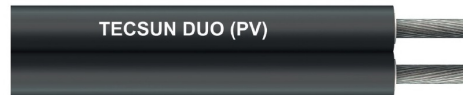


TECSUN DUO (PV) PV1-F 0,6/1kV AC (1,5kV DC) Twin PV cables, rubber insulated, TÜV and VDE certified



Application

PRYSMIAN twin PV cables TECSUN DUO (PV) PV1-F, based on TÜV 2PFG 1169/08.2007, are intended for use in Photovoltaic Power Supply Systems at nominal voltage rate up to 1,5kV DC. They are suitable for applications indoor and/or outdoor, in industrial and agriculture fields, in/at equipment with protective insulation (Protecting Class II) and in explosion hazard areas (PRYSMIAN Internal Testing). They may be installed fixed, freely suspended or free movable, in cable trays, conduits, on and in walls.

Global data

Brand	TECSUN DUO(PV)
Type designation	PV1-F
Standard	Based on TÜV 2 PFG 1169/08.2007
Certifications / Approvals	TÜV Cert.-No. R 60013989; VDE-Reg.No. 7985

Notes on installation

Notes on installation	Please note that the two insulated cores are held together only by an adhesive closing, without using a continuous web between the two. This guarantees a smooth surface of each core and improves the connectors' tightness. Single lengths up to 50m could be therefore found separated.
-----------------------	--

Design features

Conductor	Electrolytic tinned copper, Class 5 in accordance with IEC 60228 (VDE 0295)
Insulation	Cross-linked HEPR 120°C
Color code	Positive pole: red Negative pole: black
Outer sheath	Cross-linked EVA 120°C
Outer Sheath Colour	Black

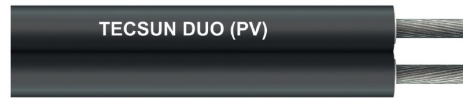
Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	0.7/1.2 kV
Max. permissible operating voltage DC	0.9/1.8 kV
Test voltage	AC: 6,5 kV / DC: 15 kV (5 Min.)
Current Carrying Capacity description	Meets requirements for PV-Wire as per TÜV 2 PFG 1169/08.2007
Electrical Tests	TÜV 2PFG 1169/08.2007: meets HD 22.2 Conductor Resistance, Test Voltages AC and DC, Electric Strength, Surface Resistance, Spark Test on Insulation, EN 50305 Part 6 DC stability (10 days, 85° C, salt water, 900 V DC), Insulation Resistance at 20° C and 90° C in Water. PRYSMIAN Internal Testing: Insulation Resistance at 120° C in Air.

Chemical parameters

Resistance to fire	TÜV 2 PFG 1169/08.2007: <ul style="list-style-type: none"> • Flame propagation acc. to IEC 60332-1-2, DIN EN 60332-1-2 (Single Cable Flame Test) • Halogen-free acc. to IEC 60754-1 • No Corrosivity acc. to IEC 60754-2 PRYSMIAN Internal Testing: <ul style="list-style-type: none"> • Multiple Cable Flame Test acc. to DIN EN 50305-9 • Low Smoke Emission acc. to IEC 61034, EN 61034 (Light Transmittance > 70%) • Low Toxicity acc. to DIN EN 50305, ITC < 3 Acc. to VDE 0473-811-404, DIN EN 60811-404, 24h 100° C
Resistance to oil	TÜV 2PFG 1169/08.2007: <ul style="list-style-type: none"> • Ozone resistance: acc. to DIN EN 50396 Test Type B, HD 22.2 Test Type B • UV-Resistance: acc. to UL 1581 (Xeno-Test), ISO 4892-2 (Method A) and HD506/A1-2.4.20 PRYSMIAN Internal Testing: <ul style="list-style-type: none"> • Absorption of Water (Gravimetric) per DIN EN 60811-1-3 Meets TÜV 2 PFG 1169/08.2007: 7 days, 23° C (N-Oxalic Acid, N-Sodium Hydroxide) per EN 60811-404
Weather resistance	Meets TÜV 2 PFG 1169/08.2007: 7 days, 23° C (N-Oxalic Acid, N-Sodium Hydroxide) per EN 60811-404
Acid and alkaline resistance	Meets TÜV 2 PFG 1169/08.2007: 7 days, 23° C (N-Oxalic Acid, N-Sodium Hydroxide) per EN 60811-404
Ammonia Resistance	30 days in Saturated Ammonia Atmosphere (PRYSMIAN Internal Testing)
Environmentally Friendly	TECSUN DUO(PV) cables comply with RoHS directives 2011/65/EU of the European Union

TECSUN DUO (PV) PV1-F 0,6/1kV AC (1,5kV DC) Twin PV cables, rubber insulated, TÜV and VDE certified



Thermal parameters

Max. operating temperature of the conductor	Max. 90°C at the conductor (lifetime acc. to Arrhenius-Diagram = 30 years). 20.000 hours of operation at conductor temperature of 120°C (and 90°C ambient temperature) are permitted.
Max. short circuit temperature of the conductor	250 °C (max. 5 s)
Ambient temperature for fixed installation	min -40 °C ; max +90 °C
Ambient temperature in fully flexible operation	min -40 °C ; max +90 °C
Resistance to cold	Cold Bend Test at -40°C temperature per DIN EN 60811-1-4. Impact Test -40°C temperature similar to DIN EN 50305
Damp-Heat Test	Meets TÜV 2 PFG 1169/08.2007 and EN 60068-2-78: 1.000 h at 90° C and 85% humidity

Mechanical parameters

Max. tensile load	15 N/mm ² in operation, 50 N/mm ² during installation
Min. bending radius	4 x D
Abrasion resistance	PRYSMIAN Internal Testing: <ul style="list-style-type: none"> • Acc. to DIN EN 53516 against abrasive paper • Sheath against sheath • Sheath against metal • Sheath against plastics
Shrinkage Test	Meets TÜV 2PFG 1169/08.2007 <2% acc. to EN 60811-1-3
Pressure Test at High Temperature	Acc. to EN 60811-3-1
Dynamic Penetration Test	Meets requirements for PV-Wire as per TÜV 2 PFG 1169/08.2007
Shore-Hardness	Type A: 85 acc. to DIN EN 53505 (PRYSMIAN Internal Testing)
Rodent resistance	Safety can be optimized by utilizing protective hoses and cables with spinning or braid metallic coatings

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixed min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for single cable free in air (60°C ambient temp.) A	Short Circuit Current (1s. from 90°C to 250°C) kA
2x2,5	20062185	1.9	4.8	5.2	15.3	88	38	8.21	32	0.36
2x4	20038503	2.4	5.2	5.6	16.8	117	60	5.09	44	0.57
2x6	20038259	2.9	5.7	6.1	18.3	155	90	3.39	56	0.86
2x10	20038504	4	6.8	7.2	21.6	240	150	1.95	78	1.43

Outer diameter (min. und max.) refers to the single cable