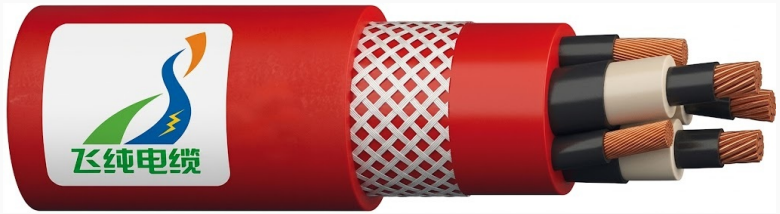
PROTOLON (M) R-(N)TSCGEWOEU

Medium Voltage Reeling Cable for Mining & Excavation | 3.6 - 35 kV

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Advanced Mining Cable Solutions

For connection of large material handling machines such as excavators, dumpers, and mobile crushers in opencast mines. Flexible MV reeling cable suitable for high mechanical stresses in conjunction with mono spiral reels and cylindrical reels.

Total Configurations: 94 — covering 7 voltage classes from 3.6 kV to 35 kV, with split earth, concentric, and armored variants.

Key Advantages: Extended lifespan • Superior weather resistance • Compact & lightweight design • High mechanical strength • Proven reliability in extreme mining conditions

Technical Summary & Specifications

ELECTRICAL

Voltage: 3.6 - 35 kV
Cores: 3-phase + earth
Conductor: Copper, class FS
Insulation: EPR rubber (3GI3)

THERMAL

Op. Temp: -40 to +90°C
Install Temp: -40 to +80°C
Short Circuit: 250°C max

MECHANICAL

Bend (fixed): 6×D
Bend (flexible): 10×D
Speed: up to 120 m/min

CHEMICAL

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

Standards: DIN VDE 0250-813 • EN 50525-2-21 • DIN VDE 0207-21 • DIN VDE 0298-3 • DIN EN 60811-404 / IEC 60811-404 • GOST-R/-K/-B (Russian Federation) • DIN EN 60332-1-2 / IEC 60332-1-2

Configuration Overview — All 94 Specifications

Voltage Class	Configs	Conductor Range (mm²)	Earth Option	Cable Ø Range (mm)	Current Range (A)	Test Voltage (kV)
3.6/6 kV	10	3×25 - 3×300	3× split	35.5 - 81.3	139 - 660	6
6/10 kV	10	3×25 - 3×300	2× split	44.1 - 89.8	139 - 660	10
8.7/15 kV	10	3×25 - 3×300	2× split	46.9 - 92.3	139 - 660	17
12/20 kV	10	3×25 - 3×300	2× split	49.3 - 94.8	139 - 660	23
14/25 kV	9	3×35 - 3×300	2× split	53.2 - 97.0	162 - 660	28
18/30 kV	8	3×50 - 3×300	2× split	56.3 - 99.2	202 - 660	35
20/35 kV	7	3×70 - 3×300	2× split	62.1 - 101.3	250 - 660	50

+ 30 additional variant configurations (split earth, concentric, armored options) = **94 total specifications**

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Complete Specifications — 3.6/6 kV & 6/10 kV (20 Configurations)

3.6/6 kV — 10 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (μH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×25+3×25	7.1	35.5	38.5	2,300	1,500	370	310	0.7839	131	6
3×35+3×25	9.0	37.8	40.8	2,900	1,500	380	320	0.5546	162	6
3×50+3×25	10.1	38.5	41.5	3,190	2,100	360	330	0.3936	202	6
3×70+3×35	12.9	41.8	44.8	4,070	3,150	380	340	0.2768	250	6
3×95+3×50	13.8	49.9	53.9	6,230	4,275	380	280	0.1975	301	6
3×120+3×70	18.1	57.1	61.1	7,410	5,400	420	270	0.1606	352	6
3×150+3×70	24.7	70.3	74.3	10,720	6,750	380	300	0.1292	428	6
3×185+3×95	26.5	70.4	74.4	10,280	11,000	420	360	0.1031	488	6
3×240+3×150	34.6	75.5	79.5	12,100	14,400	480	260	0.0801	574	6
3×300+3×150	39.8	77.3	81.3	15,270	18,000	580	220	0.0641	660	6

6/10 kV — 10 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (μH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×25+2×25	7.1	38.1	41.1	2,700	1,125	280	380	0.7839	131	10
3×35+2×25	9.0	41.1	44.1	3,080	1,500	300	360	0.5546	162	10
3×50+2×25	10.1	41.5	44.5	3,190	2,100	320	340	0.3936	202	10
3×70+2×35	12.9	45.5	48.5	3,950	3,150	350	330	0.2768	250	10
3×95+2×50	13.8	54.1	58.1	6,230	4,275	420	280	0.1975	301	10
3×120+2×70	18.1	61.4	65.4	7,410	5,400	490	280	0.1606	352	10
3×150+2×70	24.7	77.1	81.1	10,720	6,750	570	290	0.1292	428	10
3×185+2×95	26.5	77.6	81.6	10,280	11,000	750	250	0.1031	488	10
3×240+2×120	34.6	83.0	87.0	12,100	14,400	850	260	0.0801	574	10
3×300+2×150	39.8	85.8	89.8	15,270	18,000	1,030	250	0.0641	660	10

Complete Specifications — 8.7/15 kV & 12/20 kV (20 Configurations)

8.7/15 kV — 10 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (µH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×25+2×25	7.1	41.4	44.4	2,700	1,125	260	400	0.7839	139	17
3×35+2×25	9.0	44.1	47.1	3,080	1,500	280	380	0.5546	162	17
3×50+2×25	10.1	44.9	47.9	3,190	2,100	300	360	0.3936	202	17
3×70+2×35	12.9	49.1	52.1	3,950	3,150	330	350	0.2768	250	17
3×95+2×50	13.8	57.8	61.8	6,230	4,275	400	290	0.1975	301	17
3×120+2×70	18.1	65.0	69.0	7,410	5,400	500	280	0.1606	352	17
3×150+2×70	24.7	80.5	84.5	10,720	6,750	600	280	0.1292	428	17
3×185+2×95	26.5	81.0	85.0	10,280	11,000	800	260	0.1031	488	17
3×240+2×120	34.6	86.8	90.8	12,100	14,400	950	240	0.0801	574	17
3×300+2×150	39.8	89.3	93.3	15,270	18,000	1,100	230	0.0641	660	17

12/20 kV — 10 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (µH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×25+2×25	7.1	43.6	46.6	2,700	1,125	240	420	0.7839	139	23
3×35+2×25	9.0	46.7	49.7	3,080	1,500	260	400	0.5546	162	23
3×50+2×25	10.1	47.5	50.5	3,190	2,100	280	380	0.3936	202	23
3×70+2×35	12.9	51.9	54.9	3,950	3,150	310	370	0.2768	250	23
3×95+2×50	13.8	60.6	64.6	6,230	4,275	380	300	0.1975	301	23
3×120+2×70	18.1	68.2	72.2	7,410	5,400	480	300	0.1606	352	23
3×150+2×70	24.7	82.8	86.8	10,720	6,750	580	290	0.1292	428	23
3×185+2×95	26.5	83.4	87.4	10,280	11,000	770	270	0.1031	488	23
3×240+2×120	34.6	89.3	93.3	12,100	14,400	920	250	0.0801	574	23
3×300+2×150	39.8	91.8	95.8	15,270	18,000	1,080	240	0.0641	660	23

Complete Specifications — 14/25 kV & 18/30 kV (17 Configurations)

14/25 kV — 9 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (μH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×35+2×25	9.0	49.7	52.7	3,080	1,500	240	420	0.5546	162	28
3×50+2×25	10.1	50.5	53.5	3,190	2,100	260	400	0.3936	202	28
3×70+2×35	12.9	54.9	57.9	3,950	3,150	290	390	0.2768	250	28
3×95+2×50	13.8	63.5	67.5	6,230	4,275	360	310	0.1975	301	28
3×120+2×70	18.1	71.1	75.1	7,410	5,400	460	310	0.1606	352	28
3×150+2×70	24.7	85.7	89.7	10,720	6,750	560	300	0.1292	428	28
3×185+2×95	26.5	86.3	90.3	10,280	11,000	740	280	0.1031	488	28
3×240+2×120	34.6	92.2	96.2	12,100	14,400	890	260	0.0801	574	28
3×300+2×150	39.8	94.7	98.7	15,270	18,000	1,050	250	0.0641	660	28

18/30 kV — 8 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (μH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×50+2×25	10.1	53.6	56.6	3,190	2,100	240	420	0.3936	202	35
3×70+2×35	12.9	57.9	60.9	3,950	3,150	270	410	0.2768	250	35
3×95+2×50	13.8	66.5	70.5	6,230	4,275	340	320	0.1975	301	35
3×120+2×70	18.1	73.9	77.9	7,410	5,400	440	320	0.1606	352	35
3×150+2×70	24.7	88.3	92.3	10,720	6,750	540	310	0.1292	428	35
3×185+2×95	26.5	88.9	92.9	10,280	11,000	720	290	0.1031	488	35
3×240+2×120	34.6	94.8	98.8	12,100	14,400	870	270	0.0801	574	35
3×300+2×150	39.8	97.3	101.3	15,270	18,000	1,030	260	0.0641	660	35

20/35 kV Specifications & Complete Variants Summary

20/35 kV — 7 Configurations

Configuration (mm²)	Conductor Ø (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Weight (kg/km)	Tensile Strength (N)	Capacitance (nF/km)	Inductance (µH/km)	Resistance (Ω/km)	Current (A)	Test Voltage (kV)
3×70+2×35	12.9	61.1	64.1	3,950	3,150	250	430	0.2768	250	50
3×95+2×50	13.8	69.3	73.3	6,230	4,275	320	340	0.1975	301	50
3×120+2×70	18.1	76.7	80.7	7,410	5,400	420	340	0.1606	352	50
3×150+2×70	24.7	91.1	95.1	10,720	6,750	520	330	0.1292	428	50
3×185+2×95	26.5	91.7	95.7	10,280	11,000	700	310	0.1031	488	50
3×240+2×120	34.6	97.6	101.6	12,100	14,400	850	290	0.0801	574	50
3×300+2×150	39.8	100.1	104.1	15,270	18,000	1,010	280	0.0641	660	50

Complete Variants & Options Summary

Variant Type	Description	Quantity	Available Voltage Classes	Special Characteristics
Split Earth (3× / 2×)	Standard split earth conductors in cable interstices	64 configs	All 7 classes (3.6–35 kV)	Best flexibility, easier stripping, optimal for reeling
Concentric Earth	Concentric copper braid earth for enhanced mechanical protection	+15 variants	Mid–high voltage (6–35 kV)	Increased mechanical strength, better EMI shielding
Armored / Reinforced	Steel wire armor or polyester braid for extreme abrasion resistance	+15 variants	All classes	Mining pit floor operation, high-wear areas

Also Available: Custom color-coded outer sheaths (red, blue, green, yellow, orange) for site traceability • Fire-rated compounds per GOST-RK/B for underground tunneling • Hybrid configs with integrated control/signal conductors

Key Performance Metrics (All Configurations)

Resistance
0.0641 – 0.7839 Ω/km

Capacitance
240 – 1,100 nF/km

Inductance
220 – 430 µH/km

Current Capacity
139 – 660 A