

Reference table for quick selection of carrying capacity

Cross-sectional area		Recommended value of ampacity (A)		Download traffic conversion factor for different ambient temperatures	
Aluminum	Copper	Laying in the air	Buried laying	Ambient temperature °C	Conversion factor
1×2.5	1×1.5	31	43	0	1.22
1×4	1×2.5	42	59	10	1.15
1×6	1×4	57	80	20	1.08
1×10	1×6	72	106	30	1
1×16	1×10	98	139	40	0.91
1×25	1×16	132	178	50	0.82
1×35	1×25	183	213	60	0.71
1×50	1×35	227	251	70	0.58
1×70	1×50	287	308		
2×2.5	2×1.5	24	33		
2×4	2×2.5	33	46		
2×6	2×4	45	63		
2×10	2×6	58	85		
2×16	2×10	80	113		
2×25	2×16	107	144		
2×35	2×25	138	161		
2×50	2×35	171	189		
2×70	2×50	209	224		

Note: Ambient temperature is 30°C; conductor maximum temperature is 90°C



PRODUCT CHARACTERISTICS

reduce cable weight
 resistance to external environment such as ozone resistance, acid and alkali resistance and environmental climate resistance, and has a long service life of 25 years
 Reduce installation costs, can be directly buried, and can be used for series and parallel connection of multiple components
 Carrying capacity meets the requirements
 The mechanical properties of aluminum conductors meet the standards
 Copper-aluminum connection safety
 Copper-aluminum connectors and cable connections



Requirements for copper aluminum connectors

Use copper-aluminum connectors that meet the relevant requirements of EC62852, IEC61238 and 2pg standards. In view of the continuous technological progress of copper-aluminum connectors, there may be problems in the matching between cables and connectors of different brands. It is recommended that connectors of a specific brand and model need to be matched with aluminum alloy photovoltaic cables of a specific brand and model.

Matching Verification Requirements for Copper-Aluminum Connectors and Aluminum Alloy Photovoltaic Cables

Number	Experimental project	Performance requirements
1	Thermal cycle test (1000 times) thermal cycle	Initial dispersion: ≤ 0.3 Average dispersion: ≤ 0.3 Variation of resistance ratio: ≤ 0.15 Resistance ratio growth rate: ≤ 2.0 Maximum temperature: $\leq$ reference conductor temperature
2	Short circuit test (6 times)	Only for type A connector
3	Mechanical property test	40XA*, up to 20000N. The joint bears the above tensile load and keeps it for 1min. No slippage at the crimp

Note: A* indicates the nominal cross-sectional area of aluminum or aluminum alloy conductor (mm²)

Japanese Standard S-JET Approved Solar Cable

APPLICATION

Solar photovoltaic power generation system used for DC wiring between solar cell modules with a system voltage below 1500V DC, between solar cell modules and junction boxes, and between junction boxes and power controllers

TECHNICAL INDICATORS

Rated voltage: 1500V(DC)
 Test voltage: AC6.5KV/5min($20^{\circ}\text{C} \pm 0.5$) or
 DC15KV/5min($20^{\circ}\text{C} \pm 0.5$) without breakdown
 Ambient temperature: $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$
 Conductor maximum temperature: 125°C
 Expected lifespan: 25 years
 Bending radius: $\geq 4D$

STRUCTURE

Conductor: bare copper conductor in JCS 4517
 Insulation: 125°C irradiation cross-linked low-smoke
 halogen-free flame-retardant polyolefin
 Sheath: 125°C radiation cross-linked low-smoke
 halogen-free flame-retardant polyolefin
 Color: red or black

CHARACTERISTICS COMPLIANCE

Fire resistance: JISC 3665-1-2
 anti-UV: JISK 7350
 Compliance with certification: ROHS S-JET
 Executive standard: JCS 4517

Structural dimensions and parameters

Model	Specification (mm ²)	Insulation Nominal Thickness (mm)	Sheath Nominal Thickness (mm)	Approximate outer diameter (mm)
PV-CQ-2	2.0	0.7	1.0	5.6
PV-CQ-4	3.5	0.7	1.1	6.2
PV-CQ-6	5.5	0.7	1.2	6.8
PV-CQ-8	8.0	0.7	1.2	7.4

PRODUCT CHARACTERISTICS

Halogen-free and low-smoke material, in line with environmental protection requirements
 UV, ozone and weather resistance
 Flame retardant, cut resistance, penetration resistance
 Low temperature resistance, high temperature resistance, hydrolysis resistance
 Compatible with all common connectors