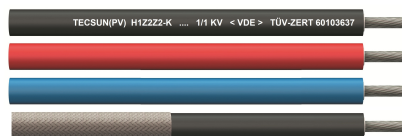


TECSUN(PV) H1Z2Z2-K



Application

PRYSMIAN Solar cables TECSUN (PV) H1Z2Z2-K are intended for use in Photovoltaic Power Supply Systems: Indoor and/or outdoor, in industrial and agriculture fields. They are suitable for applications in/at equipment with protective insulation (Protecting Class II), in explosion hazard areas (PRYSMIAN Internal Testing) and may be installed as fixed or freely suspended or free movable. Installation in cable trays, conduits, on and in walls is permissible.

TECSUN(PV) H1Z2Z2-K cables are suitable for direct burial (PRYSMIAN Internal Testing).

The cables are designed to operate at a normal maximum conductor temperature of 90 °C, but for a maximum of 20 000 hours a max. conductor temperature of 120 °C at a max. ambient temperature of 90 °C is permitted.

The version TECSUN(PV) (C) H1Z2Z2-K has an additional metallic screen braid, made of tinner copper wires, as a protective element against rodents or impact.

Global data

Brand	TECSUN(PV)
Type designation	H1Z2Z2-K
Standard	DIN EN 50618
Certifications / Approvals	VDE Approval Mark (<VDE>); TÜV-Certificate nr. 60103637

Notes on installation

Notes on installation	Thanks to more than 10 years of positive experience with direct burial, not only according to the internal tests performed, but also to the successful installation in PV plants worldwide, the TECSUN(PV) cables are suitable for direct burial in ground (PRYSMIAN Internal Testing). Installation conditions per VDE 0800 Section 174 § 5.4.2 and VDE 0891 Section 6 § 4.2 should be taken in consideration.
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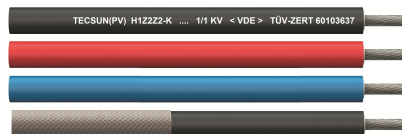
Design features

Conductor	Electrolytic tinned copper, finely stranded class 5 in accordance with IEC 60228
Insulation	Cross-linked HEPR 120°C
Color code	Natural color - white
Outer sheath	Cross-linked EVA rubber 120 ° C
	Insulation and sheath are solidly bonded (Two-layer-insulation)
Outer Sheath Colour	Black, blue, red
Protective Braid Screen	Optional (on request): braid made of tinned copper wires, surface coverage > 80%

Electrical parameters

Rated voltage	DC: 1,5/1,5 kV AC: 1,0/1,0 kV
Max. permissible operating voltage AC	1.2/1.2 kV
Max. permissible operating voltage DC	1.8/1.8 kV
Test voltage	AC: 6,5 kV / DC: 15 kV (5 Min.)
Current Carrying Capacity description	According to EN 50618, Table A-3
Electrical Tests	Acc. to EN 50618, Table 2: • Conductor Resistance; • Voltage Test on completed cable (AC and DC); • Spark Test on insulation; Insulation Resistance (at 20°C and 90°C in water); • Insulation Long-Term Resistance to DC (10 days, in 85°C water, 1,8 kV DC); • Surface Resistance of Sheath. PRYSMIAN internal test: • Dielectric Strength; • Insulation Resistance at 120°C in air.

TECSUN(PV) H1Z2Z2-K



Chemical parameters

Resistance to fire

Acc. to EN 50618, Table 2:

- Single Cable Flame Test per EN 60332-1-2;
- Low Smoke Emission per EN 61034-2 (Light Transmittance > 70%);
- Halogen-free per EN 50525-1, Annex B.

PRYSMIAN internal test:

- Multiple Cable Flame Test per EN 50305-9;
- Low Toxicity per EN 50305 (ITC < 3).

Resistance to oil

PRYSMIAN internal test, on sheath:

- 24h, 100°C (meets VDE 0473-811-404, EN 60811-404).

Weather resistance

Acc. to EN 50618, Annex E and Table 2:

- UV Resistance on sheath: tensile strength and elongation at break after 720h (360 Cycles) of exposure to UV lights acc. to EN 50289-4-17, Method A;
- Ozone resistance: per Test Type B (DIN EN 50396).

PRYSMIAN internal test:

- Water Absorption (Gravimetric) per DIN EN 60811-402.

Acid and alkaline resistance

Acc. to EN 50618, Annex B:

- 7 days, 23°C (N-Oxalic Acid, N-Sodium Hydroxide) acc. to EN 60811-404.

Ammonia Resistance

PRYSMIAN Internal Testing:

- 30 days in Saturated Ammonia Atmosphere.

Environmentally Friendly

TECSUN (PV) PV-Wire complies with the RoHS directive 2011/65/EU of the European Union.

Thermal parameters

Max. operating temperature of the conductor

Max. 90°C at conductor (lifetime acc. to EN 50618 = 25 years; lifetime acc. to Arrhenius-Diagram TECSUN = 30 years).

For a maximum of 20.000 hours a max. conductor temperature of 120 °C at a max. ambient temperature of 90 °C is permitted.

Max. short circuit temperature of the conductor

250 °C (5 s.)

Ambient temperature (for fixed and flexible installation)

Installation and handling: -25°C up to 60°C

In operation: -40°C up to +90°C

Resistance to cold

Acc. to EN 50618, Table 2:

- Cold Bending Test at -40°C acc. to DIN EN 60811-504;
- Cold Elongation Test at -40°C acc. to DIN EN 60811-505;
- Cold Impact Test at -40°C acc. to DIN EN 60811-506 and EN 50618 Annex C.

Damp-Heat Test

Acc. to EN 50618, Table 2:

- 1.000h at 90°C and 85% humidity (test acc. to EN 60068-2-78).

Mechanical parameters

Max. tensile load

15 N/mm² in operation, 50 N/mm² during installation per HD 516, DIN VDE 0298 Section 3 § 7.1 and Section 300 § 5.4.1

Min. bending radius

Acc. to EN 50565-1

Abrasion resistance

PRYSMIAN Internal Testing:

- Acc. to DIN ISO 4649 against abrasive paper;
- Sheath against sheath;
- Sheath against metal;
- Sheath against plastics.

Shrinkage Test

Acc. to EN 50618, Table 2:

- Maximum Shrinkage <2% (test acc. to EN 60811-503).

Pressure Test at High Temperature

PRYSMIAN Internal Testing:

- <50% acc. to EN 60811-508.

Dynamic Penetration Test

Acc. to EN 50618, Annex D:

- Meets requirements of EN 50618.

Shore-Hardness

PRYSMIAN Internal Testing:

- Type A: 85 acc. to DIN EN ISO 868

Durability of Print

Acc. to EN 50618:

- Test acc. to EN 50396.

Rodent resistance

Safety can be optimized by utilizing protective hoses, or protective element, such as a metallic screen braid.

Number of cores x cross section	Colour	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixed min. mm	Weight (ca.) kg/km	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for single cable free in air (60°C ambient temp.) A	Current carrying capacity for single cable on a surface (60°C ambient temp.) A	Short Circuit Current (1s. from 90°C to 250°C) kA
1x1,5	black	20154830	1.6	4.4	5	15	40	13.7	30	29	0.21
1x2,5	black	20154650	1.9	4.8	5.4	17	50	8.21	41	39	0.36
1x4	black	20149014	2.4	5.3	5.9	18	70	5.09	55	52	0.57
1x4	red	20165491	2.4	5.3	5.9	18	70	5.09	55	52	0.57
1x4	blue	20165492	2.4	5.3	5.9	18	70	5.09	55	52	0.57
1x6	black	20149015	2.9	5.8	6.4	20	80	3.39	70	67	0.86
1x6	red	20165493	2.9	5.8	6.4	20	80	3.39	70	67	0.86
1x6	blue	20165494	2.9	5.8	6.4	20	80	3.39	70	67	0.86
1x10	black	20149016	4	7	7.6	23	130	1.95	98	93	1.43
1x10	red	20165495	4	7	7.6	23	130	1.95	98	93	1.43
1x10	blue	20165496	4	7	7.6	23	130	1.95	98	93	1.43
1x16	black	20154857	5.6	9	9.8	30	200	1.24	132	125	2.29
1x25	black	20154858	6.4	10.4	11.2	34	290	0.795	176	167	3.58
1x35	black	20154859	7.5	11.7	12.5	50	400	0.565	218	207	5.01
1x50	black	20154860	9	13.5	14.5	58	550	0.393	276	262	7.15
1x70	black	20156711	10.8	15.5	16.5	66	750	0.277	347	330	10.01
1x95	black	20156712	12.6	17.7	18.7	75	970	0.21	416	395	13.59
1x120	black	20156713	14.2	19.2	20.4	82	1220	0.164	488	464	17.16
1x150	black	20156714	15.8	21.4	22.6	91	1510	0.132	566	538	21.45
1x185	black	20153870	17.4	23.7	25.1	101	1850	0.108	644	612	26.46
1x240	black	20157001	20.4	27.1	28.5	114	2400	0.082	775	736	34.32
TECSUN(PV) (C) H1Z2Z2-K											
1x4 (C)	black		2.4	6	6.6	26.4	90	5.09	55	52	0.57
1x6 (C)	black		2.9	6.5	7.1	28.4	110	3.39	70	67	0.86

Standard delivery length is 500mt. Other lengths are available on request.
All cross sections are also available in red and blue colors.