



AVR Lexion System

LUD48 driver unit

Specifications

Unit type: Switch mode constant current LED driver

Outputs: 4 dimmed outputs 0-350mA per output, 48 volt

Input: AC 80V-260V 50-60Hz 0.6A

Control: DMX512 or internal control

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About this unit

The LUD48 is an LED driver for the AVR Ledion system. It can drive up to 48 one-watt LED emitters in 4 channels, 12 per channel.

The LEDs may be controlled from DMX512, or from the unit's on board programs.

Multiple units may be linked up by DMX512, or in a stand-alone master-slave configuration.

The LUD48 is configured using an letter/number display system with pushbuttons.

The LUD48 is fully protected against short circuits on its LED output.

Connecting it up

The power cable of the unit should be connected to AC mains, 80-260V, 50-60Hz.

If the unit is installed, ensure there is clear airflow around the unit for cooling, or it may overheat and shut down.

There are three control sockets.



The left hand socket is the LED output socket.

The right hand two sockets are for connection of DMX (in and link through) or for master-slave linking of units.

- Warning: Although this unit uses similar connectors to a computer network, it is not compatible. Network equipment may be damaged if you connect this unit to a computer network.

DMX: Pin 1=Data Hot, Pin 2=Data Cold, Pin 8=Ground

LED: Pins 1-4=Common positive, pin 5=Red neg, pin 6=Green neg, pin 7=Blue neg, pin 8=White neg.

Pin 1 is the leftmost pin in the above picture.



The unit will enter a cooling period and will restart once the temperature has fallen.

To enter the menu system press the left hand button (above the _)

Option Clear to factory defaults



Alternating with



Resets all options and patterns to factory defaults when you press the right hand button. This will erase any patterns you have programmed.

Status displays

In DMX mode the display shows



The _ is replaced by a rotating circle if DMX is being received.

In standalone playback mode the display shows



(1 is the pattern number). This display also shows if Macro playback is selected by DMX.

If the unit starts to get too hot, it will reduce output power to protect itself and the LED fixtures. The display shows



(Reduced POver)

If the unit passes its safe operating temperature it will shut down. The display shows

Operating the LUD48

Operation in DMX mode

In its normal mode, the unit is controlled by five DMX channels:

1	Red
2	Green
3	Blue
4	White
5	Dimmer

You set the base DMX address using the ADDR option (press the left hand button).

The display will show the base DMX address, with a rotating status symbol when DMX is being received.

The following options affect DMX operation:

- OUPP may be set to 4 channel or 3 channel. "3CH" disables the White channel and reduces the DMX channel usage to 4.
- MODE may be set to RGBD, RGB, HSL or SNGL. RGB disables the dimmer channel. HSL changes the control mode to Hue (colour), saturation (depth of colour) and Luminance (intensity). SNGL makes the unit a single channel dimmer with all outputs controlled by one DMX channel.

The following table shows how the DMX control channels are used in the different configurations.

DMX control channels

Outp	Mode	1	2	3	4	5	6	Note
3CH	RGBD	R	G	B	D	m	-	
3CH	RGB	R	G	B	m	-	-	No master dimmer
3CH	HSL	H	S	L	m	-	-	
4CH	RGBD	R	G	B	W	D	m	-DEFAULT MODE-
4CH	RGB	R	G	B	W	m	-	No master dimmer
4CH	HSL	H	S	L	m	-	-	
*	SNGL	D	-	-	-	-	-	
*	*	Pa	Sp	Xf	?	?	?	MACR ON, Macro channel > 50%

R=Red, G=Green, B=Blue, W=White, D=Dim

H=Hue, S=Saturation, L=Luminance

m = becomes Macro control channel if MACR option is ON, otherwise unused

Pa=Pattern select, Sp=Speed select, Xf=Crossfade select

? = in macro mode, macro channel will remain where it was before.

Note: In HSL mode, the white channel is controlled using the Saturation control (0=off, 100%=full). Saturation also adjusts the RGB channels to give optimum pastel shades or white output. The RGB channels are controlled using the Hue control.

HSL mode is only suitable for controlling RGB and RGBW led fixtures. Fixtures using all-one-colour or amber LEDs should be controlled in SNGL or RGB modes.

07

Plays back a demo sequence. The unit will play back each of its 8 internal patterns eight times, then go onto the next pattern. If the user has changed the patterns, the user's patterns will be played.

This is a good way to play back a single long sequence if required. Each pattern uses its own Time, Fade and Offset settings as programmed.

Other configuration

Configure LED Load

LOAD

Alternating with

4

This allows you to fine tune the operation of the driver for the LED load. At very low LED intensities the brightness will vary slightly depending on how many LEDs you connect, so a driver with a 36-LED load will be slightly dimmer than another driver with a 12 LED load.

If you need to match drivers with different loads, set this option to the number of LEDs of each colour you have got connected (e.g. if there are 4 of each colour LED, set the option to 4). This will help the matching, though it may be impossible to match exactly.

Set unit offset

OFFS

Alternating with

4

Sets the unit offset. If you have multiple slaved units this is used to generate a rippling chase across the slaved units, for example if you have 4 slaved units and you set offset to 4, when the first unit is on step 1, the fourth unit will be on step 4. This allows you to create complicated chase patterns without lots of programming. Offset can be set individually for each pattern.

If you are using Offset, you need to set the DMX addresses of the slaved units as follows: Unit 1 should be set to DMX addr 001, unit 2 to 006, unit 3 to 011, unit 4 to 016. Further units should repeat from 001.

Clear pattern

CLF

Alternating with

-

Clears the current pattern (set by the PATT option) when you press the right hand button. The factory default pattern is reloaded.

Demo mode

DEMO

Alternating with

DMX control options

To enter the option menu, press the left hand button. Press the left hand button to go to the next option, or the second button to go back to the previous option.

DMX address

Sets the DMX address the unit is to respond to

Addr

Alternating with

001

Use the buttons under the numbers to set the address.

With all options, you must press the left hand button to store your changes, the display shows

SET

If you don't press the button, the unit will eventually time out and go back to normal menu mode, your changes will take effect temporarily, but next time the unit is powered up, the options will return to the stored setting.

3 or 4 output mode

Enables or disables the fourth output channel.

OUTP

Alternating with

4CH

The available options, selected using the right hand button, are
 4ch (RGBW) - default
 3ch (RGB)
 In 3ch mode the White output is disabled and the unit will use one less DMX channel.

Control mode

Sets the control mode for the unit – you can either control each channel individually or use the colour mix mode (HSL).

NOdE

Alternating with

RGBd

The available options, selected using the right hand button, are

- RGBD – default – individual control of each channel with overall master dimmer
- RGB – individual control but no master dimmer
- HSL (hue, saturation, luminance – colour mix mode. Hue sets the colour from all available colours in the spectrum. Saturation sets the strength of the colour, from full colour at the bottom, through pastel colours, to white at the top. Luminance sets the brightness (dimmer control) for the colour.
- SNGL – all outputs are controlled by a single DMX channel. Used when single-colour fixtures are being controlled. Uses one DMX channel only.

Macro control mode

Macro mode allows you to activate the internal patterns from DMX.

MACF

Alternating with

You can program settings into this step, if you have not got to the maximum number of steps, by pressing the second button and setting a value for HSL.

If you want to mark the end of the pattern, hold down the 2nd button for a couple of seconds. The current step will be set as the End marker (i.e. the previous step will be the last one shown).

Hold down the left hand button to exit Rec mode, or the unit will exit Rec mode after you have gone through all steps.

Set fade rate

FADE

Alternating with

0

Sets the fade rate between steps. This can be set individually for each pattern. The fade rate can be set from 0 (snap) to 9 (full fade).

If you are using long step times, avoid the lower fade rates 1-6 as they can appear “steppy”.

Set step time

t 1mE

Alternating with

15 5

Sets the time between steps. This can be set individually for each pattern. The display shows “5” for seconds or “1” for minutes. The available times are 1s, 2s, 5s, 10s, 15s, 30s, 1m, 2m, 5m, 15m, 30m, 60m

The unit outputs slaving commands as DMX to any other units. Slave units must have MODE set to RGBD. If you are using the Offset feature, Unit 1 should be set to DMX addr 001, unit 2 to 006, unit 3 to 011, unit 4 to 016. Slave mode will not work if external DMX is connected to the unit.

Record pattern

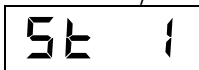


This will allow you to edit the current pattern.
The screen shows



(Pattern 01)

Then briefly shows



(Step 1)

Then the display shows



Then you set the Hue (colour), Saturation (depth of colour) and Luminance (brightness) for each step. The left hand button stores your step and moves to the next one. The second button selects Hue, Saturation or Luminance. The right hand buttons change the value. If you hold down the buttons, the value changes faster.

If the current step is the last step in the pattern, the display shows



The available options, selected using the right hand button, are OFF (no additional control channel is used) - Default
ON (an additional control channel is used to control macro functions)

When MACR is ON, an additional DMX channel is used to trigger macro mode – No macro below 50%, macro activated above 50%.

Note that if multiple units are controlled in Macro mode, the patterns are not synchronised and they may not change in time with each other if left running for long periods. We recommend that you change the pattern every hour or so to keep the units synchronised.

Also note that each unit will play back its own patterns, so if synchronisation is required, all units must be programmed with the same patterns.

In Macro mode, DMX channel 1 selects pattern 1-8, channel 2 selects step time and channel 3 selects crossfade.

➤ Important: When using Stand Alone mode, ensure that the MACR option on all units is set to OFF. If MACR is ON, the stand alone control channels may trigger the macro mode.

Stand alone usage

Press the 2nd button to go through the Stand alone options. You can link multiple units together in Stand Alone mode and they will slave together. Slave units should have the MODE option set to RGBD (the default option).

➤ Important: Do not connect DMX when units are slaved in stand alone mode. The DMX will conflict with the stand alone information and cause flickering.

Static colour

Allows you to set the unit to a fixed colour of your choice. The colour and the static mode will be retained on power-off.

SEAT

Alternating with

-

Press the right hand button to enable static colour mode. You can then set the Hue (colour), Saturation (deepness of colour), and Luminance (brightness) by pressing the second button to select H S or L.

_H99

The left hand button exits static colour mode. The right hand two buttons change the value from 0-99. If you hold down the buttons, the value changes faster.

Note: although the unit displays 0-99, there are some finer settings in between each full number, so the number will not change every time you press the button.

The unit will remain in static colour mode until you exit it. If you repower the unit, it will come back in static colour mode set to the same colour.

The unit will output the selected colour as DMX to any slave units. Slave units must have MODE set to RGBD and DMX address set to 001. Slave mode will not work if external DMX is connected.

Select pattern

Selects the stand alone pattern to playback using the PLAY option.

PAT

Alternating with

1

Select the pattern number 1-8 using the right hand buttons.

Play pattern

Starts playback of the selected pattern.

PLAY

Alternating with

-

Press the right hand button to start playback. Press any button to end playback. During playback the display shows

PL 1

Where 01 is the pattern number being played. If the unit is repowered, it will start up playing back the same pattern.