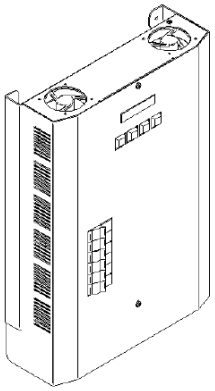
USER MANUAL

POWER 6-3 EM

POWER 6-3 EM (HALL L.)



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1. General description

Power 6-3 EM and Power 6-3 EM HALL LIGHTING have been developed for working in fix installations where power must be decentralized.

They are 6-channel dimmer of 3 kW per channel which include an LCD display for independent level adjustment of each channel. They can work autonomously without control signal.

Power 6-3 EM HALL LIGHTING differs from Power 6-3 EM in the fact that incorporates a power supply with three-independent neutral to protect separately the three phases and to avoid total turn off in case of one-phase failure. For this reason, Power 6-3 EM HALL LIGHTING is ideal for controlling hall light installations and complies with the current legislation.

They are manufactured for being fixed to a wall, taking up minimum space.

Optionally, Panic module can be adapted. Its function is to activate a particular lighting state, which is programmable, for emergency situations.

1.1. Characteristics

- Control electronics through microprocessor.
- DMX-512 (1990) digital signal input.
- Autonomous working mode selecting one of the 4 chasers.
- Charge curves that can be applied to each channel: Lineal with voltage, lineal with light, fluorescent and on/off.
- Test function for signal and power checking.
- Starting function to increase lamps life span.
- Automatic mains frequency control.
- Protection against overvoltage.
- The output charge channels are protected separately by a breaker per channel.
- DMX channel selection through LCD display in the front side.
- Optional Panic function for emergency situations.
- Output to the loads by guide terminals.
- Load is duly controlled by 40Amp. triacs which are cooled by a black anodised aluminium radiator and a fan.
- Power 6-3 EM and Power 6-3 EM HALL LIGHTING references are 07000062 and 07000073, respectively.

1.2. Technical data

Power supply	400V50Hz three-phase 230V 50Hz single-phase
Minimum load per channel	100W
Maximum load per channel	3.000W
Total maximum load	18.000W
Output breaker	16 Amp per channel
Power Supply wire section	6mm*
Digital control signal	DMX-512
Digital input connector	XLR-5 pins
Panic signal (optional)	Free contact circuit
Panic connector (optional)	Jack
Net weight	8,11 Kg.
Dimensions	104x302x440 mm

It is recommended to use a 4-pole 63-Amp breaker (preferably type-D curve) in the three-phase 400V power supply input as general protection of the dimmer.

We recommend to install a mains circuit breaker of 4 poles, 63 Amp and 0,03 Amp before the switch is tripped.

*Supplying 400V III 50Hz

2. Dimensions

Both dimmers have the following dimensions (in mm):

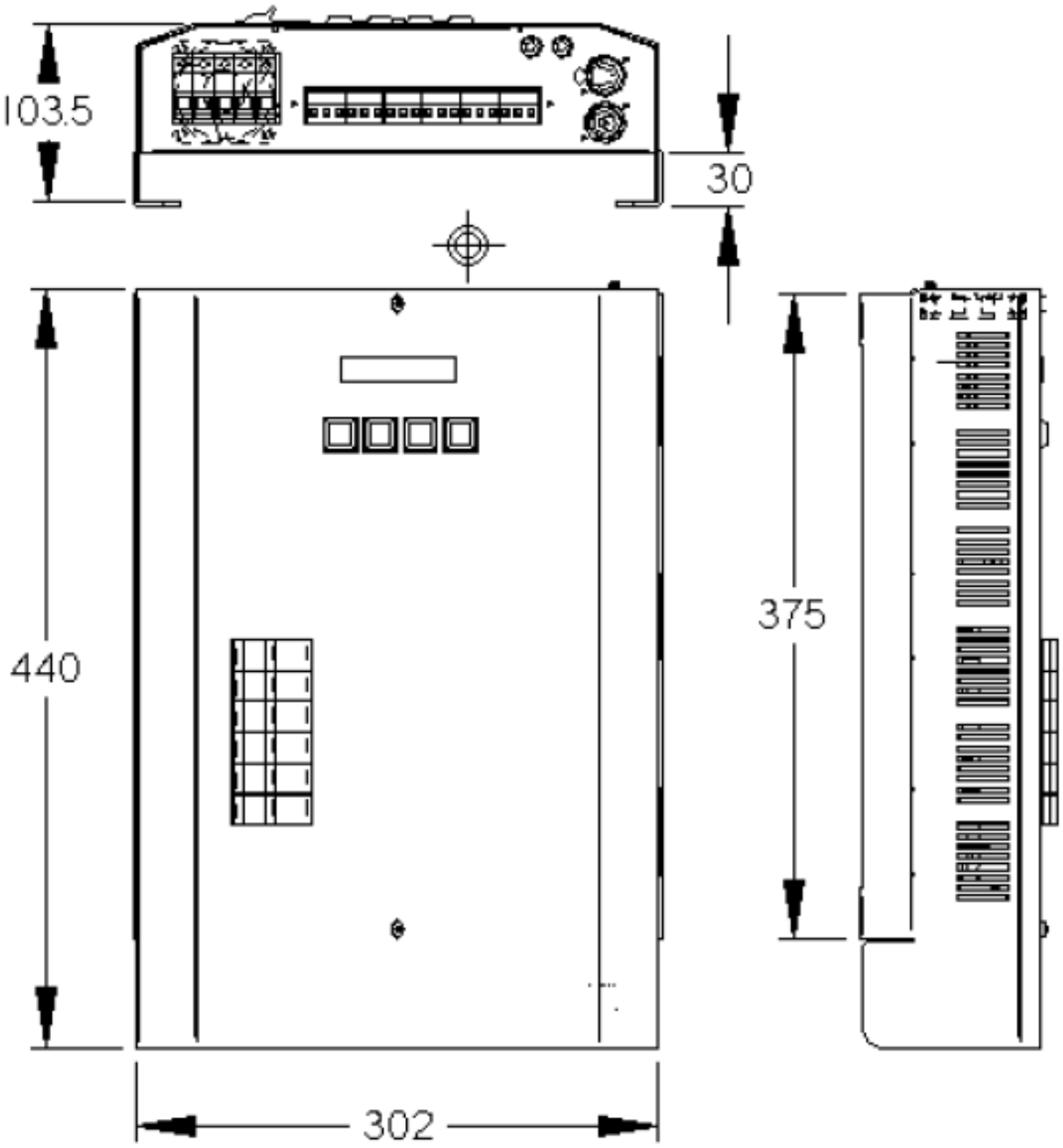


Fig.1: Dimmer dimensions

3. Installation

Power 6-3 EM and Power 6-3 EM HALL LIGHTING can be fixed to a wall. It must be taken into account that the place where they are installed must be ventilated for proper heat dissipation. For this reason, it is recommended to leave a minimum distance of 5 cm between the dimmer and the other elements.

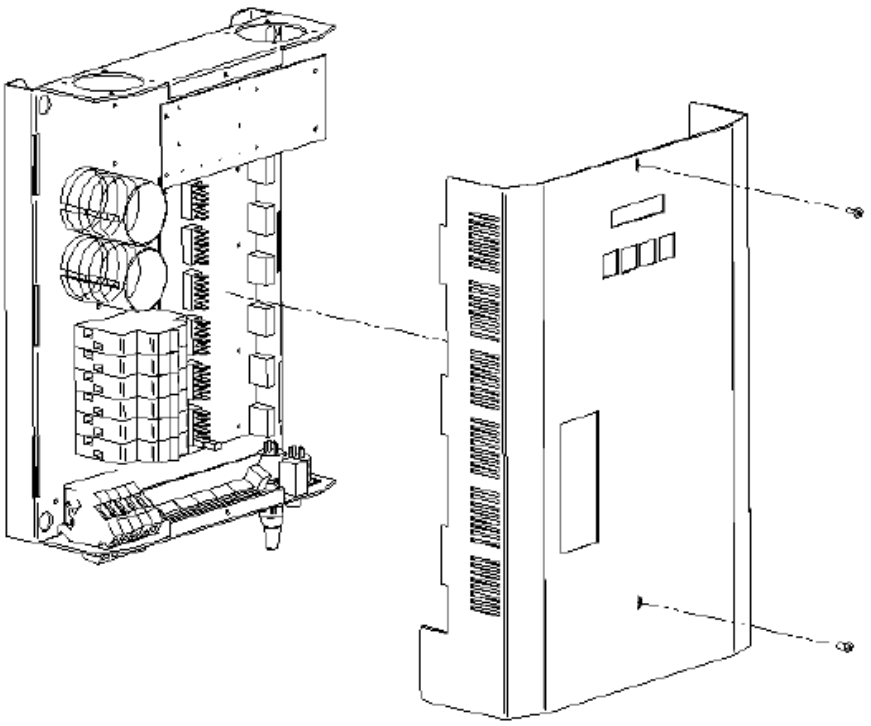


Fig.2

Once the location is chosen, the front cover must be separated from the rear one. Unscrew both bolts indicated in figure 2. Then, mark the 4 orifices of the rear support, drill them and fasten the unit to the wall (see figure 3). Eventually, place the front cover and screw the 2 bolts indicated in figure 2.

Note: If signal and power cables must be located behind the unit, place them before hang the dimmer on the wall

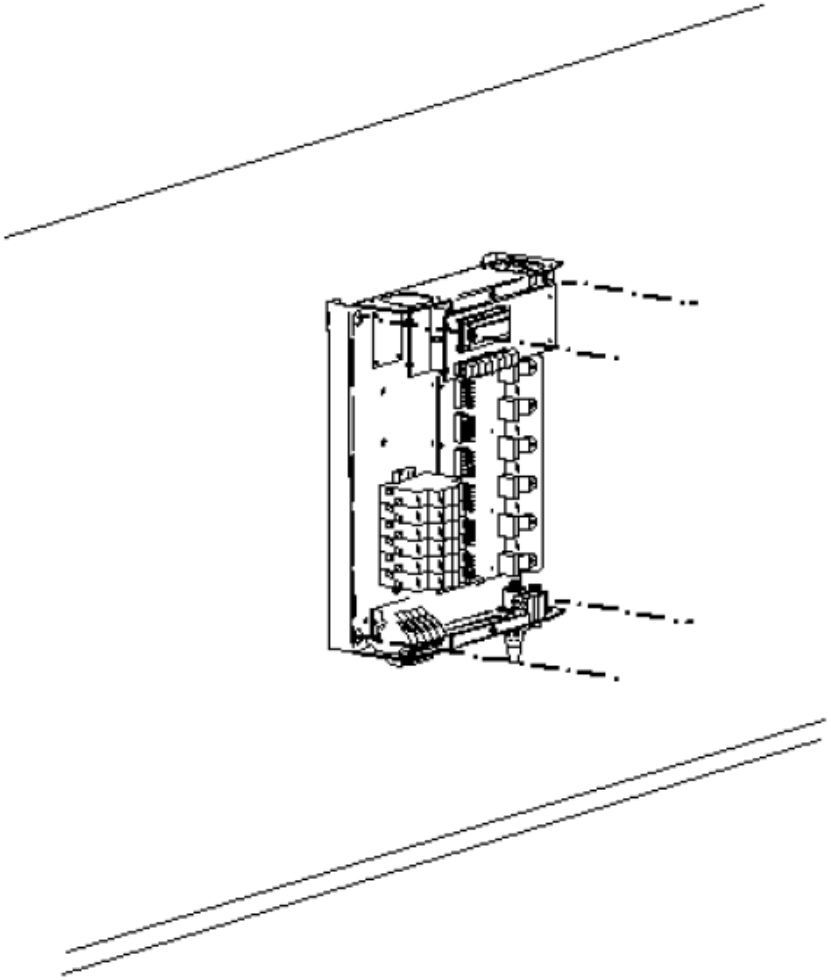


Fig.3

Power supply connections must be carried out without the front cover.

All the connections are through terminals and connectors which are located on the lower side of the unit.

4. Connection

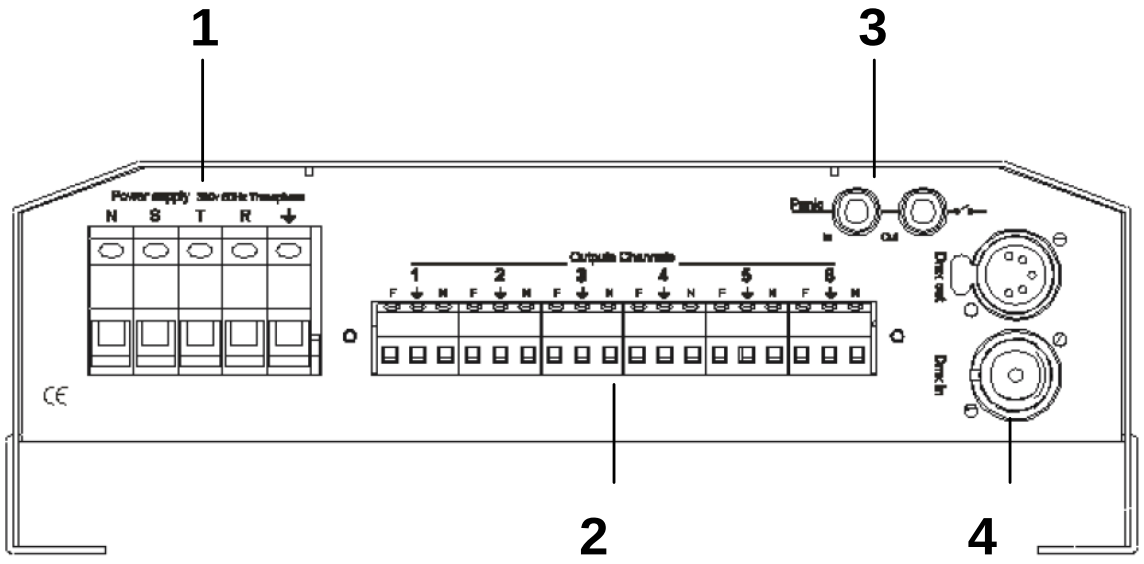


*Fig.4:*Lower side view

1. Power supply terminals
2. Charge outputs
3. Panic connectors
4. DMX In and Out

4.1. Power supply connection

While Power 6-3 EM HALL LIGHTING must be connected to three-phase power supply with neutrals and earth, Power 6-3 EM can be plugged in:

- Three-phase power supply with neutral (R, S, T and N) and earth with 400V between phases and 230V between any phase and neutral.

- 230-volt single-phase power supply in which case R, S and T inputs must be connected to the phase.

WARNING: In the second case, half the nominal power has not to be exceeded.

NOTE: It is very important for right working of the power units, to have a good earth connection. In other case, there could be voltage differences that would damage the dimmer.

These dimmers are protected against wrong connections as it should be to supply 400V between a phase and neutral. In this case, power unit would not start up and it would display the message OVERVOLTAGE during a few seconds before the unit would stop. Then, you could proceed to connect the unit in the right way and turn it on again.

NOTE: The right order of the phases is shown in figure 5.

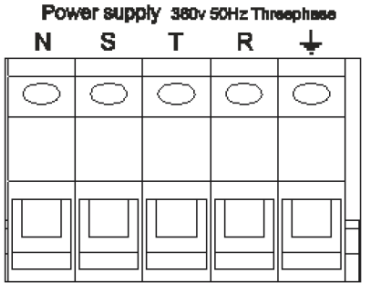


Fig. 5

Power 6-3 EM – Three-phase power supply

$$V_{RS} = V_{RT} = V_{ST} = 400V$$

$$V_{RN} = V_{TN} = V_{SN} = 230V$$

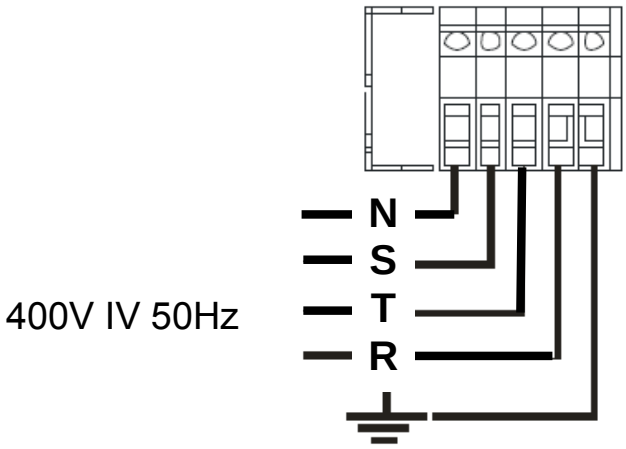


Fig. 6

Power 6-3 EM – Single-phase power supply

V_{RN} = 230V

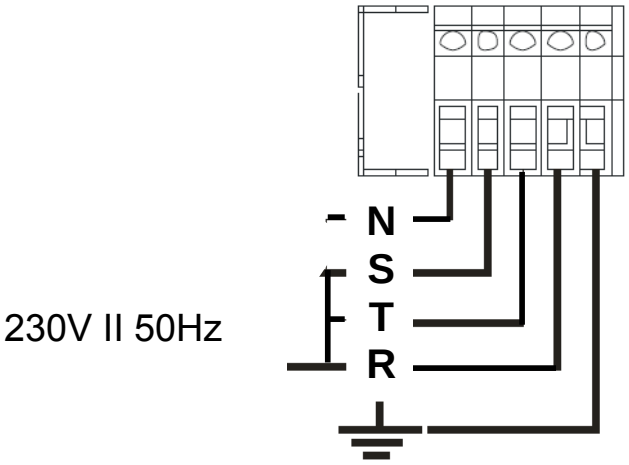


Fig. 7

Power 6-3 EM HALL LIGHTING – Three-phase power supply with individual neutrals

V_{RN1} = V_{SN2} = V_{TN3} = 230V

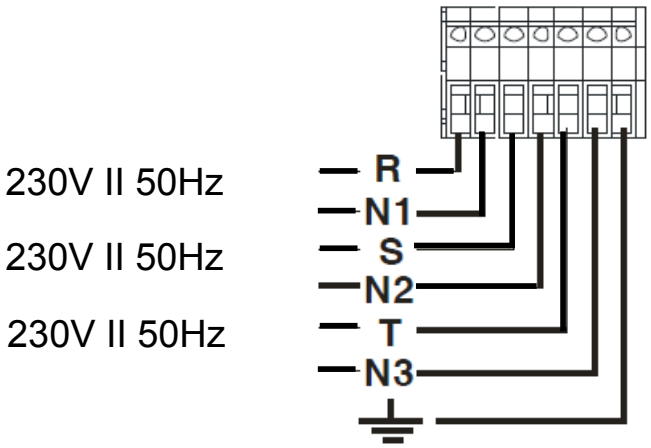


Fig. 8

4.2. Channel connection

Channels must be connected to their respective guide terminals. Each one has 3 connections: Phase, ground and neutral.

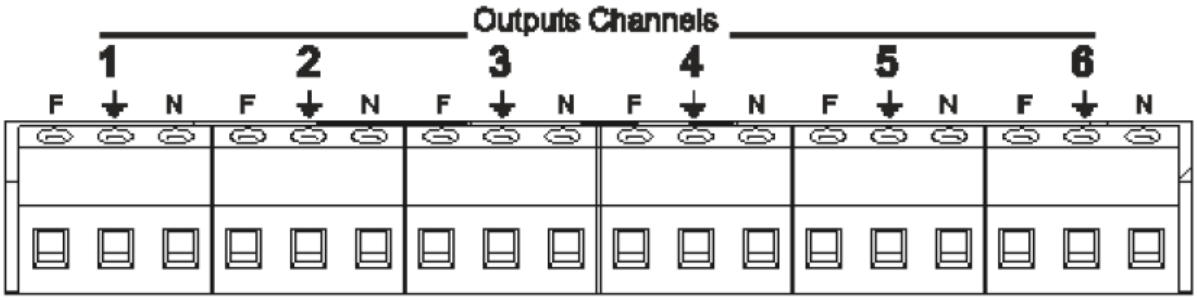


Fig. 9

4.3. DMX connection

Signal connectors are XLR of 5 pins. Signal control from the control unit must be connected to the DMX IN and the output signal to other elements to the DMX OUT. You must connect an end-of-line resistance in the output of the last serial device in order to avoid signal interferences (see figure 10).

The cables should be braided pair, shielded and low capacity, with a type 24AWG (0,2047mm^2) minimum calibre and an impedance of 120 Ohms. Please remember that the type of cable significantly conditions any problem that may arise due to parasites coming through the line.

Similarly, DO NOT USE shielded cables commonly used for connecting microphones.

The cables should be connected in such a way that pin 1 of the male connector coincides with pin 1 of the female one, and in the same way for pins 2 and 3. Pins 4 and 5 are not used.

The screen connected to pin 1 should NOT come in contact with the casing of the connector.

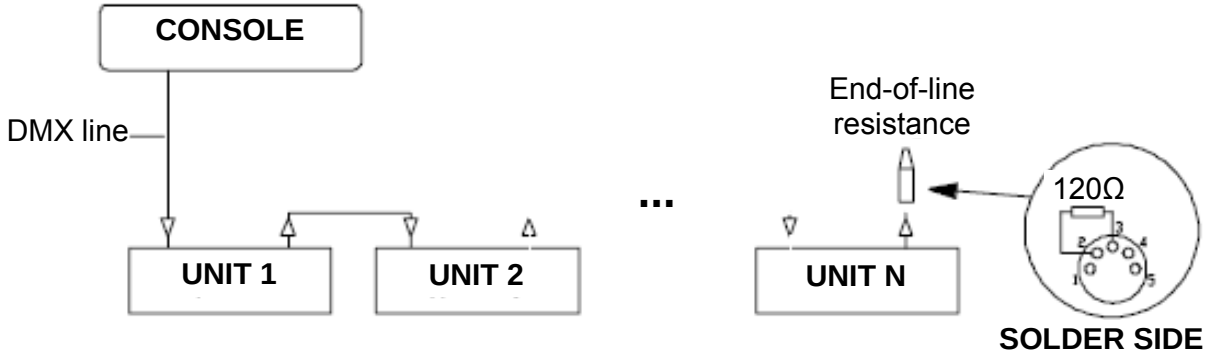


Fig.10: Signal connection net

The connection should be made exactly as shown in figure 10. You will see that a resistance of 120 Ohms 1/4W has been installed at the end of the line between pins 2 and 3. This corresponds to the end-of-line connector supplied with all projectors.

A maximum of 32 projectors may be linked up to a single line without using an amplifier. And the maximum cable length as far as the last projector is 1 Km, although it is advisable to use an amplifier for cables every 500 meters.

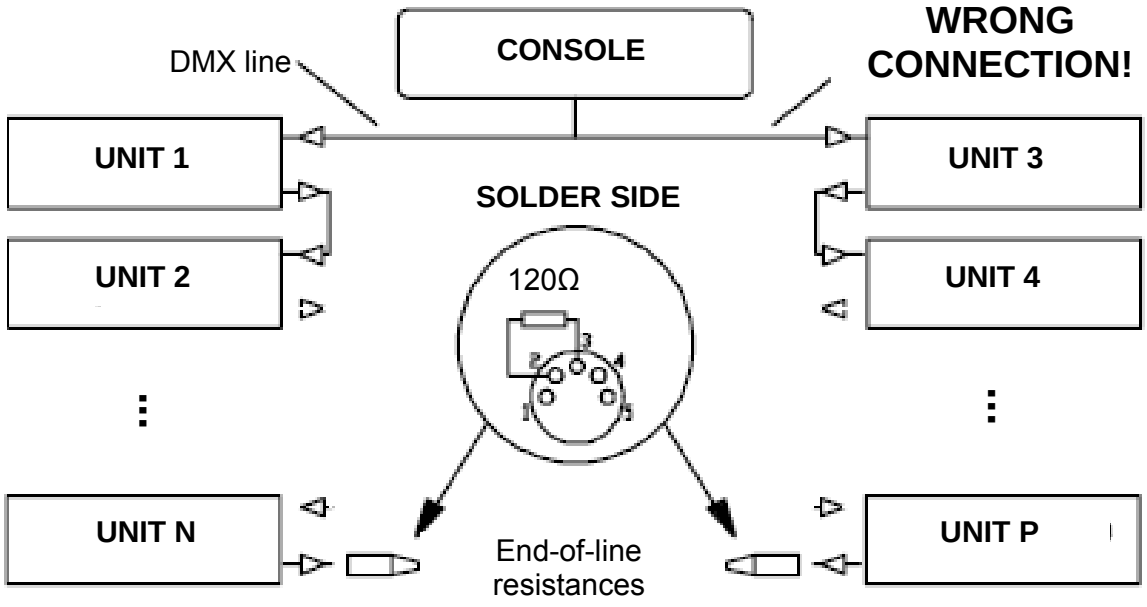


Fig.11: Wrong connection

Connection shown in figure 11 is INCORRECT. If an installation divided into several branches is required, splitters must be used. They distribute and amplify a single signal into several identical ones in different lines (see Figure 12).

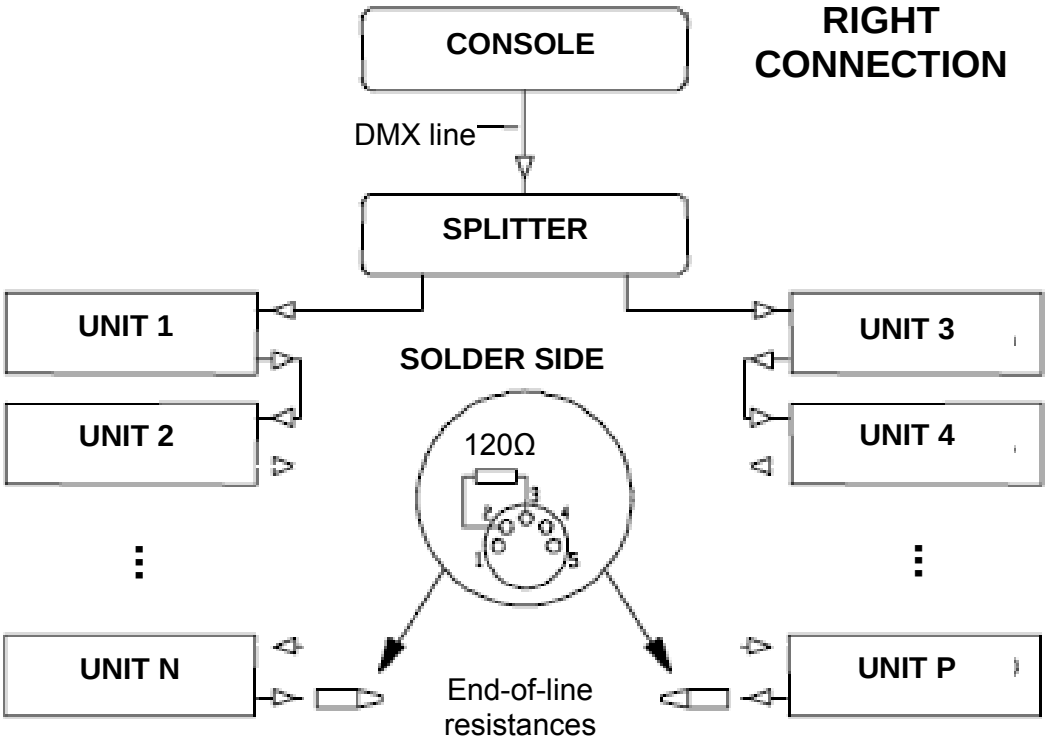


Fig.12: Right connection

4.4. PANIC connection

PANIC function connection is carried out through a Jack stereo connector situated near DMX connectors (see figure 4).

Its connection only requires two cables connected to Jack connector as shown in figure 13.

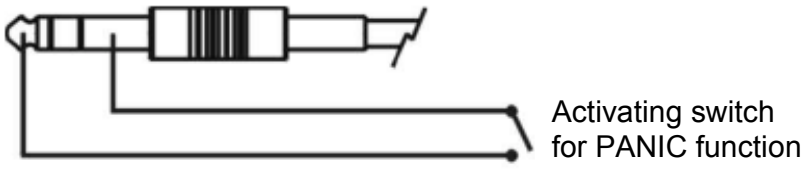


Fig.13: Jack connection (PANIC function)

PANIC function is available by means of a free contact circuit. Thus, connecting PANIC signal to a switch, function will be activated when pressing it.

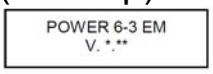
IMPORTANT: Activation of this function has to be by means of a switch, not with a button.

There is an input and output Jack connector to propagate the signal to other units.

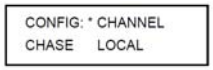
5. Programming

The following table shows a map of the dimmer menus and its options. You can move on the menus pressing “+” and “-” and select an option pressing “store”.

(Start up)

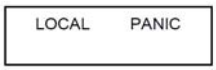


CONFIG:

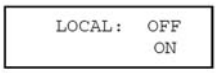


CHANNEL:

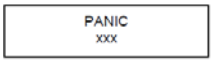
LOCAL:



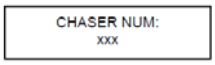
LOCAL:



PANIC:

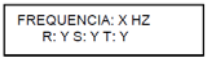


CHASE:

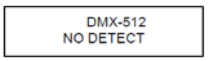


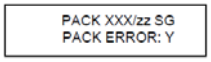
TEST:

FREQ:

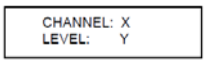


DMX:

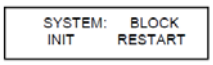




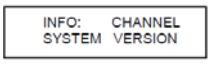
MANUAL:



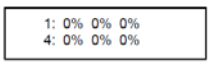
SYSTEM:



INFO:

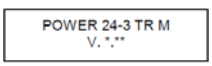


CHANNEL:

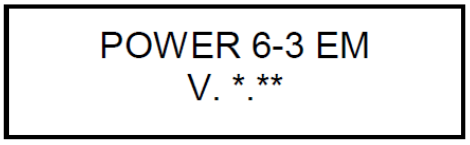


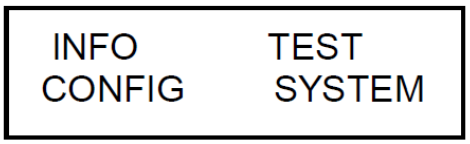
SYSTEM:

VERSION:



When the dimmer is starting up, it displays these messages:

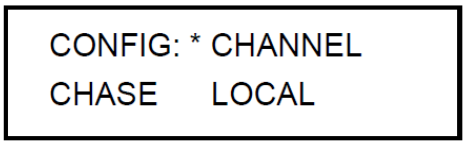




5.1. Configuration

To start with the configuration, you must enter to CONFIG menu. You can move on the menus pressing “+” and “-” and select an option pressing “store”.

Once there, you can select among three options: channels, chasers and local mode.



Channel configuration

Select CHANNEL to configure the channels.

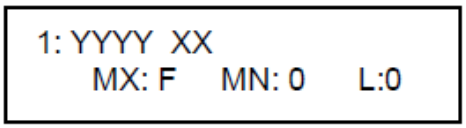
In this menu, you have two options: channel-per-channel configuration or all channels together.

XXX: It becomes “ALL” when configuring all the channels together or, alternatively, shows numbers from 1 to 6.

In the former case, parameterization (maximum, minimum, response curves, etc.) will be equal for all the channels, which starting by the first

channel will increase in one until the end of the total amount of channels of the dimmer.

When configuring the channels, either together or channel-per-channel, there will be this message:



YYY: Define the type of response curve.

LIN V – linear with voltage
LIN L - linear with light
FLUO – fluorescent
ON-OFF – Everything or nothing

XX: Address DMX channel to this dimmer channel.

MX: Maximum output value from 0 to F (100%).

MN: Minimum output value

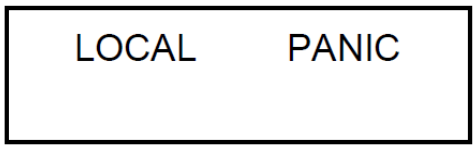
L: Channel value when working in local or PANIC mode.

For validating each option, you must press “store”.

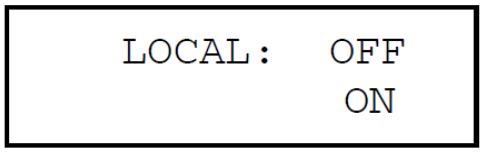
If you configure channel-per-channel, this process must be repeated for each channel. On the contrary, dimmer channels will be configured with the same options with the exception of the address.

Local mode configuration

To start this configuration, you must enter to LOCAL menu after selecting CONFIG.

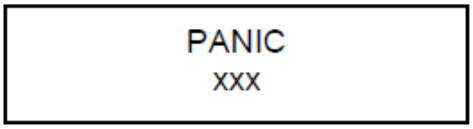


Then, select local and eventually you can select ON for activating local mode or OFF for deactivating it.



When working in local mode, channel values will be the ones configured before (see Channel configuration). Press “store” for validating the selection.

PANIC configuration



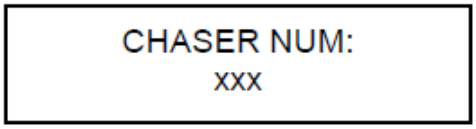
The sequence of selections to go to Panic menu is: CONFIG – LOCAL – PANIC. Then, pressing “ON” is activated.

From now on, if a Panic signal is received through the jack connector located in the lower internal side of the dimmer (see PANIC connection), automatically all the channels will be activated with the previously configured values in the local mode (see Local mode configuration).

Panic signal consists of a free contact which opens or closes a circuit from an architectural lighting system or any other element which can carry out the same function (e.g. emergency stop).

Chaser configuration

First of all, you must enter to CHASER menu:



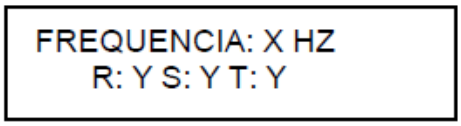
XXX: There are five options: “OFF” (chaser disconnected) or from 1 to 4 (different chasers).

Pressing “+” and “-”, you can select one of the 4 predefined chasers and then define FADE and TIME times which are from 0 to 8 minutes and 0 to 59 seconds, respectively.

5.2. Testing

This menu is for changing the output level of each channel and verifying the state of the inputs and outputs: DMX input and mains frequency.

Frequency test



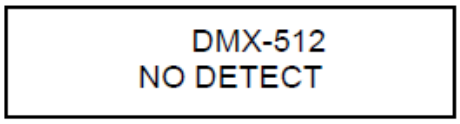
X: It indicates mains frequency value.

Y: It is “OK” if the signal is synchronised with the other phases and “Rf” for the phase used as reference. If there is no synchronism, it will be “?”.

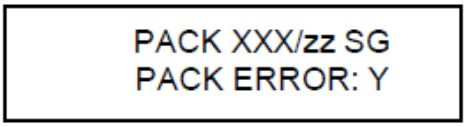
DMX test

This menu shows the DMX state and any data losing.

When DMX is not detected, it will show this message:



If DMX signal is received:



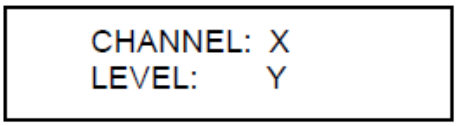
XX: Number of channels received.

ZZ: Number of packs received per second.

Y: If there is any error when receiving packs.

Manual test

This menu enables you to change manually channel level. The output level can be selected from 0 to F.

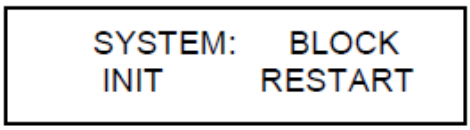


X: Number of channel to modify.

Y: Output level from 0 to F (0-100%).

5.3. System

This menu has three options: unit initialization, unit restoration and keyboard blockage.



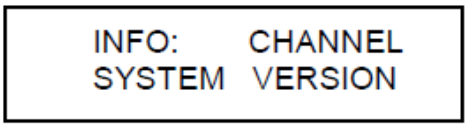
BLOCK: The four buttons are blocked. Press them altogether to unblock it.

INIT: The power unit is initialized with default values.

RESTART: Keeping the programmed parameters of the configuration, the power unit will be reset.

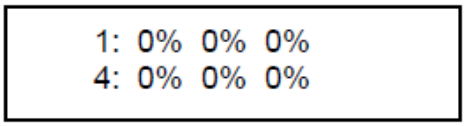
5.4. Unit information

This is a menu which informs about the state of the different parameters of the dimmer, there are three options: channel information, system menu and version menu.



Channel information

It shows the state of each channel.



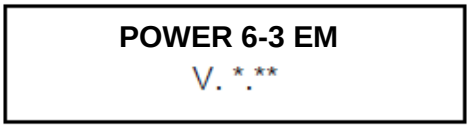
System menu

This is an information menu; consequently, no parameters can be modified.

If the power unit works in automatic mode (chasers), it will show the times of FADE and TIME. It will also show local mode state: on or off.

Version menu

It informs about the software version of the dimmer.



6. Maintenance

6.1. Regular cleaning

To prevent the growth of dust and dirt which may impair the proper operation of the equipment, it should be cleaned regularly.

For cleaning it, use a soft, slightly and damp cloth (if the equipment is very dirty, apply a little liquid detergent to the cloth).

WARNING: Do not use solvents or products containing alcohol. Make sure that no liquid get inside the equipment.

7. Most common problems

Problem	Usual cause	Solution
Unit does not start	No current reaching the unit	Check mains connections
Power unit does not give response in some channels	Breakers or differentials activated	Check breakers and differentials state
	Addressing problem	Address channels in free addresses See “Programming” section
	Wrong DMX line installation	Check the type of cable, connections, connectors, installation and 120Ω terminator resistance
The unit does not work in autonomous mode	No chaser selected	See “Programming” section
	No FADER and TIMER selected	See “Programming” section
PANIC function does not respond	Not activated or not programming	See “Programming” section
	Wrong jack connection	Check connection See “Connection” section

If the problem persists despite these measures, please contact to FRESNEL’s Technical Service Department.

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If you want to do without this product, do not mix it with the ordinary waste. There are specific methods and systems for dividing electronic and electromagnetic used products that are described in 2002/96/EC directive, which is in force in the European Community countries.

	FRESNEL S.A.	DC-01
	STATEMENT OF COMPLIANCE	DATE: 01/01/12

We declare that the products:

Mark:

STRONG

Models:

POWER 6-3 EM

POWER 6-3 EM HALL LIGHTING

Year of construction:

2012

Conforms to the following EC directives:

2006/95/EC: In relation to the safety requirements for material intended for use within specific voltage limits.

2004/108/EC: In relation to the electromagnetic compatibility of equipment, systems and installations.

Sole administrator

Ángel Torrecillas Redón Barcelona, January 1st of 2012

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