

**Programming for DCC Operation – Digital Mode**

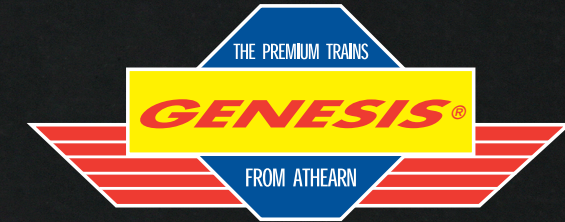
This decoder supports all program methods including register mode, paged mode, CV programming, direct mode and programming on the main (OPS mode programming). Program the locomotive the same way you would program any other NMRA compatible decoder with your DCC system.

CV	REGISTER	DESCRIPTION	RANGE	FACTORY VALUE
CV1	R1	Short address	1-127	3
CV2	R2	Start voltage	0-32	0
CV3	R3	Acceleration	0-32	0
CV4	R4	Deceleration	0-32	0
CV5	-	Top voltage	0-32	32
CV6		Speed curve select (0=linear, 1=slow increase at slow speed, 2=fast increase at slow speed)	0-2	0
	R6	Page number		
CV29	R5	Basic configuration	-	2
CV7	R7	Manufacturer Version #	-	32
CV8	R8	Manufacturer I.D.	-	143
CV17	-	Long address upper byte	192-231	192
CV18	-	Long address lower byte	0-255	3
CV19	-	Advance consist address	1-127	0
CV21	-	When CV21=0, all accessory functions will flow its own address. When CV21=1, all functions will follow the consist address	-	0
CV49		Sound on/off (0=on)	0-1	0
CV50		Horn type	0-11	4
CV51		Horn volume	0-3	3
CV52	-	Bell type	0-6	3
CV53		Bell volume	0-7	3
CV54		Bell ring rate	0-50	3
CV55	-	Diesel rumble volume	0-3	3
CV56		Brake squeal volume	0-3	3
CV57		Dynamic brake volume	0-3	3
CV58		Air release volume	0-3	3
CV59		Air pump volume	0-3	3
CV60		Safety pop valve volume	0-3	3
CV61		Engine cooling fan volume	0-3	3
CV62		Coupling volume	0-3	3
CV63		Random noise volume	0-3	3
CV64		Rail wheel clack	0-3	3
CV105	-	User identifier number	0-255	0
CV106	-	User identifier number	0-255	0
CV112		Exhaust volume	0-3	0
CV113		Coupling fire volume	0-3	3
CV114		Brake release volume	0-3	3
CV115		Auto brake squeal enable/disable	0-1	1 (enable)
CV116		Coupling sound type	0-2 (0=off)	1
CV117		**Light mode	0-3	0
CV125		Factory default setting: Programming to 1 will restore all CV's to default setting		0

\*\*Note: Use DC/Analog mode chart for description of light modes. When CV117 equals: 0=mode 1, 1=mode 2, 2=mode 3, 3=mode 4

**Note:** Due to the nature of dual function decoders, it does not support the CV read back feature. The Dual-Function decoder is manufactured by Model Rectifier Corporation for Athearn Trains.

**NOTES:**



**F Series** GENESIS®  
F-UNIT WITH  
DC/DCC SOUND SYSTEM



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## Genesis® F Series Locomotive Instruction

Your new Genesis® F-Unit Diesel Locomotive comes factory equipped with a state-of-the-art Dual Function decoder. This enables your locomotive to operate with any NMRA compatible DCC system as well as with any regular DC Train Control (HO power pack).

**CAUTION:** Do not run your new Genesis® F-Series Diesel Locomotive with power packs intended for G scale, as you may damage the locomotive circuitry. Also, never operate your locomotive with a transformer designed for use with AC powered models trains (such as O-27 trains or some European HO models).

### ATTENTION DC POWERPACK USERS

To avoid damaging the decoder in this locomotive, we recommend that once the locomotive is brought to it's idle setting (approx. 50% throttle), wait at least 3 seconds before running the locomotive at it's maximum recommended voltage level. Older power packs can exhibit a "no-load" voltage spike for a few seconds, which can damage the circuitry in the decoder.

### DC Operation- Analog Mode

This model will operate with a standard analog DC power pack. However, the locomotive's sound will not begin until the throttle is approximately at 50% of the throttle setting, and the locomotive will begin moving when the throttle has been turned to about 60%. The wireless remote transmitter features six buttons that control various sounds:

- Button 1 will start or stop the bell ringing.
- Button 2 will blow the air horn – the length of time the button is held determines the length of the horn blast.
- Button 3 activates the sound of couplers connecting.
- Button 4 controls the red Gyralight.
- Button 5 turns the dynamic brake sounds on and off.\*
- Button 6 controls the headlights and twin Gyralights.

#### DC Operation

Button	Idle/Moving
Button 1	Bell on/off
Button 2	Horn
Button 3	Coupling
Button 4	Red Gyralight/Air release sound
Button 5	Dynamic brake on/off*
Button 6	Headlights and Twin Gyralights on/off

\* When the dynamic brake sound is turned off, there will be an approximate delay of 2 seconds while the sounds fades. (Pressing the button again before the sound fades will reactivate the dynamic brake sound unnecessarily.)

Note that the dynamic brakes cannot be operated while the bell (button 1) is ringing.

### To Run Your Genesis® Locomotive

1. Turn power pack on/off switch "on" (or, if it has not on/off switch, plug it into an electrical outlet).
2. Bring the throttle up to approximately 50% of the maximum power setting, or until you hear prime mover sounds come on.
3. Move your throttle normally from this point until your desired speed is reached.

### To Stop the Locomotive or Change Direction

1. Move your throttle down to the point on the throttle where the prime mover sounds activated (see step one above) to bring the locomotive to a stop. Going too far will put the loco into the re-set mode. Idle sounds will continue.
2. Use your direction switch to change the locomotive's direction.
3. Move the throttle up to your desired speed.

When finished running you locomotive, turn the throttle all the way down to "zero" and shut off (or unplug) the power pack.

The wireless remote transmitter is powered by a 12-volt battery (#A23.12). Replacement batteries are readily available at electronic or office supply stores.

### Programming - Analog Mode

To program the various available sounds in your Genesis® model, please follow the following steps:

- Turn on the power pack. Move the throttle slowly up until you hear the prime mover sounds start; make sure the loco is in low idle.
- Leaving the power pack's throttle setting where it is, turn off the power pack's power switch and wait 2 seconds.
- Press and hold Button #6 while you turn the power pack's power switch to ON. When you hear the locomotive say "Program," quickly release Button #6. The locomotive will say "Program" a second time to confirm you are in the program mode. Wait 2 seconds before pressing any other buttons. Note that Program Mode is a slow process.
- Always wait 2 seconds after pressing a button. Do not press two buttons within that 2 second lag time, and do not press and hold a button while in the Program Mode, as the circuitry may "read" that as the button

being pressed twice, causing an error. While in the Program Mode you will only be able to perform approximately 30 program operations.

- To return to Run Mode, turn the power pack's ON/OFF switch to off, then wait 2 seconds before turning the power pack back on.

Use the following charts to program your locomotive in the Analog-DC Mode using the supplied transmitter.

#### DC Programming

Button 1	Change bell
Button 2	Change horn
Button 3	Change light mode (see below)
Button 4	Change bell rate
Button 5	Change diesel rumble volume

#### DC Programming- Set 2

Button 6 + 1	Change bell volume
Button 6 + 2	Change horn volume
Button 6 + 3	Change coupling volume
Button 6 + 4	Change brake volume
Button 6 + 5	Change dynamic brake volume

Note: Press button 6 five times to restore the factory default settings.

### Lighting Modes Description Chart

Note: There are 4 lighting modes to choose from in the analog-DC mode. These are helpful if you are going to use the locomotive in various positions in a consist as well as when operating as a single engine. Each time you press Button #3 while in the program mode, you will hear a series of "Clanks":

- 1 Clank = Mode 1 = All lights on (normal solo operation)
- 2 Clanks = Mode 2 = Front lights on in forward direction/no rear lights (lead locomotive in a consist)
- 3 Clanks = Mode 3 = All lights off (mid position locomotive in consist)
- 4 Clanks = Mode 4 = Rear lights on in backwards direction/no front lights, (end locomotive in a consist facing forward)

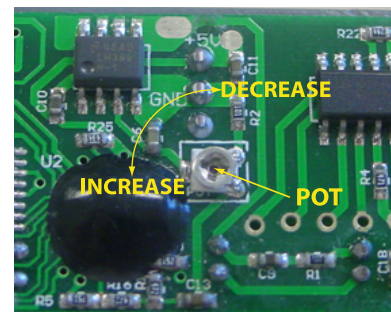
DCC users can also access these same modes by simple CV programming (see CV Chart).

### Restoring Factory Default Settings

In the Program Mode, press Button 6 five times. You will hear "Program" five times, followed by the air release sound.

## System Volume Adjustment

The overall system volume can be adjusted with the pot on the circuit board. To adjust the potentiometer (pot), first carefully remove the body from the mechanism. Locate the pot on the board. Refer to the photo for adjusting the volume. This adjustment should only need to be done once for you to achieve your desired sound level. You can make additional adjustments of the user controlled sounds with your hand unit.



### Programming - DCC Mode

Your GENESIS F-Unit will operate on any NMRA compatible Digital Command Control (DCC) system. The dual-function decoder has the following features:

- Synchronized diesel engine sound with random sounds
- 1.5 amp capacity
- Programmable for either 2 digit (1-127) or 4 digit (1-9,999) addresses
- Programmable start voltage
- Programmable acceleration rate
- Programmable deceleration rate
- Programmable top voltage
- Programmable 14-28/128 speed steps
- Directional lighting (F0)
- Special lighting effects: Mars Light, Gyralight, Beacon, or Strobe Light (depending upon which, if any, the model is equipped)
- 28 accessory functions (F1-F28)
- Advanced consisting (CV19)
- OPS mode programming
- Compatible with NMRA DCC standard
- Complies with part 15 of FCC regulations
- Programmable individual sound volumes

Note: The Bell (F1), Dynamic Brake (F6) and Rail wheel Clack (F10) cannot play simultaneously – the bell will interrupt the other two sounds.

FUNCTION	IDLE/MOVING
Double click F0	Turns on/off sound
F1	Bell on/off
F2	Horn
F3	Turns on/off accessory lighting/Air release sound
F4	Turns on/off accessory lighting/Air release sound
F5	Dynamic brake on/off
F6	Brake release (idle)Brake squeal (moving)
F7	Uncoupling lever
F8	Air hose firing
F9	Engine cooling fan
F10	Rail wheel clack (only moving)
F11	Traction air compressor
F12	Turns on/off sound
F13	Short air release
F14	Coupling crash
F15	Air pump
F16	Exhaust
F17	Short air release
F18	Change bell
F19	Change horn
F20	Change bell rate
F21	Change bell volume
F22	Change horn volume
F23	Change diesel rumble volume
F24	Change dynamic volume
F25	Change brake volume
F26	Air pop
F27	Air pop
F28	Air pop

Note: When CV122=3 (manual notch up/down, F8 will notch down and F9 will notch up.)

NOTE - Some DCC systems do not have enough power on the Program Track for programming sound decoders. If your system is one of these, there are Program track Boosters available from aftermarket DCC suppliers.

NOTE - Because this locomotive has a dual function sound decoder on board, it does not support CV read back features. This decoder supports all program methods including: register mode, paged mode, CV programming mode, direct mode, and programming on the main (OPS mode programming). Program the locomotive the same way you would program any other NMRA compatible decoder with your DCC system.

## Out of the Box DCC Running

The first time you run your new F-Unit locomotive there are a few steps you should take to make sure the locomotive operates properly:

Test the locomotive in its analog mode (DC) if possible. If it runs properly (lights, sound, forward and reverse) on DC, it will run trouble free on DCC.

The locomotive comes with a factory default DCC address of #3. Before programming a new address into the locomotive, test run it on your DCC system on address #3. This will also insure there are no problems with the locomotive.

Test all functions (lights and sound) on default address of #3. Use the supplied Function Chart.

Once these steps have been completed, follow the included CV chart to program any new programming features you want into the locomotive. When you initially program your new F-unit locomotive, this step should be done on a program track for best results. You must know how to properly use your DCC systems programming mode to program any decoder. If you are unsure of programming a decoder with your system, please consult your DCC systems instruction book regarding programming or contact the manufacturer of your DCC system for proper guidance.

### FCC Compliance

This device complies with the part 15 of FCC Rule. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that causes undesired operation.