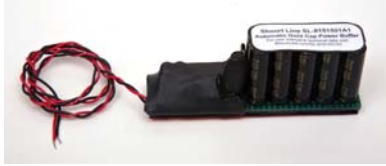


Shourt Line Power Buffer

SL-8151501A1 Automatic Gold Cap Power Buffer, (>Massoth-8151501)



Version 3.2 – 10/09

1. Security information

Congratulations on your purchase of an Automatic SL power buffer. The SL power buffer is an automatic power buffer that works with decoders from any manufacturer and does not require installing a switch to control the buffer. The automatic power buffer is an exceptional, high-performance digital unit designed for G-Scale by Shourt Line by Soft Works Ltd., United States. We highly recommend reading this manual and the documentation carefully and thoroughly before operating your SL power buffer. Shourt Line by Soft Works Ltd. used the latest in technology in designing and manufacturing the SL power buffer. The Gold Cap and Hi Cap capacitors ensure the highest safety standard and outstanding performance and reliability.

1.1. Scope of supply

- SL Power Buffer
- Manual

In case one of the items listed above is damaged or missing, please contact your dealer or the manufacturer directly.

2. Important information for the operation

- Install according to the wiring diagram. **A wire mix-up or a short circuit (e.g. red cable and black cable) may lead to severe damage to the buffer or the decoder.**
- **Faulty hook-up or wrong programming of the decoder may give you a runaway locomotive. Shourt Line will not be responsible for damages resulting from false handling.**
- **The SL power buffer must never be connected directly to the track!** Doing so will lead to the destruction of buffer and to other components.
- **Do not allow the red and black wires to short together due the extremely large capacity of the buffer!** Doing so will lead to the destruction of buffer. The buffer comes discharged and if uninstalling the buffer be sure to discharge the buffer by following the directions below prior to uninstalling.
- The SL power buffer is designed for G-scale locomotives with a maximum current draw of 3 Amps and sound modules.
- This module must only be used for operations described in the manual. Any other usage may result in the destruction of the board.
- This module is not a toy.
- The electronics may get hot during operation.

2.1. Basic function

Shourt Line Power Buffer Instructions
SL-8151501 Gold Cap Motor & Sound Power Buffer
& SL-8865011 Sound Unit Power Buffer

The Automatic SL power buffer compensates for brief power interruptions occurring with smaller Locomotives or locomotives that have short axle center distances. The locomotive motor and special functions are powered by the buffer during these power interruptions. The SL power buffer provides for outstanding operation in problematic areas such as isolated track connections and switches. The duration of the buffer operation depends on the electrical current load, charging status of the buffer and the actual speed. The duration back up power for motor and sound may last up to 2 minutes with output at 24V track voltage with **SL-8151501A1 Gold Cap Power Buffer**.

The duration of back up power for sound may last up to 30 seconds with with 24V track voltage **SL-8865011A Sound Unit Power Storage/Buffer**.

2.2. Installation

The Automatic SL power buffer may be connected to every digital decoder that features terminals for the decoder “+“and GND (decoder “-“).

- Connect the red cable to decoder “+“.
- Connect the black cable to GND or decoder “-“.

2.3 Digital operation

The SL power buffer is **automatically** disconnected while programming. During a short power interruption the SL power buffer supplies power to the decoder or sound board automatically. **To program or read the decoder, disconnect track power while loco is running and wait 30 seconds after the loco stops**; this discharges the power buffer and allows programming operations on your programming track.

In digital operation the analog mode of the decoder must be deactivated if you use an SL power buffer; otherwise the decoder detects the buffer as a false power source and changes to analog mode. For Massoth decoders the analog mode is deactivated if CV29 bit2 is set to “0“. Please check the correct setting according to your decoder manual.

2.4 Analog operation

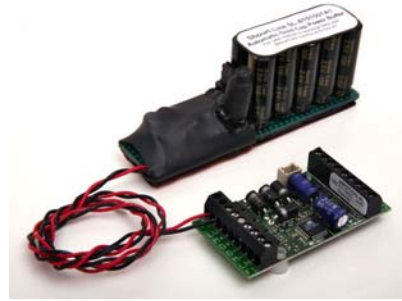
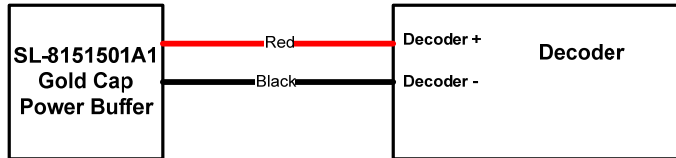
You may use the SL power buffer in analog in connection with a Massoth XLS decoder (Software V1.5 and up) or any other decoder that supports operation under analog power.

3. Operation with a Decoder

The Shourt Line decoders automatically recognize the programming mode and subsequently disconnect the SL power buffer. Discharge your power buffer prior to programming by removing track power to your operating loco and wait 30 seconds after the loco stops before placing loco on your programming track.

- Program your decoder **before installing** the SL power buffer if analog track power is used.
- Connect the SL power buffer according to the wiring diagram.

Illustration 1: Hook-up for all decoders



3.2. Driving characteristics with a Massoth Decoder

Continues = the locomotive continues to drive depending on the power in the buffer.

Continue and stop = loco continues for preset time CV129(digital) CV130(analog) then stops

Power Interrupt = loco loses track power for any reason (dirty track, bad frog or track section)

Emergency Stop = track power off -> Navigator right stop button(default is right stop button)

Stop = Primary Loco Speed dial set to stop(red led on) or Secondary Loco Stop button pushed

Halt = track power on; stop & reset all locos command -> Navigator left stop button(set by user)

X = not available under analog control

See Massoth Navigator and Central Station manual more information on Stop and Halt commands.

3.2.1. Massoth Decoder Driving characteristics L, XL, XLS(old version)

	Analog	Digital
Power interrupt	continues	continues
Emergency Stop	X	continues
Stop	X	stops
Halt	X	stops instantly

3.2.2. Massoth Decoder Driving characteristics XLS(new version - blue PCB)

the locomotive over travel time may be set in a CV. Please check your XLS manual.

	Analog	Digital
Power interrupt	continue & stop**	continue & stop**
Emergency Stop	X	continue & stop**
Stop	X	stops
Halt	X	stops instantly

**CV129(digital), CV130(analog) = continue (overtravel) time on power loss

Note: continue & stop only available with SL-8151501ABA1 Gold Cap Power Buffer & Massoth XLS with blue circuit board only. that on both analog and digital power your loco follows the commands of your throttle. When the loco loses power, or the track power is removed, the decoder uses the power in the buffer to keep the loco and sounds running. A loco with a buffer and decoder that loses track power, will continue, or continue and stop(in the case of new XLS decoder & version ABA of the SL power buffer), until the buffer power is exhausted or upon restoration of track power and throttle control.

3.2.1. Massoth Navigator Functions

The Massoth Navigator provides one button control of Halt, Emergency Stop and Stop commands;



Halt (broadcast all loco stop – track power on by pushing left STOP button)
[requires one time user setup in Navigator configuration menu]

Emergency Stop (track power is cut off by pushing right STOP button)
[factory default configuration – may be changed to left button by user]

Stop (Stops current loco via large rotary speed dial –note: red led on = stop)

Stop (Stops secondary loco by pushing round stop button below speed dial)

4. Technical specifications

- Maximum operating voltage: 24V=(DC)
- Maximum charge amperage: 500mA (at 24V digital voltage)
- Maximum output voltage: 24V
- Maximum output amperage: 3A
- Maximum charging time: varies with track power voltage and buffer size.
- Temperature range: -13°F to +140°F (-25C to +60C)

4.1. Important Notice

Never suspend the SL power buffer to shock or stress. Avoid short circuits of the connecting wires. Avoid bridging of neighboring wires and do not crush the connecting wires.

4.2. Moisture

This module must only be operated in a dry environment. Protect the SL power from moisture, humidity, and water. Moisture and humidity may limit the functionality significantly or may destroy the unit.

4.3. 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.

4.4. Warranty

Shourt Line 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.

4.5. Warranty claims

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

Please dispose of according to your State regulations.

Do not dispose of in open fire.

5. SUPPORT

Shourt Line Power Buffer Instructions
SL-8151501 Gold Cap Motor & Sound Power Buffer
& SL-8865011 Sound Unit Power Buffer

Please visit www.ShourtLine.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) info@ShourtLine.com.
Hotline hours USA: 9:00 a.m. to 4:00 p.m. PST Mo thru Fr

Phone: 310-622-4431

FAX: 310-472-6354

5.1. Manufacturer Information

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