



SK4 Solar Copper Connector

Product Specification

SUNKEAN.com

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Installation Notes

1. If the product is installed by yourself using parts or tools not specified by our company, or if the preparation and installation procedures are neglected, we do not guarantee the safety of the product.
2. To avoid electric shock, the PV photovoltaic connectors must be disconnected from the power supply during disassembly and assembly.
3. The final product must include electric shock protection features.
4. Due to safety concerns, PVC cables are not recommended for use.
5. Do NOT unplug the connector under load! Turn off the DC/AC inverter or open the DC/AC circuit breaker to ensure the connector is in a no-load state before plugging or unplugging. Under these conditions, hot-plugging is allowed within the specified limits.
6. It is recommended not to use non-tinned cables, because after oxidation of the cable conductor, the contact resistance at the crimped connection may exceed specifications.
7. After disconnecting the connector, a dust cap must be used to cover the connector interface to prevent dust, water, or other foreign substances from entering.
8. No insects or other oily foreign substances should enter the connector cavity. Ensure the interior of the product is clean before mating the connectors.
9. The mating parts have a waterproof rating of IP68, but they are not designed for prolonged submersion in water. Do not place the connectors on rooftop surfaces.
10. The product must not be used in environments containing hydrocarbons, phenols, ketones, ammonia compounds, or other substances that are corrosive to plastics. During installation, do not apply or add any grease or lubricants inside the connector.
11. The minimum acceptable distance in air defined the outer limit of the vicinity zone, where only skilled personnel or instructed person can conduct repairs at live circuitry. For systems exceeding DC 1500 V, and up to DC 2000 V, the minimum distance shall be $DV=1120\text{mm}$;

The minimum acceptable distance in air defining the outer limit of the live working zone, which a trained worker can approach by maintaining the appropriate air distances to live parts at a different electric potential and by using tools for live working. For systems exceeding DC 1500V, and up to DC 2000 V, the minimum distance shall be $DL=60\text{mm}$. Such requirement is necessary for PV-module repairs, where a trained engineer may have to access live parts.

PV-connectors for Class II equipment with system voltage exceeding 1500V DC shall be installed at industrial installations only. Such PV connectors are only to be installed and repaired by trained personnel knowledgeable in high voltage applications and of the inherent hazards associated with the use of PV connectors and their failure modes.

The Importance of Installation Instructions

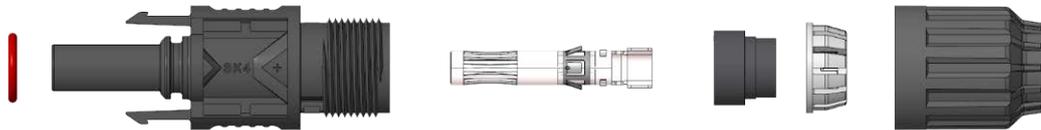
- Please follow the instructions in the operation manual carefully. Failure to do so may result in personal injury or life-threatening situations caused by arc faults, electric shock, fire, or system malfunction.
- Install and use the product in accordance with this operation manual and the relevant technical specifications.
- Keep this operation manual properly and hand it over to the end user after installation.
- If this product is to be used in other applications, the relevant requirements and specifications may differ. Please contact us for further consultation.
- Never disconnect a connector under load blindly.
- The connector is for one-time installation only.
- We recommend using our certified PV cables. Unauthorized or uncertified PV cables must not be installed on the connectors.

Product Components

Male connector



Female connector



		2.5mm ² /14AWG 4mm ² /12AWG 6mm ² /10AWG	10mm ² /8AWG
Nut	Material PA66	✓	✓
Conical Waterproof Inner Plug	Material Silicone Rubber		✓
Male Terminal	Material Tinned Copper Alloy	✓	✓
Male Plastic	Material PA66	✓	✓
O-ring	Material Silicone Rubber	✓	✓
Female Plastic	Material PA66	✓	✓
Female Terminal	Material Tinned Copper Alloy	✓	✓
T-shaped Waterproof Inner Plug	Material Silicone Rubber	✓	
Flange	Material Nylon	✓	

All materials are in compliance with RoHS and REACH requirements.

SK4 Solar Copper Connector Dimensions

Male connector	Female connector

Technical Specifications

Operating Temperature Range	-40°C~+85°C
Upper Limit Temperature	120°C
Protection Rating	IP65/IP68 (1m,1h)
Protection Rating (Unmated)	IP 2X
Rated Voltage	DC 2000V
Rated Current (at 85°C)	36A 2.5mm ² 41A 4mm ² 50A 6mm ² 70A 10mm ²
Rated Impluse Voltage	27.2kV
Contact Resistance	≤0.3mΩ
Flammability Rating	UL94V-0
Overvoltage Category	CAT III
Pollution Degree	2 (inside of enclosure)
Insulation Material	PA66
Contact Material	Tinned Copper Alloy
Terminal Connection Method	Crimping
Connector Locking Mechanism	Locking
Mating Cycles of the Connector	100
Certification Standards	IEC 62852:2014 + Amd.1:2020 EN 62852:2015 + Amd.1:2020
Certification	TÜV Rheinland / TÜV SÜD

Part Number List

Rated Voltage	P/N		IEC62852		Gap Reference mm	Cable O.D. Ref. Range (mm)	Certification	
	Tool	Manual	mm ²	Wire diameter			TUV	SUD
1500V	SK4-CSTE-A021	SK4-CSHE-A021	2.5	5.10mm	<0.5	4.7~5.7	*	*
	SK4-CSTE-A041	SK4-CSHE-A041	4	5.50mm	<0.5	4.7~5.7	*	*
	SK4-CSTE-A061	SK4-CSHE-A061	6	6.10mm	<0.8	5.6~6.8	*	*
	SK4-CSTE-A101	SK4-CSHE-A101	10	7.05mm	<0.8	6.5~8.5	*	*
2000V	SK4-CPTE-A021	SK4-CPHE-A021	2.5	6.0mm	<0.5	5.6~6.8	*	*
	SK4-CPTE-A041	SK4-CPHE-A041	4	6.4mm	<0.5	5.6~6.8	*	*
	SK4-CPTE-A061	SK4-CPHE-A061	6	6.85mm	<0.8	5.6~6.8	*	*
	SK4-CPTE-A101	SK4-CPHE-A101	10	8.1mm	<0.8	6.5~8.5	*	*

Sunkean Cable Information

Application

Sunkean Solar Cable is a highly flexible cable specially designed for connecting photovoltaic solar power systems. It is low-smoke and halogen-free, making it suitable for various solar power applications, including large-scale solar power plants, rooftop solar installations, and floating solar power stations on water. The cable effectively reduces the failure rate and operational costs of photovoltaic systems in the long term.

Characteristics

- **Temperature Range:** -40°C~+90°C
- **Rated Voltage:** DC 1500V/2000V
- **According To Standards:** PPP 58209A:2022

Cable Structure

- **Conductor:** IEC 60228 Class 5 Tinned Copper
- **Insulation:** XLPO All Color
- **Jacket:** XLPO All Color

Advantage

- **Low Smoke, Zero Halogen**
- **More Economical**
- **CPR Dca Certification**
- **UV Resistance**
- **Direct Burial**

Test Item

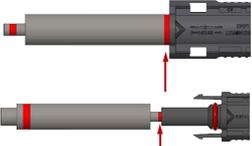
- **Zero Halogen** According to DIN EN50525-1 / IEC 62821-1
- **Flame Retardant** According to DIN EN60332-1-2 / IEC 60332-1-2
- **Smoke Density** According to DIN EN61034-2 / IEC 61034-2
- **UV Resistance** According to DIN EN50618 / IEC 62930 Annex E
- **Ozone Resistant** According to DIN EN60811-403 / IEC 60811-403

Copper Cables Commonly Used with SK4 Solar Copper Connectors: 2.5 / 4 / 6 / 10 mm² (TUV)



Cross Section (mm ²)	Conductor Stranded O.D. (mm)	Insulation Thickness (mm)	Jacket Thickness (mm)	Cable O.D. Ref. Range (mm)	Approximate Weight (kg/km)	Conductor Resistance Max(Ω/km, 20°C)
DC 1500V						
2.5	1.94	0.7	0.8	5.10±0.15	45	8.21
4	2.42	0.7	0.8	5.50±0.15	59	5.09
6	2.96	0.7	0.8	6.10±0.15	79	3.39
10	3.94	0.7	0.8	7.05±0.20	125	1.95
DC 2000V						
2.5	1.94	1.1	0.8	6.0±0.15	55	8.21
4	2.42	1.1	0.8	6.4±0.15	69	5.09
6	2.96	1.1	0.8	6.85±0.15	89	3.39
10	3.94	1.1	0.8	8.1±0.20	136	1.95

Tools and Accessories

<p>Wire Stripper SK4-T-B1</p>			<p>Reserve the proper stripping length, place the cable into the corresponding groove, and tighten the wire stripper until the outer jacket is removed.</p>
<p>Crimping Tool SK4-T-Y1</p>			<p>Place the loose terminal into the corresponding slot of the crimping tool model, then align and insert the stripped cable into the terminal slot.</p>
<p>Unlocking Tool P4-CAJ-01</p>			<p>For detailed tool unlocking steps, please refer to page 9.</p> <p>First, use one tool to fit the connector body through the middle hole and hold it firmly with your left hand. Then, use another tool to insert the open end of the nut onto the nut, and tighten it to the specified position with your right hand.</p>
<p>Dust Cap P4-F8-01</p>			<p>Fit the dust cover's opening onto the connector plug.</p>
<p>Detection Tool P4-CAJ-02</p>		 <p>Visible red indicator signifies a qualified product</p>	<p>Insert both ends of the tool into the connector windows until fully seated; the red part showing indicates a good connection.</p>

Disclaimer

1. Product Storage and Transportation

- i. The product can be stored for up to 2 years if the packaging remains intact.
- ii. During transportation and storage, the product must not be subjected to excessive pressure or impact that could cause damage.
- iii. The product should be stored at room temperature, away from light, moisture, and dust to prevent performance degradation.
- iv. When used in harsh environments with heavy dust or moisture, the dust cap must be installed before the product leaves the factory.

2. Product Installation and Operating Environment

- i. The normal operating temperature range of the product is -40°C to +85°C.
- ii. When used in rooftop power stations, the connector should not be placed directly on the roof surface.

3. When The Connector Is Not Mated, The Product Does Not Meet The Required Protection Rating And Cannot Function Properly

- i. When the connector is not mated, a dust cap must be used to cover it, and it should not be left outdoors for extended periods.
- ii. Third-party products that claim compatibility with our parts/connectors do not meet the requirements for long-term, stable, and safe electrical connections. For safety reasons, we do not recommend using them with our products for extended periods. We will not be liable for any related damages caused.