EGE SOLAR PV1-F

SOLAR CABLES FOR PHOTOVOLTAIC SYSTEMS

EGE SOLAR PV1-F is a PV cable for the interconnection of solar moduls, panel strings and inverters. PV1-F marking shows and guarantees you the up to date safety standards for PV plants according to the DKE requirements.

EGE SOLAR PV1-F solar cables are flexible single-core and multi- core cables specifically suitable for the wiring of solar installations both inside buildings and outside.

Technical Data

- **Temperature range**
  -40 °C to +90 °C
  Max. temp. at conductor +120 °C
- **Nominal voltage**
  According to VDE U0/U 600/1000 V
  AC 1800 V DC conductor/conductor
- **AC test voltage**
  6500 V, 50 Hz
- **Minimum bending radius**
  Single 1.5 cable diameters
  Multiple 10 cable diameters
- **Minimum bending radius**
  For fixed installation approx. 4 cable diameters

Cable structure

- Bare copper, Class 5, tinned, finely stranded according to DIN VDE 0295 class 5 and IEC 60228 cl. 5
- Double-insulated
- Insulation cross-linked special compound
- Outer sheath cross-linked special compound
- Sheath colour: black

Properties

- Approval: TÜV 2Pfg1169/08.2007
- UV, ozone-resistant, weather-resistant,
- Halogen-free
- Abrasion and cut resistant
- Relatively flexible
- Easy to strip
- Flame-resistant according to VDE 0482 Part 332-1-2, IEC 60332-1-2
- Resistant to short circuits up to 200 °C thanks to double insulation, short circuit temperature 200 °C/5 sec.
- Anticipated service life 25 years

EGE KABLO

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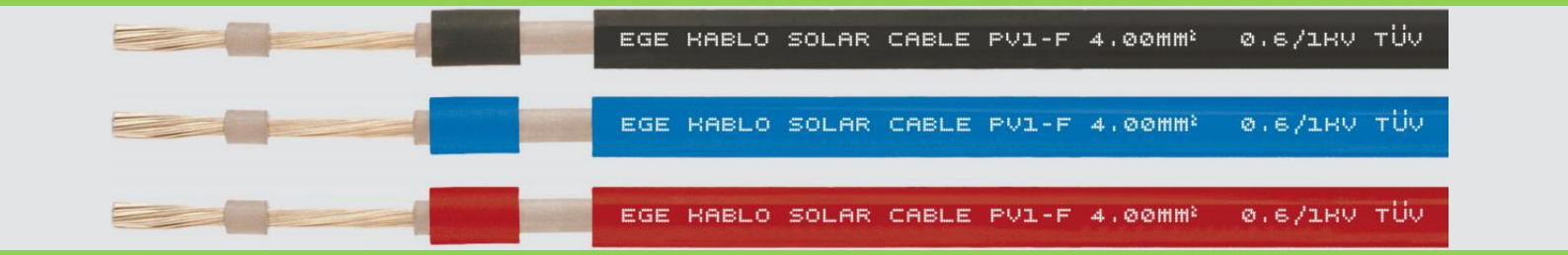
TÜVRheinland®

TECHNICAL DATA

Electrical parameters	
Nominal voltage (AC)	Uo/U 0.6/1.0 kV
Max. PV system voltage (DC)	1.8 kV
Max. permitted operating voltage (AC)	0.7/1.2 kV conductor-ground/conductor-conductor
Max. permitted operating voltage (DC)	0.9/1.8 kV conductor-ground/conductor-conductor
Test voltage (AC/DC)	6 kV/10 kV (test duration 15 min.)
Current carrying capacity	According to requirements for cables for PV systems DKE/VDE AK 411.2.3
Tests	According to DIN VDE 0282 part 2, HD 22.2 and EN 50395 conductor resistance, AC and DC voltage test, dielectric strength, surface resistance, spark test, leakage resistance at 20 °C and 90 °C in water and at 120 °C in air. EN 50305 section 6, DC resistance (10 days, 85 °C in saltwater, 1.5 kV DC)
Thermal parameters	
Ambient temperature	–40 °C to +120 °C (moveable and fixed), designed according to Iec 60216: constant temperature 120 °C = 20,000 h (2.3 years), constant temperature max. 90 °C = 30 years
Short circuit temperature	+250 °C (max. 5 sec on conductor)
Low-temperature resistance	Cold bending and elongation according to en 60811-1-4, cold impact according to en 50305
Damp / heat test	According to en 60068-2-78, 1,000 h at 90 °C and 85 % humidity
Mechanical parameters	
Tensile load	15 N/mm² in use, 50 N/mm² during installation
Bending radius	See table
Abrasion	Emery paper (int. test according to DIN 53516), sheath to sheath (int. test), sheath to metal (int. test), sheath to plastic (int. test)
Shore hardness	85 (int. test according to DIN 53505)
Rodent resistant (martens)	For absolute safety, use protective hoses or cables with metallic sheathing such as web covering or braided sleeving
Resistance to external influences	
Resistance to petroleum	24 h, 100 °C (int. test according to DIN Vde 0473 811-2-1, DIN EN 60811-2-1)
Ozone resistance	Test according to DIN EN 50396, HD 22.2 test type B
UV resistance	Test according to UL 1581 (xeno-Test), ISO 4892-2 (meth. 1), HD 605/A1-2.4.20
Acid and base resistance	According to en 60811-2-1, 7 days, 23 °C (N oxalic acid, N sodium hydroxide solution)
Ammonia resistance	30 days saturated ammonia atmosphere (int. test)
Water absorption (gravimetric)	Int. test according to DIN EN 60811-1-3 and DIN VDE 0473-811-1-3
Reaction to fire	
Flame spread, individual cable	DIN EN 60332-1-2 and DIN VDE 0482 part 332-1-2
Flame spread, bundle of cables	Int. test according to DIN EN 50305-9 and DIN VDE 0482 part 266-2-5
Smoke emission, light transmission > 70 %	Int. test according to DIN EN 50268-2 and DIN VDE 0482 part 268-2
Low corrosiveness	DIN EN 50264-1
Low toxicity	Int. test according to DIN EN 50305 (Itc index less than 3)
Ecological safety measures	Have been taken concerning recycling and disposal as well as energy-saving production (free of pollutants and halogen; no environmentally harmful pollutants are released during thermal recycling)
Design criteria	
Conductor	Electrolytic copper, tin-plated, class 5 according to IEC 60228 (DIN VDE 0295)
Insulation	Flame retardant, halogen free and crosslinked compound
Sheath	Flame retardant, halogen free and crosslinked compound
Labeling	EGE KABLO SOLAR CABLE PV1-F (cross section) 0.6/1 kV TÜV



Nominal cross section	**mm²**	**2.5**	**4**	**6**	**10**
Conductor diameter	mm	2.15	2.70	3.25	4.15
Outer diameter (minimum)	mm	5.10	6.05	6.60	7.90
Outer diameter (maximum)	mm	5.60	6.55	7.10	8.40
Min. bending radius	mm	16	19	21	24
Net cable weight. approximate	kg/km	49	75	101	160
Max. current load at 60 °C	A	41	55	70	98
Permitted short circuit current (1 sec)	kA	0.32	0.50	0.76	1.26