



TECSUN(UL) PV-Wire PV1-F Cables for Photovoltaics

The Dual Approved Cable: TÜV and UL-Listed

ENERGY



Technical Data

	Manufacturer	PRYSMIAN Kabel und Systeme GmbH Kabel und Leitungswerk Neustadt bei Coburg / DE
	Trademark	TECSUN (UL) PV-Wire
	Type designation	PV1-F
	Approvals	DKE/AK 411.2.3 VDEReg. Nr. 7985 TÜV 2PFG 1169/08.2007 Certificate Nr. R 60024312 UL 4703 (PVWire), USE2, NEC NFPA 70 690.31A UL File No. ZKLA.E312049
	Application	PRYSMIAN Solar-Cables TECSUN (UL) are intended for use in photovoltaic power supply systems. Indoor and/or Outdoor as fixed or free installation is permitted. ² Installation in cable trays, conduits, on- and in-wall, and in equipment. Suitable for use in/at equipment with protective insulation (protection class II). In other respects IEC 61215 and 61646, IEC 60364-7-712:2002, DIN VDE 0100 Teil 520. (² in constructional safely PV Systems)
Electrical parameters	Rated voltage (U ₀ /U)	AC 0.6/1.0 kV
	Maximum permissible operating voltage in AC systems (U ₀ /U)	0.7/1.2 kV
	Maximum permissible operating voltage in DC systems (U ₀ /U)	0.9/1.8 kV
	Test voltage	AC 6 kV / DC 10 kV (5 min.)
	Ampacity	In accordance with requirements for cables for PV systems, DKE/VDE AK 411.2.3
Thermal parameters	Ambient temperature	-40°C up to +90°C (-40°F up to +194°F)
	Maximum permissible operating temperature of the conductor	TÜV: +120°C (+248°F) UL: +125°C (+257°F)
	Short-circuit temperature	+280°C (+536°F) for 5 seconds
	Resistance to cold	Bending test at low temperature in accordance with DIN EN 60811-1-4 Impact test similar to DIN EN 50305
Mechanical parameters	Tensile load	15 N/mm ² in operation, 50 N/mm ² during installation
	Minimum bending radii	min. 4 x D (D=Overall Diameter of Cable)
	Gnawer resistance	Safety can be optimized by utilizing protective hoses and cables with spinning or braid metallic coatings.

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Chemical parameters	Acid and alkaline resistance	Similar to EN 60811-2-1 7 days, 23°C (73,4°F) (N-Oxalic acid, N-Sodium hydroxide)
	Weather resistance	Ozone resistance in accordance with HD 22.2 test type B UV-resistance in accordance with ISO 4892-2 Meth. A / UL 1581 Sc. 1200 (XenoTest)
	Behaviour in case of fire	Flame propagation Single cable in accordance with IEC 60332-1-2 UL 1581 1061 / VW1 Fire load in accordance with DIN 51900 Low smoke emission in accordance with IEC 61034, EN 502682 Corrosivity in accordance with IEC 60754-2 Halogen-free in accordance with IEC 60754-1
	Environmental innocuousness	TECSUN (UL) cables meet the guidelines of RoHS 2002/95/EG, 2005/69/EG and 2006/122/EG.

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Design features

Type designation	TECSUN (UL) PV-Wire PV1-F
Conductor	Electrolytic copper, tinned, Class 5 in accordance with IEC 60228
Nominal cross section	1.5mm ² to 6mm ² (similar to No. 16AWG to 10AWG)
Insulation	XLPO, fire-resistant, halogen-free, light color
Sheath	XLPO, fire-resistant, halogen-free, Ozone and UV-Resistance, black
Marking	# PRYSMIAN TECSUN (UL) (cross-section mm ²) 0.6/1 KV (TÜV) / (UL) PV WIRE (cross-section AWG) 90C WET OR DRY 600V SUN RES -40C



Selection and ordering data

Nominal cross-section and color	Order No.	Conductor diameter [mm] -- [inch]	Overall diameter of cable		Approx. net weight [kg/km] -- [lbs/1000ft]	Minimum bending radius [mm] -- [inch]	Maximum permissible tensile load [N] -- [lbs]	Current carrying capacity at 60°C ambient temperature (in free air) [A]
			Min. value [mm] -- [inch]	Max. value [mm] -- [inch]				

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1.5 mm ² / 16 AWG	5DH9 ...	1.55 -- 0.061	5.3 -- 0.209	5.7 -- 0.224	58 -- 38.97	21 -- 0.827	25 -- 5.64	37
2.5 mm ² / 14AWG	5DH9 ...	2.05 -- 0.081	6.3 -- 0.248	6.7 -- 0.264	69 -- 46.37	25 -- 0.984	40 -- 9.00	50
4.0 mm ² / 12AWG	5DH9 ...	2.55 -- 0.100	6.9 -- 0.272	7.3 -- 0.287	92 -- 61.82	28 -- 1.102	60 -- 13.49	67
6.0 mm ² / 10AWG	5DH9 ...	3.10 -- 0.122	7.4 -- 0.291	7.8 -- 0.307	111 -- 74.59	30 -- 1.181	90 -- 20.24	85