

MA **nual**

dimMA + dimMAcompact + NDP Network Dimmer Processor

Version 2.24 10.2007

English

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1 Introduction

1.1 General

The *NDP* gives you the perfect control over up to 144 channels and, in case of a control failure, allows you to output saved Cues.

1.1.2 Programming functions and entering data

You can operate the NDP, together with the menu overviews indicated in this manual, just by using the integrated display, the Encoder and the keys. An even more practical and clear approach would be using a connected monitor plus an external keyboard.

You can, however, also use a remote control via a TELNET connection< our hotline would gladly help you with your questions.

1.1.3 Hardware and interfaces

The integrated flash disk contains the software as well as all data saved with the *NDP*.

1.2 About this guide

We have tried to describe the complex options possible when working with the *NDP* in a logical sequence. As you will see, working with this unit is easier as its multiple functions imply.

Have fun working with the NDP!



Electric shock warning on the rear of the *grandMA*

The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.

SAFETY INSTRUCTIONS

Remove power from the Rack before performing any work on it; in case live parts have to be exposed, these areas have to be clearly marked and secured.

All work must be performed by trained and qualified personnel only. Observe guidelines of your electric utility and the safety instructions of all competent authorities !

1. Read all the instructions in the user's manual, especially the safety requirements
2. Follow all instructions. Keep the user's manual for later use.
3. Follow all cautions and warnings indicated on the unit.
4. Disconnect the mains plug before cleaning the unit; don't use any liquid or spray cleanser. Clean with a dry cloth.
5. Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.
6. Unplug this apparatus during lightning storms or when unused for long periods of time.
7. Do not block or cover any ventilation slots in the housing - they guarantee the reliable functioning of the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer's instructions.
8. Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This may cause a fire and an electric shock.
9. Do not place the unit on unstable surfaces. It may fall and get damaged.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Besides others, you run the risk of suffering an electric shock.

11. All service work should be exclusively performed by qualified service technicians.

12. Do not use any high-power walkie-talkies or cellular phones near the unit.

13. If one of the following conditions occurs,

please disconnect the mains plug and call your dealer or technical support!

– Liquid penetrated the unit.

– The unit was exposed to rain or high ambient humidity.

– The unit does not function properly, even when following all the instructions in the manual. Only manipulate the controls as stated in the manual, wrong settings on the controls may damage the unit.

– The unit fell and the housing was damaged.

14. WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

If one of the following conditions occurs, disconnect the device immediately and call the customer service.

A. Power cord or plug are damaged or frayed.

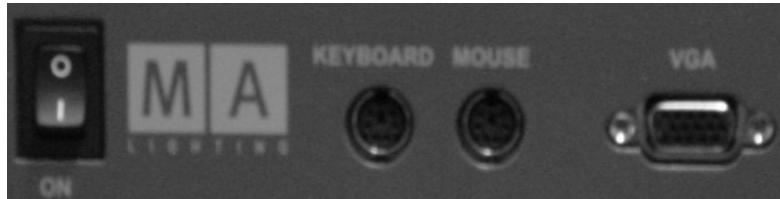
B. Fluid was spilled over the device.

C. The device was exposed to rain (or wet conditions of other forms).

D. The device does not function properly when abiding by the instructions of use. Do only adjust controls mentioned in the instructions, as an improper setting of other controls can cause damage; very often, it takes quite some time for the customer service technician to repair damages like these.

E. The device has dropped to the ground or the housing was damaged

controls and connection ports NDP



Keyboard port for a PS2 keyboard

Mouse port for a PS2 mouse (no function in this version)

VGA port for a VGA monitor

Mouse, keyboard and monitor are important e.g. for trouble shooting, but are not necessary for setup and operation

LINK the NDP has an active network connection

DATA displays the data communication in the network

ACTV indicates that the NDP is connected to the console and is active

PANIC indicates that the NDP is sending data (OUTPUT)

EXT indicates that the NDP is receiving data (INPUT)

ERROR the NDP is booting or has a failure

ESC

To move to the left in the menu; the orange LED is on, if the user is logged in as USER; the LED will blink (together with the LED in the MENU key), if there is a new message in the Message Log. After confirming the message using the ESC key, the blinking light will go out.



MENU

To move to the right in the menu; the green LED is on, if the user is logged in as ADMIN; the LED will blink (together with the LED in the ESC key), if there is a new message in the Message Log. After confirming the message using the ESC or the MENU key, the blinking light will go out.



OK

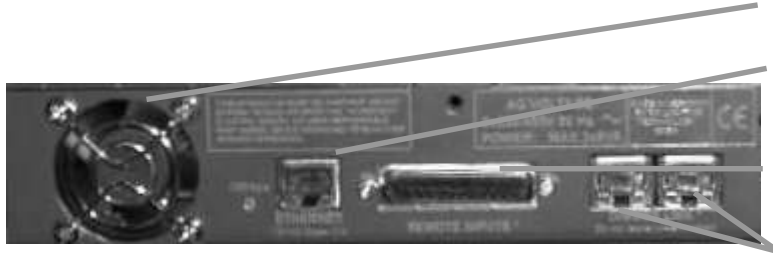
To confirm the entered changes.

RETURN

Will undo the entered changes, i.e. the old value will be inserted again, the check mark in the upper right corner of the menu, asking for a confirmation, will disappear, and the red LEDs on the OK and RETURN keys will go out.

RESET

For resetting the system. A short push with a ball penn or similar and the NDP starts booting.



Vent - do not cover!

ETHERNET 10/100 - base T/X
for RJ 45 plug-connection

REMOTE (remote keyboard port; see annex)

CAN-BUS termination 120Ω (must be plugged-in if there is no further connection)

NOTE: DO NOT CHANGE ETHERNET AND CANBUS.
DANGER OF DESTRUCTION



OUT A
ARTNET
Only DMX output

OUT B
ARTNET
Only DMX output

IN 2
IN jack or for the DMX-function, DMX-signal comes to OUT 2 without change.
MA-NET: no function in this version

IN 1
IN jack or for the DMXfunction, DMX-signal comes to OUT 1 without change
MA-NET: no function in this version



OUT D (THRU 2)
ARTNET: only DMX output of IN 2

OUT C (THRU 1)
ARTNET: only DMX output of IN 1

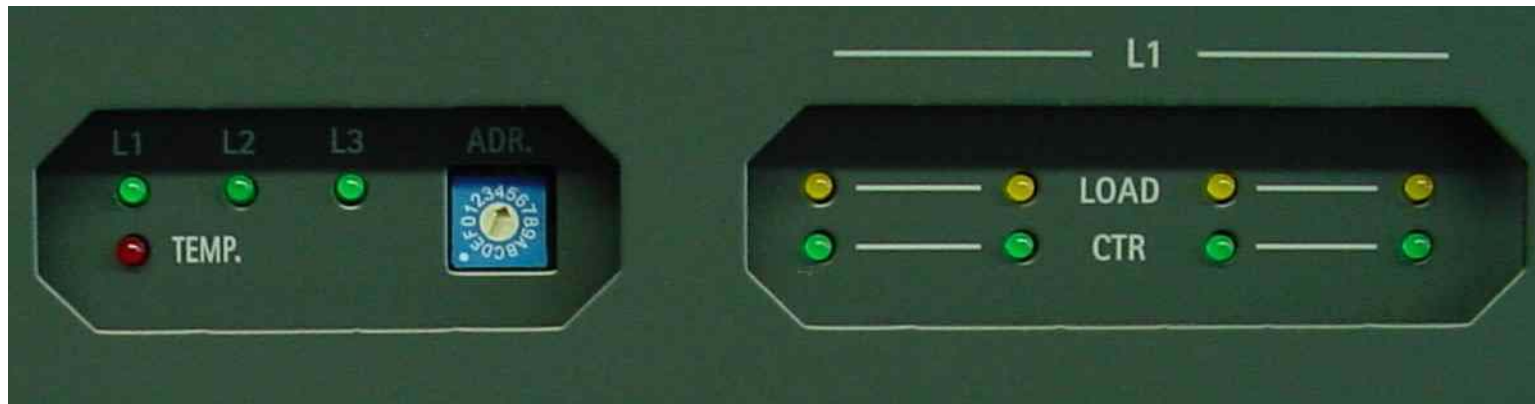
Controls and connection (COMPACT)

TEMP will be on, if there is an over temperature in the unit

LOAD (will only begin to be on, if there is a minimum of 50W per channel), accordant to the display in MONITOR CONSUMPTION

CTR (Control) will be on, if a control signal is being received (normal operating status)

L1 / L2 / L3 signals a failure of the corresponding phase



Setting (only necessary for the first start-up)

Addressing:

Adjust the address of each Compact dimmer unit by turning the blue rotary switch. Each Compact Dimmer-unit needs a unique number - avoid same number at two or more units!

For the at most 12 Compact dimmer units the numbers 1-9 and the letters A,B or C are intended. Other adjustments or double adjustment can cause malfunction of the dimmer.



CAN-BUS terminating resistor (R)

On a CAN-BUS connection, the first and last elements have to be provided with a resistor. This resistor must be switched on / off using switch n°. 4 on each module.

If the first or last element is a Crate:

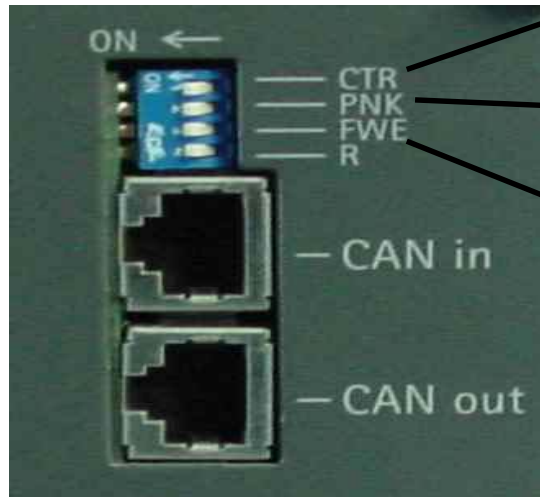
For this, set switch 4 on the Crate to the ON position. The figure on the left shows an assigned CAN-BUS input on the left side of the PCB: In this case, the left switch has to be set to OFF (no resistor, as the CAN-BUS connection is not ending here), the right switch n°. 4 must be ON (resistor active, as the CAN-BUS connection is ending here).

Switch 4 of the module in the middle has no function !

If the first or last element is a NDP:

Here, the resistor must already be implemented into the NDP ex works; see also further down in the manual.

Connections „CAN in“ und „CAN out“ can be used in any order - no particular „direction“.



Panic (PNK)

The modules to be activated when operating the PANIC button have to be preselected using Switch 3< for this, set Switch 3 to ON. Use this setting for each of the modules.

Control (CTR)

The modules to be activated when operating the CONTROL button have to be preselected using Switch 1< for this, set Switch 1 to ON. Use this setting for each of the modules.

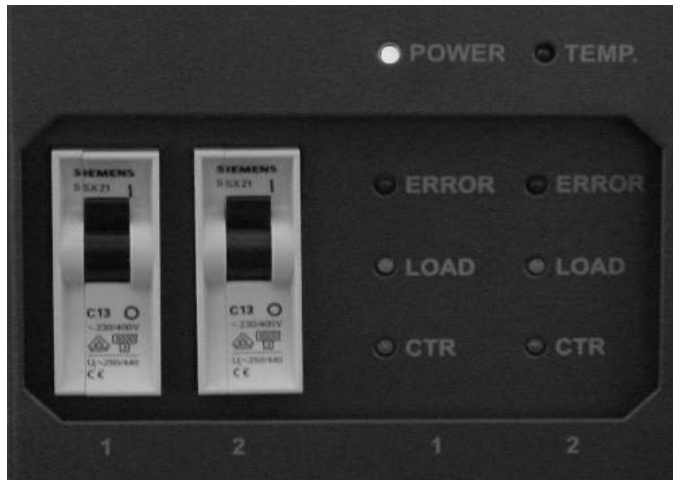
Update module (FWE)

You can have the NDP update the modules to a current software version. If you want to exclude a module from an update, „write-protect“ this module using Switch 2. To do this, set Switch 2 to OFF.

For modules to be updated by the NDP, you have to set Switch 2 to ON.

Use this setting for each of the modules.

dim *MA*



controls and connection ports MODULE

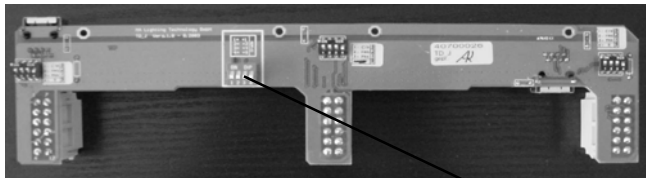
POWER will be on, if there is a power supply to the module (normal operating status)

TEMP will be on, if there is an over temperature in the module

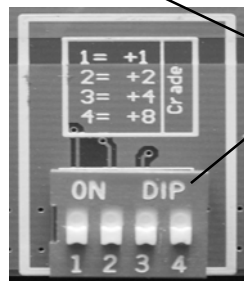
ERROR will be on for module failures

LOAD (will only begin to be on, if there is a minimum load of 200W on channel module 1, 100W&channel on channel module 2, and 50W&channel on channel module 4), and the display in MONITOR CONSUMPTION will start accordingly

CTR (Control) will be on, if a control signal is being received (normal operating status)

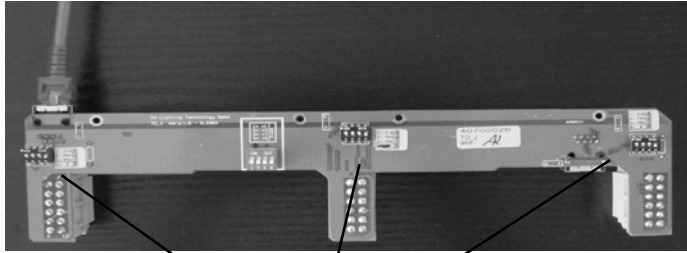


Settings on the crates (only necessary for the first start-up)



Addressing Crates:

Set the Crate number using the red switch - make sure to absolutely avoid double numbers !



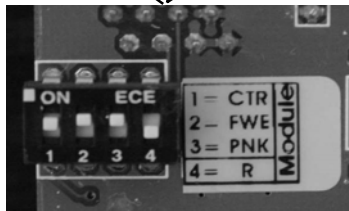
CAN-BUS terminating resistor (R)

On a CAN-BUS connection, the first and last elements have to be provided with a resistor. This resistor must be switched on / off using switch n°. 4 on each module.

If the first or last element is a Crate:

For this, set switch 4 on the Crate to the ON position. The figure on the left shows an assigned CAN-BUS input on the left side of the PCB: In this case, the left switch has to be set to OFF (no resistor, as the CAN-BUS connection is not ending here), the right switch n°. 4 must be ON (resistor active, as the CAN-BUS connection is ending here).

Switch 4 of the module in the middle has no function !

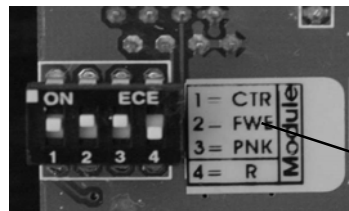


If the first or last element is a NDP:

Here, the resistor must already be implemented into the NDP ex works; see also further down in the manual.

Panic (PNK)

The modules to be activated when operating the PANIC button have to be preselected using Switch 3< for this, set Switch 3 to ON. Use this setting for each of the modules.



Control (CTR)

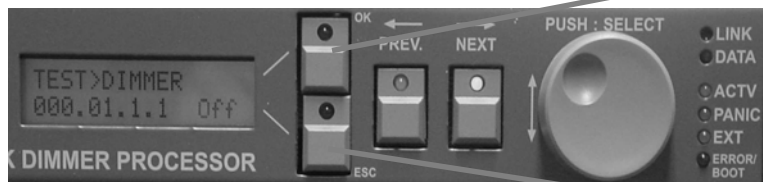
The modules to be activated when operating the CONTROL button have to be preselected using Switch 1< for this, set Switch 1 to ON. Use this setting for each of the modules.

Update module (FWE)

You can have the NDP update the modules to a current software version. If you want to exclude a module from an update, „write-protect“ this module using Switch 2. To do this, set Switch 2 to OFF.

For modules to be updated by the NDP, you have to set Switch 2 to ON.

Use this setting for each of the modules.



- Confirm your entry

- use **OK** to confirm the new setting (possible that the NDP will reboot automatically)

or

- use **RETURN** to discard the setting - the previous setting will be kept



Using the keyboard:

- select the menu (with the arrow keys)
- press the TAB key to enter changes
 - The cursor below the element that can be changed, will blink
- Enter numbers or use the arrow keys to select the new entry
- If the menu allows for multiple entries, use the arrow key or TABkey to jump to the next entry field<
- an exclamation mark at the right menu margin indicates that a new selection has been made that you still have to confirm.
- Confirm your entry
 - use **RETURN** to discard the setting - the previous setting will be kept
- or
- use **ENTER** to confirm the new setting (possible that the NDP will reboot automatically)

```

himMA Rack002 S> Version: 2.15
SYSTEM OK Mar 24 2006

S1:FAIL S2:OFF
MA Net

IP ADDRESS: >
192.168.000.117

```

```

himMA RACK 001> Version: 1.0
SYSTEM OK Jul 27 2004

S1: OK S2:OFF
ARTNET active

IP ADDRESS: >
192.168.177.114

L1:224V L2:227V
L3:226V t: 24C

I1: 0A I2: 0A
I3: 0A P: 0kW

Time: 11:36:32
Date: 29/07/04

7/1000 Cues
99% free

MESSAGE LOG > Dim 001.01.3.1 > Time: 10:07:25
No Load connect Date: 29/07/04

Dim 001.01.1.4 > Time: 10:07:24
No Load connect Date: 29/07/04

Dim 001.01.1.3 > Time: 10:07:24
No Load connect Date: 29/07/04

Dim 001.01.1.2 > Time: 10:07:24
No Load connect Date: 29/07/04

Dim 001.01.2.2 > Time: 10:07:24
No Load connect Date: 29/07/04

Dim 001.01.3.1 > Time: 10:07:24
Load resumed Date: 29/07/04

Dim 001.01.3.1 > Time: 10:06:56
No Load connect Date: 29/07/04

Dim 001.01.3.1 > Time: 10:06:55
Load resumed Date: 29/07/04

Dim 001.01.2.1 > Time: 10:06:50
No Load connect Date: 29/07/04

Dim 001.01.2.1 > Time: 10:06:49
Load resumed Date: 29/07/04

```

INFO menu

The Info menu displays general NDP data and the last 10 operational messages

During the boot process, the display will show a question mark (?) that will disappear after completion. Then, it will show a „M“ (for Master, the „pre-dominant“ device, if 2 NDPs are active), a „S“ (for Slave, the „reserve device“, if 2 NDPs are active) or no indication, if the NDP runs in solo mode. For further information, see Chapter „Several NDPs in parallel mode“

If an „E“ is shown, an error occurred on the CanBus. Please check the cable connections and rack numbers. If

Note: ***These errors will not be displayed on the grandMA***

Version number of the NDP software and the current date

Operating status of the slots and the protocol> in this case, Slot 1 is switched on, Slot 2 is not activated; ARTNET is activated as protocol

IP address and SUBNET

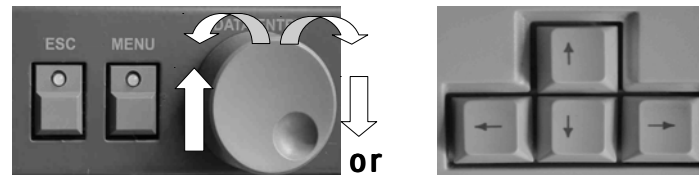
Voltage at the 3 conductors plus NDP temperature

Currents at the 3 conductors plus the present power input

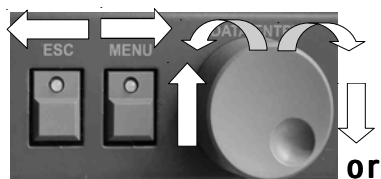
Current time and date

Number of saved Cues plus free memory capacity.

The last 10 operational messages. Use the Encoder or the arrow keys to scroll through the messages not visible



**Navigate with encoder
or arrow keys of an
extern keyboard**



Navigate with encoder
or arrow keys of an
extern keyboard

LOGIN menu

After switching on the unit, the NDP will boot automatically and be logged in as „Unknown User“. This user will not be authorized to change the settings (except date and time)

Login:

- use the RETURN or MENU keys and the Encoder (or the arrow keys of the external keyboard) to navigate to the LOGIN ADMIN or LOGIN USER cell
- Press the Encoder or TAB key (the cell to be changed will be marked by an underscore and will blink)
- Press the Encoder, until the desired digit appears, or enter it using the keyboard
- Jump to the next cell by pressing on the Encoder or the arrow key
- Use the OK or ENTER key to confirm and finish your entry

Operating mode as admin (monitor color green - LEDs of the menu keys have a permanent green light)
In delivery state, enter 1234 as password, login with this password and change it if needed.

Operating mode as user (monitor color orange - LEDs of the ESC keys have a permanent red light)
In delivery state, enter 1234 as password, login with this password and change it if needed.

Change the passwords for admin and user (only possible if logged in as admin):

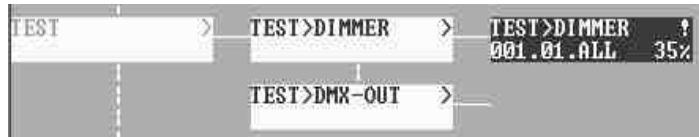
- use the RETURN or MENU keys and the Encoder (or the arrow keys of the external keyboard) to navigate to the LOG CHANGE PWD ADMIN or LOG CHANGE PWD USER cell
- Press the Encoder or TAB key (the cell to be changed will be marked by an underscore and will blink)
- Press the Encoder, until the desired digit appears, or enter it using the keyboard
- Jump to the next cell by pressing on the Encoder or the arrow key
- Use the OK or ENTER key to confirm and finish your entry

LOGOUT:

By logging out, the user status will be reset to „Unknown User“.

AUTO LOGOUT:

Here, you can set the timeframe after which the logged-in user will be logged out automatically, if no entries are made. This is to avoid unauthorized access to the NDP in case of longer absence.



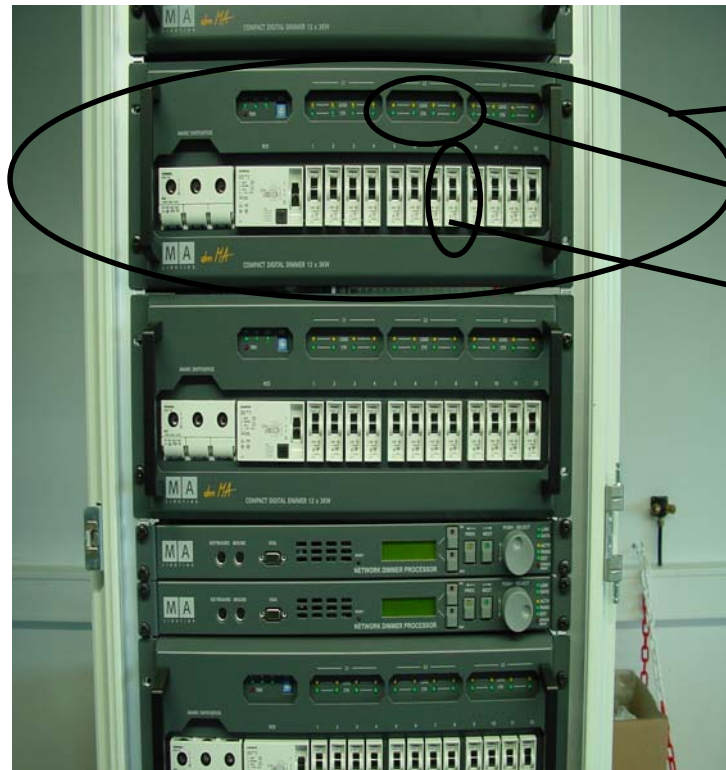
TEST menu

Here, you can test individual channels or channel groups.

TEST DIMMER: (Compact)

- Select dimmers or dimmer group.

A group can consist of all the dimmers of a Rack, a Crate or a Module. For this, set the respective number group to ALL. In the graphics, the channels of all modules of Rack n° 1, Crate n° 1 are set to 35%.



001.01.1.2

Rack number

001.01.1.2

Crate number (6 per Rack maximum; 12 crates per NDP)

001.01.1.2

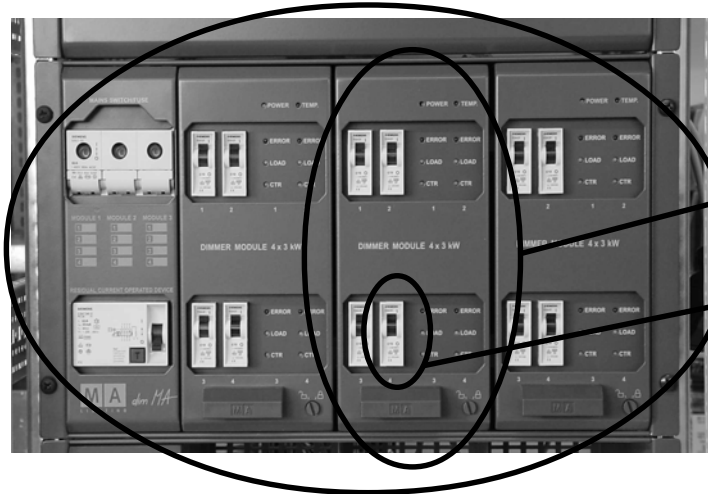
„Module“ number (always 3 „modules per crate)

001.01.1.2

Dimmer number (always 2 or 4 dimmers per „module“ are possible)

- press on the Encoder to set the Cursor to OFF, and use the arrow keys or turn the Encoder to select a dimmer value between 0 and 100%
- press OK to finish the test. If you jump back to the TEST>DIMMER cell, the test will be cancelled and all dimmers will go to 0 value.

TEST DIMMER: (Module)



001.01.1.2

Rack number

001.01.1.2

Crate number (6 per Rack maximum; 12 crates per NDP)

001.01.1.2

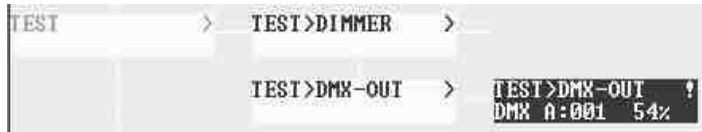
Module number (3 per Crate maximum)

001.01.1.2

Dimmer number (depending on the module type, 1, 2 or 4 dimmers per module are possible)

- press on the Encoder to set the Cursor to OFF, and use the arrow keys or turn the Encoder to select a dimmer value between 0 and 100%
- press OK to finish the test. If you jump back to the TEST>DIMMER cell, the test will be cancelled and all dimmers will go to 0 value.

TEST DMX:



- Select a DMX output (A or B)
- Select a channel number (1 - 512)
- Set the brightness value and confirm with OK or ENTER
- Exit the menu using the ESC key or the arrow key on the left side cancelling the test and resetting the brightness value to 0

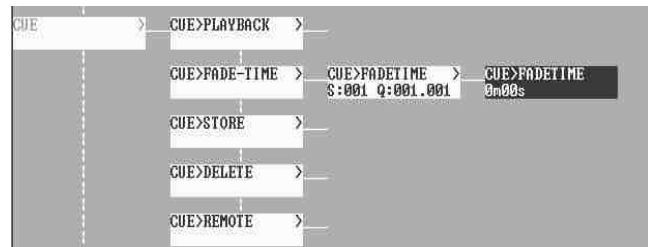
CUE menu

Cues are stage (light) images that can be saved and called up at a later time. You can save up to 1,000 Cues. For a better overview, you can group Cues in 2 number blocks< this is helpful, e.g. to create coherent groups.

Additionally, you can save Cues into sequences (a kind of folder).

In order to identify a Cue, you have to enter the sequence number and the respective Cue number. Cues do not have to have unique numbers, as long as they are saved to different sequences.

You can work with Cues directly from the NDP or via an external keyboard; you can also use a REMOTE keyboard with up to 64 assignable Cue keys - the table in the annex of this manual contains the assignment of this REMOTE keyboard.



CUE PLAYBACK:

Here, you can start or stop Cues.

- Enter the sequence number and the Cue number, and confirm with OK or ENTER
- Stop the Cue using the NDP's RETURN key or the ESC key on the keyboard, or start the next Cue using OK or ENTER (the last Cue will then be stopped automatically)
- If a Cue had been started with a REMOTE key, you can stop it from this menu.

- If a Cue had been started with a REMOTE key, and another Cue is then started from the PLAYBACK menu, both Cues will be output, i.e. the starting values will be overwritten. If a Cue had been started with a REMOTE key, the same Cue can be stopped from the menu< vice versa, a Cue started from the menu can be stopped using a REMOTE key, on which the same Cue had been set.

CUE FADE TIME:

Here, you can set the fade time (fading in of the Cue) between 0 and 5 minutes. Each Cue can be assigned an individual fade time.

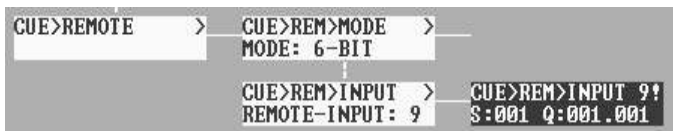
- Enter the Cue address and then set the desired fade time.

CUE STORE:

Here, you can store the dimmer setting as a Cue.

- Set the desired dimmers
- Set the desired sequence and Cue numbers. STORE will appear above the Cue number, if there is still a number available. Confirm with ENTER or the OK key

Note: if OVWR (Overwrite) appears above the Cue number, this Cue number is already assigned; either choose an unassigned Cue number or use ENTER to overwrite this Cue. This will delete the previous contents of this Cue.



CUE DELETE:

To delete Cues. Caution: this procedure cannot be undone.

- Enter the Cue address and confirm with ENTER or the upper NDP key.

WARNING: After deleting a Cue, the next one will be set into the cell - another ENTER will also delete this Cue.

CUE REMOTE:

Here, you can assign stored Cues to keys of the remote keyboard, and set the size of the keyboard and its key assignment.

REMOTE MODE:

RECALL always works in the X-Fade mode, regardless of which setting is displayed in CUE>REM>FADE.

In this mode, the keys are assigned no Cues but functions> Key 1: GO+ = will fade to the next Cue when pressed (beginning with the lowest numbered Cue. If a Cue had already been started using the PLAYBACK function, this will start the following Cue); the CUE>PLAYBACK>GO menu will display the called-up Cues. Key 2: GO- = will fade back to the last Cue Key 3: OFF = will switch off the current Cue Key 4: PAUSE = will interrupt the fade of a Cue; Pressing again on this key will cancel the interruption Key 5: TOP = will always start the lowest numbered Cue Key 6: STORE = Will store the set Cue, see CUE>STORE

6 bit 64 key remote keyboard, freely assignable with stored Cues

DIRECTt 6 key remote keyboard, freely assignable with stored Cues

REMOTE FADE:

X-Fade The selected Cue will fade in with the set time and will fade out the previous Cue. To switch off the Cue, press this key again or switch on the next Cue.

HTP Pressing once will switch on the Cue, pressing twice will switch it off again. It is possible, to switch on multiple Cues simultaneously. The keyboard functions according to the HTP principle, i.e. if a fixture is given in multiple Cues, and these were switched on, this fixture will receive the highest value.

REMOTE INPUT: (for 6 bit and DIRECT only)

- Select the REMOTE-INPUT number (the number of the key to be assigned)
- Enter sequence and Cue number and confirm
- Besides the sequence numbers, you can also enter EMPTY (below the figure 1 or 0), which will delete the assignment of this key.

All Cues OFF: (for 6 bit and DIRECT only)

To stop all Cues that had been switched on using Remote keys,

- press all 6 Remote keys (on 64 keys keyboards the first 6 keys) simultaneously. This will switch all keys and all Cues OFF, regardless of how many Cues were started.

PANIC & CONTROL menu

Using the Remote output, you can also assign a PANIC button and a CONTROL button, besides the 6 freely assignable keys to switch on and off stored Cues. Both buttons will function even if the NDP control should fail and, thus, guarantee an accurately defined lighting in case of malfunctions.



PANIC STORE:

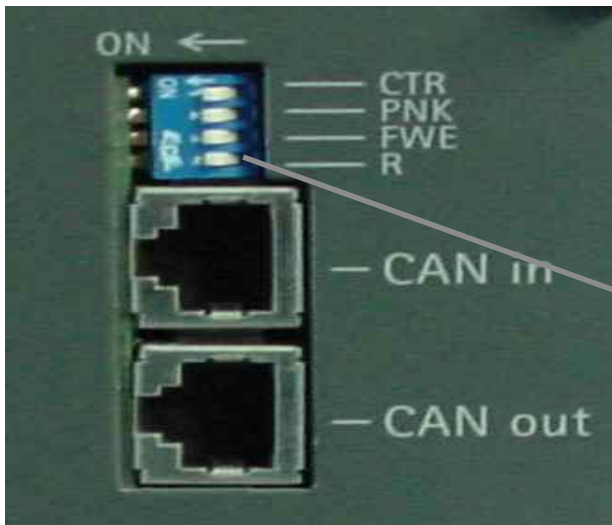
Here, you can store the fixtures and dimmer settings for the Panic lighting

- Adjust the fixtures to the desired dimmer setting
- store the setting using STORE



CONTROL STORE:

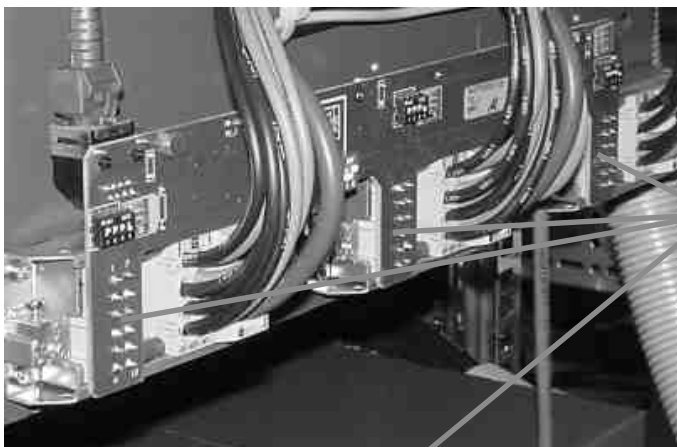
- Adjust the fixtures to the desired dimmer setting
- store the setting using STORE



Setting the Panic lighting: (COMPACT)

In order to avoid switching on all connected fixtures by pressing the Panic button - which could lead to an overload - you have to activate the dimmer channels needed for the case of a Panic scenario.

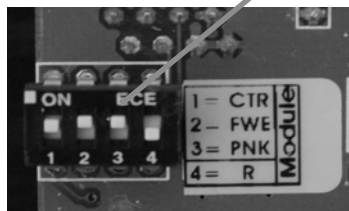
- Set Switch (PNK) of the respective module to ON; hereby you can use this module for the PANIC CUE



- Set Switch (PNK) of the respective module to ON; hereby you can use this module for the PANIC CUE

REMOTE keyboard:

For in depth information and specifications on the installation of a keyboard remote control please refer to the table given in the annex of this manual



dim *MA*

VIEW menu

Here, you can find the brightness values of the outputs displayed in %. You will only see existing elements, i.e. you can set the menu number blocks only to those numbers present. You cannot make any changes in this menu.



VIEW DIMMER:

- Enter the Rack, Crate, module, and dimmer numbers and confirm with ENTER or OK. On the right side, you will find the brightness value of the chosen dimmer in %.



VIEW CRATE:

- Enter Rack and Crate number and confirm with ENTER or OK.

Note: The items appearing on the display of the NDP will, due to technical reasons, differ from what you see on an external monitor. The NDP displays the outputs as bars, whereas the monitor will use numbers.

In the graphics on the left side, you see the outputs of Crate 1 of Rack 1. Each first dimmer of every module displays the starting values.



VIEW DMX:

- Select a DMX input (1 or 2)
 - Set the dimmer number
- The setting will be displayed as % value

- Confirm using the OK key or press ENTER and exit the menu using the ESC key or the arrow key on the left side



VIEW ETHERNET:

- Select Universe (E1 or E2)
 - Set the dimmer number
- The setting will be displayed as % value

- Confirm using the OK key or press ENTER and exit the menu using the ESC key or the arrow key on the left side

```

CONFIG > CONFIG>LANGUAGE> CONFIG>KEYBOARD
English English GERMANY
CONFIG>DATE >

```

CONFIG menu

To configure the NDP, the Crates and modules.

CONFIG LANGUAGE:

Here, you can select the menu language - currently only English available

CONFIG DATE:

Here, you can set the current date

CONFIG TIME:

Here, you can set the current time

Changes: within the menu, use TAB to jump to the cell, and set the value using ARROW UP or ARROW DWN and confirm with ENTER.

```

CONFIG > CONFIG>LANGUAGE>
English
CONFIG>DATE >
CONFIG>TIME >
CONFIG>ETHERNET> CF>EN>IP CF>EN>SUBNET
192.168.000.117 255.255.255.0
CF>EN>NETNAME
d1mPA

```

CONFIG ETHERNET IP:

- Enter the subnet and port numbers.
- Enter network-name for this rack (optional)

CONFIG ETHERNET Netname:

- Enter a name for this NDP (optional)

CONFIG ETHERNET SNMP (Simple Network Message Protocol):

- Enter the port number of the interrogating station (for fast monitoring of status of the units)

CONFIG LOCAL:

CONFIG LOCAL RACK SESSION:

- Enter session ID-number

CONFIG LOCAL RACK NUMBER:

- Enter Rack-number

LOAD CONFIG FROM:

Loading an configuration from another NDP is possible.

- enter the IP-adress of the NDP you want to load the configuration from.
- press ENTER or OK
- enter YES with arrow buttons or encoder and press ENTER or OK for confirmation

LOCAL BACK UP:

- Noch keine Funktion

ALERT BEEP:

- Disabled: acustic warning is disabled Enabled: acustic warning is activ

```

CONFIG > CONFIG>LANGUAGE>
English
CONFIG>DATE >
CONFIG>TIME >
CONFIG>ETHERNET>
CONFIG>LOCAL > LOCAL RACK>SESS
Session-ID: 1
LOCAL RACK>NO
LOCAL RACK: 001
LOAD CFG FROM
192.168.0.118
LOCAL BACKUP
NO BACKUP

```

dim *MA*

```

CONFIG>RACK > CF>RK>SETTINGS > CF>RK>CREATE > CF>RK>CREATE
RACK: 002 DON'T CHANGE

```

CONFIG RACK:

CLEAR Will delete the assignment to the NDP and all module configurations. The dimmers will be operated according to the setting of the FAIL mode, while PANIC and CONTROL will, of course, continue to function.

DONT CHANGE There will be no changes to the configuration

72x 1.4 kVA 380ms..etc: possible configurations of the Rack. You can set a configuration, even if not all modules are available - they will then be displayed with the status „VIRTUAL“. Configurations not contained in the selection can be transferred using SCAN (see below).

```

CONFIG>RACK > CF>RK>SETTINGS > CF>RK>CREATE >
CF>RK>SCAN > CF>RK>SCAN
RACK: 002 YES

```

CONFIG RACK SCAN:

● The setting SCAN FOR MODULES allows you to search for and display all accessible modules< this process will take some seconds.

This function is especially helpful during trouble shooting or after having inserted new modules.

NOTE: All virtuell dimmer disapears, only the active dimmer are displayed. If a module was inserted after scanning, repeat scanning.

```

CF>RK>COPY > CF>RK>CP>SOURCE> CF>RK>CP>TARGET> CF>RK>CP>OPTION> CF>RK>CP>CONFIR?
RACK: 002 DIM: 01.1.1 01.1.1 - 02.3.4 MODE:Switch 50- START COPY
CF>RK>CP>OPTION>
CONTROL: 8bit -
CF>RK>CP>OPTION>
PROFILE: User 5-
CF>RK>CP>OPTION>
Umax: 240 -
CF>RK>CP>OPTION>
Umin: 000 -
CF>RK>CP>OPTION>
Preheat: 000% -
CF>RK>CP>OPTION>
Resp-Time: 000n-
CF>RK>CP>OPTION>
FAULT REPORT:In-

```

CONFIG RACK RACK-No:

Here, you can select the Rack number

CONFIG RACK BACKUP:

Currently without function

CONFIG RACK COPY:

Here, you can copy, within a Rack, configurations of individual dimmers to other dimmers or racks. Settings can be copied simultaneously to multiple dimmers of different Crates.

For this, source and target dimmers have to be attached and be addressable within the network.

- CF>RK>CP>SOURCE>DIM: here, choose the dimmer (source)
- CF>RK>CP>TARGET>DIM: here, choose the dimmer (target)
- select the option you want to copy
- CF>RK>CP>CONFIRM: use TAB to select the START COPY command, and start the copying with RETURN or the OK key

you can transfer the following parameters from one dimmer to another:

- Dimmer mode
- Control mode
- Profile
- Umax (maximum drive)
- Umin (minimum drive)
- Preheat
- Fault report


```

CF>RK>SLOTS > CF>RK>SLOTMODE > SLOT 1 CONFIG > CF>RK>SLOT>UNIV
1-HTP-2 Universe: 1 (A)
CF>RK>SLOT>PATCH
Patch: IND.
CF>RK>SLOT>SRC
Source: Off
CF>RK>SLOT>WIDTH
Width: 1 line
SLOT 2 CONFIG >

```

```

CF>RK>SLOT > CF>RK>SL-SOURCE >
CF>RK>SL-PATCH >
CF>RK>SL-MODE > CF>RK>SL-MODE
SLOT 1-OVER-2

```

CONFIG RACK SLOT:

CONFIG RACK SLOTMODE:

SLOT 1 - HTP - 2 HTP = Highest Takes Precedence the higher value of slot 1 and 2 will be output
 SLOT 1 - LTP - 2 LTP = Latest Takes Precedence the lowest value of slot 1 and 2 will be output
 SLOT 1 ONLY Only the values from slot 1 will be output, slot 2 will be disregarded
 SLOT 2 ONLY Only the values from slot 2 will be output, slot 1 will be disregarded
 1 OVER 2 The values from slot 1 will be output, but in case of a malfunction or failure, those from slot 2 will be output

SLOT 1 CONFIG:

UNIVERSE:

Enter the required universe . At the moment only usefull with MAnet; later also with ARTNET and DMX.

PATCH:

Patching is necessary to assign an address to a dimmer channel. The dimmer number will be kept - the patch can be changed - this will also change the assignment of the slider controls on the console.

Here, you can set the dimmer addressing. You just begin with the first number of the first dimmer - all following dimmers will then be numbered in ascending order. If the index is displayed with an „IND“, this means that the addressing had been made individually. Patch numbers always consist of a S1 and a S2 number. This allows you to trigger the fixtures in both slots; if you only use one slot, the number of the second slot is irrelevant.

Example 1: S1 and S2 are set to 0001; i.e. all dimmers will be numbered automatically, beginning with 1.

Example 2: S1 is set to 0007, S2 to 0001; i.e. the dimmer with the lowest number receives patch number 7, the next one patch number 8.

IND = you can set an individual address in CONFIG CRATE MODULE / DIMMER. If you change the address from the CONFIG CRATE menu while a number is displayed, it will automatically switch to IND.

SOURCE

OFF: NDP has no function.

DMX: DMX-IN is activ (for NDP only 2 DMX-In jacks, only two combinations are possible:

SLOT1 2 Lines + SLOT2 DMX -IN not possible

SLOT 1 1Line + SLOT 2 1 Line

ARTNET: ARTNET is activ

MAnet: MAnet is activ

WIDTH

1 Line: The above selected universe (SLOT1 CONFIG UNIVERSE) is activ

2Lines: The above selected universe and the following universe are activ (e.g. with universe A always the following universe B is activ)

SLOT 2 CONFIG:

Same function as for Slot 1.

NOTE: If 2 lines are selected in SLOT 1 SOURCE DMX , Slot 2 cannot switched to DMX.

```
CF>RK>CUE-LINK > CF>RK>CUE-LINK
CUE-LINK is: OFF
```

CONFIG RACK CUE LINK:

OFF: Cue Link is inactiv

ON: all commands for cues will done on all dimmers with selection CUE LINK ON

```
CF>RK>SLOT-FAIL> CF>RK>FAILMODE
HOLD LAST OUTPUT
```

CONFIG RACK SLOT FAIL:

Here, you can define how dimmers will work in case of a control failure.

- HOLD LAST OUTPUT the last output will be kept
- FADE OUT the last output will be faded out after the set fade time

```
CF>RK>SLOT-FAIL> CF>RK>FAILMODE > CF>RK>FAILMODE ?
FADE CUE                           S:001 Q:003.001
```

FADE BLACK: here, you can set the fade out time

- FADE CUE S: / Q: here, you can select the Cue to be called up in case of a control failure

```
CF>RK>UOLTAGE > CF>RK>UOLT-ADJ
ADJUSTMENT                        ENABLED
```

CONFIG RACK VOLTAGE:

- ENABLED Voltage adaptation is on
- DISABLED Voltage adaptation is off

```
CF>RK>OURCURR > CF>RK>OURCURR ?
OVERCURRENT: 958A
```

CONFIG RACK OVERCURRENT:

Here, you can set the amperage value, as of which an error message is to be signalled

```
CF>RK>LTP-HYST > CF>RK>LTP-HYST
HYSTERESIS: 2
```

CONFIG RACK LTP HYST:

Here, you can set the hysteresis for the LTP-module . Setting from 2 til 20 increases the threshold value. This means, changing value within the threshold value, creates not change in output. So you can avoid, that little changes in value (e.g. deviation) creates changes in output. Changes above the threshold value creates a change in output. Setting must be adapted to circumstances.

```
CF>RK>FLASH > CF>FACT>FLASH ?
CONFIRM: YES
```

CONFIG RACK FLASH:

Here, you can update the modules. First, you have to load the current software onto the NDP using a FTP connection. Please contact your next MA - service.

- Set CONFIRM to YES and confirm - it will take some seconds, until all module updates are complete. You can check the module software versions in MONITOR in the CANPACK menu.

```
CF>CRT>MOD>DIM > DIM 001.01.1.1
DIM: 001.01.1.1                    MODE: Dim
                                    DIM 001.01.1.1 ?
                                    CONTROL: 8bit/S
```

CONFIG CRATE / MODULE / DIM:

- Choose a Crate
- Choose a module - the next cell shows the module type
- Choose a dimmer - depending on the type of module, 1, 2 or 4 dimmers are available

CONFIG CRATE / MODULE / DIM / MODE:

- OFF The dimmer remains off
- DIM The dimmer will be dimmed with the set parameters (see below)
- SWITCH xx% The dimmer will be switched on (with the Umax value) at the set % figure
Switching point is sinus = 90° (only with the first sinus)

```
CF>CRT>MOD>DIM > DIM 001.01.1.1 ?
DIM: 001.01.1.1 MODE:Switch 40%
```

```
CF>CRT>MOD>DIM > DIM 002.01.1.1
DIM: 002.01.1.1 MODE:off
DIM 002.01.1.1
CONTROL: 8bit
```

```
CF>CRT>MOD>DIM > DIM 002.01.1.1
DIM: 002.01.1.1 MODE:off
DIM 002.01.1.1
CONTROL: 8bit
DIM 002.01.1.1
S1: 241 S2: 1
```

```
DIM 001.01.1.1 ?
PROFILE: S-Curve
```

```
DIM 001.01.1.1
Umax: 240
DIM 001.01.1.1
Umin: 001
```

```
DIM 001.01.1.1 ?
Preheat: 006%
```

NON DIM xx% The dimmer will be switched on (with the Umax value) at the set % figure
Switching point is $\sinus = 0^\circ$

CONFIG CRATE / MODULE / DIM / CONTROL:

8 bit The channel will be controlled in 8 bit mode, i.e. the brightness range is divided into 256 increments

8 bit / S The channel will be controlled in 8 bit mode and has an additional channel that will trigger changed values with a set fade time.

16 bit The channel will be controlled in 16 bit mode, i.e. the brightness range is divided into 65536 increments

16 bit/S The channel will be controlled in 16 bit mode and has an additional channel that will trigger changed values with a set fade time.

NOTE: After changing the modus a new scan is necessary

CONFIG CRATE / MODULE / DIM / PATCH:

Here, you can patch the dimmer, i.e. assign an individual address to the dimmer, if it is not to be patched automatically by the system.

● Enter S1 as patch number, and, if needed, S2 as another patch number. If you change a patch number, the display in CONFIG>RACK>SLOT>PATCH will automatically switch to IND (individual)

Patch numbers always consist of a S1 and a S2 number. This allows you to trigger the fixtures in both slots; if you only use one slot, the number of the second slot is irrelevant.

Patch numbers can be assigned individually or automatically, but the dimmer number cannot be changed as it will be made up from the Rack and Crate numbers plus the channel number of the module.

CONFIG CRATE / MODULE / DIM / PROFILES:

Here, you can set the dimmer profile. Besides the preset wave forms, you can enter up to five self-created profiles. These profiles will be saved as User 1 - 5. (not available in this version)

CONFIG CRATE / MODULE / DIM / Umax: / Umin:

Here, you can limit the controlled channel range. This will refer all percentage values to the limited range;

Example: if you set Umin to 0 and Umax to 120, 50% will then correspond to an output of 60V.

CONFIG CRATE / MODULE / DIM / PREHEAT:

With a Preheat setting of more than 0%, the fixture will permanently run on a freely adjustable value, i.e. it will be „preheated“ so to speak. For some types of fixtures it makes sense to set a preheat, to accelerate the ramping up of the fixture and be easy on it.

dim *MA*

```
CF>CRT>MOD>DIM > DIM 002.01.1.1
DIM: 002.01.1.1 MODE:Off
DIM 002.01.1.1 CONTROL: 8bit
DIM 002.01.1.1 S1: 241 S2: 1
DIM 002.01.1.1 PROFILE: NONE
DIM 002.01.1.1 Umax: 240
DIM 002.01.1.1 Umin: 000
DIM 002.01.1.1 Preheat: Off
DIM 002.01.1.1 DMX #0241
```

CONFIG CRATE / MODULE / DIM / DIMMER NAME:

Here you can enter a dimmer name

```
DIM 001.01.1.1 > DIM 001.01.1.1
FAULT REPORT:Ind LOAD-CHECK On
DIM 001.01.1.1 MCP TRIP On
DIM 001.01.1.1 OVER-LOAD On
DIM 001.01.1.1 EXCESS DC Off
```

CONFIG CRATE / MODULE / DIM / FAULT REPORT:

Here you can suppress multiple error messages

- LOAD CHECK: Will indicate the failure of fixtures (mind the minimum loads, see page 6))
- MCP-TRIP: An error message will be displayed if errors occur in CAN / ETHERNET transmissions
- OVERLOAD: An error message will be displayed if an overload occurs
- EXCESS DC: An error message will be displayed if an overvoltage occurs

- OFF: Will be displayed if all reports have been deactivated
- ON: Will be displayed if all reports have been activated
- IND: Will be displayed if only some reports have been activated

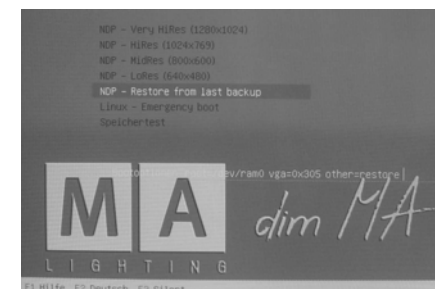
CONFIG / BOOT (only accessible with administrator rights)

CONFIG / BOOT / SCREEN:

Here, you can set the resolution of the external monitor.

CONFIG / BOOT / WAIT:

Here, you can set the dwelling time of the start menu. After this time, the menu disappears automatically



CONFIG / IMPORT:

without function

MONITOR menu

The different MONITOR menus show all recorded operating status of dimmer modules. This can only be displayed on an external monitor plus keyboard, the menus cannot be displayed on the NDP.

- Use the F1 key to switch over from the REMOTE console to the MONITOR
- Use the F1 key to switch over from the MONITOR to the MAIN menu

LOG:

Use the F1 key to switch over from the main menu to the monitor menu and activate it pressing F3

```
*** Log ***
223 02/08/04 14:41:46 Rack 001 - Administrator logged out by time-out
222 02/08/04 10:14:06 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
221 02/08/04 10:14:04 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
220 02/08/04 10:14:03 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
219 02/08/04 10:13:48 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
218 02/08/04 10:13:47 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
217 02/08/04 10:13:45 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
216 02/08/04 10:13:44 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
215 02/08/04 10:12:11 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
214 02/08/04 10:12:10 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
213 02/08/04 10:12:01 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
212 02/08/04 10:11:59 Dimmer 001.01.1.1 <100.01.1 4e> - Load again connected or lamp o.k.
211 02/08/04 10:08:56 Dimmer 001.01.1.1 <100.01.1 4e> - No Load connected or lamp failure
```

This is where all operational messages are saved that were put out after booting the NDP. The messages are more detailed as those in the message log.

CONSUMPTION:

Use the F1 key to switch over from the main menu to the monitor menu and activate it pressing F4

*** CONSUMPTION ***															
ID	Module	leff	W	Dimmer 1	leff	W	Dimmer 2	leff	W	Dimmer 3	leff	W	Dimmer 4	leff	W
*** PHASE 0 ***															
		U=	238	I=	0.0	W=	0								
01.1	1.01	<ACTIVE	4- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
02.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
03.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
04.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
05.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
06.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
07.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
08.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
09.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
10.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
11.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
12.1		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
*** PHASE 1 ***															
		U=	241	I=	0.0	W=	0								
01.2	1.01	<ACTIVE	2- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
02.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
03.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
04.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
05.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
06.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
07.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
08.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
09.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
10.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
11.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
12.2		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
*** PHASE 2 ***															
		U=	240	I=	0.0	W=	0								
01.3	1.01	<ACTIVE	1- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
02.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
03.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
04.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
05.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
06.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
07.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
08.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
09.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
10.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
11.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
12.3		<OFF	0- - - > :	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0

ID:

Identification number of the Crate (01 - 12) and of the module (1,2, or 3)

Software version:

Shows the version of the loaded software (see graphics 1.01)

Operating status:

OFF = the Crate or the Phase are not logged on and not attached ACTIVE = the Crate and the respective Phase are active VIRTUAL = the Crate is logged on, but not yet attached

Number of dimmer channels:

Here you find the number of dimmer channels of the respective module (1,2, or 4)

Modules I eff:

Effective current

W:

Power output

dimmer 1 /2 /3 /4:

Here, current and power of each dimmer of the module are displayed. The green figures indicated the active dimmer channels, the white ones those inactive.

TIMESTAMP: When the display changes, data are being transferred - the display itself does not contain any information

CAN - PACKETS:

Use the F1 key to switch over from the main menu to the monitor menu and activate it pressing F10

Module	Version	Status	Dimmer1	Dimmer2	Dimmer3	Dimmer4
01.1	1.01	<VIRTUAL 4- - - >	00-00	20-66	00-00	00-00
01.2	1.01	<VIRTUAL 2- - - >	20-66	00-00	00-00	00-00
01.3	1.01	<ACTIVE 1- - - >	00-00	00-00	00-00	00-00
02.1		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
02.2		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
02.3		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
03.1		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
03.2		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
03.3		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
04.1		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00
04.2		<VIRTUAL 0- - - >	00-00	00-00	00-00	00-00

This is where the status of all connected dimmers is displayed. Right of the software version number you find the status ACTIVE or OFF, and the module type (4 , 2, or 1 - dimmer). Green values in the respective dimmer column indicate an active status and the output DMX value.

- MODULE Here you find the CRATE number (01 - 12) and the respective MODULE number (1-3)
- VERSION This gives you the software version number; all modules should have the same software version - else update with CONFIG RACK FLASH
- STATUS Gives you the module status and the number of dimmers per module (1,2, or 4)
- DIMMER 1 - 4 These are the brightness values of the individual dimmers (00-00 to FF-FF)

CAN - STATUS:

Use the F1 key to switch over from the main menu to the monitor menu and activate it pressing F11

Module	Version	Status	Timestamp	Count	0	1	2	
01.1	1.01	<ACTIVE	4 - - - >	332ffc	23073:	00 00 00 00-00 0E 00 00	00 1E 00 00-00 00 00 00	00 50 00 00-02 8a 00 60
01.2	1.01	<ACTIVE	2 - - - >	332ffb	23073:	00 00 00 00-00 03 00 00	00 00 00 00-00 00 00 00	00 53 00 00-02 94 00 56
01.3	1.01	<ACTIVE	1 - - - >	332ffc	23073:	00 00 00 00-00 01 00 00	00 00 00 00-00 00 00 00	00 50 00 00-02 73 00 52
02.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
02.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
02.3		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
03.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
03.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
03.3		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
04.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
04.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
04.3		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
05.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
05.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
05.3		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
06.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
06.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
06.3		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
07.1		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00
07.2		<OFF	0 - - - >	0	0:	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00	00 00 00 00-00 00 00 00

- MODULE Here you find the CRATE number (01 - 12) and the respective MODULE number (1-3)
- VERSION This gives you the software version number; all modules must have the same software version - else update with CONFIG RACK FLASH (F8)
- STATUS Gives you the module status and the number of dimmers per module (1,2, or 4)
- TIME STAMP Indicates that a control command has been transferred, when the display changes - the display itself does not contain any information
- COUNT Counter, starts, when the NDP is switched on.No information for the user.

Blocks
0 1 2 Parameter for internal use only, no information for the user.

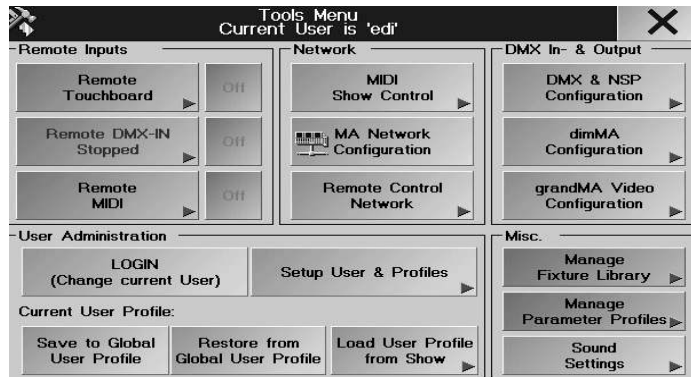
STATISTICS:

Use the F1 key to switch over from the main menu to the monitor menu and activate it pressing F12

```

*** Statistics ***
Received Packets:
0  ARTNET          0x
0  00000000        00000000
1  00000000        00000000
2  00000000        00000000
3  00000000        00000000
DMX-Queue :      anz = 0 full = 0 empty = 32 sendFail = 0
Cues       :      997 of 1000 cues free
              active Cue: None
I2C-AD     :      Temp: 28 <0021>  U1: 235 <00C5>  U2: 239 <00C9>  U3: 239 <00C8>  NULL:0 <0000>
TASK:
RCMDD      LOOPS  TIMESTAMP      tUser      tSys      tTotal
RCMDD      10      3968198        69          29          98      000%
RCMDD      0          0          0          0          0      000%
MONITOR    7165008  3997924        64658       57258      121916  016%
CANTASK    165407   3997914        316         294         610      000%
NETPROC    1019081  3997921        80399       505727     586126  000%
DMX-OUT    1224407  3997922        6752        12544       19296    002%
DMX-IN     476393   3997929        1005         390         1395     000%
OXTASK     4898     3996712         6           10          16      000%
ArtNet     61330    3994940        757          741         1498     000%

```



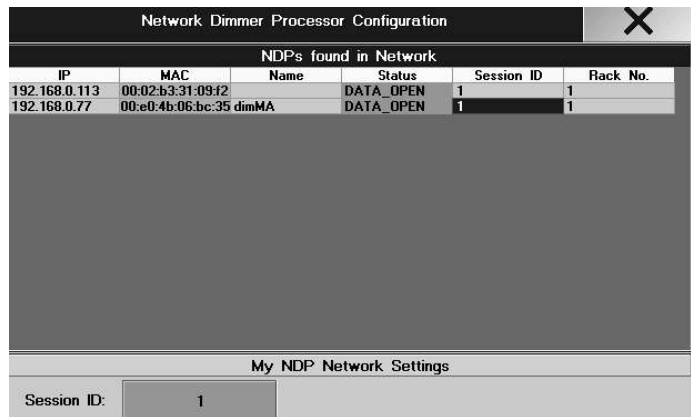
dimMA Configuration and MA dimmer Network- Menu

Die Konfiguration der Module und Dimmer kann auch von einem grandMA Pult aus vorgenommen werden (grandMA, grandMA Light, grandMA Ultralight). Dort können auch Fehlermeldungen der Dimmer gezeigt werden.

Im dimMA Config Menü erscheinen automatisch alle NDPs, die im gleichen Netzwerk sind. Beim Öffnen des MA Dimmer Network Menüs erscheinen alle angemeldeten Racks.

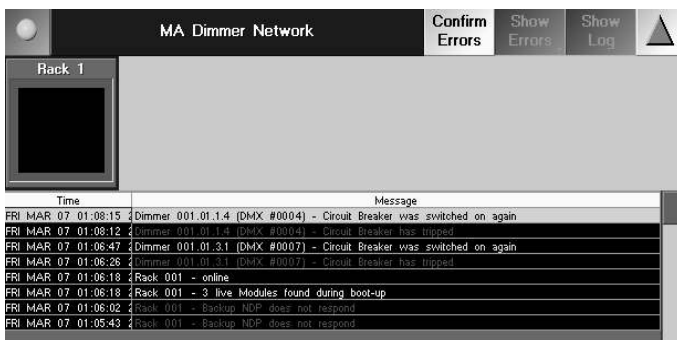
If the rack is not shown, please check:

- the first 3 groups of the IP-number must be in accordance with the IP number of the network
- same software versions?
- failures in the network?
- try the function „scan“



dimMA Configuration:

- open TOOLS menu
 - pres button dimMA Configuration
- Configuration menu opens
- enter or change IP number
 - enter or change names (Name of NDP, change the names of the dimmers in the NETWORK DIMMER menu)
 - enter session ID-Number
 - enter or change Rack-number

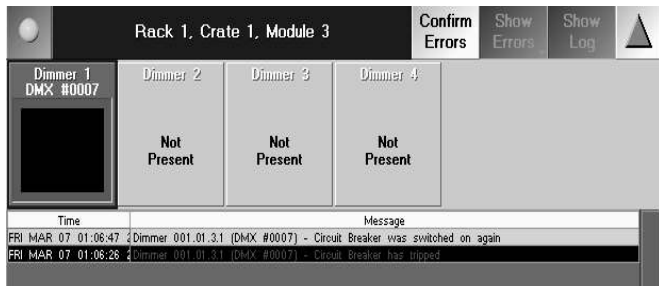


NETWORK DIMMER Menu:

In the Network Dimmer menu adjustments of the dimmers are displayed and can be edited. This is more comfortable than direkt from the NDP -you dont need an external keyboard and an external monitor.

- Create an empty screen
 - press the button NETWORK DIMMER in the CREATE A WINDOW - menu
- A overview with all racks with the same ID-number is displayed in the dimMA Configuration
- With every touch on the symbole the next level is displayed (Rack - Crate - Modul - Dimmer). The ▲ button shows the levels in reverse order.

dim *MA*



CONFIRM ERRORS:

For confirming error notes. After confirming the symbol changes from red to yellow. After eliminating the error the color changes to green.

SHOW STATUS / SHOW ERRORS:

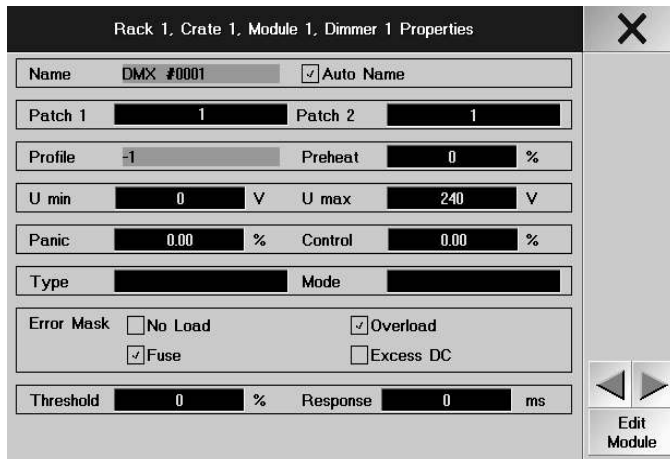
- Show Status - Modus: Racks / Crates / Module / Dimmer are displayed as green elements
- Show Error - Modus: errors are displayed within the elements

SHOW LOG:

If this button is activated (button gets dark), messages and errors for racks, modules and dimmers are displayed at the bottom.

Selecting DIMMER :

With every touch on a green button the level below opens. (e.g. touch on button „rack“ and the level with the crates opens; touch on button of a crate and the level modules opens...)



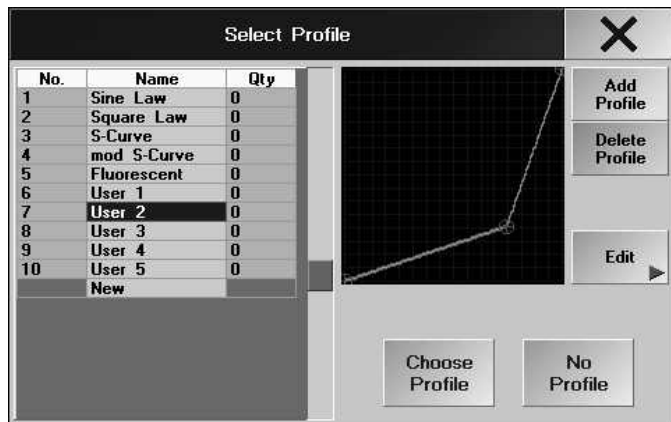
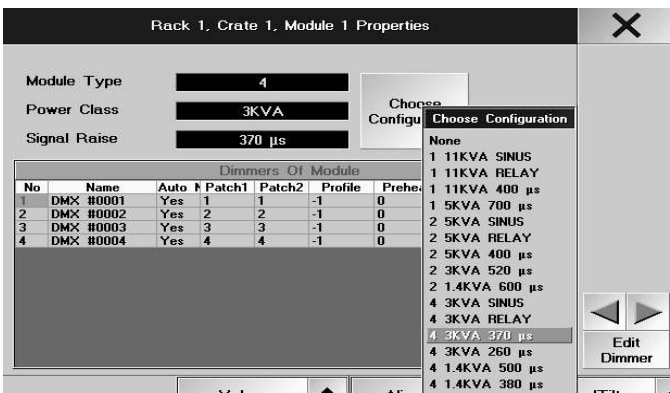
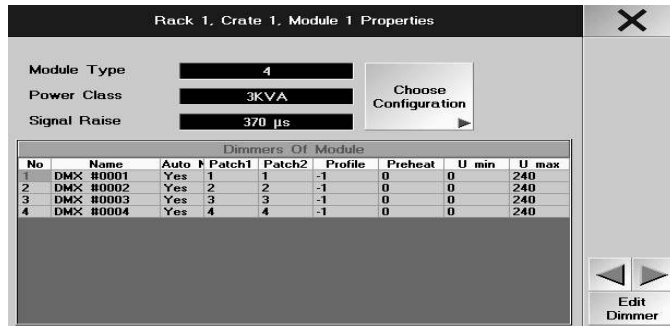
Editing Dimmers:

Open window NETWORK DIMMER and select the dimmer you want to edit.

- open NETWORK DIMMER
 - select Rack - Crate - Modul - Dimmer (with mouse or finger touch)
- Menu EDIT DIMMER / EDIT MODULE of the selected dimmer opens.
- Button Edit Dimmer / Edit Module toggles between both menus.
 - touch the required number and change value with the pop-up calculator.

Note: Values with dark background can be changed via a gradMA console or direct from the eNDP. Values with grey background can only be changed in the NDP - a message pops up.

Jump to next / previous dimmer with the < > buttons.
Close menu with X.



Editing moduls:

- open NETWORK DIMMER menu
- select Rack - Crate - Modul - Dimmer (with mouse or finger touch)
- Menu EDIT DIMMER / EDIT MODULE opens automatically
- press button Edit Module.
- Menu Edit Module opens.
- Press button CHOOSE COFIGURATION to open the overview of possible dimmer configurations and choose type.
- jump to the next / previous menu with the buttons < > .
- Close menu with X .

Create, change and select a profile

Jedem Dimmer kann ein Dimmerprofil zugeordnet werden. Besides some stadard profiles, you can also create your own profiles on a grandMA light console.

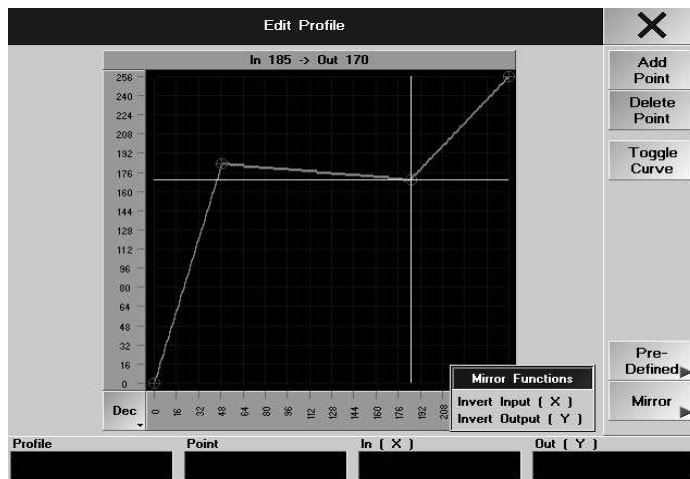
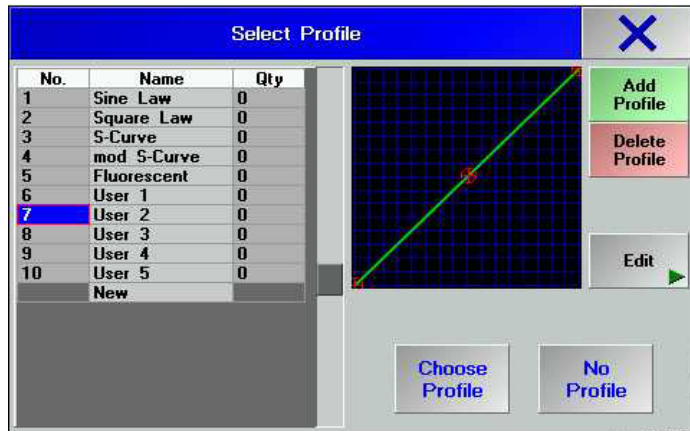
Attention: Mode DIM must be selected in the NDP -menu!

- select a ready-made profile: (with the NDP or a grandMA - light console)

- Im NETWORK DIMMER - Menü den gewünschten Dimmer wählen
- click on PROFILE
- select a profile in the SELECT PROFILE overview (with encoder, mouse or a finger touch; the number or the profile name gets a blue background), the drawing of the profile is shown
- press CHOOSE PROFILE
- The selected profile is assigned to the field PROFILE
- NO PROFILE will assign no profile

- create or change a profile: (possible only with an grandMA light console)

- select the required dimmer in the NETWORK DIMMER - menu
- click on the field PROFILE
- - Select an existing profile in the SELECT PROFILE overview (with encoder, mouse or a finger touch, the number or the profile name gets a blue background).
- Click NEW in SELECT PROFILE , press righth encoder, type in a name and confirm with OK Not edited profiles are shown as a diagonal.

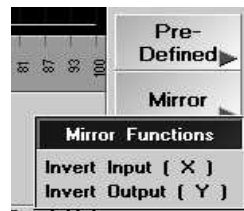
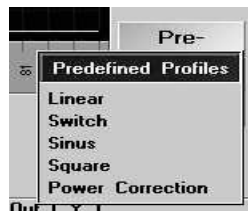


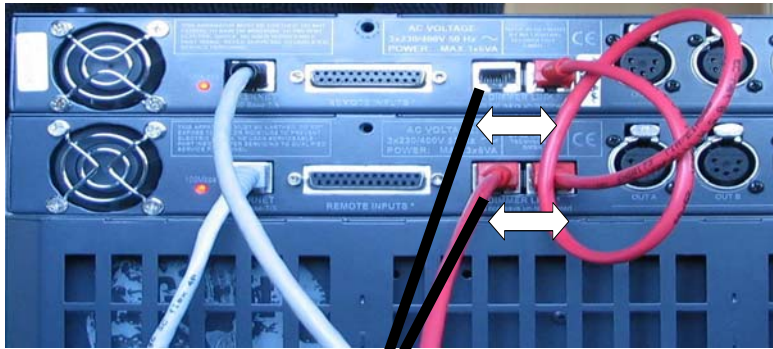
- press Button EDIT
- Touching the screen will create a reticule. ADD POINT creates a new point in the center of the reticule, DELETE POINT deletes the point.
- With the encoder POINT you can jump to the next point; the encoders In X and Out Y adjusts the reticule.
- Move a point with a touch on the screen or with „grabbing“ with the left button of the mouse.
- When a red point is in the center of the reticule, the button TOGGLE CURVE transfer the straight line into a curve between 2 points. The point changes from red to yellow.
- some predefined profiles are stored in the menu PREDEFINED.
- the MIRROR - function inverts input and output

- With leaving the EDIT menu (click on the cross top right) the profile is stored automatically
- DELETE PROFILE will delete a profile from the overview. Click to a profile in the overview (profile gets a blue background) and press DELETE PROFILE .

Changing the profile name:

- click to the profile name (name gets a blue background)
- press encoder and type the name
- confirm with OK





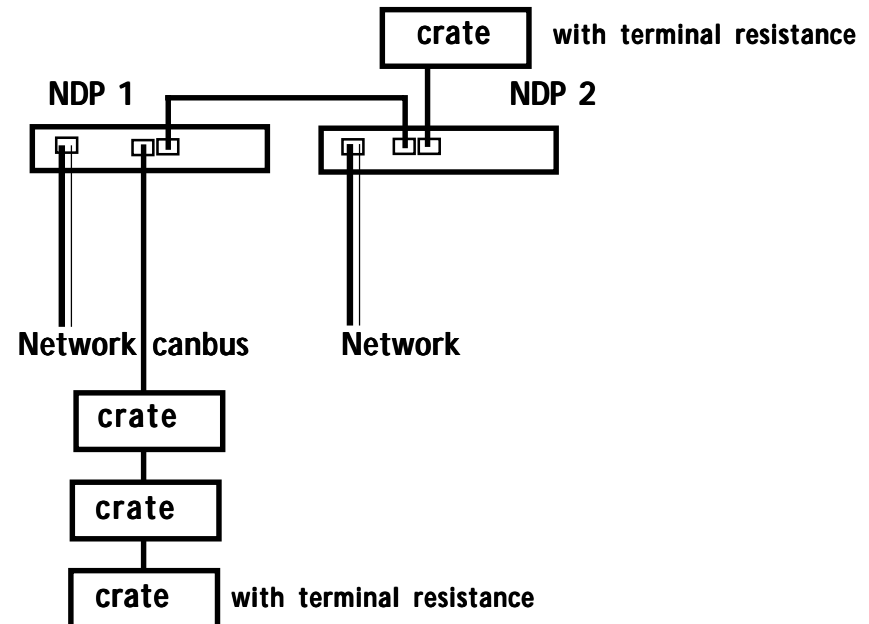
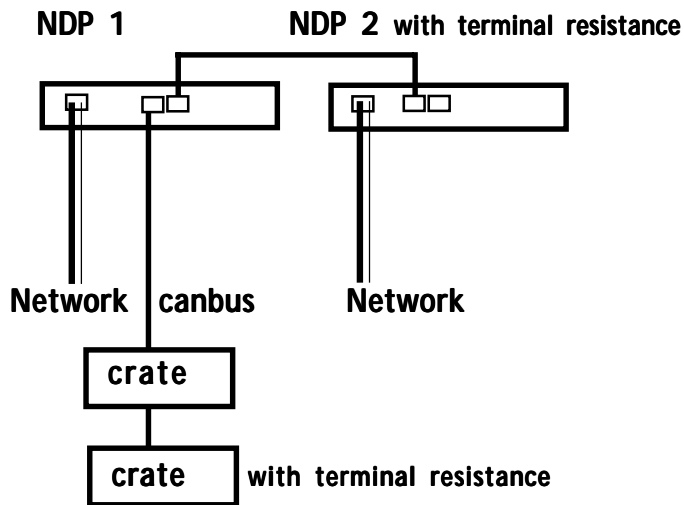
The position on the plug is irrelevant, as both CANBUS sockets can be used arbitrarily. Do not mix up with the network sockets! The position on the plug is irrelevant, as both CANBUS sockets can be used arbitrarily. Do not mix up with the network sockets!

IMPORTANT! *The device at the end of the CANBUS line must have a 120 Ohm terminal resistance, recognizable by the label next to the socket. .*

Multiple NDPs in parallel mode

In order to further increase the overall safety, you can use a second NDP as a redundant system. Both NDPs have to be connected via the CAN bus and must be linked to the Ethernet network each using an individual IP address. One NDP will „lead“ - recognizable by the M (for Master); the other NDP will run as reserve - recognizable by the S (for Slave). If the leading NDP fails for whatever reason, the other NDP will automatically take the lead. When the NDP having failed sets in again (reboot), this will then run as reserve - recognizable by the S (for Slave). The user cannot decide, which one of the NDPs takes the lead. In general, the NDP booting first will have the „lead“. While booting, the display shows a question mark (indeterminate state) - after the booting process, it will be replaced by a „S“ on one of the NDPs and by a „M“ on the respective other one. If the cell on the Display remains empty, this means that the NDP is running solo.

- connect both NDPs to the network (RJ45 plug)
 - connect both NDPs with one another on the CAN bus and with the Crates (loop). The element at the end of the CAN bus connection (Crate or NDP) must have a 120 Ohm terminal resistance (is factory-installed on the NDP and must be set for the Crate).
- NDP with terminal resistance:
 If a NDP has been factory-equipped with a terminal resistance, you can see that from the label next to the socket. This NDP must be hooked up at the end of the CAN bus line (in the photo on the left side, this is the upper NDP). The other NDP must **NOT** have this terminal resistance, as this would otherwise corrupt the Dimmer module function.



dim *MA*

Apply configuration in parallel mode

If both NDPs are connected via the network, changes made to the configuration (e.g. creating or deleting Cues) will be applied automatically on both NDPs. If one of the NDPs is, however, not active (e.g. not on the network or switched off) when changing values, you will be asked PRESS BUTTON TO LOAD FROM BACKUP when you switch on both active and connected NDPs. Now, you have to choose, which of the configurations to apply. CAUTION - the configuration not being applied will be deleted.

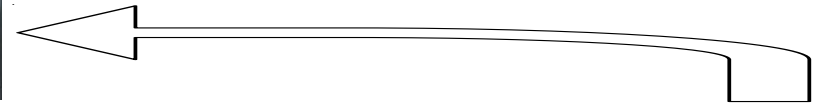
- press the **OK** button. The NDP on which you press the OK button, will apply the configuration of the other NDP. See sketch.



Pressing OK will apply the configuration of NDP 2



NDP 1



NDP2

OR:



NDP 1



NDP 2



Pressing OK will apply the configuration of NDP 1


```

CONFIG>ETHERNET>
CONFIG>LOCAL  > LOCAL RACK>SESS
                  Session-ID: 1
                  LOCAL RACK>NO
                  LOCAL RACK: 002
                  LOAD CFG FROM
                  192.168.0.113
                  LOCAL BACKUP ?
                  MAKE BACKUP
                  ALERT BEEP
                  Enabled
CONFIG>RACK  > RACK: 002

```

RESET

When you reset the device (by pressing the button on the front side of the device), the NDP will boot automatically. A reset will keep all settings and the software.

- press **RESET**
- wait, until the booting process of the NDP is complete.

BACKUP

Creating a BACKUP file:


- In order to create a BACKUP, the user must be logged in with administrator rights.
- choose the setting **MAKE BACKUP** in the **CONFIG / LOCAL / BACKUP** and confirm with **ENTER**

If updating the software fails and the NDP does not reboot, there is a way to restore the last software and the settings last used

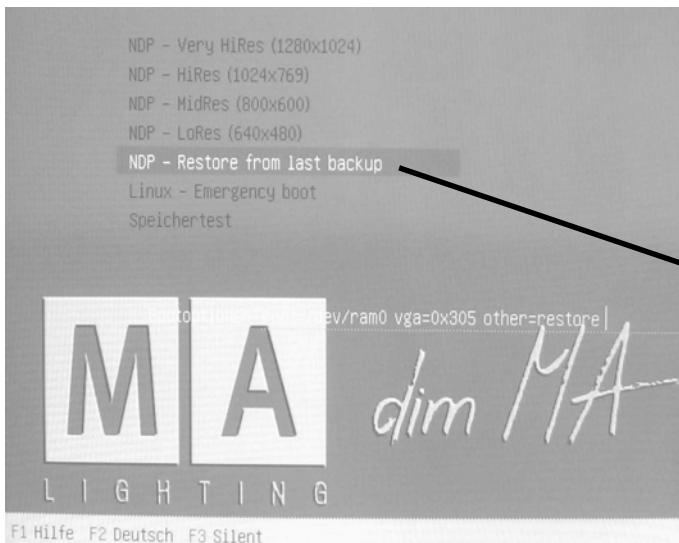
Loading a BACKUP:

For this, an external monitor plus keyboard are required.

- Switch on the NDP and wait while the device is booting, until this menu appears (the menu will only be active for a short time - can be set in the **CONFIG / BOOT** menu - and will disappear automatically, if you do not select an action)

- Choose the menu command **RESTORE FROM LAST BACKUP** (use the  keys on the keyboard) and execute by pressing **ENTER**

Then wait, until the NDP has rebooted.



SWITCH OFF

Der NDP und die einzelnen Module haben keinen eigenen EIN / AUS - Schalter. Das Gerät kann nur zusammen mit dem Hauptschalter (optional) des Dimmer - Schrank ein- und ausgeschaltet werden.

Software Update

CAUTION! Despite all due diligence, a new software version can, occasionally, contain errors, so that we do not recommend loading a new version just before an event. Update must be done by expert only - in case of doubt please contact MA service.

You can update the software one or the other way:

Update via FTP:

To install a new version, you have to establish an FTP connection between a PC and the NDP.

All NDPs (and the PC) must be hooked up to the same network (first 3 number groups of the IP address must be identical) and you have to update **each** of the NDPs individually. NDPs running different software will compromise your controlling the show.

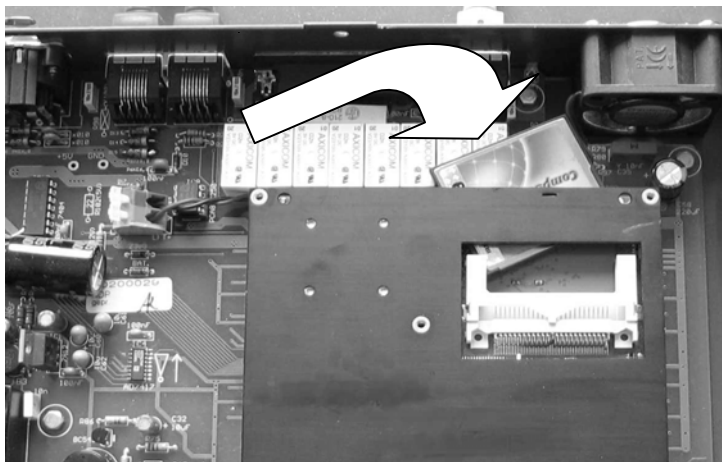
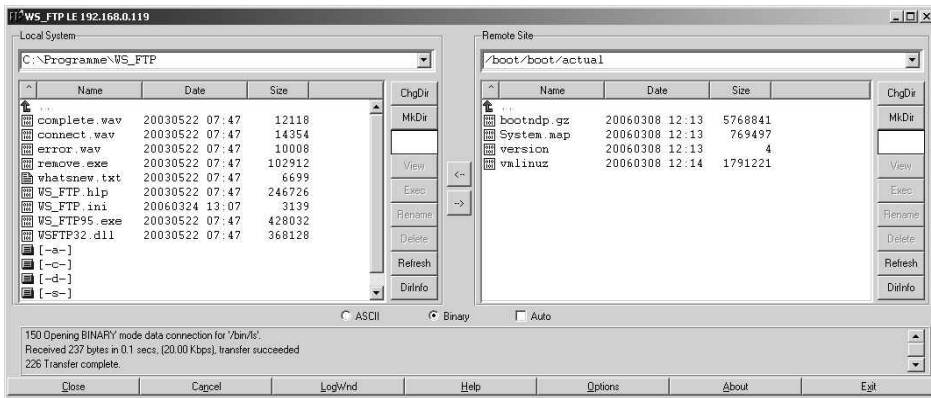
- Make an FTP connection between the PC running the software and the NDP (if you have questions regarding FTP access, please contact our Service Hotline)
- Log onto the NDP using User:root and password:root

- copy the files **bootndp.gz**, **version**, **vmlinuz** and **system.map** into the NDP directory **boot/actual**
- boot each NDP using the RESET button
- then, update the module software from the CONFIG / RACK FLASH menu
- execute SCAN
- BACKUP to reload the configuration

Update by changing the FlashCard

For this, you have to demount the NDP from the rack and disconnect it from the supply.

- The FlashCard must have been prepared by MA LIGHTING
- Remove the 4 cover screws, pull off the Encoder button, slightly lift up the cover at the back and pull it to the front. Remove the cover.
- Carefully pull the FlashCard out of its socket and remove by passing it along the fan.
- Reverse the last Step to install the new FlashCard. CAUTION! Do not bend the pins of the socket; make sure that the FlashCard is seated correctly
- Reinstall the cover and tighten the screws
- Push the NDP into the Rack and connect it to the supply

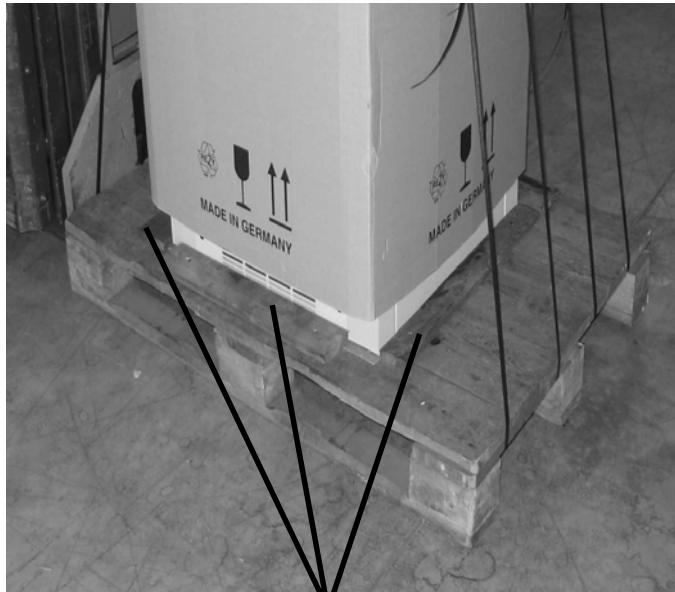


Transport:

*The cabinet should only be transported without any dimmer units / modules installed
During the transport, close the swivelling frame and the door, and lock it
The cabinet should only be transported in an upright position*



*Using a crane: for this, install the eyelet bolts (not supplied) and use appropriate hoists
(see sketch on the next page)*



Using a fork lifter: (see photo)

The cabinet should only be transported when fixed to a pallet. Always install the transport frame plus an anti tilting device!

Observe the location of the center of gravity!

Weights:

*Dimmer cabinet with NDP and Crates, without modules, including packaging and transportation lock:
approx. 220 kg*

COMPACT dimmer unit:

approx. 19 kg per unit

Module (dimMA):

<i>4 channel (low rise)</i>	<i>approx. 7,0 kg</i>
<i>4 channel (high rise)</i>	<i>approx. 8,0 kg</i>
<i>2 channel</i>	<i>approx. 7,5 kg</i>
<i>1 channel</i>	<i>approx. 7,4 kg</i>

Transport frame plus an anti tilting device (belts)

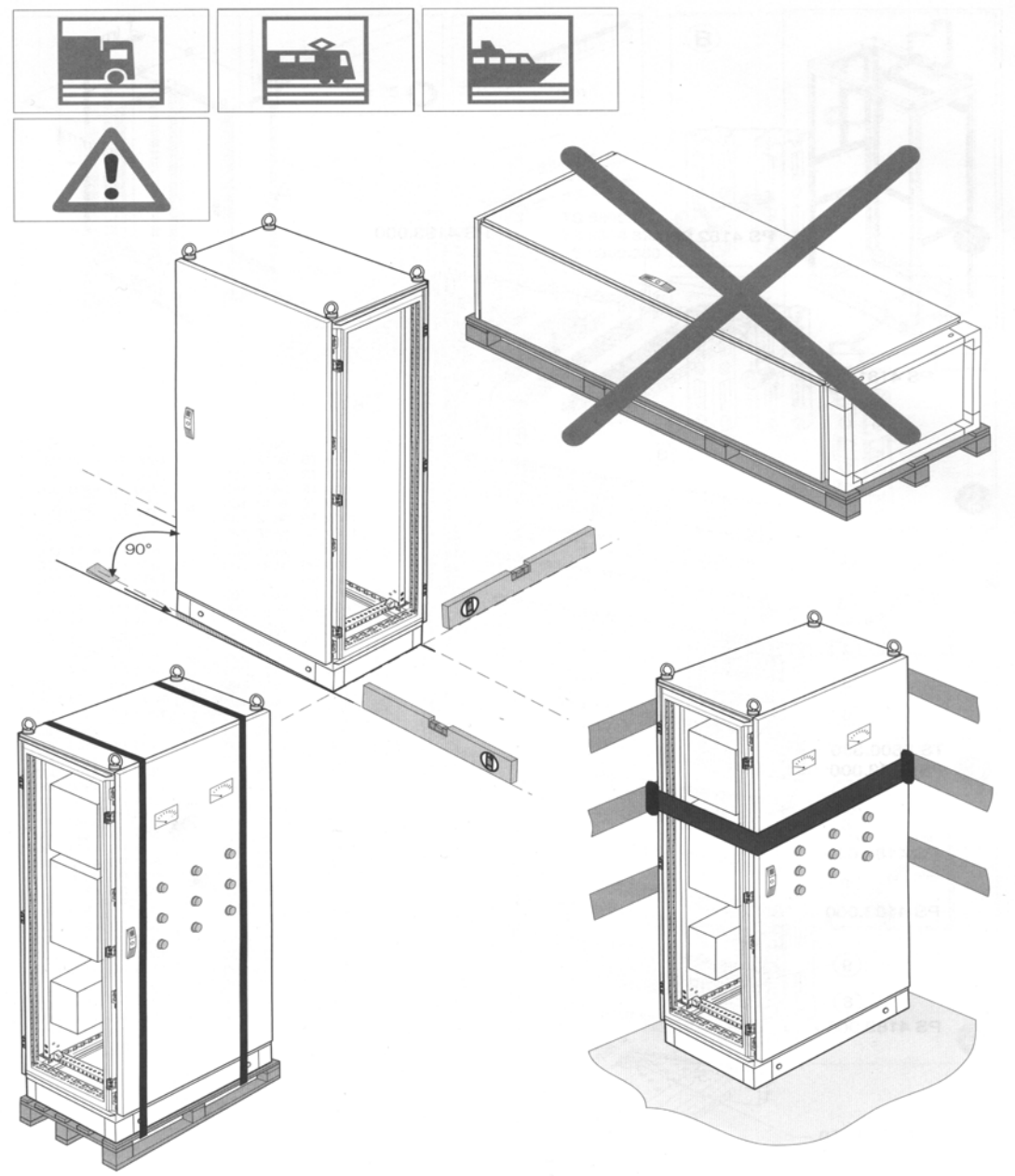
dim

MA



Transport with a fork lift:

Fixed to a pallet with a transport frame plus an anti tilting device!





Mounting:

Please ensure that the requirements for the site specifications are complied with. This can avoid accidents, malfunctions or damage on the system.

Structure of the base support:

The substructure must be level, dry, dust-free and have a good load bearing capacity

Weight:

In its maximum configuration (2 NDPs and 6 Crates with 3 modules each - 75 channels) the dimmer cabinet has a weight of approx. 400kg.

Space requirement:

The dimmer cabinet location has to be sufficient for the users not to be impeded when the protective doors are open. The sketch on the left side shows the space requirement for the cabinet.

Minimum floor area for the cabinet: 650 x 650 mm.

Minimum floor area for the cabinet to open the front and back side doors: 650 x 1,950 mm
+ space provided for traffic links!

Minimum head clearance: 2100 mm (when supplied from above, provide for additional clearance)



Securing the sub base using stone anchors:

To secure the cabinets on the floor, the RITTAL company offers special ground brackets. The cabinet can be secured to the ground after installing it without having to move the cabinet (depends on the installation of the supply feed and the cable routing).



Environmental conditions:

- access must be controllable, i.e. no access for unauthorised persons.
- Temperature 10 °C - 30 °C (50°F - 86 °F)
- Relative humidity 30 - 70% (no thawing, i.e. the air must not condensate)
- The room air must be dust-free and free of combustible or explosive substances

Air supply

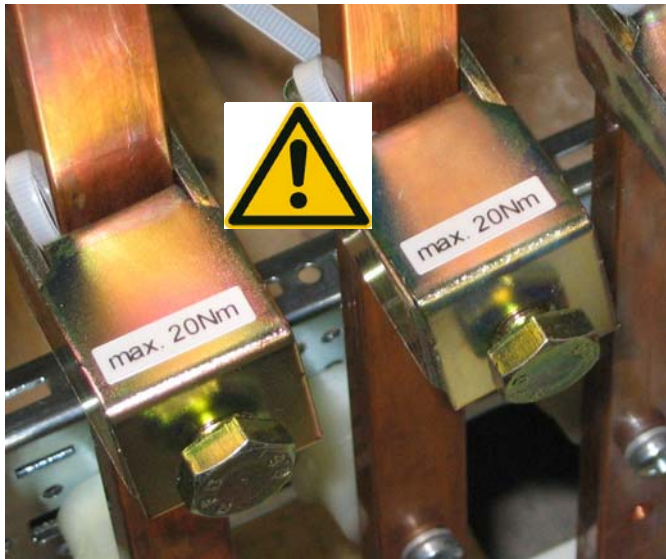
- Cooling and venting the place must be sufficiently dimensioned for the requirements to be met in maximum continuous operation (for heat built-up, see below).

Heat built-up of the dimmer cabinet under maximum load:

Empty (without modules)	0.1 kW
With 50% of the modules installed	1.1 kW
With 100% of the modules installed	2.3 kW



Max. torque for cable lugs on the copper rails 15 nm



Max. torque for cable clamps 20 nm

dim *MA*

Installation:

All work must be performed of trained and qualified personal only. Instructions of energy suppliers as well as safety codes of all competent organizations have to be complied with!

To be complied with during installation!

Max. torque for cable clamps 20 nm (see photo)

Max. torque for cable lugs on the copper rails 15 nm (see photo)

The internal wiring between the Crates and the NDPs has received a completed factory-configuration.

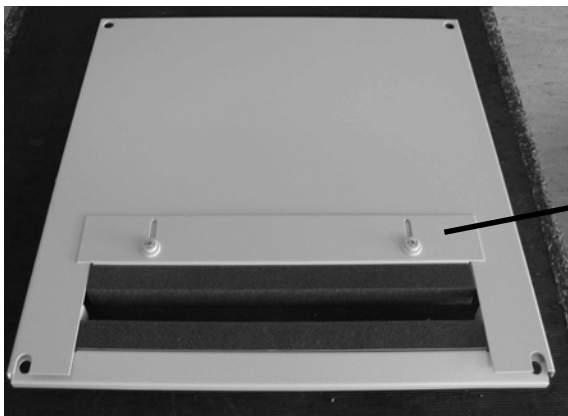
The supply feed is already provided for; if, however, you want to change it, please follow the procedure on the next page.



BEFORE MAINTAINING OR CLEANING THE SYSTEM, DISCONNECT IT FROM THE MAINS SUPPLY!

DANGER !

The dimMa Dimmer cabinet with dimmer modules plus NDP is almost maintenance-free; depending on the environmental conditions, you should only, now and then, check the venting openings and clean them using a vacuum cleaner. Do not compressed air to blow out the openings.



Supply feed from above:

Cable inlet: From above through the cover into the cabinet. For this, an optional cover is required. Remove the standard cover (remove the 4 screws) and install the optional cover. Apply the sealing strips and, after the installation, push the sliding plate snug fit to the cables. Then, tighten the slider by fastening the two screws.

Cables: Cross-section, min. 120 mm² (0.186 inch²)
Dimensioning of cables, and compliance with local regulations fall into the liability of the executing technical engineer.

For connecting the supply feed, see below.



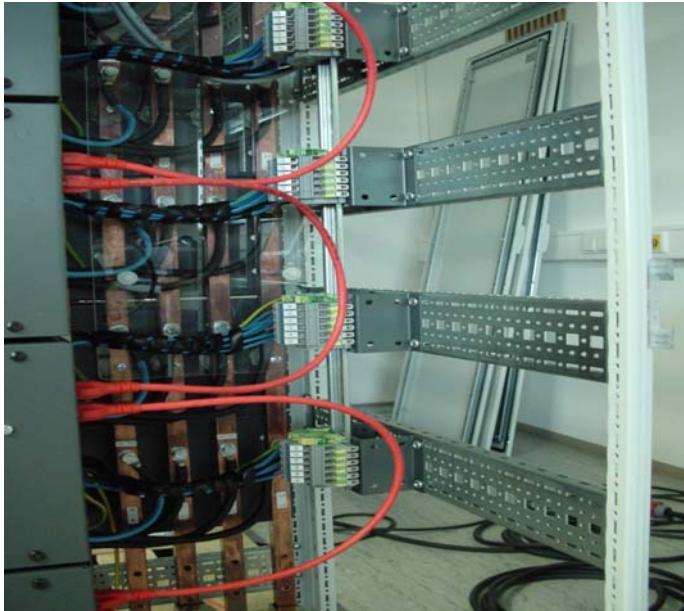
Supply feed from below:

Cable inlet: From below directly into the cabinet

Cables: Cross-section, min. 120 mm² (0.186 inch²)
Dimensioning of cables, and compliance with local regulations fall into the liability of the executing technical engineer.

Connecting the supply feed

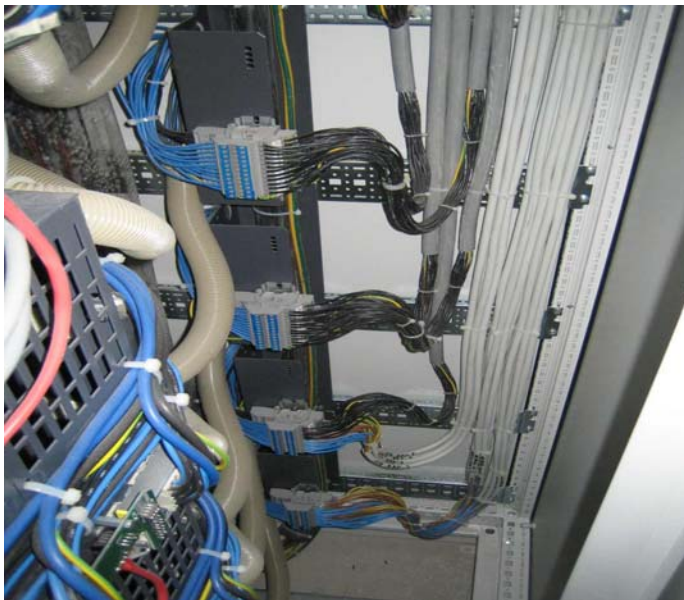
Remove the acrylic glass cover (only the lower part)
Release the cable clamp transportation locks and insert the cables into the clamps
Tighten the cable clamps with the max. allowable torque
Reinstall the acrylic glass cover again



Wiring the dimmers: (COMPACT)

Dimensioning of cables, and compliance with local regulations fall into the liability of the executing technical engineer.

To help you with the cable routing within the cabinet, you can use the photo on the left side.



Wiring the dimmers:

Dimensioning of cables, and compliance with local regulations fall into the liability of the executing technical engineer.

To help you with the cable routing within the cabinet, you can use the photo on the left side.



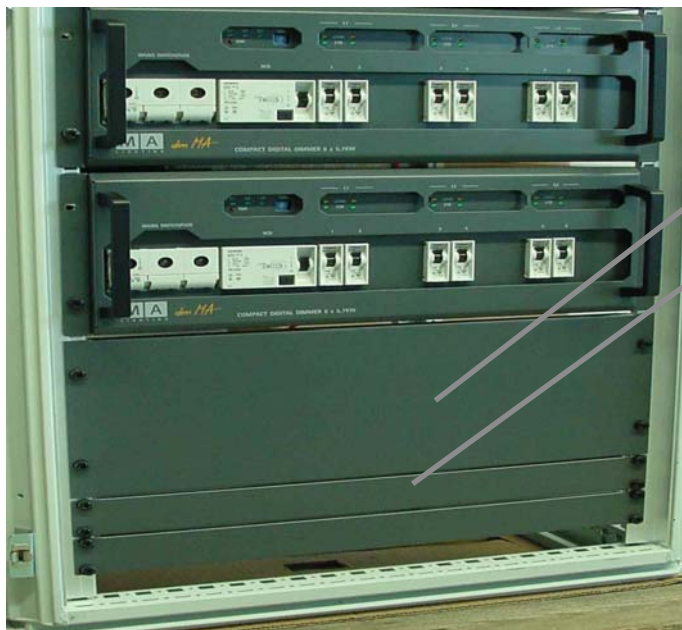
Inserting modules

- Secure the swivelling frame at top and bottom against opening by using the supplied key. The opened swivelling frame would become instable from the module load and could let the cabinet topple.



- Check the connections
The connections must not be bent or damaged.
- Insert right to the stopping face
- Secure with the quarter-turn locking, until the slot points to the „Closed“ symbol.

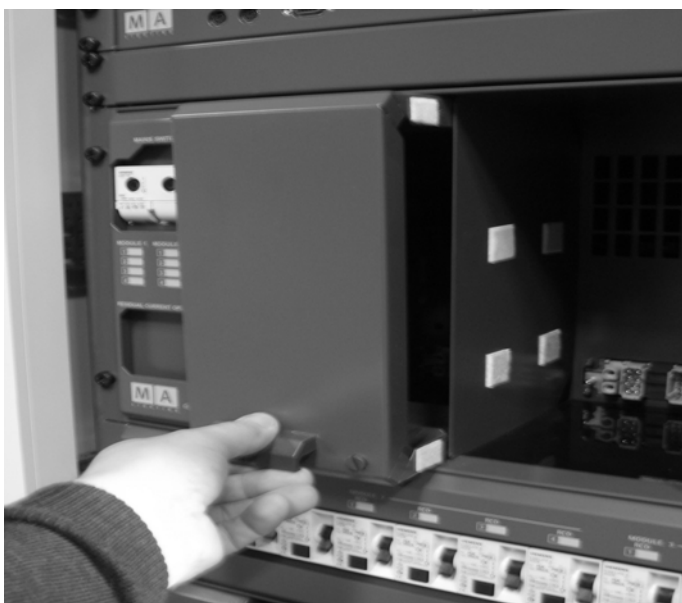
After inserting the modules, do NOT pivot out the swivelling frame! CABINET COULD TOPPLE!



Inserting safety covers (COMPACT):

If a mounting location in a rack is supposed to remain empty for a longer period of time, it has to be secured and closed by a safety cover. The safety covers are available in different dimensions; 4 HE instead of the complete dimmer, 1 HE instead of a NDP.

- Fix the cover with 4 bolts.



Inserting empty module:

If a mounting location in a Crate is supposed to remain empty for a longer period of time, it has to be secured and closed by a blind module.

- ***Insert the blind module right to the stopping face and secure with the quarter-turn locking.***



Dimmertest:

Generally the safety test on a dimmer is done in the same way as with any other electrical control gear. There are only a few things that have to be taken care of doing safety tests in dimmer installations:

1. The Insulation Resistance is measured with the dimmer rack switched off, all modules removed, no load connected. Use the test dimmer for easier access to the connectors.
2. Make sure to disconnected the phase control lamps on top of the swivel frame before doing the insulation test of the mains input. Otherwise you measure the resistance of the bulbs. Disconnect the dimmer processors as well.
3. The RCDs are tested with the dimmer rack turned on, all modules populated. Make sure to have a load (approx. 300 W) connected parallel to the circuit you are testing and the circuit is controlled @ full. (The RCD is working safe; independent from the control level, but your test instrument might not accept a measurement below a certain voltage). From a practical point of view the easiest way is to do the tripping test once and then prove that the contact voltage at nominal residual current does not exceed the maximum allowable value for each channel output. There are test instruments that are capable of doing this measurement without tripping the RCD.
4. The Measurement of the loop impedance and determination of short circuit current is also done with the dimmer rack turned on and a parallel load at full level. If your test instrument is not able to measure the loop impedance without tripping the RCD you can measure the supply impedance instead.



SERVICE

Changing units (COMPACT):

The dimMA Compact dimmer can be equipped with different modules (12 x 3KV, or 6 x 5,7KV plus different signal raise times). Only modules of one type may be exchanged.

Changing modules:

- Disconnect the Crate (set the Crate main switch to OFF) and remove the CANBUS connectors
- Remove the 4 bolts by using a screwdriver for recessed head screws (see photo on the left side)
- Pull out the module (mind its weight !); all cable connections will disconnect automatically.
- Check the connectors and guidance of the unit and insert the unit in reverse order.





SERVICE

The dimMa Dimmer Rack with its dimmer modules and the NDP does not require any maintenance, except that you should check and clean the cooling vents from time to time, and if the environmental conditions require so. The Crates of the diMA can be equipped with different modules (1 x 11KV, 2 x 5KV, or 4 x 3KV plus different signal raise times). Only modules of one type may be exchanged.

Changing modules:

- Disconnect the Crate (set the Crate main switch to OFF)
- Remove pull-out fuse (see photo on the left side)
- Pull out the module (mind its weight !); all cable connections will disconnect automatically.





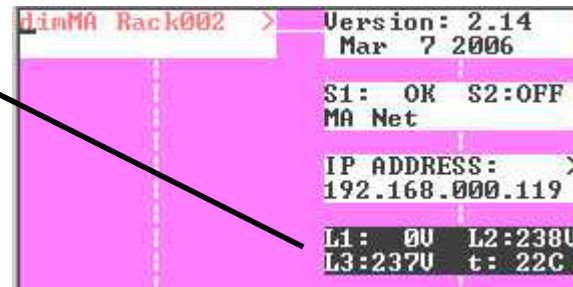
Exchanging the fuse:

After a fuse has failed, the message log on the external monitor or on the grandMA console will show the respective phase. This can also be determined by the failed LEDs of the respective modules. Exchange fuses for those of the same type only!

- De-energize the Crate
- Open the main fuse cover and remove the appropriate fuse
- Exchange the faulty fuse and install the new one, until it has reached its correct position (light click at the end position)
- Close the main fuse cover again (cover cannot be closed without a fuse or a fuse not being installed properly)
- After booting the dimmers, the error message should no longer appear.

Exchanging the NDP fuses:

After a fuse has failed, the message log on the external monitor and on the NDP display will show the respective phase. This will not interrupt the NDP operation. Exchange fuses for those of the same type only!

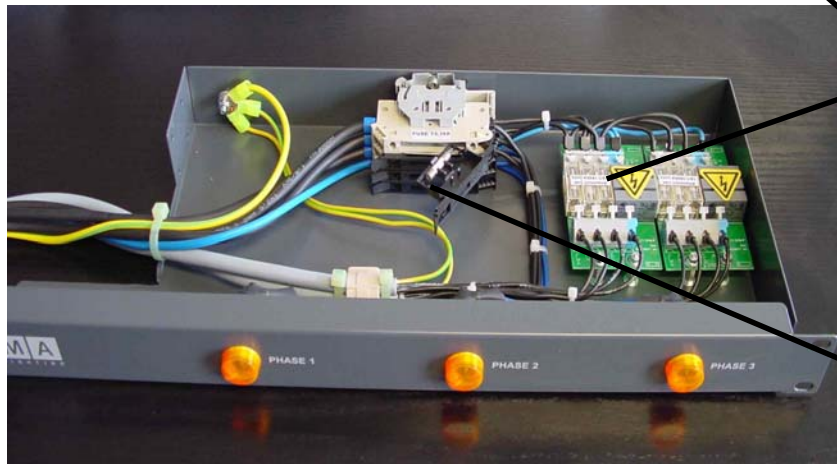


- De-energize the Dimmer cabinet
- loosen teh 4 screws and pull out the fuse unit till the fuses are visible
- Open the fuse holder and exchange the appropriate fuse
YOU MUST USE FUSES OF THE SAME TYPE ONLY !!!
- Engage the fuse holder again
- Reinstall the panel

Exchange the pre-fuse:

After a fuse has failed, the appropriate yellow control light ceases. First eliminate the cause and then:

- De-energize the Dimmer cabinet
- Open the fuse holder and exchange the appropriate fuse
YOU MUST USE FUSES OF THE SAME TYPE ONLY !!!
- Engage the fuse holder again
- Reinstall the panel



dim MA



Maintenance:

BEFORE MAINTAINING OR CLEANING THE SYSTEM, DISCONNECT IT FROM THE MAINS SUPPLY!

DANGER !

The dimMa Dimmer cabinet with dimmer modules plus NDP is almost maintenance-free; depending on the environmental conditions, you should only, now and then, check the venting openings and clean them using a vacuum cleaner. Do not compressed air to blow out the openings.

Annex

Pin assignment of Sub-D 25 pin connector:

All relays work on 5-7VDC, 50mA, any polarity

<i>PIN 1,14</i>	<i>Relay 1</i>
<i>PIN 2,15</i>	<i>Relay 2</i>
<i>PIN 3,16</i>	<i>Relay 3</i>
<i>PIN 4,17</i>	<i>Relay 4</i>
<i>PIN 5,18</i>	<i>Relay 5</i>
<i>PIN 6,19</i>	<i>Relay 6</i>
<i>PIN 7,20</i>	<i>No connection</i>
<i>PIN 8,21</i>	<i>Relay „PANIC“</i>
<i>PIN 9,22</i>	<i>Relay „CONTROL“</i>
<i>PIN 10,23</i>	<i>No connection</i>
<i>PIN 11+12</i>	<i>transformer „N“ input</i>
<i>PIN 25+25</i>	<i>GND (earthing)</i>
<i>PIN 13</i>	<i>+ 5V max. 40mA</i>

Declaration of Conformity according to directives 89/336 EWG and 92/31 EWG

Manufacturer's name: MA Lighting Technology GmbH

Manufacturer's address: Dachdeckerstraße 16
D-97297 Waldbüttelbrunn
Germany

declares that the product

Product category: Device for fixed installation / Light Control Unit

Name of complete device: dimMA / dim MA Compact

including following modules (optional):

Product name: *NETWORK DIMMER PROCESSOR (NDP)*

Product name: *COMPACT DIGITAL DIMMER*

Product type: *COMPACT DIGITAL DIMMER 12 X 3 KW*

Product type: *COMPACT DIGITAL DIMMER 6 X 5.7 KW*

Product type: *DIGITAL DIMMER 4 X 3 KW*

Product type: *DIGITAL DIMMER 2 X 5.7 KW*

Product type: *DIGITAL DIMMER 1 X 11.5 KW*

complies with the following product specifications:

Safety: EN60065, EN60950

EMV (EMC): EN55103-1 (E1), EN50081-1

EN55103-2 (E2), EN50082-1

Additional information: DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the earthing resp. to the housing of the corresponding plug.

Supervising Dipl. Ing. Michael Adenau



CHECK LIST:

Mounting

- Substructure sufficiently stable
- Environmental conditions (temperature, air humidity)
- floor space sufficient to open the doors + aisles
- Cabinet sufficiently secured
- Area sufficiently aerated
- Dimmer cabinet sufficiently cooled (stream of cooling air must not be impaired)
- All modules correctly inserted into the Crates and secured
- Swivelling frame secured against opening

Installation

- CAN bus connections made
- terminal resistance in NDP or Crate installed or switched on
- All NDPs connected via network
- Jumper Crate set (1x per Crate)
- Jumper module set (1x per module, max. 3x per Crate)
- NDP software installed
- All lines in and out correctly connected (max. torque observed)
- visual inspection of all cable connections
- Do all module LEDs light up after powering up the cabinet, and is the module detected after scanning?

Configuration

- Passwords assigned
- IP addresses of NDPs set (individually one by one)
- All dimmer patched
- Were all dimmers detected after Scanning and eventually displayed on the grandMA console?
- All channels configured individually one by one

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