

Manual DimBOX12

For software version V4.0

Introduction:

You can set up the dimmer pack by use of a LCD, a few indication leds and some push buttons, which are all placed on the front panel. In the following [name] refers to a push button. Name stands for the text on the front panel near this button. In the same way <name> refers to an indication led. The whole set up can be done with four different display menus. Also there are a few warning and information displays possible. All these items will be discussed below.

A particular menu can be recalled by pushing [select menu]. A blinking cursor points the item that can be changed by pushing [change item]. You can shift the cursor position by pushing [select item].

When you change an item value, it will be saved automatically in memory after 2 minutes. You can save it immediately by switching between two menus with button [select menu].

The backlight of the display starts burning for 13 seconds, when you push one of the buttons. You can set the backlight continually on with an internal jumper setting. In that case you have to open the pack, remove the LCD-module from some spacers and connect pin 1 with pin 2 on jumper J3.

You can control DimBOX12 by DMX512 from a control desk or you can control it with a remote preset controller. In the latter case you have to create and store the presets on the dimmer pack itself. **Attention: you can use the dimmer pack either one way or the other.** In the set up menu you have to select the way you like to use the pack. According these two possible steering methods this manual is split up in two parts.

1: DimBOX12 controlled by DMX512 (Set up menu: Ctrl=DMX512)

MAIN menu; setting the DMX start address and the GRANDMASTER.

This menu will be displayed after power on. In case an other menu is selected, the user interface returns to the MAIN menu automatically after a while. In this menu you can set:

- DMX pack (start) address:
PackAddress= 1,...,987
- The global output level controller or Grandmaster value. For example: grandmaster=50% means that every dimmer will be driven at 50% of the corresponding DMX values. Normally the Grandmaster is set on 100%.
GRANDmaster= 0,...,100%

DIMMER menu; setting the control curve and the pre-heating for a particular dimmer.

Starting at the MAIN menu push ones on [select menu]. DIMxx is the selected dimmer, with xx=1,...,12.

- Control Curve. With this item you can select a correction on how the dimmer re-acts on the DMX steering. The choice you make depends on the dimmer load (for example the lamp type). Led <nondim set> indicates if there is 'non-dim' selected for at least one dimmer.
Curve= 'non-dim' (threshold= 50%) / Linear / '40W' (low power lamps) / S-curve2 / S-curve3 / S-curve4 / 'Trafo12V' (12Volt halogen lamps with dimmable electronic transformer). Default is Linear.
- Pre-heating. This item gives you the possibility to limit the inrush current in case of flashing high power lamps by setting pre-heating on a few percents. Led < preset set > indicates if there is a pre-heating set for at least one dimmer. Default is pre-heat=0%.
PreH'= 0,...,100%

RECORD DMX menu; creating a preset by recording the DMX-input.

Starting at the MAIN menu push twice on [select menu]. Create with a separate control desk a scene. Select in the menu a preset number you like to assign to this scene; PRESETx, x=1,...,7. Move the cursor to NO. Change this with one of the buttons [change item] in DONE. After that the record is made.

Attention, only if in the set-up menu 'control' is set on 'BUTTON' you can play back these presets with a remote preset controller or with the MAIN menu. You must have removed the DMX512 connection before you can use the remote preset controller.

CREATE PRESET menu; creating a preset and programming a fade-in time.

Starting at the MAIN menu you push twice on [select menu]. Select the number of the preset you want to create: PRESETx, x=1,...,7. Set each dimmer output on the desired level by selecting a dimmer number and setting the level in percents: DIMXX, level=xxx%. To program the fade-in time you have to move the cursor to t-in and select the desired seconds: t-in=03, t=0,...,50 seconds.

SET-UP menu; general pack settings.

Keep button [select menu] pushed for a while. The set-up items are:

- Control method. You can select DMX512 or 'remote preset controller'. The latter option refers to a box with 7 or 8 push buttons connected by a serial link to the dimmer pack. By pushing button-n you can fade in a previously stored preset-n. Also you can control the GRANDMASTER remotely.
CTRL=DMX512 or BUTTON.
- MIDI channel number: Channel=XX, xx=1,...,16. (Only in case of Ctrl=BUTTON)
- GJC=Generator Jitter Compensation. This is important in case of a portable generator. You can reduce the sensitivity of the pack for generator instability. (Attention, if you choose a higher GJC level, you get less possibilities to pre-heat):
GJC=[0,1,2,3,4,5]
- Re-set the dimmer-pack to default (factory settings):
Reset all:n/y → Default: GRANDMASTER=100%, CURVE='linear',
PREH'=0% (for all dimmers),
CHANNEL=01, GJC=1.

STATUS menu.

Push on Button [View dimmer input and load]. The cursor blinks at DIMxx. Select the desired dimmer number. The input for the selected dimmer is displayed and an indication of the dimmer load in Watts. To check out which lamps are connected on this dimmer you can push again on [View dimmer input and load]; now you get a blackout and a little while later the original level fades in.

Front panel led indicators:

- mains power Led on: system power okay
- non-dim set Led on: for at least one dimmer non-dim is set.
- preset set Led on: for at least one dimmer pre-heating is set.
- input present Led on: DMX signal present.
- WARNING Led blinks with the following possible display warnings:

REPLACE FUSE
12.....

Calls attention to a tripped internal dimmer fuse. You have to open the pack and replace the pointed fuse. Use only ceramic fuses 6.3x20mm, 10A, slow with a breaking capacity of 1000A

OVERTemperature

Calls attention to a too high internal temperature (higher then 65 °C). The output for each dimmer will be dimmed until 0% in 15sec. The outputs return to their previous levels after the internal temperature declines under 60 °C.

mains error!

Calls attention to a not optimal mains connection. Disconnect the pack from mains, turn the mains connector 180° and re-connect the pack again with the mains power; now the internal fuses are placed in the phase connection. See for more info the appendix.

Short circuit on
2

Calls attention to a short circuit situation in the circuitry connected on dimmer 2. Disconnect the load. You have to push button [View dimmer input and load] to reset the electronics.

overloaded dim.!
3

Calls attention to a situation of overload on dimmer 3. Reduce the load on this dimmer. You have to push button [View dimmer input and load] to reset the electronics

APPENDIX

Conventional- and electronic transformers with 12V halogen lamps.

DimBOX12 is basically a triac-dimmer. It can handle conventional transformers. But in case of high power transformers you have to pay attention to the inrush current. There can appear a high inrush current that calls upon the shortcircuit detection. In these cases we strongly advice to use an inrush current limiter. Contact your local supplier or directly call Theater Technisch Lab for more information.

Dimmable electronic transformers must be types that are meant for inductive loadable dimmers or dimmers based on trailing edge phase control. Attention:

- Pay attention to the minimum load you have to connect to the trafo. This value is printed on the trafo. If you do not fullfill this requirement the lamps connected on that trafo are not well dimmable.
- Select for the dimmers on which you connect these electronic trafo's the curve 'Trafo12V'. See under DIMMER menu.

Conventional TL-lamps and stroboscopes.

You cannot directly connect TL-lamps and stroboscopes on the output of DimBOX12. These loads can generate enormously high voltage spikes on the output of the dimmer. These spikes can destroy the triac or driver components of the dimmer. We strongly advice the use of a voltage limiting device such like a varistor. You have to connect this component between the phase and the neutral connection of the load. Call for more info.

Triac replacement.

When the output drives the load uncontrollable at 100% or 50% in most cases the corresponding triac is destroyed. Replacement of a triac is simple. Because they are placed in a cage clamp block and not soldered! You have to remove a clamp that presses six triac to a heat sink. It is possible to change the triac yourself, contact your local supplier or directly call Theater Technisch Lab for more information.

MAINS ERROR versus 'old type' supply mains.

In Europe there are some places where the voltage between phase and neutral is about 110/120V. Devices that operate on a mains voltage of 230V must be connected on two phases; the voltage between two phases in this case is about 220/230V. The voltage between the earth wire and both the mains wires is the same namely 110/120V. Consequently there is always a 'MAINS ERROR' warning. You can work around this problem by removing an IC on the printed circuit board: open the dimmer and remove IC the reference U22(PC814). This IC is located at the right edge of the PCB near de mains connection block. The disadvantage is that in case of a fuse blow-up there is still a voltage on one pole of the outlet because there is no neutral at all.

RECOMMENDED FUSES: 10A 250V breaking capacity: 1000A, characteristic: slow.

FIRST DISCONNECT THE MAINS, BEFORE YOU OPEN THE DIMMER: DANGEROUS TO LIFE!!!

DimBOX, DimBLOCK, Dimmypack and Tripack5 are digital portable dimmers of Theater Technisch Lab:

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