The MRC AD350 decoder should perform well when used with other brand command systems. See your DCC command station’s manual to learn how to program and operate the decoder. For more information about register/CVs and their function 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.

**FCC Compliance**

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**Return Procedure**

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Send the decoder to:

Model Rectifier Corporation
Attn: Parts & Service
80 Newfield Avenue
Edison, NJ 08837-3817 U.S.A

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**Programming**

The AD350 decoder supports the following register and CV programming.

### MRC PRODIGY DCC and MRC Command 2000 users do not need to know all these register/CV numbers because the MRC DCC systems use model railroading terminology. It is easy to understand and easy to program.

<table>
<thead>
<tr>
<th>CV</th>
<th>Register</th>
<th>Description</th>
<th>Range</th>
<th>Factory Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV1</td>
<td>R1</td>
<td>Short address</td>
<td>1-127</td>
<td>3</td>
</tr>
<tr>
<td>CV2</td>
<td>R2</td>
<td>Start voltage</td>
<td>0-32</td>
<td>0</td>
</tr>
<tr>
<td>CV3</td>
<td>R3</td>
<td>Acceleration</td>
<td>0-32</td>
<td>0</td>
</tr>
<tr>
<td>CV4</td>
<td>R4</td>
<td>Deceleration</td>
<td>0-32</td>
<td>0</td>
</tr>
<tr>
<td>CV5</td>
<td>---</td>
<td>Max voltage</td>
<td>0-32</td>
<td>0</td>
</tr>
<tr>
<td>CV29</td>
<td>R5</td>
<td>Basic configuration</td>
<td>---</td>
<td>2</td>
</tr>
<tr>
<td>CV7</td>
<td>R7</td>
<td>Manufacturer version number</td>
<td>---</td>
<td>32</td>
</tr>
<tr>
<td>CV8</td>
<td>R8</td>
<td>Manufacturer ID</td>
<td>---</td>
<td>143</td>
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<tr>
<td>CV17</td>
<td>---</td>
<td>Long address upper byte</td>
<td>192-231</td>
<td>192</td>
</tr>
<tr>
<td>CV18</td>
<td>---</td>
<td>Long address lower byte</td>
<td>0-255</td>
<td>3</td>
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<tr>
<td>CV19</td>
<td>---</td>
<td>Advanced consist address</td>
<td>1-127</td>
<td>0</td>
</tr>
<tr>
<td>CV23</td>
<td>---</td>
<td>Forward headlight</td>
<td>0-255</td>
<td>1</td>
</tr>
<tr>
<td>CV24</td>
<td>---</td>
<td>Reverse headlight</td>
<td>0-255</td>
<td>2</td>
</tr>
<tr>
<td>CV25</td>
<td>---</td>
<td>Function 1</td>
<td>0-255</td>
<td>4</td>
</tr>
<tr>
<td>CV26</td>
<td>---</td>
<td>Function 2</td>
<td>0-255</td>
<td>8</td>
</tr>
<tr>
<td>CV27</td>
<td>---</td>
<td>Function 3</td>
<td>0-255</td>
<td>16</td>
</tr>
<tr>
<td>CV28</td>
<td>---</td>
<td>Function 4</td>
<td>0-255</td>
<td>32</td>
</tr>
<tr>
<td>CV29</td>
<td>---</td>
<td>Function 5</td>
<td>0-255</td>
<td>64</td>
</tr>
<tr>
<td>CV30</td>
<td>---</td>
<td>Function 6</td>
<td>0-255</td>
<td>128</td>
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<td>CV41</td>
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<td>Function 7</td>
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<tr>
<td>CV42</td>
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<td>Function 8</td>
<td>0-255</td>
<td>128</td>
</tr>
<tr>
<td>CV62</td>
<td>---</td>
<td>Ditch light flash rate</td>
<td>0-32</td>
<td>16</td>
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<tr>
<td>CV63</td>
<td>---</td>
<td>Light effect setting</td>
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<td>1</td>
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<td>CV103</td>
<td>---</td>
<td>User identifier number</td>
<td>0-255</td>
<td>0</td>
</tr>
<tr>
<td>CV106</td>
<td>---</td>
<td>User identifier number</td>
<td>0-255</td>
<td>0</td>
</tr>
<tr>
<td>---</td>
<td>R6</td>
<td>Page number</td>
<td>0-31</td>
<td>1</td>
</tr>
</tbody>
</table>

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**MRC AD350 6-FUNCTION DECODER with MRC Light Effects**

Built-in NMRA DCC plug

Thank you for purchasing our highly advanced DCC locomotive decoder. Combined with any DCC System, our decoder will make your model railroad more realistic and more exciting.

- Designed for HO scale
- Built-in NMRA DCC plug
- Maximum current: 2.0 Amp
- Programmable for either 2-digit (1-127) or 4-digit (1-9999) addresses
- Programmable start voltage
- Programmable acceleration rate
- Programmable deceleration rate
- Programmable top voltage
- Programmable 14, 28, or 128 speed steps
- Directional lighting control for front and rear lights at 0.2 amp rate
- Easy setting “Rule 17” lighting, ditch, strobe and Mars lights
- 4 accessory functions (F1 to F4), at 0.1 amp rate
- Supports advanced consisting, (CV19)
- Supports programming on main
- Compatible with NMRA DCC standard
- Complies with the Part 15 of FCC
- Accessory wire provided for decoder wiring
- 43.0mm long x 17.5mm wide x 3.5mm high

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80 NEWFIELD AVENUE
EDISON NJ 08837-3817
Tel. 732-225-6360
PRINTED IN CHINA

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If your loco has an NMRA DCC socket, all you need to do is plug in the decoder. However, it is quite a challenge to install a decoder into a locomotive without the DCC socket. You should have some basic electrical knowledge and soldering skills. If you do not have the above requirements, please ask the dealer for help in installation.

Solder tabs are furnished on the AD350 decoder for accessory functions F1, F2, F3, F4 and F5. If you wish to use these functions, you can solder wire to these tabs using the supplied accessory wires. Use a small wattage soldering iron in conjunction with electrical soldering paste. To avoid any damage on the decoder do not solder one tab more than 5 seconds at a time. If you need more time to solder, please let it cool down before soldering again.

Figure 2 shows you how to wire the decoder. After disconnecting the motor terminals from pickups, connect the red wire to the right side pickup and the black wire to the left side pick up. Connect the orange wire to the motor terminal that originally connect to the right pickup. Connect the gray wire to the motor’s other terminal. Connect the front light to the blue wire and the white wire. Connect the rear light to the blue wire and the yellow wire. The blue wire is the common terminal for lights and accessory functions. You may use the black wire or the red wire to replace the blue wire. This is very useful when you find that it is hard to isolate one of the light terminals from the pickup. Wiring the brown bus wire will also make the light dimmer. If your decoder has only a front light, you should connect the white and the yellow wires together.

Figure 3 shows you how to wire the test track. After disconnecting the motor terminals from the pickup, you are ready to test it. Never run the installed decoder on your layout without first passing the test. You may damage the decoder if it is not wired correctly or if you have not properly isolated the motor and the lights.

Put the loco on the test track. Select the Run Mode of your DCC system and select or acquire address #3. Move up throttle and the loco should move forward. Push the light button and the front light of your loco should turn on. Push the reverse direction button. The loco should move backward and the rear light should turn on. The loco cannot get to normal speed because there is a 20 ohm protection resistor in the test track. If you are able to turn on/off the front and rear lights and you are able to move the loco in forward and reverse, you did a great job. Congratulations! Do not test the loco on the test track for an extended period of time. To do so will cause the protection resistor to overheat.

All MRC decoders have been factory programmed with address #3, 28/128 speed steps and maximum top voltage. After you have finished your decoder installation, you are ready to test it. Never run the installed decoder on your layout without first passing the test. You may damage the decoder if it is not wired correctly or if you have not properly isolated the motor and the lights.

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