

### 58923 LokSound 5 nano DCC

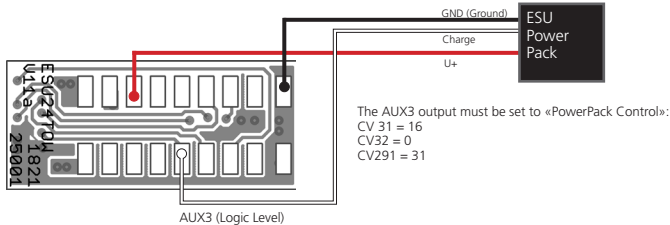


Fig. 3: PowerPack connected to LokSound 5 nano DCC

### 58741 LokSound 5 micro DCC Kato USA

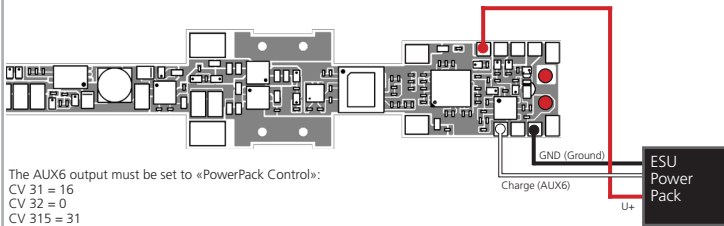
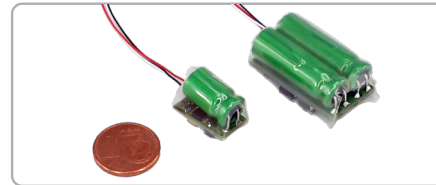


Fig. 4: PowerPack connected to LokSound 5 micro DCC Kato USA

## 54671 ESU PowerPack Mini 54672 ESU PowerPack Maxi

# Instruction manual

## 1. Edition, April 2022



### 1. WEEE-Declaration

Disposal of obsolete electrical and electronic equipment (as practised in the European Union and other European countries with dedicated collection systems). This mark on the product, the packaging or the relevant documentation indicates that this product must not be treated like household waste. Instead this product should be disposed of at a suitable collection point for recycling of electrical and electronic appliances. Thus you contribute to avoid negative impact on the environment and people's health that could be caused by inappropriate disposal. Recycling of materials contributes to preserve our natural resources. For more information regarding recycling of this product, please contact your local administration, your waste collection service or the dealer / shop where you purchased this product.



### 2. Important notes – Please read this chapter first

We congratulate you to your purchase of an ESU PowerPack. This manual would like to show you step by step how to connect the ESU PowerPack to your ESU decoder. So a request:

Please read this manual carefully. Although the ESU PowerPack has been designed as a robust device an incorrect connection may lead to faults or even to the destruction of the device. Avoid any «costly» experiments.

- ⚠ The ESU PowerPack is exclusively intended for use with model train layouts only. It may only be operated with the components listed here. Any other use is not permitted.
- ⚡ Any wiring has to be carried out while power is disconnected.
- Adhere to the wiring principles as outlined in this manual for wiring any external components.
- Avoid mechanical force or pressure on the ESU PowerPack and the selected ESU Decoder.
- Do not expose to wet and humid conditions.
- No cable should ever touch any metal part of the locomotive .
- Make sure that no wires are squeezed or cut by the model's transmission parts when reassembling the engine.

### 3. General properties

The ESU PowerPack modules can optionally be connected to all LokPilot 5 or LokSound 5 decoders and reliably supplies your locomotive with energy when driving over dirt patches and long routes. Both the noise and the light and motor functions are buffered and thus ensure that your models can continue to run for up to 3 seconds in digital operation (!) without electricity, depending on the power consumption.

The PowerPack Mini is mainly intended for H0 and N gauge decoders. The PowerPack Maxi was specially developed for use with the LokSound 5 L, but can also be connected to the H0 decoder if there is enough space. When operating on analogue systems, the PowerPack is automatically switched off.

The PowerPack has an integrated charging circuit and is controlled by the decoder. It can therefore remain in the locomotive during programming. In addition, the charging current is limited to prevent excessive loading of your booster if several models are in use. The buffer time can be limited on the decoder using CV 113 so that red signals also lead to an exact signal stop. The size of the PowerPack Mini is approx. 16 x 10 x 13 mm, while the PowerPack Maxi is 27.5 x 16 x 13 mm.

### 4. Connecting to the decoder

The PowerPack connections are designed as loose wires. The module itself is surrounded by shrink tubing, which on the one hand protects sensitive components and on the other hand is intended to facilitate assembly in the locomotive. The shrink tubing effectively prevents any short circuits to metal parts in the locomotive. So be sure to leave this shrink tubing over the module.

All ESU LokPilot 5 / LokSound 5 decoders are suitable for connection, whether LokPilot, LokPilot micro, LokSound, LokSound L, LokSound micro or LokSound Nano.

There are soldering pads on the decoders to which the PowerPack cables must be soldered. The position of the soldering pads is described in the operating instructions for the relevant decoder.

In order to be able to reach the soldering surfaces, it is permissible to remove the shrink tubing at this point. This is best done by cutting open the relevant corner. Leave the rest of the shrink tubing on the decoder.

- Solder the red cable to the «U+» soldering pad.
- Solder the white wire to the «Charge» pad.
- Solder the black wire to the «ground» pad.

⚠ When soldering, make absolutely sure that you do not create any short circuits between the soldering surfaces or to other components on the decoder! Otherwise the decoder will be defective!

⚠ The PowerPack gets relatively warm during operation. Therefore ensure that the module is adequately ventilated!

#### 4.1. Connection to the LokPilot Decoder

Fig. 1 shows the connection to the most important ESU LokPilot decoders known at the time of printing. It is best to use the PowerPack Mini for the decoders.

#### 4.2. Connection to the LokSound Decoder

In Fig. 2, Fig. 3 and Fig. 4 the connection to the most important ESU LokSound decoders known at the time of printing is shown.

### 5. CV settings

The bridging time can be set using CV 113. The factory setting 30 results in approx. 1 second. If you are operating block sections where a signal halt is effected by switching off the operating voltage, you may want to reduce the buffer time in order to ensure precise deceleration. To do this, reduce the value in CV 113.

You should avoid values below 10, otherwise the effect of the PowerPack can hardly be measured.

If you set the buffer time to be very long, the energy stored in the PowerPack may not be sufficient. In this case, of course, the decoder will switch off before the set time is reached. The achievable buffer time depends heavily on the power consumption.

In order for the PowerPack to work, the function output responsible for charging must be configured for the «PowerPackControl» function.

- ⚠ First write in CV 31 = 16, CV 32 = 0.  
Then set CV339 = 31 for LokSound 5 (AUX9).  
Then set CV323 = 31 for LokSound 5 micro (AUX7).  
Then set CV291 = 31 for LokSound 5 nano (AUX3).  
Then set CV315 = 31 for LokSound 5 micro DCC Kato USA (AUX6).

### 6. Analog operation

The PowerPack switches off automatically when you run the locomotive on analog DC or AC layouts. Unfortunately, a buffer function is not possible in such cases for technical reasons.

