

XL SYSTEM INC

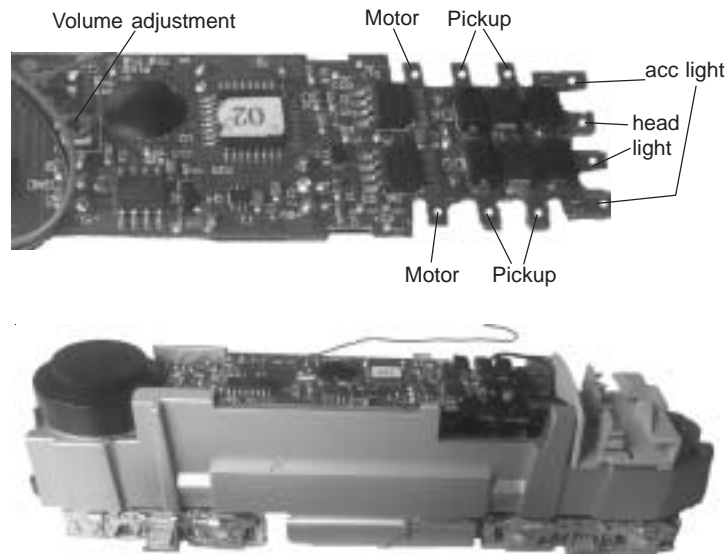
HO Drop in DC/DCC Sound Decoder for Athearn F

Item #0001821

- 1.5 amp capacity
- 11 different types of horns and 6 types of bells
- Adjustable individual sound volumes (4 levels)
- Programmable either 2-digit or 4-digit addresses
- Programmable start voltage and top voltage
- Programmable acceleration and deceleration rates
- Programmable 14, 28, 128 speed steps with Back EMF load control
- Advanced speed table control CV67-CV94
- 28 accessory functions (F1-F28)
- Compatible with NMRA DCC standards
- Complies with Part 15 of FCC Rules
- 28 mm speaker included

INSTALLATION

Take a photo of your loco original wiring and identify all the wires. Remove the original PCB. Follow the diagram to install the decoder. Hook up the front headlight to the two center tabs. Hook up the accessory light to the two edge tabs. There are four pickup tabs for the four pickup wires. Hook up the motor wires to motor tabs.



OPERATION

The factory default address is #3. The decoder has start up and shut down features. If the loco was previously shut down you have to start up the engine. Press any function key to start up the engine before operating the loco. To shut down the engine you must bring the loco to idle and then double click F8. You can use double click F0 to turn on/off sound

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 loco at speed step 1. Use program CV on the main to change CV67's value (1-255) to adjust step 1's speed. The kick voltage, CV65 is only applied when the speed step changes 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 than CV67's. When done with CV67-CV94, use read back CV to make sure their values are in increasing order.

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.

FCC COMPLIANCE

This device 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.

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 to slowly, you should clear its momentum by reprogramming CV3 and CV4 to zero. If step 1's speed is too high, you should program start voltage, CV2 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 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.

RETURN PROCEDURE

This decoder carries a 6 month warranty against factory defects. This warranty does not include abuse, misuse, neglect, improper installation. If it should become necessary to return the decoder for warranty repair / replacement, Please also include a check or a money order for \$9.00 to cover return shipping and handling. If the decoder is no longer considered under warranty, then please include a check or a money order for \$25.00 to cover the cost of repair or replacement and return shipping and handling. Before sending in the decoder please email us at linzping@gmail.com for service support. We may solve your program through email.

Send the decoder to: XL Systems Inc 14 Dora Ln Holmdel NJ 07733

FUNCTION CHARTER

Function	Idle / Moving
F0(double)	Sound on/off
F1	Bell on/off
F2	Horn
F3	Turns on/off accessory lighting
F4	Coupling
F5	Brake release (idle) / brake squeal (moving)
F6	Dynamic brake on/off
F7	uncoupling lever
F8	Air hose firing
F9	Engine cooling fan
F10	Rail wheel clack (only moving)
F11	Traction air compressor
F12	Turns on/off sound
F13	short air release
F14	Coupling crash
F15	Air pump
F16	Associated loco sound
F17	flange noise
F18	short air
F19	short air

CV CHARTER

CV	Description	Range	Default
CV1	Short address	1-127	3
CV2	Start voltage	0-32	0
CV3	Acceleration	0-32	0
CV4	Deceleration	0-32	0
CV5	Top voltage	0-32	32
CV6	Speed curve select (0=linear, 1=slow increase at slow speed, 2=fast increase at slow speed)		
0-2	0		
CV29	Basic configuration	---	2
CV7	Manufacturer version number	---	32
CV8	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	Sound on/off (0=on)	0-1	0
CV50	Horn type	0-11	4 (=11 is horn off)
CV51	Horn volume	0-3	3
CV52	Bell type	0-6	3 (=7 is bell off)
CV53	Bell volume	0-7	3
CV54	Bell ring rate	0-50	3
CV55	Diesel rumble volume	0-3	3
CV56	Brake squeal volume	0-3	3
CV57	Dynamic brake volume	0-3	3
CV58	Air release volume	0-3	3
CV59	Air pump volume	0-3	3
CV60	Safety pop valve volume	0-3	3
CV61	Engine cooling fan volume	0-3	3
CV62	Coupling volume	0-3	3
CV63	Random noise volume	0-3	3
CV64	Rail wheel clack	0-3	3
CV112	Exhaust volume	0-3	3
CV113	Coupling fire volume	0-3	3
CV114	brake release volume	0-3	0
CV115	Auto brake squeal enable/disable	0-1	1(enable)
CV116	Coupling sound type	0-2, 0=off	1
CV125	Factory default setting: Programming to 1 will restore all CV's to default setting	---	0

About US

XL Systems Inc has designed and manufactured model rail road products for MRC for more than 20 years. All MRC DCC products are made by XL Systems Inc. All our DCC products are compatible MRC DCC products. We will introduce more new products to meet customer's beget. We also provide installation and special programming and modification for customer. If you have special needs please contact to us at: linzping@gmail.com or maxiulandcc@gmail.com.