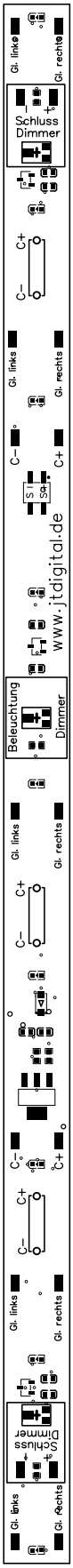
JT Digital
Modellbahnelektronik

Version 15th October 2024

0500X - Lighting Kit Universal
Manual



1 Included Items

- 1 lighting PCB
- 1 capacitor (H-type or V-type)

2 Technical Specifications

Dimensions			
Art.No.	LxWxH (incl. capacitor)	suitable for carriage length	length scale
05001	284 x 12 x 8 mm	303 mm	1:87
05002	265 x 12 x 8 mm	282 mm	1:93.5
05003	249 x 12 x 8 mm	264 mm	1:100
Min. operating voltage	6 V		
Max. operating voltage	20 V AC/DC (briefly Märklin switching voltage up to 28 VAC)		
operating modes	analogue (AC or DC) or digital		
Max. current consumption	50 mA (<2 seconds)	20 mA (> 2 seconds)	

3 Connecting the Lighting Kit

3.1 Power Supply

The lighting PCB must be connected to the track voltage. The corresponding soldering pads on the PCB are labelled `Gl. links` (left rail) and `Gl. rechts` (right rail). Both are available several times on the front and back of the PCB.
In the **two-rail system**, a the wheel/axle pickups on the left wheels need to be connected to the `Gl. links` pad on the PCB, while the pickups on the right wheels need to be connected to the `Gl. rechts` pads.
In the **three-rail (Märklin) sytem**, the wheel/axle pickups on all wheels are to be connected to the `Gl. links` pad, while the third rail pickup (slider) needs to be connected a `Gl. rechts` pad on the PCB.

3.2 Capacitor

The included supercapacitor can be mounted in two ways, depending on the type of capacitor: The H-type capacitor is to be soldered in one of three positions marked with a rectangle with C- and C+ next to it (either on the top or on the bottom side of the PCB). The V-type capacitor is to be wired to any of the C- and C+ pads using extension wires. This way, the capacitor can be stowed away, e.g. in the lavatory or other hidden spaces in the carriage. In any case, the polarity of the capacitor is important! The arrow markings point from plus to minus (+ ▷▷ −).

3.3 End of Train Signal / Tail Lights

Both ends of the lighting PCB feature separately dimmable 3.3 V connections for end of train lamps. These are equipped with a potentiometer in addition to a 220 Ω resistor. Red LEDs as train tail lights can be attached here. Please note the polarity of the LEDs: the long leg or red wire needs to be connected to the pad named `Schluss +` (tail +), while the short leg or black/blue wire needs to be connected to the pad labelled `Schluss -` (tail -). Tower-LEDs should be connected in series, whereas 0603 SMD LEDs should be connected in parallel to achieve an appropriate brightness.

4 Mounting the Lighting PCB

After soldering all connections, the PCB can be mounted in the carriage. We recommend glueing the PCB under the roof, with the LEDs pointing downwards. That way, the carriage is evenly illuminated. Before glueing, place the carriage on a piece of track to ensure everything is working fine.

4.1 Current Pickups

If the carriage is already equipped with current pickups, these should be used. If it is not equipped, you can use our axle pickups. These can simply be glued under the bogeys using hot glue.

5 Adjusting the Brightness

The lighting PCB features three potentiometers to separately adjust the brightness of the interior lighting as well as the tail lights. Simply turn the potentiometers with a small phillips screwdriver until the desired brightness is reached.

Warnings

JT Digital Modellbahnelektronik is not liable for damages caused by improper use of the product or use that contradicts this manual.

The product is not a toy. It contains sharp edges and small parts that may be swallowed. Age restriction 14+.

Contact

If you have questions or problems with our products, feel free to contact us via the contact form on our website.

www.jtdi-gital.de/kontakt