coemar

DIGIfactor 6 ch 5 Kw

instruction
manual

1st edition, september 1999

Index

1. Introduction

Congratulations on having purchased a new **coemar** product. You have ensured yourself of a controller of the highest quality, both in the components and in the technology used.

In any request for information regarding the **DIGIfactor 6 ch 5 Kw**, we ask that you specify correctly the model purchased. To this end we requst that you complete the purchase details listed below. This information will assist us in providing you with prompt and accurate information.

2. Technical characteristics

DIGIfactor 6 ch 5 Kw is a dimmer rack allowing control over the output of 6 channels from 0 to 230V. Each of the 6 channels may be loaded to a maximum of 5KW; therefore resulting in a maximum current of 22 Amps per channel.

mechanical:
- Mounting bars to allow fixing to a variety of surfaces
- Hinged front panel to allow easy internal inspection
- Maximum ambient operating temperature: 40 °C
- Weight: 17 Kg.

electrical:
- Power supply 380V three phase delta or star
- Voltage over-supply protection
- Load protection via ceramic fuses
- Maximum load per channel: 5KW
- Number of channels: 6.
- CE compliance
- Locking load connectors
- Locking supply connectors

electronics:
- Load voltages controlled by either 0/+10 v DC or DMX 512 signal
- Single channel test facility
- Digital DMX 512 addressing.
- Internal measurement of each of the three phases
- Internal measurement of supply frequency
- Instantaneous internal temperature measurement at the triacs
- Hours of operation counter
- DMX parameter measurement and display
- Individual channel pre-heating
- Variable maximum output limits for each channel
- Individual channels assignable as dimming or switching (on/off)
- Individual switching channel pre-heating(for loads with alogen lamps+trasformer).
- 9 scenes programmable in the **DIGIfactor** for use in absence of a control console
- Reset function
- DMX 512 via XLR 5/M socket
- Daisy chaining of **DIGIfactor** and other DMX 512 units via XLR 5/F plugs
- 0/+10V DC connection via 2 Locking din (8 pole)
- Internal +20 V DC powersupply

3. Mechanical installation

Installation into a rack-case or a fixed installation should follow certain procedures to ensure correct operation of the unit.

Attenzion!

DIGIfactor 6 ch 5 Kw is mechanically constructed to suit standard 19" rack mounting

Load voltage regulation is via internally mounted Triacs; these components will heat up when a load is connected; the **DIGIfactor 6 ch 5 Kw** needs to disappate this heat and for this reason the unit needs to be located in a well-ventilated position, leaving a minimum of 2 centimetres clearance around the unit housing and any adjoining surfaces.

Note that on either side of the **DIGIfactor** there are forced-cooling air intake/exhaust passages. These passages should under no circumstances be covered.

Installation should not be onto a flammable surface; a hot housing is indicative of abnormal operating conditions.

Ambient operating temperature range: -10°C to +40°C.

If the ambient operating temperature exceeds that indicated, you may choose to install a forced-air cooling system into your **DIGIfactor** rack case or mounting system to remove hot air from the housing.

After having installed the **DIGIfactor**, refer to section 9.2.3 of this manual, "Temperature testing" to complete the correct installation of the unit.

Note that maximum operating temperature should be measured only after all load has been connected and been operating for a minimum of one hour.
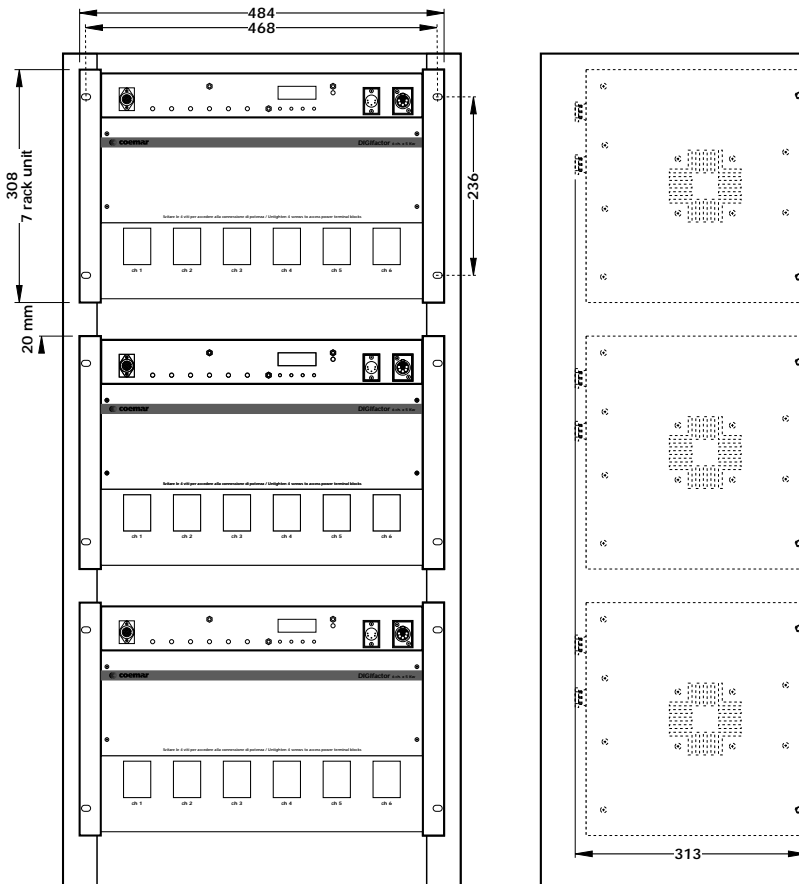
4. Connection to mains power

DIGIfactor 6 ch 5 Kw is a dimmer rack suitable for power supply via 3 phase 380V star or delta.
230V single phase supply is possible, but will not allow the unit to be used in adherance to certain safety norms concerning electrical operation and electromagnetic radiation emission.
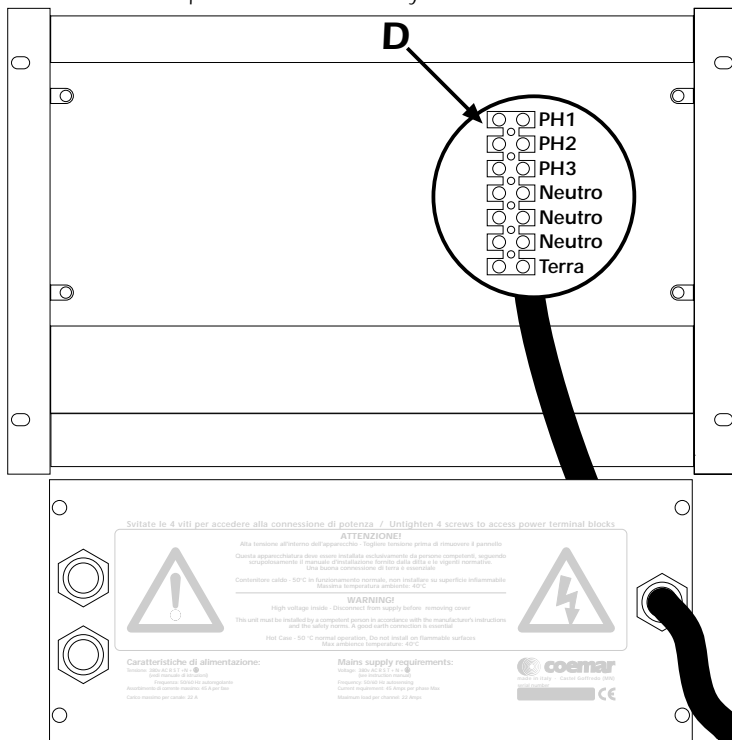Strict adherance to local regulatory requirements is essential; as is a correct and secure earth connection.
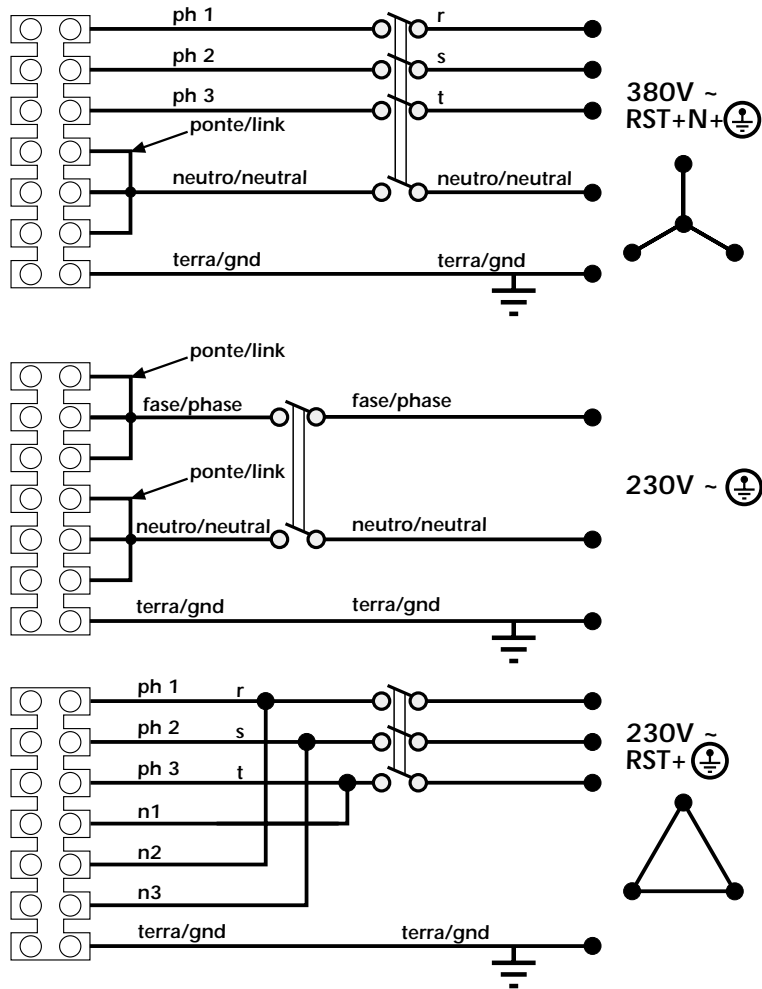Ensure the supply cable is able to carry the maximum load for the unit.

1) Loosen the four screws (A) which affix the rear panel (B).
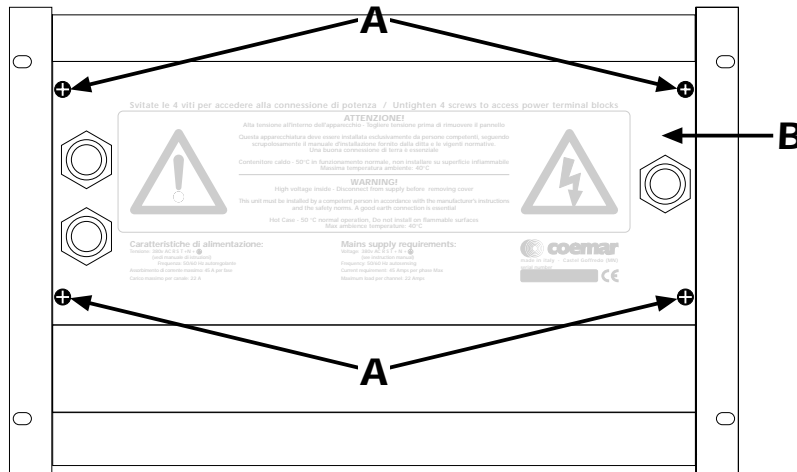
2) Locate the power supply terminal strip (D).
3) Slide your supply cable through the cable clamp till sufficient length is available for connection to the terminal strip.
4) Fix the cable clamp to the cable securely.

5) Connect the cable as shown in the diagram.

ph 1   r
ph 2   s
ph 3   t
ponte/link
neutro/neutral   neutro/neutral
terra/gnd   terra/gnd

380V ~
RST+N+⏚

ponte/link
fase/phase   fase/phase
ponte/link
neutro/neutral   neutro/neutral
terra/gnd   terra/gnd

230V ~ ⏚

ph 1   r
ph 2   s
ph 3   t
n1
n2
n3
terra/gnd   terra/gnd

230V ~
RST+ ⏚

protection
For proper powering up of the **DIGIfactor 6 ch 5 Kw** we recommend the use of a thermal/magnetic circuit breaker of sufficient rating, as indicated in the diagram.

> **Attention**
> **DIGIfactor 6 ch 5 Kw** is a high-technology dimmer running on mains power; only qualified personal should perform installation, after thorough examination of this manual, and bearing in mind all local norms. Remove mains power prior to removing the rear panel and performing any internal procedures.
> The housing may be hot, 50°C during normal operation, do not install on flammable surfaces. Maximum ambient temperature: 40°C

5. Load connection

DIGIfactor 6 ch 5 Kw can control a maximum of 6 channels @ 5 Kw per channel; a maximum of 22 Amps per channel.

Do not overload the outlets!

Refer to local reguatlions and norms with respect to the correct cabling required for connection of loads to dimmers in public locations.

A good and secure earth connection is essential.

1) Loosen the four screws on the rear of the **DIGIfactor 6 ch 5 Kw**; using two multipoles cables of suitable rating, slide the cables throught the cable holders (A) located at the rear of the unit and secure them firmly.
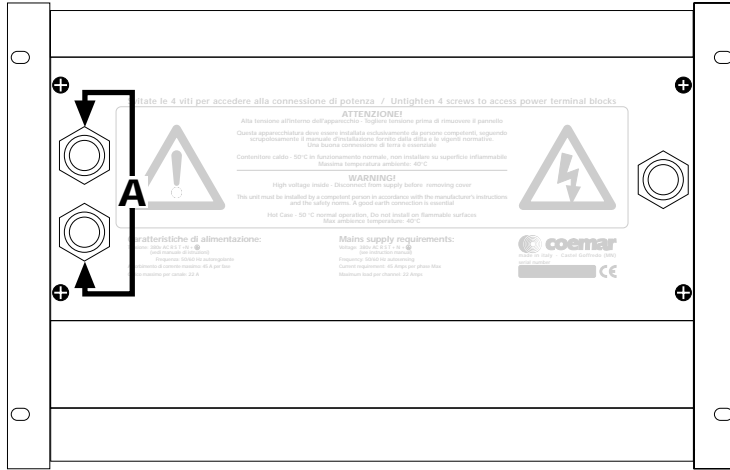
2) Loosen the four screws which affix the rear panel (A), allowing access to the load terminal strips.
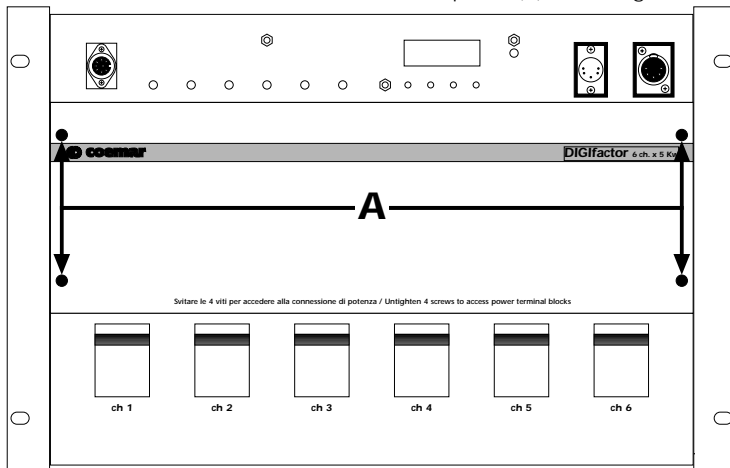
3) Load cables should be carefully passed through the rear of the dimmer through the appropriate passage at the left of the unit, located near the cooling fans.

4) Connect the load cables, referring to the schematic shown, where a standard load is indicated by lamps.
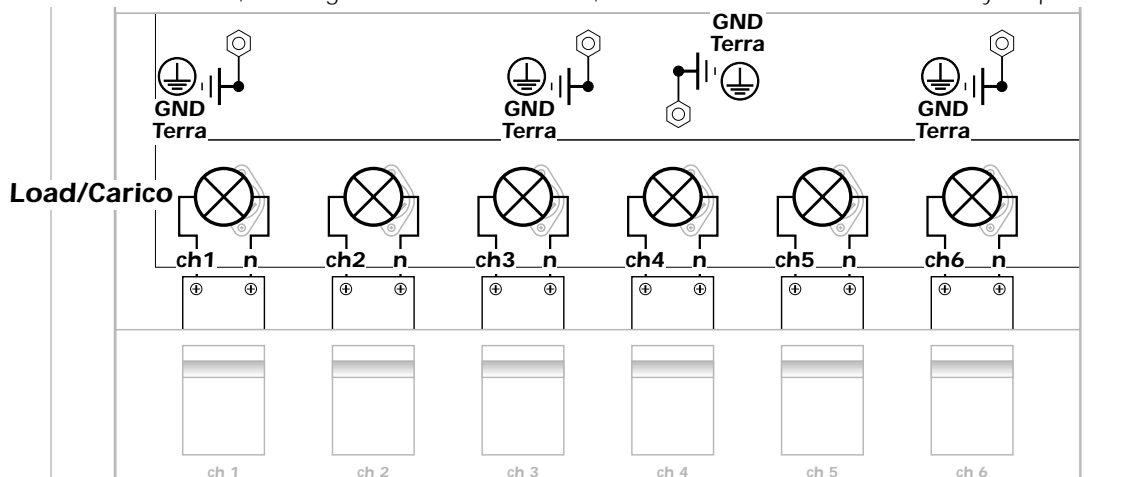
5) Close up the front and rear of the **DIGIfactor**; noting that for any required inspection of the cables the unit may be inspected from either the front or back, without having to remove it from its mountings.

6. Signal connection

DIGIfactor operates on the two most common control signals used in the lighting industry:
digital DMX 512 and analogue 0/+10V dc.

6.1 DMX 512

DIGIfactor 6 ch receives, via an XLR 5 plug, 6 channels of DMX 512 digitally addressed as 1 to 6; using the signals to control the output levels of 6 channels in the range of 0 to 255, as per the DMX 512 standard, regulated by USITT (U.S Intitute of Theatre Technology)
Connection between the DMX 512 controller and the **DIGIfactor** follows the recognised standard:
Pin 1= Ground (GND)
Pin 2= DATA -
Pin 3= DATA +
Pin 4= Optional - (not connected)
Pin 5= Optional + (not connected)

If required, the components for making up cables are available from **coemar**:
**ME 4966** (Plug XLR 5)
ME 4965 (Socket XLR 5)
CV 4158 (two core screened cable Ø 0.5)

Connection should be via two core screened cable, following all protocols for screened signal cable.
Screening is always connected to pin 1 of the XLR plug and must be isolated from the metalic housing of the plug, with regards to polarity.
A typical DMX 512 connection with **DIGIfactor 6 ch 5 Kw** is shown in the diagram.

to other power unit or DMX 512 Devices
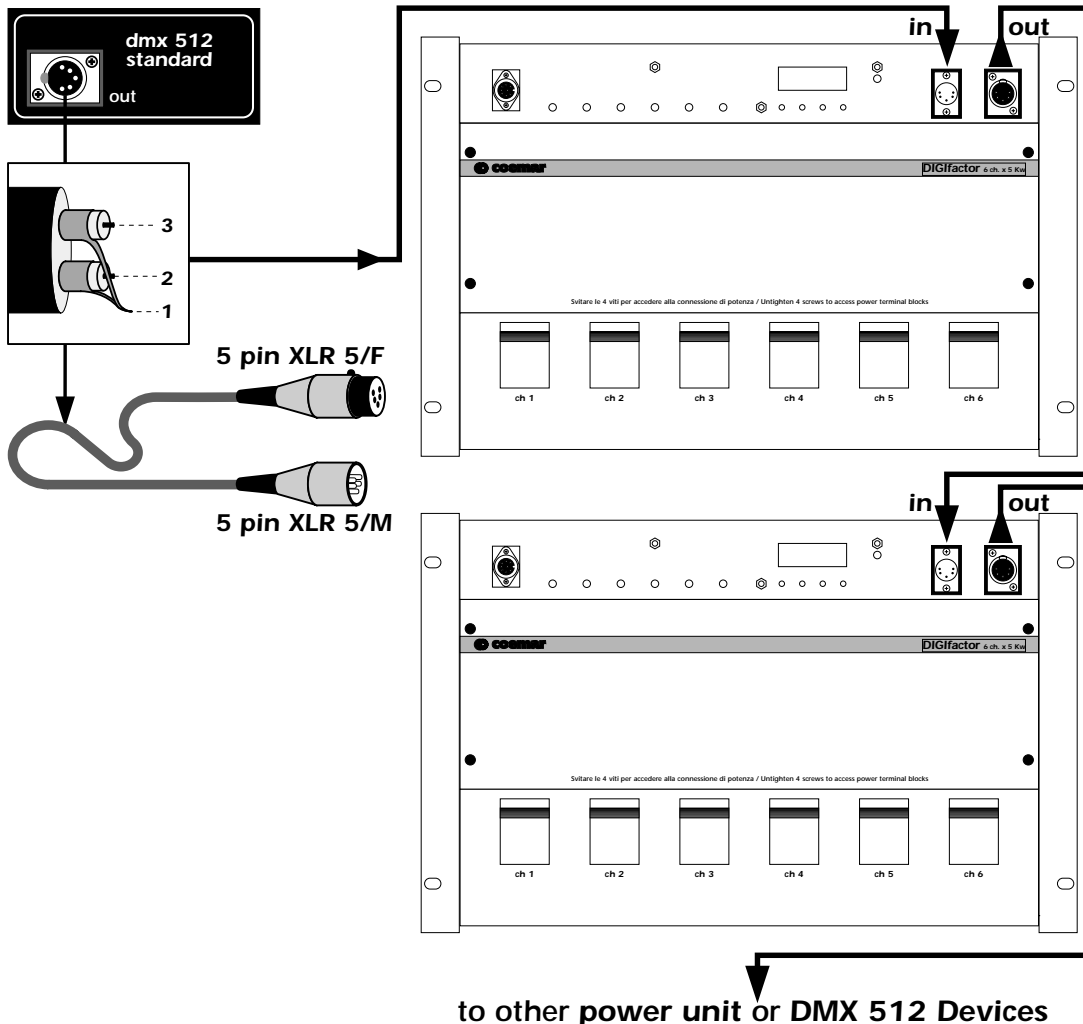
6.2 0/+10VDC

DIGIfactor 6 ch 5 Kw receives via a Locking-din plug, 6 variable voltages from 0 to +10V continuous current, as per international norms for analgoue transmission.

Connection is particualrly simple if the fixure receiving signal follows the **coemar** standard

Plug Locking din (8 pole) **DIGIfactor 6 ch 5 Kw**

Pin 1= 0/+ 10 V DC channel 1
Pin 2= 0/+ 10 V DC channel 2
Pin 3= 0/+ 10 V DC channel 3
Pin 4= 0/+ 10 V DC channel 4
Pin 5= 0/+ 10 V DC channel 5
Pin 6= 0/+ 10 V DC channel 6
Pin 7=supply + 20 V DC 100mA max
Pin 8= 0V DC reference

Pin 7 is connected to a +20 V DC stable power supply; this being used for controller which require such voltage for operation.

If the controller being used uses the **coemar** standard you may use pre-made locking din plugs, available from all authorised **coemar** service centres:

Code: 247 (5 metre length)
Code: 248 (10 metre length)
Code: 249 (25 metre length)
Code: 250 (50 metre length)

If required, componts for the manufacture of cable can be ordered from **coemar**:

ME 261 (Locking-din plug)
CV 924 (screened 8 core cable Ø 0.25, per metre)
CV 4158 (8 core cable Ø 0.25, per metre)

We recommend the use of screened cable; particularly in situations where the possiblity of electromagnetic disturbance is high, to reduce to a minimum the possible causes of incorrect functioning of equipment.

Screening should alwasy be connected to pin 8 of the locking-din.

Shown is a typical 0/+10v DC connection between controller and **DIGIfactor 6 ch 5 Kw**.
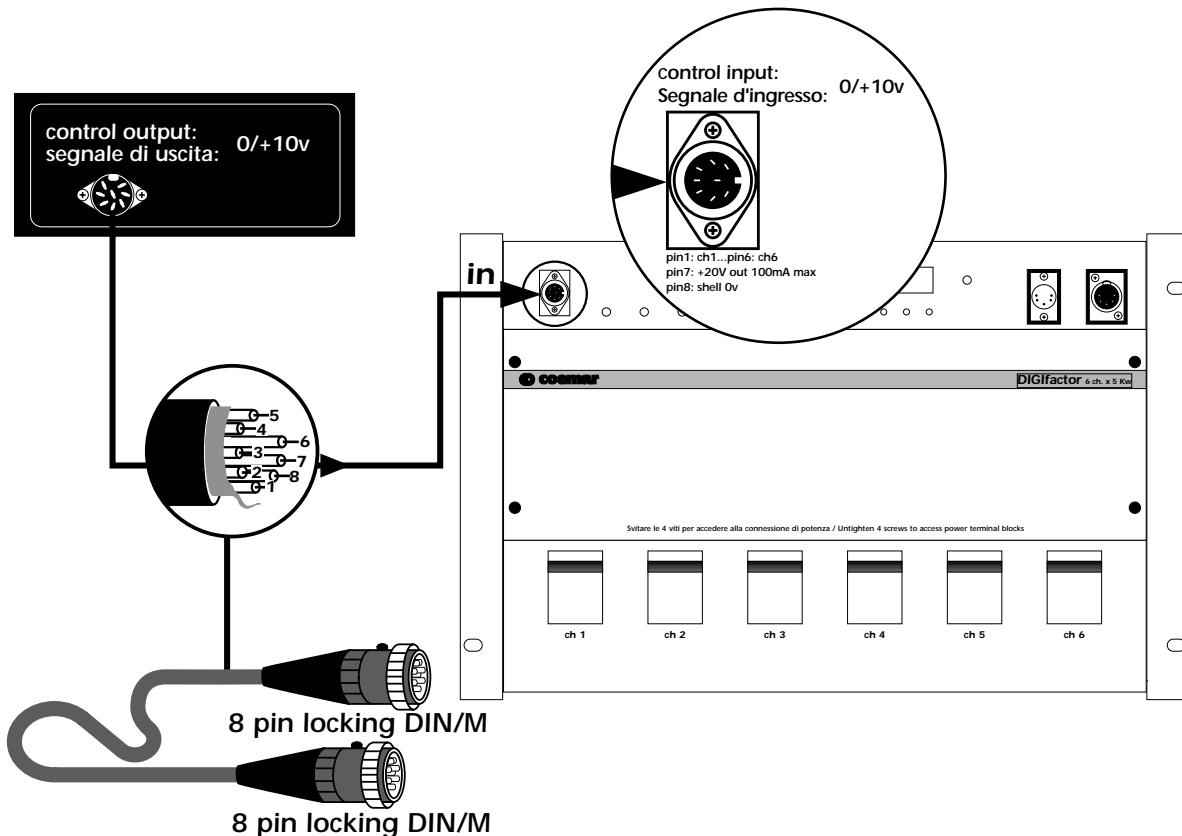
7. Powering up

After having carefully followed the instructions regarding electrical connection and mechanical fixing, the **DIGIfactor** may now be powered up via an thermal/magnetic circuit breaker as described in section 4.

Upon powering up, the display will run through a test/reset procedure which begins with a display of the software version installed in the unit, followed by a measurement of the current operating frequency of the power supply and auto-optimisation of the unit's operation.

When the display shows **A001** (or any other value preceded by the letter A), the **Digifactor** is ready for normal operation.

function display

○ ○ ○ ○
menu enter + –
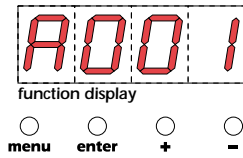
Attention!

If the start-up procedure is not as described above, and the display does not come on, it may be that the power supply is not connected properly; refer to section 4 to re-check connection.

If the display should come on signaling other than that described above, refer to your authorised **coemar** service centre for further advice.

8. DMX addressing or analogue 0/+10v DC

As described in section 6 you may use the **DIGIfactor** with either 0/+10V DC or DMX 512 control signals; depending upon the requirements of your controller

8.1 0/10 v DC

After having correctly connected the cable, channel number 1 of the **DIGIfactor** corresponds to the signal being sent via pin 1 of the first Locking DIN; channel number 2 corresponds to the signal being sent via pin 2 of the first Locking DIN, and so on until the 6th channel being via pin number 6 of the second Locking din.
A variation in the voltage from 0 to 10 V of the control signal corresponds to a variation of the load voltage from 0 to 230 V.

8.2 DMX 512

After correct connection of the DMX 512 signal cable, the 6 channels of the dimmer are controlled via 6 channels of your DMX controller in sequence.
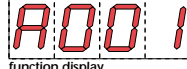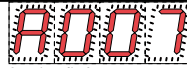
Upon first turning on the dimmer's display shows **A001** indicating the address **DMX 1**.
A dimmer so addressed will respond to channels **1** through 6 of the **DMX 512** controller, a second dimmer should be addressed as **7**, and so on in multiples of 6.
A dimmer can therefore respond to whichever 6 sequential channels of the controller you wish simply by changing the display's address.
Note that after the first address is set, **DIGIfactor** will also occupy the next 5 addresses as well.

changing the dmx address

Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	Address **DMX 001**
Press the **+** or **-** buttons until the desired channel is shown	**A007** function display ○ menu ○ enter ○ + ○ −	Shows the **DMX** addresses from 1 to 501, the led display will flash, indicating that the change has not been recorded yet.
Press the **enter** button	**A007** function display ○ menu ○ enter ○ + ○ −	Confirms your selection of address, the display stops flashing and the unit responds to the new **DMX 512** address.

Important Note: *Keeping the **+** or**-** buttons depressed will cause the display to scroll at high speed, allowing for rapid chaing ing .*

The presence of DMX signal is indicated by the flashing led in the DMX input display.

○   ○   ○   ○
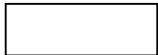
9. Display panel functions

Attenzion! Controls the proper functioning of the dimmer and its various parameters.

Altering the **coemar** factory presents can vary the functioning of the dimmer, causing it to not respond to **DMX 512** control signal; careful and thorough reading of all the following procedures is therefore recommended prior to altering any functions.

IMPORTANT NOTES: these notes are valid for all the functions which follow

1. Keeping the + or i- buttons depressed for 8 seconds for rapid scrolling.

*2. You may abort the altering of any function by simply pressing the **menu** button until the display shows the DMX address*

3. To immediately go to the maximum value, press the + button whilst simultaneously pressing the - button.

4. To immediatley go to the minimum value, press the - button whilst simultaneously pressing the + button.

*5. You may alter single channel settings or press the + or - buttons until the display shows **ALL** to alter all channels simultaneously.*

*6. Changes made via the menu buttons are confirmed and recorded when the **enter** button is pressed.*

It is always possible to over-write any settings with new ones at any time.

The reset procedure allows all settings to be returned to factory presets, with the exception of the DMX address.

7. Display panel functions remain active for 10 secondis if no changes are made, after which they will return to the DMX address display/

The display panel has three menus and main functions, which are:
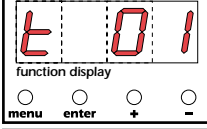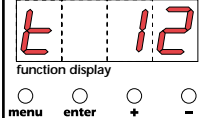
9.1. Test
9.2. Electical and electronic displays
9.3. Advanced functions (installer options)
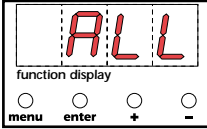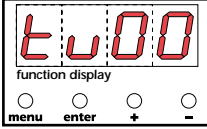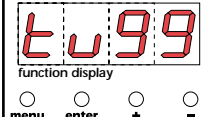
9.1. Test

9.1.1. Tests every channel

Allows the testing of every outlet of the **DIGIfactor**, without the need for a controller.

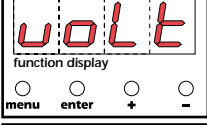|		
Power up the **DIGIfactor**	**A 0 1** function display menu enter + −	Address **DMX 001**
Press the **menu** button	**ΠEAS** function display menu enter + −	electronics display menu
Press the **+** button	**tESt** function display menu enter + −	Channel **test** menu
Press the **enter** button	**t 01** function display menu enter + −	To confirm your selection of channel **test**, the first channel for testing is displayed as 1 (**t 01**).
Press the **+** or **-** buttons to select the required channel for testing	**t 12** function display menu enter + −	For example, test channel 6 (**t 6**)
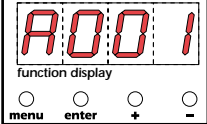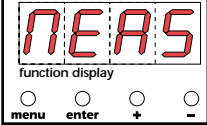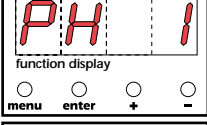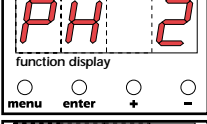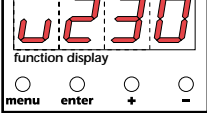
Potete ripetere il test su tutti i canali singolarmente oppure:

Press the **+** or **-** buttons	**ALL** function display menu enter + −	**ALL** to test all channels simultaneously
Press the **enter** button	**tυ00** function display menu enter + −	Output level set to **00**
Press the **+** or **-** button	**tυ99** function display menu enter + −	Select an output level from 0 to 99 (maximum output); via the digital display. As the display value increases, note that the output level of the load does the same.

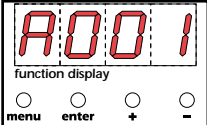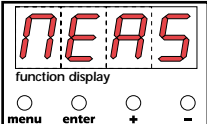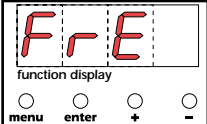## 9.2 Electrical and electronic displays
9.2.1. Voltage display
Displays the input voltage across the three phases (in volts).
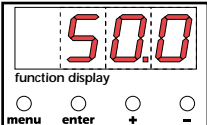
Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	**MEAS** function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons	**voLt** function display ○ menu ○ enter ○ + ○ −	voltage displayed
Press the **enter** button	**PH 1** function display ○ menu ○ enter ○ + ○ −	Voltage measurement for phase **1**
Press the **+** or **-** button	**PH 2** function display ○ menu ○ enter ○ + ○ −	For example, phase **2**
Press the **enter** button	**u230** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** displays the input voltage, for example, 230 volt.

Pressing the **enter** button in sequence displays the measured input voltage across the 3 phases; phase 1 is alwasys displayed at 4 volts over its actual value, for reasons to do with the internal electronics.
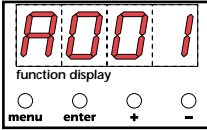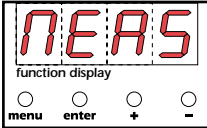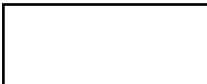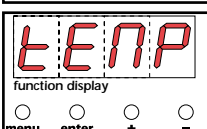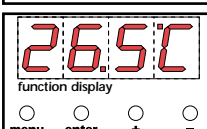
9.2.2. Frequency display
Displays the input voltage frequency (in Hertz).

Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	**MEAS** function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **enter** button		To confirm your selection
Press the **+** or **-** button	**FrE** function display ○ menu ○ enter ○ + ○ −	**FrE** measures the frequency in Hertz
Press the **enter** button	**50.0** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** displays the input voltage frequency

9.2.3. Temperature measurement
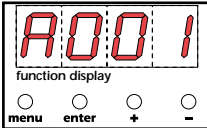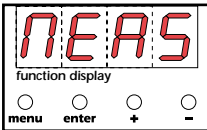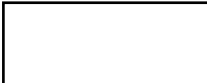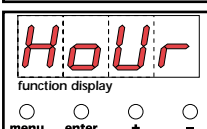Displays the instantaneous temperature of the dimmer's internals (in centigrade).
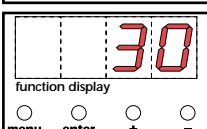
Power up the **DIGIfactor**	`A001` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	`MEAS` function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **enter** button		To confirm your selection
Press the **+** or **−** buttons	`tEMP` function display ○ menu ○ enter ○ + ○ −	**tEMP** temperature display in °C
Press the **enter** button	`26.5C` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** displays the temperature, measured at the triacs

The maximum operating temperature of the unit is 65°C. If under full load for some hours the temperature should exceed 65°, re-check the mechanical installation of the unit, which may be incorrect. The forced cooling system may be obstructed, the fan itself may be functioning incorrectly; or simply the unit's cooling system may not be situated in a suitable position to allow heat to be disappated sufficiently.
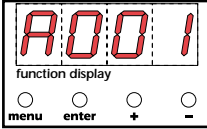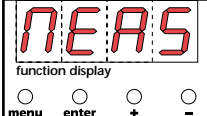In such an instance, the addition of a further fan at the base of the unit, may be appropriate.

9.2.4. DIGIfactor hours of operation
Displays the number of hours that the **DIGIfactor** has been operated

Power up the **DIGIfactor**	`A001` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turn on
Press the **menu** button	`MEAS` function display ○ menu ○ enter ○ + ○ −	Electronic menu display
Press the **enter** button		To confirm your selection
Press the **+** or **−** button	`HoUr` function display ○ menu ○ enter ○ + ○ −	**HoUr** display in hours
Press the **enter** button	`30` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** displays the amount of time, in hours, it has been operational, for example, 30.

9.2.5. DMX 512 parameters display
Displays significant parameters of the **DMX 512** signal, bringing any problems to light

Power up the **DIGIfactor**	`A001` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	`MEAS` function display ○ menu ○ enter ○ + ○ −	Electronic display menu

Press the **enter** button		To confirm your selection
Press the **+** or **-** button	**SEr** function display ○ ○ ○ ○ menu enter + −	**SEr** displays significant parameters of the **DMX 512** signal
Press the **enter** button		To confirm your selection
Press the **+** or **-** button	**rAtE** function display ○ ○ ○ ○ menu enter + −	**rAtE** measures the frequency at which **DIGIfactor** receives a new packet of signal (**DMX**)
Press the **enter** button	**24.5** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** displays the value in Hertz

Recommended values: Minimum 1, maximum 44 Hz.
or
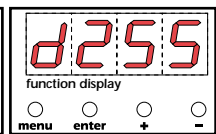
Press the **+** or **-** button	**Strt** function display ○ ○ ○ ○ menu enter + −	**Strt** the first bit after a **reset** signal (**DMX**)
Press the **enter** button	**St 0** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** displays the reading

See section 11 for information regarding error messages.

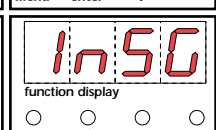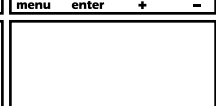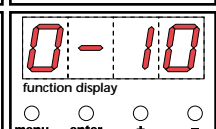### 9.2.6. Measuring the signal level for each channel with DMX 512 signal
Displays the DMX value (from 0 to 255) originating from the console on 12 channels.
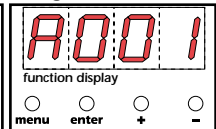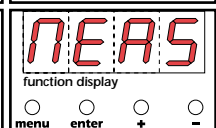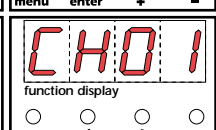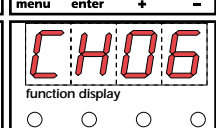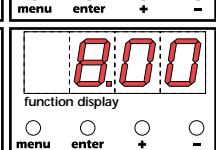
Power up the **DIGIfactor**	**A001** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** turns on
Press the **menu** button	**MEAS** function display ○ ○ ○ ○ menu enter + −	Electronic display menu
Press the **+** or **-** buttons until **InSG** is displayed	**InSG** function display ○ ○ ○ ○ menu enter + −	input signal menu
Press the **enter** button		To confirm your request
Press the **+** or **-** buttons until **dMX** is displayed	**dMX** function display ○ ○ ○ ○ menu enter + −	Displays DMX 512 input signal
Press the **enter** button	**CH01** function display ○ ○ ○ ○ menu enter + −	channel **1**
Press the **+** or **-** buttons to select the required channel	**CH06** function display ○ ○ ○ ○ menu enter + −	For example, channel **6**

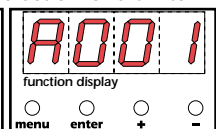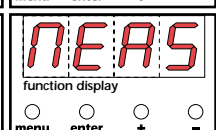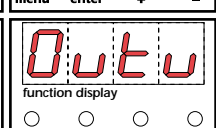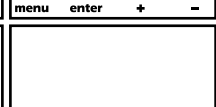|		
Press the **enter** button	d255 function display ○ menu ○ enter ○ + ○ −	Displays the DMX input signal value for the selected channel. For example, a level of 255 is shown in the diagram.

9.2.7. Measuring the signal level for each channel with 0/10V DC signal
Displays the 0/10V DC value (from 0 to +10V) originating from the console on 12 channels.
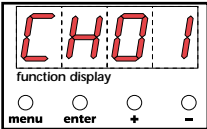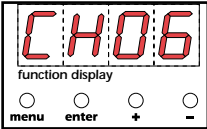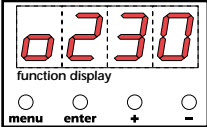
Power up the **DIGIfactor**	A001 function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	MEAS function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **+** or **-** buttons until **InSG** is displayed	InSG function display ○ menu ○ enter ○ + ○ −	input signal menu
Press the **enter** button		To confirm your request
Press the **+** or **-** buttons until **0-10** is displayed	0 - 10 function display ○ menu ○ enter ○ + ○ −	Displays **0/10**V DC input signal
Press the **enter** button	CH01 function display ○ menu ○ enter ○ + ○ −	channel **1**
Press the **+** or **-** buttons to select the required channel	CH06 function display ○ menu ○ enter ○ + ○ −	For example, channel **6**
Press the **enter** button	8.00 function display ○ menu ○ enter ○ + ○ −	Displays the 0/10V DC input signal value for the selected channel. For example, a level of 8 volts is shown in the diagram.

9.2.8. Measuring the output voltage on each channel
Displays the output voltage (in volts) on 12 channels. The value is the result of both the signal level and the internal settings chosen from the menu, such as preheating or the selection of a switching channel.

Power up the **DIGIfactor**	A001 function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	MEAS function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **+** or **-** buttons until **Outv** is displayed	Outv function display ○ menu ○ enter ○ + ○ −	Displays the output voltage
Press the **enter** button		To confirm your request
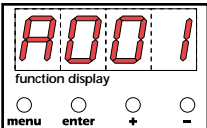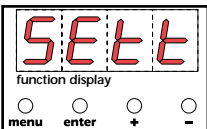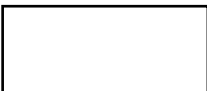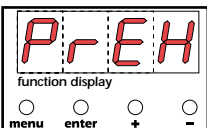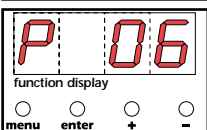
Press the **enter** button	**CH01** function display ○ menu ○ enter ○ + ○ −	channel **1**
Press the **+** or **-** buttons to select the required channel	**CH06** function display ○ menu ○ enter ○ + ○ −	For example, channel **6**
Press the **enter** button	**o230** function display ○ menu ○ enter ○ + ○ −	Displays the output voltage level RMS on the selected channel (in volts). For example, a level of **230** volts is shown in the diagram.

9.3. Advanced functions (installer options)
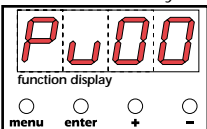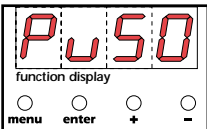
ATTENTION! Modifying these settings will modify the operation of the **DIGIfactor**, Use these functions only when necessary.

9.3.1. Lamp pre-heating

Causes sufficient voltage to be applied to the lamp load to assist in preventing lamp failure due to large thermal differences between lamp on and lamp off states.
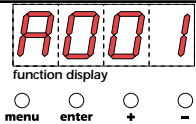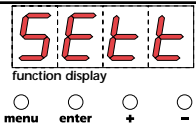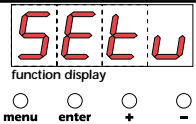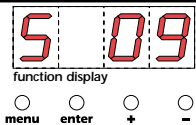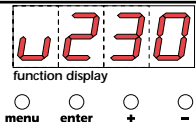
Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display ○ menu ○ enter ○ + ○ −	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** button	**PrEH** function display ○ menu ○ enter ○ + ○ −	To display the lamp pre-heat menu **PrEH**
Press the **enter** button		To confirm your selection
Press the **+** or **-** button until the required channel is selected	**P 06** function display ○ menu ○ enter ○ + ○ −	For example, number **6**

NOTE: ATTENTION! You may set individual pre-heat values for each channel or, by pressing the **+** or **-** buttons till **ALL** is displayed, you may address and set all the channels simultaneously
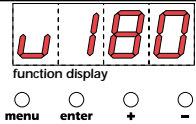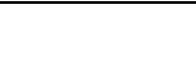
Press the **enter** button	**Pυ00** function display ○ menu ○ enter ○ + ○ −	Pre-heating set at level **0**
Press the **+** or **-** buttons until the required level is achieved.	**Pυ50** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** sets the dimmer channel(s) to the set minimum level, regardless of incoming DMX signal
Press the **enter** button		To set the level in memory

9.3.2. Setting individual channel output voltage limits

Sets a maximum output voltage (between the maximum output voltage and 180V) which the selected channel can achieve. Suitable if the dimmer is located close to the generator or sub-station by preventing lamp failure due to over-voltage supply.
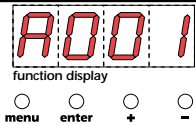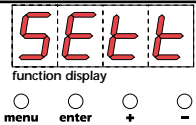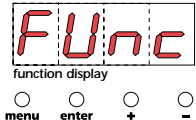
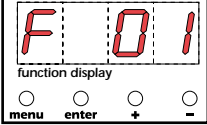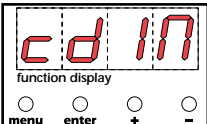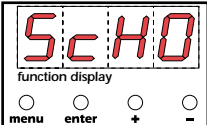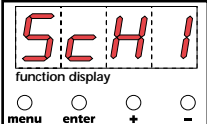|		
Power up the **DIGIfactor**	**A001** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display ○ ○ ○ ○ menu enter + −	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** button	**SEtv** function display ○ ○ ○ ○ menu enter + −	Maximum output voltage menu displayed **SEtv**
Press the **enter** button		To confirm your selection
Press the **+** or **-** button to select the required channel	**S 09** function display ○ ○ ○ ○ menu enter + −	For example, channel **4**
Press the **enter** button	**v230** function display ○ ○ ○ ○ menu enter + −	Maximum output voltage is selected.

The output voltage is set as a percentage of the incoming supply, for ease of use **DIGIfactor** displays a voltage value, this value is approximate, not real.

Press the **+** or **-** button	**v180** function display ○ ○ ○ ○ menu enter + −	You may reduce the voltage down to 200V=13%
Press the **enter** button		To confirm your selection

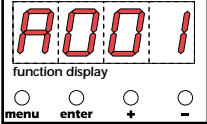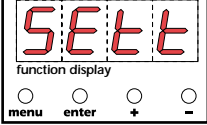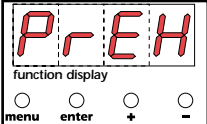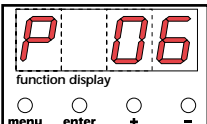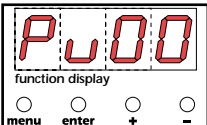### 9.3.3. Setting channels to on/off operation (switching)

Allows selected channels to be set to on/off only. The channel will remain off up to 50% and on from 50% to 100%, it will not allow the voltage to be regulated to any other value.
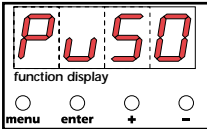
Power up the **DIGIfactor**	**A001** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display ○ ○ ○ ○ menu enter + −	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until **FUnc** is displayed	**FUnc** function display ○ ○ ○ ○ menu enter + −	**switching** (on/off) or **dimming** menu is displayed

Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until the required channel is selected.	`F  01` function display ○ menu ○ enter ○ + ○ −	For example, channel **1**
Press the **enter** button		To confirm your selection
Press the **+** or **-** button until **cdiM** is displayed	`cd 1N` function display ○ menu ○ enter ○ + ○ −	Dimmer function
Press the **+** or **-** button until **ScH0** is displayed	`ScH0` function display ○ menu ○ enter ○ + ○ −	Switching standard function
Press the **+** or **-** button until **ScH1** is displayed	`ScH 1` function display ○ menu ○ enter ○ + ○ −	Transformer switching function (allows pre-heat to be assigned)
Press the **enter** button		To confirm your selection

9.3.4. Switching channel pre-heating

Causes sufficient voltage to be applied to the channel's load to assist in preventing lamp/transformer failure due to large thermal differences between fixture on and off states.You may select this function only if the channels have been set to switching **ScH1** as described above.

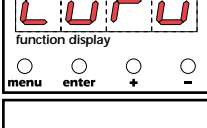| Power up the **DIGIfactor**	`A001` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	`SEtt` function display ○ menu ○ enter ○ + ○ −	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** button until **PrEH** is displayed	`PrEH` function display ○ menu ○ enter ○ + ○ −	Lamp pre-heating
Press the **enter** button		To confirm your selection
Press the **+** or **-** button until the required channel is selected	`P  06` function display ○ menu ○ enter ○ + ○ −	For example, channel **6** previously set to **ScH1**
Press the **enter** button	`Pv00` function display ○ menu ○ enter ○ + ○ −	**Pv00** pre-heat at level **0**
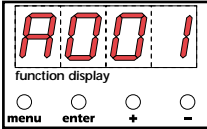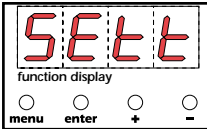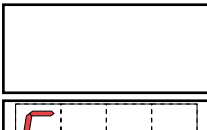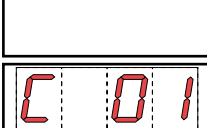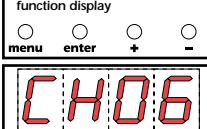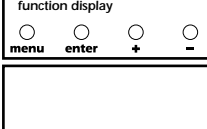
Press the **+** or **-** button until the required output voltage is achieved	**P u S0** function display ○ ○ ○ ○ menu enter + −	**DIGIfactor** sets the dimmer channel(s) to the set minimum level, regardless of incoming DMX signal
Press the **enter** button		To record the level in memory

9.3.5. Setting the response curve for the strike signal

Sets the type of output voltage value depending on the input signal. There are two possible curves:

Standard: commonly used in the illumotechnical field for years in which the strike angle from the triak is directly proportional to the control signal and the luminous intensity is less at the beginning and at the end of the adjustment.

Linear: the strike angle from the triak is linear, the luminous intensity is perfectly proportional to the input signal level.

Power up **DIGIfactor**	**A001** function display ○ ○ ○ ○ menu enter + −	**DMX** address
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display ○ ○ ○ ○ menu enter + −	menu is activated
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until **Curv** is displayed	**Curv** function display ○ ○ ○ ○ menu enter + −	Initiates response curve setting procedure
Press the **enter** button		To confirm your request
Press the **enter** button	**C 01** function display ○ ○ ○ ○ menu enter + −	channel **1**
Press the **+** or **-** buttons to select the required channel	**CH06** function display ○ ○ ○ ○ menu enter + −	For example, channel **12**
Press the **enter** button		To confirm your request
Press the **+** or **-** buttons until **Strd** is displayed	**Strd** function display ○ ○ ○ ○ menu enter + −	Sets standard curve

alternatively

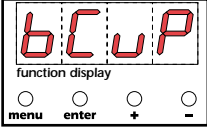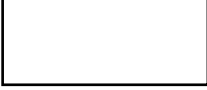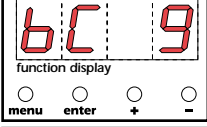|		
Press the **+** or **-** buttons until **LIn** is displayed	**LIn** function display ○ ○ ○ ○ menu enter + −	Sets linear curve
Press the **enter** button		To confirm your selection
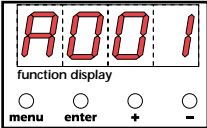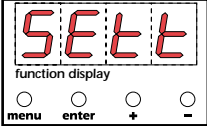
9.3.6. Recording output levels

Allow the recording of up to 9 lighting scenes which may be played back at anytime without the need for an external playback controller

Action	Display	Result
Power up the **DIGIfactor**	**A001** (function display)	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** (function display)	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until **Stor** is displayed	**Stor** (function display)	Level recording
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until the number of the required memory is displayed	**NEN3** (function display)	For example, number **3**
Press the **enter** button	**SAuE** (function display)	**DIGIfactor** reads the incoming signal, **0/+10V** or **DMX 512**. The display will flash to indicate that the recording is unconfirmed.
Press the **enter** button	**SAuE** (function display)	To confirm your request to record the scene

9.3.7. Selecting back-up scene

Selects one of the previously recorded scenes (as described in paragraph 16) to be initialized by means of an external comand, by remote or directly from the mixer (see instruction manual for correct connections).

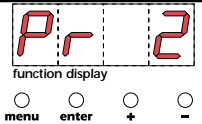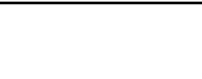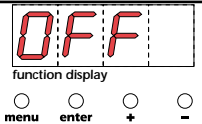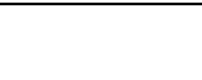| Action	Display	Result
Power up the **DIGIfactor**	**A001** (function display)	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** (function display)	Function menu displayed
Press the **+** or **-** buttons until **bCuP** is displayed	**bCuP** (function display)	Activates the back-up function
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until the number of the desired scene for back up by remote is shown	**bC 9** (function display)	For example, number **9** previously recorded
Press the **enter** button		To confirm your selection
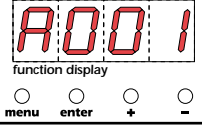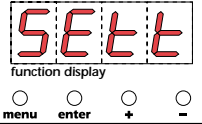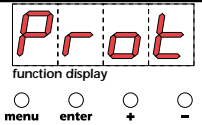
9.3.8. Protection against overheating

Selects one of three possible programs to be activated by **DIGIfactor** in case of overheating of the power zone:
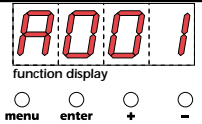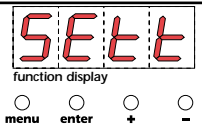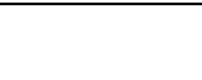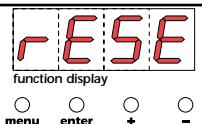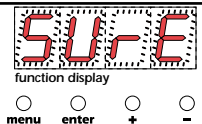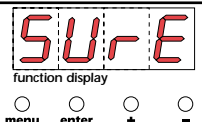
off: no protection

Pr 1: if the temperature reaches 75 °C, the channels previously set as dimmer reduce their maximum voltage level by up to 50% and the switching channels do not change their function.

Pr 2: if the temperature reaches 75 °C, the channels previously set as dimmer reduce their maximum voltage level by up to 50% and the function of the switching channels is entirely disable.

Power up the **DIGIfactor**	**A001** function display	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display	Function menu displayed
Press the **+** or **-** buttons until **Prot** is displayed	**Prot** function display	type of protection menu
Press the **+** or **-** buttons to select the required type of protection	**Pr 2** function display	For example **Pr 2**
Press the **enter** button		To confirm your selection

alternatively

Press the **+** or **-** buttons until **OFF** is displayed	**OFF** function display	Protection disabled
Press the **enter** button		To confirm your selection
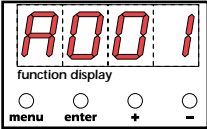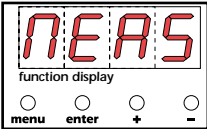
9.3.9. Resetting the DIGIfactor

Allow the **DIGIfactor** functions previously altered to be reset (except for DMX address).

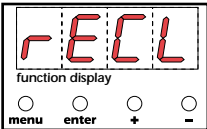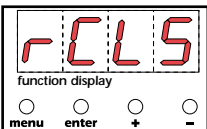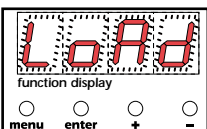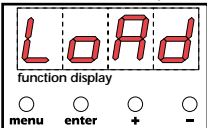|		
Power up the **DIGIfactor**	**A001** function display	**DIGIfactor** turns on
Simultaneously press the **menu** and **enter** buttons	**SEtt** function display	Function menu displayed
Press the **enter** button		To confirm your selection
Press the **+** or **-** button until **rESE** is displayed	**rESE** function display	A **reset** of all altered functions, **DIGIfactor** resets to the **coemar** factory presets
Press the **enter** button	**SUrE** function display	The display flashes to indicate an unconfirmed reset. To escape at this point, without performing a reset, press the **menu** button
Press the **enter** button	**SUrE** function display	To confirm your selection

9.3.10. Viewing recorded scenes
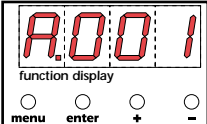
Allows the 9 recorded scenes (as described above) without the need for an external controller.

Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	**MEAS** function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **+** or **-** buttons until **rEcL** is displayed	**rECL** function display ○ menu ○ enter ○ + ○ −	To recall previously recorded scenes
Press the **enter** button		To confirm your selection
Press the **+** or **-** buttons until a previous recording is reached	**rCLS** function display ○ menu ○ enter ○ + ○ −	For example, number **5**
Press the **enter** button	**LoAd** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** loads the required scene

The display will flash to indicate the request is unconfirmed; to escape at this point press the **menu** button

Press the **enter** button	**LoAd** function display ○ menu ○ enter ○ + ○ −	To confirm your selection

From this point **DIGIfactor** will output the levels as previously recorded and the address display will include a decimal point, indicating a pre-recorded scene is currently being outputted.

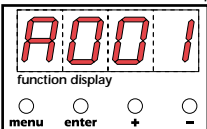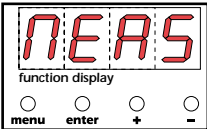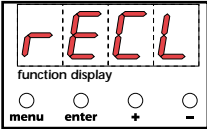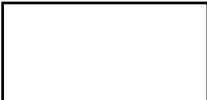|		
Indicating a pre-recorded scene is currently operational	**A.001** function display ○ menu ○ enter ○ + ○ −	Note the decimal point between the A and the DMX address

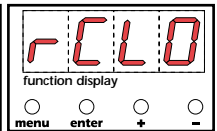**NOTE:** The pre-recorded scenes may be played back sequentially in the event of temporary control console failure.
NOTE: Pre-programmed scenes played back by the **DIGIfactor** are faded in to avoid abrupt lighting changes on-stage.
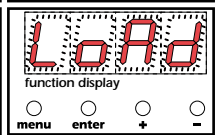
9.3.11. Switching off pre-recorded scenes

Pre-recorded scenes may be switched of when no longer required.
ATTENTION! the following procedure will not erase the scene, it will simply de-activate it until future use.
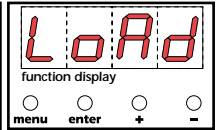
Power up the **DIGIfactor**	**A001** function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** turns on
Press the **menu** button	**MEAS** function display ○ menu ○ enter ○ + ○ −	Electronic display menu
Press the **+** or **-** buttons until **rEcL** is displayed	**rECL** function display ○ menu ○ enter ○ + ○ −	To recall the previously recorded scene
Press the **enter** button		To confirm your selection
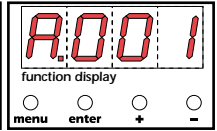
Press the **+** or **-** buttons until scene number **O** is displayed	`rCLO` function display ○ menu ○ enter ○ + ○ −	Scene **O** is displayed, non-modifiable
Press the **enter** button	`LoAd` function display ○ menu ○ enter ○ + ○ −	**DIGIfactor** loads the scene

The display will flash, indicating the need for confirmation; to escape at this point press the **menu** button

Press the **enter** button	`LoAd` function display ○ menu ○ enter ○ + ○ −	To confirm your selection

From this point **DIGIfactor** ceases to output the levels of the pre-recorded scene. Note that the address display no longer has a decimal point present.

|		
Indicating the absence of a pre-recorded scene	`A.001` function display ○ menu ○ enter ○ + ○ −	Note the decimal point between the A and the DMX address has switched off

10. Activating a back-up scene by remote

DIGIfactor 6 ch 5 Kw gives you the possibility of activating a back-up scene by remote control in case reception of the pilot signal fails. The back-up scene must be programmed as described in paragraph 9.3.10 and activated as explained in the following instructions.

1) Loosen the four screws (A) to release the rear panel (B)
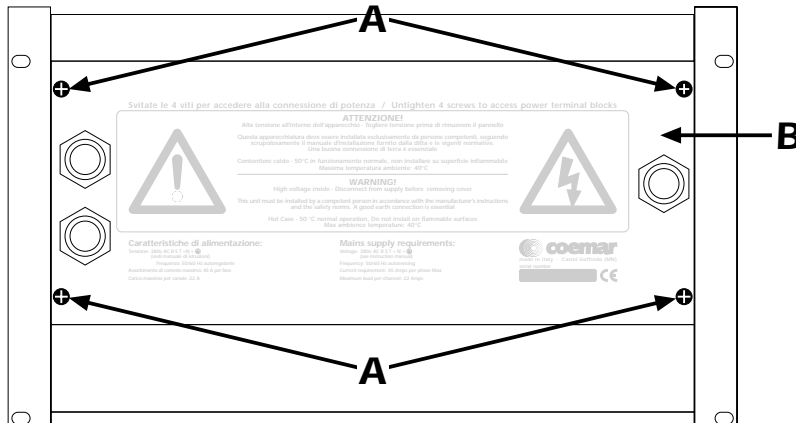
2) Locate the terminal block (C).

3) Connect a switch to the two poles in the terminal block as shown in the diagram.
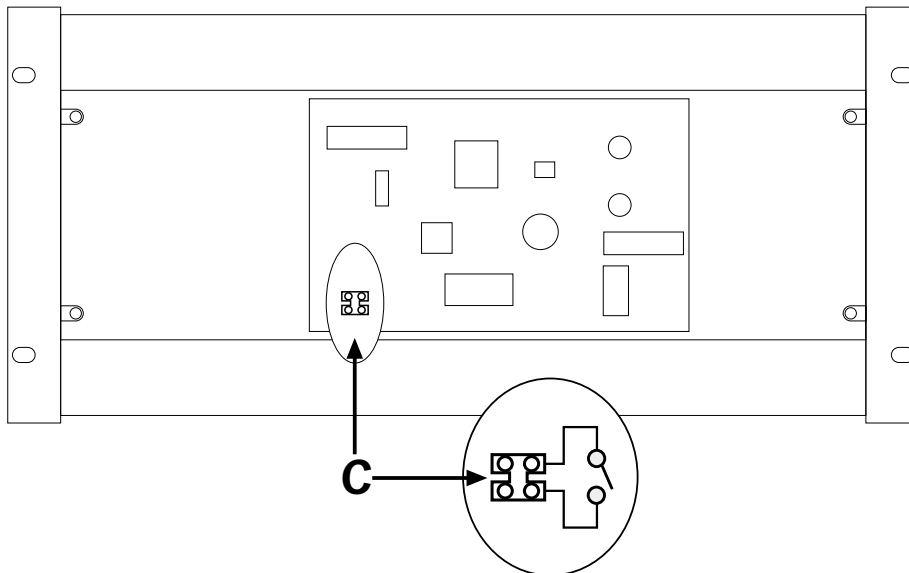
4) If the switch is open, **DIGIfactor** functions normally; if the contact is closed, however, the back-up scene you have chosen will be activated. The scene will appear in approximately 10 seconds in a way in which no perceptible change in luminous intensity will occur (as is usually the desired effect). One lighted flashing point on the display indicates the activation of a back-up scene.

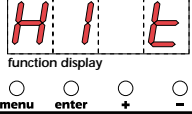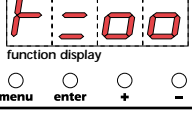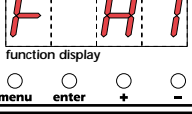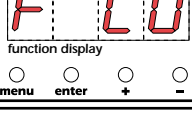5) To eliminate the back-up scene, simply re-open the switch.
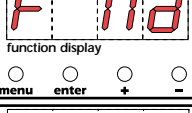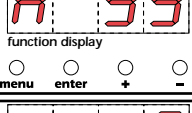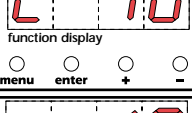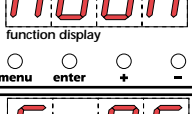
NOTE 1: the scene level is the absolute, DMX 512 and 0/10v DC inputs have no effect

NOTE 2: back-up levels have priority on recall scene

11. Error messages

DIGIfactor assists the installer and user in determining the reasons for possible failures; its memory contains the following error messages.

In the majority of cases, it may be advisable to seek the advice of an individual who has experience with the causes of errors which are described below.

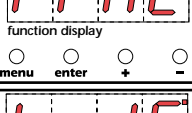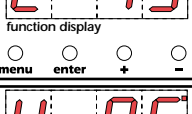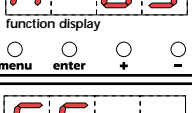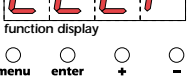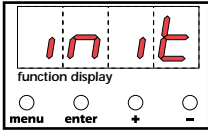| Display	Description
HIt (function display)	The internal temperature has exceeded 65°. The display will flash to indicate an abnormal state. **DIGIfactor** can continue to operate but is in danger of being damaged; adequate ventilation must be provided to resolve this problem
F=oo (function display)	An internal hardware failure has occured which is causing the unit to be unable to determine the operating frequency of 50-60 Hz. This message appears upon start up. Being a hardware problem, the unit will need to be referred to an autorised **coemar** sevice centre.
F HI (function display)	The frequency measured at start up exceeds 62 Hz **DIGIfactor** auto sets to 60 Hz; the power supply frequency problem will need to be investigated and the problem rectified in the short term. Note::light output adjustement could be wrongly set.
F LO (function display)	The frequency measured at start up is below 48 Hz **DIGIfactor** auto sets to 60 Hz; the power supply frequency problem will need to be investigated and the problem rectified in the short term. Note::light output adjustement could be wrongly set.
F Md (function display)	The frequency measured at start up falls between 52 and 58 Hz, and is therefore not standard. **DIGIfactor** auto sets to 50 Hz; the power supply frequency problem will need to be investigated and the problem rectified in the short term. Note:: light output adjustement could be wrongly set.
H 99 (function display)	The frequency, as measured during a electronic menu function exceeds the range of the unit's measurement capacity, which is between 10 and 99 Hz This condition can only be detected by a electronic menu function. The problem will need to be rectified in the short term
L 10 (function display)	The frequency, as measured during a electronic menu function falls below the range of the unit's measurement capacity, which is between 10 and 99 Hz This condition can only be detected by a electronic menu function. The problem will need to be rectified in the short term
nodM (function display)	No DMX signal present or not standard DMX 512. Check all DMX connections and the DMX 512 controller which may be switched off
FrME (function display)	The number of channels being transmitted to the **DIGIfactor** are below those indicated by its DMX address. The DMX signal cannot be interpreted correctly as it is incomplete. The dimmer requires more channels of DMX to be sent; consult your controller's manual
L 15 (function display)	The temperature is measured at below 15°C and is below the capacity of the unit to measure. This error will not compromise the correct functioning of the dimmer, however, it may indicate that the thermal sensor may have shifted its position in the dimmer's internals, perhaps during transportation. A check of this is recommended.
H 85 (function display)	The temperature as measured exceeds 85°C and is above the capacity of the unit to measure; it is imperative that the ventilation of the unit be check and improved before continued use.
EEcr (function display)	An error has occured in the EEPROM data. This error message will be shown immediately after powering up the unit. . In this situation **DIGIfactor** will attempt to rectify the error itself; success will depend upon the seriousness of the error. **DIGIfactor** will reset itself after the error has been corrected although it should be noted that data enterd via the menu functions may have been lost. **Attention!**: default settings may be incompatible with any switching circuits connected; if this condition is encountered, ensure all functions are returned to your settings.
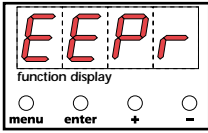
|	
EEPr function display ○ ○ ○ ○ menu enter + −	EEPROM access/reading error. **DIGIfactor** will operate only at the factory presets, ot any changes made via the menu functions. This error message indicates that the EEPROM is defective or missing. **Attention!**: default settings may be incompatible with any switching circuits connected; if this condition is encountered, ensure all functions are returned to your settings. Refer the unit to your **coemar** service centre for assistance.
init function display ○ ○ ○ ○ menu enter + −	Internal inizializing EPROM procedure

12. Maintenance

fuse replacement

The dimmer utilises 12 fuses for load protection

The indicatorsassociated with each channel will indicate a blown fuse; this indicator is easily seen.

Indicators will switch on to indicate a blown fuse, replace each fuse with one of similar dimensions and physical characteristics: T10A ceramic 6,2 X 32mm.
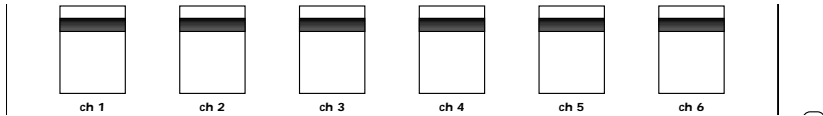

A lamp won't come on

A brief check-list of possible remedies to this situation.

1) Check that the mainbraker switch is on.
2) Check the circuit indicator to see if it shows that a fuse is blown.
3) Check the fixture's lamp is not blown.
4) Check the controller to isolate the dimmer as the cause of the problem.
5) Perform the test procedure as described in section 9.1.1.
6) Reset the memory of the EEPROM as indicated in section 9.3.6.
7) Follwing this. re-test the unit as described in section 9.1.1.

If, after this point, the dimmer is still not generating the required output, refer the unit to your authorised **coemar** service centre for assistance with your **DIGIfactor**.

replacing a triac

1) Loosen and remove the four screws (A) which affix the fron panel and access cover.
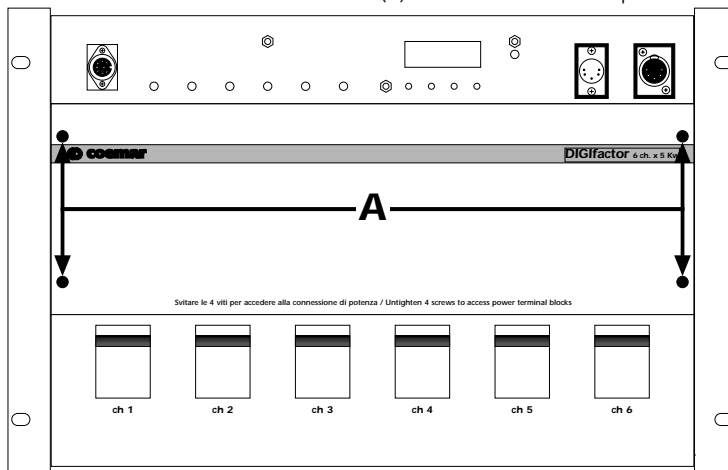
2) The metal plate which is seen internally holds the triacs which control the output voltage to each channel.
   To find the faulty triac, note that the cables which are located at this point are numbered as per the channels (from 1 to 6); the cabling schematic is reproduced in this diagram.
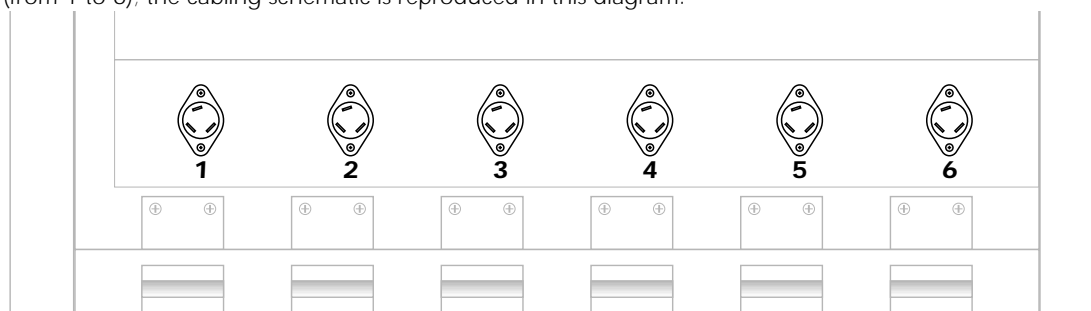
3) Locate the faulty component and replace it with an identical part: (BTA40).
4) Test the unit is functioning correctly and replace all components and covers.

Periodic cleaning

The fan and air passages should be inspected and cleaned at least every 12 weeks; this period of time may be shorter depending upon the unit's operating conditions.

To effect this cleaning use a common brush, vacuum cleaner, or air compressor.

If necessary, do not hesitate to perform this cleaning more frequently than recommended.

Electronic components.

Check all electrical connections, in particular the earth connection and all removeable connectors.

Press all connectors firmly, if necessary, re-affixing them as they were originally.

13. Spare parts

All the components of the **DIGIfactor 6 ch 5 Kw** are available as spare parts from your authorised **coemar** service centre.
To assist us in providing your with prompt and accurate service, carefully specify the model and serial number of the unit, and the spare parts which you require.

C E

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coemar si riserva il diritto di apportare modifiche senza preavviso.

coemar reserves the right to effect modifications without notification

manuale istruzioni

instruction manual

DIGIfactor 6 ch 5 Kw

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