

SOLAR PHOTOVOLTAIC CABLES

On land or floating at sea, we have the complete solutions.



SOLAR PHOTOVOLTAIC CABLES

To meet an ever-growing need for power, the world is increasingly turning to renewable and sustainably sourced solar energy. Prysmian's cables are helping businesses in the renewable industry around the globe to convert this opportunity into reality. Our technologies – which cover cables used in photovoltaic plants – support the operations of contractors and developers, grid operators, transmission and distribution system operators and panel makers. Always aware of our responsibility to the planet, we are 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.

The choice of components is critical in any PV system. Good quality and properly sized

cables provide optimized safety and longer-lasting systems. Solar PV cables are often exposed to harsh environmental conditions: UV radiation, moisture, temperature fluctuations as well as wind, snow and rain. Inadequate or low-quality cables can deteriorate quickly, thus reducing a system's power generation capacity and, therefore, its revenues. Every KW lost in generation due to poor quality cables is a loss in terms of return on investment.

Cables are one of the first components of a system to show failures, causing power generation disruptions and implying high replacement costs related not only to the replacement of cables, but also, and mostly, to the works required and the possible collateral damages to panels or other components.

WE HAVE ALL THE PHOTOVOLTAIC CABLES THAT YOU MIGHT NEED

On land or floating at sea, with our cables you can bring sustainable sun power all the way from the solar panels, through the distribution grids and into the many homes and offices. Our one-stop-shop-strategy supports you with all that you need to feed societies with renewable energy. Let the sunshine in.

WHAT WE OFFER

Prysmian offers complete cable solutions to enable the production and supply of solar photovoltaic power. In addition to the Solar PV cables, our cable portfolio includes low, medium and high voltage cables according to the most known standards of each region, as well as special cables for communication and control. In addition to cables, Prysmian offers electrical asset management solutions with PRY-CAM, the revolutionary technology for on-line, accurate and reliable partial discharge measurements, diagnosis and defect localization.

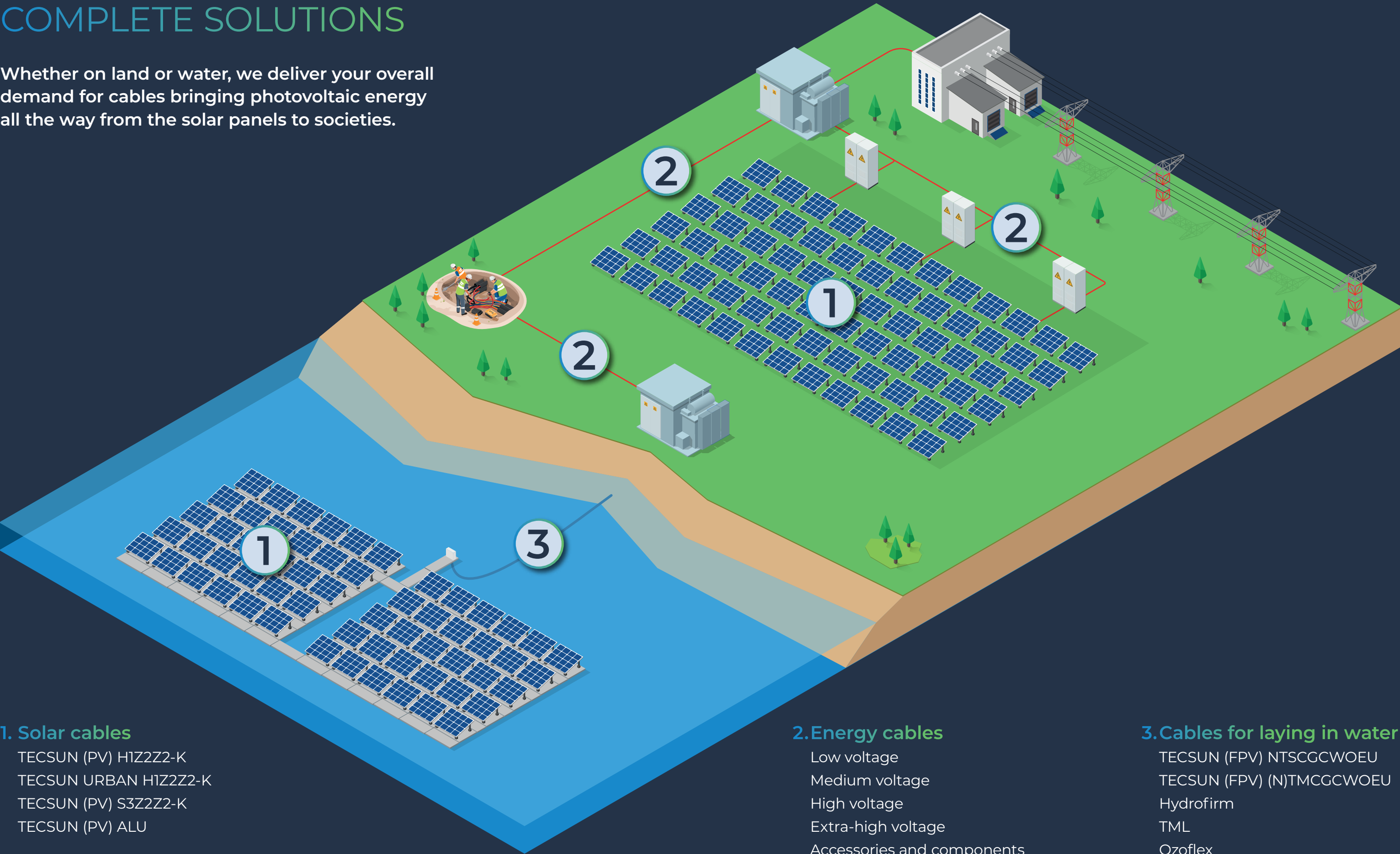
GLOBAL GROUP, LOCAL FORCE

Prysmian is world leader in the energy and telecommunications cable systems industry. No matter how large, we are always present to serve both our global and our local customers and business partners. In order to offer bespoke and tailor-made solutions, we appreciate the importance of understanding local pre-conditions and special needs. This is why we believe that it is crucial to be present within local geographies, while being backed-up by the capacity that only a truly global group possesses.



COMPLETE SOLUTIONS

Whether on land or water, we deliver your overall demand for cables bringing photovoltaic energy all the way from the solar panels to societies.



1. Solar cables

- TECSUN (PV) H1Z2Z2-K
- TECSUN URBAN H1Z2Z2-K
- TECSUN (PV) S3Z2Z2-K
- TECSUN (PV) ALU

2. Energy cables

- Low voltage
- Medium voltage
- High voltage
- Extra-high voltage
- Accessories and components

3. Cables for laying in water

- TECSUN (FPV) NTSCGCW0EU
- TECSUN (FPV) (N)TMCCGCW0EU
- Hydrofirm
- TML
- Ozoflex
- Tecwater

ONE-STOP SHOP

We have a vast and unabridged photovoltaic cable offer that can be tailor-made to fit specific customer needs.

SOLAR CABLES

Reflecting our commitment to both innovation and sustainability, we offer a full range of quality photovoltaic products, renowned in the field for their easy installation, reliability and longevity attributes and complying with all major international standards.

Our technologies are hard at work across the renewables sector, supporting the operations of contractors, developers, grid operators, PV panel makers, PV power generation system integrators and even entire solar parks.

WATER CABLES

To bring the electricity from water based solar farms to mainland, you need waterproof cables that can resist heavy seas. We offer a complete range of high performance and reliable solutions that ensure a long lifetime, compliance with the demanding off-shore environment. The reliability and service life of our submersible cables are thanks to our extensive know-how of the special operational conditions, gained from decades of close cooperation with significant manufacturers within both the submerged pumps and photovoltaic industries.

A BURIED TREASURE

TECSUN – flawless since 2003 and suitable for direct burial.

TECSUN® FEATURES



VDE certified

Only photovoltaic DC cable on the market according to EN 50618 with both VDE and TÜV certification.



Designed for DC application

Adheres to standard for DC application of PV single-core cables according to IEC 62930.



Water resistant

High resistance against water penetration. Suitable for permanent submersion in fresh (AD8) water.



Direct burial

Since 2003 TECSUN has been suitable for direct burial in soil in the presence of water and aggressive earth conditions.



Expected lifetime

Operational lifetime of 300,000 hours corresponding to approximately 30 years.



Red and blue outer sheath

The red and blue cable versions have the same UV resistance and non-discolouration over time as the black version.



Additional tests

In addition to standard tests required acc. to EN 50618, TECSUN has been tested for further 17 properties to document its superior performance.

THE TECSUN WORLD TOUR

Did you know that already today there is 2.000.000 km of TECSUN cables installed in the world! If you laid it all in one line, the cables would reach about 50 times around Earth.

Here are some examples where TECSUN was installed during the last four years: solar parks.

Egypt	1.000 mW	Netherlands	5.000 mW
Angola	800 mW	Polen	5.000 mW
Chili	1.000 mW	Portugal	3.500 mW
Germany	40.000 mW	Spain	30.000 mW
Japan	1.200 mW	Ukraine	800 mW
Kasachstan	350 mW		
Mexico	470 mW	And the World Tour continues ...	

TABLE OF CONTENT

TECSUN (PV) H1Z2Z2-K 1/1 kV AC (1.5/1.5 kV DC)	10
TECSUN URBAN H1Z2Z2-K 1/1 kV AC (1.5/1.5 kV DC)	11
TECSUN (PV) S3Z2Z2-K 1.8/3 kV AC	12
TECSUN (FPV) NTSCGCWOEU 12/20 kV	13
TECSUN (FPV) (N)TMCGCWOEU 12/20 kV	13
HYDROFIRM(T) S1BB-F 0.6/1 kV	14
SUNCONNECT (N)A2XY-J/O 1.8/3 kV AC 1.5 (1.8) kV DC	15
PROTODUR NYY-O/-J 0.6/1 kV	16
PROTODUR NAYY-O/-J 0.6/1 kV	16
PROTOTHEN X NA2XY	17
PROTOTHEN X NA2XS(F)2Y	17

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

PV CABLES, RUBBER INSULATED, VDE AND TÜV 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 of 1.5/1.5 kV DC. They are suitable for applications indoor and/or outdoor, in industrial and agriculture areas, 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.

Prysmian's additional internal tests are carried out at regular intervals – including the type tests according to EN 50618 – in our own test laboratories and confirm the outstanding properties of the TECSUN (PV) H1Z2Z2-K.

In addition, we guarantee consistent quality for 20 years with the world's only VDE-certified solar cable.

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

Nr of cores x cross section	color	Part number	Conductor diameter max. mm	Outer diameter mm		Bending 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*1		Short circuit current*2 kA	CPR class
				min.	max.					free in Air	on surface		
1x4	black	20149014	2.4	5.3	5.9	18	61	60	5.09	55	52	0.57	Dca
1x6	black	20149015	2.9	5.8	6.5	20	80	90	3.39	70	67	0.86	Dca

*1. 60°C ambient temp.
*2. 1 s. from 90°C to 250°C.
Standard delivery length is 500 m. Other lengths are available on request. All cross sections are also available in red and blue colours.
Note: If required, TECSUN (PV) H1Z2Z2-K cables are also available in other cross sections and also with customized surface marking.

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

PV CABLES, TÜV CERTIFIED AS PER EN 50618.



NEW

Application:

The new TECSUN Urban is an UV-resistant, halogen free solar cable, suitable for outdoor use. With its class 5 conductor, the cable offers excellent flexibility even in cold conditions. The TECSUN Urban is an excellent choice for rooftop installations. An eco-friendly and 3rd party approved solution for residential, industrial and commercial areas.

TECSUN URBAN H1Z2Z2-K	
Brand	TECSUN URBAN
Type designation	H1Z2Z2-K
Standard	EN 50618
Conductor	Tinned copper, finely stranded class 5 in accordance with IEC 60228
Insulation	Halogen free, heat resistant, cross-linked special compound
Outer sheath	Halogen free, heat resistant, cross-linked special compound
Outer sheath colour	Black and red
Water resistance, PRYSMIAN internal test	AD8 (DC stability and insulation resistance test)

Nr of cores x cross section	color	Part number	Conductor diameter max. mm	Outer diameter max. mm	Bending radius fixed min. mm	Weight (approx.) kg/km	Conductor resistance at 20 °C max. Ω/km	Current carrying capacity for single cable*1		Short circuit current*2 kA	CPR class
								free in Air	on surface		
1x4	black	20432556	2.4	5.9	22.8	55.9	5.09	55	52	0.57	Eca
1x4	red	20432567	2.4	5.9	22.8	55.9	5.09	55	52	0.57	Eca
1x6	black	20432569	2.9	6.5	24.8	75.1	3.39	70	67	0.86	Eca
1x6	red	20432570	2.9	6.5	24.8	75.1	3.39	70	67	0.86	Eca
1x10	black	20432642	4	7.6	28.4	116	1.95	98	95	1.43	Eca
1x10	red	20432634	4	7.6	28.4	116	1.95	98	95	1.43	Eca

*1. 60°C ambient temp.
*2. 1 s. from 90°C to 250°C.
Standard delivery length is 500 m. Other lengths are available on request. All cross sections are also available in red and blue colours.
Note: If required, TECSUN (PV) H1Z2Z2-K cables are also available in other cross sections and also with customized surface marking.

TECSUN (PV) S3Z2Z2-K 1.8/3 kV AC

HEAT RESISTANT CABLES, RUBBER INSULATED, FOR INVERTER-TRAFO INTERCONNECTION.



120 °C

Application:

Halogen free single core cables, sheathed, for junction boxes and inverters, with improved fire performance, increased heat resistance and suitable for direct burial. These cables are intended for use in photovoltaic power supply systems, at nominal voltage rate of 1.8/3 kV AC, as interconnection between central inverter and transformer station.

Can be used indoor, outdoor, in explosion hazard areas, in industry and agriculture and are suitable for applications in/at equipment with protective insulation (protecting class II). To be considered as short and ground fault protection.

Also usable for unfused connections in switchgear and distribution boards up to 1000 V (DIN VDE 0100-520 and DIN VDE 0660-500) and in accumulator circuits (DIN 5510 part 5).

TECSUN (PV) cables are suitable for direct burial in ground (PRYSMIAN internal testing). The installation guidelines shall be taken in consideration.

TECSUN (PV) S3Z2Z2-K	
Brand	TECSUN (PV)
Type designation	H1Z2Z2-K
Standard	Based on DIN EN 50618
Conductor	Tinned copper, finely stranded class 5 in accordance with IEC 60228
Insulation	Halogen free, heat resistant, cross-linked elastomeric special compound, requirements based on DIN EN 50618 and DIN VDE 0250-606
Outer sheath colour	Black
Rated voltage	1.8/3 kV
Max. permissible operating voltage	AC: 2.1/3.6 kV DC: 2.7/5.4 kV
Test voltage	AC: 6.5 kV (5 min.)
Current carrying capacity description	According to DIN VDE 0298-4
Max. operating temperature of the conductor	Rec. operating temp.: 90 °C Max. permissible operating temp.: 120 °C, for max. 20.000 h.
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fixed installation	-40 °C up to 90 °C
Ambient temperature in fully flexible operation	-40 °C up to 90 °C
Rodent resistance	Safety can be optimized by utilizing protective hoses, or protective element, such as a metallic screen braid.

TECSUN (FPV) NTSCGCWOEU 12/20 kV

MEDIUM VOLTAGE FLEXIBLE CABLES FOR THE SHORE CONNECTION OF FLOATING PV DOCKS.



WATER APPLICATIONS

Application:

Power supply cable for use in water, e.g. for the shore connection of floating docks, where high mechanical stresses are to be expected.

Suitable for use in drinking, sewage, salt and brackish water at water depths of up to 500 m.

These cables are designed to meet the requirements of the AD8 classification.

TECSUN (PV) S3Z2Z2-K	
Brand	TECSUN(FPV)
Model	Single core
Standard	Based on DIN VDE 0250-813
Maximum submersing depth	500 meters
Conductor	Electrolytic copper, not tinned, very finely stranded (class 5)
Insulation	EPR, Compound type: Special compound, 3GI3
Electrical field control	Inner and outer layer of semi-conductive rubber compound
Outer sheath	EPR + CPE double layer system
Water resistance	Meets AD8 classification
Max. operating temperature of the conductor	90 °C
Ambient temperature for fixed installation min.	-40 °C

TECSUN (FPV) (N)TMCGCWOEU 12/20 kV

MEDIUM VOLTAGE FLEXIBLE CABLES FOR SEMIFLEXIBLE INSTALLATION E.G. FOR THE USE ON FLOATING PV DOCKS.



WATER APPLICATIONS

Application:

Power supply cable for use on Floating PV docks e.g. for the interconnection of inverters.

Suitable for use in drinking, sewage, salt and brackish water at water depths of up to 500 m.

These cables are designed to meet the requirements of the AD8 classification.

TECSUN (FPV) (N)TMCGCWOEU	
Brand	TECSUN(FPV)
Model	Single core
Standard	Based on DIN VDE 0250-813
Maximum submersing depth	500 meters
Conductor	Electrolytic copper, not tinned, very finely stranded (class 5)
Insulation	EPR, Compound type: Special compound, 3GI3
Electrical field control	Inner and outer layer of semi-conductive rubber compound
Outer sheath	Basic material: Special synthetic elastomer compound, color: red
Water resistance	Meets AD8 classification
Max. operating temperature of the conductor	90 °C
Ambient temperature for fixed installation min.	-40 °C

HYDROFIRM(T) S1BB-F 0.6/1 kV

THESE CABLES ARE SUITABLE FOR CONNECTIONS OF ELECTRICAL EQUIPMENT, SUBMERGED IN WATER UNDER MEDIUM MECHANICAL STRESS.



WATER APPLICATIONS

Application:

Likewise for indoor, outdoor, industrial and agricultural applications, e.g. Floating PV docks. For protected fixed installation in pipes, equipment, as rotor connections to motors or in well systems.

Suitable for use in drinking, sewage, salt and brackish water at depths of up to 2.000 m.

These cables are designed to meet the requirements of the AD8 classification.

HYDROFIRM(T) S1BB-F	
Brand	HYDROFIRM(T)
Type designation	S1BB-F
Standard	Based on DIN EN 50525-2-21
Maximum submersing depth	2.000 meters
Conductor	Bare copper, finely stranded (class 5)
Insulation	HEPR rubber, special compound
Outer sheath	Special synthetic elastomer rubber
Outer sheath color	Blue
Max. operating temperature of the conductor	90 °C
Ambient temperature for fixed installation min.	-50 °C
Water resistance	AD8 classification

SUNCONNECT (N)A2XY-J/O 1.8/3 kV AC | 1.5 (1.8) kV DC



Application:

SUNCONNECT is a new brand of cables, manufactured by Prysmian, designed for their use in PV solar plants. Typically, the maximum voltage of the PV systems is either 600V, for residential systems, or 1000 V (or 1500 V), for utility-scale systems

SUNCONNECT are power cables with aluminium conductors, XLPE insulation and PVC outer sheath, designed for 1.8/3(3.6) kV AC | 1.5/1.5(1.8) kV DC. They are for fixed indoor / outdoor electrical installations, laying in ground, in open air, in concrete, in cable ducts, and in water, where mechanical protection is not required during installation and operation, and where the PVC outer sheath is not attacked by corrosive agents. In case of corrosive ground, extra protection for the cables is requested.

Features:

- Designed for AC | DC applications
- High dielectric strength given by cross-linked polyethylene insulation
- Lead-free materials
- Flame-retardant according to IEC 60332-1 series of standards
- Withstand high temperatures and UV-exposure
- Work with the new smart inverters & related external equipment, and withstand the reverse potential applied during night-time to the panels (see PID, Chapter 6).

SUNCONNECT (N)A2XY-J/O	
Brand	SUNCONNECT
Type designation	(N)A2XY-J/O
Standard	IEC 60502-1
Conductor	Aluminium
Insulation	Cross-linked polyethylene (XLPE)
Rated voltage	1.8/3 kV AC 1.5/1.5 kV DC
Max. permissible operating voltages	AC: 3.6 kV DC: 1.8 kV
Water resistance	Meets AD8 classification
Max. operating temperature of the conductor	90 °C
Min. laying temperature	-5 °C
Short circuit temperature	250 °C

PROTODUR NYY-O/-J 0.6/1 kV



Application:
Distribution, connecting and installation cable. The laying can be in earth, in tube, free in air, indoors, in concrete and in water. It is also UV-resistant and flame retardant.

PROTODUR NYY-O/-J 0.6/1 kV	
Brand	PROTODUR
Type designation	NY Y
Standard	DIN VDE 0276-603, IEC 60502-1
Conductor	Bare copper
Insulation	Polyvinyl chloride (PVC)
Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage	AC: 1.2 kV DC: 1.8 kV
Laying temperature min.	-5 °C
Max. operating temperature	70 °C
Short circuit temperature	160 °C <= 300 mm² 140 °C >= 300 mm²

PROTODUR NAYY-O/-J 0.6/1 kV



Application:
Distribution cable. The laying is possible directly in ground, in tubes, free in air, indoors, in concrete and in water. It is lead-free, UV-resistant and flame retardant.

PROTODUR NAYY-O/-J 0.6/1 kV	
Brand	PROTODUR
Type designation	NAY Y
Standard	DIN VDE 0276-603, IEC 60502-1
Conductor	Aluminium
Insulation	Polyvinyl chloride (PVC)
Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	AC: 1.2 kV DC: 1.8 kV
Laying temperature min.	-5 °C
Max. operating temperature	70 °C
Short circuit temperature	160 °C <= 300 mm² 140 °C >= 300 mm²

PROTOTHEN X NA2XY



Application:
Distribution and interconnection cable for industry and power generation networks. Laying: in ground, in tubes, free in air, indoors and in water. UV-resistant.

PROTOTHEN X NA2XY	
Brand	PROTOTHEN-X
Type designation	NA2XY
Standard	DIN VDE 0276-603, IEC 60502-1
Conductor	Aluminium
Insulation	Cross-linked polyethylene (XLPE)
Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage	-
Laying temperature min.	-5 °C
Max. operating temperature	90 °C
Short circuit temperature	250 °C

PROTOTHEN X NA2XS(F)2Y



Application:
Distribution cable. Suitable to be laid direct burial, in ducts, in water, outdoor above ground and indoor. The ingress of water in case of a damaged outer sheath is limited by the longitudinal watertight screen area.

PROTOTHEN X NA2XS(F)2Y			
Brand	PROTOTHEN-X		
Type designation	NA2XS(F)2Y		
Standard	DIN VDE 0276-620		
Conductor	Aluminium		
Insulation	Cross-linked polyethylene (XLPE)		
Rated voltage	6/10 kV	12/20 kV	18/30 kV
Max. permissible operating voltage AC	12 kV	24 kV	36 kV
Laying temperature min.	-20 °C		
Max. operating temperature	90 °C		
Short circuit temperature	250 °C		

Setting new standards with E Path.

An invaluable business growth opportunity fueled by sustainability.

E Path

Eco-Pathways

Eco-Cable

Prysmian proudly introduces E Path, a pioneering eco-labeling system tailored specifically for the cable industry. This innovative approach, built upon EU-ecolabel standards, sets a new benchmark for sustainability in cable manufacturing.



E Path

E Path uses measurable and known assessment criteria to summarize the contribution that cables can provide, in terms of climate change effect, paving the way for the cable industry to be included into eco or green labelling systems. Sustainability is not just a goal, it's our commitment at Prysmian. We embed sustainability into every strand of our operations, striving not just for excellence but for sustainable excellence. It's who we are, it's what we do.

Set With sustainability rooted in our DNA each cable family has to pass a rating process based on the following criteria:



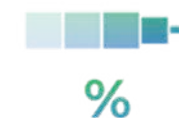
CARBON FOOTPRINT

Aimed at defining climate change impacts deriving from cables life cycle



NO TOXIC SUBSTANCES

Absence of CMR or toxic/hazardous to environment substances in the cable



PERFORMANCE EFFICIENCY

The higher the efficiency of the transmission, the more sustainable the performance



RECYCLING INPUT RATE

Presence of recycled materials in cable, both purchased and reused



ENVIRONMENTAL BENEFITS

Low carbon products (including cables used for green energy sources), CPR compliant products



RECYCLABILITY / CIRCULARITY

Presence of potentially recyclable material, possibility to reclaim/recover



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