

*Note- Instead of using CV3 and CV4, the decoder uses CV120 and CV121 as acceleration and deceleration rates. So you can change its acceleration and deceleration rates without changing CV3 or CV4 in your power decoder, if you already have these rates tailored for your locomotives optimum performance.

ADDRESS PROGRAMMING

The "MRC Sounder" comes with a factory default address of #3, and 28 speed steps. If your locomotive has a different address, and speed step already programmed into it, place the locomotive, with decoder and MRC Sounder installed, on your program track and **re-program** it to the address you had originally programmed it to. While it is on the program track, also **re-program** the locomotive to the speed step of your choice, (14-28/128). Since the decoder does not have a motor driver, you can't read back its CV.

ADDITIONAL INFORMATION

The MRC Sounder synchronized 16 Bit sound only decoder should perform well when used with other brand command systems, and decoders. See your DCC command stations manual to learn how to program and operate any decoder. For more information about register/CVs and their functions, please refer to the NMRA DCC Standard & Recommended practices, RP-9.2.2 available directly from the NMRA or their website at www.nmra.org.

FCC COMPLIANCE

This device complies with part 15 of 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 you experience any problems with the MRC Sounder, please contact MRC first by either phone, 732-225-6360, or by e-mail, rtech@modelrectifier.com. Please have the following information ready: Make/model of your DCC system and decoder. Make/scale of locomotive, and the type of problem you are experiencing. This way you can possibly avoid unnecessarily returning the MRC Sounder.

Should it become necessary to return your MRC Sounder, un-solder the Sounder and return the Sounder only. Please include a letter, [printed clearly], with your name, address, daytime phone number, and a detailed description of the problem you are experiencing. Please also include a \$10.00 check to cover shipping and handling. Be certain to return only the MRC Sounder.

Warranty does not include abuse, neglect, or using this product for anything other than it's intended purpose. Warranty coverage will be handled on a case by case basis, and other charges may apply for repair/replacement of the product.

Send the decoder to:

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

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80 NEWFIELD AVENUE
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MRC SOUNDER™ 16 Bit Sound Decoder with 28 Accessory Functions

Item 0001866

Thank you for purchasing our highly advanced DCC 16 Bit sound only decoder. Combined with any non-sound power decoder installed in your locomotive, and used with your favorite DCC System, our new sound only decoder with 16 Bit sound technology will make your model locomotive come to life.

- Easy installation - two wires only
- Three types of synchronized prime mover sounds, SD70/ALCO/Electric locomotive, with random associated locomotive sounds
- 28 functions (F1 - F28)
- 2 or 4-digit (1-9999) addressing
- Programmable 14, 28, 128 speed steps
- Programmable acceleration rate, deceleration rate
- Programmable user selectable different horns and bells
- Programmable individual sound volumes featuring 16 levels volume adjustment
- Supports advanced consisting (CV19)
- Supports programming on the main (OPS mode)
- Compatible with NMRA DCC standards
- Complies with the part 15 of FCC
- 28mm speaker included
- Dimensions: 17.4mm x 17.4mm x 4.0mm

INSTALLATION

Since there is no motor output in this sound decoder, it can be used in any locomotive, regardless of scale that already has a working power decoder installed.

To install the Sounder into a locomotive, simply solder the resistor leads on the red and black wires to any power pick up points, left and right side wheel pick ups, along with the red and black wires of your power decoder. You should have some basic electrical knowledge and soldering skills. If you do not have the above requirements, please ask the dealer for help with the installation.

SPEAKER SELECTION

The "MRC Sounder" sound only decoder comes with a 28mm round 8-ohm speaker. If it is too large for your application, smaller speakers, 20mm, or 16 X 35mm rectangular, can be purchased from MRC, or other manufacturers. Reducing speaker size will affect the overall sound quality of this decoder. Placement of the speaker inside the locomotive is up to you. Use hot glue or double-sided sticky tape to affix the speaker inside the locomotive shell.

OPERATION

There are twenty-two horn sounds and six bell sounds, along with an "off" setting for each built into this decoder for you to choose from. See programming chart for selecting the type you want. The "off" setting is useful for trailing locomotives in a consist so only the lead unit sounds its horn and bell.

If your DCC system supports higher functions, **F13** to **F28**, you can use these functions to change the type of bell sound, **F18**, or horn sound, **F19** on the move, without having to go into "ops mode" programming or by changing CV values.

Function	Idle/Moving
F1	Bell on/off
F2	Horn
F3	Short air release
F4	Coupler cut lever
F5	Brake release (idle) / brake squeal (moving)
F6	Dynamic brake on/off
F7	Coupler release/Air hose firing
F8	3 times will shut down when in idle / Manual notch down
F9	Engine cooling fan / Manual notch up
F10	Rail wheel clack (only moving)
F11	Traction air compressor
F12	Change prime mover (3-types/off)
F13	Short air release
F14	Coupler crash
F15	Air compressor
F16	Flange squeal
F17	Air release
F18	Change bell type (use F1 to turn off bell after adjustment)
F19	Horn type select
F20	Associated loco sound
F21	Change bell volume (use F1 to turn off bell after adjustment)
F22	Change horn volume
F23	Change prime mover volume
F24	Safety valve pop
F25	Air release
F26	Flange noise
F27	Sand release
F28	Air release

*Note- Bell, Dynamic Brake, and Rail-Wheel Clack, cannot play at the same time. If you activate the bell sound, **F1**, while either the Dynamic Brake or Rail-Wheel Clack sounds are activated, the Bell sound will override the other two sounds.

CV	Register	Description	Range	Default
CV1	R1	Short address	1-127	3
---	R6	Page number	---	---
CV29	R5	Basic configuration	---	2
CV7	R7	Manufacturer version number	---	1
CV8	R8	Manufacturer ID	---	143
CV17	---	Long address upper byte	192-231	192
CV18	---	Long address lower byte	0-255	3
CV19	---	Advanced consist address	0-127	0
CV21	---	When CV21=0, all accessory functions will follow its own address. When CV21=1, all functions will follow the consist address	---	0
CV49		odd number sound on, even sound off	1	on
CV50	---	Horn type	0-22	6
CV51	---	Horn volume	0-15	12
CV52	---	Bell type	0-6	3
CV53	---	Bell volume	0-15	12
CV54	---	Bell ring rate	0-50	3
CV55	---	Diesel rumble volume	0-15	12
CV56	---	Brake squeal volume	0-15	7
CV57	---	Dynamic brake volume	0-15	12
CV58	---	Air release volume	0-15	12
CV59	---	Air pump volume	0-15	12
CV60	---	Safety pop valve volume	0-15	12
CV61	---	Engine cooling fan volume	0-15	12
CV62	---	Coupling volume	0-15	12
CV63	---	Sand release volume	0-15	12
CV64	---	Rail wheel clack	0-15	12
CV112		Air compressor volume	0-15	12
CV113	---	Coupling fire volume	0-15	12
CV114	---	brake release volume	0-15	0
CV115	---	Auto brake squeal enable/disable	0-1	1(enable)
CV116	---	Flange volume	0-15	12
CV120	R3	Acceleration	0-32	0
CV121	R4	Deceleration	0-32	0
CV122	---	Diesel notch mode, 0=auto-notch 3>manual notch	0-3	0
CV123	---	Prime mover sound (3- types)	0-2	0
CV125	---	Factory default setting: Programming to 1 will restore all CV's to default setting	---	0

TROUBLE SHOOTING

This decoder should perform well with all DCC systems. The maximum DCC output should be less than 15 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 slowly, you should clear its momentum by reprogramming CV120 and CV121 to zero. 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 and 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 CV# 125 with value 1 to restore the decoder to factory settings. This should bring the decoder to life with address #3.**