This decoder supports all program modes and read back features. With MRC Prodigy Advance DCC you can read its address and CV values.

**PROGRAMMING**

This decoder should perform well with all DCC systems. The maximum DCC output should be less than 21 V. If the locomotive does not respond to commands, it may have lost its address. Please re-program the address and program CV19 to 0 (disable consist). If it responds to slowly, you should clear its momentum by reprogramming CV3 and CV4 to zero. If its top speed is too slow, program top voltage CV5 to 31. You should also clean the track to improve electrical pickup. Read your DCC system manual to learn how to program and operate the decoder. For more information about registers/CVs, their functions, please refer to the NMRA DCC Standard & Recommended Practices, RP-9.2.2. This is available directly from the NMRA or their website at www.nmra.org.

Whenever the decoder doesn’t work please use the program track to program CV125 with value 1 to restore the decoder to factory settings. This should bring the decoder to life with address #3.

**FCC COMPLIANCE**

This decoder complies with part 15 of the FCC Rules. 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 may cause undesired operation.

**RETURN PROCEDURE**

If the decoder doesn’t work please use the program track to program CV125 with value 1 to restore the decoder to factory settings. This should bring the decoder to life with address #3.

**SPEED TABLE CV67-CV94 FOR 28 SPEED STEPS**

When CV29’s bit 4 is set to “1” it will use the speed table formed by CV67-CV94 to control speed (motor voltage). It allows you to setup each speed for all 28 speed steps. First, program CV29 to 18 for short addresses (1-127) or program CV29 to 50 for long addresses (128-9999) to enable speed table control. Then select throttle to 28 speed steps and run your locomotive at speed step 1. Use program CV on the main to change CV67’s value (1-255) to adjust step 1 speed’s. The kick voltage, CV65 is only applied when the speed steps change from 0 to 1. You should switch between 0 to 1 many times to check step 1’s speed. When done with CV67, select speed step 2 and program CV68. CV68’s value must be greater then CV67’s. When done with CV67-CV94, use read back CV to make sure their values are in increasing order.

**TROUBLE SHOOTING**

Note: When using MRC Prodigy DCC to program addresses it will automatically disable the speed table (set CV29’s bit 4 to “0”). Programming CV125 to 1 will also disable the speed table and re-program CV67-CV94 to a default linear speed setting.

Printed in USA
If you have a 1.5V bulb or LED, you should connect a 2k ohm resistor in series to it.

The decoder can't touch any metal part or bare wires. The 40 mm speaker should have an enclosure made for a better sound quality.

Connect the accessory lights to the accessory output. Again, make sure there is no short circuit among these four terminals. Connect the front and rear lights to the headlight output. The middle terminal is common. Connect the left motor terminal to the green terminal # 3. The wires must be stripped 5 mm and well twisted and tinned with solder before you connect them.

Connect the left side pickup wires to the green terminal # 1. and connect the left side pickup wires to the green terminal # 2. Connect the left motor terminal to the green terminal # 2. Connect the right motor terminal to the green terminal # 3. The wires must be stripped 5 mm and well twisted and tinned with solder before you connect them to the green terminals. Make sure there is no short circuit among these four terminals. Connect the front and rear lights to the headlight output. The middle terminal is common. Connect the accessory lights to the accessory output. Accessory, output.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.

The decoder has been programmed to address #3, 28/128 speed steps. To test, place the loco on the test track. Select address #3 and 28 speed step. Move up the throttle and the loco should move. Push the light button [F0] and headlight should come on. Change the direction of the loco and the loco should change direction. The loco cannot reach full speed, due to the resistor. If all the above occurs, you passed the test. Congratulations! Do not run the loco for an extended period of time on the test track or the resistor will overheat. If your installed decoder does not pass the test, find the problem, correct it and test it again.

As long as you test the decoder on the test track there is little chance of damaging the decoder. This is why the test track is so important.