ABSTRACT OF THE DISCLOSURE

A reed relay mounting assembly in which the reed cartridge is inserted into the barrel portion of a coil-carrying bobbin, the terminals of the reed switch cartridge being interconnected with terminals mounted on the bobbin assembly. The cartridge terminals are notched to interlock with slots in the bobbin terminals when the reed switch cartridge is rotated. The bobbin is provided with a hood at each end which surrounds and protects the cartridge terminals. Slots in the bobbin end flanges receive coil wires leading from the barrel portion of the bobbin to coil terminals which are mounted outside the cartridge terminal hood.

Background of the invention

This invention relates to an improved mounting assembly for encapsulated reed switches.

Because of their ability to resist contact contamination, encapsulated reed switch relays have found wide acceptance in a variety of applications. These switches normally comprise a pair of magnetizable leaf spring wires mounted within a sealed, tubular capsule. The leaf spring arms overlap such that, when the capsule is subjected to an axial magnetic field, the leaf spring arms are pulled into contact to close a circuit path. Commonly, the reed switch capsules are mounted within the barrel portion of an insulated bobbin upon which the magnetizing coil is wound. At the ends of the encapsulated switch, the reed arms are soldered or welded to terminals which provide a convenient mode of connecting the switch to a printed circuit board or the like. One such prior art mounting arrangement for connecting reed switches to a circuit board is shown in U.S. Patent 3,238,327 which issued to J. V. Koppenstener on Mar. 1, 1966.

Summary of the invention

It is a general object of the present invention to provide secure electrical and mechanical connections between the encapsulated reed switch terminals and the associated circuit terminals within the reed relay assembly.

It is a further object of the present invention to provide an easily assembled reed relay mounting arrangement suitable for use in conjunction with printed or etched circuit boards.

It is a still further object of the invention to facilitate removal and replacement of a defective reed switch capsule.

In a principal aspect, the present invention takes the form of an improved reed switch assembly which includes an insulated bobbin including a hollow barrel portion for receiving at least one elongated, encapsulated reed switch. Outwardly projecting circuit terminals are fastened to the bobbin. In accordance with a first feature of the invention, each circuit terminal includes an elongated slot positioned to receive one terminal of a reed switch. Each reed switch capsule includes a terminal which extends axially outward from the end of the capsule. According to a second feature of the invention, the end of each switch terminal includes a constricted region flanked by a pair of enlarged regions.
3. A combination as set forth in claim 1 wherein said slot, the cross-section of said outermost enlarged region, and the cross-section of said constricted region are each rectangular and wherein the diagonal dimension of the rectangular cross-section is smaller than the narrowest dimension of said slot.

4. A combination as set forth in claim 3 including a hood affixed to the ends of said bobbin for preventing inadvertent contact with said circuit terminals.

5. A combination as set forth in claim 4 including a pair of inwardly extending lugs affixed to each of said circuit terminals and adapted to extend through and be crimped against a portion of said bobbin.

6. An improved Reed switch assembly comprising, in combination,

an elongated, insulated Reed switch bobbin having a hollow barrel portion adapted to slidably receive at least one Reed switch cartridge, said bobbin having end portions disposed at each end of said barrel portion, each of said end portions having terminal retaining recesses;

at least one elongated Reed switch cartridge slidably mounted in said barrel and having a switch terminal extending outwardly from each end of said barrel, each of said switch terminals comprising a flat planar plate section having a first and a second notch defined therein, said first and second notches being opposite one another; and

a circuit terminal associated with each of said switch terminals and having an elongated slot to slidably receive one of said switch terminals, said slot adapted to lock said switch terminal in a substantially immovable position when said Reed switch is rotated to bring said first and second notches in an interlocking relationship with said slot, said circuit terminals being retained in a substantially immovable position in said terminal retaining recesses.

7. The assembly of claim 6 including lug receiving slots defined in said end portions, and including circuit terminal lugs engaged in said lug receiving slots, said lugs being designed to hold said circuit terminals in a substantially immovable position on said end portion of said bobbin.

8. The assembly of claim 6 including coil terminals attached to said end portions and including coil wires slots defined in said end portions to receive coil wires from a coil wrapped about said barrel portion, and coil wires being attached to said coil terminals.

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