
SOLAR POWER SPECIAL CABLE
UV RESISTANT | WEATHERROOF | 30 YEAR LIFE
SOLAR PV SERIES
双登电缆
SHUANGDENG CABLE

Shuangdeng Solar Power Cable Product Manual

Unmatched Performance for Photovoltaic Systems

❶ Product Overview

Shuangdeng Solar Power Cables are expertly engineered to meet the unique demands of photovoltaic (PV) power generation systems. From large - scale solar farms to residential rooftop PV setups, these cables are designed to ensure reliable power transmission under continuous exposure to sunlight, temperature fluctuations, and harsh outdoor conditions. With advanced materials and precision manufacturing, our solar power cables offer superior durability, high - efficiency power transfer, and enhanced safety, maximizing the performance and lifespan of PV installations.

❷ Core Features & Benefits

Feature	Technical Advantage	Application Benefit
Exceptional UV Resistance	Utilizes specialized cross - linked polyolefin (XLPO) or cross - linked polyethylene (XLPE) insulation with high - grade UV stabilizers.	Protects the cable from degradation caused by long - term sunlight exposure, ensuring stable performance over 30 years.
Wide Temperature Adaptability	Maintains flexibility and electrical properties in extreme temperatures ranging from - 40°C to + 90°C (and up to + 120°C for high - temperature models).	Suitable for diverse climates, from freezing polar regions to scorching deserts, without compromising functionality.
High - Conductivity Conductors	Constructed with high - purity oxygen - free copper conductors, minimizing electrical resistance and power loss.	Optimizes the power output of PV systems, increasing energy efficiency and return on investment.
Fire - Retardant and Low - Smoke Design	Incorporates low - smoke zero - halogen (LSZH) sheath materials, compliant with international fire safety standards.	Reduces the risk of fire spread and minimizes toxic fume emissions in case of emergencies, safeguarding personnel and equipment.
Superior Chemical Resistance	Resistant to common environmental chemicals, moisture, and salt spray, ensuring long - term reliability in various outdoor environments.	Ideal for coastal solar farms, industrial - adjacent PV plants, and other chemically - challenging locations.

❸ Product Specifications

3.1 Conductor

· Material: High - purity oxygen - free copper (≥99.97% conductivity)
· Structure: Class 5 flexible stranded conductors (IEC 60228) for easy installation and flexibility
· Cross - sections: 1.5mm² - 400mm² (single - core) and multi - core configurations (2 - 4 cores) to accommodate different PV system power requirements

3.2 Insulation & Sheath

· Insulation:
XLPO (standard): Offers excellent UV resistance, thermal stability, and electrical insulation
XLPE: Provides enhanced mechanical strength and chemical resistance
· Sheath: LSZH for fire - safety and environmental protection; customized sheath materials available for special applications
Color coding: Black (standard for PV applications); customizable for specific project needs

3.3 Electrical Characteristics

· Rated voltage: 1.8/3kV (standard for PV systems), customizable for other voltage requirements
· Capacitance: ≤0.15μF/km (at 50Hz)
· Insulation resistance: ≥10000MΩ·km (20°C)
· Current - carrying capacity: Up to 200A (depending on cable size and ambient temperature)

❹ Application Scenarios

· Rooftop PV systems in residential, commercial, and industrial buildings
· Large - scale ground - mounted solar farms
· Solar power plants in both onshore and offshore applications
· PV - energy storage hybrid systems
· Solar - powered street lighting and off - grid PV installations

❺ Compliance & Certifications

· International standards: IEC 62930, TÜV 2PFG 1169, UL 4703, CE，EN 50618
· Environmental compliance: RoHS 3.0, REACH
· Optional certifications: SGS, ISO 9001

6 Installation & Maintenance

6.1 Installation Guidelines

· Minimum bending radius: 6× cable diameter (static), 8× (dynamic) to prevent damage to the conductor and insulation
· Ensure proper connection and sealing of cable terminations to prevent moisture ingress
· Avoid direct contact with sharp edges or rough surfaces during installation
· Maintain a safe distance from heat sources and other electrical cables

6.2 Storage Conditions

· Store in a dry, shaded area away from direct sunlight and chemical exposure
· Keep cable reels in an upright position at temperatures between - 10°C and + 40°C
· Protect from mechanical damage during handling and storage

7 Customization Options

· Specialized cables for high - altitude or high - humidity environments
· Custom - length cables with pre - attached connectors for quick installation
· Cables with integrated grounding conductors for enhanced safety
· Tailored color - coding and marking for complex PV system layouts