

# Electric cables for photovoltaic systems

Standard: EN 50618



## Construction:

- 1 Tin-coated copper conductor (class 5)
- 2 Insulation made of cross-linked halogen-free polyolefin
- 3 Outer sheath made of cross-linked halogen-free polyolefin, colour black or red

## Application:

Cables are designed for DC-side connections of PV panels or strings of panels to DC/AC inverters according to applicable European Norm (EN 50618). Cables are both halogen free and UV resistant.

Installation of the product should only be carried out by personnel trained and qualified for electrical works. Applicable rules of installation must be applied at all times.

## Properties:

Rated voltage AC $U_0/U$	1.0/1.0 kV	Colour of insulation	natural
Rated DC voltage	1.5 kV	Self-extinguishing of single cable	IEC 60332-1-2
Test AC voltage	6.5 kV	UV stability	yes
Max. rated DC voltage	1.8 kV	Radius of bend min.	5d (cable diameter)
Max. operating conductor temperature	+120 °C	Packaging	coils, spools, and drums
Max. short-circuit temperature	+250 °C	Certificate	TÜV Rheinland R 60169212
Temperature range for handling	-15 °C up to +90 °C	CPR class	D <sub>ca</sub> s2 d2 a2
Min. temperature for laying and manipulation	+5 °C	RoHS	yes
Min. storage temperature	-15 °C	REACH	yes

### Technical data:

No. of cores and cross-section	Nominal insulation thickness	Outer diameter approx.	Cable mass approx.	Effective resistance of conductor	Radius of bend min.
mm <sup>2</sup>	mm	mm	kg/km	Ω/km	mm
1×4	0.7	5.5	60	5.09	28
1×6	0.7	6	80	3.39	30
1×10	0.7	7	125	1.95	42

### Current carrying capacity of PV Cables

Nominal Cross sectional area	Current carrying capacity according to method of installation		
	Single cable free in air <sup>*</sup>	Single cable on a surface <sup>*</sup>	Two loaded cables touching, on a surface <sup>*</sup>
mm <sup>2</sup>	A	A	A
4	55	52	44
6	70	67	57
10	98	93	79

\* The given values of current carrying capacity have been determined for ambient temperature equal 60 °C. For the ambient temperature different from given one, the final values of current carrying capacity should be converted using the correction factors given in table below.

NOTE: The expected period of use at a max. conductor temperature of 120 °C and at a max. ambient temperature of 90 °C is limited do 20,000 h.

### Current rating conversion factor for different ambient temperature

Ambient temperature	Conversion factor
°C	
up to 60	1
70	0.92
80	0.84
90	0.75

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