



Medium-voltage reeling & TBM cables

(N)TSCGECWÖU TBM & Mining Cable (1.8/3–18/30 kV)

(N)TSCGECWÖU Tunnel Boring Machine (TBM) Cable

1.8/3 to 18/30 kV TBM reeling & coal-cutter cable with overall 6ÜLKON monitor



DIN VDE 0250-813

1.8/3–18/30 kV · 25–240 mm²

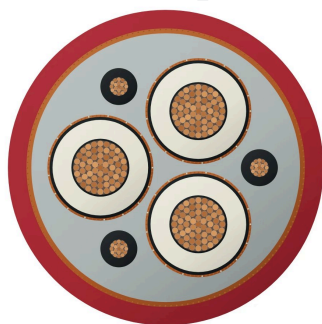
Overall 6ÜLKON Monitoring Screen

Application

DIN VDE 0250-813 (N)TSCGECWÖU medium-voltage reeling cable (3.6/6 to 18/30 kV for TBMs; 1.8/3 & 3.6/6 kV for coal cutters) with 3GI3 EPR cores, copper/textile phase earth braids, GM1b inner sheath, concentric 6ÜLKON monitoring screen and 5GM5 outer sheath.

Typical uses: Hard-rock, EPB & slurry tunnel boring machines, Long-distance hydropower & rail tunnel drives, Underground longwall shearers & coal cutters, Subsurface mine roadway & shaft construction, High-voltage mobile mining substations

Construction



Cross-section, not to scale

1	Phase conductor	DIN VDE 0295 · IEC 60228
2	Inner semiconductive layer	DIN VDE 0250-813
3	Core insulation	DIN VDE 0207-20
4	Outer semiconductive layer	DIN VDE 0250-813
5	Protective earth screen (3E)	DIN VDE 0250-813
6	Control cores (ST)	DIN VDE 0250-813
7	Inner sheath	DIN VDE 0207-21
8	Monitoring conductor (6ÜLKON)	DIN VDE 0250-813
9	Outer sheath	DIN VDE 0207-21 · IEC 60811-404

Technical data

Typical values

Rated voltage U₀/U	3.6/6, 6/10, 8.7/15, 12/20, 14/25 & 18/30 kV (TBM series) · 1.8/3 & 3.6/6 kV (Coal-cutter series)	Max. operating voltage AC / DC	Up to 20.8/36 kV AC and 27/54 kV DC on 18/30 kV series
Routine AC test voltage	6 kV (1.8/3) · 11 kV (3.6/6) · 17 kV (6/10) · 24 kV (8.7/15) · 29 kV (12/20) · 36 kV (14/25) · 43 kV (18/30) · 2 kV on control cores	Max. conductor temperature	+90 °C continuous operation · +250 °C short-circuit (1 s)
Ambient temperature range	Fixed -40 °C to +90 °C · Dynamic flexing -25 °C (or -20 °C) to +90 °C	Min. bending radius & S-bend	6 × D fixed · 10 × D flexing (DIN VDE 0298-3) · Min. 20 × D between S-type direction changes
Tensile, torsion & travel speed	15 N/mm ² reeling duty · up to 30 N/mm ² TBM advance duty · ±25 °/m torsion · max. 30 m/min travel speed	Flame & oil resistance	Flame retardant to IEC 60332-1-2 · Oil resistant to IEC 60811-404 (Type 5GM5 elastomer outer sheath)
Weather, ozone & moisture	Vulcanized GM1b inner sheath and 5GM5 outer sheath resist tunnel seepage, ozone and outdoor UV exposure	Standards	Based on DIN VDE 0250-813 · DIN VDE 0295 / IEC 60228 · DIN VDE 0298-3 / 0298-4

Sizes

42 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Designation (N)TSC GECWÖU	Voltage kV	Phase mm ²	Earth mm ²	Cond. Ø mm	Min. OD mm	Max. OD mm	Mass ≈ kg/km	Tensile 15N/mm ² N	DC Res. 20°C Ω/km	Cap. μF/km	Ind. mH/km	Current 30°C A	1s Short-Cct kA
☐ 3.6/6 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	3.6/6	25	16/3E	6.4	42.1	45.1	2,860	1,125	0.795	0.36	0.32	131	3.58
☐ 3.6/6 kV · 3×35 + 3×16/3E + 3×2.5ST + 6ÜLKON	3.6/6	35	16/3E	7.6	44.5	47.5	3,310	1,575	0.565	0.41	0.30	162	5.01
☐ 3.6/6 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	3.6/6	50	25/3E	9.1	47.0	51.0	3,960	2,250	0.393	0.47	0.29	202	7.15
☐ 3.6/6 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	3.6/6	70	35/3E	10.9	53.5	57.5	5,260	3,150	0.277	0.54	0.28	250	10.01
☐ 3.6/6 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	3.6/6	95	50/3E	12.6	57.2	61.2	6,340	4,275	0.210	0.61	0.27	301	13.59
☐ 3.6/6 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	3.6/6	120	70/3E	14.2	61.0	65.0	7,510	5,400	0.164	0.67	0.26	352	17.16
☐ 6/10 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	6/10	25	16/3E	6.4	43.0	46.0	3,030	1,125	0.795	0.31	0.33	131	3.58
☐ 6/10 kV · 3×35 + 3×25/3E + 3×2.5ST + 6ÜLKON	6/10	35	25/3E	7.6	45.7	48.7	3,600	1,575	0.565	0.35	0.32	162	5.01
☐ 6/10 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	6/10	50	25/3E	9.1	47.9	51.9	4,190	2,250	0.393	0.40	0.30	202	7.15
☐ 6/10 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	6/10	70	35/3E	10.9	54.6	58.6	5,550	3,150	0.277	0.46	0.29	250	10.01
☐ 6/10 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	6/10	95	50/3E	12.6	58.3	62.3	6,630	4,275	0.210	0.52	0.27	301	13.59
☐ 6/10 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	6/10	120	70/3E	14.2	62.1	66.1	7,840	5,400	0.164	0.57	0.27	352	17.16
☐ 6/10 kV · 3×150 + 3×70/3E + 3×2.5ST + 6ÜLKON	6/10	150	70/3E	15.8	66.6	70.6	8,490	6,750	0.129	0.63	0.26	404	21.45
☐ 6/10 kV · 3×185 + 3×95/3E + 3×2.5ST + 6ÜLKON	6/10	185	95/3E	17.8	73.1	77.1	10,860	8,325	0.106	0.64	0.26	461	26.46
☐ 6/10 kV · 3×240 + 3×120/3E + 3×2.5ST + 6ÜLKON	6/10	240	120/3E	20.4	80.7	84.7	13,820	10,800	0.080	0.64	0.25	540	34.32
☐ 8.7/15 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	8.7/15	25	16/3E	6.4	46.4	49.4	3,210	1,125	0.795	0.24	0.36	139	3.58
☐ 8.7/15 kV · 3×35 + 3×25/3E + 3×2.5ST + 6ÜLKON	8.7/15	35	25/3E	7.6	48.7	52.7	3,730	1,575	0.565	0.27	0.34	172	5.01
☐ 8.7/15 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	8.7/15	50	25/3E	9.1	53.7	57.7	4,700	2,250	0.393	0.30	0.32	215	7.15
☐ 8.7/15 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	8.7/15	70	35/3E	10.9	58.0	62.0	5,990	3,150	0.277	0.34	0.31	265	10.01
☐ 8.7/15 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	8.7/15	95	50/3E	12.6	61.6	65.6	7,080	4,275	0.210	0.38	0.29	319	13.59
☐ 8.7/15 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	8.7/15	120	70/3E	14.2	67.2	71.2	8,490	5,400	0.164	0.42	0.29	371	17.16
☐ 12/20 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	12/20	25	16/3E	6.4	48.8	52.8	3,740	1,125	0.795	0.22	0.37	139	3.58
☐ 12/20 kV · 3×35 + 3×25/3E + 3×2.5ST + 6ÜLKON	12/20	35	25/3E	7.6	51.3	55.3	4,270	1,575	0.565	0.24	0.35	172	5.01
☐ 12/20 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	12/20	50	25/3E	9.1	56.7	60.7	5,270	2,250	0.393	0.27	0.33	215	7.15
☐ 12/20 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	12/20	70	35/3E	10.9	61.3	65.3	6,390	3,150	0.277	0.31	0.32	265	10.01
☐ 12/20 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	12/20	95	50/3E	12.6	66.4	70.4	7,770	4,275	0.210	0.34	0.30	319	13.59
☐ 12/20 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	12/20	120	70/3E	14.2	70.2	74.2	9,160	5,400	0.164	0.38	0.29	371	17.16
☐ 12/20 kV · 3×150 + 3×70/3E + 3×2.5ST + 6ÜLKON	12/20	150	70/3E	15.8	71.1	75.1	9,820	6,750	0.129	0.42	0.28	428	21.45
☐ 12/20 kV · 3×185 + 3×95/3E + 3×2.5ST + 6ÜLKON	12/20	185	95/3E	17.8	71.2	75.2	10,200	8,325	0.106	0.64	0.26	488	26.46

Designation (N)TSCGECWÖU	Voltage kV	Phase mm ²	Earth mm ²	Cond. Ø mm	Min. OD mm	Max. OD mm	Mass ≈ kg/km	Tensile 15N/mm ² N	DC Res. 20°C Ω/km	Cap. μF/km	Ind. mH/km	Current 30°C A	1s Short-Cct kA
☐ 12/20 kV · 3×240 + 3×120/3E + 3×2.5ST + 6ÜLKON	12/20	240	120/3E	20.4	74.5	78.5	11,800	10,800	0.080	0.69	0.25	574	34.32
☐ 14/25 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	14/25	25	16/3E	6.4	54.6	58.6	4,100	1,125	0.795	0.19	0.40	139	3.58
☐ 14/25 kV · 3×35 + 3×25/3E + 3×2.5ST + 6ÜLKON	14/25	35	25/3E	7.6	57.1	61.1	4,640	1,575	0.565	0.21	0.37	172	5.01
☐ 14/25 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	14/25	50	25/3E	9.1	61.0	65.0	5,550	2,250	0.393	0.23	0.35	215	7.15
☐ 14/25 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	14/25	70	35/3E	10.9	66.6	70.6	6,860	3,150	0.277	0.26	0.33	265	10.01
☐ 14/25 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	14/25	95	50/3E	12.6	70.2	74.2	8,110	4,275	0.210	0.29	0.32	319	13.59
☐ 14/25 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	14/25	120	70/3E	14.2	73.9	77.9	9,450	5,400	0.164	0.32	0.31	371	17.16
☐ 18/30 kV · 3×25 + 3×16/3E + 3×2.5ST + 6ÜLKON	18/30	25	16/3E	6.4	58.0	62.0	4,490	1,125	0.795	0.17	0.42	139	3.58
☐ 18/30 kV · 3×35 + 3×25/3E + 3×2.5ST + 6ÜLKON	18/30	35	25/3E	7.6	60.7	64.7	5,060	1,575	0.565	0.18	0.39	172	5.01
☐ 18/30 kV · 3×50 + 3×25/3E + 3×2.5ST + 6ÜLKON	18/30	50	25/3E	9.1	66.1	70.1	6,220	2,250	0.393	0.20	0.37	215	7.15
☐ 18/30 kV · 3×70 + 3×35/3E + 3×2.5ST + 6ÜLKON	18/30	70	35/3E	10.9	70.0	74.0	7,330	3,150	0.277	0.23	0.35	265	10.01
☐ 18/30 kV · 3×95 + 3×50/3E + 3×2.5ST + 6ÜLKON	18/30	95	50/3E	12.6	73.9	77.9	8,660	4,275	0.210	0.25	0.33	319	13.59
☐ 18/30 kV · 3×120 + 3×70/3E + 3×2.5ST + 6ÜLKON	18/30	120	70/3E	14.2	78.6	83.6	10,250	5,400	0.164	0.27	0.32	371	17.16

- Tabulated tensile values correspond to 15 N/mm² dynamic reeling duty; slow-speed TBM backup advance duty is rated up to 30 N/mm² (2× the tabulated N value).
- Nominal current carrying capacity is stated for rubber cables laid on a surface at 30 °C ambient temperature.

Coal-Cutter & Cable-Chain Series

7 sizes

Designation NTSCGECWÖU	Voltage kV	Phase mm ²	Earth mm ²	Cond. Ø mm	Min. OD mm	Max. OD mm	Max. pull N	Mass ≈ kg/km	Current 30°C A
1.8/3 kV · 3×50 + 3×25/3E + 3×2.5ST + ÜL	1.8/3	50	25/3E	9.3	45.0	49.0	2,250	3,260	200
1.8/3 kV · 3×70 + 3×35/3E + 3×2.5ST + ÜL	1.8/3	70	35/3E	11.4	49.0	53.0	3,150	4,200	250
1.8/3 kV · 3×95 + 3×50/3E + 3×2.5ST + ÜL	1.8/3	95	50/3E	13.0	55.0	59.0	4,275	5,360	300
3.6/6 kV · 3×(35+35/3) + 2×(2×0.75ST) + 2×0.75ÜL	3.6/6	35	35/3E	8.1	47.0	50.0	1,575	3,660	160
3.6/6 kV · 3×(50+50/3) + 2×(2×0.75ST) + 2×0.75ÜL	3.6/6	50	50/3E	9.3	52.0	55.0	2,250	4,590	200
3.6/6 kV · 3×(70+70/3) + 2×(2×0.75ST) + 2×0.75ÜL	3.6/6	70	70/3E	11.4	56.0	60.0	3,150	5,780	250
3.6/6 kV · 3×(95+95/3) + 2×(2×0.75ST) + 2×0.75ÜL	3.6/6	95	95/3E	13.0	61.0	65.0	4,275	7,250	300

– 3.6/6 kV coal-cutter constructions use full-section split phase earth screens (35/3 to 95/3) and two screened control pairs 2×(2×0.75ST) + 2×0.75ÜL for longwall shearer cable handlers.

Standards and approvals

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

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Email

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Web

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Typical values for this cable type, based on DIN VDE 0250-813 · IEC 60228 Class 5. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.