

Title (en)

Current mode bus coupler with planar coils and shields

Title (de)

Bus-Ankoppler in Strombetriebsart mit flachen Spulen und Abschirmungen

Title (fr)

Coupleur de bus en mode de courant comprenant des bobines planes et des écrans

Publication

EP 0507360 B1 19960508 (EN)

Application

EP 92200239 A 19920128

Priority

US 64816191 A 19910130

Abstract (en)

[origin: EP0507360A2] A current mode bus coupler (10) for electromagnetically coupling a terminal unit, i.e., an electronic subsystem, with a data bus cable (24) comprising a twisted wire pair is disclosed. The current mode bus coupler (10) includes a planar coil (16), upper and lower slotted planar shields (20 and 22) and a ferromagnetic core (12). The planar coil 16 and planar shields (20 and 22) are formed in a sandwich (14) of alternating dielectric and conductive layers. Apertures (36, 37 and 38) are formed in the sandwich (14) for receiving the legs of the ferromagnetic core (12), and the planar coil (16) spirals around one of the apertures (37). The ferromagnetic core (12) has at least two legs, one of which is inserted into the aperture (37) around which the planar coil (16) is formed. The ferromagnetic core (12) is disengagable and disassemblable so that the core can be inserted in a loop formed by separating the conductors of the twisted wire pair data bus. The planar shields (20 and 22) which would be connected to a common ground form upper and lower layers of the sandwich (14) and shield the planar coil (16) from external electromagnetic and electrostatic fields. The upper planar shield (20) lies between the planar coil (16) and the twisted wire pair data bus in which the ferromagnetic core (12) is inserted. The apertures of the planar shields (20 and 22) are slotted (58 and 60) so that the shields, which are conductive, do not form short circuits about the legs of the ferromagnetic core (12). The sandwich (14) can include additional planar coils (18) formed about the same (or other) aperture and connected in series by conductively plated through-holes (48). <IMAGE>

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IPC 8 full level

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CPC (source: EP US)

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