CLAIMS:

1. An extension cable connection structure for a temperature measurement means, the connection structure being formed by connecting one pair of element wires derived from a sheath base end of the temperature measurement means to one pair of conductive wires derived from a leading end of an outer jacket on an extension cable, wherein a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding covers a section from the sheath base end to the extension cable leading end through one pair of coupling parts coupling the pair of element wires and the pair of conductive wires, a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding is placed such that the pair of element wires, the pair of coupling parts, and the pair of conductive wires, are each separated from one another.

2. The extension cable connection structure for a temperature measurement means according to Claim 1, wherein the outer jacket at the extension cable leading end has a tubular structure made of a thermoplastic resin with a glass-transition temperature of 125°C or less.

3. The extension cable connection structure for a temperature measurement means according to Claim 1 or 2, wherein the sheath base end is provided with a protrusion for locking the connection part.

4. The extension cable connection structure for a temperature

measurement means according to any one of Claims 1 to 3, wherein the coupling parts are formed by welding the element wires and the conductive wires.

5. The extension cable connection structure for a temperature measurement means according to any one of Claims 1 to 4, wherein the conductive wires are twisted wires, and the coupling parts are formed by further twisting ends of the conductive wires in a direction of twisting so as to be closely attached to each other and welding the element wires to the ends of the conductive wires.

6. The extension cable connection structure for a temperature measurement means according to Claim 5, wherein the coupling parts are formed by welding the closely attached leading ends of the conductive wires and further welding the element wires to the welded parts of the conductive wires.

7. The extension cable connection structure for a temperature measurement means according to any one of Claims 1 to 3, wherein the coupling parts are formed by a conductive member for swaging and fixing the element wires and the conductive wires.

8. An extension cable connection method for a temperature measurement means, the temperature measurement means having a connection structure formed by connecting one pair of element wires derived

from a sheath base end of the temperature measurement means to one pair of conductive wires derived from a leading end of an outer jacket on an extension cable, wherein, on a section from the sheath base end to the extension cable leading end through one pair of coupling parts coupling the pair of element wires and the pair of conductive wires, a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding is placed such that the pair of element wires, the pair of coupling parts, and the pair of conductive wires, are each separated from one another.

9. The extension cable connection method for a temperature measurement means according to Claim 8, wherein the coupling parts are formed by welding the element wires and the conductive wires.

10. The extension cable connection method for a temperature measurement means according to Claim 8 or 9, wherein the conductive wires are twisted wires, and the coupling parts are formed by further twisting ends of the conductive wires in a direction of twisting so as to be closely attached to each other and welding the element wires to the ends of the conductive wires.

11. The extension cable connection method for a temperature measurement means according to Claim 10, wherein the coupling parts are formed by welding the closely attached leading ends of the conductive wires and further welding the element wires to the welded parts of the conductive wires.

CLAIMS:

1. An extension cable connection structure for a temperature measurement means, the connection structure being formed by connecting one pair of element wires derived from a sheath base end of the temperature measurement means to one pair of conductive wires derived from a leading end of an outer jacket on an extension cable,

wherein a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding covers a section from the sheath base end to the extension cable leading end through one pair of coupling parts coupling the pair of element wires and the pair of conductive wires, a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding is placed such that the pair of element wires, the pair of coupling parts, and the pair of conductive wires, are each separated from one another and

wherein the conductive wires are twisted wires, and the coupling parts are formed by further twisting ends of the conductive wires in a direction of twisting so as to be closely attached to each other and welding the element wires to the ends of the conductive wires.

2. The structure according to Claim 1,

wherein the outer jacket at the extension cable leading end has a tubular structure made of a thermoplastic resin with a glass-transition temperature of 125°C or less.

3. The structure according to Claim 1 or 2,

wherein the sheath base end is provided with a protrusion for locking the connection part.

4. The structure according to any one of Claims 1 to 3,

wherein the coupling parts are formed by welding the closely attached leading ends of the conductive wires and further welding the element wires to the welded parts of the conductive wires.

5. An extension cable connection method for a temperature measurement means, the temperature measurement means having a connection structure formed by connecting one pair of element wires derived from a sheath base end of the temperature measurement means to one pair of conductive wires derived from a leading end of an outer jacket on an extension cable,

wherein, on a section from the sheath base end to the extension cable leading end through one pair of coupling parts coupling the pair of element wires and the pair of conductive wires, a connection part made of a thermoplastic polyamide resin and molded by hot-melt molding is placed such that the pair of element wires, the pair of coupling parts, and the pair of conductive wires, are each separated from one another and

wherein the conductive wires are twisted wires, and the coupling parts are formed by further twisting ends of the conductive wires in a direction of twisting so as to be closely attached to each other and welding the element wires to the ends of the conductive wires.

6. The method according to Claim 5,

wherein the coupling parts are formed by welding the closely attached leading ends of the conductive wires and further welding the element wires to the welded parts of the conductive wires.