

## (N)TSCGEWOEU TENAX TTS

### Medium voltage reeling cable



#### Application

Flexible medium voltage reeling cable for application under high mechanical stresses, e.g. high travel speeds, dynamic tensile loads, multiple changes of direction into different planes, churning on running over rollers and torsional stresses. Mainly for mobile equipment, e.g. fast-moving container cranes and large moving equipment.

#### Global data

Brand	TENAX-TTS
Type designation	(N)TSCGEWOEU
Standard	Based on DIN VDE 0250-813

#### Design features

Conductor	Plain copper, fine stranded class 5 according to DIN EN 60228 / VDE 0295
Insulation	Rubber, compound type EPR-SHS EI6, super-clean
Electrical field control	Inner and outer layer of semiconductive rubber compound
Core arrangement	Cores layed up around conductive filler with aramid rope in the center, earth conductor split into the interstices.
Inner sheath	Rubber, special compound, mechanical properties acc. to 5GM3
Reinforcement	Polyester anti-torsion braid
Outer sheath	Abrasion and tear proof special rubber compound, quality at least 5GM5 acc. to DIN VDE 0207 part 21, resistance to ozone, UV and oil. Sheath colour: red or black with yellow stripe
Marking	Embossed: (N)TSCGEWOEU (number of cores) x (cross-section) (rated voltage) DRAKA DE VDE (Year of manufacture) TENAX TTS

#### Electrical parameters

Rated voltage	3.6/6 kV	6/10 kV	8.7/15 kV	12/20 kV
Max. permissible operating voltage AC	4.2/7.2 kV	6.9/12 kV	10.4/18 kV	13.9/24 kV
Max. permissible operating voltage DC	5.4/10.8 kV	9/18 kV	13.5/27 kV	18/36 kV
AC test voltage	11 kV	17 kV	24 kV	29 kV
Current Carrying Capacity description	According to DIN VDE 0298 Part 4			

#### Thermal parameters

Max. permissible temperature at conductor	90 °C
Max. short circuit temperature of the conductor	250 °C
Ambient temperature for fixed installation	min -40 °C ; max +80 °C
Ambient temperature in fully flexible operation	min -25 °C ; max +80 °C

#### Mechanical parameters

Max. tensile load on the conductor	20 N/mm <sup>2</sup>
Max. tensile load on the conductor during acceleration	25 N/mm <sup>2</sup>
Torsional stress	± 50 °/m
Min. bending radius	Acc. to DIN VDE 0298 part 3
Min. distance with S-type directional changes	20 X D
Travel speed	- Reeling operation: up to 180 m/min

### Rated voltage 3.6/6 kV

Number of cores x cross section	Part number	Conductor diameter max, mm	Outer diameter min, mm	Outer diameter max, mm	Bending radius free moving min, mm	Weight (ca.) kg/km	Permissible tensile force max, N	Dynamic tensile force max, N	Conductor resistance at 20°C max, Ω/km	Nom. operating capacitance μF/km	Inductive Reactance (at 50Hz) Ω/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
3x16+3x16/3		5	36	39	390	1970	960	1200	1.21	0.3	0.121	99	2.29
3x25+3x25/3		6.2	38.5	41.5	415	2380	1500	1875	0.78	0.38	0.102	131	3.58
3x35+3x25/3	20074704	7.7	41.5	44.5	445	2830	2100	2625	0.55	0.43	0.097	162	5.01
3x50+3x25/3	20074720	9.3	44.5	47.5	475	3390	3000	3750	0.39	0.49	0.092	202	7.15
3x70+3x35/3		11.5	50	54	540	4400	4200	5250	0.27	0.55	0.088	250	10.01
3x95+3x50/3		12.8	54	58	580	5300	5700	7125	0.21	0.62	0.084	301	13.59
3x120+3x70/3		14.9	58	62	620	6400	7200	9000	0.16	0.67	0.082	352	17.16
3x150+3x70/3		16.5	63	67	670	7600	9000	11250	0.13	0.73	0.08	404	21.45
3x185+3x95/3		18.5	67	72	720	9200	11100	13875	0.11	0.79	0.078	461	26.46

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).

### Rated voltage 6/10 kV

Number of cores x cross section	Part number	Conductor diameter max, mm	Outer diameter min, mm	Outer diameter max, mm	Bending radius free moving min, mm	Weight (ca.) kg/km	Permissible tensile force max, N	Dynamic tensile force max, N	Conductor resistance at 20°C max, Ω/km	Nom. operating capacitance μF/km	Inductive Reactance (at 50Hz) Ω/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
3x16/16		5	37	41	410	2055	960	1200	1.21	0.26	0.118	99	2.29
3x16+3x16/3	20074723	5	36	39	390	1910	960	1200	1.21	0.26	0.118	99	2.29
3x25+3x25/3	20074717	6.2	40	43	430	2340	1500	1875	0.78	0.35	0.104	131	3.58
3x35+3x25/3	20119291	7.7	43	46	460	2890	2100	2625	0.55	0.39	0.099	162	5.01
3x50+3x25/3	20074713	9.3	45	48	480	3390	3000	3750	0.39	0.45	0.094	202	7.15
3x70+3x35/3	20126712	11.5	50.5	54.5	545	4480	4200	5250	0.27	0.51	0.09	250	10.01
3x95+3x50/3		12.8	54.5	58.5	585	5400	5700	7125	0.21	0.58	0.086	301	13.59
3x120+3x70/3		14.9	58.5	62.5	625	6700	7200	9000	0.16	0.63	0.084	352	17.16
3x150+3x70/3		16.5	63	67	670	7600	9000	11250	0.13	0.69	0.082	404	21.45
3x185+3x95/3		18.5	68	73	730	9350	11100	13875	0.11	0.75	0.08	461	26.46
3x240+3x120/3		21	73	78	780	11850	14400	18000	0.08	0.83	0.078	540	34.32

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).

Rated voltage 8.7/15 kV

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Dynamic tensile force max. N	Conductor resistance at 20°C max. Ω/km	Nom. operating capacitance μF/km	Inductive Reactance (at 50Hz) Ω/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
3x16+3x16/3		5	39	42	420	2210	960	1200	1.21	0.22	0.121	105	2.29
3x25+3x25/3	20121561	6.2	42	45	450	2550	1500	1875	0.78	0.3	0.11	139	3.58
3x35+3x25/3		7.7	45	49	490	3100	2100	2625	0.55	0.33	0.105	172	5.01
3x50+3x25/3	20100279	9.3	49	53	530	3720	3000	3750	0.39	0.37	0.099	215	7.15
3x70+3x35/3		11.5	53	57	570	5050	4200	5250	0.27	0.42	0.094	265	10.01
3x95+3x50/3	20101412	12.8	58	62	620	5900	5700	7125	0.21	0.48	0.089	319	13.59
3x120+3x70/3		14.9	63	67	670	7265	7200	9000	0.16	0.52	0.087	371	17.16
3x150+3x70/3		16.5	66	70	700	8500	9000	11250	0.13	0.57	0.085	428	21.45
3x185+3x95/3		18.5	70	74	740	9900	11100	13875	0.11	0.61	0.083	488	26.46

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).

Rated voltage 12/20 kV

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Dynamic tensile force max. N	Conductor resistance at 20°C max. Ω/km	Nom. operating capacitance μF/km	Inductive Reactance (at 50Hz) Ω/km	Current carrying capacity (1) A	Short Circuit Current (conductor) kA
3x25+3x25/3	20074721	6.2	45	48	480	2860	1500	1875	0.78	0.24	0.115	139	3.58
3x35+3x25/3		7.7	48	51	510	3250	2100	2625	0.55	0.27	0.109	172	5.01
3x50+3x25/3		9.3	51	55	550	4050	3000	3750	0.39	0.3	0.103	215	7.15
3x70+3x35/3	20074735	11.5	56	60	600	4800	4200	5250	0.27	0.34	0.098	265	10.01
3x95+3x50/3		12.8	60	64	640	6450	5700	7125	0.21	0.38	0.094	319	13.59
3x120+3x70/3		14.9	66	70	700	7700	7200	9000	0.16	0.41	0.091	371	17.16
3x150+3x70/3		16.5	69	73	730	8550	9000	11250	0.13	0.45	0.089	428	21.45
3x185+3x95/3		18.5	75	79	790	10600	11100	13875	0.11	0.49	0.086	488	26.46

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).