



LED-Lighting Board

8124001

Version 1.0 – 03/09

1. Summary

LED Lighting Board for G-scale coaches. This lighting board fits into most of the coaches of LGB and other G-scale manufacturers. The board may be mounted using the mounting holes or by double sided tape. The 8 warm white LEDs deliver an even and pleasant light distribution combined with a very low current: 0.03Amps. The design of the boards allows the board to be divided at marked locations. Starting at 14V the lighting board delivers a constant brightness. Various soldering pads are provided for power input.

1.1 Scope of Supply

- LED Lighting Board 13 inch length
- 20 inch connecting cable
- 4 mounting screws
- manual

Please contact Massoth Electronics USA if any of the above components are damaged or missing.

1.2 Important Information for the Installation

- Install the Lighting Board according to the wiring diagrams. A connection error or short circuit may lead to serious damage to the board.
- Track power (DC or AC) may only be connected to the ends of the Lighting Board where the rectifiers are located. All other inputs to be used with DC with the correct polarization only!
- The Lighting Board may only be used for the functions described in the manual. Any other use may cause damage to the board.
- This module is not a toy! Keep out of reach of children under the age of 14!
- Warranty is void in case of improper installation.
- The manufacturer cannot be responsible for damages caused by improper handling.

2 Hook Up

Solder the connection cable to the soldering pads marked “=/~“ on the left hand side where the 6 diodes are located.

This cable must be connected to either track power or a function output of a digital decoder. Please find further connecting options in chapter 3.

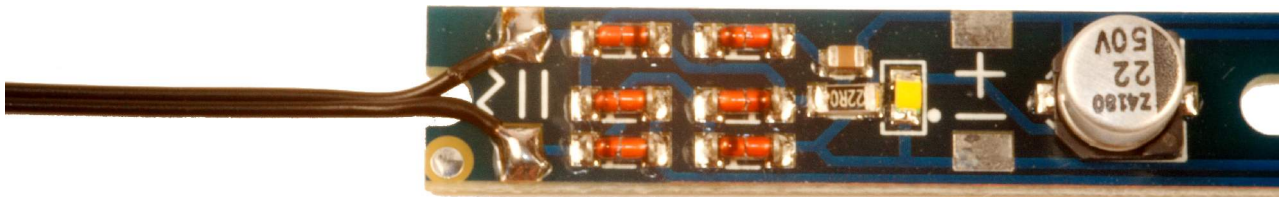


Illustration 1: Connecting the power input

2.1 Installation

The Lighting Board should be mounted with at least 2 screws or double sided tape in the roof of the coach. A summary of the various types of installations can be found in appendix A.

3 Advanced Installations

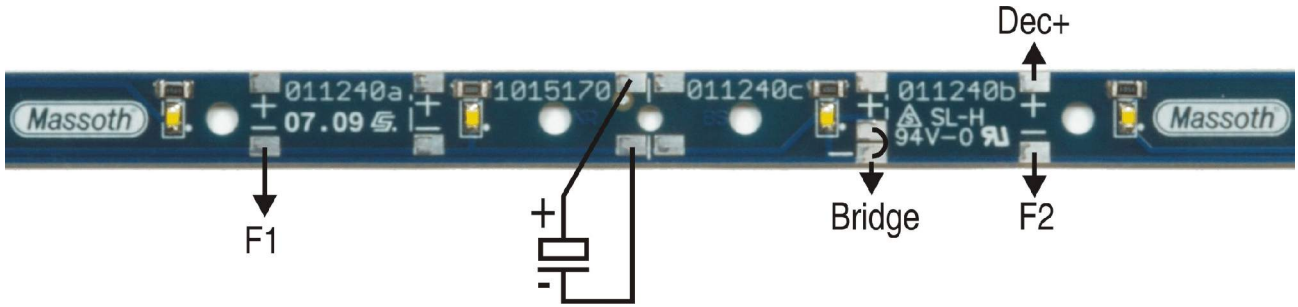


Illustration 2: Advanced hook up with power buffer

3.1 Installation of a Power Buffer

The Lighting Board is already equipped with 2 capacitors to prevent flickering of the LEDs. Additional electrolytic capacitors (ECAPs) may be connected to the soldering pads marked "+" and "-" (Illustration 2). Please observe the correct polarization. ECAPs larger than 100 μ F require a charge limiting resistor (150 Ohms) between ECAP+ and the + soldering pad. (Further tips for building power buffers may be found on the Massoth forum)

We must point out that ECAPs must have an electrical strength of at least 35Volts and they must be installed in the correct polarization. Incorrect installation may lead to severe damage to the Lighting Board. ECAPs may explode if installed incorrectly! Massoth Electronics USA cannot be responsible for damages resulting from incorrect handling.

3.2 Dividing the Lighting Board for smaller cars

The Lighting Board may be divided at the a marked locations "A" , "B" , "C" oder "D" ! (see Illustrations 3+4) We recommend to use a jig saw, a cutting wheel (Dremel Tool) or a large wire cutter.

Warranty is void if divided incorrectly.

3.3 Hook up to the rectifier

Please use the left hand connectors if you want to connect to only one side of the board (the side with the 6 diodes). In case you want to do a double sided power input you must bridge the two soldering pads shown in illustration 2 (This connects the left hand and right hand LED groups). The power should not exceed 24Volts DC,AC or DCC.

3.4 Direct hook up (hook up behind the rectifier)

The Lighting Board features additional soldering pads marked "+" and "-". Use these terminals in case you want to power the Lighting Board directly with DC.

3.5 Dividing the board into two sections

The 8 LEDs are divided into two groups with 4 LEDs each. The left hand power connection (the one with the 6 diodes) supplies both groups at the same time. The right hand input supplies only the right hand group of 4 LEDs. In case you want to control both sections separately by function outputs of a decoder, these decoders should be connected to the "+" and "-" soldering pads of the left hand side and the right hand side. (see illustration 2).

3.6 Technical specifications

- Power: 0..24V DC, AC or DCC (Digital Voltage)
- Optimum power: 14..24V (limited use in analog !)
- max. Amperage: 35 mA (at 24V)

4 Attachment

Type	Mount	Division
LGB 3x06x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x07x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x10x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x11x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x13x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x15x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x16x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x19x	2 + 4 , 12 + 14	Divide at "A" + "C"
LGB 3x20x	1 + 9	Divide at "C"
LGB 3x33x	5 + 12	
LGB 3x34x	5 + 12	Divide at "D"
LGB 3x35x	1 + 15	Shorten slightly restroom-wall
LGB 3x50x	2 + 7	Divide at "C"
LGB 3x55x	4 + 12	Divide at "D"
LGB 3x61x	5 + 11	
LGB 3x62x	5 + 11	
LGB 3x63x	5 + 11	
LGB 3x64x	5 + 11	
LGB 3x70x	2 + 14	
LGB 3x71x	2 + 14	
LGB 3x72x	2 + 14	
LGB 3x73x	2 + 14	
LGB 3x80x	4 + 12	
LGB 3x81x	4 + 12	
LGB 3x83x	4 + 12	
LGB 3x84x	4 + 12	
LGB 4x75x	2 + 4 / 7 + 9	Divide at A + C
LGB 4x84x	1 + 11	
Piko VT98	3 + 8 + 13	

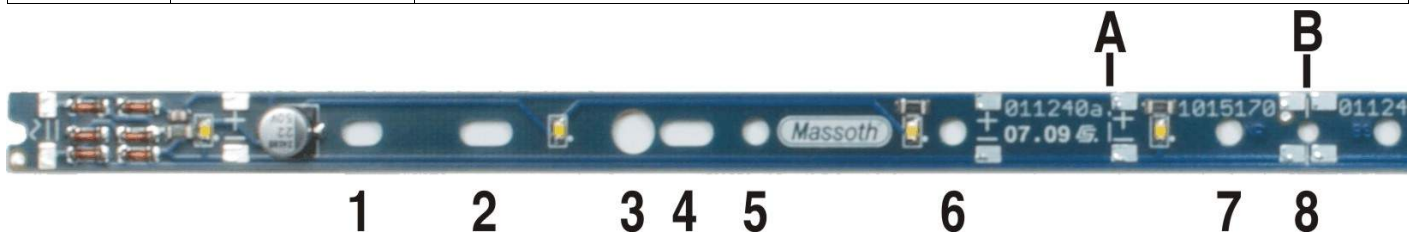


Illustration 3: Mounting and dividing locations left hand side



Illustration 4: Mounting and dividing locations right hand side

5 GENERAL AND SAFETY DETAILS

This is not a toy. Not suitable for children under the age of 14 years. This product may have sharp corners and edges and may be harmful if swallowed. Handling the item may cause restraint injuries. If not trained properly do not handle this product; have a professional install this item. Operate this product only with products posted in this manual. Technical specifications and measurements are subject to change without prior notice.

5.1 WARRANTY

Massoth Electronics USA warrants this product for 1 year from the date of purchase. This product is warranted against defects in materials and workmanship. Peripheral component damage is not covered by this warranty. Normal wear and tear, consumer modifications as well as improper use or installation are not covered.

5.2 WARRANTY CLAIMS

Valid warranty claims will be serviced without charge within the warranty period. To initiate a warranty claim please contact your dealer or Massoth Electronics USA for an RMA (return merchandise authorization). Massoth Electronics USA cannot be responsible for return shipping charges to our repair facility. Please include your proof of purchase with the returned goods.



This Decoder conforms to the CE Standards

RoHS

This Decoder is manufactured according to the latest EU Standards for lead free manufacturing conforming to RoHS Standard.



Please dispose of according to your State regulations.



Do not dispose of in open fire.

6 SUPPORT

Please visit www.massoth.com. Here, the latest software and manuals are provided. For further support and detailed technical questions you may contact your dealer or the manufacturer at (email) sales@massoth.com.

Hotline hours USA: 9:00 a.m. to 4:00 p.m. EST Mo thru Fr

Phone: 770-886-6670

FAX: 770 – 889 – 6837

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