



SPECIFICATION

Electrical connector

5 This invention relates to an electrical connector for the termination of flat cables and, more particularly, to a connector having a latching arrangement for the base and cover.

10 A flat cable connector with a cable guide slot in the cover and a latching arrangement with a complementary base is produced by the applicant and shown in Berg Bulletin 131B. After a cable is placed in the guide slot, the cover is then latched to the base. During
15 shipment, handling and assembly, the exposed tines on the insulation-displacing contacts are sometimes bent or misaligned.

A pre-assembly latch for a different type of cable connector is shown in United States
20 Patent Specification No. 4,006,957.

According to the invention, there is provided an electrical connector for terminating a multi-conductor flat cable, comprising a base member with insulation-displacing contacts
25 projecting therefrom; a cover member having a guide slot therein for receiving a cable and apertures for receiving said contacts; and a latching arrangement including integral, spaced stops at each end of one member and
30 an integral latching yoke at each end of the other member, each said yoke having a cross-piece located between said stops in a pre-assembly position and beyond the stops in a latched position of the cover with respect to
35 the base, the ends of said contacts being enclosed in said apertures in the pre-assembly position and projecting through the guide slot in the latched position.

In the accompanying drawings:

40 *Figures 1, 2 and 3* are side, end and traverse section views respectively of an embodiment of a connector according to the invention in its pre-assembly position;

Figures 4 and 5 are side and end views of the assembled connector; and

Figure 6 is an end view of a second embodiment in its assembled position.

As shown in Figs. 1 to 5, a connector 10 includes a base 12 and a cover 14. The base
50 12 and cover 14 are moulded from a 30% glass-filled polyester.

Base 12 is an elongate, rectangular block with two rows of cavities 16, each of which receives the mounting channel and pin-receiving contact of a metal terminal 18. Terminals 18 also have insulation-displacing contacts 20 in the form of skewed tines that project from cavities 16 beyond the upper surface of base 12. In the lower surface of base 12, there are
60 openings to each cavity 16 for the reception of pins mounted in a pin field or a header.

At each end, base 12 has an integral latch yoke 22 including a pair of arms that extend upwardly from the base and are joined by a
65 cross-piece 24. Cross-pieces 24 are of lesser

thickness than the arms and thus leave a passage for reception of beams 26 that depend from integral lugs on the ends of cover 14.

Beams 26 have spaced stops 28, 30 between which a cross-piece 24 is located when the base and cover members are pre-assembled (Figs. 1-3). During pre-assembly, the tines on any misaligned terminals 18 engage cover 14 in lower apertures 32 and the terminals are thereby realigned. Another advantage is that, in the pre-assembly position, the ends of the tines of contacts 20 are in the lower ends of apertures 32, i.e., are enclosed in and protected by cover 14.

80 Cover 14 has a slot 34 extending through. Slot 34 is enlarged at one end for the reception of a round conductor, flat, flex cable C and is defined by upper and lower surfaces having opposed scallops 36. The
85 enlargement or lead-in to slot 34 is especially useful in the placement of wrinkled and bent cables.

With the base and cover members in the pre-assembled position, the tines on contacts
90 20 are protected by cover 14 and slot 34 is free for the reception of a cable C. Since the ends of the contact tines are within apertures 32, slot 34 provides an unrestricted guided entry for cable C. Then, the sub-assembly is
95 located in a press and cover 14 is moved toward base 12. Each contact 20 pierces the insulation of cable C and engages a conductor in the gap between its tines. Stops 30 stress cross-pieces 24 and move beyond to the fully-
100 latched position shown in Fig. 5. After the free end of cable C is bent back over the top of cover 14 and a strain relief is applied, the sub-assembly is ready for placement in a header or on a pin field.

105 In cable C shown herein, multiple insulated conductors are interconnected by webs of a plastics adhesive. Thus, both surfaces are ribbed and fit in the opposed scallops 36 in guide slot 34. Another available cable has ribs
110 on one side but is flat on the other side. Such cables are usually inserted with the ribbed side up. With the conductors in the upper scallops 36, there is no chance of displacement by the contact tines. A guide slot 34
115 with opposed scallops 36 is also advantageous in the occasional situation where a cable with one flat surface must be inverted, i.e., have its conductors in the lower scallops.

In the embodiment of Fig. 6, latching yoke
120 22' depends from the ends of cover 14'. Stops 28', 30' are on beam 26' and the beam extends upwardly from base 12'. The provision of spaced stops 30' prevents lateral movements of cover 14' when cross-piece 24'
125 is in its pre-assembly position between stops 28', 30'.

CLAIMS

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2. A connector as claimed in claim 1, wherein said guide slot has spaced parallel surfaces provided with spaced scallops.
3. A connector as claimed in claim 1 or 2, wherein said cover member has parallel beams projecting therefrom, said stops are on the beams and said yokes are integral abutments on the base member.
4. A connector as claimed in claim 1 or 2, wherein said latching yokes project from the cover member and said stops are on the base.
5. An electrical connector substantially as herein described with reference to Figs. 1 to 5 or 6 of the accompanying drawings.