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Electrical connector with terminal cover

Abstract

Disclosed is a connector including an outer housing having a tube shape, an inner housing coupled to the inside of the outer housing, the inner housing including a rear wall and a terminal cover formed to extend from the rear wall in a longitudinal direction of the outer housing, and a terminal of a plate shape seated on and coupled to the terminal cover, wherein the terminal cover is provided to cover edges of the terminal of the plate shape and to expose a side surface of the terminal. By this structure, a finger is structurally prevented from coming into contact with the terminal of the connector, and because there are no additional components, a simplification of the structure and a reduction in cost are achieved.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION

(1) This application claims priority under 35 U.S.C. § 119 to Korean Patent Application No. 10-2021-0128169, filed on Sep. 28, 2021, in the Korean Intellectual Property Office, the disclosure of which is incorporated by reference herein in its entirety.

TECHNICAL FIELD

(2) The present disclosure relates to a connector capable of structurally preventing a finger from coming into contact with a terminal of a connector.

BACKGROUND

(3) The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

(4) Connectors for supplying power to an electric vehicle or the like may be configured as one set such that a first connector may be mounted on a device such as an inverter and a motor, and a

second connector may be detachably mounted on the first connector in a state in which a power supply cable is connected thereto. Terminals of the first connector and the second connector configured as the one set may generally be provided with a male terminal on one side and a female terminal on the other side.

(5) A connector having the male terminal among these terminals may be provided in a form in which one end of the terminal is accommodated in an open housing, but depending on a size of the opening of the housing and a depth of the terminal disposed therein, safety accidents such as electric shock may occur when a finger of an operator or the like comes into contact with the terminal.

(6) In order to reduce a risk of such a safety accident, it is desired to satisfy a normally required standard specification, for example, the IPXXB standard.

(7) In the prior art, a moving plate is added to a high voltage male connector in order to satisfy the IPXXB standard, but the addition of this component causes an increase in cost and complexity of the structure.

SUMMARY

(8) It is an aspect of the disclosure to provide a connector capable of reducing cost and simplifying the structure without adding new components while satisfying the IPXXB standard.

(9) Additional aspects of the present disclosure are set forth in part in the description which follows and, in part, should be obvious from the description, or may be learned by practice of the disclosure.

(10) In accordance with an aspect of the disclosure, a connector includes: an outer housing having a tube shape; an inner housing coupled to the inside of the outer housing, the inner housing including a rear wall and a terminal cover formed to extend from the rear wall in a longitudinal direction of the outer housing; and a terminal in a plate shape configured to be seated on and coupled to the terminal cover. In particular, the terminal cover covers edges of the terminal and exposes a side surface of the terminal.

(11) The terminal cover may include a first cover provided to cover a front surface of the terminal of the plate shape, and a second cover provided to cover upper and lower surfaces of the terminal of the plate shape.

(12) When the terminal is coupled to the terminal cover, the edges of the terminal and the first and second covers of the terminal cover may have a structure of being engaged with each other.

(13) The connector may further include a lance, wherein when the terminal is coupled to the inner housing, the lance may be coupled to a hole formed on one side of the terminal.

(14) The connector may further include a TPA (Terminal Position Assurance), wherein when the terminal is coupled to the inner housing, the terminal may be fixed using the TPA.

(15) The TPA may include a protrusion and a groove, and the protrusion may be released to separate the TPA when a force is applied to the groove of the TPA.

(16) The connector may further include a protective rib, wherein the protective rib may cover a portion of the side surface of the terminal.

(17) A hole may be formed in a center of the first cover of the terminal cover so that whether the terminal is assembled with the terminal cover may be checked.

(18) In accordance with an aspect of the disclosure, a connector includes: an outer housing having a tube shape; an inner housing coupled to the inside of the outer housing, where the inner housing includes a rear wall and a terminal cover formed to extend from the rear wall in a longitudinal direction of the outer housing; and a terminal formed in a plate shape and configured to be seated on and coupled to the terminal cover. In particular, the terminal cover is configured to cover a portion of edges of the terminal in the plate shape and to expose a side surface of the terminal. In another embodiment, the terminal cover includes at least one of a first cover provided to cover a front surface of the terminal or a second cover provided to cover upper and lower surfaces of the terminal.

(19) When the terminal is coupled to the terminal cover, the front surface of the terminal and the first cover of the terminal cover may have a structure of being engaged with each other.

(20) When the terminal is coupled to the terminal cover, the upper and lower surfaces of the terminal and the second cover of the terminal cover may have a structure of being engaged with each other.

(21) In accordance with an aspect of the disclosure, a connector includes: an outer housing having a tube shape; an inner housing coupled to the inside of the outer housing; wherein the inner housing includes a rear wall and a terminal cover formed to extend from the rear wall in a longitudinal direction of the outer housing; and a terminal formed in a plate shape and configured to be seated on and coupled to the terminal cover, wherein the terminal cover is provided to cover a portion of edges of the terminal of the plate shape and to expose a side surface of the terminal. In particular, the terminal cover includes at least one of a first cover provided to cover a front surface of the terminal of the plate shape or a second cover provided to cover upper and lower surfaces of the terminal of the plate shape. When the terminal is coupled to the terminal cover, the front surface of the terminal and the first cover of the terminal cover have a structure of being engaged with each other, and the upper and lower surfaces of the terminal and the second cover of the terminal cover have a structure of being engaged with each other.

(22) Further areas of applicability will become apparent from the description provided herein. It should be understood that the description and specific examples are intended for purposes of illustration only and are not intended to limit the scope of the present disclosure.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) These and/or other aspects of the disclosure should become apparent and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompanying drawings of which:

(2) FIG. 1 is a perspective view illustrating an outer appearance of a connector in one embodiment of the present disclosure;

(3) FIG. 2 is an exploded perspective view illustrating a method in which components of the connector are assembled in one embodiment of the present disclosure;

(4) FIG. 3 is a view illustrating an outer appearance of a terminal in one embodiment of the present disclosure;

(5) FIG. 4 is a view illustrating a terminal cover on and to which the terminal is seated and coupled in a direction in which the terminal is assembled in one embodiment of the present disclosure;

(6) FIG. 5 is a side cross-sectional view illustrating a state in which the terminal and the terminal cover are assembled in one embodiment of the present disclosure;

(7) FIG. 6 is a front view illustrating the state in which the terminal and the terminal cover are assembled in one embodiment of the present disclosure;

(8) FIG. 7 is a perspective view illustrating the connector in a state in which the terminal is assembled in one embodiment of the present disclosure;

(9) FIG. 8 is a view illustrating a lance and a protective rib for fixing and protecting the terminal when the terminal is assembled in one embodiment of the present disclosure;

(10) FIG. 9 is a view illustrating a state in which the terminal is secondarily fixed using a TPA when the terminal is assembled in one embodiment of the present disclosure;

(11) FIG. 10 is a view illustrating an outer appearance of the TPA in one embodiment of the present disclosure;

(12) FIG. 11 is a perspective view illustrating a state in which the TPA is assembled in one embodiment of the present disclosure;

- (13) FIGS. 12A and 12B respectively illustrate an upper and lower cross-sectional view depicting a structure of the connector in one embodiment of the present disclosure;
- (14) FIG. 13 is a side cross-sectional view illustrating the structure of the connector in one embodiment of the present disclosure;
- (15) FIG. 14A is an upper and lower cross-sectional view illustrating the connector coupled with a female connector in one embodiment of the present disclosure, and FIG. 14B is an enlarged view of a part identified in FIG. 14A; and
- (16) FIG. 15A is a side cross-sectional view illustrating the connector coupled with the female connector in one embodiment of the present disclosure, and FIG. 15B is an enlarged view of a part identified in FIG. 15A.
- (17) The drawings described herein are for illustration purposes only and are not intended to limit the scope of the present disclosure in any way.

DETAILED DESCRIPTION

- (18) Configurations shown in the embodiments and the drawings described in the present specification are only the exemplary embodiments of the present disclosure, and thus it is to be understood that various modified examples, which may replace the embodiments and the drawings described in the present specification, are possible when filing the present application.
- (19) Like reference numbers or signs in the various figures of the application represent parts or components that perform substantially the same functions.
- (20) The terms used herein are for the purpose of describing the embodiments and are not intended to restrict and/or to limit the disclosure. For example, the singular expressions herein may include plural expressions, unless the context clearly dictates otherwise. Also, the terms “comprises” and “has” are intended to indicate that there are features, numbers, steps, operations, elements, parts, or combinations thereof described in the specification, and do not exclude the presence or addition of one or more other features, numbers, steps, operations, elements, parts, or combinations thereof.
- (21) It should be understood that although the terms first, second, etc. may be used herein to describe various components, these components should not be limited by these terms, and the terms are only used to distinguish one component from another. For example, without departing from the scope of the disclosure, the first component may be referred to as a second component, and similarly, the second component may also be referred to as a first component. The term “and/or” includes any combination of a plurality of related items or any one of a plurality of related items.
- (22) The terms “upper surface direction,” “lower surface direction,” and the like used in the following description are defined based on the drawings, and the shape and position of each component are not limited by these terms.
- (23) When a component, device, element, or the like of the present disclosure is described as having a purpose or performing an operation, function, or the like, the component, device, or element should be considered herein as being “configured to” meet that purpose or to perform that operation or function.
- (24) Hereinafter, an embodiment of a high voltage male connector and a high voltage connector according to some embodiments of the present disclosure are described in detail with reference to the accompanying drawings.
- (25) FIG. 1 is a perspective view illustrating an outer appearance of a connector, and FIG. 2 is an exploded perspective view illustrating a method in which components of the connector are assembled.
- (26) Connectors may be generally configured as a pair including a first connector mounted on a device side and a second connector, to which a cable or the like is connected, detachably connected to the first connector, and may be classified into a male connector and a female connector depending on the type of a terminal.
- (27) The male connector has a male terminal, and the female connector has a female terminal into which the male terminal of the male connector may be inserted.

(28) The connector illustrated in FIG. 1 may be classified as the first connector mounted on a device side or the male connector. A general high voltage connector may have a structure in which an inner housing made of an insulating material such as a resin material is disposed inside an outer housing made of metal for shielding and grounding, and a terminal is inserted into the inner housing.

(29) Referring to FIG. 1, a high voltage male connector **100** according to an embodiment may include an outer housing **150**, an inner housing **130**, a partition **140**, a terminal **110**, and a terminal cover **160**.

(30) The outer housing **150** may function to form an outer appearance of the connector **100**, protect components, and support inner components, and may have a tube shape. The inner housing **130** may be inserted into and mounted in the outer housing **150**.

(31) The inner housing **130** may be assembled by being inserted into the outer housing **150** or configured by an insert injection method.

(32) The terminal **110** may be inserted into and mounted in the inner housing **130** so that a front end of the terminal **110** faces the outside.

(33) The connector **100** illustrated in FIG. 1 may include two of the terminals **110** made of a metal material, and each of the terminals **110** may be configured in a plate shape as a terminal for supplying high voltage power.

(34) The partition **140** is formed in the inner housing **130** and may be configured to surround the terminal **110**.

(35) The terminal cover **160** may be formed to extend from a rear wall of the inner housing **130** in a longitudinal direction of the outer housing **150**. That is, the terminal cover **160** may be configured separately from the inner housing **130** or may be configured to extend from the inner housing **130**.

(36) The terminal **110** may be seated on and coupled to the terminal cover **160**. In order to seat and couple the terminal **110** of a plate shape, the terminal cover **160** may be formed in a C shape.

(37) The terminal cover **160** may cover an edge of the terminal **110** of a plate shape. In this case, because one side of the terminal **110** is required to be in contact with a terminal **210** of a female connector **200**, the one side of the terminal **110** may be formed to be exposed.

(38) Referring to FIG. 2, the terminal **110** is inserted into and assembled to a rear surface of the connector **100**, and the assembled terminal **110** may be fixed with a TPA **120**. A detailed description of the TPA **120** is described below.

(39) The terminal **110** may be assembled to the rear surface of the connector **100** in order to be seated on and coupled to the terminal cover **160** formed to extend from the rear wall of the inner housing **130** in the longitudinal direction of the outer housing **150**.

(40) FIG. 3 is a view illustrating a terminal, and FIG. 4 is a view illustrating a terminal cover on and to which the terminal is seated and coupled in a direction in which the terminal is assembled.

(41) As illustrated in FIG. 3, the terminal **110** may be formed in a rectangular plate shape.

(42) The terminal **110** may include an edge **111** formed on a front surface and edges **112** formed on upper and lower surfaces of the terminal **110**. Also, a hole **113** may be provided on one side of the terminal **110**. A lance **170** may be inserted into the hole **113** such that the terminal **110** may be fixed to the inner housing **130**, and a description thereof is described below.

(43) Referring to FIG. 4, the terminal cover **160** may include a first cover **161** provided to cover the front surface of the terminal **110** and a second cover **162** provided to cover the upper and lower surfaces of the terminal **110**.

(44) When the terminal **110** is assembled with the terminal cover **160**, the first cover **161** of the terminal cover **160** comes into contact with the edge **111** of the front surface of the terminal **110**, and the second cover **162** comes into contact with the edges **112** of the upper and lower surfaces of the terminal **110**.

(45) As such, as the edges **111** and **112** of the terminal **110** are covered by the terminal cover **160**, a finger may be prevented from coming into contact with the terminal **110**.

(46) However, when the terminal cover **160** is simply in a state of being in contact with the terminal **110**, deformation and damage of the terminal **110** may occur due to an external impact or the like.

(47) In order to prevent such deformation and damage, the terminal **110** and the terminal cover **160** have a structure in which the terminal **110** and the terminal cover **160** are engaged with each other when the terminal **110** is assembled to the terminal cover **160**. Hereinafter, this structure is described with reference to FIGS. 5 and 6.

(48) FIG. 5 is a side cross-sectional view illustrating a state in which the terminal and the terminal cover are assembled, and FIG. 6 is a front view illustrating the state in which the terminal and the terminal cover are assembled.

(49) Referring to FIG. 5, the front surface of the terminal **110** may be covered by the terminal cover **160**. In this case, the terminal cover **160** in FIG. 5 may be the first cover **161** covering the front surface of the terminal **110**.

(50) As illustrated in FIG. 5, as the first cover **161** of the terminal cover **160** covers the front surface of the terminal **110**, a finger may be prevented from coming into contact with the front surface of the terminal **110**.

(51) In addition, when the first cover **161** covers the terminal **110**, deformation and damage caused by an external impact or the like may be prevented through an engaging structure **191**.

(52) Referring to FIG. 6, the upper and lower surfaces of the terminal **110** may be covered by the terminal cover **160**. In this case, the terminal cover **160** in FIG. 6 may be the second cover **162** covering the upper and lower surfaces of the terminal **110**.

(53) As illustrated in FIG. 6, as the second cover **162** of the terminal cover **160** covers the upper and lower surfaces of the terminal **110**, a finger may be prevented from coming into contact with the upper and lower surfaces of the terminal **110**.

(54) In addition, when the second cover **162** covers the terminal **110**, deformation and damage caused by an external impact or the like may be prevented through an engaging structure **192**.

(55) As another embodiment, the terminal cover **160** may include only one of the first cover **161** and the second cover **162**.

(56) In other words, only the first cover **161** covering the front surface of the terminal **110** may cover the front surface of the terminal **110** and the second cover **162** may not cover the terminal **110**, or only the second cover **162** covering the upper and lower surfaces of the terminal **110** may cover the upper and lower surfaces of the terminal **110** and the first cover **161** may not cover the terminal **110**.

(57) When only the first cover **161** covers the terminal **110**, as illustrated in FIG. 5, only the front surface of the terminal **110** is covered, so that a finger may not come into contact with the front surface of the terminal **110**.

(58) In this case, the first cover **161** and the front surface of the terminal **110** are coupled by being engaged with each other, so that deformation and damage caused by an external impact or the like may be prevented.

(59) When only the second cover **162** covers the terminal **110**, as illustrated in FIG. 6, only the upper and lower surfaces of the terminal **110** are covered, so that a finger may not come into contact with the upper and lower surfaces of the terminal **110**.

(60) In this case, the second cover **162** and the upper and lower surfaces of the terminal **110** are coupled by being engaged with each other, so that deformation and damage caused by an external impact or the like may be prevented.

(61) As such, the terminal cover **160** covering the terminal **110** may include only one of the first cover **161** and the second cover **162**, and may include both the first cover **161** and the second cover **162** as described above.

(62) FIG. 7 is a perspective view illustrating the connector in a state in which the terminal is assembled.

(63) Referring to FIG. 7, the connector **100** may include the inner housing **130** coupled to the inside of the outer housing **150** and the terminal cover **160** formed to extend from the rear wall of the inner housing **130** in the longitudinal direction of the outer housing **150**, and the terminal cover **160** may cover the terminal **110**.

(64) The terminal cover **160** may structurally prevent a finger from coming into contact with the terminal **110** by covering the front, and upper and lower edges of the terminal **110**.

(65) The terminal cover **160** may include a hole **163** in a center of the front surface.

(66) The hole **163** has a structure of being formed in the center of the front surface of the terminal cover **160** to allow the inside to be seen, and whether the terminal **110** is securely coupled to the terminal cover **160** may be checked through the hole **163**.

(67) Specifically, whether the terminal **110** is securely coupled to the terminal cover **160** may be visually checked through the hole **163**, and whether the terminal **110** is completely assembled may be checked from the outside with a contact tester by using the hole **163**.

(68) FIG. 8 is a view illustrating a lance and a protective rib for fixing and protecting the terminal when the terminal is assembled, and FIG. 9 is a view illustrating a state in which the terminal is secondarily fixed using a TPA when the terminal is assembled.

(69) In a case where a separate fixing device is not provided when the terminal **110** is assembled to the inner housing **130**, deformation and damage can be caused by an external impact or the like.

(70) Referring to FIG. 8, in order to inhibit or prevent such deformation and damage, the terminal **110** may be fixed using the lance **170** when the terminal **110** is assembled to the inner housing **130**.

(71) As illustrated in FIG. 3, the terminal **110** may be provided with the hole **113** on the one side.

(72) When the terminal **110** is assembled, as the lance **170** is coupled to the hole **113**, the terminal **110** may be firmly fixed.

(73) The lance **170** may have an elastically deformable cantilever shape to fix and release the terminal **110**.

(74) A protective rib **180** extending in a front-rear direction may be provided on one side of the terminal **110**.

(75) The protective rib **180** may serve to prevent deformation and damage by preventing an external force from acting on the terminal **110**.

(76) As described above, the terminal **110** may be fixed and protected through the lance **170** and the protective rib **180**. In addition, the TPA **120** may be further coupled to secondarily fix the terminal **110**, and a description thereof is given below.

(77) FIG. 10 is a view illustrating an outer appearance of the TPA.

(78) When a separate fixing device such as the TPA is not provided in a conventional connector, there is a problem that the terminal is pushed back when the female connector and the male connector are combined.

(79) The TPA (Terminal Position Assurance) is a terminal position assurance member, and by regulating a position of the terminal **110** by the TPA **120**, the position of the terminal **110** may be accurately secured within the inner housing **130**, so that the problem of the terminal being pushed back as described above may be solved.

(80) The TPA **120** may include protrusions **121** and a groove **122**.

(81) The protrusions **121** are portions protruding from upper and lower surfaces of the TPA **120**, and the groove **122** is a portion recessed from one side surface of the TPA **120**.

(82) The protrusions **121** formed on the upper and lower surfaces of the TPA **120** may be caught on the inner housing **130** to prevent the terminal **110** from being separated from the inner housing **130**.

(83) When a force is applied by inserting a tool into the groove **122** formed on the side surface of the TPA **120**, the protrusions **121** may be released to separate the TPA **120**.

(84) Specifically, when a force is applied to the groove **122** of the TPA **120** in a direction opposite to a fastening direction of the TPA **120** and the inner housing **130** using the tool, as the protrusions **121** of the TPA **120** fastened to the inner housing **130** generate elastic deformation, the TPA **120**

may be separated.

(85) As such, the terminal **110** may be secondarily fixed through the protrusions **121** of the TPA **120**, and the coupling of the TPA **120** may be easily released through the groove **122**.

(86) FIG. **11** is a perspective view illustrating a state in which the TPA is assembled.

(87) As described above, the terminal **110** may be fixed by the lance **170**, and the lance **170** may be fixed by the TPA **120**. That is, the terminal **110** may be primarily fixed by the lance **170** and secondarily fixed by the TPA **120**.

(88) A separate groove in which the lance **170** is accommodated may be formed on the opposite side of the groove **122** of the TPA **120**. When the protrusions **121** of the TPA **120** are coupled to the inner housing **130**, the movement of the lance **170** accommodated in the TPA **120** may be restricted, and thus the terminal **110** coupled to the lance **170** may be more firmly fixed.

(89) As a result, the protrusions **121** of the upper and lower surfaces of the TPA **120** may be caught on the inner housing so that the terminal **110** may be fixed. When a force is applied by inserting the tool into the groove **122** of the side surface of the TPA **120**, the coupling of the TPA **120** may be released.

(90) As such, the terminal **110** may be more firmly fixed to the inner housing **130** by using the TPA **120**, and deformation and damage caused by an external impact or the like may be prevented.

(91) FIG. **12A** is an upper cross-sectional view and FIG. **12B** is a lower cross-sectional view, each illustrating a structure of the connector. FIG. **13** is a side cross-sectional view illustrating the structure of the connector.

(92) Referring to FIG. **12**, the first cover **161** of the terminal cover **160** surrounds the terminal **110** on the front surface of the terminal **110** of the connector **100**.

(93) The first cover **161** and the front surface of the terminal **110** may be coupled to each other with the engaging structure **191** to be firmly fixed.

(94) According to this structural feature, even when a finger is in the vicinity of the front surface of the terminal **110** of the connector **100**, the finger may be prevented from coming into contact with the terminal **110** by the first cover **161**.

(95) Referring to FIG. **13**, the second cover **162** of the terminal cover **160** surrounds the terminal **110** on the upper and lower surfaces of the terminal **110** of the connector **100**.

(96) The second cover **162** and the upper and lower surfaces of the terminal **110** may be coupled to each other with the engaging structure **192** to be firmly fixed.

(97) According to this structural feature, even when a finger is in the vicinity of the upper and lower surfaces of the terminal **110** of the connector **100**, the finger may be prevented from coming into contact with the terminal **110** by the second cover **162**.

(98) FIG. **14A** is an upper and lower cross-sectional view illustrating the connector coupled with a female connector, and FIG. **14B** is an enlarged view of a part identified in FIG. **14A**. FIG. **15A** is a side cross-sectional view illustrating the connector coupled with the female connector, and FIG. **15B** is an enlarged view of a part identified in FIG. **15A**.

(99) The connector **100** of the disclosure is a male connector in which the terminal **110** has a shape protruding to the outside, and the female connector **200** has a terminal **110** provided therein, whereby the terminal **110** of the male connector **100** is assembled by being inserted into the inside of the female connector **200**.

(100) Referring to FIGS. **14A**, **14B**, **15A** and **15B**, the front surface of the terminal **110** is covered by the first cover **161**, and thus the front surface of the terminal **110** may not directly come into contact with the terminal **210** of the female connector **200**. Also, the upper and lower surfaces of the terminal **110** is covered by the second cover **162**, and thus the upper and lower surfaces of the terminal **110** may not directly come into contact with the terminal **210** of the female connector **200**.

(101) Therefore, the side surface of the terminal **110** of the connector **100** comes into contact with the terminal **210** of the female connector **200** whereby both the connectors may be coupled.

(102) As is apparent from the above, according to a high voltage male connector and a high voltage

connector according to an embodiment, by satisfying the IPXXB standard without adding components, the cost and weight of the high voltage connector can be reduced and the structure can be simplified.

(103) The embodiments disclosed with reference to the accompanying drawings have been described above. It should be understood by those having ordinary skill in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present disclosure. The disclosed embodiments are illustrative and should not be construed as limiting.

Claims

1. A connector comprising: an outer housing having a tube shape; an inner housing coupled to the outer housing, wherein the inner housing comprises: a rear wall, and a terminal cover configured to extend from the rear wall in a longitudinal direction of the outer housing; and a terminal in a plate shape and configured to be seated on and coupled to the terminal cover, wherein the terminal cover is configured to cover edges of the terminal and to expose a side surface of the terminal, wherein the terminal cover comprises: a first cover configured to cover a front surface of the terminal; and a second cover configured to cover upper and lower surfaces of the terminal, and wherein a hole is formed in a center of the first cover of the terminal cover so that whether the terminal is assembled with the terminal cover is checked.
 2. The connector according to claim 1, wherein when the terminal is coupled to the terminal cover, the edges of the terminal and the first and second covers of the terminal cover have a structure of being engaged with each other.
 3. The connector according to claim 2, further comprising: a lance, wherein when the terminal is coupled to the inner housing, the lance is coupled to a hole formed on one side of the terminal.
 4. The connector according to claim 3, further comprising a Terminal Position Assurance (TPA), wherein when the terminal is coupled to the inner housing, the terminal is fixed by the TPA.
 5. The connector according to claim 4, wherein the TPA comprises a protrusion and a groove, and the protrusion is released to separate the TPA when a force is applied to the groove of the TPA.
 6. The connector according to claim 5, further comprising a protective rib, wherein the protective rib covers a portion of the side surface of the terminal.
 7. The connector according to claim 1, wherein when the terminal is coupled to the terminal cover, the front surface of the terminal and the first cover of the terminal cover have a structure of being engaged with each other.
 8. The connector according to claim 1, wherein when the terminal is coupled to the terminal cover, the upper and lower surfaces of the terminal and the second cover of the terminal cover have a structure of being engaged with each other.
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