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Digitrax Command Control

DN141K2

1Amp Plug N' Play DCC Mobile Decoder for KATO N-scale SD-80/90 MAC Locomotive

1.0 Amp (1.5 Amp Peak) Mobile DCC Decoder

Easy, no solder installation

User Scalable High Resolution Speed Stabilization (Back EMF)

Integrated Digitrax Transponder

Supports Both Short (127) & Long (10,000) Address Modes

Programmable from DCC compatible equipment without opening the loco

User Programmable Address, Acceleration, Deceleration,
Start-voltage, Mid-point voltage, Max voltage and more

Automatic conversion to analog operation

4 User Configurable, Independent Functions Rated at 200ma
Use These as Regular Function Outputs or as FX™ Outputs
To Generate Special Lighting Effects

Choose from Mars, Gyalite, Single or Double Strobe, Ditch Lights and more

Smooth locomotive speed control with user selectable
14, 28, or 128 forward & reverse speed step capabilities

User loadable speed tables for customized speed control
with 128 speed step resolution

Supports Basic, Advanced & UniVersal Consisting

User configurable loco direction of travel, you decide
which way is forward without rewiring the motor

Compatible with the DCC Standard

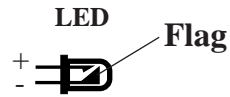


Decoder Installation Instructions. For DN141K2 In Kato N-scale SD80/90MAC

See Digitrax Decoder Users Manual for complete decoder test procedures, installation instructions & technical information. This manual is available at no charge from your dealer. If your dealer is out of these manuals they are available at www.digitrax.com or you can contact Digitrax (770) 441-7992, Fax (770) 441-0759, or e-mail sales@digitrax.com and we will gladly send you a copy.

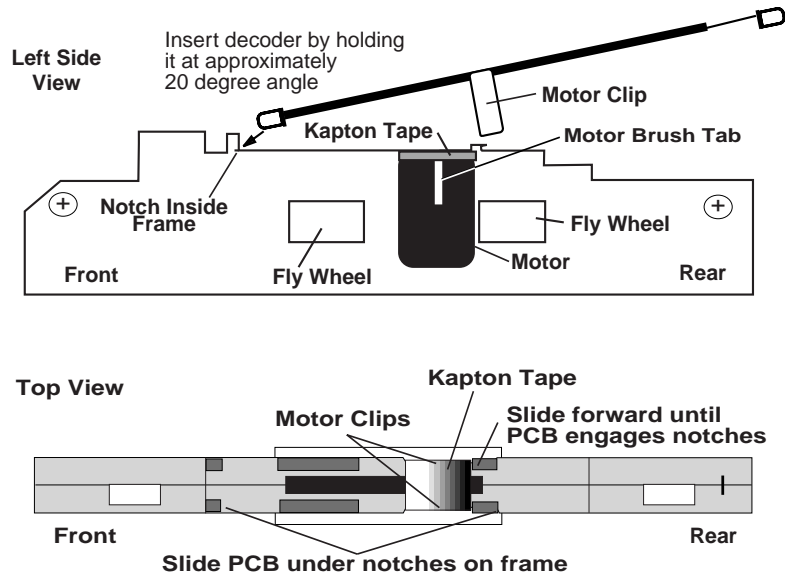
1. Remove locomotive shell and walkway.
2. Remove the lamp board by gently sliding it back and lifting up. Be sure front LED does not catch on frame during removal. (If Lamp Board won't slide back, loosen the two frame screws 1/2 turn.)
3. If you wish to use the white LEDs shipped with the Kato light board, simply desolder them from the light board and solder them on the decoder making sure to maintain the correct polarity and lead length.

Note: If you use white LED's to replace the yellow LED's on the decoder make sure the polarity is the same by looking at the flag inside the LED..



4. Your decoder was shipped secured to a piece of foam packing material by a piece of yellow Kapton tape. Remove this tape carefully and save it for use in step 5.

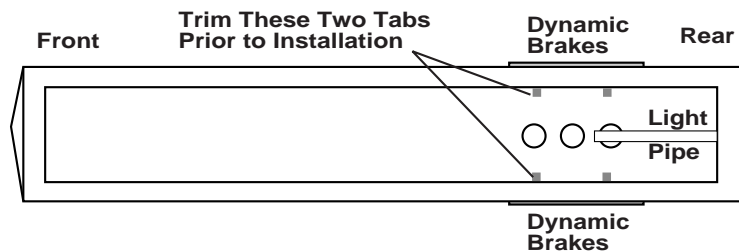
Figure 1: DN141K2 Frame



Instructions for DN141K2

5. To insure motor isolation from the frame, cut a 3/8" x 1/2" piece of yellow Kapton tape (provided) and place it across the top of the frame directly over the motor opening as shown in FIGURE 1. Be sure that the motor brushes are free of the tape.
6. Insert the front of the decoder into the front of the frame by lowering the decoder at a 20 degree angle. Gently engage the front end of the decoder in the notches in the front of the frame.
7. Once the front part of the decoder is engaged, lower the copper motor clips over the motor brush tabs. You may need to hold the brush tabs in with your fingers as you slide the motor clips over them.
8. Engage the rear section of the decoder under the notches in the frame.
9. To secure the decoder in the frame, push the decoder forward into the frame until it rests against frame tabs. See FIGURE 1. (If you had to loosen frame screws in step 2, tighten them now.)
10. To remove the decoder, disengage the decoder by pushing it toward the rear of the frame. Once the rear tabs are free, lift the back of the decoder and continue sliding toward the rear until disengaged. Be sure front LED does not catch on frame during removal.
11. Before replacing shell on locomotive use a hobby knife to trim the two plastic tabs indicated in Figure 2. Trim the tabs while the dynamic brakes are attached to the shell. This will not affect the attachment of the dynamic brakes.

Figure 2: DN141K2 Shell Modification



**For more information on Transponding & Scaleable Speed Stabilization
consult your Digitrax Decoder Manual or our web page at www.digitrax.com**

Commonly Used Configuration Variables			Commonly Used Configuration Variables		
CV#	Used For	Default	CV#	Used For	Value
CV01	2-digit address	x03/003	CV61	Directional Lights	x0
CV02	Start Voltage	x00/000		White=F0 & Yellow=F4	x1
CV03	Acceleration Rate	x00/000		Disable BEMF w/F5 ON	1x
CV04	Deceleration Rate	x00/000		Disable Vstart,Vmid,Vmax in 128 step mode	2x
CV05	Maximum Voltage	x00/000	CV49-54	FX Effect Set Ups	See Manual
CV06	Mid Point Voltage	x00/000		See note below for F2 FX	
CV55	BEMF Static Adj.	x80/128	CV65-95	Loadable Speed Tables	See Manual
CV56	BEMF Dynamic Adj.	x30/048			
CV57	BEMF Droop	x00/000			
	0x=Std				
	x0=Adv. Consist				
CV29	Configuration Register	x06/006=Advanced Mode, Analog Conversion On			
	Examples:	x04/004=Standard Mode (14 Speed Steps), Analog Conversion On			
		x07/007=Reversed Direction, Advanced Mode, Analog Conversion On			
		x16/022=Enable Loadable Speed Table, Analog Conversion On			

CV VALUES ARE SHOWN AS x## FOR HEXADECIMAL AND ### FO DECIMAL NOTATION

Functions on the DN141K2

DN141K2 comes equipped with two yellow LED's set up as F0 fwd and F0 rev, this means that when you install the decoder your headlights will be directional.

If you wish to control these lights separately from your throttle, you can program F0 reverse to run on F4 as an independent non-directional function. (see CV61 in chart on previous page)

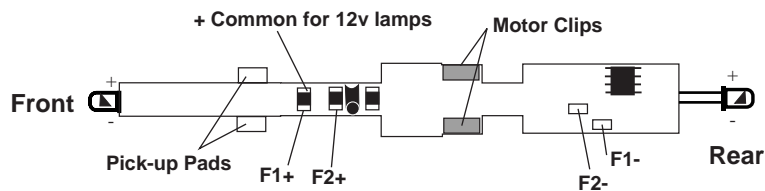
Function 1 & Function 2 are also available on the decoder. If you wish to use these functions you must solder wires to the pads indicated in FIGURE 3, then run the wires to the lights or other functions you want to control. If you are using 1.5V lamps or LED's, two 470 ohm current setting resistors are already connected to the F1+ and F2+ pads on the PCB for these applications. If the lamps you are using work better with different values, you can change the resistors.

All four functions can be set up as Digitrax Real FX™ functions. See your Digitrax Decoder Manual for complete instructions for setting up these special lighting effects.

Special note on FX operation of F1 & F2 with DH142, DN142, DN141K2, DN141E2 & DN149K2 When F1 is set up for FX operation, F2 must also be used as an FX function (it can't be used as a standard on/off function). If you want to use a combination of FX and standard on/off operation with Functions 1 & 2, please use F1 for the standard on/off lead and F2 for the FX lead.

Caution: When soldering wires to the function pads, make sure these connections cannot come in contact with the locomotive frame.

FIGURE 3



Damaged decoders should be returned directly to Digitrax for repair. The standard repair charge is \$17. Please use the original foam packing block if you do need to ship any DN141K2's for repair. Please follow installation instructions carefully to avoid breaking the PCB.

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