

Description

This invention relates to electrical conductor terminating arrangements which are especially, but not exclusively, applicable to the termination of electrical conductors in electrical connectors of the coaxial type.

The invention is especially directed to an improved conductor terminating arrangement in a coaxial connector of the kind facilitating the ready and effective connection of the usual central conductor of an incoming coaxial cable to contact means (e.g. pin contact) of the connector without the need for crimping and/or other tools.

A coaxial connector is known from USA Patent Specification Number 3761870 in which the central conductor is secured to a clamping member by the action of an axial force which is exerted upon assembly of the connector by means of a nut which is threadably connected to the connector body. The nut causes a clamping member to be axially displaced which clamping member has a bevelled end surface which cooperates with the periphery of a mushroom shaped resilient dielectric element which has a through channel that fits over the clamping member. The axial force causes radial inward depression on the clamping member to effect clamping of the conductor. When the axial pressure is removed, for example upon the disassembly of the connector, the radially inward depression is terminated and the electrical and mechanical integrity between the clamping member and the conductor is no longer maintained and they are easily separable.

Another coaxial connector is known from USA Patent Specification Number 3847 463 in which the central conductor is secured within a collet having a bevelled end. This is effected by cooperation with a collet closer which has a bevelled recess, conforming with the bevel of the collet, the two bevelled surfaces cooperating upon relative axial displacement into engagement to clamp the conductor. The relative axial displacement is effected during assembly of the connector by screwing action between a cable nut and an outer conductor. The clamping action is dependent upon the axial force exerted by the relative axial displacement and removal of that axial force by unscrewing of the cable nut permits the separation of the collet and collet closer thereby failing to maintain electrical and mechanical integrity between the collet and the conductor.

The present invention seeks to provide a connector in which electrical and mechanical integrity is maintained when an axial clamping force is removed so that the connector can be disassembled without that integrity being sacrificed.

According to the present invention there is provided an electrical conductor terminating arrangement, comprising an electrically conductive contact-making

means for receiving a conductor, an axially displaceable means which when displaced over the contact making means in a direction axially of the contact making means exerts a radial force on the contact making means to secure the conductor by pressure engagement, characterised in that the contact making means and axially displaceable means are adapted to ensure retentive mutual engagement therebetween when the axially displaceable means is displaced axially over the contact making means to provide ongoing radial pressure engagement between the contact making means and the electrical conductor in order to maintain electrical and mechanical integrity therebetween without the need for continuance of axial pressure on the axially displaceable means.

By ensuring that the axially displaceable means and contact making means are mutually retentively secured after axial displacement then the electrical and mechanical integrity of the connection of the contact means to the conductor is ensured even when the connector is disassembled.

In carrying out the present invention the displaceable means may comprise a resilient or non-resilient sleeve member which when displaced axially exerts an inward radial force on the contact-making means located within the sleeve member and which cooperates with the contact-making means positioned over the electrical conductor to provide the aforesaid ongoing pressure engagement with the conductor. A resilient sleeve member may be provided by a split metal ring or a continuous ring of resilient plastics material whereas a continuous metal ring may comprise a non-resilient sleeve member.

The contact-making means of the conductor terminating arrangement may comprise a compressible clamping element adapted to fit over the electrical conductor.

The compressible clamping element may comprise a split tubular metal part into one end of which the conductor extends and which is adapted to be radially compressed by the contact-making means to make good electrical contact with the conductor. The split tubular metal part may be formed integrally with contact means (e.g. pin contact) of the terminating arrangement provided at the end thereof remote from the end at which the conductor enters the tubular compressible clamping element.

To positively ensure good electrical contact between the compressible clamping element and the electrical conductor, the actual conductor clamping region of the element may be screw-threaded or otherwise configured to bite into the outer surface of the electrical conductor as clamping takes place.

The split tubular clamping element may, for example, be provided with radial slots which have a width less than the diameter of the conductor and which present at the periphery of a central passage in the element for slidably receiving the conductor,

sharp edges to bite into the outer surface of the conductor to make good electrical contact therewith when the clamping element is compressed. Four such radial slots may be provided to afford a passageway of cruciform configuration but other multi-slot constructions are also contemplated.

To accommodate conductors of different sizes the tubular clamping element may be stepped on its inner surface.

The split tubular clamping element may be of relatively large diameter, and connected with the contact means of the terminating arrangement by a split frusto-conical section which facilitates smooth and easy transitional displacement of an associated resilient sleeve member from the conical surface thereof to the outer periphery of the clamping element in order to compress the tubular element radially inwards as the resilient sleeve member is displaced axially over the split tubular element.

In accordance with one especially contemplated application of the present invention, a conductor terminating arrangement of the foregoing construction as broadly conceived is provided as part of a coaxial connector comprising a tubular body structure having an axially extending bore therein for receiving an incoming coaxial cable and for accommodating the electrically conductive contact-making means of the terminating arrangement located adjacent a part of the cable within the tubular body structure and electrically coupled with connector contact means (e.g. pin contact), the displaceable means of the arrangement, in response to the predetermined axial displacement thereof exerting a radial force on the contact-making means with which it co-operates to provide ongoing pressure engagement between the contact-making means and the central conductor of the coaxial cable to ensure good electrical contact therebetween without the need for the continuance of any axially applied force to the displaceable means.

The resilient or non-resilient sleeve member may form part of the axially displaceable means which also comprises a tubular insulating member at least partly accommodated within the axially extending bore of the tubular body structure of the connector at the contact means end of the connector, the sleeve member being engaged by or being attached to or formed integrally with the tubular insulating member.

Displacement of the tubular insulating member may be arrested by the abutment of an end portion of the member with shoulder means of a cup-shaped insulating stop member located within the bore of the tubular member and having a tapered opening there-through for the passage of the central conductor of the coaxial cable.

The tubular insulating member received by the axially extending bore of the tubular body structure of the connector may, in accordance with our co-pending British Patent Application No. 9223824.5, be

adapted to make a first snap engagement with another connector part whereby the connector conductor clamping or contacting-making component part is held in a pre-conductor clamping or connecting state. The tubular insulating member may also be adapted to be moved further to a position at which it makes a second snap engagement with a connector part when the clamping or contact-making part makes good electrical contact with the central conductor.

The provision of such a pre-conductor clamping and pre-conductor contact assembled state of the connector in which connector component parts are contained in situ enables the connector to be handled/transported and/or delivered without the risk of parts becoming detached or lost.

For the purpose of gripping an incoming coaxial cable at the end of the connector where the coaxial cable enters, a suitable strain-relief arrangement may be provided.

The strain relief facility may be provided by sliding the end of the connector remote from the contact between the metal braiding of the cable and the underlying cable insulation and then crimping a metal ferrule down on to the braiding.

By way of example various embodiments of the present invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows a longitudinal cross-sectional view of a coaxial cable connector comprising a conductor terminating arrangement in accordance with the present invention;

Figure 2 shows an exploded view of the coaxial cable connector of Figure 1 with small modifications;

Figure 2a shows an enlarged detail of Figure 2; and,

Figures 3a, 3b and 3c show different steps in the connection of an incoming cable to the connector of Figure 1.

Referring now to Figures 1 and 2 of the drawings, the embodiment depicted therein constitutes a preferred construction which provides inter alia a pre-conductor clamping assembled state of the connector.

The tubular body structure of the coaxial connector comprises two generally cylindrical metal parts 22 and 23, the body part 22 having an externally-threaded portion 24 which, as facilitated by the integral nut head 25, can be screwed into an internally-threaded portion of the body part 23. The body part 22 includes a cylindrical cavity 26 which slidably receives a hollow cylindrical latching member 27 of electrically insulating material. The end of the latching member 27 which engages the base of the cavity 26 is provided with a conical recess 28 against the surface of which the end of the dielectric layer of an incoming coaxial cable to the connector will abut, as will later be apparent. The right-hand end of the latching member 27 is

provided with a radially inwardly extending lip or projection 29.

The latching member 27 is adapted to receive the end of a split radially compressible metal clamping collet 31 of the conductor terminating arrangement which, in the present embodiment is formed integrally with a contact 32 (e.g. pin contact) of the connector connected to the collet 31 by a split conical section 33. The internal periphery of the clamping collet may be threaded or provided with serrations or surface irregularities or otherwise configured in order to bite into the outer surface of the single or stranded central conductor of the coaxial cable during the conductor clamping operation. In the present embodiment the metal clamping collet 31 of the terminating arrangement, as can best be seen from Figure 2a of the drawings, is split axially by means of four radial slots 34 which define a cruciform passageway extending axially through the collet and providing four axially extending sharp corners or edges 34a towards the centre of the passageway where clamping of a central conductor 44 of the coaxial cable takes place. The width of the radial slots 34 will be less than the diameter of the central conductor but the central passage or region of the cruciform passageway will be sufficiently large to slidably receive the central conductor 44 before radial compression of the collet 31 takes place to effect clamping of the conductor and termination of the latter in the connector. During such conductor clamping the axially extending sharp edges 34a of the collet 31 will bite into the conductor 44 in order to ensure good electrical contact therewith. As will readily be apparent, other multi-slot collet constructions could alternatively be provided to achieve a similar result. A six slot collet construction is also especially contemplated.

A resilient split metal ring 35 forming part of axially displaceable means and corresponding to the ring 13 in Figure 1 is provided for co-operating with the collet 31 to effect radial compression thereof. To achieve such compression, a tubular axially-displaceable member 36 of insulating material also forming part of the displaceable means is provided. The displaceable member 36 is slidably received in a through bore 37 of the body part 23 and when the two body parts 22 and 23 are secured together with the collet 31 and the co-operating split clamping ring 35 located within the internal cylindrical cavity of the body structure, the member 36 can readily be displaced axially simply by exerting finger pressure on the right-hand end thereof, as viewed in the drawing, so that the radially flexible slotted end of the member 36 defined by slots 38 first makes snap engagement with the tubular latching member 27 by the engagement of the lip or projection 29 on the member 27 with an external circumferential groove 39 in the slotted end of the displaceable member 36. It will be appreciated that the latching member 27 could be possibly be slotted, in

which case the slots 38 in the member 36 could be dispensed with. As will readily be appreciated from Figure 1 of the drawings which shows the connector in an assembled state prior to clamping of the central cable conductor, component parts of the connector are securely held in situ by the initial latching arrangement provided between the members 27 and 36 with the lip 29 of member 27 engaging groove 39 in the member 36. Such an arrangement importantly enables connectors to be handled and/or transported/delivered in readiness for cable connection and conductor clamping without the risk of connector parts becoming detached or lost.

In order to connect the connector to an incoming coaxial cable, as shown at 40 in Figure 3a of the drawings, the usual outer insulation sleeve 41 will be cut back, as shown, to expose a suitable length of an underlying metal braided screen 42. The metal braid will then be stripped back, as shown, over a requisite length to leave a length of extruded dielectric insulation 43 exposed. This dielectric will then be cut back to leave a length of bared central conductor 44. The cable end will then be inserted through a metal crimping ferrule, shown at 45 in Figures 2 and 3b, and then into the cable receiving end of the body part 22 which is already screwed to the body part 23 in the pre-conductor clamping assembled state of the connector shown in Figure 1. The body part 22 has a tubular extension 46 which may have circumferential ridges 47 so that as the cable moves into the interior of the connector the ridged extension 46 will be urged between the dielectric layer 43 and the metal braiding sleeve 42 of the cable, as shown in Figure 3b, whilst the bared end 44 of the central conductor will move into and along the central passage of the clamping collet 31 as indicated in Figure 2a of the drawings, until the forward end of the exposed dielectric material 43 abuts against the conical surface of the recess 28 provided in the latching member 27.

To effect clamping of the collet 21 to the central conductor 44 of the incoming cable 40 and thereby effect termination of the conductor 44 in the connector, the axially displaceable member 36 is simply pressed from its initial pre-clamping latched position further into the bore 37, as a result of which the split clamping ring 35 of the terminating arrangement will be forced by the displacement member 36 over the cylindrical surface of the split collet 31 which is accordingly compressed radially inwards so that the inner axially extending sharp edges 34a, as shown in Figure 2a, bite into the outer surface of the single or stranded central conductor in order to make good electrical contact therewith. When sufficient clamping force has been exerted on the collet 31 by movement of the clamping ring 35, the displaceable member 36 makes a second and final snap engagement with the latching member 27 by the engagement of a second circumferential groove 48 in the member 36 with the inturned lip or

projection 29 on the latching member 27. In this position of the displaceable member 36 the components of the connector are in the conductor clamped assembled state with the resilient split clamping ring 35 co-operating with the split collet 31 to provide ongoing pressure engagement between the collet and the central conductor. No continuing axial pressure needs to be applied to the displaceable member. In this clamped conductor state of the connector the cable may be pulled to carry out a tensile test for ensuring that effective clamping of the central conductor has been achieved.

Although in the embodiment described with reference to Figures 1 to 3 the sleeve member 35 comprises a resilient split metal ring which co-operates with the clamping element 31 to provide ongoing pressure engagement with the central conductor 44, it will be appreciated that the resilient sleeve member 35 could be replaced by a non-resilient sleeve member which co-operates with resilient contact-making means over which the sleeve member fits to provide the ongoing pressure engagement between the contact-making means and the central conductor of the co-axial cable.

It is contemplated that the members 27 and 36 could be composed of a transparent insulating material which would enable a conductor clamp connection to be viewed after unscrewing the two body parts.

In order to complete the strain relief connection between the incoming cable 40 and the connector, the metal ferrule 45 may be positioned over the metal braiding overlying the tubular ridged extension 46, as can be seen in Figure 3b of the drawings, and then crimped down on to the braiding, as shown in Figure 3c.

To enable the connector to be panel mounted, a radially collapsible ring 49 may be fitted in a groove of the body part 23. The configuration of the ring allows the contact end of the connector to be inserted into a panel aperture after which the ring restores to hold the connector in position.

The tubular insulating member 36 and the bore 37 of the tubular body structure may be provided with grooves and/or projections which cooperate to lock the tubular insulating member in position within the bore of the body structure as clamping takes place.

Claims

1. An electrical conductor terminating arrangement, comprising an electrically conductive contact-making means (31) for receiving a conductor, an axially displaceable means (35) which when displaced over the contact making means in a direction axially of the contact making means (31) exerts a radial force on the contact making means to secure the conductor by pressure en-

gagement, characterised in that the contact making means (31) and axially displaceable means (35) are adapted to ensure retentive mutual engagement therebetween when the axially displaceable means is displaced axially over the contact making means to provide ongoing radial pressure engagement between the contact making means (31) and the electrical conductor (44) in order to maintain electrical and mechanical integrity therebetween without the need for continuance of axial pressure on the axially displaceable means (35).

2. An electrical conductor terminating arrangement as claimed in claim 1, characterised in that the axially displaceable means (35) comprises a resilient or non-resilient sleeve member which exerts an inward radial force on a contact-making element (31) located within it and which co-operates with the element to provide the ongoing pressure engagement of the element with the conductor.
3. An electrical conductor terminating arrangement as claimed in claim 2, characterised that the sleeve member (35) is resilient and is provided by a split metal ring or a continuous plastics ring.
4. An electrical conductor terminating arrangement as claimed in claim 2, characterised in that the sleeve member (35) is non-resilient and comprises a continuous metal ring.
5. An electrical conductor terminating arrangement as claimed in any preceding claim, characterised in that the contact-making means (31) comprises a compressible clamping element adapted to fit over the conductor (44) and subjected to a radial compressive force exerted on it by the axially displaceable means (35) in order to cause the clamping element to clamp down on the conductor.
6. An electrical conductor terminating arrangement as claimed in claim 5, characterised in that the compressible clamping element (31) comprises a split tubular metal part into one end of which the conductor (44) is insertable and which is adapted to be radially inwardly compressed to make good electrical contact with the conductor.
7. An electrical conductor terminating arrangement as claimed in claim 6; characterised in that the split tubular metal part (31) is formed integrally with contact means (32) (e.g. pin contact) of the terminating arrangement provided at the end thereof remote from the conductive compressible clamping element.



projection 29 on the latching member 27. In this position of the displaceable member 36 the components of the connector are in the conductor clamped assembled state with the resilient split clamping ring 35 co-operating with the split collet 31 to provide ongoing pressure engagement between the collet and the central conductor. No continuing axial pressure needs to be applied to the displaceable member. In this clamped conductor state of the connector the cable may be pulled to carry out a tensile test for ensuring that effective clamping of the central conductor has been achieved.

Although in the embodiment described with reference to Figures 1 to 3 the sleeve member 35 comprises a resilient split metal ring which co-operates with the clamping element 31 to provide ongoing pressure engagement with the central conductor 44, it will be appreciated that the resilient sleeve member 35 could be replaced by a non-resilient sleeve member which co-operates with resilient contact-making means over which the sleeve member fits to provide the ongoing pressure engagement between the contact-making means and the central conductor of the co-axial cable.

It is contemplated that the members 27 and 36 could be composed of a transparent insulating material which would enable a conductor clamp connection to be viewed after unscrewing the two body parts.

In order to complete the strain relief connection between the incoming cable 40 and the connector, the metal ferrule 45 may be positioned over the metal braiding overlying the tubular ridged extension 46, as can be seen in Figure 3b of the drawings, and then crimped down on to the braiding, as shown in Figure 3c.

To enable the connector to be panel mounted, a radially collapsible ring 49 may be fitted in a groove of the body part 23. The configuration of the ring allows the contact end of the connector to be inserted into a panel aperture after which the ring restores to hold the connector in position.

The tubular insulating member 36 and the bore 37 of the tubular body structure may be provided with grooves and/or projections which cooperate to lock the tubular insulating member in position within the bore of the body structure as clamping takes place.

Claims

1. An electrical conductor terminating arrangement, comprising an electrically conductive contact-making means (31) for receiving a conductor, an axially displaceable means (35) which when displaced over the contact making means in a direction axially of the contact making means (31) exerts a radial force on the contact making means to secure the conductor by pressure en-

gagement, characterised in that the contact making means (31) and axially displaceable means (35) are adapted to ensure retentive mutual engagement therebetween when the axially displaceable means is displaced axially over the contact making means to provide ongoing radial pressure engagement between the contact making means (31) and the electrical conductor (44) in order to maintain electrical and mechanical integrity therebetween without the need for continuance of axial pressure on the axially displaceable means (35).

2. An electrical conductor terminating arrangement as claimed in claim 1, characterised in that the axially displaceable means (35) comprises a resilient or non-resilient sleeve member which exerts an inward radial force on a contact-making element (31) located within it and which co-operates with the element to provide the ongoing pressure engagement of the element with the conductor.
3. An electrical conductor terminating arrangement as claimed in claim 2, characterised that the sleeve member (35) is resilient and is provided by a split metal ring or a continuous plastics ring.
4. An electrical conductor terminating arrangement as claimed in claim 2, characterised in that the sleeve member (35) is non-resilient and comprises a continuous metal ring.
5. An electrical conductor terminating arrangement as claimed in any preceding claim, characterised in that the contact-making means (31) comprises a compressible clamping element adapted to fit over the conductor (44) and subjected to a radial compressive force exerted on it by the axially displaceable means (35) in order to cause the clamping element to clamp down on the conductor.
6. An electrical conductor terminating arrangement as claimed in claim 5, characterised in that the compressible clamping element (31) comprises a split tubular metal part into one end of which the conductor (44) is insertable and which is adapted to be radially inwardly compressed to make good electrical contact with the conductor.
7. An electrical conductor terminating arrangement as claimed in claim 6, characterised in that the split tubular metal part (31) is formed integrally with contact means (32) (e.g. pin contact) of the terminating arrangement provided at the end thereof remote from the conductive compressible clamping element.



8. An electrical conductor terminating arrangement as claimed in claim 5, 6 or 7, characterised in that the actual conductor clamping region (34a) of the compressible clamping element (31) is screw-threaded or otherwise configured to bite into the outer surface of the conductor as clamping takes place.
9. An electrical conductor terminating arrangement as claimed in claim 8, characterised in that the clamping element (31) is provided with radial slots (34) which have a width less than the diameter of the conductor and which present at the periphery of a central passage in the element for slidably receiving the conductor (44), sharp edges (34a) to bite into the outer surface of the conductor to make good contact therewith when the clamping element is compressed.
10. An electrical conductor terminating arrangement as claimed in claim 9, characterised in that four or six radial slots (34) are provided in the clamping element (31).
11. An electrical conductor terminating arrangement as claimed in claim 7, characterised in that the clamping element (31) comprises a relatively large diameter element coupled to the contact means (32) of the arrangement by a split frusto-conical section (33) which facilitates smooth and easy transitional displacement of a sleeve member (35) of the axially displaceable means (35,36) from the cone surface of the section on to the outer periphery of the clamping element (31) in order to compress the element radially inwards when the front end of the sleeve member is displaced axially.
12. An electrical conductor terminating arrangement as claimed in claim 5, characterised in that the contact-making clamping element (31) is stepped to accommodate conductors of different diameters.
13. A coaxial connector comprising a tubular body (23) structure having an axially extending bore (37) therein for receiving an incoming coaxial cable, characterised in that a conductor terminating arrangement as claimed in any preceding claim is provided with the contact-making means (31) of the arrangement being located within the tubular body structure (23) and electrically coupled to connector contact means (32) (e.g. pin contact), the axially displaceable means (35,36) of the arrangement exerting a radial force on the contact-making means (31) to provide ongoing pressure engagement between the contact-making means (31) and the central conductor (44) of a coaxial cable extending into the tubular body structure.
14. A coaxial connector as claimed in claim 13, characterised in that a resilient or non-resilient sleeve member (35) forms part of the axially displaceable means (35,36) which also comprises a tubular insulating member (36) at least partly accommodated within the axially extending bore (37) of the tubular body structure (23) at the contact means end of the connector, and in which the sleeve member is engaged by or attached to the tubular insulating member.
15. A coaxial connector as claimed in claim 14, characterised in that axial movement of the tubular insulating member (36) during clamping is arrested by the engagement thereof with a cup-shaped stop member (27) accommodated in the bore (37) of the tubular body structure and into which the contact making means fits during conductor clamping.
16. A coaxial connector as claimed in claim 14 or 15, characterised in that the tubular insulating member (36) and the bore (37) of the tubular body structure are provided with grooves and/or projections which co-operate to lock the tubular insulating member in position within the bore of the body structure as conductor clamping takes place.
17. A coaxial connector as claimed in claim 13, characterised in that the tubular body structure comprises two parts (22,23) which are threadingly connected together.
18. A coaxial connector as claimed in claim 17, characterised in that one or more parts (27,36) of the connector are composed of transparent insulating material to allow the conductor clamped or terminated condition of the connector to be inspected following separation of the body structure parts (22,23).

Patentansprüche

1. Eine elektrische Leiteranschlußanordnung, die eine elektrisch leitfähige Kontakteinrichtung (31) zur Aufnahme eines Leiters sowie eine axial verschiebbare Einrichtung (35) umfaßt, die, wenn sie über die Kontakteinrichtung (31) in einer axial zur Kontakteinrichtung verlaufenden Richtung verschoben ist, eine radiale Kraft auf die Kontakteinrichtung ausübt, um so den Leiter durch Druckeinwirkung festzuhalten, dadurch gekennzeichnet,



- daß die Kontakteinrichtung (31) und die axial verschiebbare Einrichtung (35) angepaßt sind, um ein gegenseitiges Festhalten dann sicherzustellen, wenn die axial verschiebbare Einrichtung axial über der Kontakteinrichtung verschoben ist, um zwischen der Kontakteinrichtung (31) und dem elektrischen Leiter (44) eine andauernde Druckeinwirkung zu erzielen, um somit eine elektrische und mechanische Integrität zwischen diesen zu bewahren, ohne daß der Axialdruck an der axial verschiebbaren Einrichtung (35) aufrechterhalten werden muß.
2. Elektrische Leiteranschlußanordnung nach Anspruch 1, dadurch gekennzeichnet, daß die axial verschiebbare Einrichtung (35) ein elastisches oder unelastisches Muffenelement hat, das auf ein darin liegendes Kontaktelement (31) eine nach innen wirkende Radialkraft ausübt, wobei das Muffenelement mit dem Kontaktelement zu sammenwirkt, um die andauernde Druckeinwirkung des Kontaktelements mit dem Leiter zu gewährleisten.
 3. Elektrische Leiteranschlußanordnung nach Anspruch 2, dadurch gekennzeichnet, daß das Muffenelement (35) elastisch ist und aus einem gespaltenen Metallring oder einem umlaufenden Kunststofferring besteht.
 4. Elektrische Leiteranschlußanordnung nach Anspruch 2, dadurch gekennzeichnet, daß das Muffenelement (35) unelastisch ist und einen umlaufenden Metallring enthält.
 5. Elektrische Leiteranschlußanordnung nach einem der vorangegangenen Ansprüche, dadurch gekennzeichnet, daß die Kontakteinrichtung (31) ein komprimierbares Klemmelement enthält, das so ausgebildet ist, daß es über den Leiter (44) paßt und das einer radialen Kompressionskraft durch die axial verschiebbare Einrichtung (35) ausgesetzt ist, damit das Klemmelement sich auf den Leiter festklemmt.
 6. Elektrische Leiteranschlußanordnung nach Anspruch 5, dadurch gekennzeichnet, daß das komprimierbare Klemmelement (31) ein gespaltenes Metallrohrteil hat, in dessen eines Ende der Leiter (44) eingeführt werden kann, und das so angepaßt ist, daß es radial nach innen zusammengedrückt wird, um mit dem Leiter einen guten elektrischen Kontakt zu haben.
 7. Elektrische Leiteranschlußanordnung nach Anspruch 6, dadurch gekennzeichnet, daß das gespaltenen Metallrohrteil (31) integriert
 - mit der Kontakteinrichtung (32) (z.B. Stiftkontakt) der Anschlußanordnung, die sich am vom leitfähigen komprimierbaren Klemmelement entfernten Ende befindet, ausgebildet ist.
 8. Elektrische Leiteranschlußanordnung nach Anspruch 5, 6 oder 7, dadurch gekennzeichnet, daß die tatsächliche Leiter-Klemmregion (34a) des komprimierbaren Klemmelements (31) ein Schraubgewinde hat bzw. anderweitig so ausgebildet ist, daß sie beim Klemmen in die Außenfläche des Leiters eingreift.
 9. Elektrische Leiteranschlußanordnung nach Anspruch 8, dadurch gekennzeichnet, daß das Klemmelement (31) über radiale Spalte (34) verfügt, die eine Breite haben, die kleiner als der Durchmesser des Leiters ist, und an der Peripherie eines mittigen Durchgangs im Element, der dazu dient, den Leiter (44) gleitend aufzunehmen, scharfe Kanten (34a) darstellen, die in die Außenfläche des Leiters greifen sollen, um mit diesem einen guten elektrischen Kontakt herzustellen, wenn das Klemmelement zusammengedrückt ist.
 10. Elektrische Leiteranschlußanordnung nach Anspruch 9, dadurch gekennzeichnet, daß vier oder sechs radiale Spalte (34) im Klemmelement (31) vorhanden sind.
 11. Elektrische Leiteranschlußanordnung nach Anspruch 7, dadurch gekennzeichnet, daß das Klemmelement (31) ein Element mit einem relativ großen Durchmesser hat, das über ein gespaltenes Kegelstumpfteil (33) mit der Kontakteinrichtung (32) der Anordnung verbunden ist, wobei dieses Kegelstumpfteil die reibungslose und einfache Verschiebung eines Muffenelements (35) der axial verschiebbaren Einrichtung (35,36) von der Kegeloberfläche des Teils auf die äußere Peripherie des Klemmelements (31) vereinfacht, um das Element radial nach innen zusammenzudrücken, wenn das vordere Ende des Muffenelementes axial verschoben ist.
 12. Elektrische Leiteranschlußanordnung nach Anspruch 5, dadurch gekennzeichnet, daß das Klemmkontaktelement (31) abgestuft ist, um Leiter mit unterschiedlichen Durchmessern aufzunehmen.
 13. Ein koaxialer Steckverbinder, der eine Rohrkörperkonstruktion (23) mit einer axial verlaufenden Bohrung (37) zur Aufnahme eines eingehenden Koaxkabels enthält, dadurch gekennzeichnet, daß eine Leiteranschlußanordnung nach einem



der vorangegangenen Ansprüche vorhanden ist, wobei die Kontakteinrichtung (31) der Anordnung innerhalb der Rohrkörperkonstruktion (23) liegt und elektrisch mit der Steckverbinder-Kontakteinrichtung (32) (z.B. Stiftkontakt) verbunden ist, wobei die axial verschiebbare Einrichtung (35,36) der Anordnung auf die Kontakteinrichtung (31) eine Radialkraft ausübt, um andauernde Druckeinwirkung zwischen der Kontakteinrichtung (31) und dem zentralen Leiter (44) eines Koaxkabels, das sich in die Rohrkörperkonstruktion erstreckt, zu gewährleisten.

14. Koaxialer Steckverbinder nach Anspruch 13, dadurch gekennzeichnet, daß ein elastisches oder unelastisches Muffenelement (35) Teil der axial verschiebbaren Einrichtung (35,36) ist, die zusätzlich ein röhrenförmiges Isolierelement (36) enthält, das zumindest teilweise innerhalb der axial verlaufenden Bohrung (37) der Rohrkörperkonstruktion (23) am Ende des Steckverbinders liegt, das der Kontakt einrichtung zugewandt ist, und in dem das Muffenelement durch das röhrenförmige Isolierelement verhakt ist oder mit diesem verbunden ist.

15. Koaxialer Steckverbinder nach Anspruch 14, dadurch gekennzeichnet, daß Axialbewegungen des röhrenförmigen Isolierelements (36) während des Klemmens dadurch unterbunden werden, daß ein tassenförmiges Anschlagelement (27), das in der Bohrung (37) der Rohrkörperkonstruktion liegt, sich mit dem Isolierelement verhakt, und wobei die Kontakteinrichtung während des Klemmens des Leiters in diese Bohrung paßt.

16. Koaxialer Steckverbinder nach Anspruch 14 oder 15, dadurch gekennzeichnet, daß das röhrenförmige Isolierelement (36) und die Bohrung (37) der Rohrkörperkonstruktion Nuten und/oder Vorsprünge haben, die so zusammenwirken, daß sie beim Klemmen des Leiters das röhrenförmige Isolierelement innerhalb der Bohrung der Körperkonstruktion festhalten.

17. Koaxialer Steckverbinder nach Anspruch 13, dadurch gekennzeichnet, daß die Rohrkörperkonstruktion zwei Teile (22,23) hat, die über ein Gewinde miteinander verbunden sind.

18. Koaxialer Steckverbinder nach Anspruch 17, dadurch gekennzeichnet, daß ein oder mehrere Teile (27,36) des Steckverbinders aus transparentem Isoliermaterial bestehen, sodaß nach Auseinandernehmen der Teile (22,23) der Körperkonstruktion der Leiter im ge-

klemmten oder angeschlossenen Zustand des Steckverbinders inspiziert werden kann.

5 Revendications

1. Dispositif de terminaison d'un conducteur électrique, comprenant des moyens d'établissement de contact (31) électrique, des conducteurs destinés à recevoir un conducteur, des moyens déplaçables axialement (35) qui, lorsqu'ils sont déplacés par-dessus les moyens d'établissement de contact (31) dans une direction axiale de ces derniers, appliquent une force radiale aux moyens d'établissement de contact pour fixer le conducteur au moyen d'un engagement sous pression, caractérisé en ce que les moyens d'établissement de contact (31) et les moyens déplaçables axialement (35) sont adaptés pour garantir un engagement réciproque de retenue lorsque les moyens déplaçables axialement sont déplacés axialement par-dessus les moyens d'établissement de contact de manière à établir un engagement progressif, sous une pression radiale, entre les moyens d'établissement de contact (31) et le conducteur électrique (44) de manière à maintenir une intégrité électrique et mécanique entre ces éléments sans qu'il soit nécessaire de maintenir une pression axiale appliquée aux moyens déplaçables axialement (35).

2. Dispositif de terminaison de conducteur électrique selon la revendication 1, caractérisé en ce que les moyens déplaçables axialement (35) comprennent un élément en forme de manchon élastique ou non élastique, qui applique une force radiale dirigée vers l'intérieur à un élément d'établissement de contact (31) situé à l'intérieur de cet élément en forme de manchon, et qui coopère avec l'élément d'établissement de contact pour établir l'engagement sous pression progressif de l'élément avec le conducteur.

3. Dispositif de terminaison de conducteur électrique selon la revendication 2, caractérisé en ce que l'élément en forme de manchon (35) est élastique et est formé par une bague métallique fendue ou une bague continue en matière plastique.

4. Dispositif de terminaison de conducteur électrique selon la revendication 2, caractérisé en ce que l'élément en forme de manchon (35) n'est pas élastique et comprend une bague métallique continue.

5. Dispositif de terminaison de conducteur électrique selon l'une quelconque des revendications précédentes, caractérisé en ce que les moyens



- d'établissement de contact (31) comprennent un élément de serrage compressible adapté pour être monté sur le conducteur (44) et être soumis à une force de compression radiale qui lui est appliquée par les moyens déplaçables axialement (35) afin de provoquer le serrage de l'élément de serrage sur le conducteur. 5
6. Dispositif de terminaison de conducteur électrique selon la revendication 5, caractérisé en ce que l'élément de serrage compressible (31) comprend une partie métallique tubulaire fendue, dans une extrémité de laquelle le conducteur (44) peut être inséré et qui est adaptée pour être comprimée radialement vers l'intérieur de manière à établir un bon contact électrique avec le conducteur. 10
7. Dispositif de terminaison de conducteur électrique selon la revendication 6, caractérisé en ce que sur la partie tubulaire fendue (31) sont formés, d'un seul tenant, des moyens de contact (32) (par exemple un contact à broche) du dispositif de terminaison, prévus sur l'extrémité de ce dernier, qui est distante de l'élément de serrage conducteur compressible. 15
8. Dispositif de terminaison de conducteur électrique selon la revendication 5, 6 ou 7, caractérisé en ce que la zone réelle (34a) de serrage du conducteur, que comporte l'élément de serrage compressible (31), est filetée en forme de vis ou est conformée autrement de manière à mordre dans la surface extérieure du conducteur lorsque le serrage s'effectue. 20
9. Dispositif de terminaison de conducteur électrique selon la revendication 8, caractérisé en ce que l'élément de serrage (31) comporte des fentes radiales (34), qui possèdent une largeur inférieure au diamètre du conducteur et qui présentent, au niveau de la périphérie d'un passage central aménagé dans l'élément pour y loger avec possibilité de glissement le conducteur (44), des arêtes vives (34a) aptes à mordre dans la surface extérieure du conducteur pour établir un bon contact avec ce dernier, lorsque l'élément de serrage est comprimé. 25
10. Dispositif de terminaison de conducteur électrique selon la revendication 9, caractérisé en ce que quatre ou six fentes radiales (34) sont prévues dans l'élément de serrage (31). 30
11. Dispositif de terminaison de conducteur électrique selon la revendication 7, caractérisé en ce que l'élément de serrage (31) comprend un élément de diamètre relativement important couplé 35
- aux moyens de contact (32) du dispositif au moyen d'une section tronconique fendue (33), qui facilite un déplacement de translation uniforme et facile d'un élément en forme de manchon (35) des moyens déplaçables axialement (35,36) depuis la surface conique de la section, sur la périphérie extérieure de l'élément de serrage (31) afin de comprimer cet élément radialement vers l'intérieur lorsque l'extrémité avant de l'élément en forme de manchon est déplacé axialement. 40
12. Dispositif de terminaison de conducteur électrique selon la revendication 5, caractérisé en ce que l'élément de serrage (31) établissant le contact possède une forme étagée de manière à recevoir des conducteurs ayant des diamètres différents. 45
13. Connecteur coaxial comprenant une structure formant corps tubulaire (23) comportant un perçage axial (37) servant à recevoir un câble coaxial d'arrivée, caractérisé en ce qu'un dispositif de terminaison de conducteur tel que revendiqué dans l'une quelconque des revendications précédentes est équipé des moyens d'établissement de contact (31) du dispositif qui sont situés à l'intérieur de la structure formant corps tubulaire (23) et sont couplés électriquement aux moyens de contact (32) du connecteur (par exemple contact à broche), les moyens déplaçables axialement (35,36) du dispositif appliquant une force radiale aux moyens d'établissement de contact (31) pour réaliser un engagement progressif sous pression entre les moyens d'établissement de contact (31) et le conducteur central (44) d'un câble coaxial qui pénètre dans la structure formant corps tubulaire. 50
14. Connecteur coaxial selon la revendication 13, caractérisé en ce qu'un élément en forme de manchon élastique ou non élastique (35) fait partie des moyens déplaçables axialement (35,36) qui comprennent également un élément tubulaire isolant (36) logé au moins en partie à l'intérieur du perçage axial (37) de la structure formant corps tubulaire (23) au niveau de l'extrémité du connecteur comportant les moyens de contact, et dans lequel l'élément en forme de manchon engrène avec ou est fixé à l'élément tubulaire isolant. 55
15. Connecteur coaxial selon la revendication 14, caractérisé en ce que le déplacement axial de l'élément isolant tubulaire (36) pendant le serrage est bloqué sous l'effet de son engrenement avec un élément d'arrêt en forme de pot (27) logé dans le perçage (37) de la structure formant corps tubulaire et dans lequel les moyens d'établissement de contact pénètrent pendant le serrage du



conducteur.

16. Connecteur coaxial selon la revendication 14 ou 15, caractérisé en ce que l'élément tubulaire isolant (36) et le perçage (37) de la structure formant corps tubulaire comportent des rainures et/ou des parties saillantes, qui coopèrent de manière à bloquer l'élément tubulaire isolant en position dans le perçage de la structure formant corps, lorsque le serrage du conducteur est effectué. 5 10
17. Connecteur coaxial selon la revendication 13, caractérisé en ce que la structure formant corps tubulaire comprend deux parties (22,23), qui sont réunies entre elles par vissage. 15
18. Connecteur coaxial selon la revendication 17, caractérisé en ce qu'une ou plusieurs parties (27,36) du connecteur sont réalisées en un matériau isolant transparent permettant d'inspecter le connecteur dans son état dans lequel le conducteur est serré ou est raccordé par une terminaison, à la suite de la séparation des parties (22,23) de la structure formant corps. 20 25

30

35

40

45

50

55

10