

QUICK START GUIDE

DC and DCC Operation of Atlas Gold Series HO Scale Alco RS-3 Diesel Locomotives



equipped with ESU LokSound
Select Sound-Decoders



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Quick Start for DC and DCC Operation of Atlas Gold Series HO-Scale Alco RS-3 Diesel Locomotives Equipped with ESU LokSound Select Sound-Decoders

Congratulations on your purchase of an Atlas Master™ Gold Series HO-scale model of an Alco RS-3 locomotive that is factory-equipped with an ESU LokSound Select sound-decoder. This sound-decoder provides the highest quality sound plus state-of-the art motor control. Your locomotive can run on either conventional DC (with basic features) or on NMRA Digital Command Control (with full features).

This document describes the features of the LokSound Select sound-decoder installed in the Atlas HO Gold Series Alco RS-3 locomotive when the locomotive is operated on DC or on DCC power. You can download from the Atlas website the current version of the Atlas *User Manual*^[1], which includes this locomotive. This *User Manual* provides a more complete description of both DC and DCC operation.

DC Operation of your Atlas HO-scale Gold Series RS-3 Locomotive

Using a standard variable-voltage DC power pack, turn the DC throttle up slowly until you begin to hear locomotive sounds (around 5 volts). You will hear the diesel engine *Start-Up sound sequence*, which lasts about 25 seconds. The locomotive will **NOT** move before the *Start-Up* sequence has been completed. The headlight facing the direction in which the locomotive will move turns on in its *Dim* state. Once the start-up sequence has been completed, turn up the throttle voltage up to (about 7 volts) until the locomotive starts to move. Note that you must turn the throttle to a higher setting than you would to make a non-sound locomotive start to move. The locomotive starts moving slowly due to built-in inertia from the *BEMF* (Back EMF) motor control. The headlight in the direction of movement will turn from *Dim* to *Bright*; the headlight facing the opposite direction will continue to be illuminated in the *Dim* state.

On a DC-powered layout, an Atlas HO-scale Gold Series Alco locomotive will *automatically* produce sounds that are appropriate for its current state of operation. (e.g., the *Startup* sound sequence before the locomotive begins to move) and *Brake Squeals* as the locomotive grinds to a halt. However, it is not possible to trigger individual sounds (such as the *horn* or *bell*) manually with DC track power. If you wish to have manual control of sounds, Atlas suggests that you invest in a *Basic DCC system* which will allow you to control all available sounds and other special effects in your locomotive and yet be essentially as simple to operate as a DC power pack. *Basic DCC systems* that are currently available include the:

- NCE DCC Twin,
- MRC Prodigy Explorer DCC,
- MRC TECH 6 Sound Controller 6.0 (usable in smaller scales, but primarily intended for O-scale and larger).

Moreover, one can change certain operational characteristics of the locomotive when operating on DC power by using the same DCC programming steps that are used to change these characteristics in DCC operation. See Reference [1] for details

DCC Operation of your Atlas HO-scale Gold Series RS-3 Locomotive

• Start-Up Behavior

As shipped from the factory, this locomotive behaves as follows at start-up:

- Locomotive sounds will start up immediately after DCC power is applied to the track; you will first hear the sounds of a diesel locomotive starting up from a powered-down state, followed by normal idling sounds and then (after the *Start Up* sound sequence has finished playing and the DCC throttle is advanced) running sounds will be heard.
- Even if you advance the DCC throttle, the locomotive will NOT move until **AFTER** the entire *Start-Up sound sequence* has played.

If the above behavior at startup is acceptable, there is nothing more that you need to do. If, however, you would like your locomotive to behave differently, see Example 3 in Appendix 4 of Reference [1] to change the behavior described in the first Dash item and Example 1 in Appendix 4 of this same reference to change the behavior described in the second Dash item

• DCC Functions Available in Atlas HO-Scale Gold Series Alco RS-3 Locomotives

The ESU LokSound Select sound-decoder provides a number of different DCC functions that can be triggered by pressing the appropriate key (e.g., press the “5” key to trigger DCC Function #5) on your DCC controller. The following table lists the DCC functions available in the ESU LokSound Select sound-decoder installed in Atlas Gold Series HO-scale RS-3 locomotives.

DCC Function Key Operation for Atlas HO-scale Gold Series RS-3 Locomotives

Function Key	Locomotive Behavior when Press Function Key	Function Behavior (Latching or Non-latching)	Works Only with Engine Sounds On	Works Only When Moving
F0	Front and Rear Headlights are directional. Both headlights <i>Dim</i> when <i>On</i> and stationary. Headlight in direction of movement <i>Bright</i> . (1 st push on/2 nd push off)	Latching	No	No
F1	Bell (1 st push on/2 nd push off)	Latching	No	No
F2	Horn blows until push F2 key again	Latching	No	No
Horn	Horn blows only while Horn key held down	Non-Latching	No	No
F3	Two Coupler Clank sounds alternate	Non-Latching	No	No
F4	Diesel Fans (1 st push on/2 nd push off)	Latching	Yes	Yes
F5	Dynamic Brake Fan (1 st push on/2 nd push off) Only active when prime mover sound on	Latching	Yes	Yes
F6	Optional Ditch Lights (1 st push on/2 nd push off)	Latching	-	-
F7	Switching Mode (1 st push on/2 nd push off)	Latching	No	No
F8	Audio Mute and Start Up/Shut Down	Latching	No	No
F9	Manual Notching Up sounds (1 st push on/2 nd push off)	Latching	Yes	No
F10	Manual Notching Down sounds (1 st push on/2 nd push off)	Latching	Yes	No
F11	AUX3 Function Output (1 st push on/2 nd push off). Preset to MARS light	Latching	-	-
F12	Dim Headlight (1 st push dim/2 nd push bright)	Latching	No	Yes
F13	AUX4 Func Output (1 st push on/2 nd push off)	Latching	-	-

**DCC Function Key Operation for Atlas HO-scale
Gold Series RS-3 Locomotives (continued)**

Function Key	Locomotive Behavior when Press Function Key	Function Behavior (Latching or Non-latching)	Works Only with Engine Sounds On	Works Only When Moving
F14	Talking Defect Detector sounds	Latching (For RS-3, press F14 twice.)	No	No
F15	Cab Radio Communication sounds (on/off)	Latching (For RS-3, press F15 twice.)	No	No
F16	Rail-joint Clank sounds (1 st push on/2 nd push off) Only active when prime mover sound on	Latching	Yes	Yes
F17	Brake Set/Release sounds with each push	Non-Latching	Yes	Yes
F18	Sanding Valve sounds (1 st push on/2 nd push off)	Latching	Yes	No
F19	Short Air Let-off sounds	Latching (always press F19 twice)	No	No
F20	Air Compressor sounds (1 st push on/2 nd push off)	Latching	Yes	No
F21	Pop Valve sounds (1 st push on/2 nd push off)	Latching	No	No

Section 4.1 in Reference [1] explains the operation of DCC functions F1 to F21 in detail.

- **Headlight Operation in Atlas HO-scale Gold Series RS-3 Locomotives**

The *F0* or *Headlight* DCC function key turns on or off the directional front headlight and rear headlight. The default states for the front headlight and rear headlight are *Off*. When switched *On*, the Directional Headlights¹ operate as shown in the table below. This headlight behavior mimics, to the extent possible, the way prototype yard or local switching locomotives operate.

Light	Forward	Stopped after Forward	Reverse	Stopped after Reverse
Front Headlight	Bright	Dim	Dim	Dim
Rear Headlight	Dim	Dim	Bright	Dim

When the locomotive is first powered up, you may need to press the *F0* (or *Headlight*) key on your DCC system one or two times to turn on the directional front or rear headlight.

- **DCC Programming Locations**

Most DCC systems allow you to program a Configuration Variable (CV), such as the DCC address of a locomotive, in either of two places:

- On a special section of track not connected in any way to your layout and called the Program Track. (In DCC terminology, programming locomotives on the program track is called *Service Mode Programming*.)
- Anywhere on the Main Line (regular track) of your layout. [In DCC terminology, programming a locomotive on the main line of your layout is called either *Programming on the Main (POM)* or *Operations Mode (Ops Mode)* programming.]

In almost all cases, the ESU LokSound Select decoder installed in your Alco S-2 locomotive can be programmed on your program track **WITHOUT** a Program Track Booster connected between the

¹ The LokSound Select decoder uses constant voltage lighting that is independent of track voltage.

program track output of your DCC system and your physical program track. However, if you do need a Program Track Booster, Atlas recommends the PTB-100 from SoundTraxx.

- **Programming a New DCC Address for Your Locomotive**

The decoder in every Atlas Gold Series locomotive comes from the factory set to use the short address “3.” However, in order to control (independently) several locomotives on the same track at the same time, it is necessary that each locomotive have a unique DCC address. A convenient choice for the DCC address is the road number printed on the side of the locomotive’s cab. Frequently, the number on the side of the cab is a 3- or 4-digit number, which is treated in DCC as a Long (or 4-Digit) Address.

If your DCC system allows you to program 4-digit addresses on the main line (many DCC systems do), Atlas recommends that you take advantage of this capability by programming the address of your Gold Series locomotive on the main line using Operations Mode (Ops Mode) programming.

- **Air Horn Selection**

For the Alco RS-3 switcher, the default horn is a Dual Leslie A200/A125 Horn (i.e., CV48 = 64). If you wish to use a different air horn, you may choose from the 16 air horns that are listed in the following table. To select a horn, write into CV48 the value listed to the right of the name of that horn in the table.

Air Horn Name	CV48 Value
Dual Leslie A200/A125	64
Leslie A125	65
Nathan M5	66
Nathan P3	67
Nathan P5A	68
Nathan Single Chime	69
Leslie A200	70
Leslie S3L	71
Leslie S5T	72
Nathan M3	73
Hancock Air Whistle	74
Wabco E2	75
Leslie Supertyfon	76
Nathan M3H	77
Dual Single Chime	78
Nathan K3	79

- **Resetting your Lok-Sound Select Equipped Loco to Factory Default Values**

Resetting the firmware in the LokSound Select sound-decoder to its factory-built configuration can resolve many problems that sometimes occur with firmware-controlled electronics. In fact, we have found that at least 20 to 25 percent of the problems with Gold Series locomotives that we receive for repair at Atlas can be resolved simply by resetting the sound-decoder. Hence, the very first step you take to resolve a problem should be to reset the LokSound Select sound-decoder in your locomotive using the following procedure:

- Place the locomotive on your program track and write the value 8 into CV8.
- Cycle power to the decoder first off and then on again by:
 - o Tipping the locomotive to one side so that all the wheels on the opposite side are off the rail,
 - o Holding the locomotive in this tipped position for 5 to 10 seconds,
 - o Slowly lowering the locomotive back down until all wheels are once again on the program track rails.

The second dashed item listed above (power cycling) is **extremely** important; do **not** omit it.

REFERENCES

- [1]. *User Manual: DC and DCC Operation of Atlas Gold Series Diesel Locomotives equipped with ESU LokSound Select Sound-Decoders*, Version 1.20, 07 May 2014 (or later). Download from Atlas model website:
<http://www.atlasrr.com/>
Choose *Support*, *DCC Support*, and then double click on the listing for this document.
- [2]. *LokSound Select User Manual for Diesel and Steam Decoders*, Third Edition (or later), May 2012. You can download the ESU *LokSound Select User Manual* document from the ESU website:
<http://www.esu.eu/en/start/>
by first selecting *DOWNLOADS*. Then click on *Instruction Manuals*. Next, click on *Digital Decoders*. Finally, single-click on the *Download* icon in the box labeled *LokSound Select Users Manual*.

Appendix: Body-Removal Instructions for Atlas HO-Scale RS-3 Locomotives

When reading these instructions, please refer to the exploded diagram and parts list that was packed with your Atlas HO RS-3 locomotive.

Instructions for Removing the Plastic Body Shell from an Atlas HO-Scale RS-3 Locomotive

1. Remove the couplers from the locomotive frame by unscrewing them.
2. Remove the plastic fuel tank casting by sliding it away from the metal frame. Be careful of the detail parts. With the fuel tank casting removed, you now have a better place to hold the frame.
3. Remove the side handrails from the cab on both sides, if you can. Do not remove these handrails from the sill casting. If you are unable to remove the handrails from the cab relatively easily, do not force them.
4. The plastic hood casting is held onto the metal frame by four tabs that project downward from the bottom of the hood casting: two near the rear (one tab on each side) and two near the front. Each of these tabs has a rectangular slot in which it that engages a rectangular dimple that projects inwards from an opening in the frame. To release a body tab, it must be pressed inward away from its mating frame dimple. Grab the portion of the frame from which you removed the fuel tank with one hand and with the other hand grab the hood. Push inwards so that both body tabs clear their frame dimples. Be careful where you place your hands and fingers so you don't break the handrails and detail parts. After the frame tabs have been released, pull the rear part of the hood up just enough so that the rear tabs will not become reengaged with the dimples on the frame. Repeat this same process for the front tabs.
5. Usually this technique will work. If it does not, turn the locomotive upside down and locate the hood tabs. Use a small screwdriver to push the tabs (just a little) inwards away from the frame. To release a tab from its dimple on the frame, you must push inwards on the tab until it clears the dimple. Don't let the screwdriver go too far up, or you will damage the shell. Perform this same operation on all four tabs so they are clear of the frame dimples. Again be careful. You can see these body tabs and frame dimples on the Atlas HO RS-3 parts diagram.
6. Once the tabs are released, in order to remove the hood casting from the frame and the sill casting, carefully wiggle and pull on the entire hood so that it is free of the sill casting which will remain on the frame. Be sure that you are not holding onto the handrails when you grasp the body so that you don't break the handrails and or other detail parts.
7. To replace the hood casting on the sill and frame, repeat these steps in reverse order.

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