POWER GENERATION

SOLAR PV

SOLAR POWER

Nexans Solar Solutions

Large Scale Solar Catalogue

Nexans

SUMMARY

Nexans
Solar Solutions

SOLAR POWER

Sustainability

Our mission is to Electrify the Future and work towards a new world of sustainable electrification - decarbonized, renewable and accessible to everyone.

Nexans' business operations and internal activities are committed to a range of Corporate Sustainable Responsibility (CSR) principals that focus on our people, our partners, our products and our planet for a more sustainable future.

These CSR principles draw on the Sustainable Development Goals set by the United Nations, which the Group adopted in 2008 when it joined the Global Compact. Here in New Zealand, our aim is to be consistent with Nexans' mission and purpose at a local level by being an innovative company and recognized as such by employees and customers. We consider our people and the planet as integral to our success and commit to delivering on our promises, mission, purpose and values.

By electrifying the future, Nexans is targeting the global investments and plans that will help us achieve our carbon neutrality target by 2030.

Nexans is recognised globally as a high achiever in working towards a sustainable future for this planet. The level of achievement is reflected in Nexans global sustainable performance rating as follows:

- **CDP award "A-" Carbon Disclosure Project Rating**
  CDP is a not-for-profit charity that runs a gold standards global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts towards accelerating the Rate of Change

- **ISS ESG Decile Ranking 1, Rating B**
  ISS Management is a leading provider of corporate governance and responsible investment solutions, market intelligence, fund services, and events and editorial content for institutional investors and corporations, globally.

- **EcoVadis rating 78/100 and Platinum Medal**
  EcoVadis is the world's largest and most trusted provider of business sustainability ratings, creating a global network of more than 100,000+ rated companies.

- **Sustainalytics ESG Risk rating 20.6**
  Morningstar sustainalytics provides high-quality, analytical Environmental, Social and Governance (ESG) research, risk ratings and data to institutional investors and companies,

- **MSCI Rating "A"**
  MSCI has over 50 years of expertise in research, data and technology enabling clients to understand and analyse key drivers of risk and return and confidently build more effective portfolios.

Our Focus

Nexans' innovative Solar Solutions cover full electrical connectivity from the PV Array to the Solar Farm Substation, delivering significant value across the entire value chain:

- **FASTER AND SAFER**
- **LESS SITE LABOUR**
- **NEXANS FACTORY QUALITY**
- **SITE SELECTION FLEXIBILITY**
- **LOWER COST OF OWNERSHIP**
- **BETTER FOR THE ENVIRONMENT**

Our Value

- Comprehensive connectivity
- Capabilities for solar farm plants
- Collector system installation scope that provides a tangible system warranty
- Long design life for solar assets to best secure lifetime business model expectations
- Compliance with the latest international standards to mitigate risk
- Minimal environmental impact through lower CO_2 emissions during O_2 emissions during the entire life cycle
- Recycling for circular economies aligned with Sustainable Development Strategies
- Benefiting from Nexans' expertise in energy management, data networking, and grid connectivity
- Support with international certification, local delivery, and local sourcing at an equal level of quality

Scope

Nexans Solar Under Array PV Cable System Solutions

- Designed to optimise under array cable
- Fully certified PV cable for standards compliance
- Factory-assembled and tested for quality assurance to prevent site commissioning failures
- Reduction in on-site labour skill level, number and cost
- Quick installation, short project duration Nexans Solar MV & DC Cable Solutions
- Narrow trench & installation corridor design for DC & MV cable systems
- Quicker installation with reduced trenching
- Lower cost of ownership
- Reduced labor and machinery; smaller carbon footprint
- Minimum 30 year design life

Nexans Solar Value Add **System Solutions**

Nexans SOLUTIONS

Nexans is committed to electrifying the future not just through cables but with added-value products and services. We are dedicated to innovation, solving problems both locally and internationally, with a strong focus on customer satisfaction.

What is PEP Eco Passport?

The PEP Eco Passport is a comprehensive environmental impact assessment tool designed to provide a transparent and detailed overview of the environmental performance of our products throughout their life cycle. It encompasses the entire value chain, from raw material extraction to manufacturing, product use, and end-of-life disposal or recycling.

Nexans recognizes that sustainability is a collective effort, and our PEP Eco Passport is a testament to our dedication to fostering positive change. By providing valuable insights into the environmental aspects of our products, we aim to drive responsible consumption and contribute to a more sustainable future.

Nexans ANZ aims to cover 100% of its locally manufactured stocked products under PEP Eco Passports by end of 2024. This includes cables offered in the Residential, Tertiary & Commercial Building industry, Renewables and Power Distribution markets.

ULTRACKER

ULTRACKER is a dedicated platform that efficiently manages the drum fleet, enhances remote stock visibility, and helps prevent theft. This digital geolocalisation solution for cable drums is based on a combination of a hardware device, software services and engineering expertise.

The supply chain booster

The ULTRACKER offer is a suite of solutions ensuring supply chain continuity based on Internet of Things (IoT), enhanced artificial intelligence (AI) and cloud services.

It improves Operating Working Capital (OWC) and enhances customer experience while increasing supply chain agility by boosting delivery performance, tracking deliveries, and reducing transportation costs.

ULTRACKER technology, developed by Nexans' Digital Factory, is powered by Microsoft Azure cloud services.

SOLAR POWER

Environmental Drum Program

Launched in 2021, our Green Drum programme goes one step further in our commitment to sustainable practice. We partner with our wooden drum suppliers to ensure Nexans drums have PEFC (Programme for the Endorsement of Forest Certification) or FSC (Forest Stewardship Council) certification, meaning they are a product of sustainable forestry.

The Green Drum program creates value for our customers by ensuring that the drums used to supply their cables are part of a circular economy and made from sustainably sourced forestry materials.

With our commitment to sustainable development, we encourage our customers to become part of our Green Drum Programme that encompasses our existing drum recycling service. Nexans Green Drum refers to FSC or PEFC certification held by our suppliers. Forest certification provides a mechanism to ensure timber-based products reaching the marketplace have been sourced from sustainably managed forestry.

Green Drum works alongside our existing drum return process where we collect all our wooden drums and pallets no longer in use for re-circulation, helping to limit the amount of landfill waste

Smart Cable Guard

Medium-voltage cable grids are the front line in delivering electricity to the end user. However, we are constantly demanding more from these often aging grids: to carry higher volumes, last longer, and be more flexible.

Smart Cable Guard is a proven sensor-based digital monitoring platform that lets you know exactly what is going on with your feeder cables at any time. Smart Cable Guard creates a digital twin of each monitored feeder cable and exchanges data and information instantly. These real-time insights support data-driven decision making in operations, maintenance, asset management and grid strategy.

- Monitors and analyses the status of your feeder cables 24/7
- Detects faults (including self-healing breakdowns) and weak spots
- Pinpoints faults/weak spots to within 1% of feeder cable length
- Reduces number and length of power outages
- Minimises downtime for repairs and maintenance
- Ready to be integrated via an API in your own monitoring and control systems, and asset management system or software.

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Nexans PV Harness

The Nexans Solar Harness mitigates risks associated with on-site termination failures and reduces the need for scarce and costly on-site labor.

Off-site manufacturing removes the Nexans PV cable from the project's critical path, while the optimised under-array design facilitates cost-effective cable and combiner box solutions.

- **REDUCED INSTALLATION TIME**
- **IN-HOUSE TESTING BEFORE SHIPMENT**
- **NEXANS WARRANTY**

Nexans pre-terminated PV DC MC4 harness assemblies

Application

The Nexans 1.5 kV PV DC MC4 string assemblies are based on Nexans cross-linked PV DC cable to IEC 62930 and offer exceptional performance, easy installation and long-term reliability for solar plant. The Nexans Harness is designed to link photovoltaic panels for utility-scale solar plants to the combiner box.

Specification

- Rated Voltage DC: 1500V
- Fuse Current Max: 50A
- IP 68 Rated
- IEC Certified
- Cable to IEC 62930
- TUV Certificate
- Service Life >30 years

Based on single core PV DC solar cable

Low fire hazard, cross-linked insulation and sheath.

Key benefits

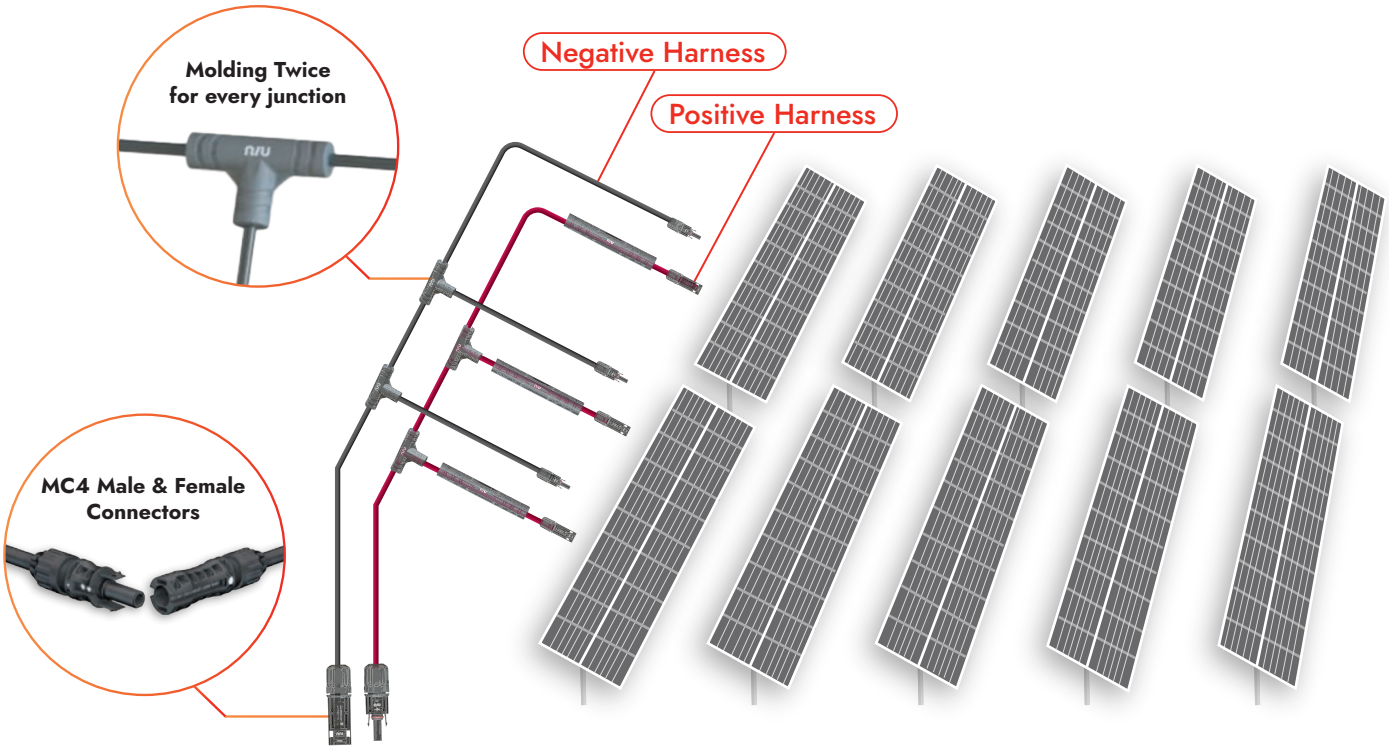
Nexans supply tailor made PV DC MC4 string assemblies according to customers' required lengths, marking/ labelling & MC4 connector types.

Installation friendly

Custom made PV DC MC4 string assemblies to enable a faster deployment on site while improving electrical reliability over time.

No need for crimping on site for higher reliability and sustainability. Specific packaging & labelling to fit installation on site.

Pre-terminated PV DC MC4



Pre-terminated PV DC MC4 string assemblies according to AS/NZS 5033 (Installation and safety requirements for photovoltaic (PV) arrays) and IEC 62548 (Photovoltaic (PV) arrays – Design requirements).

Select MC4 connector brand to match the PV panel connector. Inline fuse, holder & moulded "T" assembly also available.

- Confirm assembly length
- Confirm marking & labelling

Nexans Cable Bus Assembly

The Nexans Cable Bus Assembly is designed to optimise Large Scale Solar Farm sub-array PV string cable systems that have been designed to eliminate the combiner box and the multitude of PV string cables.

Basis of this new Nexans design is that the sub-array underground DC cable circuit continues above ground as a bus cable and under the PV array.

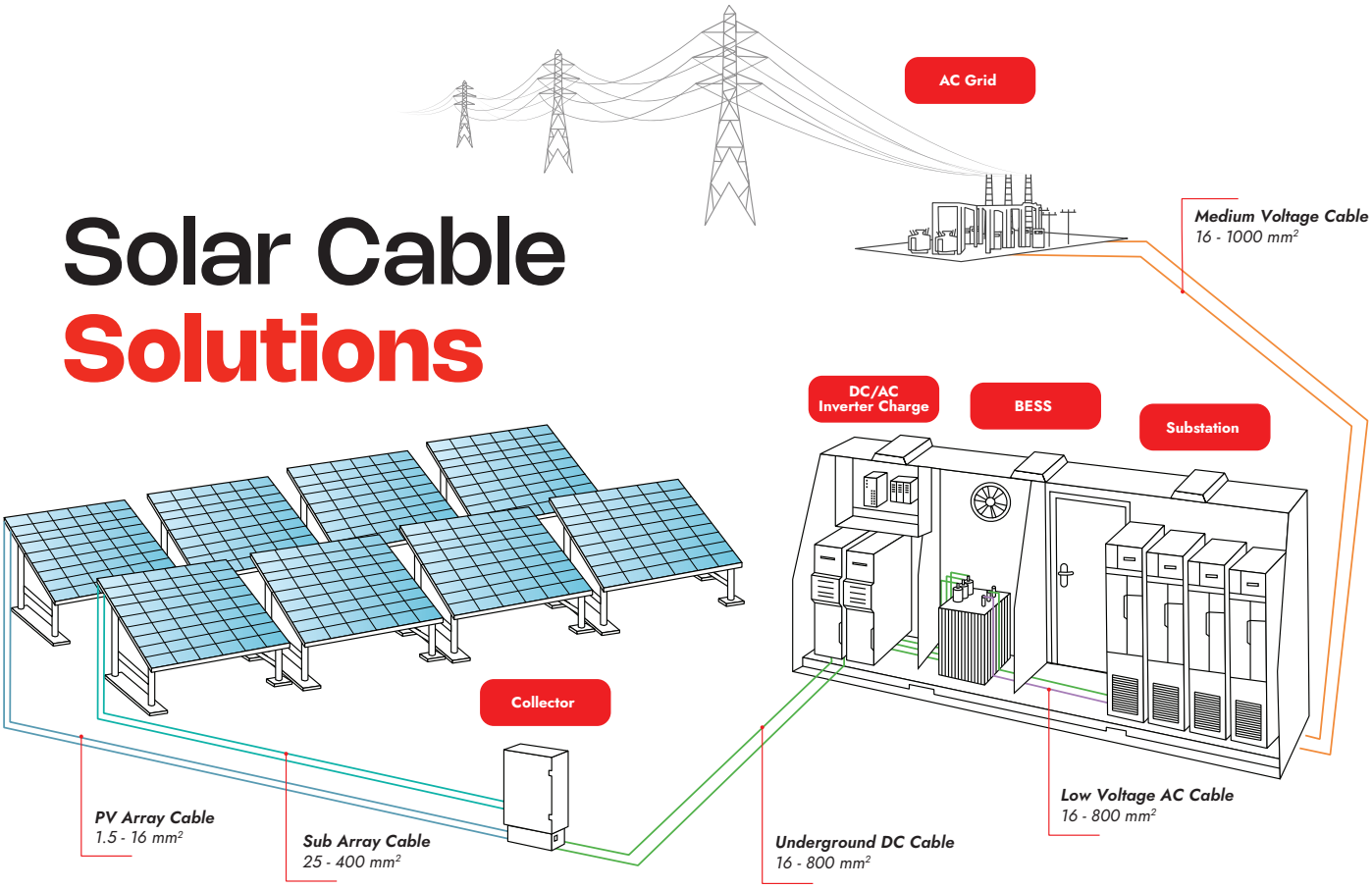
Fuse strings are welded via a patented process to the bus providing a connection quality that exceeds the design life of the cable system.

On-site string cable installation labour is eliminated with this factory tested. "plug and play" cable bus assembly system.

Available in sizes up to 400mm² Al and with 6mm² Cu string fuse take-offs

Nexans Solar
Cable Solutions

Solar Cable Solutions



Nexans PV Array Cable

Sizes 1.5 mm² through to 16 mm² tinned class 5 flexible Cu conductor, 1500/1800 V DC low fire hazard and fully certified to IEC 62930 standard. Various polarity identification options available.

Construction

- Single core, tinned Cu cables with XLPO insulation & XL-HFFR sheath. Support with fully tested harnesses available

Standards

- IEC 62930, EN 50618

Voltage Rating

- 1500 (1800) V DC

Nexans Sub Array Cable

Sizes 25 mm² to 400 mm² tinned class 5 flexible Cu conductor, 1500/1800 V DC low fire hazard and fully certified to IEC 62930 standard. Various polarity identification options available.

Construction

- Single core, tinned Cu cables with XLPO insulation & XL-HFFR sheath.

Standards

- IEC 62930, EN 50618

Voltage Rating

- 1500 (1800) V DC

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Nexans DC Cable

Under Ground

Sizes 35 mm² to 800 mm² Al or 16 mm² to 630 mm² Cu for DC system application designed for underground installation. IEC 60502.1 cable standard. Various polarity identification options available.

Construction

- Single core, AL or Cu conductor, XLPE insulation & PVC sheath.

Standards

- IEC 60502.1

Voltage Rating

- 1500 (1800) V DC

Nexans AC Cable

Low Voltage

Sizes 35 mm² to 800 mm² Al or 16 mm² to 630 mm² Cu for AC low voltage system cable after inverter DC/AC transition. AS/NZS 5000.1 standard.

Construction

- Single core, Al or Cu conductor, XLPE insulation & PVC sheath.

Standards

- AS/NZS 5000.1

Voltage Rating

- 600/1000 (1200) V AC

Nexans MV Cable

1C & 3C, 16 mm² to 1,200 mm² Al or Cu to AS/NZS 1429.1. Available in a range of copper wire fault screen sizes, swellable water barrier tapes, a robust single layer or dual layer PVC/MDPE sheath. Other customer specified available upon request.

Construction

- 1 or 3 cores; stranded compacted AL or Cu conductor; TR-XLPE insulation, copper wire metallic screen, with composite PVC, MDPE protective oversheath.

Standards

- AS/NZS 1429.1

Voltage Rating

- 6.35/11 to 19/33 kV

Nexans Cables

Communication, Control and Earthing

Nexans can also supply a complete range of LV, control, communication cables and earthing cables that would be required on most solar farm projects.

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Nexans PV Cable (SOLAR PV)

General Construction

- Cable Standard: IEC 62930
- Conductor: Tinned Copper Circular Flexible (Class 5)
- Insulation Material: XLPE
- Sheath Material: XLPE
- Cable Type: DC Solar Panel Application
- Voltage Rating: 1.5kV DC
- Insulation Colour: Clear, Red or Blue
- Sheath Colour: Black

Minimum Bending Radii

Fixed: 4xOD

During install: 6xOD

PV Array Cable

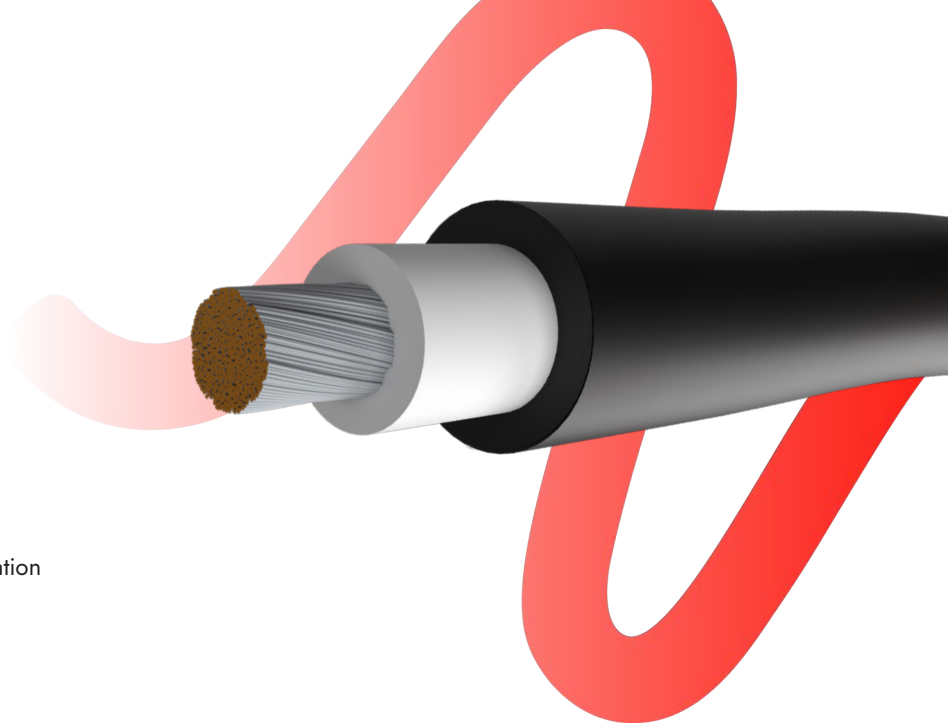
Recommended cable range: 1.5 mm^2 to 16 mm^2

Cross-sectional Area	Conductor Properties			Nominal Thickness		Cable Component Diameter			Mass of Cable	Max. Conductor DC Resistance @20°C
	Material	Form	Class	Insulation	Sheath	Conductor	Insulation	Overall		
mm^2				mm			mm		kg/km	Ω/km
1.5	Tinned Cu	Circular	5	0.7	0.8	1.6	3.0	4.7 ± 0.2	36.8	13.7
2	Tinned Cu	Circular	5	0.7	0.8	2.0	3.4	5.1 ± 0.2	48.1	8.21
4	Tinned Cu	Circular	5	0.8	0.8	2.5	4.0	5.7 ± 0.2	65.6	5.09
6	Tinned Cu	Circular	5	0.8	0.8	3.1	4.5	6.2 ± 0.2	86.8	3.39
10	Tinned Cu	Circular	5	0.8	0.8	4.5	6.0	7.7 ± 0.2	136	1.95
16	Tinned Cu	Circular	5	0.8	0.9	5.7	7.0	9.1 ± 0.2	197	1.24

Sub Array Cables

Recommended cable range: 25 mm^2 to 400 mm^2

Cross-sectional Area	Conductor Properties			Nominal Thickness		Cable Component Diameter			Mass of Cable	Max. Conductor DC Resistance @20°C
	Material	Form	Class	Insulation	Sheath	Conductor	Insulation	Overall		
mm^2				mm			mm		kg/km	Ω/km
25	Tinned Cu	Circular	5	0.9	1.0	7.1	9.0	11.3 ± 0.3	308	0.795
35	Tinned Cu	Circular	5	0.9	1.1	8.4	10.4	12.8 ± 0.3	416	0.565
50	Tinned Cu	Circular	5	1.0	1.2	10.4	12.6	15.2 ± 0.3	580	0.393
70	Tinned Cu	Circular	5	1.1	1.2	12.1	15.3	17.9 ± 0.3	813	0.277
95	Tinned Cu	Circular	5	1.1	1.3	14.9	16.8	19.6 ± 0.5	1068	0.210
120	Tinned Cu	Circular	5	1.2	1.3	15.8	19.1	21.9 ± 0.5	1308	0.164
150	Tinned Cu	Circular	5	1.4	1.4	16.5	21.5	24.5 ± 0.5	1645	0.132
185	Tinned Cu	Circular	5	1.6	1.6	19.4	23.5	26.9 ± 0.5	2051	0.108
240	Tinned Cu	Circular	5	1.7	1.7	22.2	26.5	30.0 ± 0.5	2608	0.0817
300	Tinned Cu	Circular	5	1.8	1.8	24.7	29.4	33.2 ± 0.5	3223	0.0654
400	Tinned Cu	Circular	5	2.0	2.0	28.1	34.0	38.3 ± 0.5	4261	0.0495



***Current carrying capacity**

- Ambient temperature: 30°C
- Maximum conductor temperature: 90°C
- Not suitable for underground direct burial application

Current Ratings

Crossectional Area	Current carrying capacity*		
	Single cable free in air	Single cable on a surface	Two loaded cables touching, on a surface
mm²	A	A	A
1.5	31	30	24
2.5	42	40	33
4	57	54	45
6	72	69	58
10	98	96	80
16	132	130	107

Current Ratings

Crossectional Area	Current carrying capacity*		
	Single cable free in air	Single cable on a surface	Two loaded cables touching, on a surface
mm²	A	A	A
25	183	30	138
35	227	40	171
50	287	54	209
70	361	69	269
95	433	96	328
120	508	130	382
150	590	174	441
185	671	215	506
240	808	273	599
300	913	344	693
400	1098	411	825

The continuous current ratings given in this brochure have been adopted from IEC 62930 for PV cables.

SOLAR POWER

Nexans DC Cable (SDI XL DC)

Underground DC Cable

General Construction

- Cable Standard: IEC 60502.1
- Conductor: Aluminium or Copper
- Insulation Material: XLPE
- Sheath Material: PVC
- Cable Type: DC Underground Application
- Voltage Rating: 1.5(1.8)kV DC
- Insulation Colour: Clear, Red or Blue
- Sheath Colour: Black

Recommended cable range:

Al: 35 mm^2 to 800 mm^2

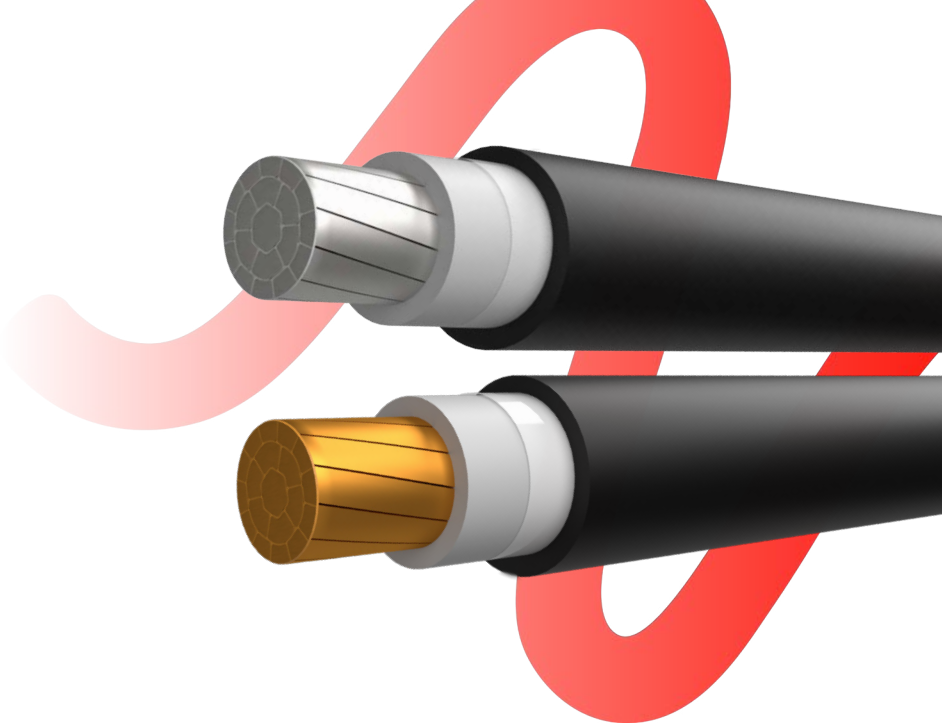
Cu: 16 mm^2 to 630 mm^2

Minimum Bending Radii

Fixed: 9xOD

During install: 12xOD

Cross-sectional Area	Conductor Properties			Nominal Thickness		Cable Component Diameter						Mass of Cable		Max. Conductor DC Resistance @20°C	
	Material	Form	Class	Insul	Sheath	Conductor		Insulation		Overall					
						Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
mm^2				mm		mm		mm		mm		kg/km		Ω/km	
16	Cu	Compacted	2	2.0	1.4	-	4.95	-	9.10	-	12.0	-	253	-	1.15
25	Cu	Compacted	2	2.0	1.4	-	6.04	-	10.2	-	13.1	-	253	-	0.727
35	Al or Cu	Compacted	2	2.0	1.4	6.91	6.95	11.1	11.2	14.0	14.2	227	447	0.868	0.524
50	Al or Cu	Compacted	2	2.0	1.4	8.25	8.05	12.4	12.3	15.3	15.2	285	576	0.641	0.387
70	Al or Cu	Compacted	2	2.0	1.5	9.72	9.74	13.9	13.9	16.8	17.1	368	792	0.443	0.268
95	Al or Cu	Compacted	2	2.0	1.5	11.4	12.5	15.6	16.7	18.8	19.9	460	1049	0.320	0.253
120	Al or Cu	Compacted	2	2.0	1.6	12.8	12.9	17.0	17.1	19.9	20.5	554	1287	0.253	0.153
150	Al or Cu	Compacted	2	2.0	1.6	14.3	14.3	18.5	18.5	21.9	21.9	648	1567	0.206	0.124
185	Al or Cu	Compacted	2	2.0	1.7	15.9	16.0	20.1	20.2	23.7	23.1	777	1885	0.164	0.0991
240	Al or Cu	Compacted	2	2.0	1.8	18.2	18.3	22.4	22.5	26.3	25.4	983	2421	0.125	0.0754
300	Al or Cu	Compacted	2	2.0	1.8	20.3	20.4	24.5	24.6	28.3	27.5	1172	3003	0.100	0.0601
400	Al or Cu	Compacted	2	2.0	1.9	23.35	23.1	27.6	27.3	33.6	33.2	1528	3810	0.0778	0.0470
500	Al or Cu	Compacted	2	2.2	2.0	26.1	26.8	30.7	31.4	34.9	34.3	1827	4787	0.0366	0.0605
630	Al or Cu	Compacted	2	2.4	2.2	29.3	30.5	34.3	35.5	38.9	38.4	2323	6134	0.0283	0.0469
800	Al	Compacted	2	2.6	2.3	33.8	-	39.3	-	44.1	=	2941	-	-	0.0367



***Current carrying capacity**

- Ambient temperature: 30°C
- Maximum conductor temperature: 90°C
- Not suitable for underground direct burial application

Current Ratings

Crossectional Area	Current carrying capacity*					
	Buried Direct		Buried in single-way duct		Buried in multi-way duct	
	Al	Cu	Al	Cu	Al	Cu
mm²	A		A		A	
16	-	148	-	129		116
25	-	190	-	165		149
35	57	227	-	197		179
50	72	269	-	232		211
70	256	330	221	284	201	260
95	306	400	264	343	242	316
120	349	450	300	387	276	357
150	392	506	336	434	311	401
185	445	575	381	492	353	455
240	518	670	442	572	415	535
300	587	761	500	648	480	621
400	675	912	587	756	556	716
500	778	1009	675	874	640	828
630	897	1167	793	1031	757	983
800	-	-	-	-	-	-

The continuous current ratings given in this brochure have been adopted from IEC 62930 for PV cables.

SOLAR POWER

Nexans AC Cable (SDI XL)

Under Ground LV

General Construction

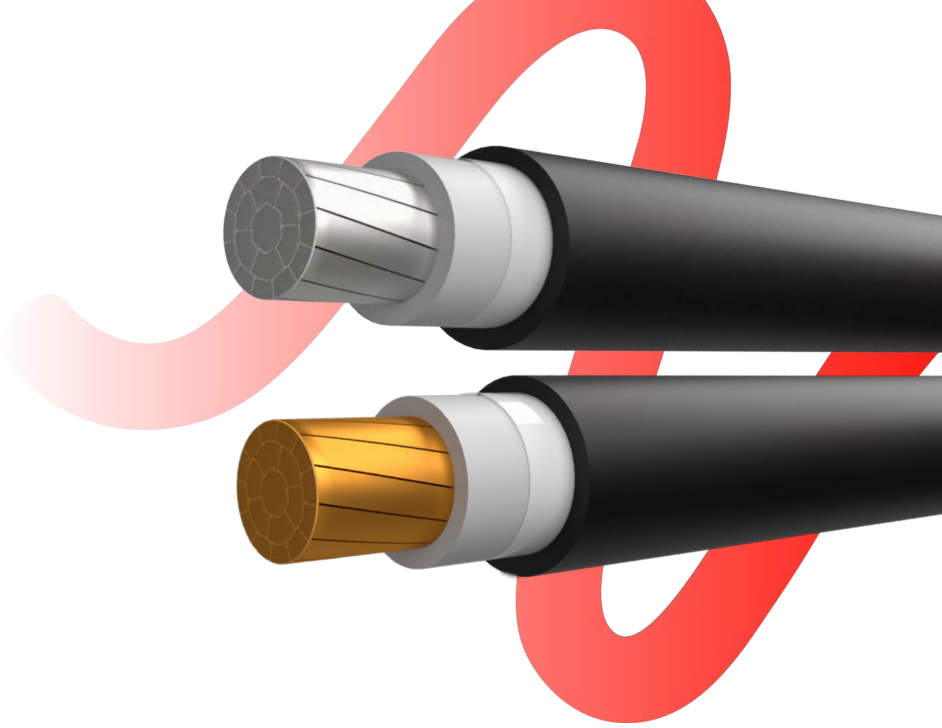
- Cable Standard: AS/NZS 5000.1
- Conductor: Aluminium or Copper
- Insulation Material: XLPE
- Sheath Material: PVC
- Cable Type: DC Underground Application
- Voltage Rating: 0.6/1(1.2)V AC
- Insulation Colour: Clear
- Sheath Colour: Black

Recommended cable range:

Al: 35 mm^2 to 800 mm^2

Cu: 16 mm^2 to 630 mm^2

Cross-sectional Area	Cable Reference		Conductor Properties			Nominal Thickness		Cable Component Diameter						Mass of Cable		Max. Conductor DC Resistance @20°C	
								Conductor		Insulation		Overall					
	Al	Cu	Material	Form	Class	Insul.	Sheath	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
mm^2						mm		mm		mm		mm		kg/km		Ω/km	
16	-	5373	Cu	Compacted	2	0.9	1.4	-	4.95	-	9.10	-	12.0	-	253	-	1.15
25	-	4676	Cu	Compacted	2	0.9	1.4	-	6.04	-	10.2	-	13.1	-	253	-	0.727
35	-	8552	Cu	Compacted	2	1.0	1.4	-	6.95	-	11.2	-	14.1	-	454	-	0.524
50	-	8881	Cu	Compacted	2	1.0	1.4	-	8.05	-	12.3	-	15.2	-	576	-	0.387
70	7763	2893	Al or Cu	Compacted	2	1.1	1.4	9.72	9.74	13.9	13.9	16.8	16.8	356	780	0.443	0.268
95	1879	5689	Al or Cu	Compacted	2	1.1	1.4	11.4	12.5	15.6	16.7	18.5	19.6	448	1044	0.320	0.193
120	9269	2440	Al or Cu	Compacted	2	1.2	1.5	12.8	12.9	17.0	17.1	19.9	20.0	523	1264	0.253	0.153
150	7344	4778	Al or Cu	Compacted	2	1.4	1.6	14.3	14.3	18.5	18.5	21.4	21.4	624	1543	0.206	0.124
185	3244	2081	Al or Cu	Compacted	2	1.6	1.6	15.9	16.0	20.1	20.2	23.0	23.1	739	1885	0.164	0.0991
240	2974	2038	Al or Cu	Compacted	2	1.7	1.7	18.2	18.3	22.4	22.5	25.3	25.4	931	2421	0.125	0.0754
300	8270	5941	Al or Cu	Compacted	2	1.8	1.8	20.3	20.4	24.5	24.6	27.4	27.5	1102	3003	0.100	0.0601
400	4468	2640	Al or Cu	Compacted	2	2.0	1.9	23.35	23.1	27.6	27.3	30.5	1410	1410	3810	0.0778	0.0470
500	4658	2340	Al or Cu	Compacted	2	2.2	2.0	26.1	26.8	30.7	31.4	33.6	34.3	42.2	4787	0.0605	0.0366
630	8554	4711	Al or Cu	Compacted	2	2.4	2.2	29.3	30.5	34.3	35.5	37.2	38.4	2176	6134	0.0469	0.0283
800	4864	-	Al	Compacted	2	2.6	2.3	33.8	-	39.3	-	42.2	-	2754	-	0.0367	-



***Current carrying capacity**

- Ambient temperature: 30°C
- Maximum conductor temperature: 90°C
- Not suitable for underground direct burial application

Current Ratings

Crossectional Area	Cable Reference		Single Phase Rating						Three Phase Rating					
			Buried Direct		Buried in single-way duct		Buried in multi-way duct		Buried Direct		Buried in single-way duct		Buried in multi-way duct	
	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
mm²	A		A		A		A		A		A		A	
16	-	5373	-	148	-	129		116	-	148	-	129		116
25	-	4676	-	190	-	165		149	-	190	-	165		149
35	-	8552	57	227	-	197		179	57	227	-	197		179
50	-	8881	72	269	-	232		211	72	269	-	232		211
70	7763	2893	256	330	221	284	201	260	256	330	221	284	201	260
95	1879	5689	306	400	264	343	242	316	306	400	264	343	242	316
120	9269	2440	349	450	300	387	276	357	349	450	300	387	276	357
150	7344	4778	392	506	336	434	311	401	392	506	336	434	311	401
185	3244	2081	445	575	381	492	353	455	445	575	381	492	353	455
240	2974	2038	518	670	442	572	415	535	518	670	442	572	415	535
300	8270	5941	587	761	500	648	480	621	587	761	500	648	480	621
400	4468	2640	675	912	587	756	556	716	675	912	587	756	556	716
500	4658	2340	778	1009	675	874	640	828	778	1009	675	874	640	828
630	8554	4711	897	1167	793	1031	757	983	897	1167	793	1031	757	983
800	4864	-	-	-	-	-	-	-	-	-	-	-	-	-

The current rating calculations have been carried out in accordance with the source documents IEC 60287-1-1, 2006 & IEC 60287-2-1, 1994 + up to Amd 2 2006.

SOLAR POWER

Nexans MV Cable

Underground AC Medium Voltage Cable

General Construction

- Cable Standard: AS/NZS 1429.1
- Conductor: Aluminium or Copper
- Conductor Screen: SC-XLPE
- Insulation Material: TR-XLPE
- Insulation Screen: SC-XLPE
- Screen Wire: SDCU wire
- Oversheath layer: Single or Dual layer
- Cable Type: Underground AC application
- Voltage Rating: 6.35/11-19/33kV AC
- Number of Core: Single Core or Three Core

Fault Rating: Variable
Typical: 3.0 kA, 6.0 kA, 10.0 kA

Oversheath Material: Variable
Typical: PVC, MDPE, HDPE

Recommended cable range:
Al: 35 mm^2 to 1200 mm^2
Cu: 16 mm^2 to 630 mm^2

Voltage Rating	Conductor Properties			Conductor Size				Nominal Thickness			
	Material	Form	Class	Al		Cu		Conductor Scree	Insulation	Insulation Screen	Sheath
				min	max	min	max	min	nom	min	
kV				mm^2		mm^2		mm	mm	mm	mm
6.35/11 (12)	Al or Cu	Compacted	2	35-	1200	16	630	0.3	3.4	0.6	Variable
12.7/22 (24)	Al or Cu	Compacted	2	35	1200	35	630	0.3	5.5	0.6	Variable
19/33 (36)	Al or Cu	Compacted	2	50	1200	50	630	0.3	8.0	0.6	Variable

Nexans
Power Accessories

SOLAR POWER

Nexans
Power Accessories

Nexans offer a range of Low Voltage and Medium Voltage cable accessories, backed by over 35 years of experience in supplying high-quality terminations, joints, clamps, and connectors.

We serve a diverse range of markets, including Power Utilities, OEMs, Contractors, Renewable Energy, Infrastructure, and Resources Market.

In addition to our standard products, we provide custom cable leads, cable preparation tooling, and testing services. We also offer technical publications on the theory and installation of accessories, as well as product awareness workshops and certified training on our products.

Links & Lugs

Mechanical Shear Off

From LV to 72 kV -
1.5 mm^2 to 1200 mm^2

Connectors & Surge Arrestors

EPDM Rubber

From 10 kV to 72 kV -
25 mm^2 to 1200 mm^2

Joints

Heatshrink - Coldshrink

From LV to 72 kV -
1.5 mm^2 to 1200 mm^2

Terminations

Heatshrink - Coldshrink - Slip On

From 10 kV to 72 kV -
25 mm^2 to 1200 mm^2

Cable Leads

Testing options - Megger - HiPot - Partial Discharge

From LV to 72 kV -
1.5 mm^2 to 1200 mm^2

Power Accessories
Value Add Solutions

MV Cable Preparation Tooling

Nexans can provide expert advice on selecting the right tools for your needs. As specialists in the field, we understand the cable preparation and fixing solutions required by jointers and engineers, allowing us to assist you in choosing the correct tooling.

In addition to individual tools, Nexans offers the new MV Professional Jointers tool kit.

This kit includes a curated selection of tools used by our jointer trainers, supplied in a durable black utility hard case with high-density foam cut-outs to protect the tools, ensuring longevity.

Reusable pulling eyes

Nexans offers install-ready cable solutions for your project by supplying cables that are pressurized and equipped with reusable pulling eyes, all fitted in a consistent and controlled environment rather than on-site.

This service saves installers time by providing cables prepared in a controlled and consistent setting, avoiding the challenges of varying on-site conditions.

Power Accessories Training Center

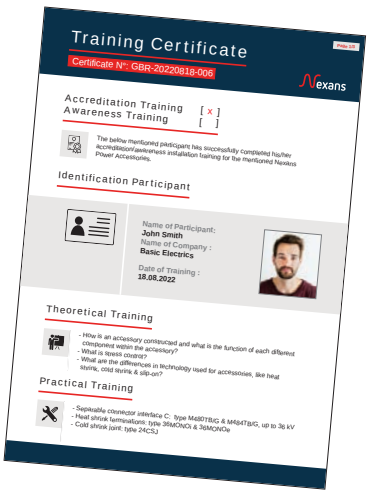
Our training centres are fully equipped to provide practical and theoretical training for jointers and engineers on all aspects of cable accessories up to 72.5kV.

Courses cover various cable constructions, cable preparation plus the installation of heat-shrink/ cold-shrink and slip-on terminations, separable connectors, joints and cabinets.

After completion of the course, each participant will be issued a training certificate, detailing the accessories the participant has been trained on. Depending the type of course, these certificates can be valid for 2, 3 or even 5 years. For our MV/LHV accessories, we even attach the electrical test results of the made examination sample.

Nexans makes a strong differentiation between the two types of training: we have the awareness training certificate and the competency training certificate. We also offer the option of recertification for expired certificate.

- **Theoretical Training:** To explain the why and how of the function of each component of the accessory.
- **Practical Training:** To instruct how to prepare your cable and install the accessory correctly.
- **Examination:** To verify objectively the workmanship of the trainee.


Training Certificate

Certificate N°: GBR-20220818-006

Nexans

Accreditation Training [x]
Awareness Training [ ]

The bellow mentioned participant has successfully completed his/her accreditation/awareness installation training for the mentioned Nexans Power Accessories.

Identification Participant

Name of Participant: John Smith
Name of Company : Basic Electrics
Date of Training : 18.08.2022

Theoretical Training

- How is an accessory constructed and what is the function of each different component within the accessory?
- What is Nexans course?
- What are the differences in technology used for accessories, like heat shrink, cold shrink & slip-on?

Practical Training

- Separable connector interface C: type M400TB/G & M484TB/G, up to 36 kV
- Heat shrink terminations: tytle 36kCNOt & 36MONOs
- Cold shrink joint: tytle 24CSJ

UJC-S/D

Underground Junction Chamber

Up to 42 kV - 1250 A

APPLICATION: For onshore renewable power parks, the underground junction chamber will be used as a connecting point for cable-jointing and branching applications. Designed and manufactured in Australia, the UJC is available in single and dual height.

TECHNICAL CHARACTERISTICS:

- Burial type 316 stainless steel housing.
- Robust design with IP68 degree of protection (IEC 60529/AS 60529).
- Suitable for voltages up to 42 kV, 1250 Amps
- Suitable for cables up to 1200 mm^2

BENEFITS :

- Reduction of land footprint.
- Joining/branching cables with different cross-sections.
- High reliability of installation.
- Good test and demarcation point.
- Caters for installation of monitoring equipment.

Patent pending
PCT/IB2024/000263

ONJC-S

Onshore Junction Cabinet

Up to 42 kV - 1250 A

APPLICATION: For onshore renewable power parks, the onshore junction cabinet will be used as a disconnecting point for branching between grid and application.

TECHNICAL CHARACTERISTICS:

- Pedestal type powder coated AISI 304 stainless steel housing.
- Robust design with IP43 degree of protection (IEC60529/EN62262 ed1:2002-02).
- RAL 7037 coolcoat UV resistant coating.

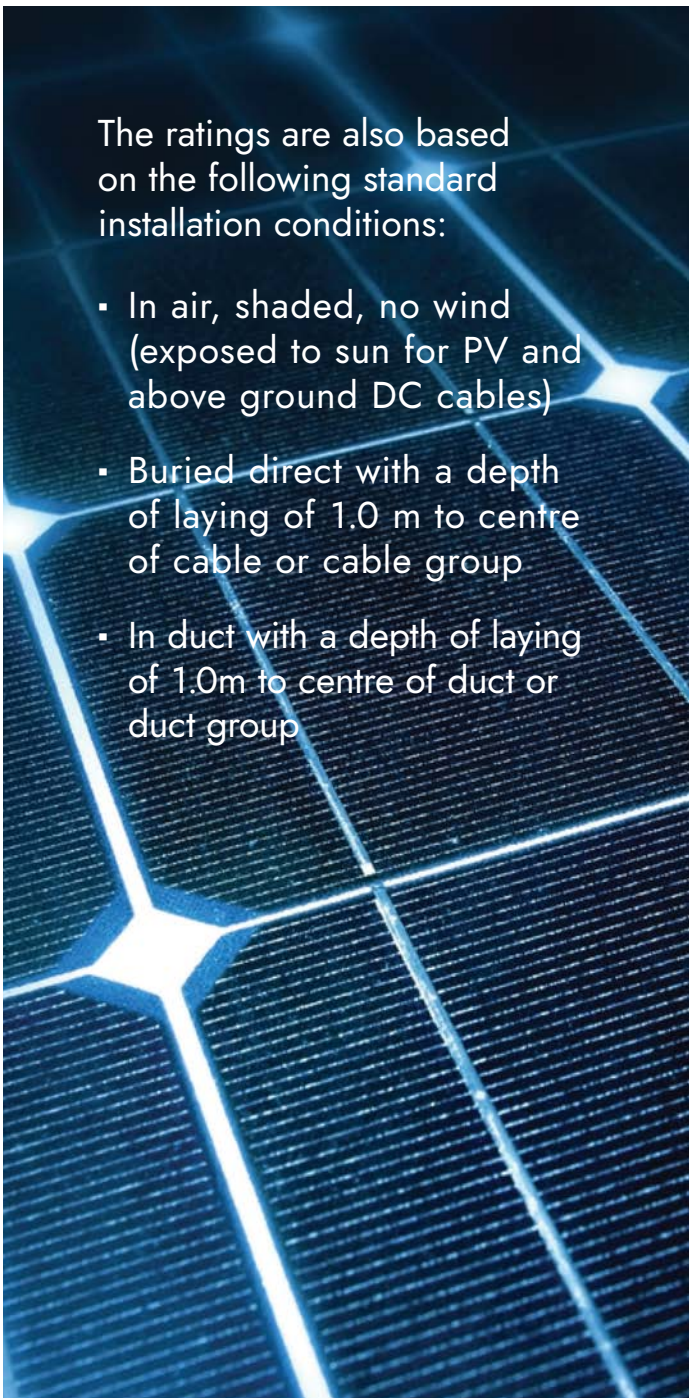
BENEFITS :

- The cabinet design is specifically suitable to be installed in outside conditions.
- High accessibility for ease of installation.
- Ideal test and demarcation point.
- Time saving on installation and down time.
- Reducing cost of installation.
- Reduction of footprint.

Other **Considerations**

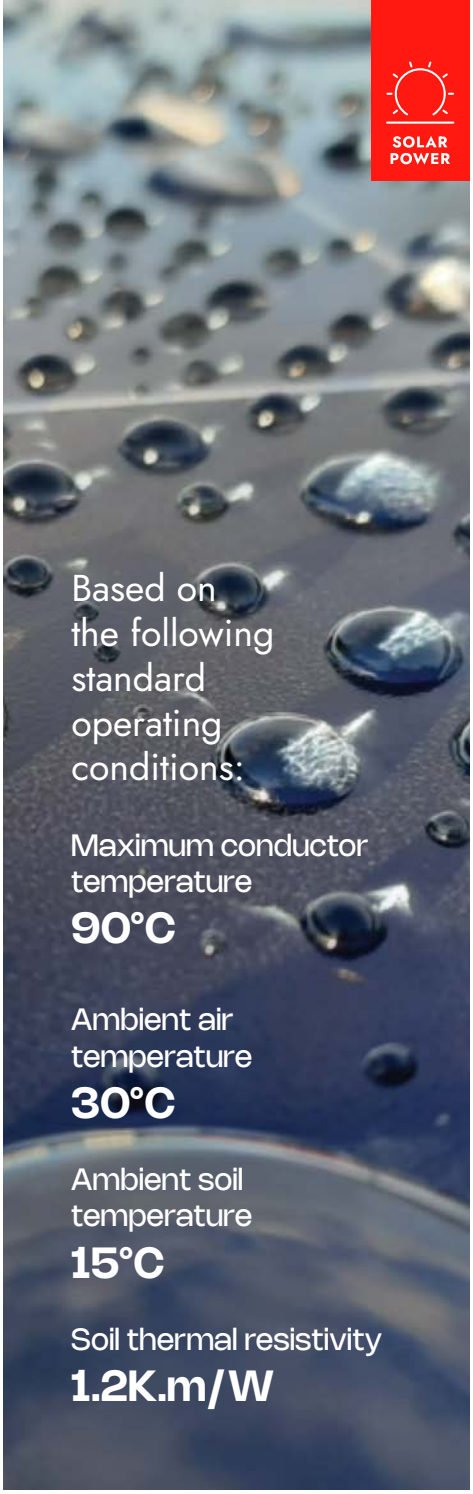
Continuous Current Ratings

The continuous current ratings given in this brochure have been calculated in accordance according to IEC 62930. Other ratings have calculated in accordance according to IEC 60287 – "Electric Cables- Calculations of the current rating".



The ratings are also based on the following standard installation conditions:

- In air, shaded, no wind (exposed to sun for PV and above ground DC cables)
- Buried direct with a depth of laying of 1.0 m to centre of cable or cable group
- In duct with a depth of laying of 1.0m to centre of duct or duct group



Nexans recommend that appropriate site soil surveys are done to determine the ground properties at the installation.

Since large scale wind and solar generating plants are commonly located in remote regions of New Zealand, **the local conditions may vary substantially from these base conditions.** In these cases the cable ratings may need to be adjusted according to the local conditions. A suite of established derating factors are published in a variety of documents including the Nexans HV Catalogue to assist. Specific attention must be placed on the accurate determination of soil thermal resistivity as this has the most significant impact on underground cable ratings.

To this extent Nexans can assist with the selection of appropriate sites and interpretation of soil "dry out" curves that will be used in the accurate determination of cable current rating. The selection of thermally stable backfill materials is also a critical component of maximising the current carrying capabilities of underground cables. Nexans can assist to provide thermal modelling studies of complex underground cable systems, including multiple parallel runs, (utilising Finite Element Methods), to ensure the guaranteed cable system design throughput can be confidently met.

Although it is common practice to design cables systems for continuous rated load of a generating plant, useful gains in cable ratings can be seen when a varying load is considered, due to the long thermal time constant of an underground cable system. This is especially relevant for solar farms, where considering the daily load cycle instead of a continuous load for current rating calculations can achieve gains of up to 10%. Nexans can assist in identifying where these gains can be realized.

Other factors that affect the current rating of a cable include the MV screen bonding method.

Solid bonding reduces the current rating of a single core cable due to the heating effects of circulating currents caused by the induced voltage in the screens, however its impact is minimal if the cables are installed in a close configuration, such as trefoil or flat touching. Conversely, the current rating of cables installed in a spaced formation such as flat spaced can be severely impacted due to high circulating currents in the screens. The overall reduction is dependent on cable spacing, screen size, conductor size and can be as much as 40 %.

If, by virtue of the special nature of the installation, a spaced cable formation is required, special bonding methods may need to be employed to eliminate circulating currents, ie single point or cross bonding. This is usually only considered for cable systems employing large cables.

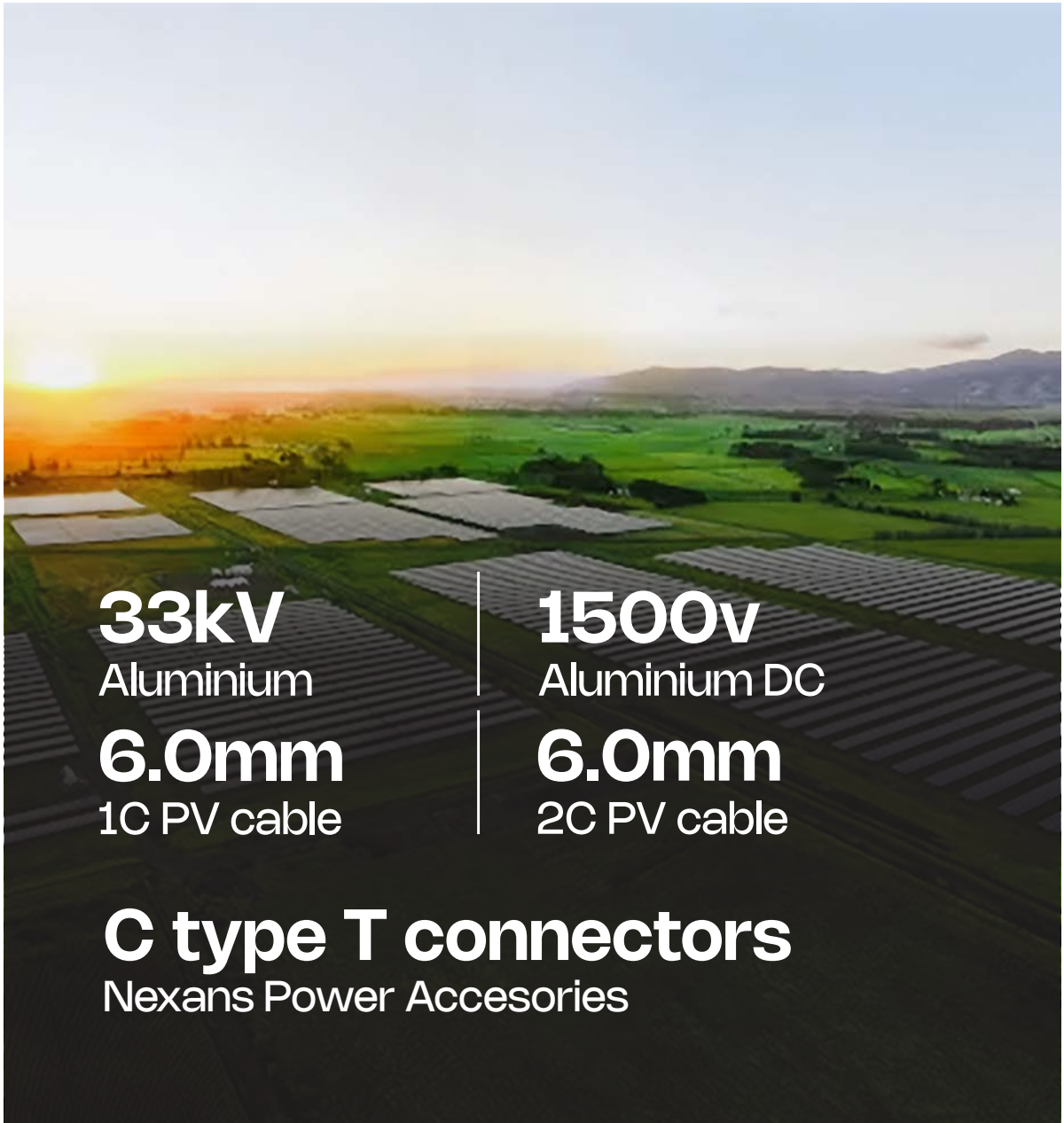
SOLAR POWER

Case Study

Lodestone Solar Farms

Customer:	ElectroNet
Industry:	Renewable Generation
Location:	Edgecumbe - Kaitaia
Amount of Cable Supplied:	227km to Edgecumbe 422km to Kaitaia
Project value:	$300M (all Projects)

Kohirā - Kaitaia Solar Farm



Objectives

ElectroNet was selected as the electrical installer for New Zealand's first two utility-scale solar farms developed by Lodestone Energy. Kohirā was the first project completed in Northland's sunny Kaitaia, supplying 33MW (56GWh annually) directly into the national grid. This was followed by the Rangitaiki solar farm situated in the Bay of Plenty at Edgecumbe offering a similar energy supply of 32MW (54 GWh annually). The sites were chosen for their ease of connection to the national grid, proximity to an industrial load as well as high sunshine hours.

Solution

Nexans were in turn chosen by ElectroNet as a cable supplier recognising a long-term relationship over a number of grid, network and renewable generation projects. Nexans New Zealand's knowledge, experience along with our in-house local manufacturing enabled the right product to be delivered in a timely manner to suit the project requirements. This allowed ElectroNet to complete the cabling of the projects on time without delays. Nexans technical experience allowed alternate solutions to be put forward for consideration where there were obvious advantages and savings to be taken advantage of.

Customer Quote

Nexans is a well-respected supplier in the industry, known for delivering products on time and offering good value. This reputation is particularly important in a market with fluctuating costs and competitive overseas suppliers and contractors in the renewable generation sector in New Zealand.

Rangitaiki - Edgecumbe Solar Farm

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POWER GENERATION

SOLAR PV

WE DELIVER THE BEST SOLUTIONS TO SUPPORT YOUR PROJECT NEEDS

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ELECTRIFY THE FUTURE