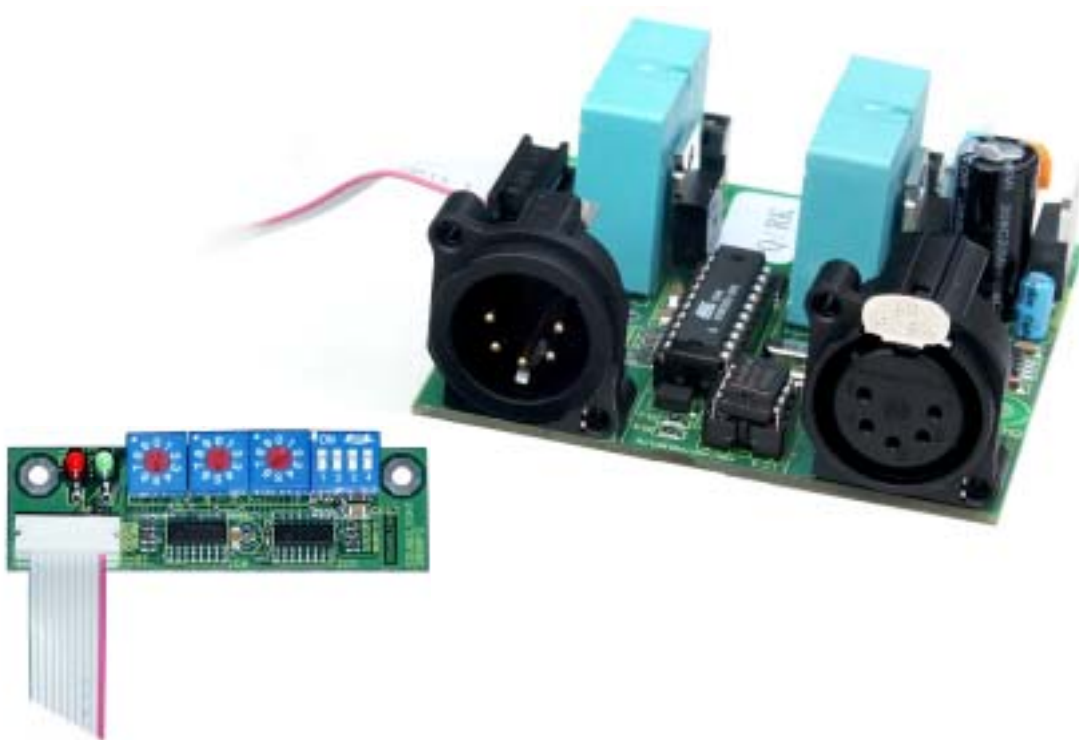


OPERATING MANUAL

DMX Relay Card 3202R Mk6



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PREFACE

Thank you for choosing a SOUNDLIGHT device.

The SOUNDLIGHT DMX Relay Card 3202R is an intelligent DMX demultiplexer decoding digital data complying with standards USITT DMX512 and DIN 56930-2. The card drive two contact relay outputs. The card can be used with all standard light control systems. Its special 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.
- **integrated hysteresis**
Adjustable hysteresis ensures flicker free switching
- **simple supply**
The power supply is from standard regulated DC voltage, 12V DC
- **signal loss**
In the case of a loss of the drive signal a pre-definable action will be taken.
- **cost-effective**
The SOUNDLIGHT 3202R is a cost-effective solution for many purposes.

FEATURES

The relay card 3202R consists of a base printed circuit board and a detachable DMX start address setting board. The relay card can be operated with or without start address board at your option; see below for programming and address setting options. This card is intended for use in lighting effects and as fast-switching relay card; for limitations see "Additional Notes" on page 7. The 3202R-EP replaces the 3002R-EP, which is no longer available.

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 3202R complete with address board 3000P
- * this manual

INSTALLATION

Please mount the card in a closed, screened case. The card features fastening holes for tapped screws M3. We recommend use of brass distance bolts or spacers to mount the card 10mm above the case base plate. Connect the power supply to PSU leads or the PSU screw terminals.

The power supply connector leads are:

- red: +12V DC stabilized
- blue: 0V, GND

Upon application of supply voltage the card is ready for operation.

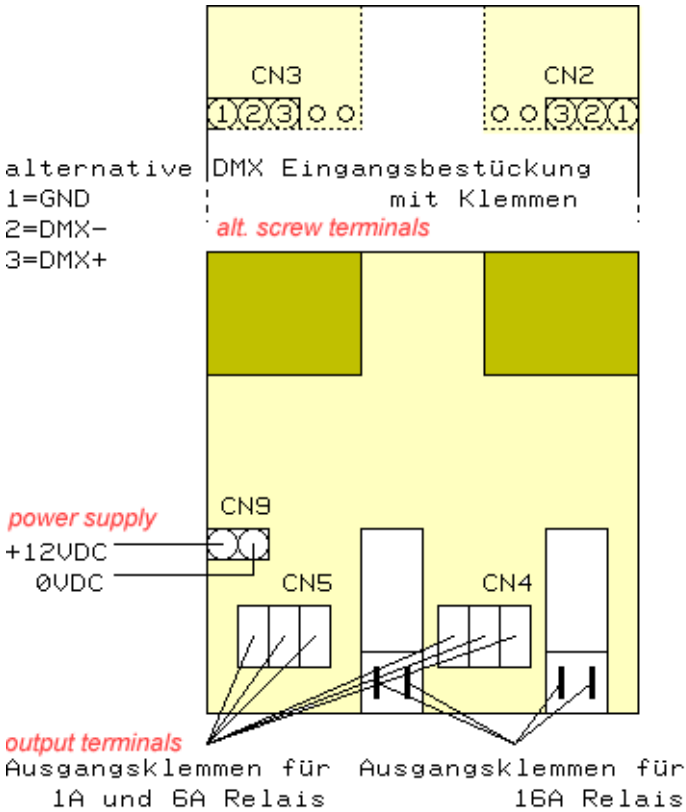
ATTENTION! Reversing the PSU leads may damage the unit!

DMX INPUT / OUTPUT

Connection to the DMX512 data line is by 5-pin onboard XLR connectors, as defined in the standards document. For pin assignment see below.

DMX INPUT	(male)
1	GND
2	DMX -
3	DMX +
4	not connected, thru-wired to Pin 4 DMX OUT
5	not connected, thru-wired to Pin 5 DMX OUT

DMX OUTPUT	(female)
1	GND
2	DMX -
3	DMX +
4	not connected, thru-wired to Pin 4 DMX IN
5	not connected, thru-wired to Pin 5 DMX IN



The drawing shows the position of the onboard connectors. The lower connectors are the relay output contacts; pin assignment of CN4/CN5 may vary due to type of relay used. Please verify using a ohmmeter.

CN1 Relay output #1
CN2 Relay output #2

- orange C (Common)
- dark grey NC (Normally Closed)
- light grey NO (Normally Open)

NOTE: Pin assignment may vary due to relay type used. Please check before use!

CN3 Power Supply

- red +12V DC [24V DC if 24V relays are used]
- blue 0V, GND

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 address 000, all outputs are disabled regardless of the data received.

DIP SWITCH SETTINGS

The relay card 3202R may be configured to match different applications. Set the DIP-switches 1...4 on the DMX start address selector board to achieve the desired mode of operation. Settings will be retained in nonvolatile memory if the address board is removed after.

S1: HOLD Mode

With HOLD mode ON, the last valid DMX data will be retained at signal loss. Otherwise, all outputs will be set according to S2 setting (below).

OFF	HOLD mode off
ON	HOLD mode on

S2: Safety Level

With HOLD mode OFF, the outputs will be set:

OFF	all outputs set to OFF
ON	all outputs set to ON

S3, S4: Switching Hysteresis Selection

SETTING	RELAY OFF	RELAY ON
S3=OFF S4=OFF	<45%	>55%
S3=ON S4=OFF	<25%	>75%
S3=OFF S4=ON	<10%	>90%
S3=ON S4=ON	0%	>0%

RELAY TYPES

The card can be equipped with a variety of different contact relays. Catalog models include the 3002R-EP6 with 6A changeover contacts, and the 3202R-EP16 with 16A heavy duty relays.

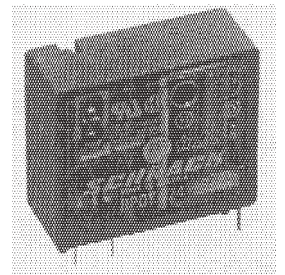
Please note that all current data are given for resistive load only. Switching of inductive loads requires application of a suitable degradation factor - see note below or refer to relay manufacturer's data sheet.

3202R-EP6

6ARELAY

high voltage changeover contact, universal use for all applications

max. switching current: 8A @ 230V resistive load
 max. switching voltage: 440V AC @ resistive load
 max. switching power: 2000VA AC
 contacts: 1x changeover (NC/NO)

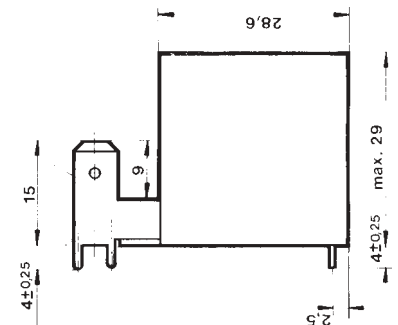


3202R-EP16

16ARELAY

high current N.O. contact, for power switching applications

max. switching current: 16A @ 230V resistive load
 max. switching voltage: 380V AC @ resistive load
 max. switching power: 4000VA AC
 contacts: 1x closing contact (N.O.)



NOTE:

When selecting and ordering the appropriate relay card, please note, that all data given by the relay manufacturers are for **RESISTIVE LOAD** only. Incandescent lamps may be considered to be resistive loads. Switching inductive loads, such as transformers or solenoids, requires lower loads - we strongly recommend not to exceed 50% of the resistive load data. Besides, contacts may burn due to inductive spikes and sparks. Make sure to add protective circuitry (RC combinations, VDR resistors) if switching inductive loads. Switching inductive loads on the mains power supply may also generate high frequency noise and degrade the power supply quality. If switching capacitive loads (electronic ballasts or psu) inrush current limiting devices may be required to prevent contact damage.

TECHNICAL DATA

Dimensions: 70 mm x 70 mm x 45 mm
 Power Supply: 12V DC approx. 30mA (no relay) to 150mA (both relays)
 DMX IN: 1 Unit Load
 DMX OUT: fed-through
 Relay Out: see relay data (above)
 Order Code.: 3202R-EP0 (no relays fitted)
 3202R-EP6 (6A universal relays fitted)
 3202R-EP16 (16A mini contactors fitted)

NOTE: boards may be ordered and fitted with 24V relays upon request.

CE CONFORMITY



This DMX demultiplexer is microprocessor controlled and uses high frequency (16 MHz quartz). The interface has been tested in our EMC lab to comply with EN5022B and IEC65/144.

To ensure the best performance regarding radiated and conducted emissions we suggest to install the interface card in a closed, conductive (e.g. metal) housing, which must be connected to GND.

Please make sure that shielded data cable is used and the shield is connected properly to the GND pin. Shield must never make contact to other signal lines.

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.

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 relays card 3202R which require the user's attention. Should your unit require servicing, please send it to the factory, freight paid.

END OF LIFETIME



When the useful lifetime of this product has been reached, it must be disposed of properly. Electronic devices must not be placed in domestic waste. Consult your local authorities to find the nearest collection point of used electric and electronic devices. SOUNDLIGHT is a WEEE registered company (Reg Nr. DE58883929).

INTERNET-HOTLINE

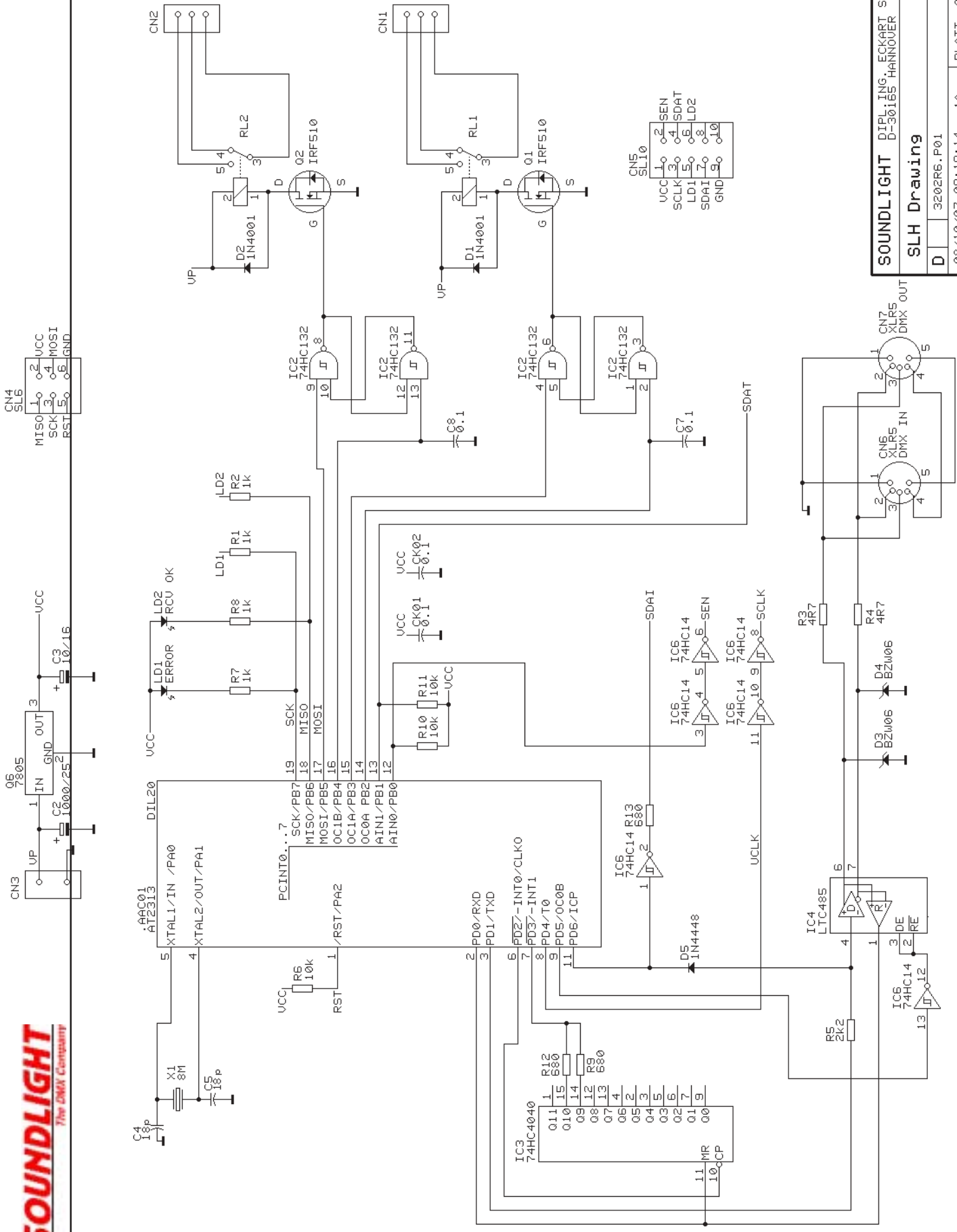
Please check our internet domain <http://www.soundlight.de> for new versions, updates etc. If you have any comments which may be worth considering, please send a message to support@soundlight.de. We will check your message and reply accordingly.

ADDITIONAL NOTES

The relay interface 3202R-EP has been designed for use in lighting effects or as effects unit. Thus, switching speed has been optimized and the 3202R-EP is a *very fast switching card*.

We do **not** recommend to use this board as switching board in power distribution systems, where high noise immunity, but only slow switching speed is required. As DMX512 by itself does not contain any provisions for error detection or error correction, false or disturbed data packets could lead to short interval erroneous switching. When switching loads such as discharge lamps (e.g. followspots, scanners or moving heads), this then could lead to lamp problems as many lamps cannot be hot-restricted, or moving lights would shut off and then go through their initialization sequence.

We have programmed a noise-immune slow-speed switching version of the well renowned 3002R interface, which is available as 3202R-EP16S. This interface is **limited to one switching action per second** and performs multiple interpretations of the incoming DMX512 signal. It will change its output state **only** if the appropriate DMX command can be detected reliably **and** repeatedly. Thus, please order the 3202R-EP16S instead.



SOUNDLIGHT DIPL.-ING. ECKART STEFFENS
D-30165 HANNOVER

SLH Drawing

D 3202R6.P01
08/10/07 09:19:14 1A BLATT 01 / 1

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