

DMX-Player L MK2

User Manual



DMX [®]
4
ALL



For your own safety, please read this user manual and warnings carefully before installation.

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Description

The **DMX-Player L^{MK2}** is a DMX Stand-Alone Player, designed for several tasks.

Various programmable DMX-Programs can be stored in the DMX-Player L^{MK2}.

The different options on the DMX-Player L^{MK2} are used to start the stored programs without a needed PC.

Stand-Alone Function

The internal 1MByte-FLASH storage allows a simple storage and easy replay of DMX-Programs directly within the DMX-Player L^{MK2}.

Expandable Storage with MicroSD-Card

By simply plugging a MicroSD-Card the storage for the Stand-Alone-Replay can be fit to certain requirements.

DMX-Output with 512 DMX-Channels

The DMX-Output with 512 DMX-Channels can be used completely within the Stand-Alone-Operation.

Easy Configuration via USB

The Configuration occurs easily via USB with the PC-Program DMX-Configurator. The Configuration once set is stored in the device.

Live-Controlling

Via USB the controlling for the DMX-Outputs is possible, also Live with PC. Thereby the programming can be checked without transferring it in the Stand-Alone-Storage.

Several Possibilities to start programs

The DMX-Player L^{MK2} provides different possibilities to start the stored programs, e.g. via button or Matrix-Keyboard.

TWI-Anschluss for external accessory

The DMX-Player L^{MK2} has a TWI connection for external accessory. For the 5pin design the connection can be made with a flat cable (Cable for TWI Extension 4fold).

Internal real-time clock

The internal real-time clock can start programs according to certain times.

Firmware-Update-Function

To use further functions the DMX-Player L^{MK2} offers a Firmware-Update-Function.

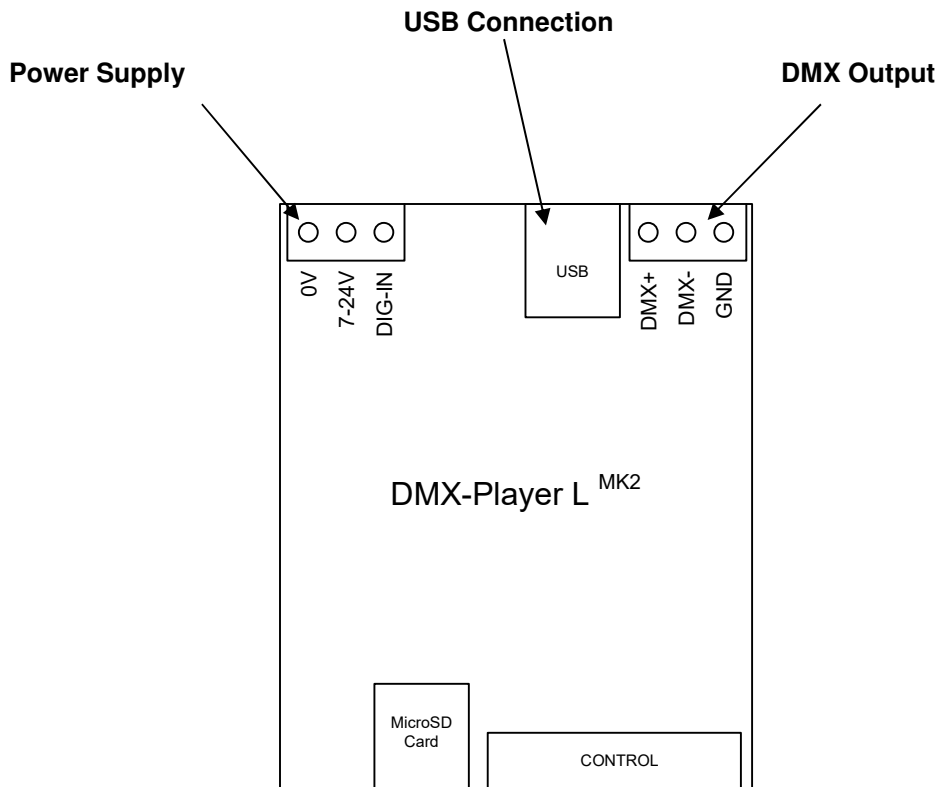
Top hat rail mounting available

Suitable for the DMX-Player L^{MK} the DIN rail housing 700 is available as accessory.

Data Sheet

Power supply:	7 – 24 V (~45mA @ 12V / ~22mA @ 24V)
Output:	DMX-Signal with 512 Channels
Inputs:	Digital LongDistance-Control Inputs for: <ul style="list-style-type: none">- Program Selection (Button / Matrix)- Brightness +/-- Speed +/-- Trigger- DIG-IN for 1-Button-Handling
Connection:	<ul style="list-style-type: none">- Screw terminal for power supply- Screw terminal for DMX-Output- Control-Connection with 20pin header- USB-A for transfer programs or for Live-Operation with PC
Program storage:	1MByte internal FLASH or optional MicroSD-Card (not included)
Handling:	external Button / Matrix-Keyboard external IR-Remote Control (Accessory)
Functions:	IR-Sensor Input for optional IR-Sensor Real-Time Clock for up to 16 Timer-Trigger TWI-Connection Firmware-Update-Function
Dimensions:	64,2mm x 82mm

Connection



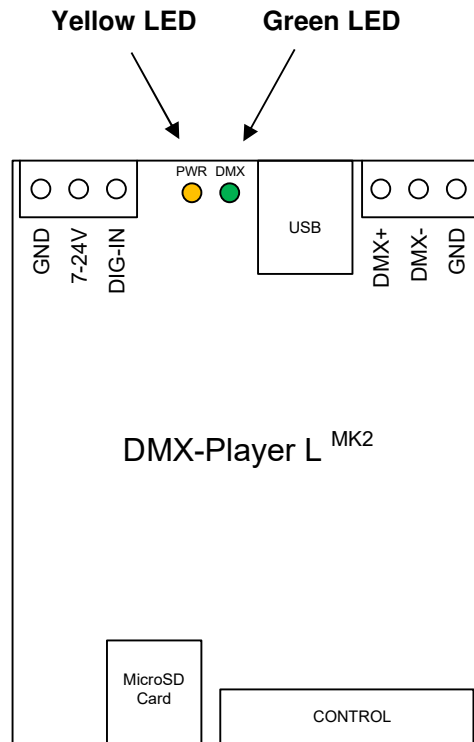
Control-Connection

19	17	15	13	11	9	7	5	3	1
20	18	16	14	12	10	8	6	4	2

- 1 - PRG1
- 2 - PRG2
- 3 - PRG3
- 4 - PRG4
- 5 - PRG5
- 6 - PRG6
- 7 - PRG7
- 8 - PRG8
- 9 - PRG9
- 10 - PRG10
- 11 - SPD+
- 12 - SPD-
- 13 - INTENS+
- 14 - INTENS-
- 15 - TRIGGER
- 16 - IR
- 17 - SCL
- 18 - SDA
- 19 - GND
- 20 - +5V

LED-Displays

Two LEDs signal the current status of **DMX-Player L^{MK2}**.



YELLOW lights permanently

Program replay is OK

GREEN lights permanently

DMX-Output is OK

YELLOW flashes 1x short / long Break

There are no Stand-Alone-Programs stored

YELLOW flashes 4x short / long Break

Program memory faulty

YELLOW/GREEN alternate

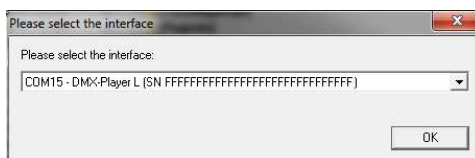
The device is within the Update-Mode

Device Configuration

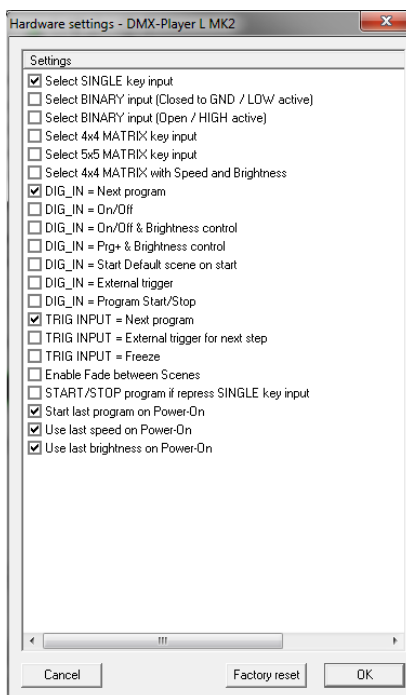
An USB-Connection to PC, consisting the Program DMX-Configurator, is needed for the device configuration.

Please proceed as following to make the device configuration:

- Connect the DMX-Player L^{MK2} via USB to PC
 - ⇒ A USB-Cable with A-Plug is needed (optional Accessory)
 - ⇒ Install the USB-Driver if it does not already exist
- Start the Program DMX-Configurator (Minimum Version 2.3.4)
 - ⇒ This is available as download under www.dmx4all.de
- Please establish a connection with the DMX-Player L^{MK2} within the DMX-Configurator by selecting the corresponding device and confirm with OK.




- Call the menu item *Settings* → *Hardware Settings*
- Here, the device configurations can be done. These will be described in detail on the following pages.



- By click OK the settings are stored and transferred to the DMX-Player L^{MK2}.

Program Selection

The selection of the stored programs can occur via several circuits. Which circuit is used must be configured within the Hardware-Settings in the DMX-Configurator (see section Device Configuration).

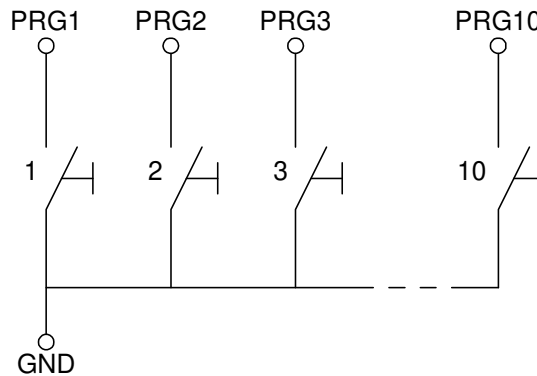
 The DMX-Player L^{Mk2} always executes only one program. If a program is selected, the currently executed program is terminated.

10 Button / Switch

With the 10 buttons or switches the first 10 stored programs can be called directly.

Within the Hardware-Settings must Select SINGLE key input be activated.

Connection:

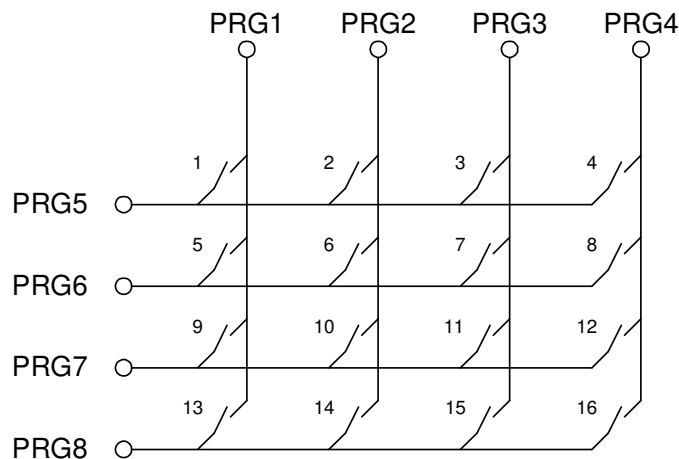


Matrix 4x4

With a Matrix-Circuit up to 16 programs can be called with one button.

Within the Hardware-Settings must Select 4x4 MATRIX key input be activated.

Connection:

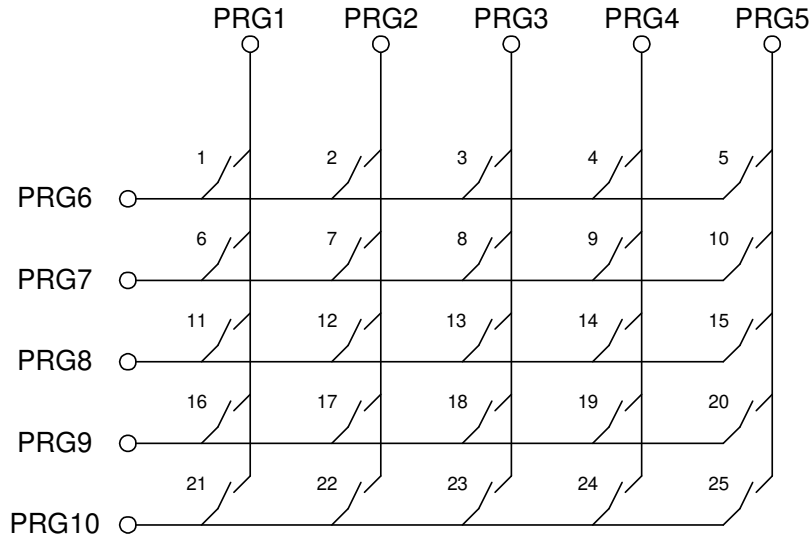


Matrix 5x5

With a 5x5-Matrix-Circuit up to 25 programs can be called with one button.

Within the Hardware-Settings must Select 5x5 MATRIX key input be activated.

Connection:

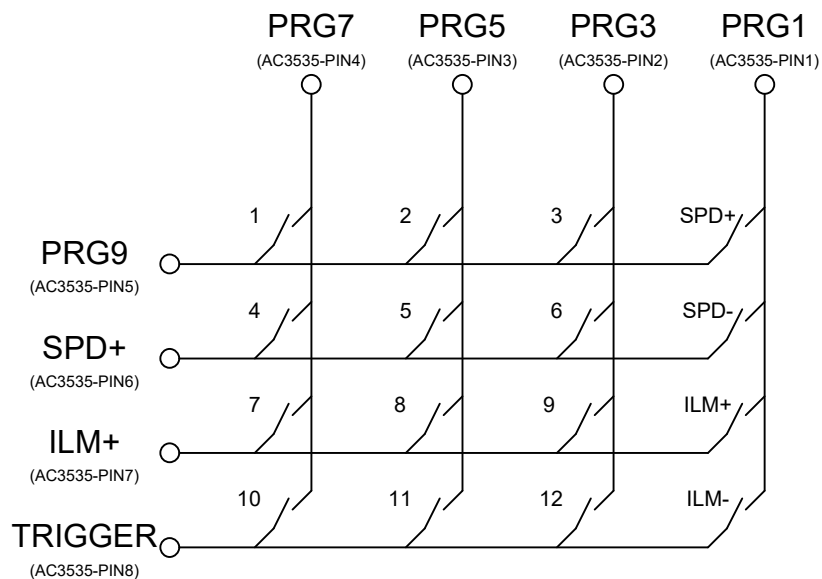


Matrix 4x4 with speed and brightness for APEM-AC3535

This option allows connecting an APEM-AC3535 Keyboard.

Within the Hardware-Settings must Select 4x4 MATRIX with Speed and Brightness be activated.

Connection:



Selection via key pad for ENTER and BLACKOUT

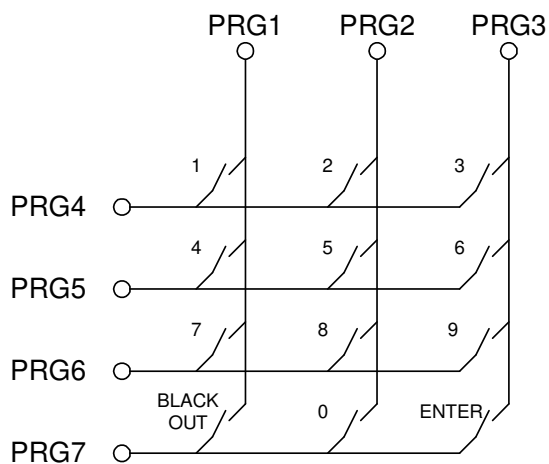
The scene to be executed is entered with the numeric keypad and then ENTER. The programs 1 to 250 are possible.

In addition, the BLACKOUT function can be used to switch the BlackOut function on and off.

The ENTER button automatically switches the BlackOut function off.

Example: Scene 28: ,2' + ,8' + ,ENTER'
Scene 146: ,1' + ,4' + ,6' + ,ENTER'

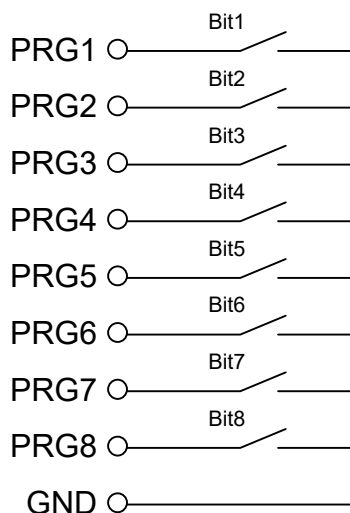
Connection:



Selection via 8-Bit binary Signal (LOW active)

With an 8-Bit binary controlling-signal up to 250 programs can be called. Therefore, the 8-Bit of the binary signal must be applied to the inputs PRG1 up to PRG8.

Within the Hardware-Settings must Select BINARY input (Closed to GND / LOW active) be activated.



By closing the inputs to GND, the corresponding program will be executed immediately: (X → closed contact)

Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7	Bit8	Program
								1
X								2
	X							3
X	X							4
		X						5
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
X			X	X	X	X	X	249
	X		X	X	X	X	X	250
X	X		X	X	X	X	X	RESERVED
		X	X	X	X	X	X	RESERVED
X		X	X	X	X	X	X	RESERVED
	X	X	X	X	X	X	X	RESERVED
X	X	X	X	X	X	X	X	RESERVED

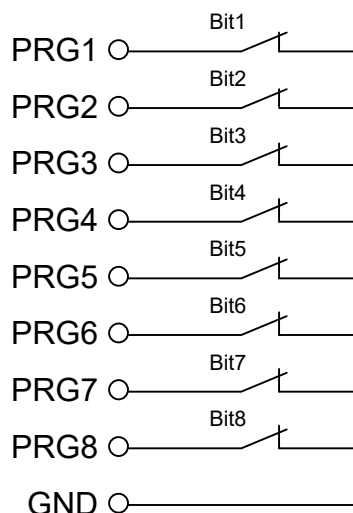


The Bit combination must be permanently present for the program to be played !

Selection via 8-Bit binary Signal (HIGH active)

With an 8-Bit binary controlling-signal up to 250 programs can be called. Therefore, the 8-Bit of the binary signal must be applied to the inputs PRG1 up to PRG8.

Within the Hardware-Settings must Select BINARY input (Open / HIGH active) be activated.



By opening the inputs, the corresponding program will be executed immediately:
(X → open contact)

Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	Bit7	Bit8	Program
								1
X								2
	X							3
X	X							4
		X						5
:	:	:	:	:	:	:	:	:
X			X	X	X	X	X	249
	X		X	X	X	X	X	250
X	X		X	X	X	X	X	RESERVED
		X	X	X	X	X	X	RESERVED
X		X	X	X	X	X	X	RESERVED
	X	X	X	X	X	X	X	RESERVED
X	X	X	X	X	X	X	X	RESERVED



The Bit combination must be permanently present for the program to be played !

Execute program after turning on

After switching on a specific or the last selected program can be replayed.

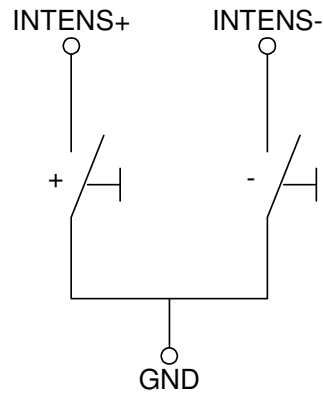
If a specific program is to be started, so it is to specify in the DMX-Configurator under *Default Scene on Start*.

If the last replayed program is to be started, in the device configuration the option Start last program on Power-On must be activated.

If the option *Start last program on PowerOn* is activated the last replayed program, will be started each time independent of the *Default Scene on Start*.

Brightness Setting

The Brightness Setting occurs via 2 buttons connected to the Control-Connection INTENS+ and INTENS- .



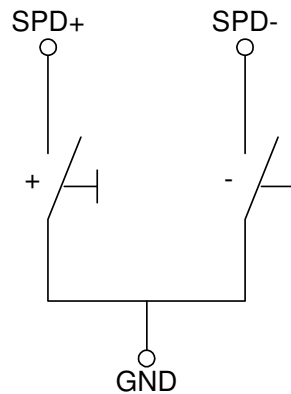
Restore last brightness setting after turning on

After turning on the last brightness setting can be restored.

The option Use last brightness on Power-On must be activated in the device configuration.

Speed Setting

The Speed Setting takes place via 2 buttons connected to SPD+ and SPD- at the control connection.



Restore last speed setting after turning on

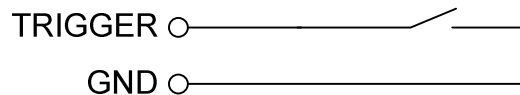
After turning on the last speed setting can be restored.

The option Use last speed on Power-On must be activated in the device configuration.

Trigger-Input

The Trigger-Input at the Control-Connection of the DMX-Player L^{MK2} is configurable and so several applications are possible.

The trigger puls can be created by trigger the contact to GND.



TRIG INPUT = Freeze

This option stops / starts the program replay as long as the trigger input is connected against GND.

TRIG INPUT = Next program

This option switches to the next program if the contact is closed. After the last program, it switches back to the first one.

TRIG INPUT = Next Step (External Trigger)

TRIG INPUT = Next Step HIGH SPEED (External Trigger)

This options switch one step if the contact is closed, in the case that **External Trigger** is selected as wait time.

With this setting it is possible to switch a program on with an external clock. A Fade-Time will not be ended with a Trigger-Signal, so the Trigger-Signal will be ignored during a Fade.




The TRIGGER input is designed for frequencies of maximum 5Hz. (minimum 120ms break time)

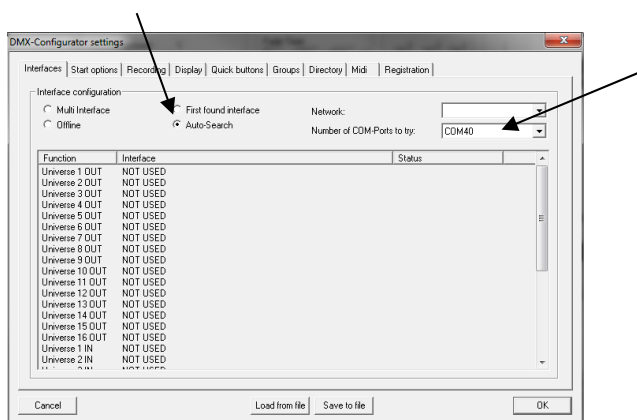
The HIGH SPEED option allows a maximum frequency of 25Hz. (50% duty cycle)

Create and store Stand-Alone-Programs

The DMX-Player L MK2 has a user-programmable Stand-Alone Reproduction. The programs, created at the PC and with the DMX-Configurator are transferred to the DMX-Player L MK2 and can be replayed at the PC.

To create and program the programs serves the software DMX-Configurator. This is downloadable for free under www.dmx4all.de .

After installing the software you can set the connection to the connected DMX-Player L MK2 under *Settings*→*Communication settings* or the symbol  within the toolbar

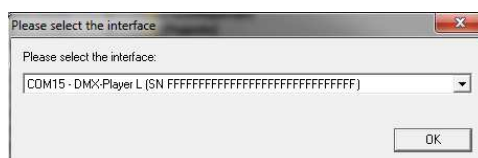


If *Auto-Search* is selected the system searches for the connected device automatically.

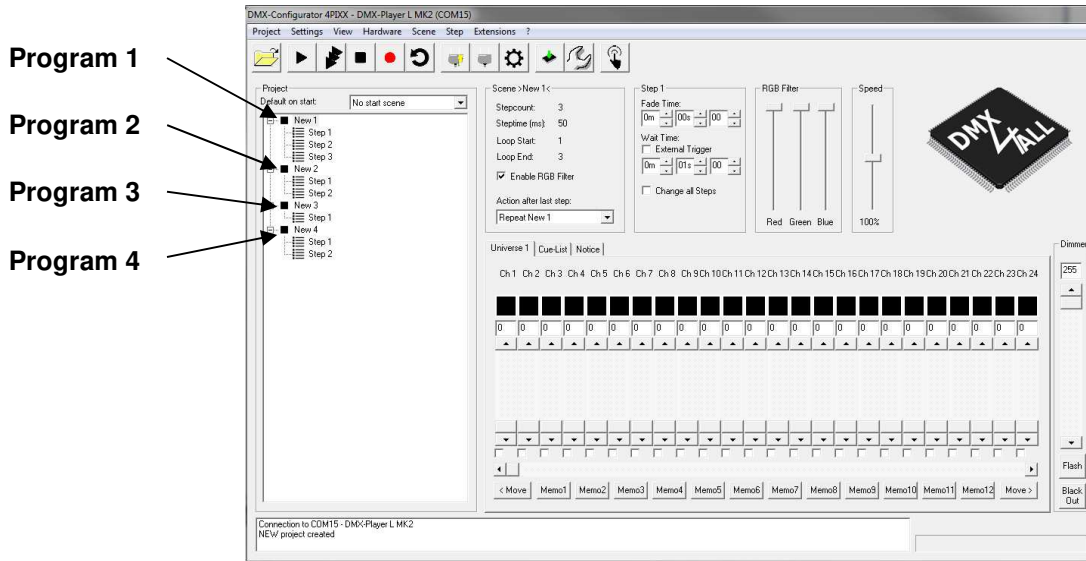


The DMX-Player L MK2 uses a Virtual COM-Port (VCP). The *Number of COM-Ports to try* must be set high enough, at least on the COM-Port which is used by the DMX-Player L MK2 itself. Which COM-Port is used for the connected DMX-Player L MK2 can be checked in the Windows Device Manager.

After the automatically Auto-Search a selection dialog is displayed, in which the corresponding device is selected:



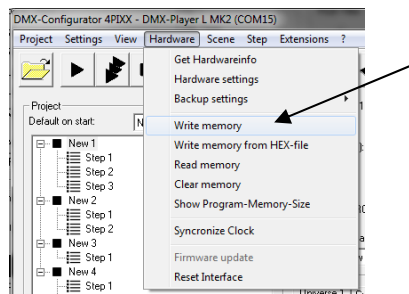
Now, the programs can be created. The setting options are so extensive they can't be explained in detail.



The order of the programs, within the example named *New 1*, *New 2*, *New 3* and *New 4*, specifies the order of the programs transferred to the DMX-Player L MK2 too. The programs name is not considered.

If, for example, program 3 is started via input PRG3 so it is in this case *New 3*.

The programs are stored within the Stand-Alone Memory of the Player L MK2 occurs via the menu item *Hardware*→*Write memory*.



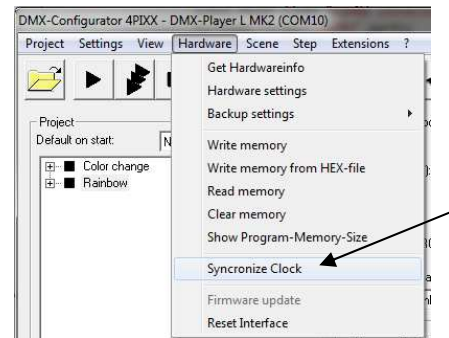
This process can take some time! Please don't interrupt the transfer.

Use the Real-Time Clock

The **DMX-Player L^{MK2}** has an internal real-time clock. With this clock programs can be started at adjustable times.

Adjust the time

Select the menu item *Hardware* → *Synchronize Clock* in the DMX-Configurator. Now the current PC-System time is transferred to the DMX-Player L^{MK2}.



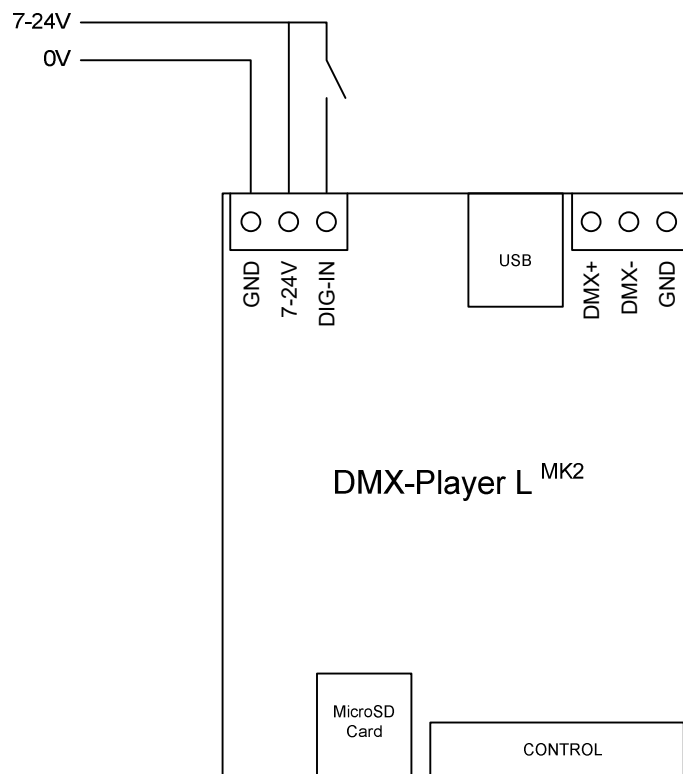
If programs with configured timer trigger are transferred to the DMX-Player L^{MK2}, so the current PC system-time is transferred to the DMX-Player L^{MK2} too.

Digital Control Input DIG IN

The digital control input **DIG-IN** of the **DMX-Player L^{MK2}** can be configured with several functions (see DMX-Player L^{MK2} device configuration):

- | | |
|---|---|
| <input checked="" type="checkbox"/> DIG_IN = Next program | Execute next program |
| <input checked="" type="checkbox"/> DIG_IN = On/Off | Switching On/ Off |
| <input checked="" type="checkbox"/> DIG_IN = On/Off & Brightness control | Switching On/Off (short actuation)
Brightness setting (long actuation) |
| <input checked="" type="checkbox"/> DIG_IN = Prg+ & Brightness control | Execute next program (short actuation)
Brightness setting (long actuation) |
| <input checked="" type="checkbox"/> DIG_IN = Start Default scene on start | Start „Default scene on start“ |
| <input checked="" type="checkbox"/> DIG_IN = External trigger | Release trigger
(maximum 5Hz / minimum 120ms break time) |
| <input checked="" type="checkbox"/> DIG_IN = Program Start/Stop | Start/ Stop Program |

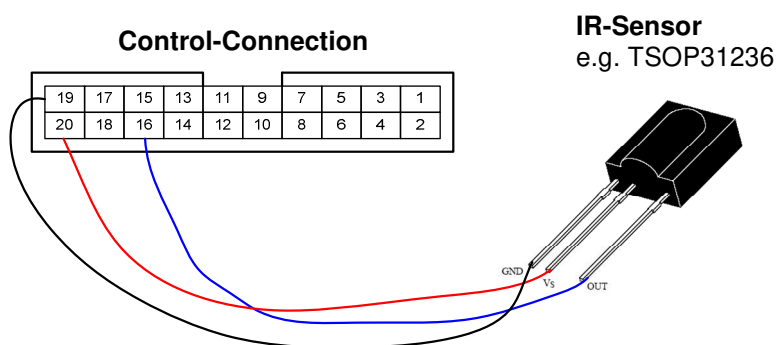
The control inputs wiring occurs via a button to the power supply:



IR-Remote Control

The **DMX-Player L^{MK2}** allows an IR-Operation by external IR-Sensor. An IR-Sensor is to connect to the 16 Pin Control-Connection.

A suitable IR-Sensor is available as accessory.



The stored Scenes can be called via IR-Remote Control.
The DMX-Player L^{MK2} can be run via DMX4ALL LED-Remote Control.

Using with DMX4ALL LED-Remote Control

The program selection occurs via the buttons **1, 2, 3 ... 9, 0** according to the programs 1 up to 10.

Via button **+** and **-** the brightness and speed can be set as well as the program selection is possible.

After pressing the **SPEED** key the speed is adjustable.

After pressing the **PROG SELECT** key the programs are selectable.

After pressing **R** or **G** or **B** the brightness is adjustable.

A separated setting for red, green and blue is not possible.

The button **BLACK OUT** activates or deactivates the BlackOut-Function. The brightness setting remains.

The button **FLASH** activates or deactivates the Flash-Function (all 100%). The brightness setting remains.



Security-Function

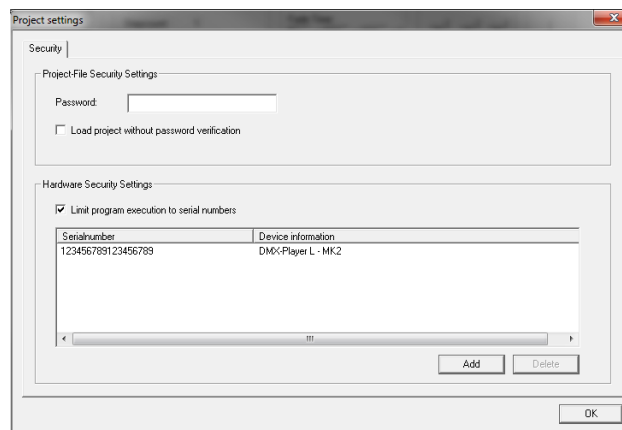


For using the safety-function a *Programming PRO-Key* for the DMX-Configurator is necessary.

The **DMX-Player L^{MK2}** has a Security-Function, allowing the usage of created programming exclusively on selected devices.

For this, the devices serial number must be entered during the programming.

The Security-Settings can be called within the DMX-Configurator under the menu item *Project*→*Project settings*.

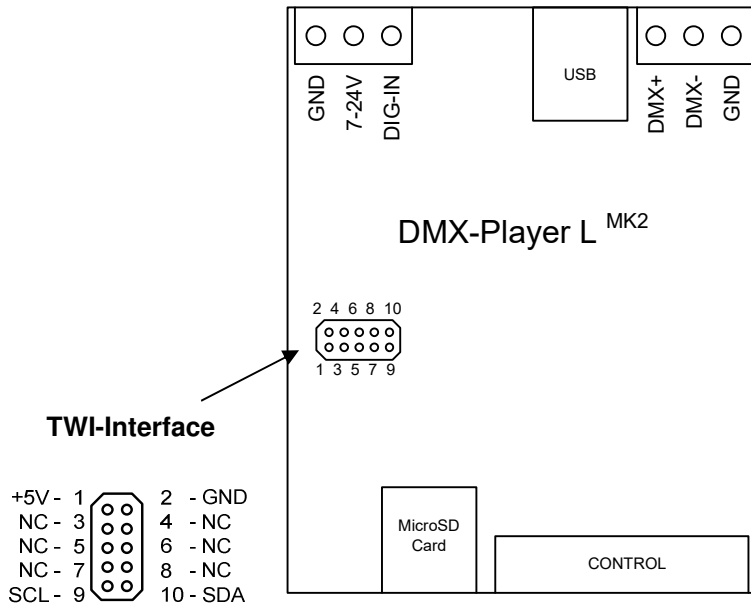


TWI-Connection for external accessory

The **DMX-Player L MK2** has a TWI-Connection for using for external accessory. In the 5-pin version, the accessories can be connected using a ribbon cable (cable for TWI Extension 4fold).

5pin TWI-Connection:

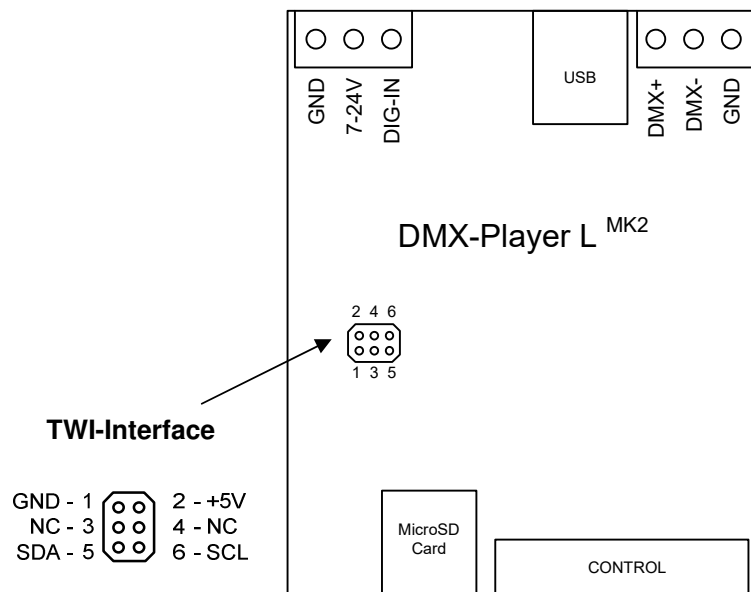
(Delivery from 07/2018 / Hardware version 2.2)



NC = Not Connected (not used)

3pin TWI-Connection:

(Delivery from 06/2018 / Hardware version 2.1)



NC = Not Connected (Not used)

MicroSD-Card

The **DMX-Player L^{MK2}** can use a MicroSD-Card for the program memory. Insert it with the contacts at the front / bottom.

When inserting the MicroSD card, slide it in until a click is heard and resistance is felt.

When removing the SD card, press it again until a click is heard. The card is now pressed out approximately 5mm and can be removed.



Use only MicroSD-Cards or SDHC-Cards class 4 or higher.

The MicroSD-Card must be formatted with the FAT16 or FAT32. The file names should have a maximum of 8 signs. There must be no folders on the MicroSD.

The files generated by the DMX-Configurator must not be renamed!

Factory Reset

The **DMX-Player L^{MK2}** can be reset into the delivery state via a factory reset.

Please proceed as follows:

- Turn off the device (disconnect power supply and USB!)
- Connect PRG1 and PRG2 with GND
- Turn on the device (connect power supply or USB!)
- The yellow LED flashes
- Remove the UPDATE-Jumper during flashing
- The Factory reset proceeds
- The green LED flashes 10x as confirmation
- Reattach the UPDATE-Jumper

Firmware-Update

The **DMX-Player L^{Mk2}** has an Update-Function, allows transferring further Firmware-Versions.

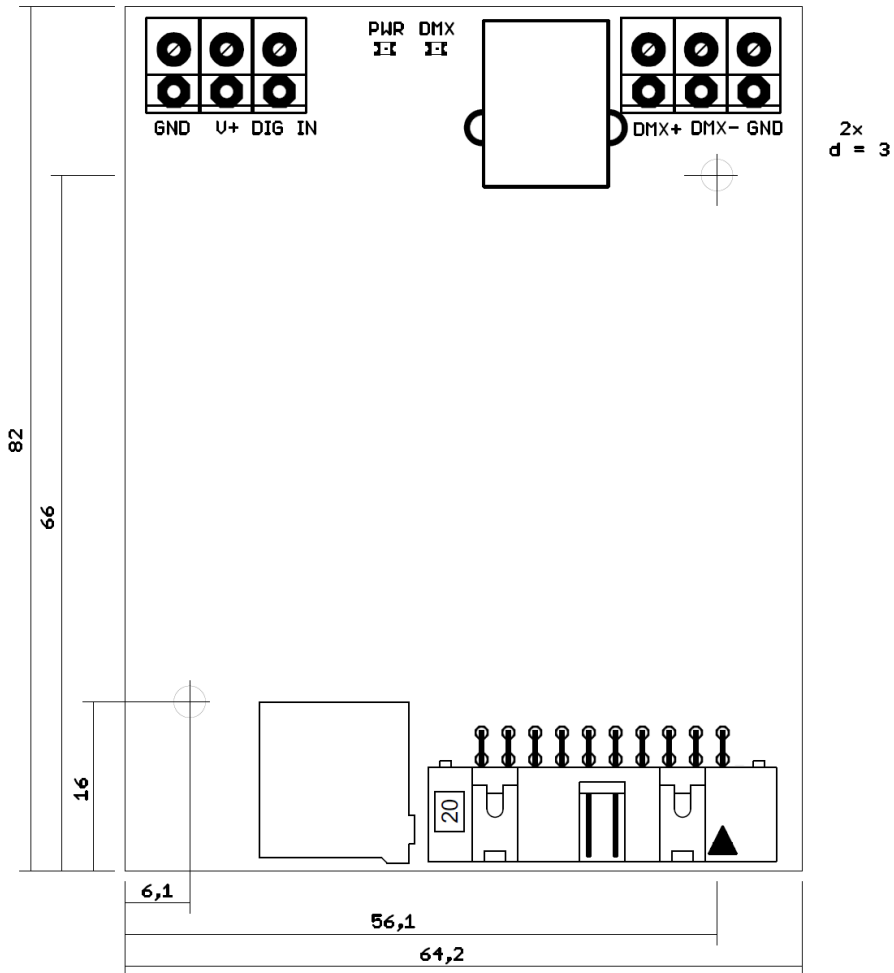
Please proceed as follows:

- Switch off the device (disconnect power supply and USB!)
- Remove UPDATE jumper
- Establish USB connection to PC
- Start Update-Software **DMX4ALL USB-Updater**
- Select DMX-Player L^{Mk2} from list
- Click *Firmware-Update*
- Select Firmware-File (.bin) and confirm
- Wait, until Update has finished
- Reconnect UPDATE-Jumper



If an error occurs during the Update, you can restart at any time. In this case turn off the DMX-Player L^{Mk2} and close the software before you start the Firmware-Update again.

Dimension



All details in mm

Accessory

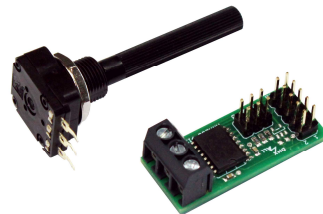
Top hat rail mounting 700



Power supply 12V



TWI-Analog-Extension



TWI-Program Display-Extension



Cable for TWI Extension 4fold

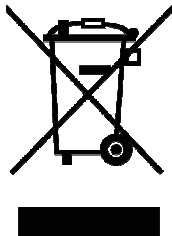


CE-Conformity



This assembly (board) is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.

Warning



This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

Risk-Notes



You purchased a technical product. Conforming to the best available technology the following risks should not be excluded:

Failure risk:

The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk:

For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk:

The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk:

Any nonstandard use could cause incalculable risks and is not allowed.

Warning:

It is not allowed to use the device in an operation, where the safety of persons depend on this device.



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Last changes: 18.07.2023

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