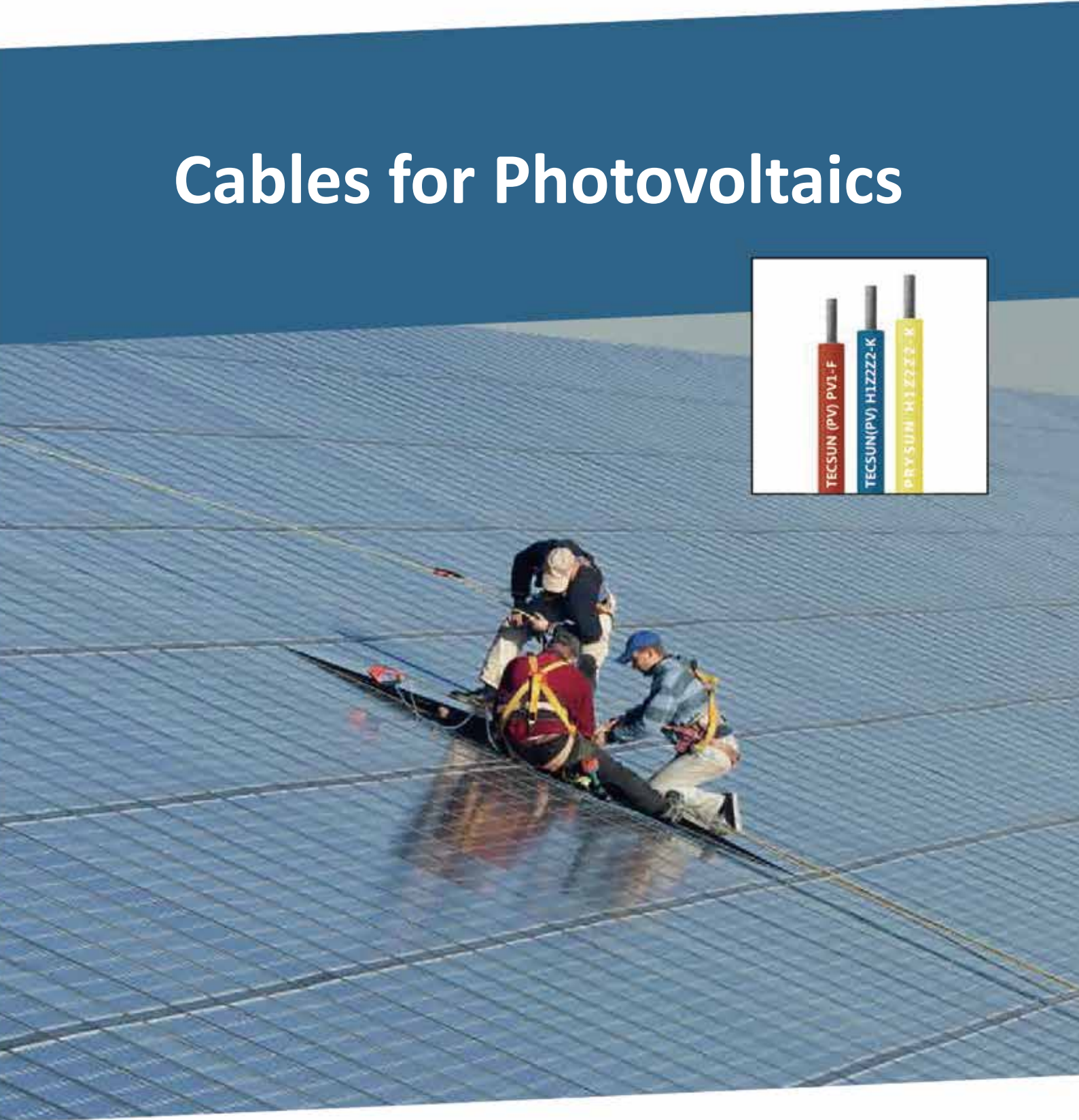


Cables for Photovoltaics



Linking the future

As the worldwide leader in the cable industry, Prysmian Group believes in the effective, efficient and sustainable supply of energy and information as primary driver in the development of communities.

With this in mind, we provide major global organisations in many industries with best-in-class cable solutions, based on state-of-the-art technology.

Through two renowned commercial brands - Prysmian and Oraka - based in almost 100 countries, we are constantly close to our customers, enabling them to further develop the world's energy and telecoms infrastructures, and achieve sustainable, profitable growth.

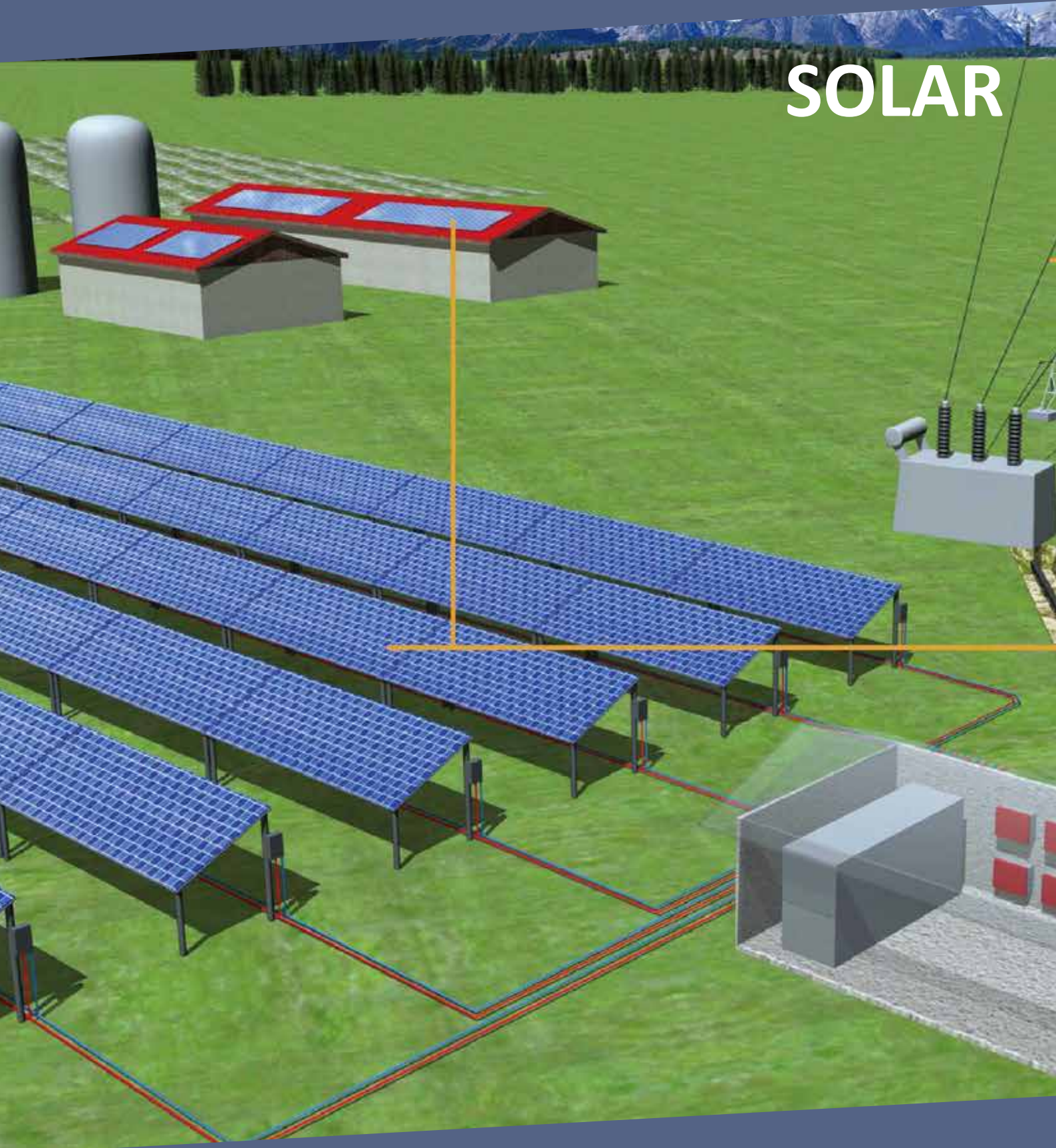
In our energy business, we design, produce, distribute and install cables and systems for the transmission and distribution of power at low, medium, high and extra-high voltage.

In telecoms, the Group is a leading manufacturer of all types of copper and fibre cables, system and accessories - covering voice, video and transmission.

Drawing on over 140 years' experience and continuously investing in R&D, we apply excellence, understanding and integrity to everything we do, meeting and exceeding the precise needs of our customers across all continents, at the same time shaping the evolution of our industry.



SOLAR





„One-Stop Shop“-Strategie: Bei uns bekommen Sie Ihren Gesamtbedarf an Kabeln und Leitungen für Ihre PV-Anlage.



Energy Cables

LV cables
MV cables
HV cables
Accessories and components for LV, MV, HV

Energiekabel

LV Kabel
MV Kabel
HV Kabel
Zubehör und Komponenten für LV, MV, HV



Solar Cables

TECSUN (PV) H1Z2Z2-K
TECSUN (UL) PV-Wire PV1-F

Solarleitungen

TECSUN (PV) H1Z2Z2-K
TECSUN (UL) PV-Wire PV1-F



Special Cables

Fibre optic cables
Data cables
Control cables

Spezial-Leitungen

Glasfaserleitungen
Datenleitungen
Steuerleitungen

TECSUN(PV) PV1-F

PV cables, rubber insulated TÜV and VDE certified



Why TECSUN®



Long life time
>30 years



High operating temp. up to 120°C



Superior behaviour against fire



High performance material-European quality



Environmental Friendly

APPLICATION

Installation in cable trays, conduits, on and in walls

Construction

Standard	2Pfg 1169/08.2007 UL4703
Conductor (IEC 60228)	Class 5 Tinned copper conductor
Insulation	Halogen-free and Cross-linked HEPR 120°C
Sheath (DIN EN 50563-2-1)	Halogen-free Cross-linked EVA rubber 120°C
Color	Black

Electrical Parameters



Rated Voltage
0.6/1.0kV(AC)
Max. permissible operating voltage
0.9/1.8kV (DC)

Thermal Parameters



Operating temperature
-40°C – up to **120°C**
-40F up to +248 F
Ambient temperature
-40°C – up to 90°C
-40F up to +218 F

Chemical Parameters



Resistance to fire	EN 60332-1-2
Halogen-free	EN 50525-1 Annex B
Low smoke Emission	EN 60134-2
Acid and alkaline resistance	EN 50168
Resistance to oil	EN 60811-404
Weather resistance	TÜV 2Pfg 1169
UV resistance	EN 50289-4-17 Method A
Ozone resistance	EN 50396
Water absorption	EN 60811-402

Mechanical Parameters



Max. Tensile load	15N/mm ²
Min. bending radius	6D
Abrasion resistance	ISO 4649
Shrinkage Test <2%	EN 60811
Pressure Test at High Temp. <50%	EN 60811-3-1-1-3
Dynamic Penetration Test	TÜV 2Pfg 1169
Shore Hardness min. 85 nach	DIN EN ISO 868
Rodent resistance	Acc. to requirement

TECSUN(PV) H1Z2Z2-K

PV cables, rubber insulated TÜV and VDE certified as per EN50618



Why TECSUN®



Long life time
> 30 years



High operating temp. up to 120°C



Superior behaviour against fire



High performance material-European quality



Environmental Friendly

APPLICATION

TECSUN (PV) H1Z2Z2-K is intended for use in photovoltaic power supply systems.

Construction

Standard	EN 50618:2014
Conductor (IEC 60228)	Class 5 Tinned copper conductor
Insulation	Halogen-free and Cross-linked HEPR 120°C
Sheath (DIN EN 50563-2-1)	Halogen-free Cross-linked EVA rubber 120 °C
Color	Black

Electrical Parameters



Rated Voltage
1.0/1.0kV(AC)
Max. permissible operating voltage
1.8/1.8kV (DC)

Thermal Parameters



Operating temperature
-40°C –up to 120°C
-40F up to +248 F
Ambient temperature
-40°C –up to 90°C
-40F up to +218 F

Chemical Parameters



Resistance to fire	EN 60332-1-2
Halogen-free	EN 50525-1 Annex B
Low smoke Emission	EN 60134-2
Acid and alkaline resistance	EN 50168 Annex B
Resistance to oil	EN 60811-404
Weather resistance	EN 50618 Annex E
UV resistance	EN 50289-4-17 Method A
Ozone resistance	EN 50396
Water absorption	EN 60811-402

Mechanical Parameters



Max. Tensile load	15N/mm ²
Min. bending radius	EN 50565-1
Abrasion resistance	ISO 4649
Shrinkage Test <2%	EN 60811-503
Pressure Test at High Temp. <50%	EN 60811-508
Dynamic Penetration Test	EN 50618 Annex D
Shore Hardness min. 85 nach	DIN EN ISO 868
Durability of Print	EN 50396
Rodent resistance	Acc. to requirement

Prysmian 施做測試高於 EN 50618 測試基本要求

Requirement DB EN 50618 H1Z2Z2-K 測試要求說明		
Product name	產品名稱	Solar DB EN 50618
Code designation	安規	H1Z2Z2-K
Cross selections available	截面積	2,5 mm ² - 35 mm ²
Standard / Abbreviations	標準 / 縮寫	DIN EN 50618; TÜV certificate
		Requirement Profile- Solar DB EN 50618 H1Z2Z2-K
Conductor	導體	E-Cu tinned acc. IEC 60228 Class 5
Insulation	絕緣	Crosslinked special Polyolefin
Sheating	被覆	Crosslinked special Polyolefin
Printing	印字	Solar DB EN 50618 H1Z2Z2-K X,XX mm ²
Continuity of marks	連續商標	≤ 550 mm
Sheet colour	顏色	red, blue, black (Usage of colour with very high lighth fastness)
Expected period of use	期待使用期限	25 years
		Electrical Specifications
Rated Voltage U0/U	額定電壓 U0/U	1,0/1,0 kV AC 1,5/ 1,5 kV DC
Max. permissible operating voltage	最大允許工作電壓	1,2/ 1,2 kV AC 1,8/ 1,8 kV DC (conductor-conductor, not earthed system, unloaded circuit)"
Current carrying capacity	載流量	acc. to EN 50618, table A-3
Resistance of the conductor	導體電阻	EN 50395 clause 5 acc. to EN 50618, table 2
Voltage test on the completed cable with AC or DC	測試電壓交流或直流	EN 50395 clause 6 (6,5 kVAC or 15 kVDC; 5 min)
Surface resistance	表面電阻	EN 50395 clause 11
Insulation resistance	絕緣電阻	EN 50395 clause 8.1 performed at 20 ° C & 90 ° C in water results acc. to EN 50618, table 1
Spark test	火花放電試驗	EN 62230, Annex A
Long term resistance of insulation to DC	長期耐受性絕緣擊穿	EN 50395 clause 9 (10 days, 85 ° C in NaCl 3 %, 1,8 kVDC)
		Mechanical Specifications
Properties before ageing	老化前性能	EN 60811-1-1; EN 60811-1-2 (tensile strenth insulation ≥ 6,5 N/mm ² tensile strenth jacket ≥ 8,0 N/mm ² elongation at break ≥ 125 %)
Hot Set test	熱加載測試	EN 60811-2-1 (200 ° C; 15 min. under load; 20 N/cm ² stress)
Bending radius	彎曲半徑	≥ 4 x outer diameter
Dynamic penetration test	動態滲透測試	acc. to EN 50618 - Annex D
		Thermal Specifications
Ambient temperature in operation	操作周溫	-40 ° C to + 90 ° C
Min. ambient temperature for installation	最佳操作周溫	-25 ° C
Min. allowable ambient temperature	允許最低操作周溫	-40 ° C
Max. temperature at conductor	導體最大溫度值	120 ° C, based on EN 60216-1 (20.000 h; 50 % residual elongation)
Short-circuit temperature	短路溫度	+250 ° C (max. 5 sec on conductor)
Damp heat test	濕熱測試	EN 60068-2-78 (1.000h at 90 ° C and 85 % relative humidity)
Shrinkage test	收縮測試	EN 60811-503 (120 ° C, 1h, shrinkage <2,0%)
Cold bending test	冷彎測試	EN 60811-504 (-40 ° C, duration of conditioning: 16 h)
Cold elongation test	冷伸長測試	DIN EN 60811-505 (-40 ° C ± 2 ° C, duration of conditioning: 16 h)
Cold impact test	冷沖擊測試	EN 60811-506 and EN 50618, Annex C (-40 ° C; mass of hammer 1.000 g)

Prysmian 施做測試高於 EN 50618測試基本要求

Solar DB EN Technical Data Sheet Stand: 01.07.2017 測試要求說明		
		Specifications Regarding to Safety
Long term resistance of insulation to DC	直流絕緣長期耐受性	class Eca in accordance with EN 50575:2014
Resistance against acid and alkaline solution	耐酸鹼溶液	EN 60811-404 7 days; 23 ° C (N-Ocalic-acid; N-Sodium hydroxide solution)
Ozone resistance on completed cable	耐臭氧性	EN 50396 clause 8.1.3, method B
Weathering/ UV-resistance on sheath	被覆耐候性 / 抗紫外線性能	meets EN 50618, Annex E EN 50289-4-17, method A (720 h; 60 ° C ± 3 ° C; 50 ± 5 % relative humidity)
Test for vertical flame propagation on complete cable	垂直火焰傳導測試	EN 60332-1-2
Smoke emission of complete cable	煙霧透被度測試	EN 61034-2 (light transmittance > 80 %)
Assessment of halogens / Determination of halogens - Elemental test	鹵素的評估 / 鹵素的測定 - 元素測試	EN 50525-1, Annex B
		Additional internal tests
Direct burial	直埋	acc. To UL 854: -Section 23 Impact-resistance Test -Section 24 Crushing-Resistance Test
Long-term insulation resistance in water	長期沸水絕緣測試	test acc. to UL 44 Section 5.4 & UL 2556, Section 6.4: 90° C ± 5 ° C; 2000V (DC) ≥ 3 GΩ×m after 12 weeks test result: > 50GΩ×m after 12 weeks
Long-term insulation resistance in air	長期高周溫絕緣測試	test acc. to UL 44, Section 5.5 & UL 2556, Section 6.4: 120 ° C; 2000V (DC) ≥ 50 GΩ×m after 12 weeks
Max. permissible operating voltage by	允許的最大工作電壓	2,0/ 2,0 kVDC
Dielectrical strength	介電強度	12 kV 60 min Comparison to Requirement of EN 50618: 6,5 kV; 5 min
Resistance against salt water	鹽水抵抗	storage at 23 ° C for 7 days in saturated salt solu on Change of tensile strength < 5 %
Electrical capacitance and relative permittivity	電容和相對介電常數	test acc. to UL 44, Section 5.6 & UL 2556, Section 6.5: 90° C ± 5 ° C water temperature; immersion for 14 days relative permittivity after 1 day immersion ≤ 6 % capacitance after 14 days immersion ≤ 10 % difference in capacitance from day 7 to day 14 ≤ 4 %
Certificates & Guidelines:	證書和指南	EN 50618, R60107612 RoHS 2011/65/EU

What links sustainable ideas to real-world results?

Cable solutions to enable the production and supply of renewable energy

To meet an ever-growing need for power, the world is increasingly turning to renewable and sustainably sourced wind and solar energy. In response to this demand, Prysmian cables are helping businesses in the renewable industry around the globe convert these new opportunities into reality.

Our technologies - which cover cables used in wind turbine and tower operations, submarine inter-array, platform connection and export cables to link the various turbines and underground power transmission and distribution cable system for wind

power applications are at work across the renewables sector, supporting the operations of turbine manufacturers, contractors and developers, grid operators, system integrators and panel makers.

Always aware of our responsibility to the planet, we're constantly driving innovation in our industry, aiming to help renewable industry partners deliver projects with benefits for the future of both our world and their businesses.

TECSUN(PV) PV1-F 0,6/1kV AC (1.5kV DC)



TECSUN(UL) PV1-F 0,6/1kV AC (600V UL) PV cables, rubber insulated, UL and TÜV certified



Application

PRYSMIAN TECSUN (UL) PV1-F PV-Wire, acc. to UL 4703 and TÜV 2PFG 1169/08.2007, is intended for use in Photovoltaic Power Supply Systems. 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.

TECSUN (UL) PV1-F PV-Wire is permitted for direct burial (UL 4703-4).

Global data

Brand	TECSUN(UL)
Type designation	PV1-F, UL Categorie: ZKLA
Standard	Acc. to UL 4703 (PV-Wire), NEC NFPA 70 690.31A and TÜV 2 PFG 1169/08.2007
Certifications / Approvals	UL Cert-No. 011011-E312049; TÜV Cert.-No. R 60039360

Notes on installation

Notes on installation	<p>Service Entrance Cable per UL 854:</p> <ul style="list-style-type: none"> •Section 23 Impact Test •Section 24 Crushing Test <p>TECSUN (UL) PV1-F PV-Wire is permitted for direct burial (UL 4703-4). The corresponding installation guidelines shall be taken in consideration.</p>
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Design features

Conductor	Electrolytic tinned copper, Class 5 in accordance with IEC 60228 (VDE 0295)
Insulation	HEPR complying with UL 1581 Table 50.245, IEC 60502-1
Outer sheath	Cross-linked EVA rubber complying with UL 1581 Table 50.245, DIN VDE 0282 part 1, HD 22.1. Insulation and Jacket are solidly bonded (Two-Layer-Insulation)
Outer sheath colour	Black

Electrical parameters

Rated voltage	(U ₀ /U) 600/1000 V AC per TÜV 2PFG 1169/08.2007 rating. (U) 600 V AC per UL 4703 rating
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.
Relative Permittivity and Stability Factor	<ul style="list-style-type: none"> • Meets UL 2556 Section 6.5: $\epsilon_r \leq 6$ • Meets UL 2556 Section 6.6: after 14 days < 1; Difference day 1 and day 14 < 0.5;
Long Term Insulation Resistance	<ul style="list-style-type: none"> • In Water: 90° C 600 V (AC) per UL 2556 Section 6.4.4.2.1 $\geq 3G\Omega$ after 12 weeks • In Air: 113° C 600 V (AC) per UL 2556 Section 6.4.4.2.2 $\geq 3G\Omega$ after 12 weeks
Dielectric Withstand	Per UL 2556 Section 6.2 Method 1 and UL 44 Table 42 and 43: 1.5 - 6 mm ² 3.0 kV; 10 - 35 mm ² 3.5 kV; 50 - 95 mm ² 4.0 kV

TECSUN(UL) PV1-F 0,6/1kV AC (600V UL) PV cables, rubber insulated, UL and TÜV certified



Chemical parameters

Reaction to fire	<p>UL 4703 :</p> <ul style="list-style-type: none"> • Vertical Flame Test per UL 2556-9.5 • Horizontal Flame Test per UL 2556-9.1 • VW-1 per UL 1581 1061 <p>TÜV 2 PFG 1169/08.2007</p> <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 <p>PRYSMIAN Internal Testing:</p> <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 <p>Meets UL 1581 Section 400.1, Requirements per UL 44 Table 20</p>
Resistance to oil	UL 4703:
Weather resistance	<ul style="list-style-type: none"> • Meets UL 2556 Section 4.2.8.5: 300 hours • Meets UL 44 Section 5.15.2: 720 hours <p>TÜV 2PFG 1169/08.2007:</p> <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: • Absorption of Water (Gravimetric) per DIN EN 60811-1-3
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)
Conductor Corrosion	7 days 121° C per UL 2556 Section 8.1
Environmentally Friendly	TECSUN (PV) PV-Wire complies with RoHS directives 2011/65/EU of the European Union

Thermal parameters

Max. operating temperature of the conductor	<p>UL 4703 rating: +105° C (+221° F) Dry Operation</p> <p>TÜV 2 PFG 1169/08.2007: +120° C (+248° F) per IEC 60216 permanent temperature for 20.000 h (= 2.3 years); at max. 90° C permanent temperature (= 30 years)</p>
Max. short circuit temperature of the conductor	<p>TÜV 2PFG 1169/08.2007: +200° C (392° F) at the conductor max. 5 sec.</p> <p>PRYSMIAN Internal Testing: +250° C (482° F) at the conductor max. 5 sec.</p>
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	<p>UL 4703: Cold Bend Test at -40° C temperature (per UL 2556 Section 7.5). Flexibility at -40° C temperature per UL 1581 Section 583</p> <p>TÜV 2 PFG 1169/08.2007: Cold Bend Test at -40° C temperature per DIN EN 60811-1-4. Impact Test -40° C temperature similar to DIN EN 50305</p>
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	<p>PRYSMIAN Internal Testing:</p> <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	Meets TÜV 2PFG 1169/08.2007 <50% 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)
Deformation Test	Pressure Head 9.5 mm Ø, 60 minutes, 131° C, 2000 g load per UL 2556 Section 7.7
Insulation Fall-In	Meets UL 2556 Section 7.1
Durability of Print	Test per UL 2556 Section 7.16 and UL 44 Section 5.2
Rodent resistance	Safety can be optimized by utilizing protective hoses and cables with spinning or braid metallic coatings

Datasheet

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixec min. mm	Weight (approx.) kg/km	Conductor resistance at 20°Cmax 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
1,5 mm ² / 16 AWG	20025133	1.6	5.3	5.7	21.2	45	13.7	30	0.19
2,5 mm ² / 14 AWG	20025135	1.9	5.6	6	22.4	57	21	41	0.32
4 mm ² / 12 AWG	20025134	2.4	6.1	6.5	24.4	74	5.09	55	0.5
6 mm ² / 10 AWG	20025136	2.9	6.6	7	29.6	94	3.39	70	1.76
10 mm ² / 8 AWG	20025137	4	8.3	9	33.6	152	1.95	98	1.26
16 mm ² / 6 AWG	20025458	5.5	10	10.7	39.6	230	1.24	132	2.01
25 mm ² / 4 AWG	20025459	6.4	11.3	12	44.8	320	0.795	176	3.15
35 mm ² / 2 AWG	20025460	7.5	12.3	13	48.4	420	0.565	218	4.41
50 mm ² / 1 AWG	20025461	9	14.8	15.5	59.2	600	0.393	276	6.3
70 mm ² / 2 / 0 AWG	20025462	10.8	16.6	17.3	66.4	800	0.277	347	8.82
95 mm ² / 3 / 0 AWG	20025463	12.6	18.4	19.1	73.6	1010	0.21	416	12

TECSUN(PV) PV1-F 0,6/1kV/ AC (1,5kV/ DC) PV cables, rubber insulated



Application

PRYSMIAN Solar cables TECSUN (PV) PV1-F acc. to 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.

TECSUN(PV) cables are also suitable for direct burial (PRYSMIAN Internal Testing), where the corresponding guidelines for direct burial shall be considered.

Global data

Brand	TECSUN(PV)
Type designation	PV1-F
Standard	TÜV 2 PFG 1169/08.2007
Certifications / Approvals	TÜV Cert.-No. R 60013989

Design features

Conductor	Electrolytic tinned copper, Class 5 in accordance with IEC 60228 (VDE 0295)
Insulation	Cross-linked HEPR 120°C (compound type EI6/EI8)
Outer sheath	Cross-linked EVA rubber 120°C (compound type EM4/EM8). Insulation and sheath are solidly bonded (Two-layer-insulation)
Outer Sheath Colour	Black

Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Maximum PV-System voltage	DC up to 2000 V possible
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 per TOV 2 PFG 1169/08.2007
Electrical Tests	TÜV 2PFG 1169/08.2007: meets VDE 0282 Section 2, HD 22.2 and EN 50395 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, 1500 V DC), Insulation Resistance at 20°C and 90°C in Water. PRYSMIAN Internal Testing: Insulation Resistance at 120°C in Air.

TECSUN(PV) PV1-F 0,6/1kV AC (1,5kV DC) PV cables, rubber insulated



Chemical parameters

Resistance to fire	<p>TÜV 2 PFG 1169/08.2007:</p> <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 <p>PRYSMIAN Internal Testing:</p> <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 <p>Acc. to VDE 0473-811-404, DIN EN 60811-404, 24h 100°C</p>
Resistance to oil	<p>TUV 2PFG 1169/08.2007:</p> <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 HD605/A1-2.4.20 <p>PRYSMIAN Internal Testing:</p> <ul style="list-style-type: none"> • Absorption of Water (Gravimetric) per DIN EN 60811-1-3 <p>Meets TUV 2 PIG 1169/082007: 7 days, 23°C (N-Oxalic Acid, N-Sodium Hydroxide) as per EN 60811-404</p>
Weather resistance	
Acid and alkaline resistance	<p>Meets TUV 2 PIG 1169/082007: 7 days, 23°C (N-Oxalic Acid, N-Sodium Hydroxide) as per EN 60811-404</p>
Ammonia Resistance	30 days in Saturated Ammonia Atmosphere (PRYSMIAN Internal Testing)
Environmentally Friendly	TECSUN(PV) cables comply with RoHS directives 2011/65/EU of the European Union

Thermal parameters

Max. operating temperature of the conductor	<p>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.</p>
Max. short circuit temperature of the conductor	250 °C (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	<p>PRYSMIAN Internal Testing:</p> <ul style="list-style-type: none"> • Acc. to DIN ISO 4649 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	Meets TÜV 2PFG 1169/08.2007 <50% acc. to EN 60811-3-1
Dynamic Penetration Test	Meets requirements as per TÜV 2 PFG 1169/08.2007
Shore-Hardness	Type A: min. 85 nach DIN EN ISO 868 (PRYSMIAN Internal Testing)
Rodent resistance	Safety can be optimized by utilizing protective hoses, or protective element, such as a metallic screen braid.

Datasheet

Number of cores x cross section	Colour	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Banding 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	Current carrying capacity for single cable on a surface (60°C ambient teme.) A	Short Circuit Current (1s. from 90°C to 250°C) kA
1x1,5	black	1.6	4.4	4.8	14.4	34	23	13.7	30	29	0.21
1x2,5	black	1.9	4.7	5.1	15.3	44	38	8.21	41	39	0.36
1x4	black	2.4	5.2	5.6	16.8	59	60	5.09	55	52	0.57
1x6	black	2.9	5.7	6.13	18.3	81	90	3.39	70	67	0.86
1x10	black	4	6.8	7.2	21.6	120	150	1.95	98	93	1.43
1x16	black	5.6	8.3	8.9	36	190	240	1.24	132	125	2.29
1x25	black	6.4	10	10.7	43	280	375	0.795	176	167	3.58
1x35	black	7.5	11.1	11.8	47	880	525	0.565	218	207	5.01
1x50	black	9	12.6	13.3	53	530	750	0.393	276	262	7.15
1x70	black	10.8	14.8	15.8	61	720	1050	0.277	347	330	10.01
1x95	black	12.6	16.2	17	68	900	1425	0.21	416	395	13.59
1x120	black	14.2	17.7	18.7	75	1150	1800	0.164	488	464	17.16
1x150	black	15.8	19.7	20.7	83	1420	2250	0.132	566	538	21.45
1x185	black	17,4	21.3	22.3	89	1710	2775	0.108	644	612	26.46
1X240	black	20.4	24.2	25.5	102	2200	3600	0.082	775	736	34.32

TECSUN(PV) H1Z2Z2-K 1/1kV AC (1.5/1.5kV DC)



TECSUN(PV) H1Z2Z2-K 1/1kV AC (1,5/1,5kV DC) PV cables, rubber insulated, TÜV and VDE certified as per EN 50618



Application

PRYSMIAN Solar cables TECSUN (PV) H1Z2Z2-K acc. to EN 50618, are intended for use in Photovoltaic Power Supply Systems at nominal voltage rate up to 1,5/1,5kV DC.

They are suitable for applications indoor and/or outdoor, in industrial and agriculture fields, in/at equipment with protective insulation (Protecting Class II), 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.

TECSUN(PV) H1Z2Z2-K cables are suitable for direct burial (PRYSMIAN Internal Testing), where the corresponding guidelines for direct burial shall be considered.

Global data

Brand	TECSUN(PV)
Type designation	H1Z2Z2-K
Standard	DIN EN 50618
Certifications / Approvals	TÜV-Certificate nr. 50360241

Design features

Conductor	Electrolytic tinned copper, finely stranded class 5 in accordance with IEC 60228
Insulation	Cross-linked HEPR 120°C
Outer sheath	Cross-linked EVA rubber 120°C. Insulation and sheath are solidly bonded (Two-layer-insulation)
Outer Sheath Colour	Black

Electrical parameters

Rated voltage	DC: 1,5/1,5 kV
Maximum PV-System voltage	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	<p>Acc. to EN 50618, Table 2:</p> <ul style="list-style-type: none"> • 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. <p>PRYSMIAN internal test:</p> <ul style="list-style-type: none"> • Dielectric Strength; • Insulation Resistance at 120°C in air.

TECSUN(PV) H1Z2Z2-K 1/1kV AC (1,5/1,5kV DC) PV cables, rubber insulated, TÜV and VDE certified as per EN 50618



Chemical parameters

Reaction to fire	<p>Acc. to EN 50618, Table 2:</p> <ul style="list-style-type: none"> • 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. <p>PRYSMIAN internal test:</p> <ul style="list-style-type: none"> • Multiple Cable Flame Test per EN 50305-9; • Low Toxicity per EN 50305 (ITC < 3).
Resistance to oil	<p>PRYSMIAN internal test, on sheath:</p> <ul style="list-style-type: none"> • 24h, 100°C (meets VDE 0473-811-404, EN 60811-404).
Westher resistance	<p>Acc. to EN 50618, Annex E and Table 2:</p> <ul style="list-style-type: none"> • 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). <p>PRYSMIAN internal test:</p> <ul style="list-style-type: none"> • Water Absorption (Gravimetric) per DIN EN 60811-402.
Acid and alkaline resistance	<p>Acc. to EN 50618, Annex B:</p> <ul style="list-style-type: none"> • 7 days, 23°C (N-Oxalic Acid, N-Sodium Hydroxide) acc. to EN 60811-404.
Ammonia Resistance	<p>PRYSMIAN internal Testing:</p> <ul style="list-style-type: none"> • 30 days in Saturated Ammonia Atmosphere.
Enviromentally Friendly	<p>TECSUN(PV) cables comply with the RoHS directive 2011/65/EU of the European Union.</p>

Thermal parameters

Max. operating temperature of the conductor	<p>Max. 90°C at conductor (lifetime acc. to Arrhenius-Diagram TECSUN = 30 years). 20.000 hours of operation at conductor temperature of 120°C (and 90°C ambient temperature) are permitted.</p>
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	<p>Acc. to EN 50618, Table 2:</p> <ul style="list-style-type: none"> • 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	<p>Acc. to EN 50618, Table 2:</p> <ul style="list-style-type: none"> • 1.000h at 90°C and 85% humidity (test acc. to EN 60068-2-78).

Mechanical parameters

Max. tensile load	15 N/mm ² in operation, 50 N/mm ² during installation
Min bending radius	Acc. to EN 50565-1
Abrasion resistance	<p>PRYSMIAN internal Testing:</p> <ul style="list-style-type: none"> • Acc. to DIN ISO 4649 against abrasive paper; • Sheath against sheath; • Sheath against metal; • Sheath against plastics.
Shrinkage Test	<p>Acc. to EN 50618, Table 2:</p> <ul style="list-style-type: none"> • Maximum Shrinkage <2% (test acc. to EN 60811-503).
Pressure Test at High Temperature	<p>PRYSMIAN internal Testing:</p> <ul style="list-style-type: none"> • <50% acc. to EN 60811-508.
Dynarnic Penetration Test	<p>Acc. to EN 50618, Annex D:</p> <ul style="list-style-type: none"> • Meets requirements of EN 50618.
Shore-Hardness	<p>PRYSMIAN internal Testing:</p> <ul style="list-style-type: none"> • Type A: 85 acc. to DIN EN ISO 868
Durability of Print	<p>Acc. to EN 50618:</p> <ul style="list-style-type: none"> • Test acc. to EN 50396.
Rodent resistance	Safety can be optimized by utilizing protective hoses, or protective element, such as a metallic screen braid.
Anti-Rodent and Anti-tennite resistance 防蟻酸、防鼠咬(復合物或帶銅絲編織)	

Datasheet

Number of cores x cross section	Colour	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Banding radius fixed min. mm	Weight (approx.) 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	Current carrying capacity for single cable on a surface (60°C ambient teme.) A	Short Circuit Current (1s. from 90°C to 250°C) kA
1x1,5	black	1.6	4.4	5.2	15	35	23	13.7	30	29	0.21
1x2,5	black	1.9	4.9	5.7	17	46	38	8.21	41	39	0.36
1x4	black	2.4	5.4	6.2	16	61	60	5.09	55	52	0.57
1x6	black	2.9	5.9	6.7	20	80	90	3.39	70	67	0.86
1x10	black	4	7.1	7.8	23	122	150	1.95	98	93	1.43
1x16	black	5.6	9	9.8	30	200	240	1.24	132	125	2.29
1x25	black	6.4	10.4	11.5	34	290	375	0.795	176	167	3.58
1x35	black	7.5	11.7	12.8	50	400	525	0,565	218	207	5.01
1x50	black	9	13,5	14.5	58	560	750	0,393	276	262	7.15
1x70	black	10.8	15.5	16.5	66	750	1050	0.277	347	330	10.01
1x95	black	12.6	17,7	18.7	75	970	1425	0.21	416	395	13.59
1x120	black	14.2	19.2	20.4	82	1200	1800	0.164	488	464	17.16
1x150	black	15.8	21,4	22.6	91	1500	2250	0.132	566	538	21.45
1x185	black	17,4	23.7	25.1	101	1840	2775	0108	644	612	26.46
1X240	black	20.4	27.1	28.5	114	2400	3600	0.082	775	736	34.32

PRYSUN H1Z2Z2-K 1/1kV AC (1.5/1.5kV DC)



PRYSUN H1Z2Z2-K 1/1kV AC (1.5/1.5kV DC) PV cables, elastomer insulated Per EN50618



Application

Designed and tested acc. to EN50618:2014, PRYSMIAN Solar cables PRYSUN 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), and may be installed as fixed or freely suspended or free movable. Installation in cable trays, conduits, on and in walls is permissible.

Global data

Brand	PRYSUN
Type designation	H1Z2Z2-K
Standard	Refer to EN50618:2014
Certifications / Approvals	TÜV-Certificate nr.50430405

Design features

Conductor	Class 5 Tinned copper conductor
Insulation	Halogen free cross-linked elastomer Natural color - white or Red
Outer sheath	Halogen free cross-linked elastomer
Outer Sheath Colour	Black or Red

Electrical parameters

Rated voltage	DC: 1,5/1,5 kV
Maximum PV-System voltage	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: <ul style="list-style-type: none"> • 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.

PRYSUN H1Z2Z2-K 1/1kV AC (1.5/1.5kV DC) PV cables, elastomer insulated Per EN50618



Chemical parameters

Reaction 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.
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 (EN 50396).
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.

Thermal parameters

Max. operating temperature of the conductor	Max. 90°C at conductor. 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 (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/mm ² in operation, 50 N/mm ² during installation
Min. bending radius	Acc. to EN 50565-1
Shrinkage Test	Acc. to EN 50618, Table 2: • Maximum Shrinkage <2% (test acc. to EN 60811-503).
Dynamic Penetration Test	Acc. to EN 50618, Annex D: • Meets requirements of EN 50618.
Durability of Print	Acc. to EN 50618: • Test acc. to EN 50396.

Datasheet

Number of cores x cross section	Colour	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Banding radius fixed min. mm	Weight (approx.) 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	Current carrying capacity for single cable on a surface (60°C ambient teme.) A	Short Circuit Current (1s. from 90°C to 250°C) kA
1x1,5	black	1.6	4.4	5.2	15	35	23	13.7	30	29	0.21
1x2,5	black	1.9	4.9	5.7	17	47	38	8.21	41	39	0.36
1x4	black	2.4	5.4	6.2	18	61	60	5.09	55	52	0.57
1x6	black	2.9	5.9	6.4	20	81	90	3.39	70	67	0.86
1x10	black	4	7.1	7.8	23	124	150	1.95	98	93	1.43
1x16	black	5.6	9	9.8	30	190	240	1.24	132	125	2.29
1x25	black	6.4	10.4	11.5	34	285	375	0.795	176	167	3.58
1x35	black	7.5	11.7	12.8	50	380	525	0,565	218	207	5.01
1x50	black	9	13,5	14.5	58	535	750	0.393	276	262	7.15
1x70	black	10.8	15.5	16.5	66	745	1050	0.277	347	330	10.01
1x95	black	12.6	17,7	18.7	75	965	1425	0.21	416	395	13.59
1x120	black	14.2	19.2	20.4	82	1211	1800	0.164	488	464	17.16
1x150	black	15.8	21,4	22.6	91	1481	2250	0.132	566	538	21.45
1x185	black	17,4	23.7	25.1	101	1822	2775	0.108	644	612	26.46
1X240	black	20.4	27.1	28.5	114	2353	3600	0.082	775	736	34.32

Renewable Energy Cable



SunGen® Photovoltaic Wire

XLPE, RHH or RHW-2

600 V, UL Type PV, Single Conductor, Aluminum

Product Construction:

Conductor:

- 6 AWG thru 2 AWG Class B compact stranded aluminum alloy (8000 Series) per ASTM B800 and ASTM B801
- 1 AWG thru 350 kcmil compact stranded SIW aluminum alloy (8000 Series) per ASTM B800, ASTM B801 and ASTM B836
- 400 kcmil thru 1000 kcmil Class B compact stranded aluminum alloy (8000 Series) per ASTM B800 and ASTM B801

Insulation:

- Flame-retardant Cross-linked Polyethylene (XLPE)
- RHH/RHW-2 (XLPE)

Print:

- GENERAL CABLE® (PLANT OF MFG) SIZE (AWG OR KCMIL) (MM²) COMPACT SUNGEN® AA-8030 AL XLPE 600 V RHH RHW-2 90°C SUN RES (-40°C) PV WIRE VW-1 DIR BUR (UL) YEAR DATE (TIME OF MFG) SEQUENTIAL FOOTAGE

Options:

- Other sizes and stranding options available upon request
- CT for 1/0 AWG and larger, RHH/RHW-2
- Available in black and full color skin coat

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 600 V, for interconnection wiring of grounded and ungrounded photovoltaic power systems described in NEC® Article 690
- Stable electrical properties over a broad temperature range
- General purpose building wire for use primarily in conduit or other recognized raceways as specified in the National Electric Code® (NEC®)
- Maximum operating temperature not to exceed 90°C in wet or dry locations

Features:

- Oil Resistant PRI/PRII
- Gas and Oil Res GRI/GRII
- UV/sunlight-resistant, moisture-resistant and flame-retardant insulation in all colors
- Meets cold bend and cold impact tests at -40°C
- Excellent electrical, thermal and physical properties
- Resistant to crush, compression cuts and heat deformation
- Rated for direct burial

Compliances:

- Industry Compliances:**
 - UL 4703 Type PV, UL File #E343277
 - National Electrical Code (NEC®)
- Flame Test Compliances:**
 - UL 2556 Horizontal Burn
 - CT UL 1685, RHH/RHW-2
 - VW-1 UL 2556
- Other Compliances:**
 - RoHS Compliant
 - OSHA Acceptable

Packaging:

- Material cut to length and shipped on non-returnable wood reels



COND. SIZE (AWG/kcmil)	NUMBER OF WIRES	NOMINAL CONDUCTOR DIAMETER		MIN. AVG. INSULATION THICKNESS		NOMINAL CABLE DIAMETER		ALUMINUM CONDUCTOR WEIGHT		NET WEIGHT	
		IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km
6 AWG - 1000 kcmil CONDUCTORS											
6*	7	0.169	4.29	0.075	1.91	0.319	8.10	25	37	51	76
4*	7	0.213	5.41	0.075	1.91	0.363	9.22	39	58	70	104
2*	7	0.268	6.81	0.075	1.91	0.418	10.62	62	92	99	147
1*	8	0.298	7.57	0.095	2.41	0.488	12.40	79	118	132	196
1/0*	10	0.337	8.56	0.095	2.41	0.527	13.39	99	147	159	237
2/0*	12	0.374	9.50	0.095	2.41	0.564	14.33	125	186	190	283
3/0*	16	0.421	10.69	0.095	2.41	0.611	15.52	158	235	230	342
4/0*	19	0.470	11.94	0.095	2.41	0.660	16.76	199	296	279	415
250*	23	0.514	13.06	0.110	2.79	0.734	18.64	235	350	336	500
300*	22	0.566	14.38	0.110	2.79	0.786	19.96	282	420	392	583
350*	26	0.607	15.42	0.110	2.79	0.827	21.01	329	490	446	664
400*	37	0.659	16.74	0.110	2.79	0.879	22.33	376	560	495	737
500*	37	0.736	18.69	0.110	2.79	0.956	24.28	471	701	602	896
600*	61	0.813	20.65	0.125	3.18	1.063	27.00	565	841	729	1085
750*	61	0.908	23.06	0.125	3.18	1.158	29.41	706	1051	888	1321
1000*	61	1.060	26.92	0.125	3.18	1.310	33.27	941	1400	1151	1713

Dimensions and weights are nominal; subject to industry tolerances.
 * Non-stock item; minimum runs apply. Please consult Customer Service for price and delivery.

COLOR CODE CHART

COLOR CODE	COLOR	COLOR CODE	COLOR
1	Black	7	Blue
2	White	8	Orange
3	Red	9	Gray
4	Green	A	Purple
5	Yellow	C	Tan
6	Brown		

Renewable Energy Cable



Renewable Energy Cable



SunGen® Photovoltaic Wire

XLPE, RHH or RHW-2

1000 V or 2000 V, UL Type PV, Single Conductor, Aluminum



Product Construction:

Conductor:

- 6 AWG thru 2 AWG Class B compact stranded aluminum alloy (8000 Series) per ASTM B800 and ASTM B801
- 1 AWG thru 350 kcmil compact stranded SIW aluminum alloy (8000 Series) per ASTM B800, ASTM B801 and ASTM B836
- 400 kcmil thru 1000 kcmil Class B compact stranded aluminum alloy (8000 Series) per ASTM B800 and ASTM B801

Insulation:

- Flame-retardant Cross-linked Polyethylene (XLPE)
- RHH/RHW-2 (XLPE)

Print:

- GENERAL CABLE® (PLANT OF MFG) SIZE (AWG OR KCMIL) (MM²) COMPACT SUNGEN® (VOLTS) PV WIRE OR RHH OR RHW-2 AA-8030 AL XLPE 90°C SUN RES (-40°C) VW-1 DIR BUR (UL) OR C(UL) (VOLTS) RPVU90 FT1 YEAR DATE (TIME OF MFG) SEQUENTIAL FOOTAGE

Options:

- Other sizes and stranding options available upon request
- "FOR CT USE" for 1/0 AWG and larger, RHH/RHW-2
- Available in black and full color skin coat

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 1000 V or 2000 V, for interconnection wiring of grounded and ungrounded photovoltaic power systems described in NEC® Article 690
- Stable electrical properties over a broad temperature range
- General purpose building wire for use primarily in conduit or other recognized raceways as specified in the National Electric Code® (NEC®)
- Maximum operating temperature not to exceed 90°C in wet or dry locations

Features:

- Oil Resistant PRI/PRII
- Gas and Oil Res GRI/GRII
- UV/sunlight-resistant, moisture-resistant and flame-retardant insulation in all colors
- Meets cold bend and cold impact tests at -40°C
- Excellent electrical, thermal and physical properties
- Resistant to crush, compression cuts and heat deformation
- Rated for direct burial

Compliances:

- Industry Compliances:**
 - UL 4703 Type PV, UL File #E343277
 - National Electrical Code (NEC®)
- Flame Test Compliances:**
 - UL 2556 Horizontal Burn
 - CT UL 1685, RHH/RHW-2
 - VW-1 UL 2556
- Other Compliances:**
 - OSHA Acceptable
 - RoHS Compliant

Packaging:

- Material cut to length and shipped on non-returnable wood reels

CATALOG NUMBER	COND. SIZE (AWG/kcmil)	NUMBER OF WIRES	NOMINAL CONDUCTOR DIAMETER		MIN. AVG. INSULATION THICKNESS		NOMINAL CABLE DIAMETER		ALUMINUM CONDUCTOR WEIGHT		NET WEIGHT	
			IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km
6 AWG - 1000 kcmil CONDUCTORS												
81006*	6	7	0.169	4.29	0.085	2.16	0.339	8.61	25	37	56	83
81004*	4	7	0.213	5.41	0.085	2.16	0.383	9.73	39	58	75	112
81002*	2	7	0.268	6.81	0.085	2.16	0.438	11.13	62	92	105	156
81001*	1	8	0.298	7.57	0.105	2.67	0.508	12.90	79	118	143	213
81110*	1/0	10	0.337	8.56	0.105	2.67	0.547	13.89	99	147	166	247
81210*	2/0	12	0.374	9.50	0.105	2.67	0.584	14.83	125	186	197	293
81310*	3/0	16	0.421	10.69	0.105	2.67	0.631	16.03	158	235	238	354
81410*	4/0	19	0.470	11.94	0.105	2.67	0.680	17.27	199	296	288	429
81250*	250	23	0.514	13.06	0.120	3.05	0.754	19.15	235	350	346	515
81300*	300	22	0.566	14.38	0.120	3.05	0.806	20.47	282	420	403	600
81350*	350	26	0.607	15.42	0.120	3.05	0.847	21.51	329	490	458	682
81400*	400	37	0.659	16.74	0.120	3.05	0.899	22.83	376	560	507	754
81500*	500	37	0.736	18.69	0.120	3.05	0.976	24.79	471	701	615	915
81600*	600	61	0.813	20.65	0.135	3.43	1.083	27.51	565	841	744	1107
81750*	750	61	0.908	23.06	0.135	3.43	1.178	29.92	706	1051	904	1345
81100*	1000	61	1.060	26.92	0.135	3.43	1.330	33.78	941	1400	1169	1740

Dimensions and weights are nominal; subject to industry tolerances.

* Non-stock item; minimum runs apply. Please consult Customer Service for price and delivery.

COLOR CODE CHART

COLOR CODE	COLOR	COLOR CODE	COLOR
1	Black	7	Blue
2	White	8	Orange
3	Red	9	Gray
4	Green	A	Purple
5	Yellow	C	Tan
6	Brown		



Renewable Energy Cable



SunGen® Photovoltaic Wire
XLPE, RHH/RHW-2, VW-1
600 V, UL Type PV, Single Conductor, Copper

Product Construction:

Conductor:

- 12 AWG thru 1000 kcmil bare compressed copper. Class B per ASTM B8
- 12 AWG thru 8 AWG bare copper, compressed, Class B stranding per ASTM B33 and B8
- 12 AWG thru 8 AWG tinned coated compressed copper. Class C stranding per ASTM B33 and B8

Insulation:

- Flame-retardant Cross-linked Polyethylene (XLPE), black

Print:

- GENERAL CABLE® (PLANT OF MFG) SUNGEN® 600 V PV WIRE DIR BUR OR RHH OR RHW-2 (SIZE) XLPE 90°C WET OR DRY SUN RES (UL) -40°C VW-1 MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

Options:

- Bare or tinned copper conductors
- Other stranding options are available upon request
- Now available in colors
- Available in UL 1685 CT Flame rated ≥ 1/0 AWG RHW-2

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 600 V for interconnection wiring of grounded and ungrounded photovoltaic power systems as described in Section 690.31(A) and other applicable parts of the National Electrical Code® (NEC), NFPA 70

Features:

- Rated 90°C wet and dry
- Rated for direct burial
- Deformation-resistant at high temperatures
- Excellent moisture resistance, exceeds UL 44
- Stable electrical properties over a broad temperature range
- Increased flexibility
- Resistant to crush and compression cuts
- UV/sunlight-resistant
- Meets cold bend and cold impact tests at -40°C

Compliances:

- Industry Compliances:
- UL 4703 Type PV, UL File # E343277
 - National Electrical Code (NEC®)
 - UL 44 Type RHW-2, UL File # E39406
- Flame Test Compliances:
- UL 1581 VW-1
- Other Compliances:
- EPA 40 CFR, Part 261 for leachable lead content per TCLP
 - OSHA Acceptable
 - RoHS Compliant

Packaging:

- Material cut to length and shipped on non-returnable wood reels



CATALOG NUMBER	COND. SIZE (AWG/kcmil)	NUMBER OF WIRES	COLOR	NOMINAL CONDUCTOR O.D.		MIN. AVG. INSULATION THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET WEIGHT	
				IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km

12 AWG - 1000 kcmil BARE COPPER CONDUCTORS													
5841.711200B*	12	19/.0185	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711209B*	12	19/.0185	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711202B*	12	19/.0185	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
425440	10	19/.0234	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
439490	10	19/.0234	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5841.711102B	10	19/.0234	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5841.710800B*	8	19/.0295	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710809B*	8	19/.0295	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710802B*	8	19/.0295	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710600B*	6	19/.0372	Black	0.180	4.57	0.075	1.91	0.330	8.38	81	121	110	164
5841.710400B*	4	19/.0469	Black	0.235	5.97	0.075	1.91	0.385	9.78	129	192	163	243
5841.710200B*	2	19/.0591	Black	0.296	7.52	0.075	1.91	0.446	11.33	205	305	247	368
5841.710100B*	1	19/.0664	Black	0.322	8.18	0.095	2.41	0.512	13.00	258	384	316	470
5841.715100B*	1/0	19/.0745	Black	0.362	9.19	0.095	2.41	0.552	14.02	326	485	389	579
5841.715200B*	2/0	19/.0837	Black	0.405	10.29	0.095	2.41	0.596	15.14	411	612	481	716
5841.715300B*	3/0	19/.0940	Black	0.456	11.58	0.095	2.41	0.646	16.41	518	771	596	887
5841.715400B*	4/0	19/.1055	Black	0.512	13.00	0.095	2.41	0.702	17.83	653	972	740	1101
5841.716250B*	250	37/.0822	Black	0.558	14.17	0.110	2.79	0.778	19.76	772	1149	880	1310
5841.716300B*	300	37/.0900	Black	0.611	15.52	0.110	2.79	0.831	21.11	926	1378	1044	1554
5841.716350B*	350	37/.0972	Black	0.661	16.79	0.110	2.79	0.881	22.38	1063	1582	1190	1771
5841.716400B*	400	37/.1040	Black	0.706	17.93	0.110	2.79	0.926	23.52	1235	1838	1370	2039
5841.716500B*	500	37/.1159	Black	0.789	20.04	0.110	2.79	1.009	25.63	1509	2246	1660	2470
5841.716600B*	600	61/.0992	Black	0.866	22.00	0.125	3.18	1.116	28.35	1883	2802	2069	3079
5841.716750B*	750	61/.1109	Black	0.968	24.59	0.125	3.18	1.218	30.94	2316	3447	2523	3755
5841.717000B*	1000	61/.1280	Black	1.117	28.37	0.125	3.18	1.367	34.72	3088	4595	3327	4951

12 AWG - 8 AWG BARE COPPER, 7 STRAND CONDUCTORS													
5841.711200B7*	12	7/.0305	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711209B7*	12	7/.0305	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711202B7*	12	7/.0305	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
405400	10	7/.0385	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
439390.06	10	7/.0385	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
439380.06	10	7/.0385	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
405600*	8	7/.0481	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710809B7*	8	7/.0481	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710802B7*	8	7/.0481	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112

12 AWG - 8 AWG TINNED COPPER CONDUCTORS													
5841.711200*	12	19/.0185	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711209*	12	19/.0185	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711202*	12	19/.0185	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5841.711100*	10	19/.0234	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5841.711109*	10	19/.0234	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5841.711102*	10	19/.0234	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5841.710800*	8	19/.0295	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710809*	8	19/.0295	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5841.710802*	8	19/.0295	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112

Dimensions and weights are nominal, subject to industry tolerances.
* Non-stock item; minimum runs apply. Please contact Customer Service for price and delivery.



Renewable Energy Cable

SunGen® Photovoltaic Wire

XLPE, RHH/RHW-2, VW-1, RPVU90, FT1
2000 V, UL Type PV, Single Conductor, Copper



CATALOG NUMBER	COND. SIZE (AWG/kcmil)	NUMBER OF WIRES	COLOR	NOMINAL CONDUCTOR O.D.		MIN. AVG. INSULATION THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET WEIGHT	
				IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km
12 AWG - 1000kcmil BARE COPPER CONDUCTORS													
5851.711200B	12	19/0185	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711209B	12	19/0185	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711202B	12	19/0185	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
426400	10	19/0234	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
439410	10	19/0234	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
439400	10	19/0234	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
426300	8	19/0295	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
439430	8	19/0295	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
439420	8	19/0295	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5851.710600B*	6	19/0372	Black	0.180	4.57	0.075	1.91	0.330	8.38	81	121	110	164
5851.710400B*	4	19/0469	Black	0.235	5.97	0.075	1.91	0.385	9.78	129	192	163	243
5851.710200B*	2	19/0591	Black	0.296	7.52	0.075	1.91	0.446	11.33	205	305	247	368
5851.710100B*	1	19/0664	Black	0.322	8.18	0.095	2.41	0.512	13.00	258	384	316	470
5851.715100B*	1/0	19/0745	Black	0.362	9.19	0.095	2.41	0.552	14.02	326	485	389	579
5851.715200B*	2/0	19/0837	Black	0.405	10.29	0.095	2.41	0.596	15.14	411	612	481	716
5851.715300B*	3/0	19/0940	Black	0.456	11.58	0.095	2.41	0.646	16.41	518	771	596	887
5851.715400B*	4/0	19/1055	Black	0.512	13.00	0.095	2.41	0.702	17.83	653	972	740	1101
5851.716250B*	250	37/0822	Black	0.558	14.17	0.110	2.79	0.778	19.76	772	1149	880	1310
5851.716300B*	300	37/0900	Black	0.611	15.52	0.110	2.79	0.831	21.11	926	1378	1044	1554
5851.716350B*	350	37/0972	Black	0.661	16.79	0.110	2.79	0.881	22.38	1063	1582	1190	1771
5851.716400B*	400	37/1040	Black	0.706	17.93	0.110	2.79	0.926	23.52	1235	1838	1370	2039
5851.716500B*	500	37/1159	Black	0.789	20.04	0.110	2.79	1.009	25.63	1509	2246	1660	2470
5851.716600B*	600	61/0992	Black	0.866	22.00	0.125	3.18	1.116	28.35	1883	2802	2069	3079
5851.716750B*	750	61/1109	Black	0.968	24.59	0.125	3.18	1.218	30.94	2316	3447	2523	3755
5851.717000B*	1000	61/1280	Black	1.117	28.37	0.125	3.18	1.367	34.72	3088	4595	3327	4951
12 AWG - 8 AWG BARE COPPER, 7 STRAND CONDUCTORS													
5851.711200B7*	12	7/0305	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711209B7*	12	7/0305	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711202B7*	12	7/0305	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
406400	10	7/0385	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
406400.09	10	7/0385	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
406400.02	10	7/0385	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
426600*	8	7/0481	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
426600.09*	8	7/0481	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
426600.02*	8	7/0481	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
12 AWG - 8 AWG TINNED COPPER CONDUCTORS													
439630*	12	19/0.185	Black	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711209*	12	19/0.185	White	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
5851.711202*	12	19/0.185	Red	0.088	2.24	0.060	1.52	0.212	5.38	20	30	36	54
426450*	10	19/0.234	Black	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5851.711109*	10	19/0.234	White	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
5851.711102*	10	19/0.234	Red	0.112	2.84	0.060	1.52	0.238	6.05	32	48	48	71
426650*	8	19/0.295	Black	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5851.710809*	8	19/0.295	White	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112
5851.710802*	8	19/0.295	Red	0.143	3.63	0.075	1.91	0.299	7.59	51	76	75	112

Dimensions and weights are nominal; subject to industry tolerances.
* Non-stock item; minimum runs apply. Please contact Customer Service for price and delivery.

Product Construction:

Conductor:

- 12 AWG thru 1000 kcmil bare copper compressed copper. Class B per ASTM B8
- 12 AWG thru 8 AWG bare copper, compressed, Class B stranding per ASTM B33 and B8
- 12 AWG thru 8 AWG tinned coated compressed copper. Class C stranding per ASTM B33 and B8

Insulation:

- Flame-retardant Cross-linked Polyethylene (XLPE), black

Print:

- GENERAL CABLE® (PLANT OF MFG) SUNGEN® 2000 V PV WIRE DIR BUR OR RHH OR RHW-2 (SIZE) XLPE 90°C WET OR DRY SUN RES (UL) -40°C VW-1 OR C(UL) 2000 V RPVU90 FT1 MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

Options:

- Bare or tinned copper conductors
- Other stranding options are available upon request
- Now available in colors
- Available in UL 1685 CT Flame rated ≥ 1/0 AWG RHW-2

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 2000 V for interconnection wiring of grounded and ungrounded photovoltaic power systems as described in Section 690.31(A) and other applicable parts of the National Electrical Code® (NEC), NFPA 70

Features:

- Rated 90°C wet and dry
- Rated for direct burial
- Deformation-resistant at high temperatures
- Excellent moisture resistance, exceeds UL 44
- Stable electrical properties over a broad temperature range
- Increased flexibility
- Excellent resistance to crush and compression cuts
- UV/sunlight-resistant
- Meets cold bend and cold impact tests at -40°C

Compliances:

- Industry Compliances:
 - UL 4703 Type PV, UL File # E343277
 - c(UL) CSA C22.2 No. 271 RPVU90 File # E343277
- National Electrical Code (NEC®)
 - UL 44 Type RHW-2, UL File # E39406
- Flame Test Compliances:
 - UL 1581 VW-1
- Other Compliances:
 - EPA 40 CFR, Part 261 for leachable lead content per TCLP
 - OSHA Acceptable
 - RoHS Compliant

Packaging:

- Material cut to length and shipped on non-returnable wood reels



Renewable Energy Cable

SunGen® Photovoltaic Wire

Dual Layer EPR/XL-CPE, USE-2 at 600 V, RHH/RHW-2, RWU90
600 V, UL Type PV, Single Conductor, Copper



Product Construction:

Conductor:

- 14 AWG thru 2 AWG tinned coated compressed copper. Class C stranding per ASTM B33 and B8
- 1 AWG thru 1000 kcmil tinned coated compressed copper. Class B stranding per ASTM B33 and B8

Insulation:

- Lead-free Ethylene Propylene Rubber (EPR) colored for contrast with black jacket

Jacket:

- Black, lead-free, flame-retardant, oil-, chemical- and sunlight-resistant Cross-linked Chlorinated Polyethylene (XL-CPE)

Print:

- GENERAL CABLE® (PLANT OF MFG) SUNGEN® 600 V PV WIRE DIR BUR OR RHH OR RHW-2 OR USE-2 (SIZE) 90°C WET OR DRY SUN RES (UL) -40°C VV-1 MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

Options:

- Bare copper conductors
- Other stranding options are available upon request
- Now available in colors

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 600 V for interconnection wiring of grounded and ungrounded photovoltaic power systems as described in Section 690.31(A) and other applicable parts of the National Electrical Code® (NEC), NFPA 70

Features:

- Rated 90°C wet and dry
- Rated for direct burial
- Deformation-resistant at high temperatures
- Excellent moisture resistance, exceeds UL 44
- Stable electrical properties over a broad temperature range
- Extra tough, mechanically rugged dual-layer construction
- Increased flexibility
- Resistant to most oils and chemicals
- UV/sunlight-resistant
- Meets cold bend and cold impact tests at -40°C

Compliances:

Industry Compliances:

- UL 4703 Type PV, UL File # E323451
- National Electrical Code (NEC®)
- ICSA S-95-658/NEMA WC70
- UL 44 Type RHH or RHW-2, UL File # E90494 or E54260
- UL 854 Type USE-2 for 600 V, UL File # E90499 or E86307
- Limited Smoke Rating per UL

Flame Test Compliances:

- UL 1581 VW-1
- For sizes 1/0 and larger: IEEE 383, IEEE 1202/CSA FT4

Other Compliances:

- EPA 40 CFR, Part 261 for leachable lead content per TCLP
- OSHA Acceptable
- RoHS Compliant

Packaging:

- Material cut to length and shipped on non-returnable wood reels



CATALOG NUMBER	COND. SIZE (AWG/kcmil)	COND. STRAND	NOMINAL CONDUCTOR O.D.		MIN. AVG. INSULATION THICKNESS		MIN. AVG. JACKET THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET WEIGHT	
			IN	mm	IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km

14 AWG - 1000 kcmil TINNED COPPER CONDUCTORS

12211.711400*	14	19/.0142	0.070	1.78	0.030	0.76	0.030	0.76	0.201	5.11	13	19	32	48
12211.711200*	12	19/.0185	0.088	2.24	0.030	0.76	0.030	0.76	0.219	5.56	20	30	42	63
12211.711100*	10	19/.0234	0.112	2.84	0.030	0.76	0.030	0.76	0.242	6.15	32	48	59	88
12211.710800*	8	19/.0295	0.143	3.63	0.045	1.14	0.030	0.76	0.310	7.87	50	74	89	132
12211.710600*	6	19/.0372	0.184	4.67	0.045	1.14	0.045	1.14	0.376	9.55	81	121	141	210
12211.710400*	4	19/.0469	0.234	5.94	0.045	1.14	0.045	1.14	0.420	10.67	129	192	202	301
12211.710200*	2	19/.0526	0.296	7.52	0.045	1.14	0.045	1.14	0.487	12.37	205	305	292	435
12211.710100*	1	19/.0664	0.323	8.20	0.055	1.40	0.060	1.52	0.539	13.69	258	384	408	607
12211.715100*	1/0	19/.0740	0.370	9.40	0.055	1.40	0.060	1.52	0.587	14.91	326	485	478	711
12211.715200*	2/0	19/.0837	0.410	10.41	0.055	1.40	0.060	1.52	0.632	16.05	411	612	590	878
12211.715300*	3/0	19/.0940	0.460	11.68	0.055	1.40	0.060	1.52	0.678	17.22	518	771	734	1092
12211.715400*	4/0	19/.1055	0.520	13.21	0.055	1.40	0.060	1.52	0.738	18.75	653	972	865	1287
12211.716250*	250	37/.0822	0.558	14.17	0.065	1.65	0.080	2.03	0.862	21.89	772	1149	995	1481
12211.716300*	300	37/.0900	0.611	15.52	0.065	1.65	0.080	2.03	0.915	23.24	926	1378	1167	1737
12211.716350*	350	37/.0972	0.661	16.79	0.065	1.65	0.080	2.03	0.965	24.51	1063	1582	1321	1966
12211.716400*	400	37/.1040	0.706	17.93	0.065	1.65	0.080	2.03	1.010	25.65	1235	1838	1508	2244
12211.716500*	500	37/.1159	0.789	20.04	0.065	1.65	0.080	2.03	1.093	27.76	1509	2246	1810	2694
12211.716600*	600	61/.0992	0.866	22.00	0.080	2.03	0.080	2.03	1.200	30.48	1883	2802	2237	3329
12211.716750*	750	61/.1109	0.968	24.59	0.080	2.03	0.080	2.03	1.302	33.07	2316	3447	2707	4028
12211.717000*	1000	61/.1280	1.117	28.37	0.080	2.03	0.080	2.03	1.451	36.86	3088	4595	3534	5259

Dimensions and weights are nominal; subject to industry tolerances.
* Non-stock item; minimum runs apply. Please contact Customer Service for price and delivery.

Renewable Energy Cable



Renewable Energy Cable

SunGen® Photovoltaic Wire

Dual Layer EPR/XL-CPE, USE-2 at 600 V, RHH/RHW-2, RWU90
2000 V, UL Type PV, Single Conductor, Copper



Product Construction:

Conductor:

- 14 AWG thru 2 AWG tinned coated compressed copper. Class C stranding per ASTM B33 and B8
- 1 AWG thru 1000 kcmil tinned coated compressed copper. Class B stranding per ASTM B33 and B8

Insulation:

- Lead-free Ethylene Propylene Rubber (EPR) colored for contrast with black jacket

Jacket:

- Black, lead-free, flame-retardant, oil-, chemical- and sunlight-resistant Cross-linked Chlorinated Polyethylene (XL-CPE)

Print:

- GENERAL CABLE® (PLANT OF MFG) SUNGEN® 2000 V PV WIRE DIR BUR OR RHH OR RHW-2 OR 600 V USE-2 (SIZE) 90°C WET OR DRY SUN RES (UL) -40°C VW-1 c(UL) RWU90 1000 V MONTH/YEAR OF MFG SEQUENTIAL FOOTAGE MARK

Options:

- Bare copper conductors
- Other stranding options are available upon request
- Now available in colors

Applications:

- Single conductor, sunlight-resistant, direct burial photovoltaic wire rated 90°C wet or dry, 2000 V for interconnection wiring of grounded and ungrounded photovoltaic power systems as described in Section 690.31(A) and other applicable parts of the National Electrical Code® (NEC), NFPA 70

Features:

- Rated 90°C wet and dry
- Rated for direct burial
- Deformation-resistant at high temperatures
- Excellent moisture resistance, exceeds UL 44
- Stable electrical properties over a broad temperature range
- Extra tough, mechanically rugged dual-layer construction
- Increased flexibility
- Resistant to most oils and chemicals
- UV/sunlight-resistant
- Meets cold bend and cold impact tests at -40°C

Compliances:

Industry Compliances:

- UL 4703 Type PV, UL File # E323451
- National Electrical Code (NEC®)
- ICEA S-95-658/NEMA WC70
- UL 44 Type RHH or RHW-2, UL File # E90494 or E54260
- UL 854 Type USE-2 for 600 V, UL File # E90499 or E86307

• Limited Smoke Rating per UL

Flame Test Compliances:

- UL 1581 VW-1
- For sizes 1/0 and larger: IEEE 383, IEEE 1202/CSA FT4

Other Compliances:

- EPA 40 CFR, Part 261 for leachable lead content per TCLP
- OSHA Acceptable
- RoHS Compliant

Packaging:

- Material cut to length and shipped on non-returnable wood reels

CATALOG NUMBER	COND. SIZE (AWG/kcmil)	COND. STRAND	NOMINAL CONDUCTOR O.D.		MIN. AVG. INSULATION THICKNESS		MIN. AVG. JACKET THICKNESS		NOMINAL CABLE DIAMETER		COPPER WEIGHT		NET WEIGHT	
			IN	mm	IN	mm	IN	mm	IN	mm	LBS/1000 FT	kg/km	LBS/1000 FT	kg/km
14 AWG - 1000 kcmil TINNED COPPER CONDUCTORS														
12221.711400*	14	19/.0142	0.070	1.78	0.045	1.14	0.030	0.76	0.232	5.89	13	19	36	54
12221.711200*	12	19/.0185	0.088	2.24	0.045	1.14	0.030	0.76	0.250	6.35	20	30	46	68
12221.711100*	10	19/.0234	0.112	2.84	0.045	1.14	0.030	0.76	0.273	6.93	32	48	64	95
12221.710800*	8	19/.0295	0.143	3.63	0.055	1.40	0.030	0.76	0.332	8.43	50	74	95	141
12221.710600*	6	19/.0372	0.184	4.67	0.055	1.40	0.045	1.14	0.398	10.11	81	121	148	220
12221.710400*	4	19/.0469	0.234	5.94	0.055	1.40	0.045	1.14	0.442	11.23	129	192	208	310
12221.710200*	2	19/.0526	0.296	7.52	0.055	1.40	0.045	1.14	0.507	12.88	205	305	306	455
12221.710100*	1	19/.0664	0.323	8.20	0.065	1.65	0.060	1.52	0.561	14.25	258	384	440	655
12221.715100*	1/0	19/.0740	0.370	9.40	0.065	1.65	0.060	1.52	0.607	15.42	326	485	505	752
12221.715200*	2/0	19/.0837	0.410	10.41	0.065	1.65	0.060	1.52	0.652	16.56	411	612	615	915
12221.715300*	3/0	19/.0940	0.460	11.68	0.065	1.65	0.060	1.52	0.700	17.78	518	771	747	1112
12221.715400*	4/0	19/.1055	0.520	13.21	0.065	1.65	0.060	1.52	0.760	19.30	653	972	891	1326
12221.716250*	250	37/.0822	0.558	14.17	0.075	1.91	0.080	2.03	0.882	22.40	772	1149	1012	1506
12221.716300*	300	37/.0900	0.611	15.52	0.075	1.91	0.080	2.03	0.935	23.75	926	1378	1184	1762
12221.716350*	350	37/.0972	0.661	16.79	0.075	1.91	0.080	2.03	0.985	25.02	1063	1582	1339	1993
12221.716400*	400	37/.1040	0.706	17.93	0.075	1.91	0.080	2.03	1.030	26.16	1235	1838	1527	2272
12221.716500*	500	37/.1159	0.789	20.04	0.075	1.91	0.080	2.03	1.113	28.27	1509	2246	1831	2725
12221.716600*	600	61/.0992	0.866	22.00	0.090	2.29	0.080	2.03	1.222	31.04	1883	2802	2262	3366
12221.716750*	750	61/.1109	0.968	24.59	0.090	2.29	0.080	2.03	1.324	33.63	2316	3447	2734	4069
12221.717000*	1000	61/.1280	1.117	28.37	0.090	2.29	0.080	2.03	1.473	37.41	3088	4595	3564	5304

Dimensions and weights are nominal; subject to industry tolerances.

* Non-stock item; minimum runs apply. Please contact Customer Service for price and delivery.



