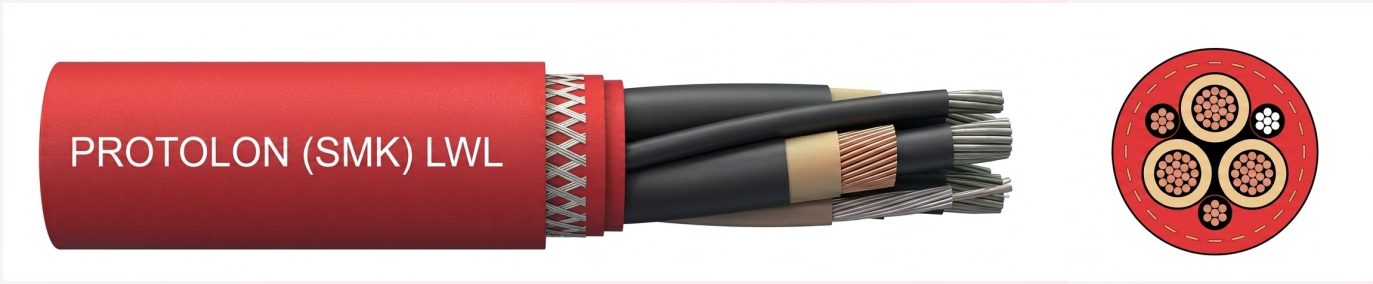
PROTOLON (SMK)-LWL

Medium Voltage Fiber Optic Reeling Cable

Complete Technical Specification
Type: (N)TSKCGEWOEU | All 37 Configurations

AnHui Feichun
Special Cable Co., Ltd
Professional Manufacturer



PROTOLON (SMK)-LWL - Professional Medium Voltage Reeling Cable with Integrated Fiber Optics

PRODUCT OVERVIEW

PROTOLON (SMK)-LWL (Lightweight) combines high-performance medium voltage power transmission with integrated fiber optic data transmission in a single cable system. Engineered for extreme mechanical stresses, high travel speeds, dynamic loads, and simultaneous power & data communication - ideal for automated container cranes, smart industrial equipment, and Industry 4.0 applications.

KEY APPLICATIONS

- Container cranes (STS/RTG)
- Automated reeling systems
- Smart industrial equipment
- Real-time data transmission
- IoT/Industry 4.0 systems
- Mobile power & communication
- High-speed hoisting systems

QUALITY FEATURES

POWER + DATA **FIBER OPTIC** **HIGH SPEED** **FLEXIBLE** **DURABLE** **INTEGRATED**

ELECTRICAL & TECHNICAL PARAMETERS

Parameter	Specification
Brand/Type	PROTOLON (SMK)-LWL
Type Designation	(N)TSKCGEWOEU
Standard	DIN VDE 0250-813, FDDI, ISO/IEC 9314 Part 3
Rated Voltages	3.6/6 kV | 6/10 kV | 8.7/15 kV | 12/20 kV
Core Configuration	3 Power Cores + 2 Earth Conductors (split) + 1 Fiber Tube
Conductor Material	Tinned electrolytic copper, very fine stranded, class FS
Insulation Type	PROTOLON HS - High-grade EPR compound
Fiber Optics	Standard: 6 fibers G62.5/125µm (MMF) Optional: 12, 18, 24 fibers | G50/125µm or E9/125µm types
Max. Tensile Load	20 N/mm² (standard) | Up to 30 N/mm² (dynamic acceleration)

Torsional Stress	±25°/m
Min. Bending Radius	20 × D (D = cable diameter)
Travel Speed (Gantry)	No restriction (240+ m/min, consult for higher speeds)
Ambient Temp (Fixed)	-50°C to +80°C
Ambient Temp (Flexible)	-35°C to +80°C
Max. Conductor Temp	90°C (continuous)
Short Circuit Temp	250°C (max)
EMC Performance	Extremely low interference level (symmetrical 3-core design)
Data Transmission	High data rate capability via integrated fiber optics

FIBER OPTIC SPECIFICATIONS

G62.5/125MM MULTIMODE

- Attenuation@850nm: <3.3 dB/km
- Attenuation@1310nm: <0.9 dB/km
- Bandwidth@850nm: >400 MHz
- Bandwidth@1300nm: >600 MHz
- NA: 0.275 ± 0.02

G50/125MM MULTIMODE

- Attenuation@850nm: <2.8 dB/km
- Attenuation@1310nm: <0.8 dB/km
- Bandwidth@850nm: >400 MHz
- Bandwidth@1300nm: >1200 MHz
- NA: 0.2 ± 0.02

E9/125MM SINGLEMODE

- Attenuation@1310nm: <0.4 dB/km | • Attenuation@1550nm: <0.3 dB/km | • NA: 0.14 ± 0.02 | • Chromatic Dispersion@1300nm: <3.5 ps/nm·km |
- Chromatic Dispersion@1550nm: <3.5 ps/nm·km

PROTOLON (SMK)-LWL 3.6/6 KV - 7 CONFIGURATIONS

3.6/6 kV + 1×(6G62.5)

Config	Part No.	MLFB	Ø P(mm)	Ø E(mm)	Ø min(mm)	Ø max(mm)	R(mm)	Wt(kg/km)	Tens(N)	Dyn(N)	R@20°C	I(A)	I²t(kA²)
3×25+2×25/2+1FO	-	5DK3081	7.1	5	39.9	42.9	429	2570	1500	2250	0.8	131	3.58
3×35+2×25/2+1FO	20004468	5DK3082	8.3	5	42	45	450	2990	2100	3150	0.57	162	5.01
3×50+2×25/2+1FO	20004469	5DK3083	9.9	5	44.8	47.8	478	3660	3000	4500	0.39	202	7.15
3×70+2×35/2+1FO	20004470	5DK3084	11.8	5.9	49.9	53.9	539	4740	4200	6300	0.28	250	10.01
3×95+2×50/2+1FO	20004471	5DK3085	13.8	7.2	54.8	58.8	588	5920	5700	8550	0.21	301	13.59
3×120+2×70/2+1FO	20008293	5DK3086	15.4	8.3	58.2	62.2	622	7130	7200	10800	0.16	352	17.16
3×150+2×70/2+1FO	20007743	5DK3100	17.2	8.3	63.5	67.5	675	8500	9000	13500	0.13	404	21.45

PROTOLON (SMK)-LWL 6/10 KV - 10 CONFIGURATIONS

6/10 kV + 1×(6G62.5)

Config	Part No.	MLFB	Ø P	Ø E	Ø min	Ø max	R	Wt	Tens	Dyn	R@20°C	I	I²t
3×25+2×25/2+1FO	20004548	5DK4081	7.1	5	40.7	43.7	437	2640	1500	2250	0.8	131	3.58
3×35+2×25/2+1FO	20004549	5DK4082	8.3	5	42.7	45.7	457	3060	2100	3150	0.57	162	5.01
3×50+2×25/2+1FO	20004550	5DK4083	9.9	5	46.1	49.1	491	3730	3000	4500	0.39	202	7.15
3×70+2×35/2+1FO	20004551	5DK4084	11.8	5.9	51.1	55.1	551	4870	4200	6300	0.28	250	10.01
3×95+2×50/2+1FO	20004552	5DK4085	13.8	7.2	56.1	60.1	601	6070	5700	8550	0.21	301	13.59
3×120+2×70/2+1FO	20006945	5DK4086	15.4	8.3	60.9	64.9	649	7500	7200	10800	0.16	352	17.16
3×150+2×70/2+1FO	20004553	5DK4087	17.2	8.3	64.8	68.8	688	8670	9000	13500	0.13	404	21.45
3×185+2×95/2+1FO	20007673	5DK4088	19	9.8	69.3	73.3	733	10290	11100	16650	0.11	461	26.46
3×240+2×120/2+1FO	20035801	5DK4090	21.8	11	76.7	80.7	807	12960	14400	21600	0.08	540	34.32
3×300+2×150/2+1FO	-	5DK4091	24.4	12	84.2	89.2	892	15880	18000	27000	0.07	620	42.9

PROTOLON (SMK)-LWL 8.7/15 KV - 10 CONFIGURATIONS

8.7/15 kV + 1×(6G62.5)

Config	Part No.	MLFB	Ø P	Ø E	Ø min	Ø max	R	Wt	Tens	Dyn	R@20°C	I	I²t
3×25+2×25/2+1FO	20004658	5DK5061	7.1	4.2	41.1	44.1	441	2680	1500	2250	0.8	139	3.58
3×35+2×25/2+1FO	20004659	5DK5062	8.3	4.2	43.7	46.7	467	3150	2100	3150	0.57	172	5.01
3×50+2×25/2+1FO	20004660	5DK5063	9.9	4.2	47.1	50.1	501	3830	3000	4500	0.39	215	7.15
3×70+2×35/2+1FO	20004661	5DK5064	11.8	5	52.6	56.6	566	5010	4200	6300	0.28	265	10.01
3×95+2×50/2+1FO	20004662	5DK5065	13.8	5.9	57.8	61.8	618	6230	5700	8550	0.21	319	13.59
3×120+2×70/2+1FO	20004663	5DK5066	15.4	7	61.6	65.6	656	7650	7200	10800	0.16	371	17.16
3×150+2×70/2+1FO	20004664	5DK5067	17.2	7	67	71	710	8990	9000	13500	0.13	428	21.45
3×185+2×95/2+1FO	20007673	5DK5068	19	8	71.1	75.1	751	10650	11100	16650	0.11	488	26.46
3×240+2×120/2+1FO	-	5DK5070	21.8	9	79.8	83.8	838	13700	14400	21600	0.08	574	34.32
3×300+2×150/2+1FO	-	5DK5071	24.4	10	87.6	92.6	926	16850	18000	27000	0.07	660	42.9

PROTOLON (SMK)-LWL 12/20 KV - 10 CONFIGURATIONS

12/20 kV + 1×(6G62.5)

Config	Part No.	MLFB	Ø P	Ø E	Ø min	Ø max	R	Wt	Tens	Dyn	R@20°C	I	I²t
3×25+2×25/2+1FO	20004698	5DK5521	7.1	4.2	44	47	470	2980	1500	2250	0.8	139	3.58
3×35+2×25/2+1FO	20004699	5DK5523	8.3	4.2	47.3	50.3	503	3480	2100	3150	0.57	172	5.01
3×50+2×25/2+1FO	-	5DK5***	9.9	4.2	51	54	540	4220	3000	4500	0.39	215	7.15
3×70+2×35/2+1FO	20007667	5DK5***	11.8	5	55.5	59.5	595	5440	4200	6300	0.28	265	10.01
3×95+2×50/2+1FO	-	5DK5***	13.8	5.9	61	65	650	6810	5700	8550	0.21	319	13.59
3×120+2×70/2+1FO	-	5DK5***	15.4	7	65.2	69.2	692	8230	7200	10800	0.16	371	17.16
3×150+2×70/2+1FO	20161632	5DK5***	17.2	7	70.2	74.2	742	9580	9000	13500	0.13	428	21.45
3×185+2×95/2+1FO	-	5DK5***	19	8	74.7	78.7	787	11190	11100	16650	0.11	488	26.46
3×240+2×120/2+1FO	-	5DK5***	21.8	9	82.9	86.9	869	14240	14400	21600	0.08	574	34.32
3×300+2×150/2+1FO	-	5DK5***	24.4	10	89.7	94.7	947	17500	18000	27000	0.07	660	42.9

CONTACT & TECHNICAL SUPPORT

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Service: 24/7 Technical Support & Custom Solutions

PROTOLON (SMK)-LWL Complete Portfolio: 37 configurations across 4 voltage levels | Integrated fiber optics (6 fibers standard) | PROTOLON HS insulation | PROTOFIRM Sandwich sheath | Power + Data transmission | Unrestricted reeling speed capability

Standards Compliance: DIN VDE 0250-813, DIN VDE 0295, DIN VDE 0207 Part 20, DIN VDE 0298 Part 3, FDDI, ISO/IEC 9314 Part 3

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PROTOLON (SMK)-LWL - Complete Edition with all 37 configurations. Standard configuration includes 6 fibers G62.5/125µm multimode. Optional: 12/18/24 fibers, G50/125µm or E9/125µm types available. For fiber specifications and custom configurations, consult technical support.