

Description

The invention relates to a shielded electrical connector.

There is disclosed in US-A-4 449 778 a shielded electrical connector assembly of the type having a forward mating portion and a rear cable connecting portion, the assembly comprising a terminal housing, upper and lower ground shields, and upper and lower insulative cover parts. The lower ground shield has a base panel with a pair of sidewalls and a rearward upstanding therefrom and a forward contact portion extending away from said rearwall. The lower cover part has a base panel with a pair of sidewalls and a rearwall upstanding therefrom, the panel, sidewalls, and rearwall of said lower shield fitting against the panel, sidewalls, and rearwall of said lower cover when said connector is assembled. The forward contact portion fits against the housing, the housing having a terminal support platform flanked by a pair of upstanding sidewalls bridged by a hood toward the forward end thereof, the upper shield having forward contact portions which fit against the hood facing the platform, the forward contact portions of the upper shield engaging the forward contact portions of the lower shield when the connector is mated with a like connector. The lower ground shield and lower cover part of the known connector each have a panel with a wall upstanding therefrom, the walls each having a cable receiving opening therein which opens away from the respective panels, the openings being aligned for reception of a cable when the lower ground shield is assembled inside the lower cover part.

The known connector, however, does not have continuous shielding along the sides thereof when mated with another connector. Grounding currents in the cable shield connected to one connector pass only through forward contact portions of the upper and lower shields. It has been discovered that mere proximity of shields in complementary mated connectors does not provide effective interference shielding, especially when high signal frequencies (on the order of 400 MHz) are involved.

According to the invention, therefore, a shielded electrical connector as described above is characterized in that the lower shield has a pair of wings extending forward from respective sidewalls thereof, the wings being assembled between respective sidewalls of the housing to lie between the terminal support platform and the hood. Each wing has a flange lying against the respective housing sidewall and a resilient tongue which extends beyond said sidewall for engaging the flange on the wing in a complementary connector. The shielding is thus electrically continuous around the junction when the connectors are mated, leaving no "holes" which could cause interference.

The inventive connector is also designed for economy of manufacture; coring of molded parts is accomplished in two orthogonal directions so that multicavity molds are possible.

The connector also offers ease of assembly. The lower shield is emplaced by moving into the rear of the housing and the lower cover part is then likewise emplaced by movement toward the rear until it latchably engages the housing to hold the lower shield in place.

Furthermore, the cable receiving opening in the upstanding wall of the lower shield is flanked by a pair of integrally formed flanges which fit substantially flushly into the cable receiving opening in the upstanding wall of the lower cover part. The lower cover part has a pair of parallel flanges flanking the opening therein on the outside surface of the upstanding wall thereof, the flanges being collectively profiled as a dovetail. The assembly further comprises an inserter member having an aperture therethrough, the aperture opening in the dovetail slot on a mating face of the inserter member, the dovetail slot being profiled to engage the dovetail flanges on the outer wall of the lower cover part by movement of the inserter member perpendicularly toward the plane of the panel of the lower cover part. The assembly further comprises a metal contact ferrule profiled to fit between the individual conductors and the shield of a cable. Upon assembling the lower ground shield to the lower cover part, assembling the cable through the inserter member, stripping the outer insulation from the end protruding from the mating face to expose the cable, and inserting the ferrule between the individual conductors and the exposed cable shield, the exposed cable shield can be forced between the flanges of the lower shield when the dovetail slot in the inserter is mated with the dovetail flanges on the lower cover part.

The inventive connector provides the advantage of assured contact integrity between the lower shield and the cable shield, which upon mating with a complementary connector assures continuity of ground between shields of respective cables.

These and additional advantages will be readily understood by referring to the description and figures which follow.

Figure 1 is an exploded perspective of the housing terminals, lower shield, and shunt assembly.

Figure 2 is a perspective of the lower cover exploded from the assembled housing and lower shield.

Figure 3 is a perspective of the upper cover, upper housing, lower shield, and lower cover.

Figure 4 is an exploded perspective of the shunt assembly and a sectioned portion of the housing.

Figure 5 is a perspective of the assembled connector.

Figure 6A is a plan view of the assembled

cable, inserter, and strain relief ferrule before assembling the contact ferrule and clamp.

Figure 6B is a plan view of the contact ferrule and clamp assembled to the cable.

Figure 7A is a plan view of the assembled connector.

Figure 7B is a side view of the assembled connector.

Figure 7C is a mating end view of the assembled connector without the top cover.

Figure 8 is a plan view of an alternative inserter as assembled to the cable and lower cover.

Figure 9A to 9D are views of the alternative inserter halves.

Figure 1 shows a terminal housing 10 with which the assembly sequence begins. The housing 10 has a terminal support platform 13 extending from a front end 11 to a rear end 12 where terminals 2 are received. Each terminal 2 has a wire barrel 4, a mating tongue 6, and a base portion 7 extending therebetween; the base portion 7 is received in the respective channel 17 in the platform 13. The platform is flanked by sidewalls 18 upstanding therefrom, which sidewalls have rearward facing shoulders 19 on respective inside faces thereof and shielding channels 21 extending forward from the shoulders 19. Partitions 24 flank the inside faces of the sidewalls 18 forward of shoulders 19 and define slots 25 below channels 21. A hood 28 bridges the sidewalls 18 at this end. Shunt assembly 30 is shown poised for reception between shoulders 19 and a post 23 upstanding from the platform 13 between the two central channels 17.

Lower shield 40 comprises a base panel 41 from which integrally formed forward contact portion 42 extends and sidewalls 43 upstand. Rearwall portions 44 are formed from respective sidewalls 43 to flank base panel 41 and define a cable receiving opening 55 therebetween. Each rearwall portion 44 is formed with a flange 45 flanking opening 55, each flange 45 being formed with detents 46. A resilient tongue 47 extends from the panel 41 into opening 55. Forward wings 48 are formed from respective sidewalls 43 at respective first bends 49 which define rearward facing shoulders on opposed surfaces thereof. The wings 48 are also formed with second bends 50 defining forward facing shoulders on opposed surfaces thereof. A mating flange 51 and a resilient tongue 53 extend forwardly from each shoulder 50; the flange 51 has an outwardly curled lip 52 for mating with the tongue of a like connector.

Figure 2 shows the lower shield 40 assembled to housing 10; forward wings 48 are flush against inside surfaces of sidewalls 18 in the housing and forward facing shoulders 50 on the shield abut rearward facing shoulders 19 on the housing. Tongues 53 lie in slots 25 with the flange 51 offset thereabove. The channel 21 (Figure 1) allows passage of lip 52 therethrough during assembly. The shunt assembly 30 is latchably emplaced after the shield 40 is assembled to housing 10.

The lower cover 60 comprises a base panel 61 having integrally molded sidewalls 63 and rearwalls 68 upstanding therefrom. A latch 62 upstanding from the center of base 61 serves to retain the cover 60 with housing 10 (Figure 7B). Sidewalls 63 have respective horizontal mating ribs 64 extending forwardly therefrom for mating with housing 10 (Figure 7C) and vertical mating ribs 65 for reception between rear face 12 of housing 10 and shoulder 49 of lower shield 40. The rearwalls 68 define a cable opening 69 therebetween and have respective flanges 71 extending from outside surfaces 70 and flanking opening 69. The flanges 72 taken together are profiled as a dovetail intersected by opening 69. Notches 74 are formed at the interstice of each sidewall/rearwall pair, the notches 74 each having a shoulder 75 therein for retention of the upper cover 110 (Figure 3). The latch arm 78 is molded with a T-member 79 for mating with a complementary connector.

Figure 3 depicts the lower cover 60 assembled to the lower shield 40 and housing 10. The flanges 45 fit flushly against flanges 71 on rearwalls 68. The inserter assembly, shown in greater detail in Figures 6A and 6B, comprises cable 80, inserter member 87, and stuffer 97. The inserter member 87 comprises a rearward gripping portion 88 and a mating flange 89 which is profiled with a dovetail slot 90 for receiving the dovetail ridges 72 on the lower cover 60. A contact ferrule 94 is fit between individual insulated conductors 81 and braided shield 82 to insure good grounding contact between flanges 45 and the braid 82; detents 46 serve to retain ferrule 94.

An upper shield 100 comprise a base panel 101, forward contact tongues 102, and resilient side members 103 which are received against inside faces of respective sidewalls 43 on lower shield 40. Resilient tongue 104, like tongue 47 below, serves to contact braid 82. Upper cover 110 comprises a panel portion 112, lock arms 114, and a latch arm 117 having a T-slot 118 for retention with a complementary connector. Aligning posts 116 are received in channels 66; the rounded surfaces of posts 116 serve to cam the cover 110 forward to fit snugly against hood 28. The upper shield 100 is assembled to upper cover 110 by staking plastic studs in through holes 105 and assembled to lower cover 60 and housing 10 after inserter 87 and stuffer 97 are applied thereto by latching arms 114 with shoulders 75 in notches 74.

Figure 4 shows the exploded components of shunt assembly 30, which comprises a dielectric carrier 31, shunt members 36, 38 for bridging alternative terminals, and a dielectric spacer 35 therebetween. The carrier 31 has staking pegs 32 for fixing members 36, 38 thereto and channels 33 which permit flexure of the shunt contacts 37, 39. Latches 34 cooperate with apertures 20 in sidewalls 18 of housing 10 to retain the assembly 30 (Figure 1) which is positioned between shoulders 19 and post 23. Note slot 16 in platform 13, which slot receives the forward contact por-

ons 42 of lower shield 40 (Figure 1).

The assembled connector is shown in Figure 5; like the connector disclosed in US-A-4 449 778, it is an hermaphroditic connector designed to mate with a like connector inverted so that T-bars 79 mate with T-slots 118. Further, the connector of the present invention is designed to mate with a connector of the type disclosed in US-A-4 449 778; the resilient tongues 53, which mate with respective flanges 51 in a like connector, do not preclude mating with the prior art connector.

Figure 6A shows the inserter member having cable 80 fed through axial aperture 92 therein and emerging from mating flange 89. The insulation 83 is stripped to expose braid 82 and a strain relief ferrule 84 is crimped to the insulation 83 adjacent the exposed braid. Flange 85 on ferrule 84 is profiled to nest in countersink 93 in mating flange 89, as shown in Figure 6B, thus preventing strain on the conductor terminations when axial force is applied on cable 80. Referring again to Figure 6A, the contact ferrule 95 is shown loosely fit on exposed conductors 81. This is subsequently fit concentrically within braid 82, the clamp 96 is applied, and the braid trimmed as shown in Figure 6B.

Figure 7A is a plan view of the assembled connector with the upper cover removed. The stuffer 97 has been used to force the individual insulated conductors 81 into the wire barrels 4 of the terminal 2 in conventional fashion. The dovetail slot 91 on mating flange 89 of inserter member 87 is engaged with dovetail flanges 72, offering a major advantage of the inventive connector, to wit, compressive force is maintained on the contact ferrule 94 within braid 82. This assures that the electrical contact between the braid 82 and lower ground shield 40 will be maintained, while contact forces tend to relax in known prior art arrangements.

Figure 7B is a partial side section view of the assembled connector. This view details the cooperation between housing 10, lower shield 40, and lower cover part 60. The housing 10 has a terminal support platform 13 with a forward extension 15 and an opposed bottom recess 14. A shield slot 16 extends through the housing 10 and receives forward contact portions 42 of lower shield 40 therethrough to lie below extension 15. The contact portions 42 so emplaced provide mating surfaces for contact tongues 102 of an upper shield 100 in a complementary connector. The lower cover part 60 protects the base panel 41 of lower shield 40 and is held in place by cooperation of latch 62 in recess 14.

Figure 7C is an end view showing the cooperation between ribs 64 on lower cover 60 and channels 22 in housing 10 which serves to support the two parts in mated condition. The forward wings 48 of lower shield 40 are shown emplaced against sidewalls 18 with the tongues 53 in respective slots 25 and extending therebeyond (Figure 2) for mating against the flange 51 of a like shield in a complementary connector. The

lip 52 is formed outward to permit mating without interference.

Figure 8 depicts an alternative inserter 120 which provides for terminating the cable 80 at 45 degrees to the lower cover part 60. The inserter 120 comprises a threaded portion 124 which receives an internally threaded compression cap 134 and a mating portion 125 having a dovetail slot 126 which mates with flanges 72 as previously described. This inserter 120 can be inverted to permit termination of cable 80 at a second orientation 45 degrees to the lower cover part. Cable clamping to provide strain relief for termination of conductors 81 is provided by applying compression nut to threaded portion 124.

Referring to Figures 9A and 9D, the alternative inserter 120 is conveniently molded in two halves 121 connected by a hinge 122. Each half 121 has a cable receiving bore portion 128 which in cooperation with the other bore portion forms a passage through the assembled inserter 120. Each bore portion is profiled with flanges 130, 131, ridges 132, and a spike 133 for progressively bearing on the outer jacket of cable 80 as nut 134 (Figure 8) is threaded into position. This arrangement eliminates the need for a strain relief ferrule 84 as previously described.

Claims

1. A shielded electrical connector assembly of the type having a forward mating portion and a rear cable connecting portion, being matable with a like corresponding cable assembly and comprising a terminal housing (10), upper (100) and lower (40) ground shields, and upper (110) and lower (60) insulative cover parts, said lower ground shield (40), having sidewalls (43), and fitting against said lower cover part (60) when said connector is assembled, said lower cover part (60) and lower ground shield (40), each having cable receiving openings (69, 55) therein, the housing (10) having a terminal support platform (13) and a hood (28) toward the forward end thereof, the upper (100) and lower (60) shields having forward contact portions (102, 42) an upper shield forward contact portion (102) on the one connector assembly engaging a lower shield contact portion (42) on a like corresponding connector assembly when two like connector assemblies are mated, characterized in that:

said lower shield (40) has a pair of forwardly extending wings (48), said wings (48) being assembled to said housing (10) to lie between said terminal support platform (13) and said hood (28) each wing (48) having a flange (51) and a resilient tongue (53) extending beyond the flange (51) for engaging the flange (51) on a like corresponding connector;

the lower shield (40) having a pair of integrally formed flanges (45) flanking the cable receiving opening (55) therein and received in the lower cover part cable receiving opening (69), the lower cover part (60) having an upstanding wall (68),



ons 42 of lower shield 40 (Figure 1).

The assembled connector is shown in Figure 5; like the connector disclosed in US-A-4 449 778, it is an hermaphroditic connector designed to mate with a like connector inverted so that T-bars 79 mate with T-slots 118. Further, the connector of the present invention is designed to mate with a connector of the type disclosed in US-A-4 449 778; the resilient tongues 53, which mate with respective flanges 51 in a like connector, do not preclude mating with the prior art connector.

Figure 6A shows the inserter member having cable 80 fed through axial aperture 92 therein and emerging from mating flange 89. The insulation 83 is stripped to expose braid 82 and a strain relief ferrule 84 is crimped to the insulation 83 adjacent the exposed braid. Flange 85 on ferrule 84 is profiled to nest in countersink 93 in mating flange 89, as shown in Figure 6B, thus preventing strain on the conductor terminations when axial force is applied on cable 80. Referring again to Figure 6A, the contact ferrule 95 is shown loosely fit on exposed conductors 81. This is subsequently fit concentrically within braid 82, the clamp 96 is applied, and the braid trimmed as shown in Figure 6B.

Figure 7A is a plan view of the assembled connector with the upper cover removed. The stuffer 97 has been used to force the individual insulated conductors 81 into the wire barrels 4 of the terminal 2 in conventional fashion. The dovetail slot 91 on mating flange 89 of inserter member 87 is engaged with dovetail flanges 72, offering a major advantage of the inventive connector, to wit, compressive force is maintained on the contact ferrule 94 within braid 82. This assures that the electrical contact between the braid 82 and lower ground shield 40 will be maintained, while contact forces tend to relax in known prior art arrangements.

Figure 7B is a partial side section view of the assembled connector. This view details the cooperation between housing 10, lower shield 40, and lower cover part 60. The housing 10 has a terminal support platform 13 with a forward extension 15 and an opposed bottom recess 14. A shield slot 16 extends through the housing 10 and receives forward contact portions 42 of lower shield 40 therethrough to lie below extension 15. The contact portions 42 so emplaced provide mating surfaces for contact tongues 102 of an upper shield 100 in a complementary connector. The lower cover part 60 protects the base panel 41 of lower shield 40 and is held in place by cooperation of latch 62 in recess 14.

Figure 7C is an end view showing the cooperation between ribs 64 on lower cover 60 and channels 22 in housing 10 which serves to support the two parts in mated condition. The forward wings 48 of lower shield 40 are shown emplaced against sidewalls 18 with the tongues 53 in respective slots 25 and extending therebeyond (Figure 2) for mating against the flange 51 of a like shield in a complementary connector. The

lip 52 is formed outward to permit mating without interference.

Figure 8 depicts an alternative inserter 120 which provides for terminating the cable 80 at 45 degrees to the lower cover part 60. The inserter 120 comprises a threaded portion 124 which receives an internally threaded compression cap d134 and a mating portion 125 having a dovetail slot 126 which mates with flanges 72 as previously described. This inserter 120 can be inverted to permit termination of cable 80 at a second orientation 45 degrees to the lower cover part. Cable clamping to provide strain relief for termination of conductors 81 is provided by applying compression nut to threaded portion 124.

Referring to Figures 9A and 9D, the alternative inserter 120 is conveniently molded in two halves 121 connected by a hinge 122. Each half 121 has a cable receiving bore portion 128 which in cooperation with the other bore portion forms a passage through the assembled inserter 120. Each bore portion is profiled with flanges 130, 131, ridges 132, and a spike 133 for progressively bearing on the outer jacket of cable 80 as nut 134 (Figure 8) is threaded into position. This arrangement eliminates the need for a strain relief ferrule 84 as previously described.

Claims

1. A shielded electrical connector assembly of the type having a forward mating portion and a rear cable connecting portion, being matable with a like corresponding cable assembly and comprising a terminal housing (10), upper (100) and lower (40) ground shields, and upper (110) and lower (60) insulative cover parts, said lower ground shield (40), having sidewalls (43), and fitting against said lower cover part (60) when said connector is assembled, said lower cover part (60) and lower ground shield (40), each having cable receiving openings (69, 55) therein, the housing (10) having a terminal support platform (13) and a hood (28) toward the forward end thereof, the upper (100) and lower (60) shields having forward contact portions (102, 42) an upper shield forward contact portion (102) on the one connector assembly engaging a lower shield contact portion (42) on a like corresponding connector assembly when two like connector assemblies are mated, characterized in that:

said lower shield (40) has a pair of forwardly extending wings (48), said wings (48) being assembled to said housing (10) to lie between said terminal support platform (13) and said hood (28) each wing (48) having a flange (51) and a resilient tongue (53) extending beyond the flange (51) for engaging the flange (51) on a like corresponding connector;

the lower shield (40) having a pair of integrally formed flanges (45) flanking the cable receiving opening (55) therein and received in the lower cover part cable receiving opening (69), the lower cover part (60) having an upstanding wall (68),



filed as a dovetail (72), through which the cable receiving opening (69) extends, said cable assembly further comprising an inserter member (87) receiving a shielded cable (80) extending through a metal contact ferrule (94) therein, and having a dovetail slot (90) to engage the lower cover part dovetail profile (72), the cable shielding (82) being thereby held in engagement with the lower shield integrally formed flanges (45) in the cable receiving opening (55) by interengagement of the dovetail profile (72) and slot (91).

2. A connector assembly as in claim 1 characterized in that said housing (10) has a planar slot (16) therethrough paralleling said terminal support platform (13) for receiving said forward contact portions (42) of said lower shield (40) therethrough, said forward contact portions (42) lying against a forward extension of said housing (10) opposite said platform (13).

3. A connector assembly as in claim 1 characterized in that said flanges (51) on said wings (48) have outwardly turned lips (52) which lie against the ends of respective housing sidewalls (43) to facilitate mating with complementary tongues (53).

4. A connector assembly as in claim 1 characterized in that said housing (10) has a pair of partitions (24) upstanding from said terminal support platform (13), said platform (13) and partitions (24) extending beyond the adjacent sidewalls (43), said resilient tongues (53) lying against said partitions (24) and extending beyond said sidewalls (43).

5. A connector assembly as in claim 1 characterized in that said housing (10) and lower cover member (60) are molded with cooperating rib (64) and channel (22) means to permit sliding assembly of said cover (60) to said housing (10) from the rear thereof, and cooperating latching means (62, 14), said lower shield (40) being retained in the connector by engaging said lower cover part (60) to said housing (10).

6. The connector assembly of claim 1 characterized in that said cable assembly further comprises a strain relief ferrule (84) which is crimped to the outer insulation (83) after assembling the cable through the aperture (92) in the inserter (87), the strain relief ferrule (84) having a flange (85) which is located toward the end of the outer insulation, the flange (85) being profiled to prevent pulling the strain relief ferrule (84) through the aperture (92), whereby axial forces on the cable will be transmitted through the inserter member (87) to the lower cover part (60).

7. The connector assembly of claim 6 characterized in that the aperture (92) is countersunk to receive the flange (85) on the strain relief ferrule (84) therein.

8. The connector assembly of claim 1 characterized in that the flanges (45) on the lower shield member (40) are each formed with a pair of resilient detents (46) formed into the opening (55) and directly opposing the detents of the opposite flange, the detents (46) serving to position the contact ferrule (94) therebetween.

9. The connector assembly of claim 1 characterized by an axial aperture (92) through the inserter member (87) being profiled to bend the cable, the dovetail slot (90) in the mating face being profiled to mate with the dovetail flanges (71) on the lower cover part (60) in two orientations whereby the cable may approach the connector assembly in either of two directions.

Patentansprüche

1. Abgeschirmte elektrische Verbinderanordnung des Typs mit einem vorderen Verbindungsbereich und einem hinteren Kabelanschließbereich, die mit einer gleichartigen, entsprechenden Kabelanordnung verbindbar ist und ein Anschlußgehäuse (10), eine obere (100) und eine untere (40) Erdungsabschirmung sowie ein oberes (110) und ein unteres (60) isolierendes Abdeckungsteil umfaßt, wobei die untere Erdungsabschirmung (40) Seitenwände (43) aufweist und bei zusammengebautem Verbinder gegen das untere Abdeckungsteil (60) gepaßt ist, wobei das untere Abdeckungsteil (60) und die untere Erdungsabschirmung (40) jeweils mit einer Kabelaufnahmeöffnung (69, 55) ausgebildet sind, wobei das Gehäuse (10) eine Abschlußtrageplattform (13) sowie eine haubenartige Abdeckung (28) zu ihrem vorderen Ende hin aufweist, wobei die obere (100) und die untere (60) Abschirmung vordere Kontaktbereiche (102, 42) aufweisen, und wobei ein vorderer Kontaktbereich (102) der oberen Abschirmung an der einen Verbinderanordnung mit einem Kontaktbereich (42) der unteren Abschirmung an einer gleichartigen, entsprechenden Verbinderanordnung angreift, wenn zwei gleichartige Verbinderanordnungen miteinander verbunden werden, dadurch gekennzeichnet, daß die untere Abschirmung (40) ein Paar sich nach vorne erstreckender Flügel (48) aufweist, wobei die Flügel (48) derart an dem Gehäuse (10) montiert sind, daß sie zwischen der Anschlußtrageplattform (13) und der haubenartigen Abdeckung (28) liegen, und wobei jeder Flügel (48) einen Flansch (51) sowie eine sich über den Flansch (51) hinauserstreckende federnd nachgiebige Zunge (53) zum Angreifen an dem Flansch (51) eines gleichartigen komplementären Verbinders aufweist; und daß die untere Abschirmung (40) ein Paar einstückig mit ihr ausgebildeter Flansche (45) aufweist, die die darin ausgebildete Kabelaufnahmeöffnung (55) flankieren und in der Kabelaufnahmeöffnung (69) des unteren Abdeckungsteils (60) aufgenommen sind, wobei das untere Abdeckungsteil (60) eine hochstehende und mit einem Schwalbenschwanzprofil (72) versehene Wand (68) aufweist, durch die sich die Kabelaufnahmeöffnung (69) hindurcherstreckt, wobei die Kabelanordnung außerdem ein Einsetzglied (87) umfaßt, das ein sich durch eine Metallkontaktzwinge (94) in dem Einsetzglied erstreckendes abgeschirmtes Kabel (80) aufnimmt und einen Schwalbenschwanzschlitz (90) zum in Eingriff Treten mit dem Schwalbenschwanzprofil (72) des unteren Abdeckungsteils



auflast, wodurch die Kabelabschirmung (82) dadurch durch den gegenseitigen Eingriff zwischen dem Schwalbenschwanzprofil (72) und dem Schwalbenschwanzschlitz (91) mit den einstückig mit der unteren Abschirmung ausgebildeten Flanschen (45) in der Kabelaufnahmeöffnung (55) in Eingriff gehalten ist.

2. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß das Gehäuse (10) einen sich durch dieses hindurcherstreckenden planaren Schlitz (16) aufweist, der parallel zu der Anschlußtrageplattform (13) verläuft und die vorderen Kontaktbereiche (42) der unteren Abschirmung (40) in sich durch den Schlitz hindurcherstreckender Weise aufnimmt, wobei die vorderen Kontaktbereiche (42) an einem vorderen Fortsatz des Gehäuses (10) gegenüber der Plattform (13) anliegen.

3. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß die Flansche (51) an den Flügeln (48) nach außen gekrümmte Lippen (52) aufweisen, die zur Erleichterung einer Verbindung mit komplementären Zungen (53) an den Enden der jeweiligen Gehäuseseitenwände (43) anliegen.

4. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß das Gehäuse (10) ein Paar von der Anschlußtrageplattform (13) hochstehender Trennwände (24) aufweist, wobei sich die Plattform (13) und die Trennwände (24) über die benachbarten Seitenwände (43) hinauserstrecken und die federnd nachgiebigen Zungen (53) an den Trennwänden (24) anliegen und sich über die Seitenwände (43) hinauserstrecken.

5. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß das Gehäuse (10) und das untere Abdeckungsteil (60) eine daran angeformte Zusammenwirkungseinrichtung aus einer Rippeneinrichtung (64) und einer Kanaleinrichtung (22), die eine durch Aufschieben erfolgende Montage der Abdeckung (60) an dem Gehäuse (10) von dessen Rückseite her ermöglicht, und eine Zusammenwirkungs-Verriegelungseinrichtung (62, 14) aufweisen, wobei die untere Abschirmung (40) durch in Eingriff Bringen des unteren Abdeckungsteils (60) mit dem Gehäuse (10) in dem Verbinder festgehalten ist.

6. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß die Kabelanordnung außerdem eine Zugentlastungszwinge (84) umfaßt, die nach den Anbringung des Kabels durch die Öffnung (92) in dem Einsetzglied (87) hindurch auf die äußere Isolierung (83) gecrimpt wird, wobei die Zugentlastungszwinge (84) einen zum Ende der äußeren Isolierung hin angeordneten Flansch (85) aufweist und wobei der Flansch (85) ein derartiges Profil aufweist, daß ein Hindurchziehen der Zugentlastungszwinge (84) durch die Öffnung (92) hindurch verhindert ist, wodurch auf das Kabel wirkende axiale Kräfte durch das Einsetzglied (87) auf das untere Abdeckungsteil (60) übertragen werden.

7. Verbindieranordnung nach Anspruch 6, dadurch gekennzeichnet, daß die Öffnung (92) zur darin erfolgenden Aufnahme des Flansches

(85) an der Zugentlastungszwinge (84) angesenkt ist.

8. Verbindieranordnung nach Anspruch 1, dadurch gekennzeichnet, daß die Flansche (45) an dem unteren Abschirmungsglied (40) jeweils mit einem Paar federnd nachgiebiger Festhaltglieder (46) ausgebildet sind, die in die Öffnung (55) hineingeformt sind und den Festhaltgliedern des gegenüberliegenden Flansches direkt gegenüberliegen, wobei die Festhaltglieder (46) zum dazwischen Positionieren der Kontaktzwinge (94) dienen.

9. Verbindieranordnung nach Anspruch 1, gekennzeichnet durch eine axiale Öffnung (92) durch das Einsetzglied (87), die ein zum Biegen des Kabels ausgelegtes Profil aufweist, wobei der Schwalbenschwanzschlitz (90) in der Verbindungsseite ein Profil aufweist, das für eine Verbindung mit den Schwalbenschwanzflanschen (71) an dem unteren Abdeckungsteil (60) in zwei Ausrichtungen ausgelegt ist, wodurch sich das Kabel der Verbindieranordnung in zwei verschiedenen Richtungen nähern kann.

Revendications

1. Ensemble à connecteur électrique blindé du type comportant une partie avant d'accouplement et une partie arrière de connexion d'un câble, pouvant s'accoupler avec un ensemble à câble correspondant et identique et comprenant un bâti (10) de bornes, des blindages supérieur (100) et inférieur (40) de mise à la masse et des parties isolantes supérieure (110) et inférieure (60) de boîtier, ledit blindage inférieur (40) de mise à la masse comportant des parois latérales (43) et s'ajustant contre ladite partie inférieure (60) de boîtier lorsque ledit connecteur est assemblé, ladite partie inférieure (60) de boîtier et ledit blindage inférieur (40) de mise à la masse présentant chacun des ouvertures (69, 55) de réception de câble, le bâti (10) comportant un plateau (13) de support de bornes et une coiffe (28) vers son extrémité avant, les blindages supérieur (100) et inférieur (60) ayant des parties avant de contact (102, 42), une partie avant de contact (102) du blindage supérieur située sur le premier ensemble à connecteur s'enclenchant avec une partie de contact (42) du blindage inférieur sur un ensemble à connecteur correspondant et identique lorsque deux ensembles à connecteurs identiques sont accouplés, caractérisé en ce que:

ledit blindage inférieur (40) comporte deux ailes (48) s'étendant vers l'avant, lesdites ailes (48) étant montées sur ledit bâti (10) de façon à s'étendre entre ledit plateau (13) de support de bornes et ladite coiffe (28), chaque aile (48) comportant une joue (51) et une languette élastique (53) s'étendant au-delà de la joue (51) pour s'enclencher avec la joue (51) d'un connecteur correspondant identique;

le blindage inférieur (40) étant réalisé d'une seule pièce avec deux joues (45) bordant l'ouverture (55) de réception de câble de ce blindage et



Joues dans l'ouverture (69) de réception de câble de la partie inférieure de boîtier, la partie inférieure (60) de boîtier comportant une paroi montante (68), ayant un profil en queue d'aronde (72), à travers laquelle s'étend l'ouverture (69) de réception de câble, ledit ensemble de câble comprenant en outre un élément d'insertion (87) recevant un câble blindé (80) qui passe dans une virole (94) de contact en métal, située dans cet élément d'insertion, et présentant une rainure (90) en queue d'aronde pour s'enclencher avec le profil (72) en queue d'aronde de la partie inférieure de boîtier, le blindage (82) du câble étant ainsi maintenu en prise avec les joues (45) réalisées d'une seule pièce avec le blindage inférieur, dans l'ouverture (55) de réception de câble, par l'enclenchement mutuel du profil (72) et de la rainure (91) en queue d'aronde.

2. Ensemble à connecteur selon la revendication 1, caractérisé en ce que ledit bâti (10) est traversé par une fente plane (16) parallèle audit plateau (13) de support de bornes afin de recevoir à travers elle lesdites parties avant (42) de contact dudit blindage inférieur (40), lesdites parties avant (42) de contact s'étendant contre un prolongement avant dudit bâti (10), opposé audit plateau (13).

3. Ensemble à connecteur selon la revendication 1, caractérisé en ce que lesdites joues (51) situées sur lesdites ailes (48) comportent des lèvres (52) tournées vers l'extérieur, qui s'étendent contre les extrémités des parois latérales respectives (43) du bâti et pour faciliter l'accouplement avec des languettes complémentaires (53).

4. Ensemble à connecteur selon la revendication 1, caractérisé en ce que ledit bâti (10) comporte deux cloisons (24) s'élevant dudit plateau (13) de support de bornes, ledit plateau (13) et les cloisons (24) s'étendant au-delà des parois latérales adjacentes (43), lesdites languettes élastiques (53) étant appliquées contre lesdites cloisons (24) et s'étendant au-delà desdites parois latérales (43).

5. Ensemble à connecteur selon la revendication 1, caractérisé en ce que ledit bâti (10) et ledit

élément inférieur (60) de boîtier sont moulés de façon à comporter des moyens coopérants à nervure (64) et rainures (22) pour permettre un assemblage par glissement dudit boîtier (60) sur ledit bâti (10) à partir de l'arrière de celui-ci, et des moyens coopérants (62, 14) de verrouillage, ledit blindage inférieur (40) étant retenu dans le connecteur par enclenchement de ladite partie inférieure de boîtier (60) avec ledit bâti (10).

6. Ensemble à connecteur selon la revendication 1, caractérisé en ce que ledit ensemble à câble comprend en outre une virole (84) de soulagement de contraintes qui est sertie sur l'isolant extérieur (83) après le montage du câble à travers l'ouverture (92) dans l'élément d'insertion (87), la virole (84) de soulagement de contraintes comportant une collerette (85) qui est située vers l'extrémité de l'isolant extérieur, la collerette (85) étant profilée de façon à empêcher la virole (84) de soulagement de contraintes d'être tirée à travers l'ouverture (92), afin que des forces axiales exercées sur le câble soient transmises par l'intermédiaire de l'élément d'insertion (87) à la partie inférieure de boîtier (60).

7. Ensemble à connecteur selon la revendication 6, caractérisé en ce que l'ouverture (92) est fraisée de façon à recevoir la collerette (85) située sur la virole (84) de soulagement de contraintes.

8. Ensemble à connecteur selon la revendication 1, caractérisé en ce que les joues (45) situées sur l'élément de blindage inférieur (40) comportent chacune deux organes élastiques (46) d'arrêt formés dans l'ouverture (55) et directement opposés aux organes d'arrêt de la joue opposée, les organes d'arrêt (46) servant à positionner entre eux la virole (94) du contact.

9. Ensemble à connecteur selon la revendication 1, caractérisé par le fait que l'élément d'insertion (87) est traversé par une ouverture axiale (92) profilée de façon à plier le câble, la rainure (90) en queue d'aronde située dans la face d'accouplement étant profilée de façon à s'accoupler avec les joues (71) en queue d'aronde situées sur la partie inférieure de boîtier (60), dans deux orientations afin que le câble puisse aborder l'ensemble à connecteur dans l'une de deux directions.

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