OPERATING INSTRUCTIONS
LED SYSTEM POWER SUPPLY 4E

Version 2.5

english

SCHNICK SCHNACK SYSTEMS

Content

1.0 Overview

The LED System Power Supply 4E (SPS4E) supplies Schnick-Schnack-Systems' Series B and Series C products with power and data.

The SPS4E has four, independent 4 pin XLR outputs, each of which can supply up to 10 x LED Tiles C, 17 x LED Strips C25-250 or 17x LED Strips C50-500. In Series C products the LEDs can be individually controlled.

Each output can supply 1 x LED Panel C60 or C100, 2 x LED Band units or up to 8 m of LED Line.

Once again with these products each LED can be individually controlled. The SPS 4E can also supply all Series B products by Schnick-Schnack-Systems. Up to 20 x LED Tiles B or 8 m of LED Strips B25-250 can be connected to each output.
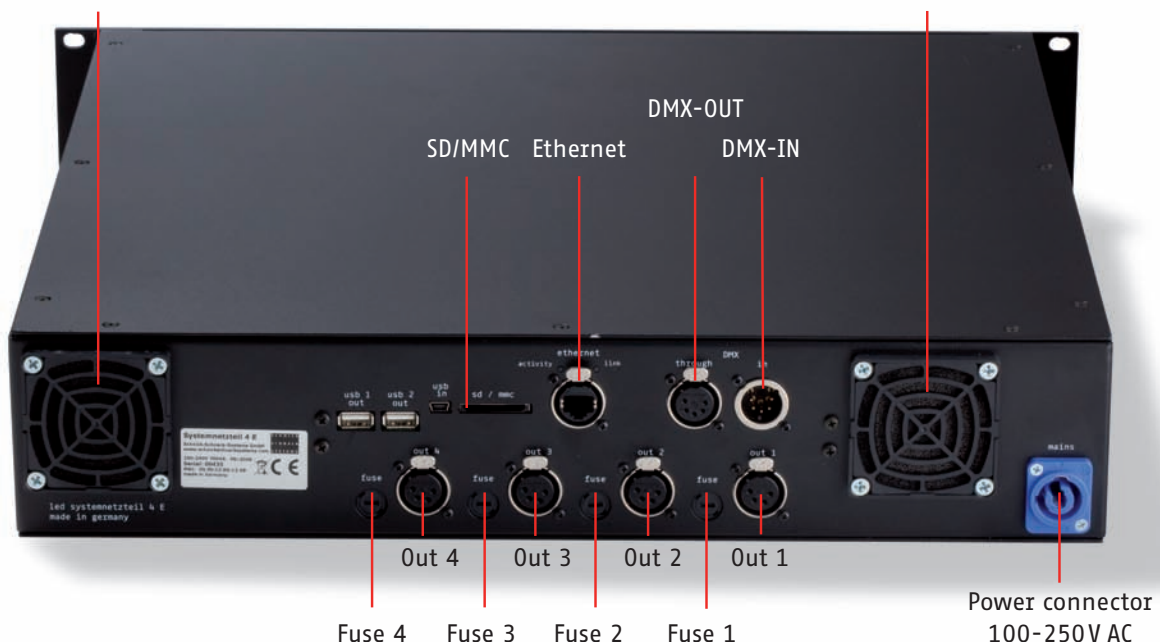
The SPS 4E can be controlled by either ArtNet or DMX 512 data and is therefore compatible with most lighting consoles and media servers. The control signal can be freely patched across the four outputs. It is also possible to use the SPS 4E as a stand-alone unit, without a DMX or ArtNet control signal.

2.0 Connectivity

The following connectors are located at the rear of the unit:

Fan Inlet
DO NOT COVER!
Clean regularly.

Fan Inlet
DO NOT COVER!
Clean regularly.

DMX-OUT

SD/MMC   Ethernet   DMX-IN

Out 4   Out 3   Out 2   Out 1

Power connector
100-250V AC

Fuse 4   Fuse 3   Fuse 2   Fuse 1

DMX In and Out:	Neutrik 5 pin XLR
ArtNet Input:	Neutrik Ethercon
Mini USB Input:	Reserved for future use
2 x USB Output:	Reserved for future use
SD Card Slot:	Used for software updates
LED Output 1-4:	Neutrik 4 pin XLR
Power Connector:	Neutrik Powercon 100-250 V AC

3.0 Installation

Examine the SPS 4E immediately after unpacking for any damage which may have occurred during transit. A damaged unit should not be used under any circumstances.

If the SPS 4E is moved from a cold to a warm environment, then a period of three hours should be allowed to pass before use, to allow for the evaporation of any condensation, which may have formed as a result of the temperature change.

If the SPS 4E is to be installed in a rack, care must be taken to ensure that there is sufficient airflow around both the front and back of the unit.
The temperature of the surrounding air should not exceed 35 °C.

The use of rails is recommended for rack-mounting, to relieve strain on the front panel.

Connect the DMX In and (if necessary) Out cables, followed by the LED outputs. Power-up the SPS 4E, by connecting the Neutrik Powercon plug.
After approximately one second, the unit is ready for use.

Do not operate the SPS 4E in direct sunlight.
Do not use water or aggressive solvents to clean the SPS 4E, wiping with a damp cloth should be sufficient.

Heavy soiling may be removed using a mild detergent.

4.0 System Cabling

Cabling of the system is very simple, although the following points should be considered:

Schnick-Schnack-Systems' LED illuminants connect to each another using 4 pin PCB connectors, which are small, lightweight and ideal for this purpose.

Cabling from the SPS 4E outputs makes use of XLR 4 pin cables, of the type commonly used in colour scroller systems with two wires for power and a shielded pair for data.

The interface between the two types of cable is the XLR 4 Adapterboard: a small PCB which carries both 4 pin XLR and PCB connectors. It is designed to be fitted to stage and set elements and provide a rugged point of connection which will withstand repeated use.

Each output of the SPS 4E will drive up to 512 channels of DMX i.e.:

10 x LED Tiles C or 17 x LED Strips C25-250 or 32 x LED Strips with Intelligenz or 1 x LED Panel C60 or 2 x LED Band C100.

Please note: The length of the 4 pin XLR cable between the SPS 4E and the Adaptorboard should not exceed 20 m.
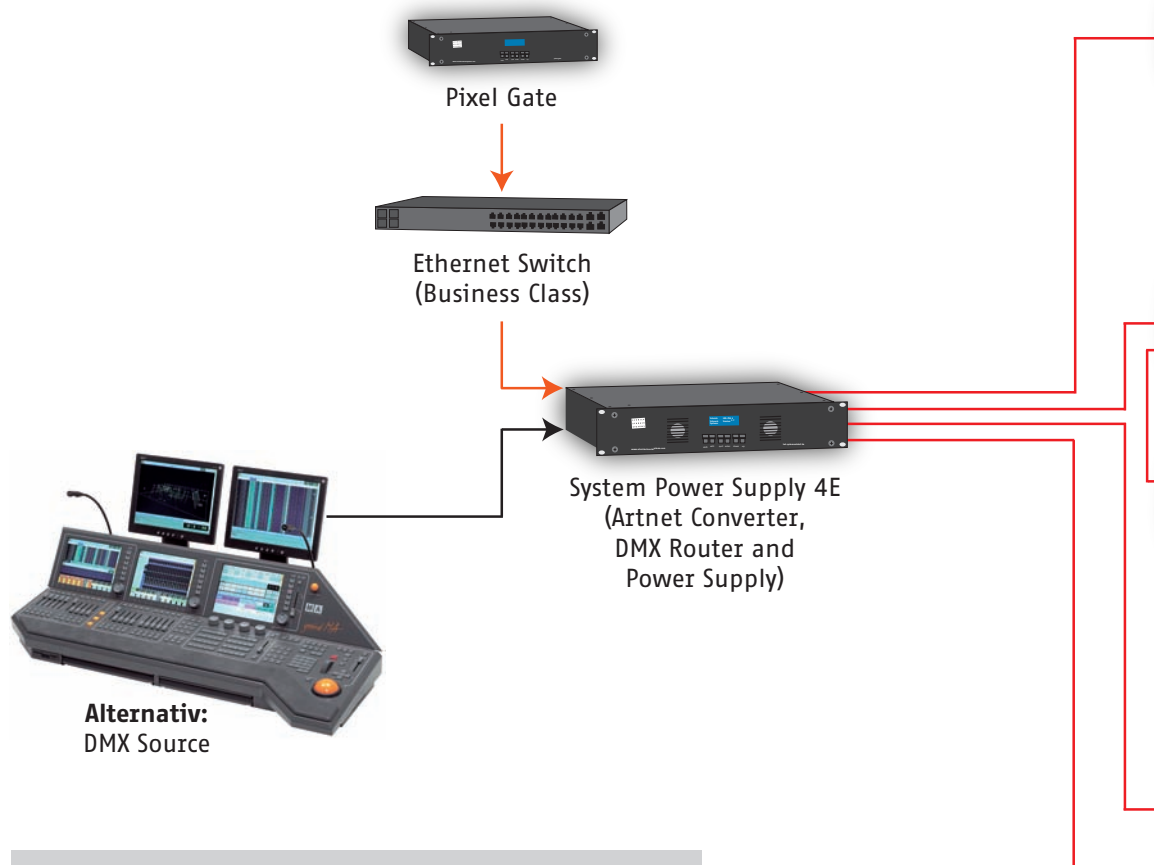
Each output of the Adaptorboard will drive up to 3 A power, i.e.:

10 x LED Tiles B or 10 x LED Tiles C or 16 x LED Strips B25-250 with Intelligenz.
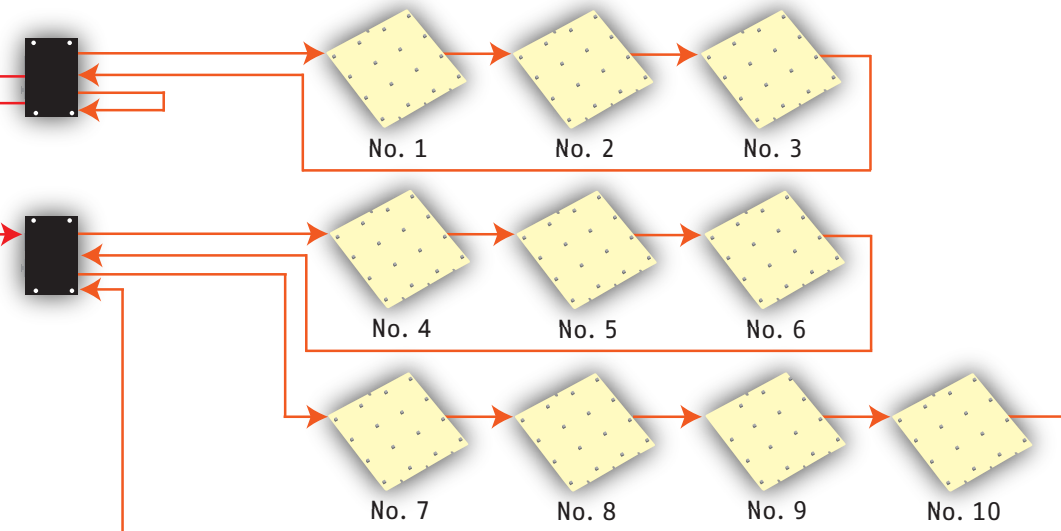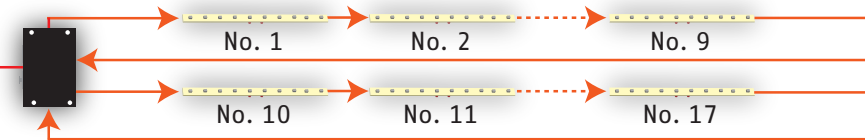
Please note: The total length of PCB cable connected to an Adaptorboard output should not exceed 6 m, including the loopback.

4.1 Cabling Example

The following diagram offers an overview of various connection options, using the SPS 4E.

Pixel Gate

Ethernet Switch
(Business Class)

System Power Supply 4E
(Artnet Converter,
DMX Router and
Power Supply)

Alternativ:
DMX Source

CAT 6 Cable	————
DMX XLR-5 Pol Cable	————
Power and DMX, XLR-4 Pol Cable	————
Power and DMX, PCB Link Cable	————

No. 1   No. 2   No. 9

No. 10   No. 11   No. 17

No. 1   No. 2   No. 3

No. 4   No. 5   No. 6

No. 7   No. 8   No. 9   No. 10

Third exit just as with maximally 6 A, and/or 512 DMX channels provably.

Fourth exit just as with maximally 6 A, and/or 512 DMX channels provably.

5.0 Menus

Shift Edit Quit Enter Down Up
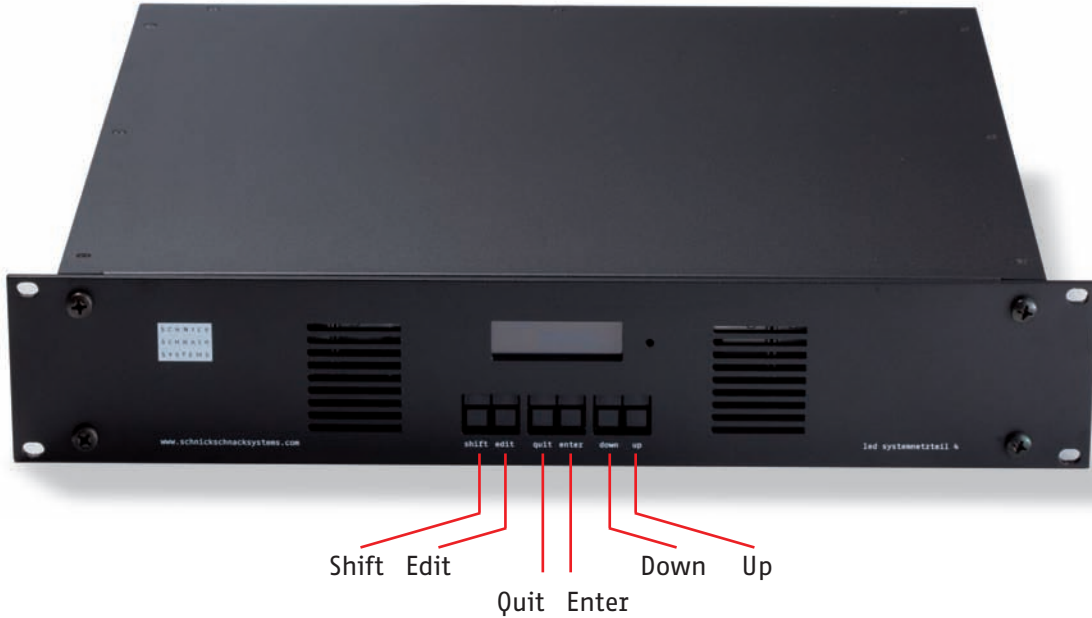
5.1 Menu Order

Welcome to Systemnetzteil 4E	x °C
IP x.xxx.xx.xx	v 2.5

Main Menu:
Info

Main Menu:
Quickpatch ArtNet

Main Menu:
Quickpatch DMX

Main Menu:
Setup Menu

Main Menu:
Test Menu

Main Menu:
Factory Defaults

5.2 Menu Selection

To change mode, press the **QUIT** button, the display will show **Change Mode?** Confirm the action by pressing the **ENTER** button or cancel by pressing the **QUIT** button again. Use the **UP** and **DOWN** buttons to select the desired mode. Confirm selection by pressing the **ENTER** button or press the **QUIT** button to return to the most recently used mode.

> Change Mode?
> Quit   Enter

5.2.1 Info

This mode displays the unit type and installed software version.

> Welcome to   x °C
> Systemnetzteil 4E   v 2.5
> IP x.xxx.xx.xx
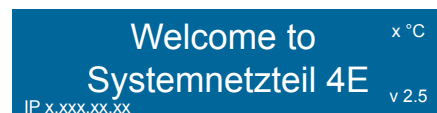
5.2.2 Manual Patch

When changing from the **Quick Patch** mode into the **Manual Patch** mode the following display is shown:

This mode offers the user the opportunity to overwrite the DMX channels set by the **Quick Patch** mode with channels of their own choice. Please note that as this operation is irreversible, **SHIFT** and **ENTER** must be pushed together, in order to confirm the channel selection, otherwise press **QUIT** to exit the mode.
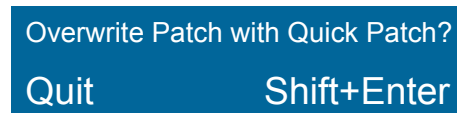
Setting values in **Manual Patch** mode:
Use the **OUT** field to select the output to be patched (1-4). Use the **CH** filed to assign a DMX start address to the selected. In the **TYPE** field select **INT** to allow an output level to be set manually. Select DMX to allow control of the output via DMX.

> Overwrite Patch with Quick Patch?
> Quit   Shift+Enter

> Out: ☐ Universe: DMX
> Ch: ▮1 Type: FIX Val: OFF

5.2.3 Quick Patch ArtNet

For each output two data fields are shown on the display. The uppermost field displays the ArtNet universe as a decimal number.

	Out 1 ■	Out 2 ■	Out 3 ■	Out 4 ■
Universe	0	1	2	3
Start-Ch:	1	1	1	1

The lower field displays the DMX start address for the universe in the data field above it (a universe may need to be patched across more than one output). A control check mark in a square by each output number, denotes the presence of valid ArtNet data at that output.

5.2.4 Quick Patch DMX

For each output two data fields are shown on the display. The upper field shows the DMX start channel (**start CH:**) for that output. The lower field offers the opportunity to combine subsequent channels into regularly repeating groups. Use the **EDIT** button to select the required field.

DMX: NONE	Out 1 ■	Out 2 ■	Out 3 ■	Out 4 ■
Start-Ch:	1	1	1	1
Combine:	OFF	OFF	OFF	OFF

The **DMX** field shows the status of the incoming **DMX** signal. **NONE** shows that no **DMX** signal is being received. **GOOD** shows that a valid **DMX** signal is being received.

The table on the following page shows the various repeat and combine options available via the menu system.

Combine and Repeat Modes

OFF – no combine

ALL – all LED boards are steered by 3 DMX channels

C 2 – always 2 plates are interconnected

C 3 – always 3 plates are interconnected

C 4 – always 4 plates are interconnected

C 5 – always 5 plates are interconnected

C 6 – always 6 plates are interconnected

C 7 – always 7 plates are interconnected

C 8 – always 8 plates are interconnected

C 9 – always 9 plates are interconnected

C 10 – always 10 plates are interconnected

R 2 – each second plate is interconnected

R 3 – each third plate is interconnected

R 4 – each fourth plate is interconnected

R 5 – each fifth plate is interconnected

R 6 – each sixth plate is interconnected

R 7 – each seventh plate is interconnected

R 8 – each eighth plate is interconnected

R 9 – each ninth plate is interconnected

R 10 – each tenth plate is interconnected

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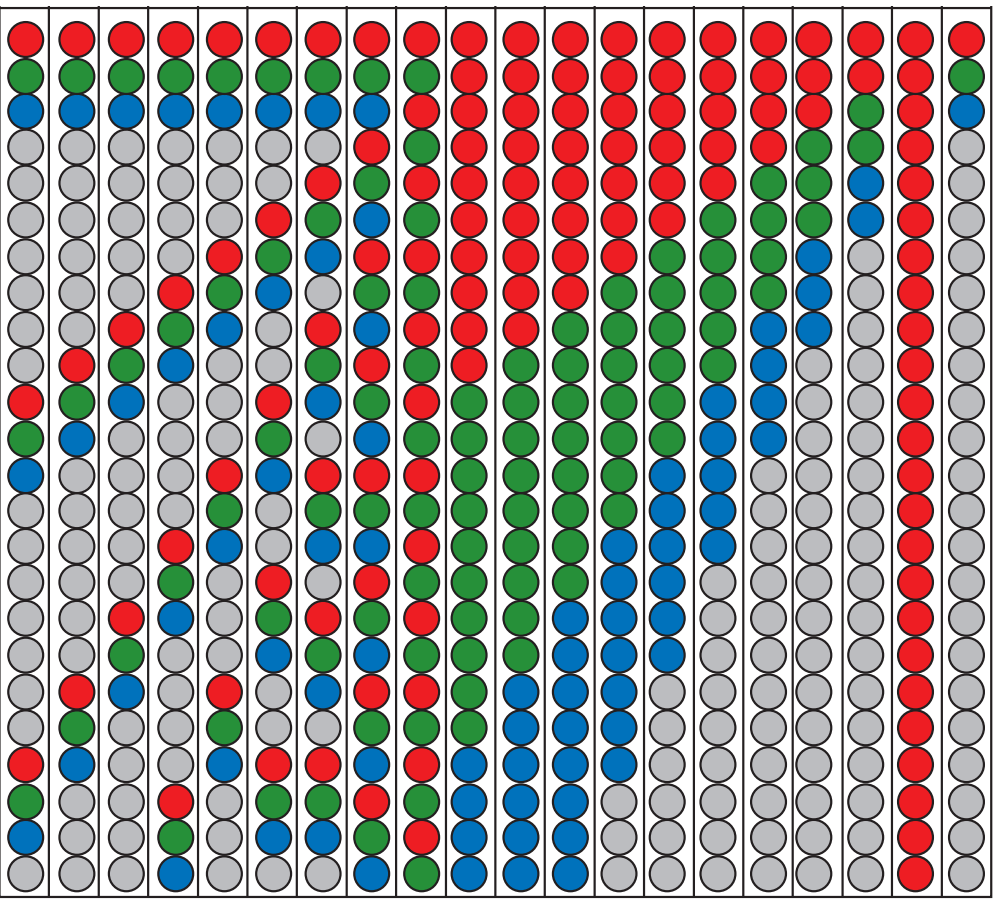
5.2.5 Setup Menu

```
Setup Menu:
   Output
```

5.2.5.1 Output Type

Switch between standard DMX 512 or S3 DMX for the enterprise of the LED tiles C25 or LED panels C60-25.

```
Output Type:
   DMX 512
```

```
Output Type:
   Gain
```

5.2.5.2 Colour Gain

With this function the colors red, green and blue can be made darker. With 255 this function is deactivated.

```
Colour Gain (off: 255)
R: 255   G: 255   B: 255
```

5.2.6 Test Menu

```
Test Menu:
   Manual RGB
```

```
Test Menu:
   ArtNet Monitor
```

```
Test Menu:
   ArtNet Test TX
```
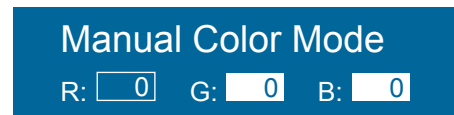
```
Test Menu:
   Demo Slow
```

```
Test Menu:
   Demo Fast
```

5.2.6.1 Manual RGB

This mode allows a static, single colour to be set across all connected illuminants, without the need for an incoming DMX signal.
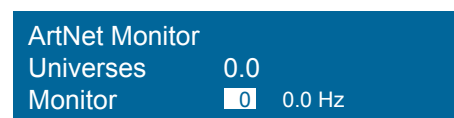
As with the other modes, use the **EDIT** button to select the required field and the **UP** and **DOWN** buttons to set the required values.

Manual Color Mode
R: 0   G: 0   B: 0

5.2.6.2 ArtNet Monitor

Universes indicates the first and last sent ArtNet universe.

Monitor indicates, with which frequency the adjusted universe sends.

ArtNet Monitor	
Universes	0.0
Monitor	0 0.0 Hz

5.2.6.3 ArtNet Test Mode

In this mode the SPS 4E will function as an ArtNet data transmitter.

This function was implemented as a means of testing the cables and Ethernet switches used in a system without the need for an external ArtNet data source. While in this mode, the SPS 4E will perform no other functions and no control over LEDs will be possible.

In this mode, the SPS 4E sends a strobe signal over ArtNet, switching all channels on and off simultaneously. The following parameters can be adjusted:

Ton: The duration of the On-pulse of the strobe impulse (in seconds).

Toff: The duration of the Off-pulse of the strobe impulse (in seconds).

#uni: The number of the ArtNet universe, over which data is being sent.

In this mode, the SPS 4E will default to the last-used universe.

The **STATE** field display, in real time, wheter an **ON** or **OFF** pulse is being sent.

ArtNet Test Mode			
Ton	Toff	#uni	State
0.50	1.00	255	Off
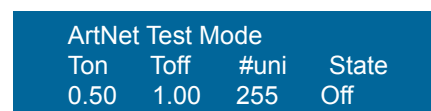
5.2.6.4 Demo Mode Fast/Slow

In this mode all connected LEDs will run a preset sequence at one of two speeds selected by the user. Please note that separate SPS 4E units running this mode will not run synchronization with each other.

Demo Mode Slow

Demo Mode Fast

5.2.7 Factory Defaults

The equipment puts back to factory settings.

Restore Factory Defaults?	
Quit	Shift+Enter

5.2.8 Error Message

If one of the fuses protecting the outputs should fail, the display will flash and show the following type of message.

Output Error	Out 1	Out 2	Out 3	Out 4
Fuse:	BAD	O.K.	O.K.	O.K.

6.0 Updating the Software

The SPS 4E system software can be updated easily with the latest version, using an SD Card.
New software versions keep products up to date with the latest features and are available for download from our website at www.schnickschnacksystems. com. Please read the readme.txt file, for details of how to format the software correctly onto an SD Card.

To update the software version:

1. Turn off the SPS 4E by disconnecting the power cable.

2. Insert the SD Card, carrying the software version to be uploaded, into the SC Card slot on the rear of the unit.

3. Turn the SPS 4E back on, bye reconnecting the power cable.

4. The SPS 4E automatically detects and loads the new software version. The software is loading, the display will show a message saying: „**Please wait**".

5. When the installation is complete, the display shows the welcome message and the new software version number.

6. The SPS 4E is now ready to use again.

7.0 Technical Data

Housing:	19", 2 U rack-mounted casing
Dimensions (mm):	483x88x430(WxHxD)
Input voltage:	100-250 V AC, 50/60 Hz
Power comsumption:	700 VA
Current output:	6 A per output maximum
Main connector:	Neutrik Powercon
Data protocol:	DMX 512 A-1990 USITT, isolated and protected
DMX in:	Neutrik XLR, 5 pin
DMX trough:	Neutrik XLR, 5 pin
ArtNet:	Neutrik Ethercon
LED outputs 1-4:	4 x Neutrik XLR 4 pin
Weight:	1.8 kg

7.1 Pin Connection

DMX:

1	2	3	4	5	Housing
Data GND	Data -	Data +	n/c	n/c	n/c

XLR 4-Pol-Ausgang:

1	2	3	4	Housing
GND	Data -	Data +	+ 24 V	n/c

8.0 Contact Details

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S C H N I C K
S C H N A C K
S Y S T E M S

EC-Declaration of conformity

I hereby declare that the product

LED-Beleuchtungssystem bestehend aus „LED-Systemnetzteil 4E", „LED-Kachel C",
„LED Streifen C25", „LED Pnael C60", „LED-Band C100", „LED Streifen B" mit „Intelligenz" und Verkabelung nach Bedienungsanleitung

(Name of product, type or model, batch or serial number)

meets the essential requirements referred to in Article 3 of the Council Directive 99/5/EC.

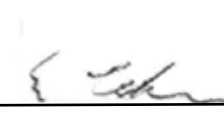The following harmonized standards have been applied:

EN 60950-1:2003

EN 55015:2000

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Koeln, January 2nd 2008
(Place, Date of issue)

(Signature)

Dipl.Ing.(FH) Erhard Lehmann
(Name in block letters)