

# 光伏电缆

## Photovoltaic cable

光伏发电产生的低压直流电需转换为交流电，连接光伏电池与交直流逆变器间的电缆即为光伏电缆。本产品适用于最高允许1.8kV（线芯对线芯，非接地系统）直流电压、在光伏系统中CD侧使用的单芯软电缆（电线），该产品适合于II类安全等级下使用，电缆运行的环境温度最高到90℃，电缆可以多根并联使用。本产品运用先进的辐照交联工艺，采用低烟无卤阻燃材料生产，产品具有耐高温、抗臭氧、抗紫外线短时过载能力强、寿命长、耐磨、耐油、防腐、高抗拉等优点。

### 一、电缆额定电压

AC  $U_0/U=0.6/1kV$

DC 1.8kV（线芯对线芯，非接地系统，没有负载下的回路）如果电缆使用在直流系统中，其导体间的额定电压应不大于电缆AC额定值的1.5倍，在单相接地直流系统中，此数值应乘以0.5的系数。

### 二、温度范围

环境温度：-40℃到+90℃；

导体最高工作温度：120℃；电缆运行的环境温度最高到90℃，依据EN60216-1标准进行考核，其绝缘和护套的温度指数是120℃，5秒钟短路温度是200℃，期望使用寿命是25年。

### 三、型号规格

型号 Type	导体 Conductor	芯数 Core number	标称截面mm <sup>2</sup> Nominal cross section area	名称 Name
FV	镀锡铜丝 Tinned copper	1	1.5~35	无卤阻燃辐照绝缘和无卤阻燃辐照护套料光伏电缆 Photovoltaic cable with halogen free flame resistant irradiated insulation and sheath

### 四、电缆尺寸参数

芯数*标称截面 Core No.*normal cross section area	导体种类 Conductor category	参考外径 Outer diameter(mm)
1*1.5	5	4.8
1*2.5	5	5.2
1*4	5	6.8
1*6	5	7.3
1*10	5	8.5
1*16	5	9.8
1*25	5	11.0
1*35	5	13.1

Low voltage DC generated by Photovoltaic should be converted into AC. Photovoltaic cable is used to connect Photovoltaic battery and DC/AC converter. It applies to maximum 1.8KV D C (core to core, non grounded system) In photovoltaic system single core cable (wire) is used in DC side, besides photovoltaic cable is used in Class II class safety level and working in environment temperature of Max 90 °C, We can use many parallel cables. It adopts advanced process of irradiation XLPE and it is used low smoke halogen free material with advantage of high temperature resistance, ozone resistance, ultraviolet resistance, aging resistance, oil resistance, wear resistance, erosion resistance, high tensile and strong instantaneous overload capacity.

### Rated Voltage

AC  $U_0/U=0.6/1.6kV$

DC 1.8kV (core to core, non grounded system, return circuit without overloading) if cable is used in DC system, rated voltage between conductors should be not more than 1.5 times of rated A.C value, if it is used in DC system of single-phase grounding, it should be multiplied by 0.5 coefficient values.

### Temperature Range

Ambient temperature: -40°C to +90°C

Max working temperature of conductor: 120°C; working temperature of cable should not exceed 90°C, the temperature index of insulation and sheath is 120°C, The temperature of 5 seconds short circuit is 200°C according to EN60216-1 standard. The expected working life is 25 years.

### Cable Type and Specication

### Cable Dimension Parameter

## 五、电缆主要技术参数

- 1、20°C时导体最大直流电阻值应满足GB/T3956标准中5类导体的规定;
- 2、交流耐电压试验：6.5KV/5min不击穿。

## Main Technical Parameter

Max. conductor DC resistance at 20°C shall meet the requirement of class 5 conductor stipulated in GB/T3956 standard.  
Cable should endure AC voltage withstand test:6.5KV/5min without puncture.

## 六、电缆载流量

## Current Carrying Capacity of Cable

标称截面 Normal cross section area	安装种类 Type of Installation		
	单芯电缆空气中自由敷设 ( A ) To be laid in the air of single core cable	单芯电缆敷设在设备表面 ( A ) Single core cable to be laid on the surface of equipment	在设备表面相邻敷设 ( A ) Cable placing nearby the surface of equipment
1.5	30	29	24
2.5	41	39	33
4	55	52	44
6	70	67	57
10	98	93	79
16	132	125	107
25	176	167	142
35	218	207	176

## 七、电缆结构示意图

## The Sketch Map of Cable Structure

