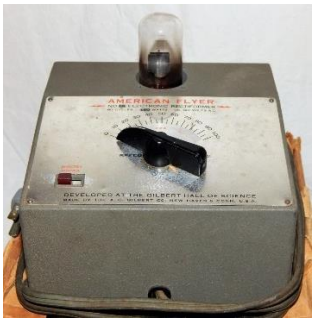
Operating DC Voltage Vintage Trains

American Flyer made locomotives with DC motors from 1947 – 1950, Marklin had a DC train line called HAMO, and most HO and smaller gauge trains were DC types. Some were offered with DC power supplies and some required an AC to DC converter known in those days as rectifiers. The rectifiers were used with standard type AC transformers.

American Flyer, Lionel, Marklin and other AC train transformers can be connected to an AC to DC converter to run DC motored locomotives. The DC rectifiers (or in Gilbert's language – Directronic Rectifiers & Rectiformers) had connections for an AC throttle voltage incoming from a standard AC transformer and output connections for DC and common wires to the track. There was a direction switch on the unit for forward or reverse train direction. DC locomotives do not require a reversing mechanism so only the electrical switch is required for reversing.

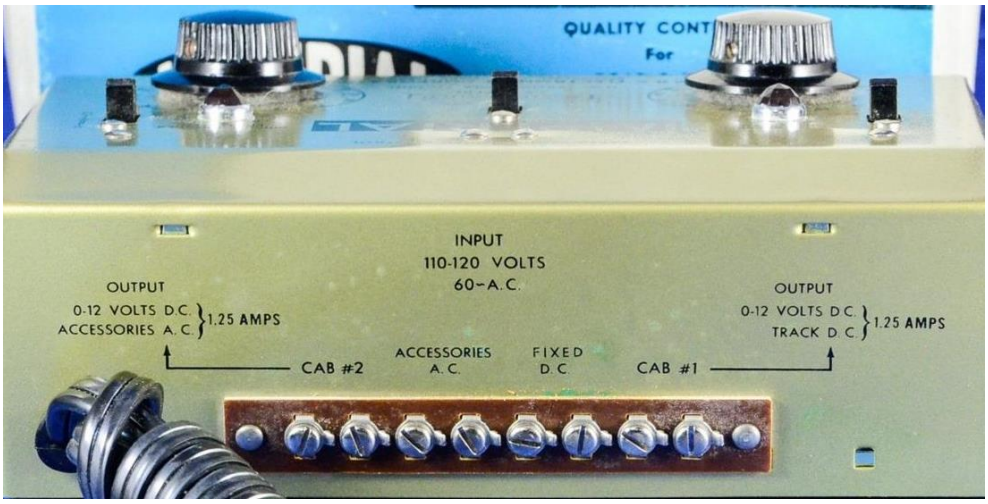
Directronic Rectifier



Rectiformer

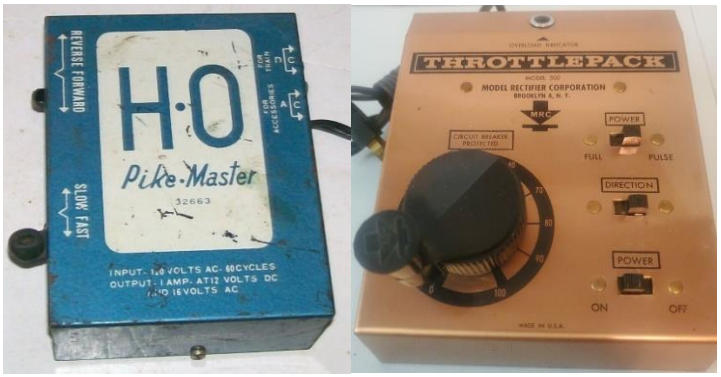
American Flyer, Lionel, Marx and others provided a complete DC power pack for operating HO trains. Internally these had a transformer, DC diode bridge and throttle with AC voltage outputs for accessories and DC voltage output for trains. They contained some type of voltage regulation and DC power filtering. Independent manufacturers offered large wattage and Amperage power packs that are compatible with the vintage HO trains.

Sizing of the DC power pack is as important as sizing of an AC transformer. The DC rectifiers above mentioned typically had a capacity of 7 Amps. The power packs typically are rated in output Amps and some do not differentiate between train and accessory loads but only total combined loads. Some have power ratings marked near the terminals.



Most HO locomotives consume .3 to 1 Amp each depending on the type and age of the locomotive's motor. Older technology HO motors from the 1930's, 40's and 50's can draw up to 2 amps each. Light bulbs vary all over the place based on their type and size. Check package labels if you can find them. There were many accessory items specially made by Gilbert and other major manufacturers. These typically have solenoids drawing about 1- 1.5 watts, and motors of 1.5 to 3 watts. They are normally AC type devices and require connection to the accessory terminals.

As electronics advanced and components were lower cost in the 1970's, added features were made to DC power packs. They had features like momentum, brakes, pulse for very low speeds etc.



DCC and digital operation is beyond the scope of this writeup.