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› ESU LOK58921 HO Scale LokSound 5 DCC Generic Direct with Integrated Power Pack User Manual

ESU LOK58921

ESU LOK58921 HO Scale LokSound 5 DCC Generic Direct with Integrated Power Pack User Manual

Model: LOK58921 | Brand: ESU

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your ESU LOK58921 HO Scale LokSound 5 DCC Generic Direct with Integrated Power Pack. This advanced digital sound decoder is designed to enhance the realism and performance of your HO scale model locomotives.

2. KEY FEATURES

- **Integrated PowerPack:** Features a 1 Farad capacity PowerPack to maintain power during track imperfections and over turnout ladders, ensuring uninterrupted operation and sound for up to three seconds.
- **Advanced Motor Control:** Improved engine control with a variably adjustable PWM clock frequency (10kHz to 50kHz) for quiet operation, especially with bell armature motors. Includes Auto-tune function for automatic decoder adaptation to the motor.
- **High Current Output:** Delivers up to 1.5A motor current, suitable for various locomotive types, including older models.
- **Multiple Function Outputs:** Offers up to 10 amplified function outputs, depending on the interface version, for controlling lights and other locomotive features.
- **DCC Compatibility:** Designed for Digital Command Control (DCC) systems.

3. SAFETY INFORMATION

- Always disconnect power from the track and locomotive before installation or maintenance.
- This product contains small components and is not suitable for children under 8 years of age without adult supervision.
- Ensure correct wiring polarity to prevent damage to the decoder or locomotive.

- Avoid short circuits during installation and operation.
- Do not expose the decoder to moisture or extreme temperatures.

4. PACKAGE CONTENTS

Your ESU LOK58921 package should contain:

- 1x ESU LOK58921 HO Scale LokSound 5 DCC Generic Direct Decoder with Integrated Power Pack
- (Additional accessories may vary by retailer)

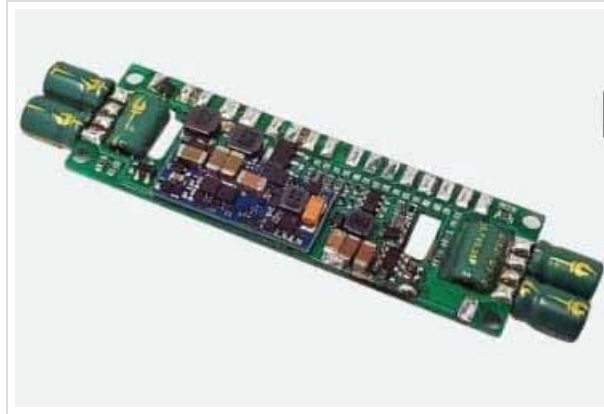


Image: The ESU LOK58921 LokSound 5 DCC Generic Direct decoder, showing its compact circuit board design with integrated power pack capacitors on either end.

5. SETUP AND INSTALLATION

The LOK58921 is designed for direct installation in HO scale locomotives. Always refer to your locomotive's specific disassembly and wiring instructions in conjunction with these general guidelines.

5.1 Preparation

1. Ensure your locomotive is clean and free of debris.
2. Carefully remove the locomotive shell according to the manufacturer's instructions.
3. Identify the existing circuit board or wiring harness where the decoder will be installed.

5.2 Wiring and Connection

The LOK58921 features a generic direct interface. Standard DCC wiring color codes should be followed:

- **Red:** Right Rail Pickup
- **Black:** Left Rail Pickup
- **Orange:** Motor Positive (+)
- **Gray:** Motor Negative (-)
- **White:** Headlight (Forward)
- **Yellow:** Reverse Light (Rear)
- **Blue:** Common Positive (+) for Lights and Functions
- **Green/Purple/Brown etc.:** Auxiliary Functions (e.g., cab lights, ditch lights, smoke unit)

Carefully solder or connect the decoder wires to the corresponding points on your locomotive. Ensure all connections are secure and insulated to prevent short circuits.

5.3 Physical Placement

Find a suitable location within the locomotive shell for the decoder. Ensure it does not interfere with moving

parts or block light paths. Use double-sided tape or a similar adhesive to secure the decoder if necessary, ensuring proper ventilation.

6. OPERATING INSTRUCTIONS

Once installed, the LokSound 5 decoder operates under Digital Command Control (DCC) protocols. Refer to your DCC system's manual for specific programming procedures.

6.1 Programming the Decoder Address

1. Place the locomotive on the programming track.
2. Access the programming mode on your DCC system.
3. Program CV1 (short address) or CV17/CV18 (long address) to your desired locomotive number.
4. Confirm the address has been successfully written.

6.2 Sound Functions

The LokSound 5 decoder comes pre-loaded with a sound project. Specific sound functions are typically mapped to F-keys on your DCC throttle. Common functions include:

- **F0:** Headlight/Reverse Light
- **F1:** Bell
- **F2:** Horn/Whistle
- **F3:** Coupler Crash
- **F4:** Dynamic Brake/Brake Squeal
- **F5-F28:** Various auxiliary sounds and functions.

Consult the specific sound project documentation (often available on the ESU website) for a detailed list of F-key mappings.

6.3 Motor Control and PowerPack

The integrated PowerPack ensures smooth operation over dirty track or turnout frogs. It stores energy to power the motor, lights, and sound for short periods (up to 3 seconds, depending on load) during power interruptions.

Motor control parameters can be fine-tuned using Configuration Variables (CVs). The Auto-tune function (refer to ESU LokSound manual for specific CVs) can automatically optimize motor performance for your locomotive.

7. MAINTENANCE

- Keep the decoder and locomotive interior free from dust and debris.
- Ensure all wiring connections remain secure.
- Regularly clean your track to minimize power interruptions and maximize the effectiveness of the PowerPack.
- Avoid touching the decoder's electronic components directly to prevent electrostatic discharge.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No sound or motor response	Incorrect wiring; short circuit; incorrect DCC address; no power to track.	Check all wiring connections; verify DCC address; ensure track power is on; check for shorts.
Intermittent sound or motor stuttering	Dirty track; poor wheel contact; PowerPack not fully charged (unlikely with integrated unit, but possible if track is very dirty for extended periods).	Clean track and locomotive wheels; ensure good electrical pickup.
Lights not working	Incorrect wiring; damaged LED/bulb; function output disabled.	Check light wiring; test LED/bulb; verify function mapping in CVs.
Motor hums excessively	PWM frequency not optimized for motor.	Use the Auto-tune function or manually adjust PWM frequency CVs.

9. SPECIFICATIONS

- **Model:** LOK58921
- **Scale:** HO Scale
- **Decoder Type:** LokSound 5 DCC Generic Direct
- **Integrated PowerPack:** Yes, 1 Farad capacity
- **Motor Current:** Up to 1.5A continuous
- **Function Outputs:** Up to 10 amplified outputs (interface version dependent)
- **PWM Clock Frequency:** 10kHz to 50kHz (adjustable)
- **Recommended Age:** 8 years and up
- **Manufacturer:** ESU

10. WARRANTY AND SUPPORT

For specific warranty information, please refer to the documentation provided with your purchase or visit the official ESU website. For technical support, contact ESU customer service or your authorized ESU dealer.

ESU Website: www.esu.eu