



# Application Guide

HOW TO ASSEMBLE THE CABLE MANUALLY

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## What are connectors?

### ➤ Connector

Regardless of its design complexity, every connector performs a relatively simple function: it bridges a gap between two conductors in a circuit. This bridging allows an electric current (or light waves in a fiber optic system) to move from one conductor to another along a pathway.

The connectors for PV cables have male and female parts, see the below diagram.



For photovoltaic connectors, various companies' product design appearance will be different, but the principle is essentially the same. Multi-contact is the pioneer in the connector industry, the popular type is PV-KST4, PV-KBT4, PV-SSH4 (Usually called MC4, EVO2 and EVO3).

## Assemble the Cable

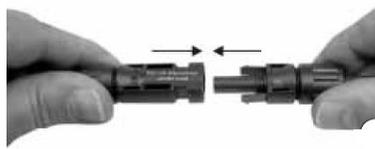
- a) PV cable removal of insulation and sheath, of a conductor with 6 ~ 7.5 mm (for equipment or process, there may be differences in length), then with special tools or equipment for pressure welding conductor to the connector metal pin, with a crimping effect as shown in the figure below.



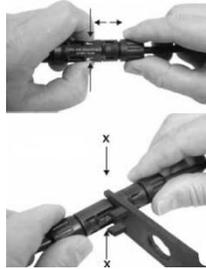
- b) Insert the finished pin into the corresponding pressure to the plastic in the terminal.



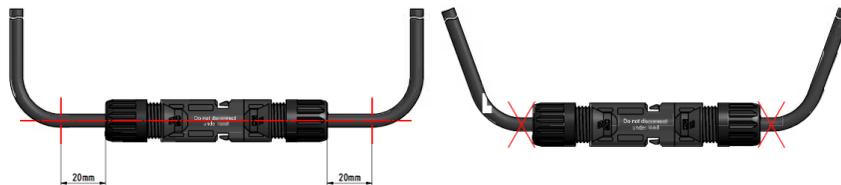
- c) Tighten the connector with torque tools or equipment, with typical torque value of 2.5 ~ 3 Nm, thus the male and female head connection can be made.



- d) Use hands or special tools to separate the male and female head.



- e) Finished cable assembly components shown as below, being careful to set aside a straight part to ensure the reliability of use.



## Over diameter of the conductor

- Before components are used for processing, the user should choose appropriate connectors according to the conductor diameter.
- Below is the table of over diameter of conductor.

**Maximum diameters of circular copper conductors –  
solid, non-compacted stranded and flexible**

1	2	3	4
Cross sectional area mm <sup>2</sup>	Conductors in cables for fixed installations		Flexible conductors (Classes 5 and 6) mm
	Solid (Class 1) mm	Stranded (Class 2) mm	
0,5	0,9	1,1	1,1
0,75	1,0	1,2	1,3
1,0	1,2	1,4	1,5
1,5	1,5	1,7	1,8
2,5	1,9	2,2	2,4
4	2,4	2,7	3,0
6	2,9	3,3	3,9
10	3,7	4,2	5,1
16	4,6	5,3	6,3

From: IEC 60228.

### Remark

- According to different wiring needs and technical requirements, Photovoltaic cables also can use an injection method to connect the connectors. Detailed methods need to be designed and produced by component factories.
- This guide briefly discussed a regular way of processing photovoltaic cables and connectors, for reference only. Detailed specific components of processing operations should be ensured by process and installation in the components factory.