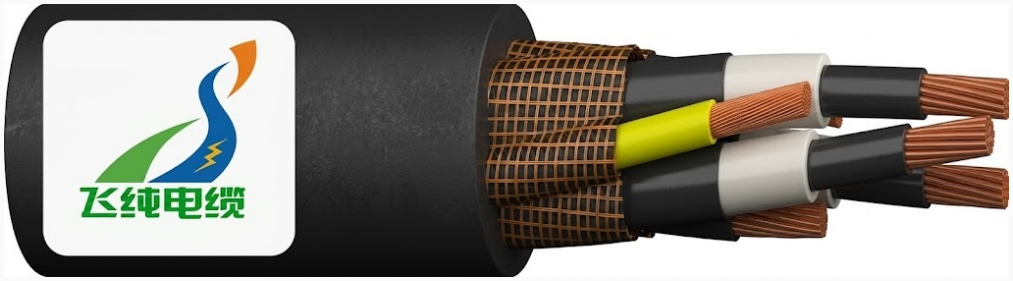
PROTOLON (SB-SAM) (N)TSCGEWOEU

Medium Voltage Flexible Trailing Cable with Optimized Wall Thickness | 6 - 20 kV

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Optimized Wall Thickness Trailing Cable

PROTOLON (SB-SAM) (N)TSCGEWOEU serves as power supply or connection cable for large material handling machines, e.g. excavators in opencast mines, subject to extremely high mechanical stresses in which abrasion and chaffing stresses are to be expected in trailing operation. The optimized wall thickness reduces cable weight and outer diameter compared to standard constructions.

Total Configurations: 36 — covering 4 voltage classes from 3.6/6 kV to 12/20 kV, with conductor sizes from 3×25 mm² up to 3×240 mm², each with an integrated 1×10 signal/telemetry pilot core (ST).

Key Advantages: Reduced wall thickness for lighter, more compact cable • Integrated telemetry/signal pilot core (1×10ST) • High torsional & tensile resistance • Oil, ozone & UV resistant

Technical Summary & Specifications

ELECTRICAL

Voltage: 3.6/6 (7.2) – 12/20 (24) kV
Test Voltage: 11 – 29 kV
Conductor: Finely stranded tinned copper, class 5

THERMAL

Max conductor temp: 90°C
Short circuit temp: 250°C
Fixed install: -40 to +80°C
Flexible install: -30 to +60°C

MECHANICAL

Torsional stress: ±100°/m
Tensile strength: 20 N/mm² static
Bend radius: 6×D fixed / 10×D flexible

CHEMICAL

Flame Retardant: ✓ EN/IEC 60332-1-2
Oil / Ozone / UV: ✓ Resistant

Standards: DIN VDE 0250-813 • EN 50525-2-21 • DIN VDE 0298-3 • GOST-R/-K/-B Fire Certificate (Russian Federation) • DIN EN 60332-1-2 / IEC 60332-1-2 • IEC 60811-404

Cable Construction

Conductor & Insulation

1. Conductor — finely stranded tinned copper, class 5; pilot core: very finely stranded tinned copper, class FS with semi-conductive special rubber compound
2. Semi-conductive EPR
3. Core insulation — EPR rubber (PROTOLON Special compound 3G13)

Core Arrangement

4. Three-core design with split earth conductor in the interstices, tear-resistant reinforcing tape over assembly
5. Semi-conductive NBR easy strip
6. Split earth conductor

Reinforcement & Sheath

7. Braiding — Polyester material
8. Inner sheath — rubber, polychloroprene (PCP) special compound 5GM5
9. Outer sheath — rubber, polychloroprene (PCP) special compound > 5GM5

Complete Specifications — 3.6/6 kV (9 Configurations)

PROTOLON(SB-SAM) (N)TSCGEWOEU 3.6/6 kV — 9 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×25+2×25/2+1×10ST	6.5	35.5	42.5	2,670	1,500	0.35	0.32	0.78	131
3×35+2×25/2+1×10ST	7.6	41.9	44.9	3,020	2,100	0.39	0.31	0.554	162
3×50+2×25/2+1×10ST	9.1	45.8	45.8	3,510	3,000	0.45	0.29	0.386	202
3×70+2×35/2+1×10ST	10.9	46.5	49.5	4,300	4,200	0.52	0.28	0.272	250
3×95+2×50/2+1×10ST	12.7	52.9	56.9	5,600	5,700	0.58	0.27	0.206	301
3×120+2×70/2+1×10ST	14.4	56.5	60.5	6,750	7,200	0.65	0.26	0.161	352
3×150+2×70/2+1×10ST	16.2	63.0	67.0	8,100	9,000	0.71	0.25	0.129	404
3×185+2×95/2+1×10ST	17.8	66.4	70.4	9,400	11,100	0.77	0.25	0.106	461
3×240+2×120/2+1×10ST	20.6	72.3	76.3	11,700	14,400	0.88	0.24	0.08	540

Note: All configurations include an integrated 1×10 mm² signal/telemetry pilot core (ST) in addition to the 3 main phase conductors and split earth conductor.

Complete Specifications — 6/10 kV (9 Configurations)

PROTOLON(SB-SAM) (N)TSCGEWOEU 6/10 kV — 9 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×25+2×25/2+1×10ST	6.5	40.8	43.8	2,700	1,500	0.30	0.34	0.78	131
3×35+2×25/2+1×10ST	7.6	41.1	44.1	3,030	2,100	0.33	0.32	0.554	162
3×50+2×25/2+1×10ST	9.1	45.3	48.3	3,600	3,000	0.38	0.31	0.386	202
3×70+2×35/2+1×10ST	10.9	47.7	50.7	4,540	4,200	0.43	0.29	0.272	250
3×95+2×50/2+1×10ST	12.7	54.2	58.2	5,700	5,700	0.48	0.28	0.206	301
3×120+2×70/2+1×10ST	14.4	57.7	61.7	7,130	7,200	0.54	0.27	0.161	352
3×150+2×70/2+1×10ST	16.2	64.2	68.2	8,300	9,000	0.59	0.26	0.129	404
3×185+2×95/2+1×10ST	17.8	67.6	71.6	9,600	11,100	0.64	0.26	0.106	461
3×240+2×120/2+1×10ST	20.6	72.3	76.3	12,060	14,400	0.72	0.25	0.08	540

Note: All configurations include an integrated 1×10 mm² signal/telemetry pilot core (ST) in addition to the 3 main phase conductors and split earth conductor.

Complete Specifications — 8.7/15 kV (9 Configurations)

PROTOLON(SB-SAM) (N)TSCGEWOEU 8.7/15 kV — 9 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×25+2×25/2+1×10ST	6.5	41.9	44.9	2,600	1,500	0.22	0.37	0.78	139
3×35+2×25/2+1×10ST	7.6	45.5	48.5	3,440	2,100	0.25	0.35	0.554	172
3×50+2×25/2+1×10ST	9.1	47.4	50.4	3,700	3,000	0.28	0.33	0.386	215
3×70+2×35/2+1×10ST	10.9	53.7	57.7	5,380	4,200	0.32	0.31	0.272	265
3×95+2×50/2+1×10ST	12.7	57.6	61.6	6,150	5,700	0.35	0.30	0.206	319
3×120+2×70/2+1×10ST	14.4	63.0	67.0	7,840	7,200	0.39	0.29	0.161	371
3×150+2×70/2+1×10ST	16.2	66.8	70.8	8,990	9,000	0.43	0.28	0.129	428
3×185+2×95/2+1×10ST	17.8	71.0	75.0	10,100	11,100	0.46	0.27	0.106	488
3×240+2×120/2+1×10ST	20.6	78.3	83.3	12,800	14,400	0.52	0.27	0.08	574

Note: All configurations include an integrated 1×10 mm² signal/telemetry pilot core (ST) in addition to the 3 main phase conductors and split earth conductor.

Complete Specifications — 12/20 kV (9 Configurations) & Summary

PROTOLON(SB-SAM) (N)TSCGEWOEU 12/20 kV — 9 Configurations

Basic Construction (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Capacitance (nF/km)	Operation Inductance (mH/km)	Conductor Resistance at 20°C (Ω/km)	Current (A)
3×25+2×25/2+1×10ST	6.5	44.9	47.9	3,000	1,500	0.78	0.22	0.37	139
3×35+2×25/2+1×10ST	7.6	47.2	50.2	3,500	2,100	0.554	0.24	0.35	172
3×50+2×25/2+1×10ST	9.1	51.7	55.7	4,350	3,000	0.386	0.27	0.33	215
3×70+2×35/2+1×10ST	10.9	55.5	59.5	5,400	4,200	0.272	0.31	0.32	265
3×95+2×50/2+1×10ST	12.7	60.5	64.5	6,500	5,700	0.206	0.35	0.30	319
3×120+2×70/2+1×10ST	14.4	65.9	69.9	8,000	7,200	0.161	0.38	0.29	371
3×150+2×70/2+1×10ST	16.2	70.6	74.6	9,200	9,000	0.129	0.42	0.28	428
3×185+2×95/2+1×10ST	17.8	75.8	79.8	10,850	11,100	0.106	0.45	0.28	488
3×240+2×120/2+1×10ST	20.6	81.2	86.2	13,300	14,400	0.08	0.51	0.27	574

Configuration Summary — All 36 Specifications

Voltage Class	Test Voltage	Configurations	Conductor Range	Cable Ø Range	Current Range (A)
3.6/6 (7.2) kV	11 kV	9	3×25 – 3×240 mm²	35.5 – 76.3 mm	131 – 540
6/10 (12) kV	17 kV	9	3×25 – 3×240 mm²	40.8 – 76.3 mm	131 – 540
8.7/15 (17.5) kV	24 kV	9	3×25 – 3×240 mm²	41.9 – 83.3 mm	139 – 574
12/20 (24) kV	29 kV	9	3×25 – 3×240 mm²	44.9 – 86.2 mm	139 – 574
TOTAL: 36 Complete Specifications Across 4 Voltage Classes					

Applications & Ordering Information

Used as power supply and connection cable for large material handling machines (excavators, draglines, mobile crushers) in opencast mines. The integrated telemetry pilot core (1×10ST) enables real-time monitoring alongside power supply. For custom lengths, drum packaging, or technical consultation, please contact us directly via WhatsApp or visit our websites below. All 36 standard configurations are available ex-works with standard lead times.

Contact AnHui Feichun Special Cable Co., Ltd
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