SOLAR POWER

Rapid urbanisation and globalisation has given rise to an increased demand for energy. The fast pace of depletion of conventional sources of energy have influenced us to find newer and sustainable solutions to meet this increase in demand. In such a scenario, renewable energy sources like wind and solar energy are the need of the hour.

Solar power generation has emerged as one of the most rapidly growing renewable sources of electricity. Solar energy is set to address the ever-growing need for power across the world. It has a low impact on the environment, serving as an ideal alternative to produce electricity, while maintaining a lower carbon-footprint and thereby helping preserve the nature. This has opened new avenues of business for the cable and wire manufacturing companies.

In the recent years, there has been an increase in the number of solar power generation plants, in India and across the world, which has in-turn created a higher demand for wires and cables. In response to this increase in demand, KEI is helping the renewable energy industry harness the opportunity.

KEI is proud to contribute to the renewable energy industry by supplying electrical solar cables to solar power plants. With a sharp focus on technology and innovation, the Company aims at becoming one of the key environment friendly technology companies of the country. To keep pace with the changing needs of the industry, it is important to overcome challenges, identify opportunities for growth and provide future-proof solutions for the industry.

PROPERTIES

- A lifetime 'Component': lasts up to 30 years even under tough conditions
- Used in extreme weather conditions (UV Resistance)
- Halogen-free: low smoke emission and low toxicity during fire
- Flame & fire retardant
- Flexibility & stripability: for fast and easy installation
- Easy installation: with color identification
- Suitable to common connector types
- TÜV, VDE, UTE and IMQ certified
- One common factor for most of the photovoltaic power systems is outdoor use, characterised by high temperature / high UV radiation

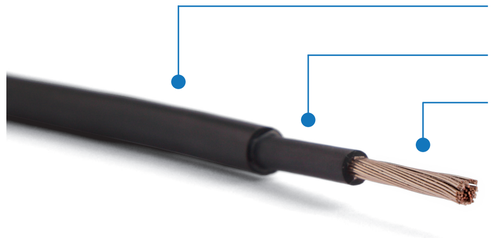
Specification

Type of appliance: Cable for Photovoltaic Systems
Standard: 2Pfg 1169/08.2007/BSEN 50618
Marking: KEI, PV1-F, 0.6/1.0 kV, Cable size, year of manufacturing, TUV 2 Pfg 1169/08.2007 or BSEN 50618
Cross Sectional area: 2.5 sqmm to 16 sqmm or as per customer requirement
Maximum permissible voltage 2000 Vdc
Conductor According to class 5 of IEC 60228/ DIN VDE 0295
Lower ambient temperature: -40^{0}C
Upper ambient temperature: +90^{0}C
Max. temperature at conductor: 120^{0}C for 20000h

Construction

KEI Solar Cables are manufactured with the following material:

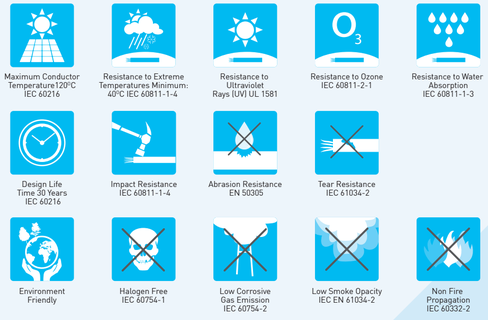
- Annealed tinned copper conductor-Class 5
- Cross linked insulated halogen-free polyolefin compound
- Cross linked halogen free polyolefin sheath compound



REQUIRED FEATURES OF SOLAR CABLE

Cable Size	Approx. overall diameter	Approx. weight of cable	Max. conductor D.C resistance at 20^{0}C	Current rating under continous operation 90^{0}C & ambient temperature at 40^{0}C
sqmm	mm	Kg/km	Ohm/km	Amp
1.5	4.60	35	13.70	22
2.5	4.90	45	8.21	30
4	5.40	60	5.09	42
6	5.90	80	3.39	52
10	7.10	120	1.95	76
16	8.60	180	1.24	95
25	10.30	275	0.80	125
35	11.70	370	0.57	159
50	13.70	515	0.39	185
70	16.00	710	0.28	239
95	17.70	930	0.21	290
120	20.20	1190	0.16	335
150	22.20	1470	0.13	385
185	24.60	1800	0.11	440
240	27.70	2310	0.08	520

Tests and Ratings



FEATURES

Chemical Features:

- Weather and UV resistant
- Resistant to mineral oils
- Resistant to acids & alkalis

Thermal Features:

- Ambient Temperature: -40°C ~ +90°C
- Maximum Temperature at Conductor: 120°C (20000h)
- Short Circuit Temperature: 200°C at conductor (max. 5 sec)
- Thermal Endurance Test: According to EN 60216-2 (temperature index +120°C)
- High Temperature Pressure: Test according to EN 60811-3-1
- Damp Heat Test: According to EN 60068-2-78, 1000 hrs. at 90°C with 85% humidity

Electrical Features:

- Rated Voltage: 0.6/1 kV AC
- Rated DC Voltage: 1.5 kV
- Maximum Permitted DC Voltage: 1.8 kV (conductor / conductor, non earthed system, circuit not under load)
- Maximum Permitted AC Voltage: 0.7/1.2 kV (Uo/U)
- Working Voltage: DC 1000 V
- Insulation Resistance: 1000 MΩ/KM
- Spark Test: 6000 VAC (8400 VDC)
- Voltage Withstand: 6500 V as per EN50395 for 5 min
- Ampacity: According to requirements for cables for PV systems

Mechanical Features:

- Resistant to impact, tear and abrasion
- Minimum bending radius is 4 times the diameter
- Safe pulling force - 50 N/sqmm
- Mineral oil resistance will be according to EN 60811-2-1
- Ozone resistance will be according to EN 50396 part 8.1.3
- Weathering-UV Resistance: according to HD 605/A1 or DIN 53367
- Ammonia resistance is done for 30 days in saturated ammonia atmosphere (internal testing)
- Very good resistance to oil and chemicals
- Acidic & alkaline resistance will be according to EN 60811-2-1 (Oxal acid and sodium hydroxide)

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KEI/SO/DCL/001 REV-02

SELECTED Superbrand INDIA Consumer Validated 2019-20

KEI Wires & Cables

CABLES FOR PHOTOVOLTAICS
(SOLAR CABLES)