KB895: Digitrax Decoders with AC motors and "Lionel" Type E Units
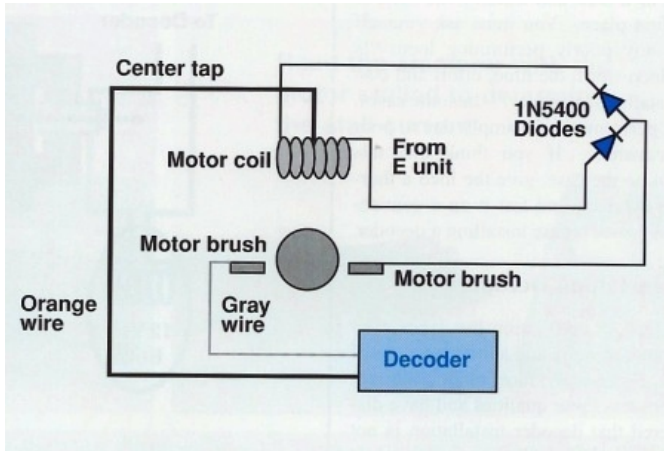
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Using Digitrax Decoders with AC Motors and Lionel Type E Units

This application note shows how Lionel users and other users of AC motors can use DCC to run their layouts.

This example shows a wiring diagram for an AC universal motor with two-wire field coil. For this type of motor you must add a bridge rectifier to control the polarity to the motor's field coil. This type of motor is found in AC locos built from the 1950s through today.

Some Lionel type AC locos have motors with three wire field coils and an E Unit. Half of the coil is used for forward motion and the other half for reverse motion. In analog operation the E unit controls which half of the field coil is used to run the motor. When using this type of motor arrangement, disconnect the E unit and connect the decoder and diodes in its place as shown in these examples.