



## American Flyer AC to DC Engine Conversion November 2012

To convert the American Flyer universal open frame electric motor from AC to DC operation, you need to replace the E-Unit with a full-wave bridge rectifier. Any minimum, 4 amp, 25 volt full wave bridge rectifier, available from Radio Shack, Allied, DigiKey, Newark, Mouser, etc., will do. The E-Unit can be left in place if at any time you want to reverse the conversion.

The polarity of the armature and thus the direction of the engine will be reversed when the DC track polarity is reversed. Please refer to the below diagram. The full wave bridge rectifier has the following leads:

1. Positive (+)
2. AC (~)
3. AC (~)
4. Negative (-)

### Connections:

- Left Field to Positive Lead (+)
- Right Field to Negative (-) Lead
- Left Brush to AC (~) Lead
- Right Brush to Rear Tender Truck
- Front Tender Truck to AC (~) Lead

Connect Head Light and Smoke Unit (if equipped) Leads to Front and Rear Tender Trucks Leads

Check to see that the engine runs forward when the right (engineer's) side rail is positive and reverse when the left (fireman's) side rail is positive. If not, reverse the wire connectors from the tender to the engine. Mark the wire connectors and socket to retain polarity in any future disassembly/ reassembly.

Once converted from AC to DC do not operate the engine with AC track voltage. The engine will not run and prolonged exposure to AC voltage may permanently damage the motor.

If you have any questions call or email me:

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