

## 28kV CU 133% TRXLPE One-Third Neutral LLDPE Primary UD

Single Conductor, 345 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

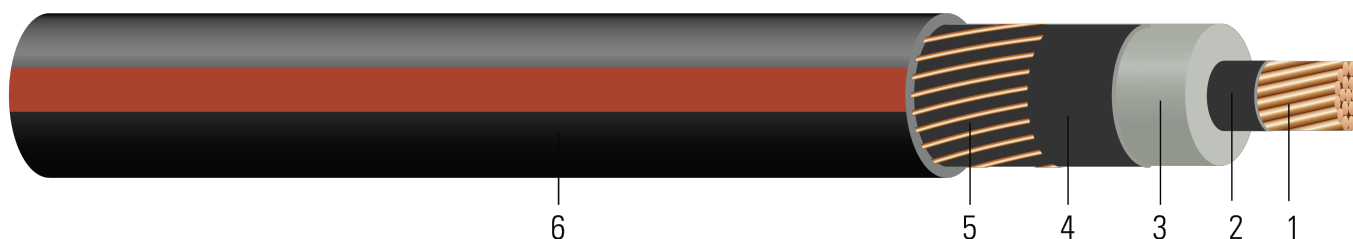


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Moisture blocked class B compressed stranded soft drawn bare copper per ASTM B3 and ASTM B8 (Conductor moisture block optional and tinned copper per ASTM B33 optional)
- Conductor Shield:** Conventional Semi-conducting cross-linked copolymer; Supersmooth conductor shield optional; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
- Insulation:** 345 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
- Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

### APPLICATIONS AND FEATURES:

Southwire's 28kV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, sunlight, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation, 130°C for emergency overload, and 250°C for short circuit conditions. Jacket types available that can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

### SPECIFICATIONS:

- ASTM B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ICEA S-94-649 Standard for Concentric Neutral Cables Rated 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- Rural Utility Standard RUS 1728F-U1 or 1728.204 (Electric standards and specifications for materials and construction)
- UL 1072 Listed as MV 90 When Specified
- Optional CSA 68.5: -40°C and MV 90°C optional marking available upon request

### SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DR(R) [CONDUCTOR SIZE] [AWG or KCMIL] CU 28000 VOLTS TRXLPE INSULATION 345 MILS -- (NESC) --  
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



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**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Neutral DC Resistance 25°C	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension*
	AWG/ Kcmil	inch	inch	mil	inch	No. x AWG	Ω /1000ft	mil	inch	lb /1000ft	inch	lb
TBA	1 (1)	0.289	1.016	345	1.096	7x14	0.376	50	1.324	872	15.9	670
TBA	1 (19)	0.322	1.049	345	1.149	7x14	0.376	50	1.377	931	16.5	670
TBA	1/0 (1)	0.325	1.052	345	1.152	9x14	0.292	50	1.380	1005	16.6	845
TBA	1/0 (19)	0.362	1.089	345	1.189	9x14	0.292	50	1.417	1051	17.0	845
TBA	2/0 (19)	0.405	1.132	345	1.232	11x14	0.239	50	1.460	1190	17.5	1065
TBA	3/0 (19)	0.456	1.183	345	1.283	14x14	0.188	50	1.511	1371	18.1	1342
TBA	4/0 (19)	0.512	1.239	345	1.339	18x14	0.146	50	1.567	1594	18.8	1693
TBA	250 (37)	0.558	1.294	345	1.394	21x14	0.125	50	1.622	1789	19.5	2000
TBA	350 (37)	0.661	1.397	345	1.497	18x12	0.092	80	1.817	2370	21.8	2800
TBA	500 (37)	0.789	1.525	345	1.625	17x10	0.061	80	1.989	3159	23.9	4000
TBA	750 (61)	0.968	1.713	345	1.843	20x9	0.041	80	2.232	4422	26.8	6000
TBA	1000 (61)	1.117	1.862	345	1.992	21x8	0.031	80	2.409	5615	28.9	8000

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor



**Table 2 – Electrical and Engineering Data**

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance*	Positive Sequence Impedance*	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C†	Allowable Ampacity Directly Buried 90°C‡
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
1 (1)	0.129	0.161	0.077	0.054	0.209	1.014	0.451+j0.200	0.162+j0.054	2627.1	180	220
1 (19)	0.129	0.161	0.073	0.053	0.222	1.074	0.451+j0.199	0.162+j0.053	2627.1	180	220
1/0 (1)	0.102	0.128	0.073	0.052	0.223	1.080	0.377+j0.148	0.129+j0.052	3377.6	200	250
1/0 (19)	0.102	0.128	0.068	0.051	0.237	1.147	0.377+j0.147	0.129+j0.051	3377.6	200	250
2/0 (19)	0.081	0.101	0.064	0.049	0.253	1.225	0.317+j0.114	0.102+j0.049	4128.2	230	285
3/0 (19)	0.0642	0.080	0.060	0.047	0.271	1.316	0.258+j0.085	0.082+j0.047	5254.1	260	325
4/0 (19)	0.051	0.064	0.055	0.046	0.292	1.415	0.208+j0.065	0.066+j0.045	6755.3	300	365
250 (37)	0.0431	0.054	0.052	0.044	0.312	1.512	0.179+j0.055	0.057+j0.044	7881.2		
350 (37)	0.0308	0.039	0.046	0.043	0.349	1.692	0.134+j0.044	0.043+j0.042	10732.8	390	475
500 (37)	0.0216	0.028	0.041	0.042	0.394	1.913	0.091+j0.035	0.033+j0.039	16113.0	455	555
750 (61)	0.0144	0.019	0.035	0.040	0.461	2.235	0.062+j0.029	0.026+j0.035	23905.5	545	650
1000 (61)	0.0108	0.015	0.032	0.038	0.513	2.489	0.047+j0.026	0.022+j0.032	31658.9		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)



**Table 3 – Weights and Measurements (Metric)**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Concentric Neutral	Neutral DC Resistance 25°C	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension*
	AWG/Kcmil	mm	mm	mm	mm	No. x AWG	Ω/km	mm	mm	kg/km	mm	newton
TBA	1 (1)	7.34	25.81	8.76	27.84	7x14	1.23	1.27	33.63	1298	403.86	2982
TBA	1 (19)	8.18	26.64	8.76	29.18	7x14	1.23	1.27	34.98	1385	419.10	2982
TBA	1/0 (1)	8.25	26.72	8.76	29.26	9x14	0.96	1.27	35.05	1496	421.64	3760
TBA	1/0 (19)	9.19	27.66	8.76	30.20	9x14	0.96	1.27	35.99	1564	431.80	3760
TBA	2/0 (19)	10.29	28.75	8.76	31.29	11x14	0.78	1.27	37.08	1771	444.50	4739
TBA	3/0 (19)	11.58	30.05	8.76	32.59	14x14	0.62	1.27	38.38	2040	459.74	5972
TBA	4/0 (19)	13.00	31.47	8.76	34.01	18x14	0.48	1.27	39.80	2372	477.52	7534
TBA	250 (37)	14.17	32.87	8.76	35.41	21x14	0.41	1.27	41.20	2662	495.30	8900
TBA	350 (37)	16.79	35.48	8.76	38.02	18x12	0.30	2.03	46.15	3527	553.72	12460
TBA	500 (37)	20.04	38.73	8.76	41.28	17x10	0.20	2.03	50.52	4701	607.06	17800
TBA	750 (61)	24.59	43.51	8.76	46.81	20x9	0.13	2.03	56.69	6581	680.72	26700
TBA	1000 (61)	28.37	47.29	8.76	50.60	21x8	0.10	2.03	61.19	8356	734.06	35600

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor



**Table 4 – Electrical and Engineering Data (Metric)**

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Charging Current	Dielectric Loss	Zero Sequence Impedance*	Positive Sequence Impedance*	Short Circuit Current @ 30 Cycle	Allowable Ampacity in Duct 90°C†	Allowable Ampacity Directly Buried 90°C‡
AWG/Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
1 (1)	0.4232	0.53	0.0235	0.1772	0.686	3.3268	0.451+j0.200	0.162+j0.054	2627.1	180	220
1 (19)	0.4232	0.53	0.0223	0.1739	0.728	3.5236	0.451+j0.199	0.162+j0.053	2627.1	180	220
1/0 (1)	0.3346	0.42	0.0223	0.1706	0.732	3.5433	0.377+j0.148	0.129+j0.052	3377.6	200	250
1/0 (19)	0.3346	0.42	0.0207	0.1673	0.778	3.7631	0.377+j0.147	0.129+j0.051	3377.6	200	250
2/0 (19)	0.2657	0.33	0.0195	0.1608	0.830	4.0190	0.317+j0.114	0.102+j0.049	4128.2	230	285
3/0 (19)	0.2106	0.26	0.0183	0.1542	0.889	4.3176	0.258+j0.085	0.082+j0.047	5254.1	260	325
4/0 (19)	0.1673	0.21	0.0168	0.1509	0.958	4.6424	0.208+j0.065	0.066+j0.045	6755.3	300	365
250 (37)	0.1414	0.18	0.0158	0.1444	1.024	4.9606	0.179+j0.055	0.057+j0.044	7881.2		
350 (37)	0.1010	0.13	0.0140	0.1411	1.145	5.5512	0.134+j0.044	0.043+j0.042	10732.8	390	475
500 (37)	0.0709	0.09	0.0125	0.1378	1.293	6.2762	0.091+j0.035	0.033+j0.039	16113.0	455	555
750 (61)	0.0472	0.06	0.0107	0.1312	1.512	7.3327	0.062+j0.029	0.026+j0.035	23905.5	545	650
1000 (61)	0.0354	0.05	0.0098	0.1247	1.683	8.1660	0.047+j0.026	0.022+j0.032	31658.9		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

