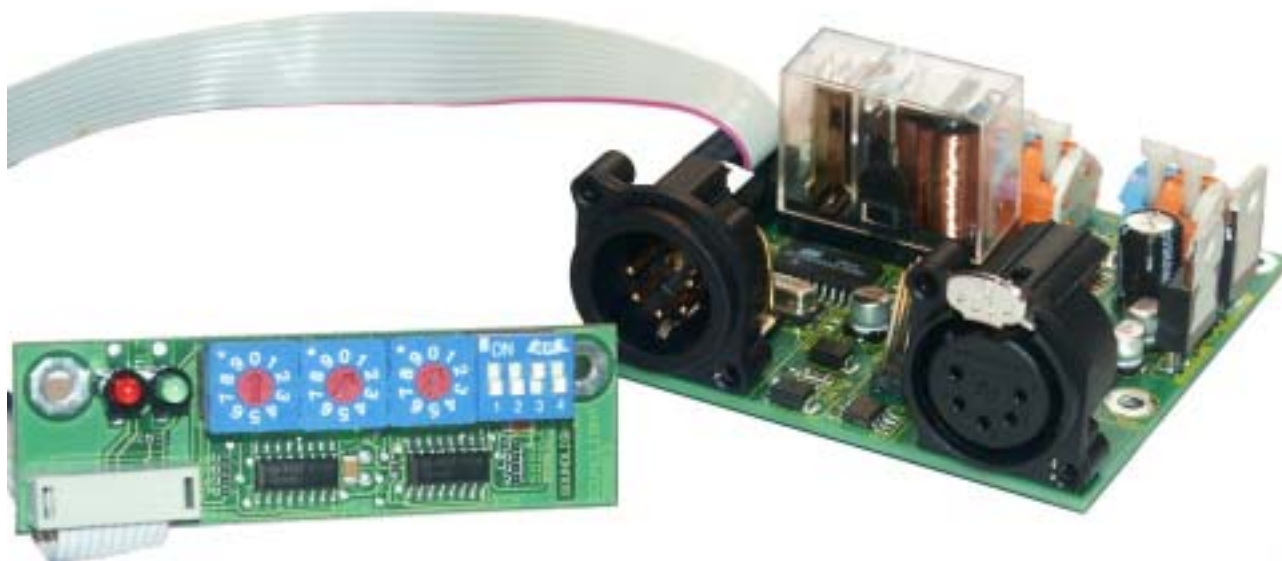


OPERATING MANUAL

DMX Combi-Decoder and Relay Card 3221C-EP

VERSION 3221C-EP Mk1.0 15-18V DC



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SOUNDLIGHT *The DMX Company* Bennigser Strasse 1 D-30974 Wennigsen Tel. 05045-912 93-11

Thank you for choosing SOUNDLIGHT.

The SOUNDLIGHT DMX Decoder Relay Card 3221C is an intelligent DMX demultiplexer decoding digital data complying with standards USITT DMX512 and DIN 56930-2. The card drive two analog outputs 0...+10V DC and one contact relay output. 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, 15V DC to 18V DC
- **signal loss**
In the case of a loss of the drive signal a pre-definable action will be taken.
- **cost-effective**
The SOUNDLIGHT 3221C is a cost-effective solution for many purposes.

Applications

The Decoder 3221C is suited for all applications, where analog control and load switching is required. The relay contact is designed to switch 230V @ 10 Amps resistive load. Typical applications include fluorescent tube ballast driver circuits, smoke machine control, stroboscope control or similar uses.

Connectors

The decoder 3221C consists of these input and output connectors:

CN1 POWER SUPPLY 15-18V DC

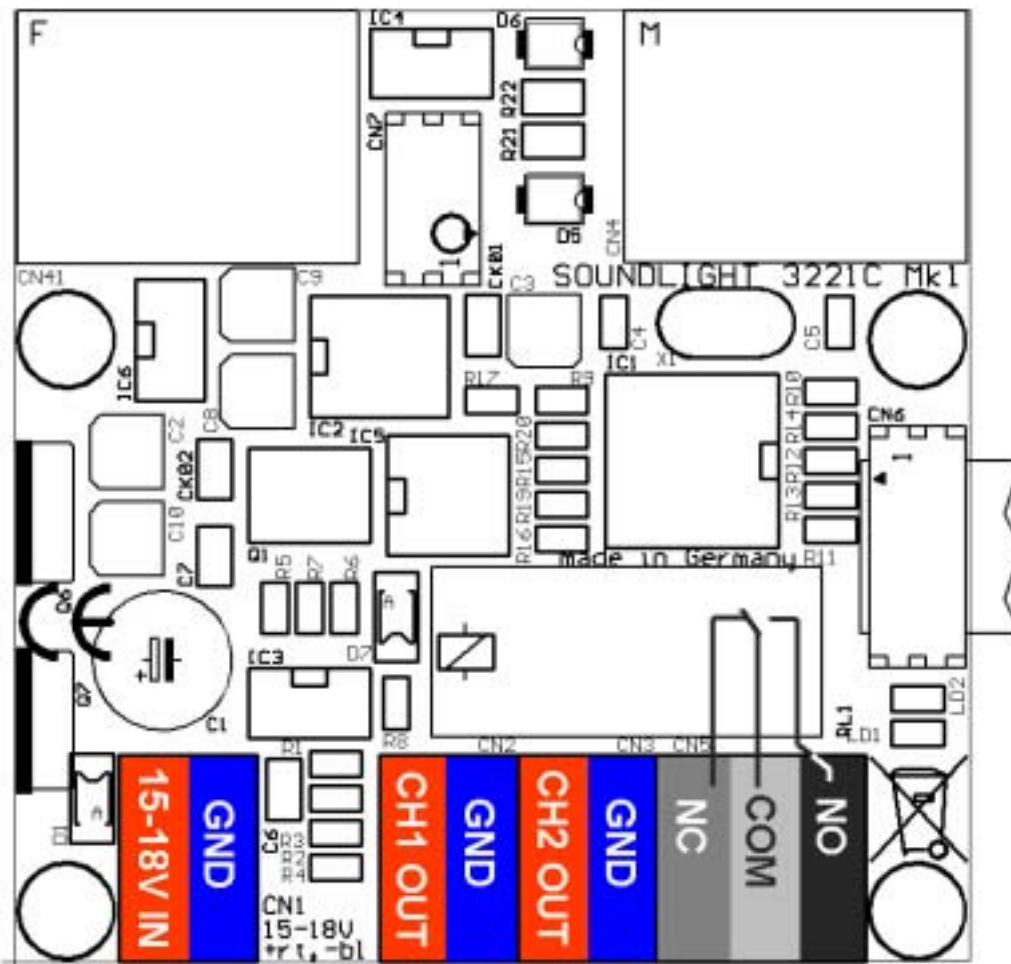
orange +15...+18V DC
blue 0 V DC (GND)

CN2 Signal Output 1 (Cage clamp terminal 2-pole)

orange CH 1, 0...+10V DC OUT
blue 0V, GND

CN3 Signalausgang 2 (Klemme 2-polig)

orange CH 2, 0...+10V DC OUT
blue 0V, GND



CN4 DMX INPUT (XLR 5-pin)

- 1 GND
- 2 -DMX
- 3 +DMX
- 4 2. Link (spare)
- 5 2. Link (spare)

CN41 DMX OUTPUT (XLR 5-pin)

- 1 GND
- 2 -DMX
- 3 +DMX
- 4 2. Link (spare)
- 5 2. Link (spare)

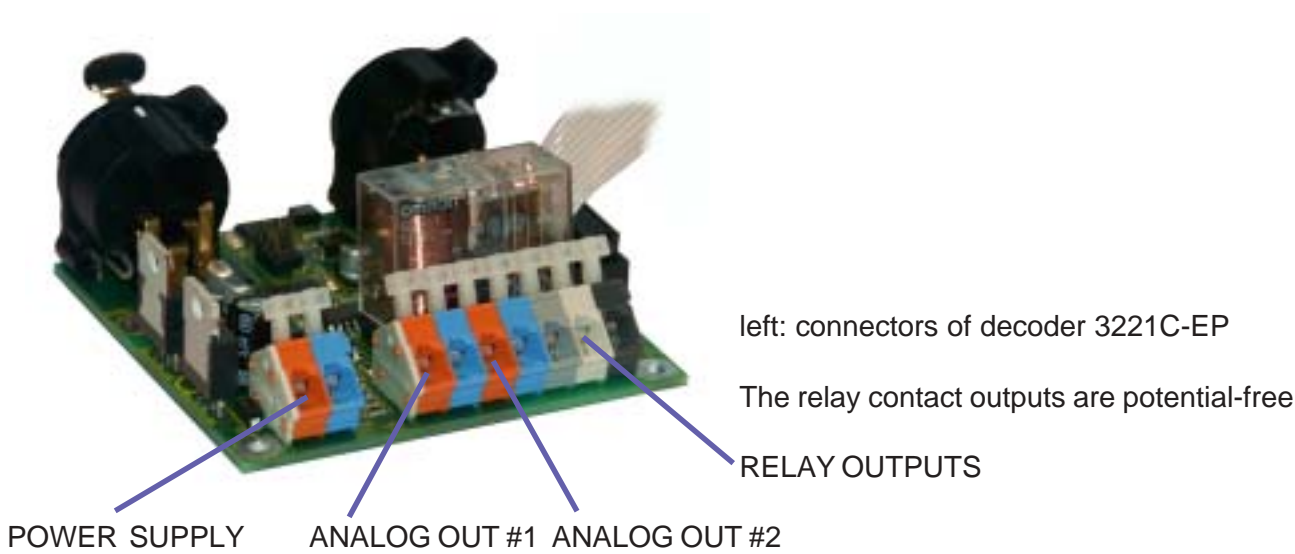
The "second link" contacts are not used within the decoder 3221C but only fed thru to the second connector.

CN5 Relay Output (3-pole)

- medium grey NC, normally closed
- light grey Common
- dark grey NO, normally open

CN6 Addressboard connector (pin header 10-pole)

to connect the DMX start address board 3000P or 3003P

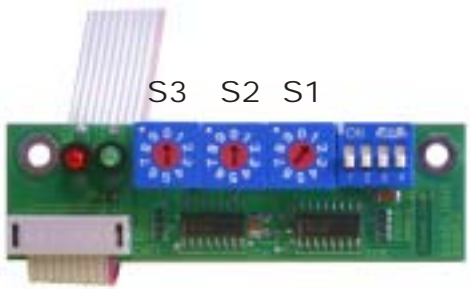


Signal Indicators

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. The unit will assume a loss of data, if no valid data have been received within one second.

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.

Example shown: start address set to 001

DIP Switches

The configuration of the decoder can be set using DIP-switches. All settings can be made individually. The default setting of all switches is "OFF", ensuring standard operation of the decoder.

- SWITCH 1** **DMX HOLD:** **default: off = no**
If the HOLD function has been set, the last valid setting is retained at loss of data.
- SWITCH 2** **Offwert:** **default: off = Outputs OFF**
If HOLD is not set, all outputs are set to zero in normal position (default).
If switch 2 is set, all outputs will be set to full output instead.
- SWITCH 3** **DMX relay channel** **default: off = CH 3**
OFF: Relay trip points are 4% / 14%, relay responds to DMX channel 3
ON: Relais trip points are 0% / 1%, relay responds to DMX channel 1
- SWITCH 4** **INVERT** **default: off = normal**
OFF: Outputs 1 & 2 are fading upward from 0V to +10V
ON: Outputs 1 & 2 are fading downward from +10V to 0V

IF connected, the address setting board may remain connected to the decoder at all times (recommended) or may be removed after making the desired settings. All settings are saved in nonvolatile memory within the 3221C decoder.

Connecting Hints

The 0...10V analog signal outputs of the 3221C decoder are designed to source current or to sink current as requested by the application. Thus all types of loads may be connected to the decoder: passive loads (such as dimmer packs, smoke machines, motor drivers etc) as well as active loads (1-10V electronic florescent tube ballasts, electronic 1...10V transformers and more).

When driving dimmable flourescent tube ballasts, the relay contact may be used to switch the power supply of the ballast. Set DIP-switch #3 to synchronize analog output #1 and the relay to fully control the flourescent tube.

Relay Contact Rating

This DMX decoder is equipped with high power relay contact outputs. Contact rating is 230V AC, 10A max. resistive load. Care must be taken if driving inductive loads (transformers, solenoids etc.) since these may produce high induced voltages, generating sparks and thus damage the contact surfaces. Capacitive loads may damage contacts due to excessive inrush currents. If switching inductive or capacitive loads a suitable reduction factor (recommended: 50%) must be taken into consideration and protection measures against sparks and inrush currents must be taken.

Technical Data

Dimensions:	71 mm x 71 mm
Power Supply:	230V AC (208-264V) 50/60 Hz typ ca. 2,4W
DMX IN:	1 Unit Load
DMX OUT:	fed thru
Analog out:	0...+10V DC, max. 4mA
Relay Out:	max. 230V 10A resistive load
Order Code:	3221C-EP

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.

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.

Environmental Notice



When the useful lifetime of this product has been reached, it must be disposed of properly. Electric and electronic devices must not be placed in domestic waste. Consult your local authorities for more information about collection of used equipment.

Service

There are no parts within the DMX decoder 3221C 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.

Accessories

The decoder 3221C comes complete with DMX start address board type 3000P. Alternatively, the decoder can be used in combination with address board 3003P, which features a bright 3-digit LED display. DIP switch settings are then emulated by programming the 3003P address board.



Address board 3003P