

OPERATING MANUAL

DMX / 1-10V Decoder 3044BH Mk3



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Thank you for choosing a SOUNDLIGHT device.

The SOUNDLIGHT DMX to 1...10V Converter 3044B-H is an intelligent DMX decoder decoding digital data complying with standard USITT DMX512 and DIN 56930-2 to analog output to drive analog dimmable ballasts for fluorescent tubes. The card can be used with all standard lighting control systems. Its special advantages include:

- **universal protocol decoding**
Recognizes all variants of the protocol as defined by USITT / ESTA / ANSI / DIN
- **future-proof**
The unit is software controlled and can easily be adapted to any change in protocol definition.
- **high linearity**
As the unit accepts and outputs data in digital format, excellent linearity characteristics result.
- **simple supply**
The power supply is achieved by its own PSU, power supply is 230V AC.
- **signal loss - switchable**
In the case of a loss of the drive signal the last setting will remain intact.
- **noise-immune srl data input**
Special slew-rate limited input circuitry provides excellent noise immunity on data lines.
- **cost-effective**
The SOUNDLIGHT 3004B-H is a cost-effective solution for many purposes.

APPLICATIONS

The converter 3044B-H is designed to drive fluorescent light tubes with variable intensity. Up to twenty-five electronic ballasts (assumed: max 1mA per input) or fifty electronic ballasts (assumed: max 0.5mA per input) may be connected per output. The unit is well suited for all applications on stage, for TV background lighting, or for architectural lighting purposes. The dimming range is 100% to 1%, and OFF (mains switching) at DMX input zero..

UNPACKING

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

When unpacking, you should identify these items:

- * the interface card 3004B-H
- * this manual

NOTE: The optional programming adaptor 3000P or 3003P must be ordered separately.

CONNECTORS

The decoder 3044BH consists of these connectors:

CN2 POWER SUPPLY 230V AC

black	L 230V AC	LIVE	230V AC
blue	N 230V AC	NEUTRAL	230V AC

CN1 DMX DATA

1	grey	GND, Screen	-> refers to Pin 1 XLR
2	blue	control signal DMX -	-> refers to Pin 2 XLR
3	orange	control signal DMX +	-> refers to Pin 3 XLR

CN3 Adress decoder board

1	VCC (+5.0V)	Logic power supply 5.0V stabilized
2	SEN	Serial Enable (Strobe)
3	SCLK	Serial Clock
4	SDAT	Serial Data OUT
5	LD1	LED ERROR
6	LD2	LED OK
7	SDAI	Serial Data IN
8	nc	- do not use! -
9	GND (0.0V)	Logic power supply 0.0V (GND)
10	nc	- do not use! -

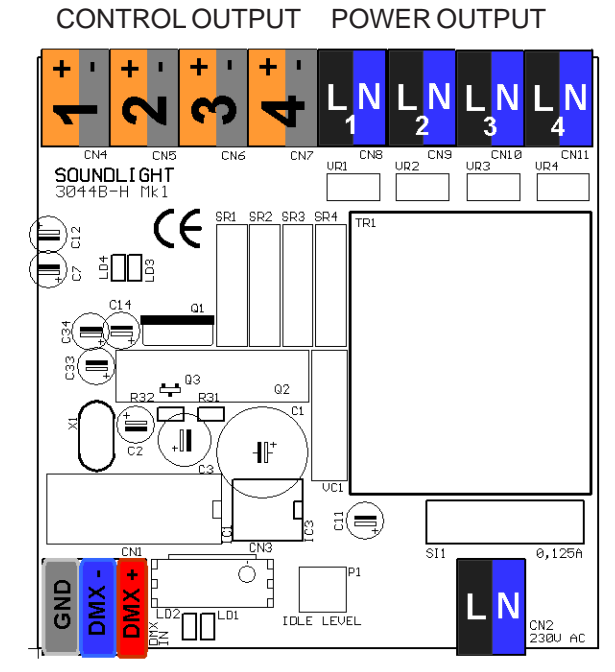
CN4-7 Control output to electronic ballasts (EVG)

1	orange	channel 1: control signal 1-10V output
2	white	channel 1: GND 0V
3	orange	channel 2: control signal 1-10V output
4	white	channel 2: GND 0V
5	orange	channel 3: control signal 1-10V output
6	white	channel 3: GND 0V
7	orange	channel 4: control signal 1-10V output
8	white	channel 4: GND 0V

CN8-11 Power supply (230V) to electronic ballasts (EVG)

1	grey	channel 1: output L 230V switched
2	blue	channel 1: output N
3	grey	channel 2: output L 230V switched
4	blue	channel 2: output N
5	grey	channel 3: output L 230V switched
6	blue	channel 3: output N
7	grey	channel 4: output L 230V switched
8	blue	channel 4: output N

Connector Layout



pictured: layout of connectors 3044B-H

CONTROL OUTPUT POWER OUTPUT

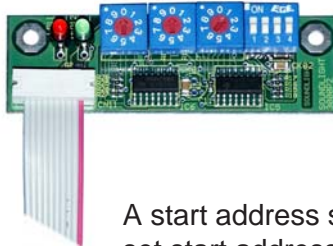
DMX INPUT POWER INPUT (230V AC)

Signal Indicators

Status signalling is with LED indicators:

- green: DMX data reception OK
- red: ERROR
- normally off
- blinks at transmission errors or at loss of signal

Start address



It is a commonly used scheme for building automation devices to avoid configuration switches. All settings are stored permanently in non-volatile memory. When installing the decoder for the first time, the DMX start address (number of the first DMX data slot, value 001 ... 509) and decoder options must be programmed.

A start address switch board 3000P or 3003P (to be purchased separately) is required to set start address and mode of operation and decoder options.

NOTE!

You do not need to open the 3044B-H interface to connect the start address switch board. Before connecting the adaptor, disconnect the interface from mains. Plug in the address board, then power up the interface again. Make sure, that no parts of the address board are in contact with metallic parts.

This work should be carried out by a qualified technician only. If you do not qualify, contact the factory or a factory representative to obtain a pre-programmed decoder.

Decoder Options

NOTE: Using the new address setting board (order code: 3000P) will allow to set to set additional parameters of the 3044B-H decoder. These functions include:

SWITCH #1	OFF: non-hold mode, see switch #2 ON: DMX HOLD, last valid setting is retained at loss of signal
SWITCH #2	OFF: Output to full ON(*) when no DMX signal present ON: Output to full OFF when no DMX signal present
SWITCH #3	OFF: 4-channel operation ON: 1-channel operation
SWITCH #4:	OFF: no master mode ON: master mode: DMX CH5 is common master level

Control by DMX512

DMX512 will control four outputs, beginning with the programmed start address. Each output can be operated individually. The start address can be set by the start address switch board. The unit may be operated with or without start address board (then of course a valid start address must have been set before).

If master mode has been set, the decoder will use five data slots (four outputs plus master).

Electronic Ballasts (EVG)

Control of electronic ballasts is via connectors CN4-7. There is one connector pair per output, with the common output being GND (white, resp. light grey connector) for all connected ballasts.

Usually terminals on the electronic ballasts are designated "+" and "-", respectively. Then "-" will mean GND. Please note that the **maximum output current is limited to 25mA** per output. This means, assuming a control current of 1mA per ballast:

The number of ballasts per drive output of the 3044B-H must not exceed 25 units in parallel.

If the ballasts require more input drive current the number of ballasts must be adjusted accordingly, e.g. assuming 0.5 mA per ballast will allow 50 units, but 3mA per ballast will only allow 8 units.

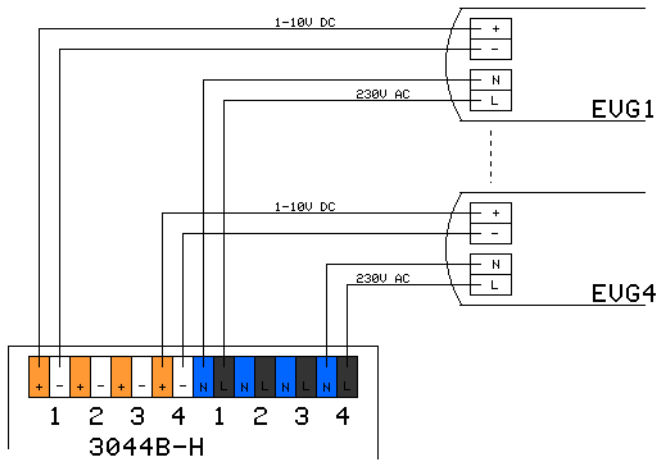
The ballasts can be powered from the switched AC outputs. **The maximum load per output must never exceed 200W, and the inrush current must never exceed 8Amps.** If higher loads are to be switched, use a contactor or power relay being driven by the switched output of the 3044B-H.

Wiring of electronic ballasts shall only be performed by trained and skilled electricians.

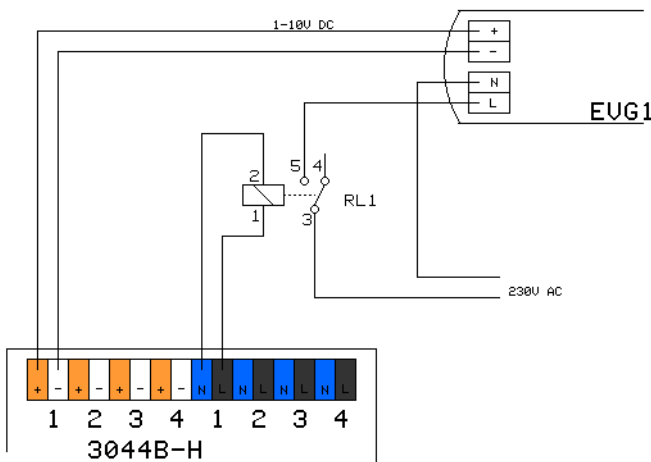
NOTE: Interchanging power and data outputs will result in damaging connected components. Please make absolutely sure that the wiring is correct and has been checked thoroughly before powering up the system!

Power Supply of Ballasts

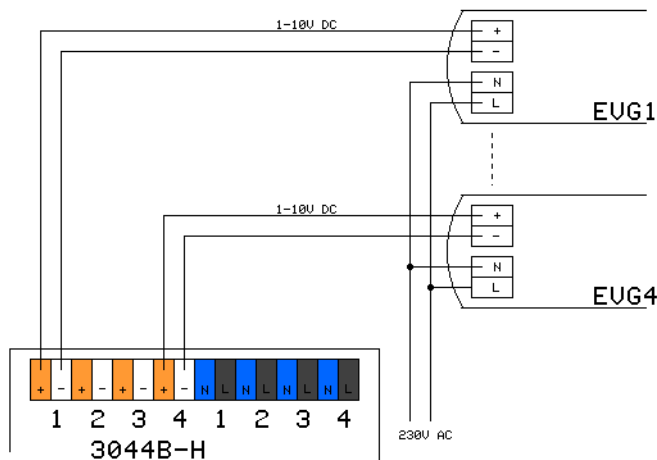
Electronic ballasts with 1-10V control input usually cannot be shut down via control voltage. To power off the ballasts, the 3044B-H features four switched power outputs (connectors CN8-CN11). Power will be cut off when the associated DMX control input is driven with 000 control value. The output will be activated for DMX data 002 thru 255 (02 hex to FF hex).



Schematic: individually powered and switched ballasts



Schematic: heavy load switched by additional contactor (use 230V AC relay, if necessary, bypass with 0.22uF capacitor)



Schematic: ballasts not switched, powered directly from mains

Technical Data

Dimensions:	86mm (W) x 113mm (D) x 68mm (H)
Power Supply:	230 V AC
DMX IN:	1 Unit Load
DMX OUT:	fed thru
Ballast Out:	1-10V DC Signal (current sink , max. 25mA)
Order Code:	3044B-H

Disturbances

If a trouble-free operation cannot be guaranteed, disconnect the decoder 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.

CE Marking



The unit has been tested in our lab and has been marked to comply with CE requirements. To ensure compliance, use grounded power leads only and make sure that properly shielded data lines (CAT5, DMX data cable or Digital Audio cable to AES/EBU specifications) are used. Any modifications not approved by the manufacturer may void CE compliance.

FCC STATEMENT

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

FCC Caution: Any change or modification to the product not expressly approved by SLH could void the user's authority to operate the device.

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 / 1-10V decoder 3044B-H which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.

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. We will check your message and reply accordingly.

End-of-Lifetime Procedures



Electronic devices are not domestic waste and must be disposed of properly. If the end of lifetime of this device has been reached, it must be recycled by your local WEEE recycling system.

SOUNDLIGHT is a WEEE registered company (registration code DE-58883929)