Anhui Feichun Special Cable Co., Ltd.

安徽飞纯特种电缆有限公司

PROTOLON (ST) 3E NTSCGEWOEU I 3-30 KV

Medium Voltage Flexible Cables for Use in Water with Copper Core Shield

APPLICATION

Power supply cable for use in water, including connections to dredgers, floating docks, pumps, and similar equipment in applications where high mechanical stresses are to be expected. This cable is also suitable for use in sewage, salt water, and brackish water at water depths of up to 500 meters. This screened cable design is suitable for use with dredging equipment according to VDE 0168 specifications.

WATERPROOF DESIGN | 500M DEPTH RATING | SEA WATER RESISTANT | FLAME RETARDANT | UV RESISTANT | OIL RESISTANT

UNDERWATER PERFORMANCE SPECIFICATIONS

Maximum Water Depth **500 meters**	Sea Water Resistance **Excellent**
Operating Environment **Sewage, Salt & Brackish Water**	Voltage Range **3 kV - 30 kV**

STANDARDS / APPROVALS

General DIN VDE 0250-813	**Electrical Parameters** DIN VDE 0298-4
Certifications / Approvals MSHA P-189-4	**Chemical Behaviour** DIN EN 60811-404 / IEC 60811-404, DIN EN 50525-2-21
Fire Certificate (Russian Federation)	**Fire Performance**

GOST -R/-K/-B

DIN EN 60332-1-2 / IEC 60332-1-2

CABLE CONSTRUCTION

1. **Conductor**
   Finely stranded copper, tinned, class 5. Protective Earth Conductor: individual concentric conductors distributed over the insulation of the three main cores.
2. **Inner Semi-Conducting Layer**
   Semi-conductive EPR.
3. **Core Insulation**
   EPR rubber - Special compound 3GI3.
4. **Outer Semi-Conducting Layer**
   Semi-conductive EPR.
6. **Core Arrangement**
   Three main conductors laid-up with individual concentric protective-earth conductor.
7. **Inner Sheath**
   Special EPR compound - waterproof.
8. **Outer Sheath**
   Chlorinated polyethylene (CM/CPE) - Special compound 5GM3 - waterproof.

THERMAL PARAMETERS

Max. conductor temperature	90 °C
Max. conductor temperature at short circuit	250 °C
Ambient temperature fix installation (min)	-40 °C
Ambient temperature fix installation (max)	80 °C
Ambient temperature flexible installation (min)	-25 °C
Ambient temperature flexible installation (max)	60 °C

CHEMICAL PARAMETERS

Flame retardant	In accordance with EN/IEC 60332-1-2
Oil resistant	Yes

Ozone resistance	Yes
Resistant to UV	Yes
Sea water resistance	Excellent
Max. water depth	500 m

MECHANICAL PARAMETERS

Torsional stress	+/- 25 °/m
Permanent tensile strength (rule)	15 N/mm²
Bending radius (rule) - Fixed installation	6 x D (Acc. to VDE 0298-3)
Bending radius (rule) - Flexible operation	10 x D

ELECTRICAL RATINGS

PARAMETER	1.8/3 KV	3.6/6 KV	6/10 KV	8.7/15 KV	12/20 KV	14/25 KV	18/30 KV
Rated voltage U_0/U (Um)	1.8/3 (3.6) kV	3.6/6 (7.2) kV	6/10 (12) kV	8.7/15 (17.5) kV	12/20 (24) kV	14/25 (29) kV	18/30 (36) kV
Test voltage	6 kV	11 kV	17 kV	24 kV	29 kV	36 kV	43 kV
Nominal voltage U	3,000 V	6,000 V	10,000 V	15,000 V	20,000 V	25,000 V	30,000 V

TECHNICAL DATA - CABLE CONFIGURATIONS

PROTOLON (ST) 3E NTSCGEWOEU 1.8/3KV

FEICHUN SPECIAL CABLES
Website Address www.reelingcable.com www.feichuncables.com
Whatsapp Account + 86 13855123218
Email Address Zihao.yang@feichuncables.com & Ziyu.huang@feichuncables.com

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x25/3E	6.4	37.5	40.5	2,400	1,125	330	0.33	0.795	131
3x35+3x25/3E	7.6	40.9	43.9	3,000	1,575	380	0.31	0.565	162
3x50+3x25/3E	9	45.4	48.4	3,600	2,250	430	0.3	0.393	202
3x70+3x35/3E	10.9	50.8	54.8	4,800	3,150	500	0.28	0.277	250
3x95+3x50/3E	12.6	57.1	61.1	6,200	4,275	520	0.27	0.21	301
3x120+3x70/3E	14.1	59.7	63.7	7,540	5,400	560	0.27	0.164	352
3x150+3x70/3E	16	67.6	71.6	8,700	6,750	630	0.26	0.132	404
3x185+3x95/3E	17.8	69.3	73.3	10,160	8,325	690	0.25	0.108	461

PROTOLON (ST) 3E NTSCGEWOEU 3.6/6KV

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x185+3x95/3E	17.8	75.8	79.8	11,000	8,325	560	0.26	0.108	461
3x240+3x120/3E	20.4	82	86	13,500	10,800	600	0.25	0.0817	574

PROTOLON (ST) 3E NTSCGEWOEU 6/10KV



Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x16/3E	6.4	43.9	46.9	3,100	1,125	240	0.36	0.795	131
3x25+3x25/3E	6.4	44.1	47.1	3,100	1,125	240	0.36	0.795	131
3x35+3x16/3E	7.6	49.8	52.8	3,850	1,575	270	0.34	0.565	162
3x35+3x25/3E	7.6	46.7	49.7	3,740	1,575	270	0.34	0.565	162
3x50+3x25/3E	9	52.4	56.4	4,460	2,250	300	0.32	0.393	202
3x70+3x35/3E	10.9	57.3	61.3	5,840	3,150	340	0.31	0.277	250
3x95+3x50/3E	12.6	63.2	67.2	7,250	4,275	380	0.29	0.21	301
3x120+3x70/3E	14.1	67.1	71.1	8,560	5,400	420	0.29	0.164	352
3x150+3x70/3E	16	71.9	75.9	9,400	6,750	460	0.28	0.132	404
3x185+3x95/3E	17.8	77.6	81.6	11,300	8,325	500	0.27	0.108	461

PROTOLON (ST) 3E NTSCGEWOEU 8.7/15KV

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x25/3E	6.4	48.4	52.4	3,700	1,125	200	0.39	0.795	139
3x35+3x25/3E	7.6	52.8	56.8	4,300	1,575	220	0.37	0.565	172
3x50+3x25/3E	9	56.6	60.6	5,000	2,250	240	0.35	0.393	215
3x70+3x35/3E	10.9	60.8	64.8	6,300	3,150	280	0.33	0.277	265
3x95+3x50/3E	12.6	68	72	7,700	4,275	310	0.31	0.21	319
3x120+3x70/3E	14.1	71.7	75.7	8,950	5,400	330	0.3	0.164	371
3x150+3x70/3E	16	77.9	82.9	10,500	6,750	370	0.29	0.132	428
3x185+3x95/3E	17.8	81.8	86.8	12,100	8,325	400	0.28	0.108	488

PROTOLON (ST) 3E NTSCGEWOEU 12/20KV

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x25/3E	6.4	55.3	59.3	4,350	1,125	170	0.41	0.795	139
3x25+3x16/3E	6.4	55.3	59.3	4,580	1,125	170	0.41	0.795	139
3x35+3x16/3E	7.6	56.6	60.6	4,940	1,575	190	0.39	0.565	172
3x35+3x25/3E	7.6	57	61	4,930	1,575	190	0.39	0.565	172
3x50+3x25/3E	9	59.9	63.9	5,790	2,250	210	0.37	0.393	215
3x70+3x35/3E	10.9	67.1	71.1	7,090	3,150	240	0.35	0.277	265
3x95+3x50/3E	12.6	71	75	8,280	4,275	260	0.33	0.21	319
3x120+3x70/3E	14.1	77.8	81.8	10,000	5,400	280	0.32	0.164	371
3x150+3x70/3E	16	82.3	87.3	11,400	6,750	310	0.31	0.132	428
3x185+3x95/3E	17.8	87.9	92.9	13,300	8,325	340	0.3	0.108	488

PROTOLON (ST) 3E NTSCGEWOEU 14/25KV

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x25/3E	6.4	63	67	5,790	1,125	150	0.44	0.795	139
3x35+3x25/3E	7.6	64.5	68.5	5,900	1,575	160	0.41	0.565	172
3x50+3x25/3E	9	68.4	72.4	6,700	2,250	180	0.39	0.393	215
3x70+3x35/3E	10.9	72.5	76.5	8,000	3,150	200	0.37	0.277	265
3x95+3x50/3E	12.6	79.2	84.2	9,700	4,275	220	0.35	0.21	319
3x120+3x70/3E	14.1	82.9	87.9	11,000	5,400	240	0.34	0.164	371
3x150+3x70/3E	16	89.7	94.7	13,000	6,750	270	0.32	0.132	428
3x185+3x95/3E	17.8	93.6	98.6	15,000	8,325	290	0.31	0.108	488

PROTOLON (ST) 3E NTSCGEWOEU 18/30KV

Configuration	Conductor Ø (mm)	Cable Ø Min (mm)	Cable Ø Max (mm)	Cable Weight (kg/km)	Max. Tensile Strength (N)	Nominal Op. Capacitance (nF/km)	Op. Self Inductance (mH/km)	Conductor Resistance (Ω/km)	Current Capacity (A)
3x25+3x25/3E	6.4	67.1	71.1	6,300	1,125	140	0.46	0.795	139
3x35+3x25/3E	7.6	70.3	74.3	6,720	1,575	150	0.43	0.565	172
3x50+3x25/3E	9	75.4	79.4	7,900	2,250	160	0.41	0.393	215
3x70+3x35/3E	10.9	79	84	9,200	3,150	180	0.38	0.277	265
3x95+3x50/3E	12.6	86.2	91.2	10,950	4,275	200	0.37	0.21	319
3x120+3x70/3E	14.1	89.9	94.9	12,400	5,400	220	0.35	0.164	371
3x150+3x70/3E	16	94.9	99.9	13,800	6,750	230	0.34	0.132	428
3x185+3x95/3E	17.8	100.5	105.5	15,950	8,325	250	0.33	0.108	488
3x240+3x120/3E+3x2.5ST	20.4	108.3	111.3	19,480	10,800	260	0.32	0.0817	574

CONTACT INFORMATION

WHATSAPP

+86 13855123218

TECHNICAL SUPPORT

tech@feichuncables.com

SALES CONTACT

zihao.yang@feichuncables.com

ENGINEERING CONTACT

ziyu.huang@feichuncables.com