



# CurrentKeeper Reference

For use with the following SoundTraxx CurrentKeeper formats:

## **810140**

### **CurrentKeeper™**

- Maintains power to the decoder for up to 10 seconds during electrical interruptions
- Compatible with NMRA DCC Standards & Recommended Practices

## **810160**

### **CurrentKeeperII™**

- Maintains power to the decoder for up to 10 seconds during electrical interruptions
- Compatible with NMRA DCC Standards & Recommended Practices

# All Aboard!

SoundTraxx CurrentKeepers™ are designed to add additional power capacity to any decoder installation. They can be used to overcome dirty track, limited electrical pickup or dead frogs to ensure reliable operation of any locomotive in your fleet.

In this reference document, you will find information about operating your model equipped with a CurrentKeeper, as well as information pertaining to programming and resetting CVs.

For information about installing a CurrentKeeper with a SoundTraxx decoder, refer to the decoder's packaging for wiring diagrams as well as the included instruction sheet. A full list of wiring diagrams can also be found on our website. If you cannot locate a wiring diagram for your decoder or are installing it with a factory equipped (OEM) SoundTraxx product, contact our Customer Support Department for assistance.

## Operating With a CurrentKeeper Installed

While our CurrentKeepers have been designed for use without the need to program any CVs, there are some operating scenarios and features of our sound decoders that can be affected by a CurrentKeeper installation.

### Disabling Analog (DC) Mode for Proper Operation

Because a CurrentKeeper is a passive energy storage device providing power directly to the decoder during a power interruption, enabling analog mode (DC operation) can have an impact on how the model responds even on a digital (DCC) layout.

During an interruption of power from the track, DCC packets (information sent to the decoder from the command station) are also not present. If bit 2 (APS) in CV 29 (Configuration Data 1) is on to enable analog mode operations, the decoder will interpret a loss of DCC commands as that the model is operating in an analog environment. This will cause an immediate reduction in volume and will also cease all DCC motor commands received by the decoder (stop the motor). The decoder will begin to look for changes in track voltage typically associated with analog powerpacks as the means of controlling the motor, sound and lighting effects.

For optimal performance in a DCC environment, we recommend that you disable analog mode operation for your models equipped with a CurrentKeeper. This will ensure that voltage is properly provided to the decoder during a momentary power loss. Refer to the "Configuring the Decoder" section of your decoder's User's Guide for more information about how to disable analog mode using CV 29 (Configuration Data 1).

### Operating in a Dual Mode (DCC/DC) Environment

Model railroad club layouts that employ both digital and analog modes of operation often require that members enable analog mode. This is to ensure that the model does not immediately stop should it encounter a DC power source. While we always recommend that you disable analog mode when operating with a CurrentKeeper, there are some steps that can be taken to aid in operations if you must leave analog mode enable.

Momentum can be added to help provide some amount of hold-up time for CurrentKeeper equipped models that operate on both digital and analog layouts. Programming CV 4 (Baseline Deceleration Rate) to a value between 10 and 25 will allow the model to decelerate slowly during a power loss or when it encounters a DC block. Programming CV 3 (Baseline Acceleration Rate) to the same value ensures that the model accelerates smoothly after power is restored. For more information about these CVs refer to the "Configuring Throttle and Braking" section of your decoder's User's Guide.

## Setting Duration of Operation with a CurrentKeeper

With analog (DC) mode disabled, CV 11 (DCC Packet Time-Out Value) can be used to control the amount of hold-up time a CurrentKeeper provides. This feature can be useful if your layout has un-powered sections of track protecting open swing gates or removable lift out sections.

Entering a value from 0 to 255 into CV 11 will set the time-out period which corresponds to the amount of time the decoder will operate normally with a CurrentKeeper installed. The time-out period is calculated in seconds as follows:

$$\text{Time-Out Period (seconds)} = \text{CV 11 Value} \times 0.25$$

For example, a reasonable value such as 12 corresponds to 3 seconds of full operation (motor, sound and lighting) provided by a CurrentKeeper after a power loss has interrupted the DCC packets being sent to the decoder. After such time has expired, the motor will be stopped according to the value set in CV 4 (Baseline Deceleration Rate). This prevents the model from potentially running off the end of the layout and onto the floor.

## Programming and Resetting CVs

Configuring your decoder when a CurrentKeeper is installed can also present a couple challenges. Fortunately, we can provide a few tips and tricks to make programming and resetting CVs a much easier process when a CurrentKeeper has been added to your installation.

### Using Service Mode on the Programming Track

Reading and writing CVs using Service Mode programming on a dedicated programming track alters the response of the decoder. A CurrentKeeper must be fully charged (2-3 minutes) before placing the model on the programming track. This will ensure that all programming commands and CV read back commands are interpreted correctly throughout the process. Failure to fully charge a CurrentKeeper before placing the model on the programming track can result in errant CV values interpreted by the command station.

If the model is disassembled for programming and testing before final reassembly, you may want to consider configuring as many features as possible before installing a CurrentKeeper.

In addition, if a CurrentKeeper is plugged into a decoder equipped with a 2-pin quick plug socket, you can simply remove it during programming and testing.

### Using Operations Mode on the Main Track

A CurrentKeeper will have no effect on the programming process when using Operations Mode.

### Resetting CVs

Because our CurrentKeepers are designed to keep the model operating during losses of power, completion of the CV reset procedure includes an extra step when one is installed in your model. You must ensure that power to the decoder has been completely removed before reapplying power to complete the reset process. The process of draining a CurrentKeeper takes between 3 and 4 minutes (depending on the model of decoder that it's connected to). To ensure that all power has been removed, observe that the pilot light on the decoder itself has been completely extinguished. If you cannot physically see this light, wait an additional 3-4 minutes from the point at which the sound or lights on your model go out. You may then re-apply power and look for 16 flashes of all lighting outputs to confirm a successful reset.

### **Contacting Support**

Our service department is available Monday-Friday, from 9am to 5:30pm (Mountain Time).

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