

Kato Digitrax DCC Decoder.

29-351 Decoder For Control Car With Motor.

Please read this instruction sheet carefully prior to the use.

- How to install the Decoder

1. Please slide the under-cover over chassis in direction of the arrow and take it off.
2. Please insert such a tool as flat headed screwdriver between car body and truck and remove the truck.
3. Please insert carefully the decoder in the direction indicated in the picture.
4. Please make sure that the decoder is inserted firmly to the very end.
5. Please fit the truck to the original position and put the under-cover on again before running the car. When the under-cover is not put over, the power might not come to the decoder, causing the non function of the decoder.

- Rating and function of EM13 decoder for Motor Car

Default (initial) address value: 03 (Range it can be changed in: 01-9983)

Maximum Current: 1.0A (Peak Current Value: 1.5A)

Function Circuits: No (Only with circuit for Motor)

Complete with BEMF (Run with stable speed using Back Electric Magnetic Field),
Reset (Initialization), Transponding (Detection of position of the motor car)

The decoder can be customized in the function by changing the following program values.

Program items and their values			
CV	Default value	Function	Value range or Value Setting Example
CV01	03	2 digit address	01 ~ 127
CV02	00	Start Voltage	00 ~ 255 (Voltage 0 ~ 100%)
CV03	00	Acceleration rate	00 ~ 31 (Rapid ~ Slow Change)
CV04	00	Slowdown rate	00 ~ 31 (Rapid ~ Slow Change)

CV05	00	Maximum Voltage	00 ~ 255 (Voltage 0 ~ 100%)
CV06	00	Voltage at mid point	00 ~ 255 (Voltage 0 ~ 100%)
CV08	129	For Reset*	Enter 08 for reset
CV29	06	To set speed steps	06, 07, 38, 39, etc.
CV57	06	Grade of BEMF effects	00 ~ 15 (Single Motor-Car traction)

* "129", the default value under CV08 is a maker ID No. Regardless of the figure, please enter "08" for Reset (the value will return to the default value.)

- Compliance, Warnings & Handling.

Please use this decoder in combination with devices complying with NMRA DCC rules. With controlling devices employing another digital system, it will not work.

This product is an electronic device. So rough handling, water or static electricity may break the chip.

As it is a p.c.board, it has tiny and pointed parts. Please store the product where small children cannot reach their hands to.

Train car installed with the DCC decoder can be run on analog-operated track as well, but may not run when the power pack controller does not match with it.

The specifications and price of the product is subject to change without preannouncement.

Kato Digitrax DCC Decoder.

29-353 Decoder FR11 For White LED Passenger Car Lighting Set 11-209 & 11-210.

This decoder works to turn on or off the passenger car lighting and to stabilize the brightness of the lighting in DCC friendly train cars, regardless the train stops or runs.

As for the way of installation in the passenger cars, please read the instruction sheet attached to the White LED lighting set.

- How to install the Decoder to the passenger car lighting set

Please fit the parts to the enclosed bracket in order of 1 lighting p.c.board and decoder as shown in the picture.

Bracket

1. Lighting p.c.board
2. Decoder

Fit them like this.

Please install the bracket fitted with lighting p.c.board and decoder onto the car according to the instruction sheet enclosed with the white LED lighting set.

*This product can be used only for LED type 11-209 and 11-210 White LED Lighting Sets, and cannot be used for light bulb type 11-201, 12-205, 11-204 and 11-206 Lighting Sets.

- Rating and Function of FR11 (for Passenger Car Lighting Set)

Default address value: 03 (Range it can be changed in): 01-9983)

Function Circuits: 1 Circuit (For Passenger Car Lighting): F1 key switches the lighting ON/OFF (The key can be changed.)

Maximum Current: 65mA

The decoder can be customized in the function by changing the following program values.

Program items and their values			
CV	Default value	Function	Value range or Value Setting Example
CV01	03	2 digit address	01 ~ 127
CV61	02	With combination of CV61 and CV64, the function	
CV64	00	No. (Key) can be set to turn on/off the lighting. Default Setting is "F1". With F1 Key, it can be turned on/off.	

In case of changing the function No., please select the item which you want to set and program the values under CV61 and CV64 in the decoder.

CV61	CV64	Function No. which can be switched on/off	Transponding (Position Detection)
00	00	F1	OFF
01	00	F0	OFF
02	00	F1	ON (Default Setting)
03	00	F0	ON
02	01	F3	ON
02	02	F5	ON
00	01	F3	OFF
00	02	F5	OFF

*CV Values can be only written in and cannot be read out.

- Compliance, Warnings & Handling.

Please use this decoder in combination with devices complying with NMRA DCC rules. With controlling devices employing another digital system, it will not work.

This product is an electronic device. So rough handling, water or static electricity may break the chip.

As it is a p.c.board, it has tiny and pointed parts. Please store the product where small children cannot reach their hands to.

Train car installed with the DCC decoder can be run on analog-operated track as well,

but may not run when the power pack controller does not match with it.

The specifications and price of the product is subject to change without preannouncement.

Kato Digitrax DCC Decoder

29-352 Decoder for the control of head & tail lights On end cars

The FL12 decoder can be installed in head & end cars so lighting can be controlled by DCC

Please read this instruction sheet carefully prior to the use.

Basic Information on the FL12 Decoder:

The purpose of FL12 decoder is for turning on/off head/tail lights in Kato N scale passenger models that are equipped for quick installation of a DCC function decoder.

- Default address: 03 (address can be changed from 01-9983)
- Function Circuits: 2 circuits (head/tail lights): F0 key toggles lights ON/OFF
- Maximum Current: 125mA for each circuit
- Automatic switching to head or tail light corresponding to the direction the train is operating in, complete with transponding (train position detecting) function.

How to install the Decoder

1. Remove the floor board cover near the top of the car on the bottom side while pressing it in the direction indicated by the arrow.
2. Remove the switch if pre-installed (Some models do not have this plastic slide switch installed.)
3. Note the orientation of the decoder. The notch in decoder indicates orientation direction.
4. Place the decoder into the opening where the floor board cover was removed. Now slide the decoder towards the end of the car.
5. Be sure that decoder is inserted firmly to the very end.
 - How the decoder is inserted will dictate how the lighting effects operate. If the lighting effects are opposite of anticipated operation (ie, backup lights going forward, forward in backup mode), remove decoder, turn 180 degrees and reinsert.
6. After installation of the decoder in the car, replace the floor board cover. This part is integral in locking the decoder in place. Without the cover fitted, positive contact between the decoder and the car cannot be assured.

Customization and Programming of the FL12 Decoder:

The decoder can be customized in the function by changing the following program values:

Program items and their values:

CV	Default value	Function Value	Range Example
CV01	03	2 digit address	01~127
CV61	02		
CV64	00		

Default (initial) setting is "F0". With "F0" Key, the light can be toggled on and off.

In case of changing the function No. (key) from the default of F0, along with toggling transponding on and off, change the following values of CV61 and 63 per the table below:

CV61	CV64	Function No. for turning on/off light	Transponding
00	00	F0	OFF
02	00	F0	ON (Default value)
02	01	F3	ON
02	02	F5	ON
00	01	F3	OFF
00	02	F5	OFF

PLEASE NOTE: The CV values in this function decoder can be written in, however, there is no read back capability, so it may appear in programming that your decoder is not responding.

A model with this DCC decoder installed can be run on DC operated track as well, however depending on CV changes made may not function correctly.

Compliance, Warnings & Handling:

- Please use this decoder in combination with other devices complying with NMRA DCC rules.
- Rough handling, water or static electricity may damage the FL12 decoder.
- This product contains small parts and is not intended for children under the age of 14.
- Due to constant product improvements, specifications are subject to change without notice.