



NDE290 DCC Digital decoder

Ver1.04

The drM DCC decoder complies with the DCC specification of the NMRA Association

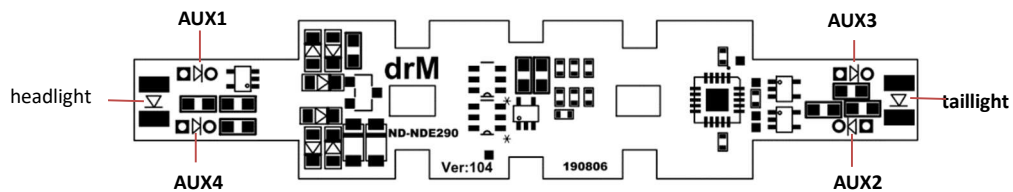
NDE290

Features

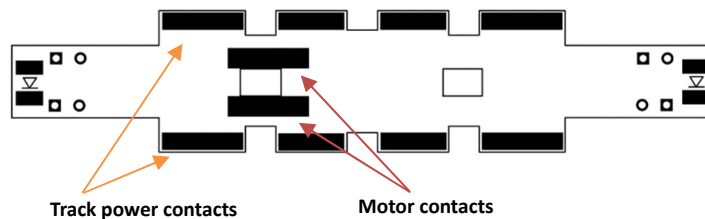
1. Only for N gauge.
2. The highest voltage is 18V
3. 28/128 speed operation.
4. 0.8A motor current output, the maximum peak value is 1.5A.
5. 1~9999 Vehicle number selection.
6. The function output has 6 kinds of light effect output.
7. Size 69mm x 13.5mm x 2mm

Installation Notes

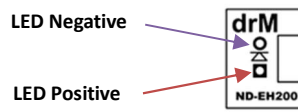
- Front of the decoder



- The back of the decoder



1. LED connects



- The above figure indicates the headlight and taillight LED installation pins, and the opposite LED installation will cause the LED to not light up.
- Headlights, taillights, AUX1~AUX4 can be directly connected to LEDs below 0805, no resistors are required.

2. Decoder installation

- After disassembling the vehicle, remove the analog circuit board on the car, and install the decoder directly according to the position of the analog circuit board.
- When installing the decoder, pay attention to the connection of the decoder track power contact with the conductive copper sheet of the vehicle track.
- When installing the decoder, pay attention to the direction of the decoder, and connect the copper plate of the vehicle motor to the decoder motor.

CV List

CV	Description	Range	Factory setting
1	Short address	1-127	3
2	Minimum start speed	0-255	0
3	Acceleration delay	0-255	5
4	Deceleration delay	0-255	7
5	Maximum speed	0-255	220
6	Mid-speed	0-255	127
7	SW version		2
8	Reset / NMRA assigned manufacturer ID for drM : 164 (10100100)	8	164
17	Long address, Hi byte	192 - 231	
18	Long address, Low byte	0 - 255	
19	Consist address	0 - 127	0
21	Consist function F1~F8		255
22	Consist function (FF , FR)		255
29	Basic settings Bit 0 - Vehicle direction: 0 = Forward, 1 = Reverse Bit 2 - Analog option: 0 = off 1 = on Bit 4 -Speed curve table: 0 = off, Use CV # 2, 5, 6. 1 = on, Use CV 's # 67 - 94 Bit 5 - Short/Long address: 0 = Short address CV #1 1 = long address CV #17+18		6

34~43	Function output mapping FF,FR,F1~F8							CV34: 0x01 CV35: 0x02 CV36: 0x04 CV37: 0x08 CV38: 0x10 CV39: 0x04 CV40: 0x00 CV41: 0x00 CV42: 0x00 CV43: 0x00	
	CV	-	-	AUX4	AUX3	AUX2	AUX1		FR
	34	0	0	0	0	0	0		0
	35	0	0	0	0	0	0		1
	36	0	0	0	0	0	1		0
	37	0	0	0	0	1	0		0
	38	0	0	0	1	0	0		0
	39	0	0	1	0	0	0		0
	40	0	0	0	0	0	0		0
	41	0	0	0	0	0	0		0
	42	0	0	0	0	0	0		0
	43	0	0	0	0	0	0		0
	CV34 Corresponding to F0 (headlight) CV35 Corresponding to F0 (taillight) CV36 Corresponding to F1 CV37 Corresponding to F2 CV38 Corresponding to F3 CV39 Corresponding to F4 CV40 Corresponding to F5 CV41 Corresponding to F6 CV42 Corresponding to F7 CV43 Corresponding to F8 Example: When CV34 = 0x01, press the F0 direction to move forward, the headlight will light up, if the modified value is 0x02, press the F0 direction to go backward, and the headlight will light up.								
56	Head/tail light lighting effect, the one digit is set by head, and the ten digit is set by tail. Example: 12, single digit 2 headlight effect single flashing light, tens digit 1 tail light effect gradually lights up 0. None 1. Light up gradually 2. Single flash 3. Warning light 1 4. Warning light 2 5. Double flashing lights						0 - 55	0	
57	AUX1/AUX2 lighting effects, the one digit is set by AUX1, and the ten digit is set by AUX2. Example: 12, single digit 2 AUX1 effect single flash, tens digit 1 AUX2 effect gradually lights up. 0. None 1. Light up gradually 2. Single flash 3. Warning light 1 4. Warning light 2 5. Double flashing lights						0-55	0	
58	AUX3/AUX4 lighting effects, the one digit is set by AUX3, and the ten digit is set by AUX4. Example: 12, single digit 2 AUX3 effect single flash, tens digit 1 AUX4 effect gradually lights up. 0. None 1. Light up gradually 2. Single flash 3. Warning light 1 4. Warning light 2 5. Double flashing lights						0-55	0	
59	Headlight bright						0-15	15	
60	Taillight Bright						0-15	15	
61	AUX1 bright						0-15	15	
62	AUX2 bright						0-15	15	

63	AUX3 bright	0-15	15
64	AUX4 bright	0-15	15
67~94	28 speed table		
107	Motor start setting	0-30	0

Function output

1. The AUX1 mapping to the function 1.
2. The AUX2 mapping to the function 2.
3. The AUX2 mapping to the function 3.
4. The AUX2 mapping to the function 4.
5. The function can change mapping by CV34~43.

Reset decoder

If you want to reset the decoder CV value, write 8 in CV8, and all CV values will be restored to the factory settings after power-on again.

Decoder programming

Decoder editing can be used to read CV values or write CV values in the editing mode of each brand's controller. For the CV editing method of the controller, please refer to the instructions of the controller.

Please refer to the description of the CV value list for the content of the CV value. The factory address of the decoder is No. 3, and the decoder can be directly operated with the No. 3 car number.

Precautions

- Do not place any conductive materials (liquid, metal...) on the decoder.
- Please install the vehicle when the power is off during installation.
- Do not remove or replace any components under the decoder.
- Do not output more than 100mA current for each function.
- The overall output of the chip should not exceed 1000mA.
- The occurrence of the above situation will cause the decoder to be damaged.
- This product is not a toy, please do not give it to 14-year-old children.