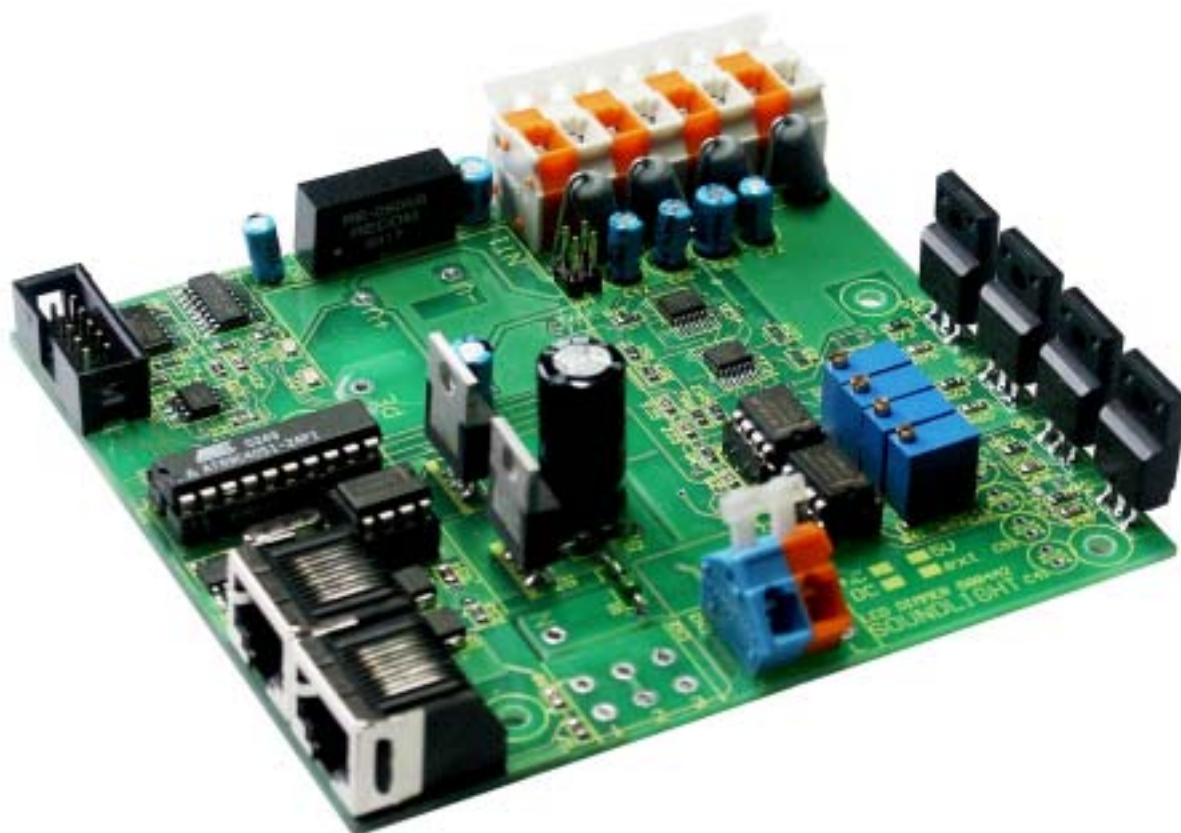


# OPERATING MANUAL

## DMX LED Current Dimmer 5004A-EP Mk2



(C) SOUNDLIGHT 1996-2006 \* ALL RIGHTS RESERVED \* NO PART OF THIS MANUAL MAY BE REPRODUCED, DUPLICATED OR USED COMMERCIALY WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER \* ALL STATEMENTS WITHIN THIS MANUAL HAVE BEEN CHECKED CAREFULLY AND ARE BELIEVED TO BE ACCURATE, HOWEVER SOUNDLIGHT DOES NOT ASSUME ANY RESPONSIBILITY FOR ERRORS OR OMISSIONS. \* THE USER HAS TO CHECK THE SUITABILITY OF THE EQUIPMENT FOR THE INTENDED USE. SOUNDLIGHT EXPRESSLY EXCLUDES ANY RESPONSIBILITY FOR DAMAGES - DIRECT OR INDIRECT - WHICH MAY OCCUR DUE TO MISUSE, UNPROPER INSTALLATION, WRONG OPERATING CONDITIONS AND NON-COMPLIANCE TO THE INSTRUMENT'S INSTRUCTIONS, AS WELL AS IGNORANCE OF EXISTING SAFETY REGULATIONS.

**Thank you for choosing SOUNDLIGHT products.**

The SOUNDLIGHT DMX LED Current dimmer 5004A is an intelligent 4-channel dimming device to control high current, high output Luxeon® LED devices. The unit complies with digital control signals according to USITT DMX-512/1990 or DIN56930-2, respectively. It is compatible with all DMX512 light control systems. Its advantages include:

- **universal protocol decoding**  
Recognizes all variants of the protocol as defined by USITT / ESTA / DIN
- **future-proof**  
The unit is software controlled and can easily be adapted to any change in protocol definition.
- **simple supply**  
The supply voltage is 24V DC.
- **data failure proof**  
At data loss, the last valid setting will remain intact

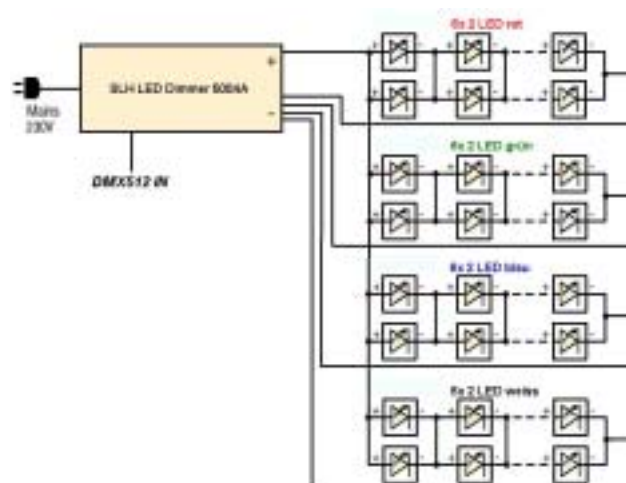
## Applications

The LED current dimmer 5004A-FG has been designed to dim high current LED devices precisely. Factory setting is for a maximum output current of 700mA @ 24V per color, conforming to the Luxeon® Standard wiring shown below. As the unit is flicker-free, it is ideally suited for film and TV applications, but can similarly be used for architectural lighting, for show, dance floor or live concert.

Suitable LED devices are ® Light Sources (Lumileds) or Dragon® LED (Osram). Each output of the 5004A current control dimmer can feed up to 12 LEDs, to be connected in two paralleled chains of 6 LEDs each. Common connection of the LEDs are the anodes, whereas the cathodes are driven from the control outputs.

The LED Dimmer 5004A is intended to drive these LED devices directly:

- 1x LEDSPOT 48 RGBW
- 1x LEDSTRIP 38 RGBW
- 1x LEDSTRIP 36 RGB
- 2x LEDSPOT 18 RGB
- 4x LEDSPOT 12



# Unpacking

Please unpack carefully and check that all items are intact. When leaving our factory, the unit has been in good condition. In case of damage during transport please notify the carrier immediately.

When unpacking, you should identify these items:

- \* the dimmer card 5004A-EP
- \* this manual

# Connectors

All connections to the board are via spring loaded connector terminals (WAGO cage clamps). See the diagram for details how to connect to the pc board.

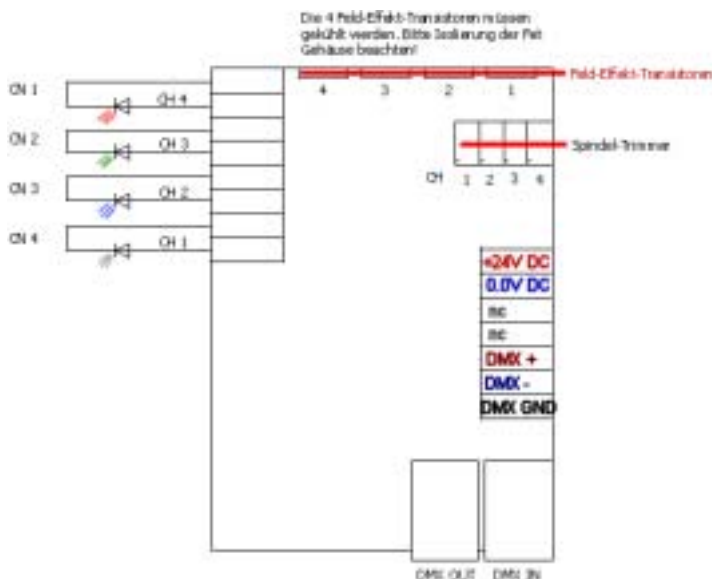
The 5004A-EP will usually be supplied with 24V DC, which must be obtained from a regulated DC power supply. Power must be applied to these terminals:

power supply:	red clamp	+24V DC
	blue clamp	0,0V DC (GND)

The DMX input must be supplied to the onboard RJ45 connectors. Alternatively, the DMX input signal may be supplied via cage clamp connectors. Pin assignment is:

DMX standard:	clamp color	RJ 45 Pin No.
1: DMX GND	grau	3,6
2: DMX -	blau	1
3: DMX +	orange	2

# MOSFET COOLING



Please note that the output driver MOSFET transistors need cooling. A heatsink capable of dissipating up to 40W power is required for continuous operation. Failure to provide heatsink capabilities may result in severe damage of the output stages. **NOTE:** Additional Isolation for output transistors against heatsink must be provided if non-isolated devices are mounted.

## Output Adjustment

The outputs are factory pre-adjusted for 700mA max. output current. The adjustment may be re-adjusted for currents from 350mA to 1050mA. Make sure a suitable power supply is connected and a heatsink of proper size is being used. Use the trimpots and a DC multimeter to adjust the max current value.

**WARNING:** Excessive current may cause permanent damage to connected LEDs

## Signal Indicators

The state of the demultiplexer card is signalled with two indicator LEDs.

green: OPERATION (blinking)

red: ERROR (blinking)

Error blinking at data errors or loss of communication.

## Start Address Switches

The three decimal coding switches set the start address, that is the address of the first channel to be decoded. The setting is fully decimal, no binary conversion is necessary as is with DIL switches.

S1: Ones

S2: Tens

S3: Hundreds

If the switch block is set to non-defined address 000, all outputs are disabled regardless of the data received. The dimmer status is being signalled with two LEDs.

Valid start address settings are 001 to 512. Recommended start address settings are 001 to 509 for 8 bit data mode, and 001 to 505 for 16 bit data mode.

## Automatic test patterns

Setting the start address selector switches to addresses of 800 and more, various test modes will be invoked. Use these settings for:

Address	Test pattern
801	Channel 1 (red) 100%
802	Channel 2 (green) 100%
803	Channel 3 (blue) 100%
804	Channel 4 (white) 100%
900 - 962	Rainbow color chase, select speed by address (900: fastest, 962: slowest)
964 - 993	same, but additionally 100% white
996	Flashing all outputs to 50%
997	Flashing all outputs to 100%
998	Ramping up all outputs synchronously
999	Set all outputs to 100%

## DIP-Switches

The configuration of the LED dimmer is set by a 4-position DIP switch. The DIP switch is located right next to the address setting switches and allows selection of various parameters. Factory setting of all switches is OFF

### DMX CONTROL MODE

Output control is via four (8 bit) or 8 (16 bit) resolution.

This is selected by DIP switch #1

1	2	3	4		
off	x	x	x	8 Bit control (1 DMX channel per color)	(factory setting)
on	x	x	x	16 Bit control (2 DMX channels per color)	

### SIGNAL SMOOTHING

Use DIP-switch #2 to select signal smoothing.

1	2	3	4		
x	off	x	x	Smoothing ON , slow response	(factory setting)
x	on	x	x	Smoothing OFF, fast response	

### SAFETY LEVEL

Sets the intensity level, which is output at loss of DMX data signal.

Use DIP-Switch #3 to select the safety level.

NOTE: valid only when HOLD = OFF (see below)

1	2	3	4		
x	x	off	x	Safety value = 0 („LAMPS OFF“)	(factory setting)
x	x	on	x	Safety value = 1 („LAMPS ON“)	

### HOLD MODE

The HOLD mode will hold the last valid data level at loss of control signal.

Use DIP-Switch #4 to select HOLD mode.

NOTE: setting supersedes Safety Level setting

1	2	3	4		
x	x	x	off	Hold-Mode OFF	(factory setting)
x	x	x	on	Hold-Mode ON	

## Address board LED blink codes

Green	Red	LED-Status
ON	-	OK, receiving valid data
-	blink	ERROR: no DMX signal received
2x blink	ON	Current setting is being stored in EEPROM

Further error codes: count number of red blinks after green blink

1 x start	1x	The DMX start address has been set to 000
1 x start	2x	The DMX start address has been set such, that some channels would be outside the valid 512ch data range
1 x start	3x	The DMX start address is higher than 512
1 x start	5x	The DMX startbyte is not zero
1 x start	6x	Service routines have been selected
1 x start	7x	The received DMX universe is smaller than the start address set
1 x start	8x	-

# Technical Data

Dimensions:	218mm (1/2 19" B) x 44mm (H) x 305mm (T) outside dimensions without connectors
Power supply:	typ. 24V DC (12...24V) @ 2,8 A
DMX IN:	1 Unit Load, RJ45 (DMX NET®) Pin 1= DMX - Pin 2= DMX + Pin 3= GND
DMX OUT:	fed through
Dimmer Out:	4x 700mA @ max. 22,8 V
BestellNr.:	5004A-EP

## Mounting instructions

### IMPORTANT NOTE:

This unit will generate heat to be dissipated. The amount of heat generated differs with the number and quantity of LEDs driven. The dissipated power per channel is  $((V_{supply} - V_{LED}) * I_{LED})$

## DISTURBANCES

If a trouble-free operation cannot be guaranteed, disconnect the relay card interface and secure it against unwanted operation. This is especially necessary, when

- the unit has visible damages;
- the unit does not operate;
- internal parts are loose;
- connection cables show visible damages.

## LIMITED WARRANTY

This instrument is warranted against defects in materials and workmanship for a period of 12 months, beginning with the date of purchase. The warranty is limited to repair or exchange of the hardware product; no further liability is assumed. SOUNDLIGHT is not responsible for damages or for loss of data, sales or profit which arise from usage or breakdown of the hardware product. In Germany, SOUNDLIGHT will repair or replace established defects in hardware, provided that the defective part is sent in, freight paid, through the responsible dealer along with warranty card and/or sales receipt prior to expiration of warranty.

Warranty is void:

- when modifying or trying to repair the unit without authorisation;
- modification of the circuitry;
- damages by interference of other persons;
- operation which is not in accordance with the manual;
- connection to wrong voltage or current;
- misuse.

## SERVICE

There are no parts within the DMX LED current control Dimmer 5004A-EP which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.

## END-OF-LIFETIME



If this device has reached the end of useful life it must be disposed of properly. Electronic must not be placed in domestic waste, but disposed of separately at an appropriate collection point. This will benefit the environment for all.

## INTERNET-HOTLINE

Please check our internet domain <http://www.soundlight.de> for new versions, updates etc. If you have any comments which may be worth considering, please send a message to [support@soundlight.de](mailto:support@soundlight.de). We will check your message and reply accordingly.