BCM Box.  
Click on the link to start the BCM web start client  
The BCM client starts automatically

## 7 Technical specifications

### 7.1 Green BCM BOX

Width of Casing:	57.6mm   2.27in.
Height	126mm   4.96in.
Depth	166mm   6.53in.
Power Rating	100-240V AC, 0.4A, 50-60Hz
Mains Adapter:	IEC inlet filter (power entry module with 2 fuses)
Keyboard Connection:	USB Connection (USB1)
Display Connection:	HDMI
Network Connection	RJ45 (WALL, CLIENT)
MAC Address	WALL interface: MAC TIVA, CLIENT interface: MAC SPI
Control Connection	RJ25, 3.5mm phone jack
Motherboard:	iMX6 Cortex A9 processor based EDX extension board

### 7.2 Green Power Switch

Width of Casing:	57.6mm   2.27in.
Height	126mm   4.96in.
Depth	80.5mm   3.16in
Power Rating	100-240V AC, 5A, 50-60Hz
Mains Adapter:	IEC Appliance Inlet C14 with line switch
Control Connection	RJ25, 3.5mm phone jack

### 7.3 Power Module 19inch

#### 7.3.1 SMPS Power Unit 800W

Width	101.6mm   4in.
Height	40.6mm   1.6in.
Depth	230mm   9.0in.
Weight	1.1kg   2.2lbs
Input	85VAC-275VAC, 47-63Hz
Nominal Output Power	800W
Nominal Output Voltage	48VDC
Nominal Output Current	15 ADC

### 7.3.2 SMPS Power Unit 1200W

Width	101.6mm   4in.
Height	40.6mm   1.6in.
Depth	230mm   9.0in.
Weight	1.1kg   2.2lbs
Input	90VAC-275VAC, 47-63Hz
Nominal Output Power	1200W
Nominal Output Voltage	48VDC
Nominal Output Current	26 ADC

### 7.3.3 Mechanics

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

## 7.4 Environmental Conditions

### Operating conditions

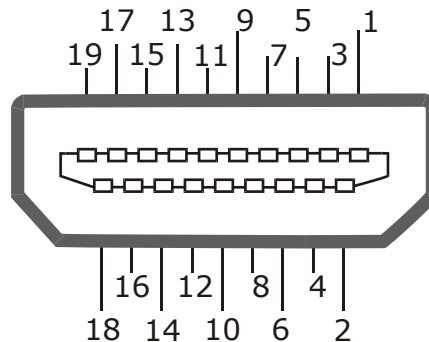
Temperature	10°C to 45°C
Humidity	20% to 80%, non-condensing up to 40°C

### Transportation/storage

Temperature	-20°C to 50°C
Humidity	5% to 90%, non-condensing

## 7.5 Interfaces

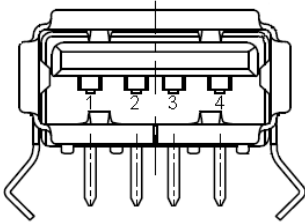
### 7.5.1 HDMI Type A



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 +		

### 7.5.2 USB connector







1	+5V power
2	Differential Data line
3	Differential Data line
4	GND

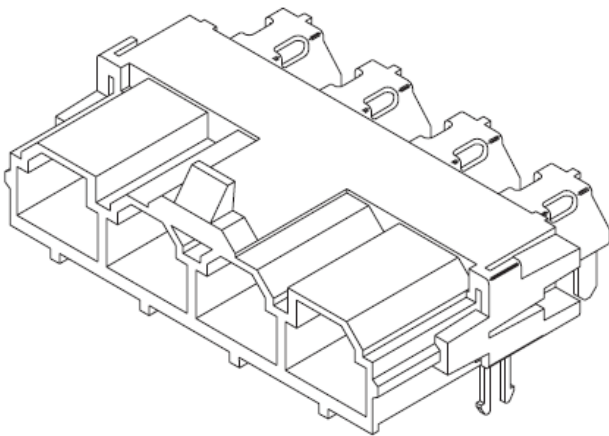
### 7.5.3 RJ25 connector

Position	Pair	T/R	±	RJ25	German colors <sup>[b]</sup>
1	3	T	+	T3	 violet
2	2	T	+	T2	 green
3	1	R	-	R1	 white
4	1	T	+	T1	 brown
5	2	R	-	R2	 yellow
6	3	R	-	R3	 slate

## 7.5.4 RJ45 connector

Pin	T568A Pair	T568B Pair	1000BASE-T Signal ID	Wire	T568A Color	T568B Color	Pins on plug face (socket is reversed)
1	3	2	DA+	tip	 white/green stripe	 white/orange stripe	
2	3	2	DA-	ring	 green solid	 orange solid	
3	2	3	DB+	tip	 white/orange stripe	 white/green stripe	
4	1	1	DC+	ring	 blue solid	 blue solid	
5	1	1	DC-	tip	 white/blue stripe	 white/blue stripe	
6	2	3	DB-	ring	 orange solid	 green solid	
7	4	4	DD+	tip	 white/brown stripe	 white/brown stripe	
8	4	4	DD-	ring	 brown solid	 brown solid	

## 7.5.5 10.00mm Pitch Mini-fit™ Header





## 7.6 Module configurations



**For countries with 100-110V power net, only the 800W version is available!  
The 1200W version is restricted to countries with 220-240V power net!**

Depending on the overall configuration (number of displays, with/without OPS (Open pluggable specification "Mini-PC" to be plugged into the display), number and type of power units) the design of the Power Module 19inch provides redundancy on SMPS failure. Since power consumption is not only dependent on the number of displays but also on the length of the cable, the following tables also includes the cable length.

### Without redundancy

			800 W power bricks				1200 W power bricks			
			1	2	3	4	1	2	3	4
110V	HVD5521 KVD5521 IVD5521	10 m	2	4	6					
		20 m	2	4	6					
		50 m	1	3	5	6				
		100 m	1	3	5	6				
230V	HVD5521 KVD5521 IVD5521	10 m	2	4	6		3	6		
		20 m	2	4	6		3	5	6	
		50 m	1	3	5	6	2	5	6	
		100 m	1	3	5	6	2	5	6	

Short explanation:

With power net 100-110V, the 1200 W power brick is not allowed (red)

The max. number of displays (green) depends on the cable length: in case of 10m cables, you can run 2 displays with 1 power brick 800W. If you go for 100m cable, 1 power brick 800W serves for 1 display only – both, in case of 100-110V and in case of 220-240V.

In case it is a 220-240V power net and you use the 1200W power brick, one power module runs 3 displays at max. cable length of 20m.

### With redundancy

In case you go for redundancy on the power bricks, the table looks like this. The "+1" is the redundant power brick.

			800 W power bricks			1200 W power bricks		
			1+1	2+1	3+1	1+1	2+1	3+1
110V	HVD5521 KVD5521 IVD5521	10 m	2	4	6			
		20 m	2	4	6			
		50 m	1	3	5			
		100 m	1	3	5			
230V	HVD5521 KVD5521 IVD5521	10 m	2	4	6	3	6	
		20 m	2	4	6	3	5	6
		50 m	1	3	5	2	5	6
		100 m	1	3	5	2	5	6

### 7.6.1 Distribution of power bricks / displays per power module

The required power bricks per power module 19" and the number of connected displays per power module 19" is determined via „round robin“.

Thus for a display wall comprising more displays than the max. number of projection modules for the power module 19" (=6 or 5, respectively, see table above) and thus requiring more than one power module 19", there are the following scenarios:

- All power modules 19" are connected to the SAME amount of displays

Or

- There are n1 power modules 19" connected to m1 displays, and n2 power modules 19" connected to (m2 = m1+1) displays

Example:

Display wall of 16 displays, residual power 110V, power brick 800W, cable length 100m, no redundancy

**Without redundancy!**

			800-W power bricks			
			1	2	3	4
110V	OVD4621 OVD5521 KVD5521 IVD5521	10·m	2	4	6	8
		20·m	2	4	6	8
		50·m	1	3	5	6
		100·m	1	3	5	6

Required number of power modules 19" for 16 displays (=roundup(16/6 )): 3

Number of displays connected to the power modules 19": 5 + 5 + 6 (round robin!!)

Number of required power bricks: 3 + 3 + 4

(in case of redundancy, 4 power modules 19" are required, and each of them is connected to 4 displays, the number of bricks sums up to 4\* (3+1))

## 8 Contact

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

### **BARCO NV**

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## 9 Certification

- The product has successfully been tested to be in accordance with:



See product ID label for additional approval marks!



## 10 RoHS of Chinese Mainland

### 中国大陆 RoHS

根据中国大陆《电器电子产品有害物质限制使用管理办法》（也称为中国大陆 RoHS），以下部分列出了 Barco 产品中可能包含的有毒和/或有害物质的名称和含量。中国大陆 RoHS 指令包含在中国信息产业部 MCV 标准：“电子信息产品中有毒物质的限量要求”中。

According to the “Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Barco’s product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section “Limit Requirements of toxic substances in Electronic Information Products”.

零件项目(名称) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印制电路配件 Printed Circuit Assemblies	X	0	X	0	0	0
内部线路 Internal wiring	X	0	X	0	0	0
外接电(线)缆 External Cables	X	0	X	0	0	0
底架 Chassis	X	0	X	0	0	0
电源供应器 Power Supply Unit	X	0	X	0	0	0
风扇 Fan	X	0	X	0	0	0
装置配件 Installation kit	X	0	X	0	0	0

本表格依据 SJ/T 11364 的规定编制

This table is prepared in accordance with the provisions of SJ/T 11364.

0: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

0: Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求。

X: Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.

在中国大陆销售的相应电子信息产品（EIP）都必须遵照中国大陆《电子电气产品有害物质限制使用标识要求》标准贴上环保使用期限（EFUP）标签。Barco 产品所采用的 EFUP 标签（请参阅实例，徽标内部的编号使用于指定产品）基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the “Marking for the restriction of the use of hazardous substances in electrical and electronic product” of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Barco uses (please refer to the photo) is based on the “General guidelines of environment-friendly use period of electronic information products” of Chinese Mainland.

