

Econami Diesel Quick Start Guide

For Athearn® RTR
DCC & Sound equipped locomotives

Congratulations on the purchase of your Athearn Ready-To-Roll (RTR) locomotive, equipped with state-of-the-art Econami sound. This powerful SoundTraxx® Digital Sound Decoder (DSD) has many additional features that you might not be used to; this supplement sheet will not detail all of them, but it will provide the basics to get you started.

IMPORTANT:

This Quick Start Guide assumes that you have some understanding of, or experience with, other SoundTraxx Digital Sound Decoders. It covers the differences you may need to know between these decoders and any you may have previously used.

Athearn RTR Sound Features and Specifications

Econami Sound Decoders have a number of great features designed to enhance your operating experience.

Many features have been programmed to operate similarly to previous SoundTraxx decoders, but some will require further explanation.

Decoder Features:

- Prototypical diesel engine sounds with multiple horns and bells available to customize your locomotive.
- Hyperdrive2™ Technology, which includes features such as high-resolution speed steps and torque control for smooth operation at all speeds.
- Back Electro Motive Force (EMF) for consistent operating speeds regardless of track gradient or load.
- Prototype specific Hyperlight™ lighting effects such as beacons, Mars lights, ditch lights and more.

Sound Features:

There are several sound features found in your new Econami sound equipped locomotive which can be adjusted to suit your personal preferences. You can also individually adjust the volume of each sound effect with the built-in mixer. The addition of a short horn effect will allow you to easily incorporate prototypical signaling practices into your operations. Dynamic braking sounds add prototype fidelity to mountainous running and the available manual notching allows you to control the engine RPM, independent of speed, to simulate heavy loads or coasting downhill.

Athearn Econami Diesel Default Sound & Light Functions

Out of the box, your Athearn RTR locomotive with Econami sound has been set up with the following function button assignments.

Note that these default settings are different from the SoundTraxx aftermarket Econami sound.

Sound Decoder Function Assignments			
Function Key	HO Scale Default Effect	Function Key	HO Scale Default Effect
F0	Headlight/Backup Light	F11	Brake Set/Release ⁵
F1	Bell	F12	(Not Used)
F2	Horn	F13	Couple/Uncouple
F3	Short Horn ¹	F14	Half Speed & Momentum Override
F4	Dynamic Brakes ² or Straight to Idle ³	F23	"All Aboard"/Coach Doors
F5	Lighting Effect 1 ⁴	F24	(Not Used)
F6	Lighting Effect 2 ⁴	F25	(Not Used)
F7	Dimmer	F26	Engine RPM Notch Up
F8	Mute	F27	Engine RPM Notch Down
F9	(Not Used)	F28	(Not Used)
F10	(Not Used)	Emergency Stop	Red Emergency Mars Light (If equipped)

1 - The short horn function can be changed to a grade crossing horn sequence by changing CV 37 to 0. If you would like to re-map the short horn function to another key using SoundTraxx's Flex-Map™ function mapping, CV 37 must also be set to 0 to prevent the short horn function from being activated with function key 3.

2 - On locomotives with Dynamic Brakes

3 - On locomotives without Dynamic Brakes

4 - If your locomotive's prototype is equipped with flashing ditch lights, they will flash when the horn button (F2) is depressed.

5 - Functional braking is not enabled by default.

Decoder Features

The Econami is equipped with many new & exciting features that enhance prototypical operations, such as alternate horns, bells, prime movers, and more. Please visit www.soundtraxx.com/manuals.php and view the "Econami Diesel Users Guide" & "Econami Diesel Technical Reference" for additional information about these features.

Changing the DCC Address

Many users prefer to change the DCC address of their locomotives to either the cab number or some other assigned number. The method by which this is accomplished will vary depending on which manufacturer's DCC system you are using. Econami sound decoders can accept 2- or 4-digit addresses.



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Changing the Default Sounds

Your new RTR locomotive with Econami sound comes with several alternate sound options so you can change the sound to suit your taste or prototype. The available sounds on each locomotive will vary depending on which model you have, but the method for changing them remains the same. Simply program the following CVs to a value shown in parentheses to choose between the available sounds. *Note; default horn values may vary depending upon prototype research.*

Horn Select: CV 120 (0-15)

0- Nathan K3LA	8- Nathan P5A
1- Nathan K3L	9- Leslie A125
2- Nathan K5LA	10- Leslie RS3L
3- Nathan K5LA #2	11- Leslie S2M
4- Nathan M3	12- Leslie S3L
5- Nathan M5	13- Leslie S5T
6- Nathan P3	14- Wabco E2
7- Nathan P5 (Early)	15- Hancock 4700 Air Whistle

Bell Select: CV 122 (0-23) ¹

0-3: EMD #1
4-7: EMD #2
8-11: EMD #3
12-15: EMD #4
16-19: Canadian Brass
20-23: Western Cullen Hayes Gong Bell

Prime Mover Select: CV 123 (0-2+, depending on model of decoder)

Air Compressor Select: CV 124 (0-1)

0: Engine Driven
1: Shaft Driven

1 - Note that the bell sound is the same for each 4 consecutive numbers, but the ring rate will change. Example - a value of 0 is an EMD bell with a slow ring rate, while values 1-3 are the same bell but with a progressively faster rate.

Adjusting Sound Volumes

There are two ways to adjust the volume of your locomotive. CV 128 is the master volume control. It can be set from a value of 0 to 255, with 255 being the loudest. Try adjusting this CV first.

There is also a provision to adjust the individual sound levels. Please refer to the following CVs:

CV129: Horn	CV139: Brake Squeal
CV130: Bell	CV140: Brake Release
CV131: Prime Mover	CV143: Poppet Valve
CV132: Air Compressor	CV148: E-Stop
CV133: Dynamic Brake	CV149: Uncouple
CV134: Radiator Fans	CV150: "All Aboard!"/Coach Doors
CV137: Coupler	

All of these CVs can be set from a value of 0 to 255, with 255 being the loudest. If you have not achieved satisfactory results by adjusting CV 128, then try adjusting these additional CVs.

Operating in DC (Analog Mode) Using a DC Power Pack

While the Econami system installed in your Athearn model is meant to be operated with DCC, it may be used on a DC powered layout. When running in analog, you may control your locomotive using an ordinary power pack. However, operation will be different than running non-decoder equipped locomotives.

Your locomotive will remain silent and non-functioning until the throttle is turned up to about 7.5 volts to provide sufficient voltage to power up the internal circuitry of the decoder. Note that at this low voltage, operation of the locomotive may be somewhat erratic due to variations in power packs. You will get the most consistent operation at voltages in the 9-14V range. At this point, only small adjustments of power will be required to produce speed changes. Note that you will not be able to run standard DC locomotives in multiple with your RTR locomotive with Econami sound, due to the RTR locomotive with Econami sound needing a higher starting voltage requirement and therefore different running characteristics.

When operating in analog mode, be careful not to exceed the decoder's input voltage rating of 27 volts. When your track voltage exceeds 22 volts, the decoder will automatically shut off the sound and motor and flash the front and rear lights: back down on the throttle immediately.

IMPORTANT: Your RTR locomotive will work best in analog mode when using a high-quality, electronically regulated power pack, preferably one that supplies smooth, filtered DC power. Older rheostat style power packs and pulse power packs will result in erratic and unreliable operation and should not be used with the sound decoder. If your power pack provides a Pulse power switch, leave it in the 'Off' position.

Troubleshooting

If you are having problems with your locomotive's operation or non-operation, please try resetting the Decoder to Factory Defaults before contacting Athearn Help for assistance.

Resetting the Decoder to Factory Defaults

All Econami sound decoders can be reset to their factory values easily. If you have changed some CVs and are not happy with the results, or your locomotive is not responding normally, this is the first troubleshooting step that you should try.

To do this, set CV 8 to a value of 8. Once you have done this, cycle the DCC system's power off for approximately 5-10 seconds, then turn it back on. You should observe the locomotive's lights blinking 16 times after a brief delay, indicating a successful factory reset. After a successful factory reset, your locomotive will respond to address 3, and all CV values will be returned to their factory supplied default values.

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COMPATIBLE WITH
THE NMRA DCC
STANDARDS AND
RECOMMENDED
PRACTICES

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