



## Power supply PS104, PS154, PS204 and PS254 with integrated splitbox

Functional description

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Caution! Operate the device only after having read and **understood** operating instructions!

## Power supplies PS104, PS154, PS204, PS254

Power supplies with integrated DMX-splitbox for Licht-Technik color changer, dimmer shutter and motorized yokes.

The wide input range provides the possibility to work with different input voltages. Because of the safe electrical separation from the mains and the low operating voltage of 28V the system is very safe for the users.

Please make sure, that the input voltage is not **switching** or **rising** (e.g. 110V to 230V) when the device is powered. When using a generator, make sure that the device is switched off until power is **stable**.

The power supply is a **switching** regulator which guarantees a high reliability at a low heat. It is short circuit protected and overload proof.

The built in **DMX-Splitbox** has a DMX input which is automatically terminated and opto isolated. The splitbox supplies 6 DMX outputs.

**Further** splitboxes can be connected to the **5pin** outputs. Even if in power off state the OUT output supplies DMX signal. The OUT1 output supplies only a DMX signal when the device is in power on state (e.g. for star wiring).

For the Licht-Technik devices 4 **DataPower** outputs are available (OUT1..4).

Also useful as **DMX-Repeater** and signal refreshing.

The housing is made of 2mm **powder coated** aluminium.

The built in nearly noiseless fan is **temperature controlled** to provide a good heat dissipation also in a warm environment.

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## **Introduction**

Dear customer,  
thank you for buying this product. You got a product which is state of the art. It complies with national and european standards (electromagnetic compliance 2004/108/EG). The conformity was proven, the corresponding declaration and documents are deposited at the manufacturer. To sustain this status and ensure a safe operation, the user must observe this manual!

## **Appropriate use**

The power supplies PS104, PS154, PS204 and PS254 supply electrical power to our devices Color changer, dimmer-shutter and motoized yokes.

An outdoor use can take place only conditionally, because the housing is not waterproof. The contact of water must be avoided in any circumstances. For cleaning of the housing, a dry, lint-free cleaning rag can be used. The use of cleanser should be omitted. An other usage as described above can lead to damage and, in addition, the risk of short circuit, fire, injury and death exists. The whole product must not be modified and reconstructed. The housing must not be opened.

The safety and operating instructions must be observed in any circumstances.

# Safety and operating instructions

## Before opening the housing disconnect the device from the mains !!!

Don't try in any case to touch the electronic through the vents, also with any objects. This can cause an electrical accident that can lead to death!

Admissible **ambient temperature**: 0..+40 degree Celsius.

Do not **block** or **cover** the vents.

The power supply is not for use in outside area. Only applicable **indoor** in clean and dry environment.

The Power supply must be kept **dry**. In case of water condensation a waiting period of 2 hours is necessary until the state of being acclimatised is reached.

The device must not be mounted at the **hand grip** into a Rigg or similar systems. For this purpose a holding yoke is available which is mounted at the top of the device.

Observe **mains** voltage and **fuse**:

Type	Max. power	Max. current Sec.	Mains voltage 1	Primary fuse 1	Mains voltage 2	Primary fuse 1
PS104	240 W	10 A	93 – 132 VAC	6,3 A slow blow	187 – 264 VAC	3,15 A slow blow
PS154	360 W	15 A	85 – 132 VAC	6,3 A slow blow	187 – 264 VAC	6,3 A slow blow
PS204	480 W	20 A	93 – 132 VAC	8 A slow blow	187 – 264 VAC	4 A slow blow
PS254	600 W	25 A	85 – 132 VAC	10 A slow blow	187 – 264 VAC	6,3 A slow blow

Please note: The **switching** or rising/falling from one input voltage range to another during operation can lead to damage of the device!

When using a **generator**, first start the generator and wait for stable mains supply voltage! After that switch on the power supply

**Distribute** the load evenly over the four outputs!

Keep the DataPower cables to the devices as **short** as possible.

Observe the **maximum load**! The power consumption of every device is indicated on the type plate. The total power of all connected devices must not exceed the maximum power of the power supply!

When it has to be assumed that a safe operation is no longer possible, the equipment must be switched off immediately and be secured against unintended operation.

### **This is the case when**

- the equipment shows visible damages;
- the equipment is no longer functional;
- parts of the equipment are loose or slackened;
- connecting lines show visible damages.

Prior to starting the equipment the user must check the usefulness of the device for its intended purpose. In particular, Licht-Technik shall decline any liability for damages of the equipment as well as for consequential damages resulting of the device being used inappropriately, of inexperienced installation, incorrect starting and use, and of non-compliance with the valid safety regulations.

## **Disposal**

No longer required packaging and packaging aids are recyclable and should be given up to collecting points.

Used up batteries and accus are not for household garbage. These must be brought to recycling stations. Information about recycling stations are available at your responsible municipal administration.

### **Attention!**

This product with all electrical and electronic components must not be disposed in the household garbage! For this kind of products a separate disposal system is defined by law!

### **Information for disposal by the user in the european union:**

Used electrical and electronic devices must be disposed separately to ensure a environment friendly recycling. These products must be given up to responsible collecting points. The disposal is free of charge for the user. Please enquire at your local administration where you can give up this product for professional recycling. If your product is equipped with batteries or accus, please remove them before disposal and give them up separately (see above).

### **Information for disposal by the user outside the european union:**

If you want to dispose this product, please contact your local responsible municipal administration for environment friendly recycling.

**By giving up the product to responsible collecting points you support a professional recycling and make a significant contribution for protecting the environment and human health.**

# Cabling



The standardized DMX-Signal is based on industrie's RS485 Interface. It is designed for maximum lengths up to 1200m. This length is under condition in theatre or studio normally not possible. As a result of internal tests we recommend a maximum length of 200m (**only DMX, 5PIN**). A maximum of 32 DMX receiver can be connected to one DMX transmitter. If more devices should be connected a splitbox must be used.

Connect the light mixer panel and the Splitbox PS104/PS204 with a 5PIN XLR-DMX-cable. The splitbox is provided with two DMX out jacks for connecting additional splitboxes. At each of the four DATA Power outputs the devices can be connected. Observe the maximum number of devices!

## Distribute the load evenly over the 4 outputs.

Observe the **maximum load!** The power consumption of every device is indicated on the type plate. The total power of all connected devices must not exceed the maximum power of the power supply!

Type	Max Current	Max PS104 (10A)		Max PS154 (15 A)		Max PS204 (20 A)		Max PS254 (25 A)	
		total	per output	total	per output	total	per output	total	per output
Color changer	1,2 A	8	4	12	4	16	4	20	5
Dimmer shutter	1,2 A	8	4	12	4	16	4	20	5
MagVader	2,5 A	4	2	6	2	8	4	10	3
Motoryoke	4,0 A	2	1	3	1	4	2	5	1

Different types per power supply possible, observe maximum load!

The last device in a row should be **terminated** with a 470 Ohm resistor.

The maximum length of a datapower line (four pin) must not exceed 80 m because of the voltage drop.

## Getting started

**Caution!** Check the mains voltage:

Type	Max. power	Max. current Sec.	Mains voltage 1	Primary fuse 1	Mains voltage 2	Primary fuse 1
PS104	240 W	10 A	93 – 132 VAC	6,3 A slow blow	187 – 264 VAC	3,15 A slow blow
PS154	360 W	15 A	85 – 132 VAC	6,3 A slow blow	187 – 264 VAC	6,3 A slow blow
PS204	480 W	20 A	93 – 132 VAC	8 A slow blow	187 – 264 VAC	4 A slow blow
PS254	600 W	25 A	85 – 132 VAC	10 A slow blow	187 – 264 VAC	6,3 A slow blow

- Main switch to off.
- Put power in cable into plug.
- Connect the DMX (5pin) cable to DMX in.
- Connect further DMX receiver or further splitboxes (PS104/PS154/PS204/PS254) to DMX out (5pin).
- At the 4pin outputs devices like color changer, shutter or motoryoke are connected
- Switch on the power supply at the main switch

# Technical data

## Dimensions and Weight:

Type	Width	Height	Depth	Weight
PS104 / PS154	20,5 cm	16,5 cm	27 cm	3,8 kg
PS204 / PS254	20,5 cm	16,5 cm	37,5 cm	6,5 kg

## Mains voltage:

Type	Max. power	Max. current Sec.	Mains voltage 1	Primary fuse 1	Mains voltage 2	Primary fuse 2
PS104	240 W	10 A	93 – 132 VAC	6,3 A slow blow	187 – 264 VAC	3,15 A slow blow
PS154	360 W	15 A	85 – 132 VAC	6,3 A slow blow	187 – 264 VAC	6,3 A slow blow
PS204	480 W	20 A	93 – 132 VAC	8 A slow blow	187 – 264 VAC	4 A slow blow
PS254	600 W	25 A	85 – 132 VAC	10 A slow blow	187 – 264 VAC	6,3 A slow blow

<b>Admissible ambient temperature:</b>	0..40 degree Celsius		
<b>Maximum output power:</b>	PS104: 240 W, 10 A PS154: 360 W, 15 A PS204: 480 W, 20 A PS254: 600 W, 25 A		
<b>Output voltage:</b>	28 V DC		
<b>Fusing:</b>	PS104:	93V-132V:	6,3A slow blow
	PS104:	187V-264V:	3,15A slow blow
	PS154:	85V-132V:	6,3A slow blow
	PS154:	187V-264V:	6,3A slow blow
	PS204:	93V-132V:	8A slow blow
	PS204:	187V-264V:	4A slow blow
	PS254:	85V-132V:	10A slow blow
	PS254:	187V-264V:	6,3A slow blow

## Pin assignment:

**OUT1..4:** 4pin XLR, gold contacts  
PIN 1 0 V min. cross section 0,75mm<sup>2</sup>  
PIN 2 Data – min. cross section 0,25mm<sup>2</sup>  
PIN 3 Data + min. cross section 0,25mm<sup>2</sup>  
PIN 4 +24 V DC min. cross section 0,75mm<sup>2</sup>  
Housing: shield

**DMX-IN/ OUT:** 5pin. XLR, gold contacts  
PIN 1 Shield min. cross section 0,25mm<sup>2</sup>  
PIN 2 Data – min. cross section 0,25mm<sup>2</sup>  
PIN 3 Data + min. cross section 0,25mm<sup>2</sup>  
PIN 4 not connected min. cross section 0,25mm<sup>2</sup>  
PIN 5 not connected min. cross section 0,25mm<sup>2</sup>

### **DataPower cable:**

2 x 0,75mm<sup>2</sup> power supply (Pin 1 and 4)

2 x 0,25mm<sup>2</sup> twisted pair, 110 Ohm characteristic impedance (Pin 2 and 3), shielded.  
Shielded

## **Malfuctions**

**Caution! Before opening the housing disconnect the device from electrical mains**

**Caution!** Change the fuse only in **disconnected** condition. If the fuse will blow again, the device has to be repaired at Licht-Technik

**Caution!** Replace a defect fuse only with a fuse of the right value

In the inside of the device are **no** parts which can be repaired by the user!!

The built in power supply is **short circuit protected, overload proof** and very reliable in operation. In case of a defect no changable parts can be reached.

When the power is on and the DMX signal is connected the DMX LED must light. Otherwise the splitbox PCB-board is defect. This happens in case of short circuits from 24 V to data+ or data-.

Error	Possible reaseons
DMX ok does not light	No DMX-signal on the input PS104/204 switched off DMX-panel switched off
DMX ok lights, but no signal at Output	Splitbox electronic defect because of short circuits in cable. Try another output.
No voltage at outputs	Mains voltage ok?

## Warranty

The warranty for our products is 2 years. It comprises any repair of failures – free of charge – which can be proved to result from defects of fabrication.

Warranty expires when:

- the device was modified or attempted to be repaired
- damages were caused by the intervention of foreign persons
- damages are due to noncompliance with the operating instructions
- the device was connected to an incorrect voltage or incorrect type of current
- the device was incorrectly operated or when damages were caused by negligent handling or misuse

All maintenance and servicing works related to the product must be carried out by the company *Licht-Technik*. *Licht-Technik* shall not assume any liability for losses or damages of any kind being the results of inexpert servicing.

## Further information

This document and the information contained therein are subject to copyright and neither the whole nor any part of it may, and this is also valid for the described product, be reproduced, copied or recorded in any form without the prior written authorization of *Licht-Technik Vertriebs GmbH*.

The products of *Licht-Technik GmbH* are subject to constant development. Therefore *Licht-Technik* reserves the right to modify components, motors and also technical specifications any time and without prior notice.

# Declaration of conformity

**Manufacturer:** Licht-Technik Vertriebs GmbH  
**Address:** Osterwaldstraße 9-10  
80805 München

declares that the product:

**Name of product:** Power Supply / splitbox  
**Type of product:** PS104/PS154/PS204/PS254

corresponds to the following specifications under strict observance of the installation instructions and technical specifications:

**Standard 2004/108/EG of the European Parliament and the council from  
15. December 2004  
for law provision adaptation of the member states concerning the electrical  
compatibility and for  
abrogation of standard 89/336/EEG.**

The device passed the test. A testreport is available at company Licht-Technik Vertriebs GmbH.

Munich, 19.9.2005

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Uwe Hagenbach / Bernhard Grill  
Managing directors