

Integrated digital thyristor dimmer

Operating Manual

Alex M / Alex MX



Manual version 030430-150C

Manual ID no. 7280M1201

ETC – Electronic Theatre Controls

transtechnik
by ETC

transtechnik

Operating Manual

Alex M / Alex Mx

Integrated digital thyristor dimmer

© 2000 – 2006 Electronic Theatre Controls GmbH

All rights reserved.

No part of this manual may be reproduced
or copied in any form without the written
approval of Electronic Theatre Controls GmbH.

Technical data subject to change.

transtechnik

Contents

Meet Alex M	7
First impressions	7
Operation	8
Special features	9
Safety	10
Symbols	10
Important rules	11
Alex M is very robust, but... ..	12
Lighting in no time with Alex M.....	13
Working with Alex M.....	14
Wiring.....	14
Switching the device on.....	15
Controls	15
Keys.....	15
Rotating knob	16
Preventing improper use of Alex	17
Basic settings.....	18
Language selection	18
Setting the display contrast	19
Resetting the dimmer processor	19
Selecting the source for the dimmer control signals	20
Setting the DMX start address	21
Further basic settings	23
Providing stationary lighting (manual intensity adjustment)	24
Setting the intensity of a channel.....	24
Setting the same intensity for all channels	25
Saving current output levels as presets	26
Preheating	27
Setting preheating individually for each dimmer channel.....	27
Setting the same preheat intensity for all dimmer channels	28
Intensity limit.....	29
Setting an intensity limit.....	29
Setting the same intensity limit for all dimmer channels	30
Dimmer curves.....	31

Assigning a dimmer curve individually for each dimmer channel	32
Assigning the same dimmer curve to all channels	33
Setting the switching threshold for a non-dim curve.....	33
Providing light automatically.....	35
Fading in stored presets	35
Displaying the contents of stored presets	36
Creating a chase with the chaser function.....	37
Setting the fade time	37
Setting the wait time for presets	37
Setting a sequence of presets	38
Running a chase	39
Holding/terminating a chase	40
The menu pages.....	41
Status line	41
Menu page 1: Intensities.....	42
Output level display	42
Input/display fields	43
Menu page 2: Parameters	44
Input fields for each individual channel.....	44
Input fields for each channel individually	45
Input fields for all channels together.....	45
Menu page 3: Memory/Chaser	46
Output diagrams	46
Input/display fields	47
Menu page 4: Basic settings.....	49
Input/display fields	49
Software version	52
Identifying whether a base load is fitted	52
Software updates	53
Appendix	55
Technical data.....	55
List of factory settings	58
Pin assignments.....	59
Pin assignment of the load outputs (HTS plug-in connector).....	59
Pin assignment for the EXT socket	61
Version status	63

Meet Alex M

First impressions

Functions

Alex M allows you to:

- Convert DMX control commands received from the lighting control system into voltage values for electrical loads like spotlights
- Save a maximum of twelve presets and make them available for use.
- Run several presets at the same time with selectable weightings.

The *chaser function* allows you to:

- Run entire lighting programs – from chases to complex sequences of stored presets.

Features

- All common loads controllable
- Selection of three signal sources:
DMX, analog, internally stored presets
- Selection of dimmer characteristics:
Different curves can be defined for each dimmer channel, including a genuine non-dim function
- Preheat:
Preheating of spotlights of up to 30% independently for each channel
- Output level limitation:
Between 30% and 100% independently for each channel
- Precaution in case the input signal fails:
Output of the last preset, one of the twelve stored presets or synchronizing-dark connection
- Automatic switching to 50 Hz or 60 Hz line frequency
- Alex MX: Electronic base load allows convenient dimming of fluorescent lamps.

Operation

Display	An extremely high-contrast CFL (cathode fluorescent lamp) backlit display with a visible area of 13 x 7 centimeters and over 30,000 pixels, making it easy to read even from a considerable distance whatever the ambient lighting conditions.
Menu-driven interface	You operate Alex M using four keys, a rotating knob (encoder) and the menus that appear on the display.
Status information	Graphical output level displays for each of the six or twelve channels and plain-text messages or instructions constantly keep you informed of the current operating status.
Update	The dimmer processor software is constantly being further developed. Your dimmer processor can be updated to match the latest developments at any time.

Special features

Thyristors	The thyristors, which use phase angle control for the output voltage, each contain a separate ignition circuit for the positive and negative half-waves. This means that the output voltages of each of the dimmer units have no DC components and makes them suitable for controlling low-voltage transformers.
Fan	A temperature controller ensures that the fan only ever runs just as fast as is absolutely necessary.
Emergency shutdown	If the temperature level on the dimmer unit gets too high (e.g. because of a blockage in the air intake), the device is shut down automatically to prevent damage due to overheating. Once the temperature returns to permissible values, the dimmer unit automatically resumes operation. The loads connected undergo a soft restart.

Safety

Symbols

This manual uses the symbols depicted below for Danger, Caution and Note. The meanings of these symbols are as follows:

**Danger**

This symbol indicates situations where failure to follow the instructions carefully can result in death, injury or accidents.

**Caution**

This symbol indicates situations where failure to follow the instructions carefully can cause damage to your equipment.

**Note**

This symbol is used to draw your attention to a particularly important passage of text.

Important rules

It is not dangerous to work with Alex M. Protective insulation and a whole series of other protective measures ensure that you cannot come into contact with any harmful electric currents. However, as with all electrical equipment, you will need to observe a few simple rules:



- Never switch on equipment that is obviously damaged. Send the equipment to an authorized dealer or back to the factory for repairs.
- If there is any reason to suspect a fault, unplug the equipment from the mains supply immediately. Make sure that it cannot be started up again and send it to an authorized dealer or back to the factory for repairs.
- Always unplug equipment from the power supply before opening it.
- Components inside the equipment can be very hot if they have only just been switched off.

Repairs are only ever to be made by an authorized dealer or by transtechnik.

Alex M is very robust, but...

Alex M is designed to cope with the rigors of mobile service, so it will put up with a lot. Nevertheless, you should still adhere to the following guidelines:



- Only use your equipment for the purpose for which it is intended.
- Never cover the front and back of your equipment in such a way that this would impede air circulation (e.g. with plastic sheeting).
- Ensure that there are always sufficient openings for heat to be expelled.
- Avoid direct contact with moisture.

Lighting in no time with Alex M



- Alex M lets you get down to business straight away. Over the next few pages you will find an outline of the major functions for operating and adjusting the system.
- For detailed information on the menu pages and all the opportunities afforded by Alex M, please turn to page 41.
- You will find a list of the factory settings on page 58.

Alex M with six or twelve output channels

The screenshots used in this manual depict the menu pages for an Alex M dimmer unit with twelve output channels. If your Alex M unit has six output channels, the *Intensities*, *Parameters* and *Memory/Chaser* menu pages will look rather different owing to the smaller number of output channels.

Working with Alex M

Wiring

Not even Alex M lets you get away without setting up any cable connections:

- A connection to the power supply
- Connections to the required dimmer channels

This is all you need to go ahead and provide lighting with Alex M. If the dimmers are to be controlled by external signals as well, you also need to connect the signal source:

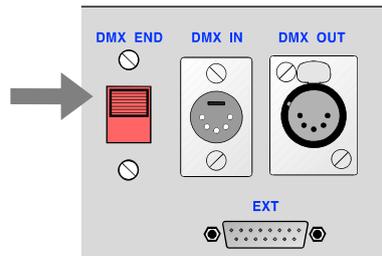
Control with DMX512/1990 signal Connect DMX cables to the DMX IN and DMX OUT sockets.

If the DMX OUT socket is left unoccupied, it must be terminated with a resistor. Set the switch on the backplane of the device to the position "DMX END". The DMX output socket is now terminated with 100 Ω .



Failure to apply a terminating resistor can lead to errors in DMX transmission or make such transmission impossible altogether.

When the "DMX END" switch on the backplane of the device is set to this position, the DMX output socket is terminated with 100 Ω .



Control with 0 – 10 V analog signals Connect the signal cable to the EXT socket.

For the pin assignment for the EXT socket, see page 61.

Switching the device on

As soon as the power (at least one phase) has been switched on, the dimmer system starts up and the welcome screen appears on the display for five seconds. The first menu page, *Intensities*, then appears (see page 42).



Fig. 1: Welcome screen

Controls

All input is made using 4 keys and a rotating knob (the encoder). Menus and messages are displayed on a backlit LCD screen.

Keys



Scrolls from one menu page to the next.
Prerequisite: Edit mode must be inactive.



Saves the changes you have made and terminates edit mode.



Activates edit mode so that entries and changes can be made. In edit mode you can change values (e.g. dimmer values).



Terminates edit mode without saving the changes you have made.

The LEDs in the [Edit] and [Save] keys and the status line at the bottom of the display provide information on the current input status:

Edit mode not active <i>Status line</i>	 Wheel selects	 Edit to change	
Edit mode active, no values changed yet <i>Status line</i>	 Wheel	← LED on  Save confirms	Esc quits
Edit mode active, at least one value changed <i>Status line</i>	 Wheel	← LED on  Save confirms	← LED on Esc quits

Rotating knob

The rotating knob has two modes:

- Edit mode inactive** All input fields are displayed one after the other. The current input field is highlighted.
- Edit mode active** The relevant parameter (e.g. numeric value) in the current input field (highlighted) is changed.



To save space, the rotating knob is referred to simply as a **knob** in the menus. The same applies to the rest of this manual.

Preventing improper use of Alex

You can secure the device against inadvertent improper use by activating LOCK mode.



Prerequisite for activating LOCK mode:
EDIT mode must not be active.

1 Switch lock mode on or off by pressing and holding [Save] and then additionally pressing [Esc].

- In LOCK mode, menu page 1, *Intensities*, is displayed constantly.
- The text LOCKED_MODE appears highlighted (**Fig. 2**).
- Used on their own, none of the four keys have a function.
- If you turn the knob, this moves the underlining under the DMX address and the highlighting of the intensity value.

..1	2	3	4	5	6	7	8	9	10	11	12
50	50	50	50	50	50	50	50	50	50	50	50
✓	✓	✓	-	-	-	-	-	-	-	-	-
MEM	4*	ALL	LEV	50	DMX	1	CM	L1	231V	L2	231V
LOCKED MODE								L3	231V		

Fig. 2: Display with LOCK mode activated

Basic settings



Before you start, you can rest assured:
The device is **ready for operation immediately** even if you don't make any basic settings.

Before you start working with Alex M, you should nevertheless have a look at selected basic settings (there are a total of 12). You can use them to customize Alex M to suit your exact requirements.

To make working with the device easier for you, you can set the *menu language* and *display contrast*, for example. Then select the *signal source* and the *DMX start address*. The *reset function* allows you, if you wish, to reset the device to the factory settings.

These five steps are described on the following pages.

Language selection

Currently, the menu texts can be displayed in five languages:

English – German – Dutch – Italian – Spanish.

The factory setting is English. To set another language, proceed as follows:

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *LANGUAGE* field is highlighted.
 - The currently set language is highlighted.
- 3 Press [Edit].
- 4 Use the knob to select a language.
- 5 Use [Save] to save the language you have selected.

DMX ADDRESS	1	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE	FU-TIME	40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE	USG	490.2
LANGUAGE	English	CONTRAST 70
Wheel selects Edit to change U 1.41		

Fig. 3: *Basic Settings* menu
Active field: *LANGUAGE*

Setting the display contrast

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *CONTRAST* field is highlighted.
- 3 Press [Edit].
- 4 Use the knob to set the desired contrast (factory setting: 75).
- 5 Press [Edit].
 - The contrast setting is saved.

DMX ADDRESS	1	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE	FU-TIME	40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE	USG	490.2
LANGUAGE	English	CONTRAST 75
Wheel Save confirms Esc quits		U 1.41

Fig. 4: *Basic Settings* menu
Active field: *CONTRAST*

Resetting the dimmer processor

The reset function resets all settings and parameters to the factory settings. In particular:

- All dimmer parameters are reset.
- All the stored presets are reset to zero.
- The language is set to *English*.

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *RESET DEVICE* field is highlighted.
 - Yes is the highlighted default value.
- 3 Press [Edit].
- 4 Use the knob to select
 - Yes for *reset* or
 - No for *do not reset*.

DMX ADDRESS	1	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE	FU-TIME	40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE	Yes	USG 490.2
LANGUAGE	English	CONTRAST 70
Wheel selects Edit to change		U 1.41

Fig. 5: *Basic Settings* menu
Active field: *RESET DEVICE*

Selecting the source for the dimmer control signals

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *INPUT* field is highlighted.
- 3 Press [Edit].
- 4 Use the knob to select a signal source.
(Factory setting:
Dmx + Mem/Chase)

DMX ADDRESS	1		
ON DMX FAIL	Hold		
MEMORY TIME	0.5	f 50.02 Hz	
INPUT	Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE		FU-TIME	40
DIMMER CONTROL	On	UAMAX	230
RESET DEVICE		USG	490.2
LANGUAGE	English	CONTRAST	70
Wheel selects Edit to change			U 1.41

Fig. 6: *Basic Settings* menu
Active field: *INPUT*

<i>Dmx</i>	External device via DMX signal
<i>Analog</i>	External device via analog signal
<i>Mem/Chase</i>	Alex M (manual control, stored presets, chases)
<i>Dmx + Mem/Chase</i>	External device via DMX signal and Alex M
<i>Analog + Mem/Chase</i>	External device via analog signal and Alex M
<i>Ana+Dmx+Mem/Chase</i>	External devices via analog signal, DMX signal and Alex M

- 5 Press [Save] to save the setting for the selected signal source.

Setting the DMX start address

There are two ways to set the DMX addresses:

- All twelve channels receive a DMX address, which is incremented in ascending order from the start address.
- Each of the twelve channels receives its own address.

Setting a sequence of DMX addresses in ascending order

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *DMX ADDRESS* field is highlighted.
- 3 Press [Edit].
- 4 Turn the knob *clockwise* to set the desired DMX start address (Factory setting: 1).
- 5 Press [Save].

DMX ADDRESS	1	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE	FU-TIME	40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE	USG	490.2
LANGUAGE	English	CONTRAST 70
Wheel Save confirms Esc quits		U 1.50

Fig. 7: *Basic Settings* menu
Active field: *DMX ADDRESS*

- The selected start address is saved.
- Each channel receives the address corresponding to its channel number incremented from the start address.
- The resulting DMX addresses are then displayed on menu page 1, *Intensities*.

Assigning each channel an individual DMX address

- 1 Press [Page] until menu page 4, *Basic Settings*, appears.
- 2 Turn the knob until the *DMX ADDRESS* field is highlighted.
- 3 Press [Edit].
- 4 Turn the knob *counterclockwise* until the *SINGLE* setting appears.
- 5 Press [Save].

DMX ADDRESS	SINGLE	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase	ANA-MIN	5
CLEAR MEM/CHASE	FU-TIME	40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE	USG	490.2
LANGUAGE	English	CONTRAST 70
Wheel Save confirms Esc quits		U 1.41

Fig. 8: Basic Settings menu
Active field: *DMX ADDRESS*
Selected: *SINGLE*

- The setting *SINGLE* is saved, and the next line is highlighted.

- 6 Press [Page].
 - The field for entering addresses individually appears.
- 7 Use the knob to highlight a channel, and then press [Edit].
- 8 Use the knob to set the DMX address.
- 9 Repeat this procedure for each of the twelve channels.

1:	10	2:	14	3:	8	4:	18
5:	25	6:	30	7:	40	8:	5
9:	6	10:	8	11:	100	12:	17
LINEAR							

Fig. 9: Entering addresses individually



The *LINEAR* field in the lower left corner of the display allows you to enter a start address as of which the channels receive addresses in ascending order. This entry thus corresponds to the method described in the previous section.

Fig. 10: Appearance of menu page 1, *Intensities*, when DMX addresses have been assigned to the channels individually.

10	14	8	18	25	30	40	5	6	8	100	17
50	60	80	40	30	FF	90	FF	90	FF	0	0
✓	✓	✓	-	-	-	-	-	-	-	-	-
MEM 1	ALL LEV 0	DMX SIN	CM	L1 232V							
Wheel selects Edit to change				L2 232V							
				L3 232V							



If individual DMX addresses are assigned, the individual addresses page (**Fig. 9**) appears as fifth menu page when scrolling with [Page].

Further basic settings

Further basic settings can be made on menu page 4, *Basic Settings*, in the same way as described in the previous pages:

Setting	Entry field
Behavior if DMX signal fails	<i>ON DMX FAIL</i>
Fade-in time for the selected auxiliary group if the DMX signal fails	<i>MEMORY TIME</i>
Minimum value for dimmer control via analog signal	<i>ANA-MIN</i>
Resetting of all preset and chase parameters	<i>CLEAR MEM/CHASE</i>
Fade-in time for intensity increments	<i>FU-TIME</i>
Dimmer control on/off	<i>DIMMER CONTROL</i>
Maximum output voltage	<i>UAMAX</i>

For explanations and selection options: See the section entitled *Menu page 4: Basic settings* on page 49.



The *USG* field on menu page 4, *Basic Settings*, is not an input field; it merely indicates the operating time in hours.

Providing stationary lighting (manual intensity adjustment)

Alex M with six or twelve output channels

The screenshots used in this manual depict the menu pages for an Alex M dimmer unit with twelve output channels. If your Alex M unit has six output channels, the *Intensities*, *Parameters* and *Memory/Chaser* menu pages will look rather different owing to the smaller number of output channels.

Setting the intensity of a channel

The description that follows explains how to set the intensity of a single dimmer channel.

- 1 On menu page 4, *Basic Settings*, select *Mem/Chase* as the signal source (see page 19).
- 2 Press [Page] to call menu page 1, *Intensities*.
- 3 Use the knob to select the (dimmer) channel you require.
 - The dimmer channel number is underlined in the uppermost line (1 in the figure); the current setting is selected (56 in the figure).
- 4 Press [Edit] and use the knob to set the desired intensity value.
 - The setting takes effect immediately and is displayed in the form of a transparent bar and a numeric value. Value range: 0 to FF (0% to 100%).
- 5 Press [Save] to save the setting.

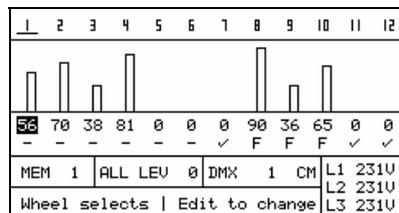


Fig. 11:
Setting the intensity of a channel

Setting the same intensity for all channels

- 1 Press [Page] to call menu page 1, *Intensities*.
- 2 Use the knob to select the *ALL LEV* function.
 - The current setting is selected (75 in the figure).
- 3 Press [Edit] and use the knob to set the desired value.
 - The setting takes effect immediately and is displayed in the form of a transparent bar with a numeric value for each channel. Value range: 0 to FF (0% to 100%).
- 4 Press [Save] to save the setting.

1	2	3	4	5	6	7	8	9	10	11	12
75	75	75	75	75	75	75	75	75	75	75	75
✓	✓	✓	-	-	-	-	-	-	-	-	-
MEM 1	ALL LEV	75	DMX	1	CM	L1 232V	L2 232V	L3 232V			
Wheel Save confirms Esc quits											

Fig. 12: *ALL LEV* function

If you find that you are unable to go below a certain value when changing the output level, it may be because:

- At least one stored preset or chase is activated (see menu page 3, *Memory/Chaser*, on page 46)
- *Mem/Chase* is not selected as the signal source. Example:
 - Selected signal source: DMX
 - Selected response in the event of a DMX failure: preset 2
 - No DMX signal
 - ☒ The stored preset 2 is thus active.

Output level values that are determined by activated presets can be increased by making settings on menu page 1, *Intensities*, but never reduced (HTP principle: **highest takes precedence**).

Similarly, intensity values that are determined by an external signal source can also only be increased but never reduced. External intensity values are shown on menu page 1, *Intensities*, by means of solid bars.

Saving current output levels as presets

This function saves the current intensity settings as a preset – irrespective of its composition in terms of external and internal intensities (solid and transparent bars).

- 1 Press [Page] to call menu page 1, *Intensities*.
- 2 Use the knob to select the *MEM* function.
- 3 Press [Edit] and use the knob to set the desired memory block number (from 1 to 12).
 - Memory blocks to which presets are already assigned are indicated by an asterisk (*).
- 4 Press [Save] to save the current intensities as a preset under the selected number (no. 4 in the figure).

1	2	3	4	5	6	7	8	9	10	11	12
75	75	75	75	75	75	75	75	75	75	75	75
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MEM	4*	ALL	LEV	75	DMX	1	CM	L1	231V	L2	231V
Wheel selects Edit to change											
L3 231V											

Fig. 13: *MEM* function



Any preset that was already assigned to this memory block (*) will be overwritten.

Preheating

Setting preheating individually for each dimmer channel

The preheat intensity can be adjusted in 0.1% steps in the range from 0 to 10%. Above 10% you can change the value in 1% steps.

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *PRE* row and to the desired channel in this row.
- 3 Press [Edit] and use the knob to set the desired percentage for the preheat intensity (15% in the figure).
 - The setting takes effect immediately.
Value range:
0 to 30%
- 4 Press [Save] to save the currently selected preheat intensity.

CH	1	2	3	4	5	6	7	8	9	10	11	12	
PRE	0	0	0	0	0	15	0	0	0	0	0	0	
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
DCU	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	
LEV	50	50	50	50	50	50	50	50	50	50	50	50	
STA	✓	✓	✓	-	-	-	-	-	-	-	-	-	
CLR	ALL		THRESHLD 10				L1 231U						
								Wheel Save confirms Esc quits		L2 231U		L3 231U	

Fig. 14: Setting the preheat intensity value



Set preheat intensity values are constantly output to the corresponding channels but do not appear in the bar chart on menu page 1, *Intensities*.

Setting the same preheat intensity for all dimmer channels

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *ALL* input field.
- 3 You can set the same values here for all channels for the following:
 - Preheat (*PRE*)
 - Intensity limit (*LIM*)
 - Dimmer curve (*DCU*)
- 4 Turn the knob until *ALL PRE* appears.
 - The currently set preheat intensity value is highlighted (5.0 in the figure).
- 5 Press [Edit] and use the knob to set the desired preheat intensity value. The preheat intensity can be adjusted in 0.1% steps in the range from 0 to 10%. Above 10% you can change the value in 1% steps.
- 6 Press [Save] to save the currently selected preheat intensity value for all channels.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
LEV	50	50	50	50	50	50	50	50	50	50	50	50
STA	✓	✓	✓	-	-	-	-	-	-	-	-	-
CLR	ALL PRE		5.0	THRESHLD		10	L1		231V			
							L2		231V			
							L3		231V			

Fig. 15: Setting the same preheat intensity for all channels

Intensity limit

Setting an intensity limit

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *LIM* row and to the desired channel in this row.
- 3 Press [Edit] and use the knob to set the desired limit intensity value (FF = 100% in the figure).
 - The setting takes effect immediately.
Value range: 0 to FF (0% to 100%)
- 4 Press [Save] to save the currently selected limit intensity value.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	0	0	0	0	0	15	0	0	0	0	0	0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
LEV	50	50	50	50	50	50	50	50	50	50	50	50
STR	✓	✓	✓	-	-	-	-	-	-	-	-	-
CLR	ALL		THRESHLD 10				L1 231V					
Wheel Save confirms Esc quits						L2 231V						
						L3 231V						

Fig. 16: Setting an intensity limit



Set limit intensity values are not taken into account in the bar chart on menu page 1, *Intensities*. If a given channel is limited to 90%, for example, a maximum of 90% is output – even if menu page 1, *Intensities*, indicates a higher value for this channel.

Setting the same intensity limit for all dimmer channels

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *ALL* input field.
- 3 You can set the same values here for all channels for the following:
 - Preheat (*PRE*)
 - Intensity limit (*LIM*)
 - Dimmer curve (*DCU*)
- 4 Turn the knob until *ALL LIM* appears.
 - The currently set limit intensity value is highlighted (90 in the figure).
- 5 Press [Edit] and use the knob to set the desired limit intensity value.
- 6 Press [Save] to save the currently selected limit intensity value for all channels.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
LIM	90	90	90	90	90	90	90	90	90	90	90	90
DCU	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
LEV	50	50	50	50	50	50	50	50	50	50	50	50
STA	✓	✓	✓	-	-	-	-	-	-	-	-	-
CLR	ALL LIM 90		THRESHLD 10		L1 231V		L2 231V		L3 231V			
Wheel Save confirms Esc quits												

Fig. 17: Setting the same intensity limit for all channels

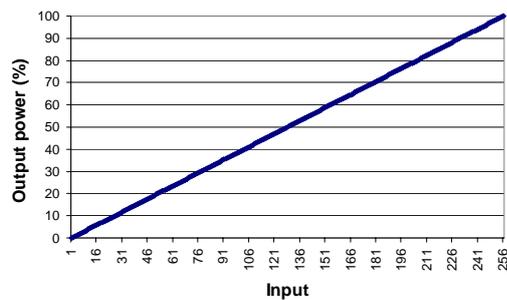
Dimmer curves

The dimmers are controlled using characteristic curves. A curve assigns each output level (e.g. 50%) to a specified 'real' dimmer level. The dimmer curve can be used to modify the dimming behavior of a spotlight to the given requirements (e.g. to come on when a particular threshold value is achieved, unlike linear control).

All dimmer curves refer to the power output. Characteristic curve LI "linear" thus means "linear power output".

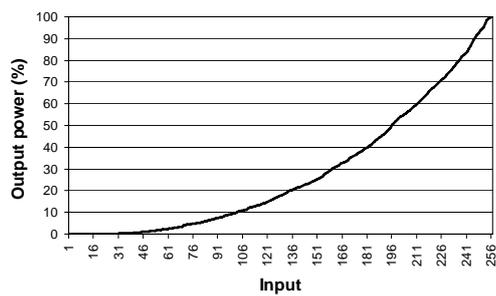
You can assign a specific dimmer curve to each dimmer channel. You can choose between five curves:

LI Linear = linear power output

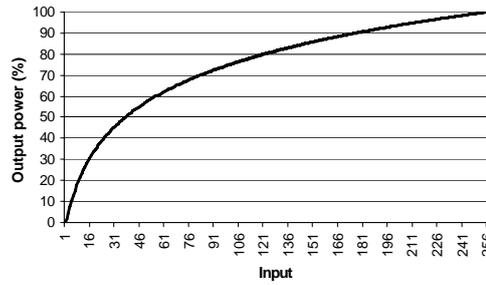


SC Halogen
Currently not implemented, behaves as LI = linear power output

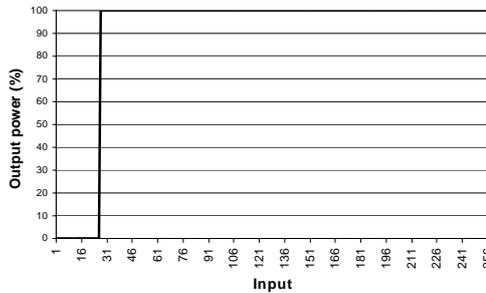
EX For fluorescent lamps



LG Logarithmic or voltage linear, for 115 V at an output level of 50%



ND Non-Dim (switching curve)



Assigning a dimmer curve individually for each dimmer channel

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *DCU* row and to the desired channel in this row.
- 3 Press [Edit] and use the knob to set the desired dimmer curve.*
- 4 Press [Save] to save the currently selected dimmer curve (ND for non-dim on channel 5 in the figure).

CH	1	2	3	4	5	6	7	8	9	10	11	12	
PRE	0	0	0	0	0	0	0	0	0	0	0	0	
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	
DCU	LI	LI	LI	LI	ND	LI	LI	LI	LI	LI	LI	LI	
LEV	50	50	50	50	50	50	50	50	50	50	50	50	
STA	✓	✓	✓	-	✓	-	-	-	-	-	-	-	
CLR	ALL		THRESHLD		10	L1		231V		L2		231V	
Wheel Save confirms Esc quits												L3	231V

Fig. 18: Assigning a dimmer curve individually

*) As you turn the knob, four unassigned characteristic curve storage locations (--) appear between the LG and ND curves.

Assigning the same dimmer curve to all channels

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *ALL* input field.
- 3 You can set the same values here for all channels for the following:
 - Preheat (*PRE*)
 - Intensity limit (*LIM*)
 - Dimmer curve (*DCU*)
- 4 Turn the knob until *ALL DCU* appears.
 - The currently set dimmer curve is highlighted (LI in the figure).
- 5 Press [Edit] and use the knob to set the desired dimmer curve (*LI*, *SC*, *EX*, *LG* or *ND*; see page 31).*
- 6 Press [Save] to save the dimmer curve selected for all channels.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	0	0	0	0	0	0	0	0	0	0	0	0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI	LI
LEV	50	50	50	50	50	50	50	50	50	50	50	50
STA	✓	✓	✓	-	-	-	-	-	-	-	-	-
CLR	ALL DCU		THRESHLD		10		L1 231V		L2 231V		L3 231V	
Wheel selects Edit to change												

Fig. 19: Assigning the same dimmer curve to all dimmer channels

*) As you turn the knob, four unassigned characteristic curve storage locations (--) appear between the LG and ND curves.

Setting the switching threshold for a non-dim curve

- 1 Press [Page] to call menu page 2, *Parameters*.
- 2 Use the knob to move the selection cursor to the *THRESHLD* input field.
- 3 Press [Edit] and use the knob to set the desired switching threshold (applies to all channels with a non-dim curve).
 - Value range: 5 to 95
- 4 Press [Save] to save the switching threshold selected for all channels.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LG	LI	LI	LI	LI	LI	LI	LI
LEV	50	50	50	50	50	50	50	50	50	50	50	50
STA	✓	✓	✓	-	-	-	-	-	-	-	-	-
CLR	ALL		THRESHLD		10		L1 231V		L2 231V		L3 231V	
Wheel selects Edit to change												

Fig. 20: Setting the switching threshold for a non-dim curve



Providing light automatically

Fading in stored presets

You can fade in several stored presets with individually selected weightings.

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *MEM* row and to the desired preset in this row (3 in the figure).
 - The bar chart displays the individual intensities of this preset.

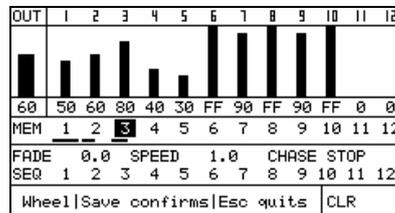


Fig. 21: Bar chart with the intensities of a preset

- 3 Press [Edit] and use the knob to set the desired output level (weighting factor) for the selected preset:
 - Value range: 0 to FF (0% to 100%).

The weighting factor is displayed in three forms:

 - As a wide bar in the *OUT* field
 - As a numerical value in the *OUT* field (60% in the figure)
 - As a narrow bar under the number of the preset
- 4 Press [Save] to save the selected weighting factor.



The bar and the numeric value in the *OUT* field apply only to the selected preset. By contrast, the narrow bars under the preset number constantly display the weighting factors for the presets. This enables you to identify at a glance which presets are contributing how much to the current lighting scene.

While the presets are faded in, **output levels from other settings or sources** continue to be output:

- Internally: Manual output levels created using menu page 1, *Intensities*
- Externally: Output levels determined by other signal sources

If you want to **output all presets that have been stored alone**, the following prerequisites must be met:

- Signal source: Mem/Chase
- All manually created output levels must be at zero

Displaying the contents of stored presets

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *MEM* row and to the desired preset in this row (preset 3 in the figure).
 - The bar chart displays the intensities of this preset.

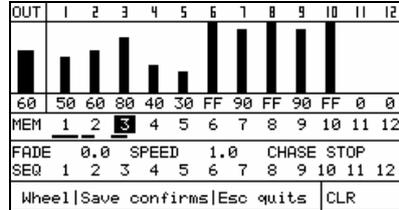


Fig. 22: Bar chart with the intensities of preset 3

Creating a chase with the chaser function

Setting the fade time

The fade time is the time taken for the first preset to fade in, for the first preset to crossfade to the second, and so on.

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *FADE* field.
- 3 Press [Edit] and use the knob to set the desired fade time (0.0 seconds in the figure).
 - Applies to all presets.
 - Value range: 0.0 to 999.0 (seconds)
- 4 Press [Save] to save the selected fade time.

OUT	1	2	3	4	5	6	7	8	9	10	11	12
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0						SPEED	1.0		CHASE	STOP	
SEQ	1	2	3	4	5	6	7	8	9	10	11	12
	Wheel selects Edit to change											CLR

Fig. 23: Setting the fade time

Setting the wait time for presets

The wait time is the period of time for which each preset remains on at full power in the case of chase lighting.

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *SPEED* field.
- 3 Press [Edit] and use the knob to set the desired wait time of the presets (1.0 seconds in the figure).
 - Applies to all presets.
 - Value range: 0.0 to 999.0 (seconds)
- 4 Press [Save] to save the selected wait time.

OUT	1	2	3	4	5	6	7	8	9	10	11	12
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0						SPEED	1.0		CHASE	STOP	
SEQ	1	2	3	4	5	6	7	8	9	10	11	12
	Wheel selects Edit to change											CLR

Fig. 24: Setting the wait time

Setting a sequence of presets

You can define a sequence of 1 to a maximum of 12 presets in any order. The SEQ row on menu page 3, *Memory/Chaser*, contains 12 positions for this purpose that are prefilled with the 12 storable presets in ascending order (factory setting). However, any preset can be assigned to each of these sequence positions.

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the SEQ row and to the desired sequence position in this row.
- 3 Press [Edit] and use the knob to set the desired preset number at this sequence position (preset no. 3 in the figure).
 - Value range: . ., 1 to 12
 - Two dots (. .) conclude a sequence that has less than 12 presets.
- 4 Press [Save] to save the selected preset or the characters concluding the sequence (. .) at the current sequence position.

OUT	1	2	3	4	5	6	7	8	9	10	11	12
	50	60	80	40	30	FF	90	FF	90	FF	0	0
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0		SPEED			1.0		CHASE		STOP		
SEQ	1	2	3	4	5	6	7	8	9	10	11	12
Wheel selects Edit to change CLR												

Fig. 25: Assigning a sequence position

Example:

You want to run the following sequence:
Preset 7 – preset 2 – preset 12

Enter it in the SEQ row, as shown in **Fig. 26**.

- The sequence is executed as follows:
7 – 2 – 12 –
7 – 2 – 12 –
7 – 2 – 12 –
...

OUT	1	2	3	4	5	6	7	8	9	10	11	12
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0		SPEED			1.0		CHASE		STOP		
SEQ	7	2	12									
Wheel selects Edit to change CLR												

Fig. 26: Sequence of three as an example

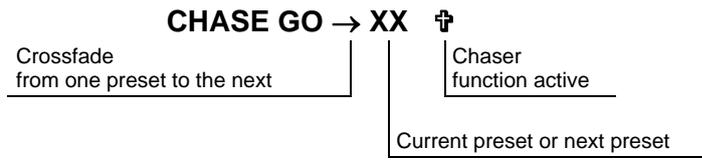
Running a chase

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *CHASE* field.
 - The current status (STOP) is selected.
- 3 Press [Edit].
 - The status display changes to GO.

OUT	1	2	3	4	5	6	7	8	9	10	11	12
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0	SPEED		1.0	CHASE		GO					
SEQ	7	2	12	..								
Wheel Save confirms Esc quits CLR												

Fig. 27: Running a chase

- 4 Press [Save] to activate the chase.
 What you see on the display while the chaser function is active:



Press [Page] twice to switch to menu page 1, *Intensities*, in order to be able to follow the execution of the lighting sequence in the bar chart.

While the presets are faded in, **output levels from other settings or sources** continue to be output:

- Internally: Manual output levels created using menu page 1, *Intensities*
- Externally: Output levels determined by other signal sources

If you want to **output all presets that have been stored alone**, the following prerequisites must be met:

- Signal source: Mem/Chase
- All manually created output levels must be at zero

Holding/terminating a chase

- 1 Press [Page] to call menu page 3, *Memory/Chaser*.
- 2 Use the knob to move the selection cursor to the *CHASE* field.
 - The current status (GO__XX ↕) is selected.
- 3 Press [Edit].
 - The number of the preset that has just been output disappears, but the chaser function remains active.
- 4 Use the knob:
 - To set the HOLD function to *hold* the chase. The current output values are retained.
 - To set the STOP function to *terminate* the chase. The chase is faded out immediately.

OUT	1	2	3	4	5	6	7	8	9	10	11	12
MEM	1	2	3	4	5	6	7	8	9	10	11	12
FADE	0.0	SPEED		1.0	CHASE		HOLD	*				
SEQ	7	2	12									
Wheel Save confirms Esc quits										CLR		

Fig. 28: Holding a chase

Difference:

- HOLD: [SAVE] holds the chaser function; the current output values are retained.
 - STOP: [SAVE] terminates the chaser function; the chase is faded out immediately.
- 5 Press [Save] to activate the selected function (HOLD or STOP).



Every time the chaser function restarts, it begins with the first preset in the sequence, irrespective of whether HOLD or STOP was active last.

The menu pages

In conjunction with the keypad and the knob, four menu pages (shown here for an Alex M with 12 channels) allow you to make all the entries you need and keep you in the picture at all times regarding the current operating status of Alex M:

1	2	3	4	5	6	7	8	9	10	11	12
50	20	25	FF	35	50	75	40	85	75	FF	75
✓	✓			✓				✓			✓
MEM 1	ALL LEV 0	DMX 1	CM	L1 235V	L2 234V	L3 234V					
Wheel selects Edit to change											

Menu page 1: **Intensities**
(see page 42)

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	0	0	0	0	0	0	0	0	0	0	0	0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LG	LI						
LEV	50	20	25	FF	35	50	75	40	85	75	FF	75
STA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLR	ALL	THRESHLD 10	L1 236V	L2 236V	L3 235V							
Wheel selects Edit to change												

Menu page 2: **Parameters**
(see page 44)

OUT	1	2	3	4	5	6	7	8	9	10	11	12
60	50	60	80	40	30	FF	90	FF	90	FF	50	60
MEM 1	2	3	4	5	6	7	8	9	10	11	12	
FADE 0.0	SPEED 1.0	CHASE STOP										
SEQ 1	2	3	4	5	6	7	8	9	10	11	12	
Wheel Save confirms Esc quits CLR												

Menu page 3: **Memory/Chaser**
(see page 46)

DMX ADDRESS	1											
ON DMX FAIL	Hold											
MEMORY TIME	0.5	f 50.02 Hz										
INPUT Dmx + Mem/Chase	ANA-MIN	5										
CLEAR MEM/CHASE	FU-TIME	40										
DIMMER CONTROL	On	UAMAX	230									
RESET DEVICE	USG	490.2										
LANGUAGE	English	CONTRAST	70									
Wheel Save confirms Esc quits U 1.50												

Menu page 4: **Basic Settings**
(see page 49)



You press [Page] to cycle through these 4 menu pages. The welcome screen only appears when the device has been booted.

Status line

All menu pages have a status line along the bottom edge of the display. This is where help texts and error messages are displayed.

During normal operation, the status line displays the following texts:

Wheel selects | Edit to change (edit mode inactive)

or

Wheel | Save confirms | Esc quits (edit mode active)

Menu page 1: Intensities

Menu page 1, *Intensities*, constantly displays the current output levels for all dimmer channels in a bar chart.

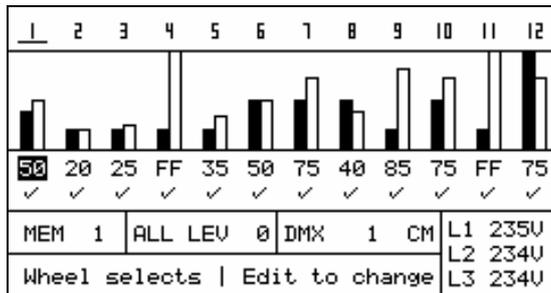


Fig. 29: Menu page 1, *Intensities*, for a configuration with 12 dimmers. When there are 6 dimmers, you will, of course, only see six channel-specific indicators (e.g. bars).

Output level display

Menu page 1, *Intensities*, constantly displays the current output levels for all dimmer channels in a bar chart. Each bar is split into two:

- Left half (solid)** Contribution made by other, external devices (DMX or analog) to the output level
- Right half (transparent)** Contribution made internally by Alex M to the output level (stored presets, chases).

The output value displayed is always whichever of the external and the internal contributions is the higher.

Input/display fields

1st row under bar chart	Contribution made by Alex M to the output level Specified in percent for each channel Value range: 0 to FF (0% to 100%) Factory setting: All 0
2nd row under bar chart	Status display, entry for each channel  Circuit closed, no error - Circuit open (no lamp connected, spotlight defective)* E Fuse triggered P Phase error
MEM X†	Input field for saving the current output level as a preset X Memory block, value range: 1 to 12 † Memory block is assigned
ALL LEV	Input field: The same internal output level can be assigned to all channels.
DMX 1 CM	Indicates the signal source, which can be any of the following: DMX xxx CM DMX and Memory/Chaser or analog, DMX and Memory/Chaser DMX xxx -- DMX only ANA --- CM Analog and Memory/Chaser ANA --- -- Analog only --- --- CM Memory/Chaser only xxx = DMX start address Memory/Chaser = stored presets/chases
L1 230V	Displays the current phase voltages.
L2 230V	---
L3 230V	--- Phase missing

*) The display "-" (Circuit open) is not available on units fitted with an electronic base load.

Menu page 2: Parameters

This menu page shows the individual dimmer parameters for each channel and allows you to modify them.

CH	1	2	3	4	5	6	7	8	9	10	11	12
PRE	0	0	0	0	0	0	0	0	0	0	0	0
LIM	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
DCU	LI	LI	LI	LI	LG	LI	LI	LI	LI	LI	LI	LI
LEV	50	20	25	FF	35	50	75	40	85	75	FF	75
STA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CLR	ALL		THRESHLD 10		L1 236V		L2 236V		L3 235V			
Wheel selects Edit to change												

Fig. 30: Menu page 2, *Parameters*, for a configuration with 12 dimmers. When there are 6 dimmers, you will, of course, only see six channel-specific displays (e.g. bars).

Input fields for each individual channel

PRE	Preheat for spotlights Value range: 0 to 30 Factory setting: All 0
LIM	Output level limit Value range: 30 to FF (30% to 100%) Factory setting: All FF
DCU	Dimmer curve, possible settings: LI Linear SC Halogen EX Fluorescent lamps LG Logarithmic -- (not assigned) ND Non-Dim (switched dimmer curve) Factory setting: All LI Dimmer curves: see page 31.

Input fields for each channel individually

LEV Internal contribution to the output level
Value range: 0 to FF (0% to 100%)

STA Status display

-  Circuit closed, no error
- Circuit open (no lamp connected, spotlight defective)*
- E* Fuse triggered
- P* Phase error



The symbol  is also displayed if a lamp is not connected and output exceeds 90%.

*) The display "-" (Circuit open) is not available on units fitted with an electronic base load.

Input fields for all channels together

CLR Yes [Save] resets all the parameters on this page to their factory settings (see page 58).

You can assign all channels the same:

- ALL PRE** – Preheat values
- ALL LIM** – Output level limits
- ALL DCU** – Dimmer curves

The value ranges are as for *PRE*, *LIM* and *DCU* (see previous page).

THRESHLD Switching threshold for a non-dim curve
Value range: 5 to 95
Factory setting: 10

Menu page 3: Memory/Chaser

Menu page 3, *Memory/Chaser*, allows you to activate stored presets statically or as chases.

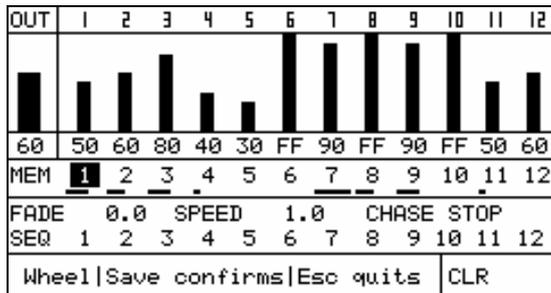


Fig. 31: Menu page 3, *Memory/Chaser* for a configuration with 12 dimmers. When there are 6 dimmers, you will, of course, only see six channel-specific indicators (e.g. bars).

Output diagrams

For the currently selected preset, the bar charts indicate:

- The (internal) output for each channel
- The percentage to which this preset is activated and is therefore contributing to the current lighting

These values are also displayed in numeric form.

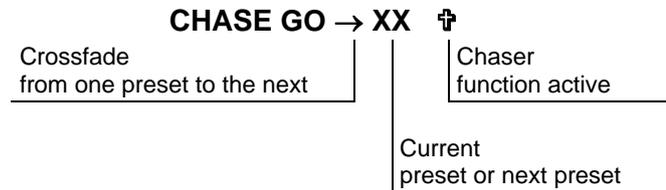
Input/display fields

OUT	<p>Contribution made by the selected preset to the current lighting. A bar shows you at a glance the weighting factor applied for the preset.</p> <p>Value range: 0 to FF (0% to 100%) Factory setting: 0</p>
MEM	<p>List of stored presets (12 memory blocks). The weighting factor (the contribution made by a given preset to the current lighting) is displayed as a small bar under the preset number. The same applies to presets that are not selected.</p>
FADE	<p>Fade time for the chaser function: This is the time taken for the first preset to fade in, for the first preset to crossfade to the second, and so on. The fade time applies to all presets.</p> <p>Value range: 0.0 to 999.0 (seconds) Factory setting: 0.0</p>
SPEED	<p>Wait time for individual presets in the case of chases</p> <p>Value range: 1.0 to 999.0 (seconds) Factory setting: 0.0</p>

Input/display fields (continued)

CHASE	Activates, holds and terminates the chaser function.
GO	[Save] starts the chaser function.
HOLD	[Save] holds the chaser function; the current output values are retained.
STOP	[Save] terminates the chaser function.

What you see on the display while the chaser function is active:



SEQ Sequence of stored presets that can be output using the chaser function. The sequence can contain up to 12 presets.

Value range: . . , 1 to 12
 Factory setting: 1 2 3 ... 12
 . . Concludes a sequence which
 contains less than 12 entries.

CLR Yes_ [Save] sets the weighting factors (*OUT*) of all presets to zero and terminates the chaser function, if it is active.



The contents of the presets are retained.

Menu page 4: Basic settings

This menu page shows the basic settings for the dimmer system and allows you to modify them.

DMX ADDRESS	1	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase		ANA-MIN 5
CLEAR MEM/CHASE		FU-TIME 40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE		USG 490.2
LANGUAGE	English	CONTRAST 70
Wheel Save confirms Esc quits		U 1.50

Fig. 32: Menu page 4, Basic Settings

Input/display fields

DMX ADDRESS DMX start address of the dimmer system
 Value range: 1 to 512 and *SINGLE*
 Factory setting: 1

ON DMX FAIL Behavior if the DMX signal fails
 (detected after 2 seconds)

Hold Maintains the current output levels

Memory XX Fades in the stored preset XX
 Only effective if *DMX + Mem/Chase* is selected as the signal source under *INPUT*.

Chaser Chaser function active (chase)
 Only effective if *DMX + Mem/Chase* is selected as the signal source under *INPUT*.

Blackout Deactivates all channels.

Factory setting: *Hold*

Input/display fields (continued)

MEMORY TIME	Fade-in time for preset XX if the DMX signal fails														
FREQ	Display of mains frequency Display only. This is not an input field and cannot be addressed with the knob.														
INPUT	Source of the dimmer control signals <table> <tr> <td><i>Dmx</i></td> <td>DMX signal only</td> </tr> <tr> <td><i>Analog</i></td> <td>Analog signal only</td> </tr> <tr> <td><i>Mem/Chase</i></td> <td>Stored presets or chases only</td> </tr> <tr> <td><i>Dmx + Mem/Chase</i></td> <td>DMX signal and stored presets/chases</td> </tr> <tr> <td><i>Analog + Mem/Chase</i></td> <td>Analog signal and stored presets/chases</td> </tr> <tr> <td><i>Ana+Dmx+Mem/Chase</i></td> <td>Analog signal, DMX signal and stored presets/chases</td> </tr> <tr> <td>Factory setting:</td> <td><i>Dmx + Mem/Chase</i></td> </tr> </table>	<i>Dmx</i>	DMX signal only	<i>Analog</i>	Analog signal only	<i>Mem/Chase</i>	Stored presets or chases only	<i>Dmx + Mem/Chase</i>	DMX signal and stored presets/chases	<i>Analog + Mem/Chase</i>	Analog signal and stored presets/chases	<i>Ana+Dmx+Mem/Chase</i>	Analog signal, DMX signal and stored presets/chases	Factory setting:	<i>Dmx + Mem/Chase</i>
<i>Dmx</i>	DMX signal only														
<i>Analog</i>	Analog signal only														
<i>Mem/Chase</i>	Stored presets or chases only														
<i>Dmx + Mem/Chase</i>	DMX signal and stored presets/chases														
<i>Analog + Mem/Chase</i>	Analog signal and stored presets/chases														
<i>Ana+Dmx+Mem/Chase</i>	Analog signal, DMX signal and stored presets/chases														
Factory setting:	<i>Dmx + Mem/Chase</i>														
ANA-MIN	Minimum value for output level through analog signal in percent. Below this value: output = zero. Value range: 5 to 10 Factory setting: 5														
CLEAR MEM/CHASE	_Yes_ + [Save] reset all parameters that affect stored presets and the chaser function to the factory settings. In particular, all stored presets are reset to zero. For a list of the factory settings, see page 58.														

Input/display fields (continued)

FU-TIME	Fade-in time with intensity increments. Instead of outputting an intensity increment, the device fades the increment in over the specified time to "smooth out" the incremental effect. Value range: 40 to 500 (milliseconds) Factory setting: 40 (equivalent to the inertia of spiral-wound filaments in a lamp)
DIMMER CONTROL	Dimmer control on/off <i>An</i> Dimmer control active <i>Aus</i> Dimmer control off Factory setting: <i>An</i>
UAMAX	Output voltage at full output Value range: 180 to 280 (volts) Factory setting: 230
RESET DEVICE	Yes + [Save] resets all the settings and parameters to the factory settings (see page 58).
USG	Operating hours counter Display only. This is not an input field and cannot be addressed with the knob.
LANGUAGE	Menu language Available: English, German, Dutch, Italian, Spanish Factory setting: English
CONTRAST	Display contrast Value range: 0 to 99 Factory setting: 75

Software version

The software version number of the device is shown on the bottom right of the display next to the status line on menu page 4, *Basic Settings*.

Identifying whether a base load is fitted

The dimmer unit can be fitted with an optional electronic base load ("Alex MX"). You can see whether your unit is fitted with this optional extra on menu page 4, *Basic Settings*: The letter "A" at the end of the software version number indicates that a base load is fitted.

DMX ADDRESS	!	
ON DMX FAIL	Hold	
MEMORY TIME	0.5	f 50.02 Hz
INPUT Dmx + Mem/Chase		ANA-MIN 5
CLEAR MEM/CHASE		FU-TIME 40
DIMMER CONTROL	On	UAMAX 230
RESET DEVICE		USG 490.2
LANGUAGE	English	CONTRAST 70
Wheel Save confirms Esc quits		U 1.50A

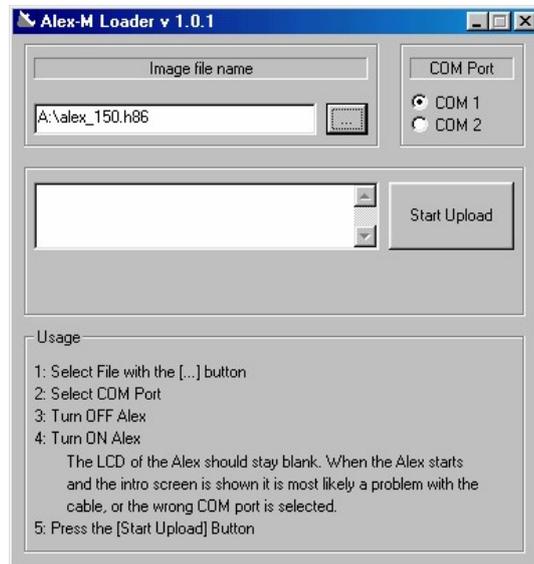
Fig. 33: Menu page 4, *Basic Settings*. The "A" in the software version number at the bottom right of the page indicates that this unit is fitted with an electronic base load.

Software updates

The software tool “Alex-M Loader” provides you with a simple method of updating the dimmer processor software from a PC or laptop. You will need the following cable:

- 9-pin Submin-D, male to female. Pins 4, 7 and 8 must be bridged. See **Fig. 35** on page 54.

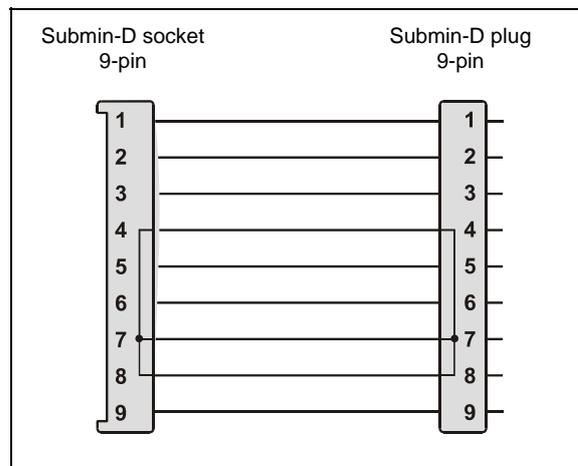
Fig. 34:
The “Alex-M Loader”
software tool



- 1 Use the cable to connect the RS232 submin-D socket at the rear of the unit to a serial port on the PC / laptop.
- 2 Start the “Alex-M Loader” software tool.
- 3 Select the file with the software you want to install. The file must have the extension .h86.
 - Either enter the path and name of the file in the text box
 - or
 - Click [...] and browse for the file as normal under Windows (in much the same way as you would open a file in Microsoft Word, for instance).

- 4 Select the serial port of the PC / laptop which is being used (COM1 or COM2).
- 5 Switch the dimmer unit off briefly and then on again (disconnect the power supply briefly).
 - If the cable is connected correctly and the settings are correct, the display on the unit remains white. If, on the other hand, the welcome screen appears, it is probable that either the incorrect serial port has been selected or the cable has been connected incorrectly.
- 6 If the screen of the dimmer processor is white: Start the software update process by pressing [Start_Upload].
 - The new software is read in and progress bars indicate the status of the update. This process may take several minutes. The software has been read in when the progress bars disappear.
- 7 When the software update has been completed, close "Alex-M Loader" and remove the cable.
 - The unit is immediately operational with the new software.
 - The settings you have selected and any presets you have stored are retained.

Fig. 35: 9-pin Submin-D cable, male to female. Pins 4, 7 and 8 are bridged.



Appendix

Technical data

Interfaces

DMX512/1990	1 x In 1 x Out (loop output)
Analog control voltages	12 x 0 V to +10 V
RS-232	1 x e.g. for a laptop
Link	1 x to link a number of devices

Functions

Sources of the control signals	<ol style="list-style-type: none"> 1. DMX 2. Analog 3. Stored presets, individual or simultaneous
Combination of different control signals	Real-time maximum creation
DMX512/1990 address area	Can be set from 1 to 512 for each channel individually via the display on the front plate
Auxiliary groups	12, independently of the lighting control system
Chase	Adjustable wait and fade-in times, free sequence selection, independently of the lighting control system
Preheat	0% to 30%; can be set independently for each dimmer channel
Output level limit	30% to 100%; can be set independently for each dimmer channel

Selection options if DMX signal fails	<ol style="list-style-type: none"> 1. Last setting 2. One of the 12 auxiliary groups 3. Chase 4. All circuits dark
Surge immunity	Cold lamps can be powered up with no restrictions.
Control curves	<ol style="list-style-type: none"> 1. Linear 2. Halogen (currently not implemented) 3. Fluorescent lamps 4. Logarithmic 5. Non-Dim
Base load	Integrated electronic base load for convenient dimming of fluorescent lamps (Alex MX)

Output stages

Rated power	12 x 2.5 kVA (13 A) or 6 x 5 kVA (25 A)
Power loss	< 1% (300 W) at full load < 2 % (600 W) at full load 90 W at no-load operation
Minimum load	Not required (0 VA) with Alex Mx
DC component at output	± 1 V (control symmetrical)
cos φ of the controlled load	≥ 0.4
Risetime	400 μ s

General data

Mechanical design	19" rack-mountable unit as a standalone device or for mounting in a flight case or rack
Display	LCD, 130 x 70 mm, backlit CFL, 240 x 128 pixels
Computer system	Modern processor architecture based on SMD technology
Power supply	400 V AC, 3 P + N + PE CEE 32 A or CEE 63 A 48 to 52 Hz or 58 to 62 Hz
Power system input	5-pin CEE connector, 32 A or 63 A
Load output	Multicore (Harting); others available on request
Dimensions	19", 3 HE (132 mm), approx. 400 mm deep without connectors
Weight	Approx. 28 kg
Cooling system	Temperature-controlled fan
Housing protection class	IP21
Ambient temperature	Recommended: 0 to 35 °C
Permissible relative humidity	0% to 90% (non-condensing)
Safety	In accordance with the European standards EN 60204 and EN 60950
EMC	In accordance with the European standards EN 50081/82 and EN 55014

Technical data subject to change.

List of factory settings

RESET DEVICE on menu page 4, *Basic Settings*, allows you to reset all the settings on your dimmer system to the factory settings. The menu pages *Parameters* and *Memory/Chaser* offer reset functions that only apply to certain settings.

Size	Value
DMX start address	1
Behavior if DMX signal fails	Hold
Fade-in time after DMX failure	0.5 s
Signal source	DMX + Memory/Chaser
Minimum analog output	5 %
Fade-in time for intensity increments	40 ms
Dimmer control	on
Max. output voltage	230 V
Menu language	English
Display contrast	75 %
Manual output control for all channels	0 %
All stored presets	deleted
All preheat output levels	0 %
All output limits	100 %
Dimmer curve for all channels	linear
Non-Dim switching threshold	10 %
Weighting factor for all presets	0 %
Chaser fade-in time	0.0 s
Chaser wait time	1.0 s
Chaser sequence	1 2 3 ... 12

Pin assignments

Pin assignment of the load outputs (HTS plug-in connector)

Alex M 12 x 2.5 kVA

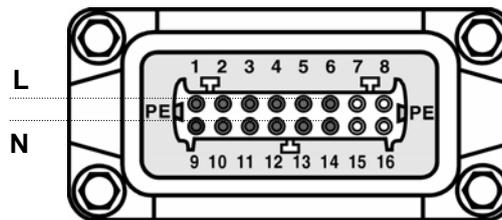
Upper HTS plug-in connector (CH 1-6):

Pin	1	2	3	4	5	6	7	8
Assignment (phase)	L CH 1	L CH 2	L CH 3	L CH 4	L CH 5	L CH 6	–	–
Pin	9	10	11	12	13	14	15	16
Assignment (neutral)	N CH 1	N CH 2	N CH 3	N CH 4	N CH 5	N CH 6	–	–

Lower HTS plug-in connector (CH 7-12):

Pin	1	2	3	4	5	6	7	8
Assignment (phase)	L CH 7	L CH 8	L CH 9	L CH 10	L CH 11	L CH 12	–	–
Pin	9	10	11	12	13	14	15	16
Assignment (neutral)	N CH 7	N CH 8	N CH 9	N CH 10	N CH 11	N CH 12	–	–

Fig. 36:
16-pin HTS plug-in connector
(load outputs
Alex M 12 x 2.5 kVA)



Alex M 6 x 5 kVA

Upper HTS plug-in connector (CH 1-3):

Pin	1	3	5
Assignment (phase)	L CH 1	L CH 2	L CH 3
Pin	2	4	6
Assignment (neutral)	N CH 1	N CH 2	N CH 3

Lower HTS plug-in connector (CH 4-6):

Pin	1	3	5
Assignment (phase)	L CH 4	L CH 5	L CH 6
Pin	2	4	6
Assignment (neutral)	N CH 4	N CH 5	N CH 6

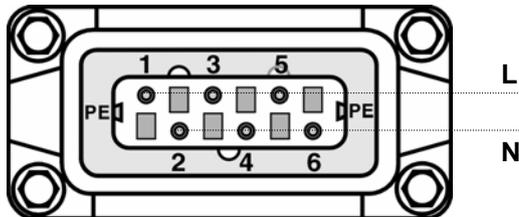
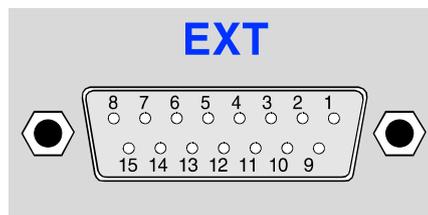


Fig. 37:
6-pin HTS plug-in connector
(load outputs
Alex M 6 x 5 kVA)

Pin assignment for the EXT socket

The 15-pin Submin-D socket EXT on the backplane of the dimmer unit serves as the feed-in for analog control signals (12 channels, 0 – 10 V).



	8	7	6	5	4	3	2	1							
Pin	15	14	13	12	11	10	9								
Channel number	–	–	GND	12	11	10	9	8	7	6	5	4	3	2	1



Version status

Manual version	SW vers.	Date	Changes/additions
080897-120A	1.20	08.08.1997	First complete edition of the manual, German and English
171298-129A	1.29B	17.12.1998	German edition Additional menu languages, individual address assignment for each channel, preheat settings enhanced
240399-130A	1.30	24.03.1999	Addition to the manual version 080897-120A, German and English LOCK mode
241199-141A	1.41	24.11.1999	German edition Additional signal source "DMX, Analog and Memory/Chaser"
140200-141B	1.41	14.02.2000	Complete edition, German and English
241100-141C	1.41	24.11.2000	Small additions and corrections in the manual
020927-150A	1.50	27.09.2002	Additions German and English: <ul style="list-style-type: none"> • Automatic change-over 50/60 Hz • Optional fitting with electronic base load • New Dimmer curves
030430-150B	1.50	31.03.2003	Small additions and corrections in the manual

transtechnik

transtechnik

Integrated digital thyristor dimmer



Electronic Theatre Controls GmbH

*Ohmstrasse 3 . 83607 Holzkirchen . Germany
Tel +49 (0) 80 24 / 47 00-0
Fax +49 (0) 80 24 / 47 00-3 00*

*eMail Deutschland@etconnect.com
Internet www.etconnect.com*