

ABSTRACT

POWERED CARTRIDGES AND OTHER DEVICES WITHIN HOUSINGS

The present invention describes a system and method for supplying electrical power to a device, such as a filter element, located within a housing. In one embodiment, a conductive coil is embedded into the housing base, and a second coil is embedded into the filter element. Current is then passed through the coil in the housing base. Through induction, a current is created in the second coil in the filter element, in much the same way as a transformer functions. This inductive field may interfere with the operation of the various electronic functions, such as communications, sensing or other activities. To overcome this issue, an energy storage component, such as a capacitor, is included in the filter electronics. In this way, the power generated by the inductive field can be stored, and used when the inductive field is no longer present.

Figure 1