

# CONTROL CABLE PERFECT COMMAND



 双登电缆  
SHUANGDENG CABLE



# Shuangdeng Control Cable Product Manual

High-reliability Solutions for Industrial Control Systems

## ① Product Overview

Shuangdeng Control Cables are engineered to deliver stable signal transmission and power supply in complex industrial environments. Designed for control circuits, automation systems, and instrumentation, our cables combine advanced materials with precision manufacturing to ensure durability, interference resistance, and safety.

## ② Core Features & Benefits

| Feature                | Technical Advantage   | Application Benefit                                  |
|------------------------|---|--|
| Superior Insulation    | Cross-linked polyethylene (XLPE) or PVC insulation with high dielectric strength.     | Minimizes signal loss and prevents short circuits.   |
| Effective Shielding    | Aluminum foil + braided copper shield (optional) for EMI/RFI protection.              | Ensures stable operation in high-noise environments. |
| Flexible Construction  | Stranded conductors with high tensile strength for easy installation in tight spaces. | Reduces installation time and mechanical stress.     |
| Temperature Resistance | -40°C to +90°C (standard); up to +150°C (high-temperature models).                    | Suitable for extreme climatic conditions.            |
| Fire-retardant Design  | Low-smoke, halogen-free (LSZH) sheaths compliant with international safety standards. | Minimizes toxic fumes in emergency situations.       |

## ③ Product Specifications

### 3.1 Conductor

- Material: High-purity oxygen-free copper (99.97% conductivity)
- Structure: Class 5 flexible stranded (IEC 60228) or solid conductors
- Cross-sections: 0.5mm<sup>2</sup> to 10mm<sup>2</sup> (multi-core options: 2-61 cores)

### 3.2 Insulation & Sheath

- Insulation: XLPE (standard) / PVC / TPE / FEP (customizable)
- Sheath: PVC (general purpose) / LSZH (metro/indoor) / PUR (outdoor/abrasion-resistant)
- Color coding: Compliant with IEC 60445 (black, white, blue, yellow-green, etc.)

### 3.3 Electrical Characteristics

- Rated voltage: 300/500V (IEC 60227) or 600V (UL standard)
- Capacitance:  $\leq 0.1\mu\text{F}/\text{km}$  (at 1kHz)
- Insulation resistance:  $\geq 1000\text{M}\Omega\cdot\text{km}$  (20°C)

## ④ Application Scenarios

- Industrial automation (PLC control, robotics)
- Power plants and substations
- Building management systems (BMS)
- Railway signaling and transportation
- Oil & gas exploration and refining
- Renewable energy (wind/solar farm control panels)

## ⑤ Compliance & Certifications

- International standards: IEC 60227, IEC 60502, UL 1015, CE
- Environmental compliance: RoHS 2.0, REACH
- Optional certifications: CSA, VDE, JIS

## ⑥ Installation & Maintenance

### 6.1 Installation Guidelines

- Minimum bending radius: 6× cable diameter (static), 10× (dynamic)
- Avoid exposure to direct sunlight or chemical solvents

- Maintain distance from high-voltage cables to reduce interference

## 6.2 Storage Conditions

- Store in dry, ventilated areas at -10°C to +40°C
- Keep reels upright to prevent sheath deformation

## 7 Customization Options

- Special temperature resistance (-60°C to +200°C)
- Armor layers (steel tape / wire braid for mechanical protection)
- Multi-core configurations with integrated power and signal lines
- Custom color coding and marking for complex systems