DN147A0

Fits many older Atlas N locomotives

N Scale
Mobile Decoder
1.0 Amp/2 Amps Peak
4 FX^3 Functions, 200ma output

Features:

- Drop in "A0" Atlas light board replacement decoder. Allows decoder to be moved between different locomotives with typically no soldering.

- Series 7 Enhanced Decoder Features.

- Series7 decoder firmware may be user updated using a Digitrax USB equipped Command Station with Sound Loader software or equivalent in decoder IPL mode.

- 4 Digitrax FX^3 Functions-Control lights and functions for prototypical lighting effects and on/off control.

- Configurable FX^3 Pulse Function available on all function outputs.

- Digitrax LocoMotion® System – Lets your trains run like the real thing!

- 2 Digit and 4 Digit Addressing.

- Basic, Advanced & UniVersal Consisting.

- SuperSonic motor drive for quiet operation.

- Direct and Operations Mode programming.

- Program CVs with Digitrax Command Control, or compatible DCC system.

- Decoder Factory Reset by writing CV8, with or without speed table reset.

- Transponder Equipped ready for transponding ID on your layout.

- Power-on Motor Isolation Protection, helps prevent damage to your decoder.

- DCC Compatible.

- FCC Part 15, Class B RFI compliant.

- Operates on DCC track voltage 9V minimum. to 22V maximum.

Parts List:

1 DN147A0 compact 1 amp Atlas light board decoder
1 Instruction Sheet

CAUTION: **This "A0" form factor decoder fits many older legacy Atlas locomotives. More recent versions of the same shell/locomotive type may require a different decoder. Check before purchasing this version.**

Installation Instructions: Visit www.digitrax.com for the latest information and technical updates. Refer to Figure 1 for the decoder layout.

cap- RH track Blue/+12V RH track F2

+

147A0

+

cap+ LH track RH motor LH motor LH track Cam F1
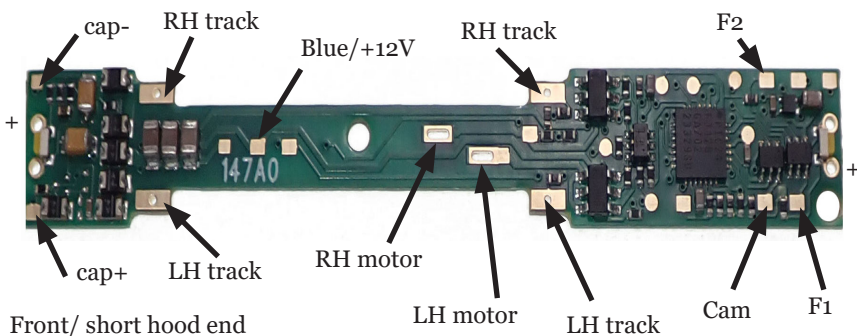
Front/ short hood end

Figure 1: DN147A0 Decoder *showing connections.*

To install, follow these steps:

1. Carefully remove the Locomotive shell.
2. Loosen the insulated frame screws at front and back of frames sufficiently so you can spread the frame uppers apart and remove the factory light board. If you fully undo these screws, you will have a harder task to reassemble the drive train, trucks etc.
3. Check the motor tabs are squarely aligned from side to side between frames, and high enough to bear on the matching decoder motor pads, without shorting to the frames.
4. Align and place the decoder in to the top of the frames, and then move frames back together. When all is secure, and trucks and gear towers are correct, re-tighten the two frame screws. Take care motor tabs do not short to frames.
5. Place the loco on an active DCC track powered by a compatible DCC system and set to the factory default address 03 to select for testing. Turn on and off the lights/F0 and ensure the leds respond. Test the motor runs.
6. After confirming the decoder is functional, carefully replace the locomotive shell, making sure that the decoder and parts are not damaged.

Customizing Your Decoder:

This decoder should initially operate at factory default address 03. For customizing, the following CV table gives the common CVs used by this decoder. Reading CV8 on a programming track, or Digitrax Mainline Operations mode will return CV8 = 129, also confirming the decoder is functional.

If the decoder does not respond, make sure CV29 reads as 6 and CV1 is 3 to enable factory default address 03, or do a factory reset by *writing* CV8 to 8.

See the Digitrax web site for more information on programming Series7 CVs.

CV#	Control Usage	Range	Default
1	2 Digit Address	1-127	03
2	Vstart	0-255	0
3	Acceleration Rate	0-32	0
4	Deceleration Rate	0-32	0
5	Vhigh	0-255	255
6	Vmid	0-255	128
7	Product ID- Series7 standard mobile decoder		204
8	Manufacturer ID- Digitrax		129
9	Motor Drive frequency in KHz	4-50	0->16
10	Motor feedback voltage trim	32-127	0->64
11	Packet timeout, in seconds. 0= Off	0-60	6
17/18	4 Digit Address		0000
19	Consist 2 digit Address	1-127	0
29	Decoder Primary Configuration		6
33-46	Function to Output Lead mapping		
49	FX setting White/F0F lead	0-255	0
50	FX setting Yellow/F0R lead	0-255	0
65	Kick Start	0-255	0
66	Forward Trim	0-255	127
67-94	Speed Table	0-255	
95	Reverse Trim	0-255	127
120	Decoder type- N - Atlas A0 light board		7
253	IPL download version		>4

Figure 1 shows the "+" or positive terminal of the led mount holes at front and back of the decoder, if you wish to change to T1 style leaded white leds.

The +ve and -ve external capacitor pads are shown for connecting an external power capacitor or power extender. For F1/2, the Blue or +12V connection is shown to connect 12V lamps, or current setting resistors for leds.

This decoder is usable on many older Atlas N locomotives which have varied over the last ~30 years. Some versions have frame halves with varying tolerances for engaging the four track power tabs (top and bottom). If the decoder is loose in the frames, you can add a thin *insulating* shim, such a piece of paper or thin scotch tape to a pair of **upper decoder track tabs** shown. Do *not* cover the lower track tabs. A suitable shim will ensure a snug fit and reliable power pickup.

More recent Atlas light boards may employ a wholly different track and motor interface, so check that this decoder is mechanically compatible before install.

Warranty & Repair

Digitrax gives a one year *Warranty* against manufacturing defects for this product. Visit www.digitrax.com for instructions for tech support and returning items for repair.

Please return warranty items directly to Digitrax - DO NOT return items to place of purchase.

errors and omissions excepted.