

PV-CABLE

Flex-Sol-Evo-DX



Halogen free, low smoke, flexible, single-core, cross-linked double layers photovoltaic cables, in particular for use at direct current (DC) side of photovoltaic systems. These cables are designed to match with most PV components according to class II with a nominal DC voltage of 1.5 kV (IEC) between conductors and between conductor and earth. The maximum permitted operating DC voltage is 1.8 kV.

The maximum operating voltage for UL applications is 2 kV. The cables are in compliance with IEC 62930 and EN 50618 as well as with UL4703. The cables are designed to operate at a normal continuous maximum conductor temperature of 90 °C. The permissible period of use at a maximum conductor temperature of 120 °C is limited to 20000 h.

Order No.	Type	Conductor cross section		Conductor diameter	Outer diameter	Strand design	Max. Conductor resistance / 20°C	Weight per length
		mm²	AWG	mm	mm	n x Ø mm	Ω/km	kg/m
62.7434-91021	FLEX-SOL-EVO-DX 2,5/14AWG	2.5	14	2.0 ±0.1	5.94 ±0.1	47 x 0.25	8.21	0.050
62.7435-91021	FLEX-SOL-EVO-DX 4,0/12AWG	4	12	2.4 ±0.1	6.35 ±0.2	52 x 0.30	5.09	0.064
62.7436-91021	FLEX-SOL-EVO-DX 6,0/10AWG	6	10	3.0 ±0.1	6.97 ±0.2	78 x 0.30	3.39	0.084
62.7437-91021	FLEX-SOL-EVO-DX 10,0/8AWG	10	8	4.1 ±0.1	8.57 ±0.2	77 x 0.40	1.95	0.138

Table 1: Current carrying capacity according to method of installation¹⁾

Conductor cross section		Single cable free in air	Single cable on a surface	Two loaded cables touching, on a surface
mm ²	AWG	A	A	A
2.5	14	42	40	33
4	12	57	54	45
6	10	72	69	58
10	8	98	96	80

Table 2: Current rating conversion factors for different ambient temperatures acc. to IEC 62930¹⁾

Ambient temperature	Conversion factor
°C	
0	1.22
10	1.15
20	1.08
30	1.00
40	0.91
50	0.82
60	0.71
70	0.58

¹⁾ The current carrying capacity is depending from the method of installation and the surrounding ambient temperature. The above tables 1 and 2 have to be applied to identify the maximum current for the relevant cross-section.

Technical data	
Rated voltage	IEC and EN: 1500 V DC (maximum permitted operating voltage 1800 V DC) UL: 2000 V DC
Test voltage according to EN 50395-6 or IEC 60245-2	6.5 kV AC / 15 kV DC (5 min.)
Insulation resistance of the complete cable according to EN 50395-8.2 or IEC 60227-2	≥ 1000 MΩkm
Ambient temperature	-40 °C up to +90 °C
Maximum conductor temperature	+90 °C (max. +120 °C for 20 000 h)
Maximum short-circuit temperature	+250 °C for maximum 5 seconds
Bending radius, relative to outer diameter (OD)	Dynamic: >5 × OD Static: >4 × OD
Resistant to...	UV / Ozone / Acids, alcalis and oil (IRM 902)
Fire protection	Flame retardant (No flame propagation according to IEC/EN 60332-1-2)
Conductor	Flexible tinned coated copper conductor according to class 5 of IEC/EN 60228
Inner insulation	(White) XLPO (RAL9003)
Sheath insulation, with colour patch (black)	Cross-linked Polyolefin
Sheath color	21
TÜV Rheinland approval according to EN 50618	R 50542766
TÜV Rheinland approval according to IEC 62930	R 50542783
UL component	E 470857