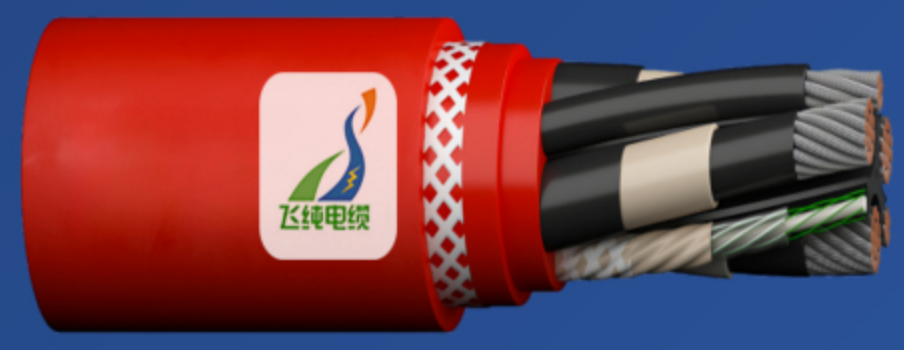
# Anhui Feichun Special Cable Co., Ltd.

安徽飞纯特种电缆有限公司

## PROTOLON(SMK) (N)TSCGEWOEU

Medium Voltage Flexible Reeling Cable

Rated Voltage: 6/10 kV



## Application

Flexible medium voltage reeling cable for application under high to extreme mechanical stresses, including high travel speeds, dynamic tensile loads, multiple changes of direction into different planes, churning on running over rollers and torsional stresses. Mainly for mobile equipment such as fast-moving container cranes and large moving equipment.

## Global Data

**Brand**

PROTOLON(SMK)

**Type Designation**

(N)TSCGEWOEU

**Standard**

Based on DIN VDE 0250-813

**Certifications**

GOST-R

## Design Features

**Conductor**

Conductor and earth conductor made of electrolytic copper tinned, very finely stranded, class FS (refer also to DIN VDE 0295)

**Insulation**

PROTOLON HS - High grade special compound based on high-quality EPR (at least 3GI3); improved mechanical and electrical characteristics (refer also to DIN VDE 0207, Part 20)

**Electrical Field Control**

Inner semiconductive layer of EPR, outer semiconductive layer of modified NBR, capable of being stripped when cold and thus extremely easy to prepare (Easy Strip design)

### Core Identification

Natural coloured insulation with black semiconductive layer

### Core Arrangement

Three-core design, with earth conductor split into 3 parts positioned in the interstices

### Sheath System

**PROTOFIRM Sandwich:**

• Double layer inner sheath: Special compound based on EPR, quality at least 5GM3, also served as water barrier, color: red
• Anti-torsion braid: Reinforced braid made of polyester threads, in a vulcanized bond between the sheaths, resulting in high strength of the sheath system
• Double layer outer sheath: A sheath system with a unique combination of flexibility and robustness through sandwich structure. Abrasion and tear-proof high grade rubber compounds based on PCP, quality at least 5GM5, colour: bright red/red

### Marking

PROTOLON (SMK) (N)TSCGEWOEU (number of cores)x(cross-section) (rated voltage) (year of manufacture) (serial number)

## Electrical Parameters

### Rated Voltage

6/10 kV

### Max. Operating Voltage AC

7.2/12 kV

### Max. Operating Voltage DC

9/15 kV

### AC Test Voltage

20 kV

### EMC

This design exhibits an extremely low interference level as a result of use of a symmetrical three-core design with very narrow manufacturing tolerances

### Data Transmission

Special designs with Twisted Shielded Pairs or Individually Screened control elements available on request. A special cable design with fibre optics can be found in the product range PROTOLON(SMK)-LWL

### Current Carrying Capacity

According to DIN VDE 0298, Part 4. Higher values are permissible in specific cases (please consult the manufacturer)

## Chemical Parameters

### Resistance to Oil

Acc. to DIN EN 60811-404 and DIN VDE 0473-811-404, paragraph 10

### Weather Resistance

Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture

### Water Resistance

According to HD 2216

## Thermal Parameters

### Max. Temperature at Conductor

90 °C

### Max. Short Circuit Temperature

250 °C

### Ambient Temp. (Fixed Install.)

min -50 °C ; max +80 °C

### Ambient Temp. (Flexible Op.)

min -35 °C ; max +80 °C

## Mechanical Parameters

### Max. Tensile Load

20 N/mm²

### Max. Tensile Load (Acceleration)

Up to 30 N/mm² (acc. to DIN VDE 0298 part 3: 15 N/mm²)

### Torsional Stress

± 25 °/m

### Min. Bending Radius

Acc. to DIN VDE 0298 part 3

### Min. Distance (S-type Changes)

20 x D (D = cable diameter)

### Travel Speed

Gantry (reeling operation): no restriction. For speeds beyond 240 m/min it is recommended to consult the cable manufacturer

### Additional Tests

Reversed bending test, torsional stress test

## Technical Specifications - 6/10 kV

| Cores × Cross Section (sq mm) | Part Number | MLFB Number | Conductor Ø max. (mm) | Earth Ø max. (mm) | Outer Ø min. (mm) | Outer Ø max. (mm) | Bending Radius (mm) | Weight (kg/km) | Max. Tensile (N) | Dynamic Tensile (N) | Resistance (Ω/km) | Current (A) | Short Circuit (kA) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3×25 + 3×25/3 | 20004539 | 5DK4061 | 7.1 | 4.2 | 37.8 | 40.8 | 408 | 2400 | 1500 | 2250 | 0.8 | 131 | 3.58 |
| **3×35 + 3×25/3** | **20001443** | **5DK4062** | **8.3** | **4.2** | **40.2** | **43.2** | **432** | **2830** | **2100** | **3150** | **0.57** | **162** | **5.01** |
| 3×35 + 3×35/3 | 20004545 | 5DK4072 | 8.3 | 5.0 | 40.2 | 43.2 | 432 | 2920 | 2100 | 3150 | 0.57 | 162 | 5.01 |
| 3×35 + 3×50/3 | 20008105 | 5DK4802 | 8.3 | 5.9 | 42.7 | 45.7 | 457 | 3280 | 2100 | 3150 | 0.57 | 162 | 5.01 |
| 3×50 + 3×25/3 | 20004540 | 5DK4063 | 9.9 | 4.2 | 43.7 | 46.7 | 467 | 3570 | 3000 | 4500 | 0.39 | 202 | 7.15 |
| 3×70 + 3×50/3 | 20004546 | 5DK4074 | 11.8 | 5.9 | 47.7 | 50.7 | 507 | 4570 | 4200 | 6300 | 0.28 | 250 | 10.01 |
| 3×95 + 3×50/3 | 20004541 | 5DK4065 | 13.8 | 5.9 | 52.8 | 56.8 | 568 | 5710 | 5700 | 8550 | 0.21 | 301 | 13.59 |
| 3×120 + 3×70/3 | 20004542 | 5DK4066 | 15.4 | 7.0 | 56.2 | 60.2 | 602 | 6840 | 7200 | 10800 | 0.16 | 352 | 17.16 |
| 3×150 + 3×70/3 | 20004543 | 5DK4067 | 17.2 | 7.0 | 61.5 | 65.5 | 655 | 8200 | 9000 | 13500 | 0.13 | 404 | 21.45 |
| 3×185 + 3×95/3 | 20004544 | 5DK4068 | 19.0 | 8.0 | 65.3 | 69.3 | 693 | 9690 | 11100 | 16650 | 0.11 | 461 | 26.46 |
| 3×240 + 3×120/3 | 20113369 | 5DK4070 | 21.8 | 9.0 | 73.8 | 77.8 | 778 | 12310 | 14400 | 21600 | 0.08 | 540 | 34.32 |
| 3×300 + 3×150/3 | 20154762 | 5DK4071 | 24.4 | 10.0 | 79.5 | 83.5 | 835 | 14780 | 18000 | 27000 | 0.07 | 620 | 42.9 |

**Note:** (1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).
**Special designs available upon request!**


**FEICHUN SPECIAL CABLES**

飞纯电缆

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