

## 28kV AL 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

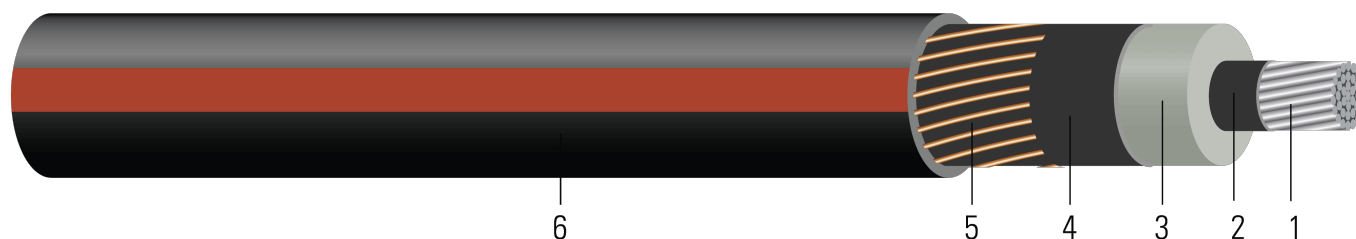


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350  $\frac{3}{4}$  hard H16/H26 ( Non Moisture Blocked 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 B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- 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] AL 28000 VOLTS TRXLPE INSULATION 345 MILS -- (NESC) --  
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



Southwire

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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	6x14	0.438	50	1.324	685	10.5	502
TBA	1 (19)	0.322	1.049	345	1.149	6x14	0.438	50	1.377	739	11.0	502
TBA	1/0 (1)	0.325	1.052	345	1.152	6x14	0.438	50	1.380	750	11.	634
TBA	1/0 (19)	0.352	1.079	345	1.179	6x14	0.438	50	1.407	778	11.2	634
TBA	2/0 (19)	0.395	1.122	345	1.222	7x14	0.376	50	1.450	847	110	799
TBA	3/0 (19)	0.443	1.170	345	1.270	9x14	0.292	50	1.498	937	11.9	1007
TBA	4/0 (19)	0.498	1.225	345	1.325	11x14	0.239	50	1.553	1042	12.4	1270
TBA	250 (37)	0.558	1.294	345	1.394	13x14	0.202	50	1.622	1163	12.9	1500
TBA	350 (37)	0.661	1.397	345	1.497	18x14	0.146	80	1.785	1463	14.	2100
TBA	500 (37)	0.789	1.525	345	1.625	16x12	0.104	80	1.945	1837	15.	3000
TBA	750 (61)	0.968	1.713	345	1.843	24x12	0.069	80	2.163	2433	17.3	4500
TBA	1000 (61)	1.117	1.862	345	1.992	20x10	0.052	80	2.356	3011	18.8	6000

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)	0.211	0.265	0.077	0.054	0.209	1.014	0.578+j0.239	0.266+j0.054	2251.8	140	175
1 (19)	0.211	0.265	0.073	0.053	0.222	1.074	0.577+j0.238	0.266+j0.053	2251.8	140	175
1/0 (1)	0.168	0.211	0.073	0.052	0.223	1.080	0.523+j0.238	0.212+j0.052	2251.8	155	195
1/0 (19)	0.168	0.211	0.069	0.051	0.233	1.129	0.522+j0.237	0.212+j0.051	2251.8	155	195
2/0 (19)	0.133	0.167	0.065	0.050	0.249	1.207	0.456+j0.197	0.168+j0.049	2627.1	180	225
3/0 (19)	0.105	0.132	0.061	0.048	0.267	1.293	0.381+j0.144	0.133+j0.048	3377.6	200	255
4/0 (19)	0.0836	0.105	0.056	0.046	0.287	1.391	0.320+j0.112	0.106+j0.046	4128.2	235	285
250 (37)	0.0707	0.089	0.052	0.044	0.312	1.512	0.278+j0.090	0.091+j0.044	4878.8		
350 (37)	0.0505	0.064	0.046	0.043	0.349	1.692	0.207+j0.062	0.066+j0.043	6755.3	310	375
500 (37)	0.0354	0.045	0.041	0.041	0.394	1.913	0.151+j0.046	0.048+j0.040	9540.3	370	450
750 (61)	0.0236	0.030	0.035	0.039	0.461	2.235	0.102+j0.033	0.035+j0.037	14310.5	460	545
1000 (61)	0.0177	0.023	0.032	0.038	0.513	2.489	0.077+j0.029	0.029+j0.035	18956.4	520	620

\* 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	6x14	1.44	1.27	33.63	1019	266.70	2234
TBA	1 (19)	8.18	26.64	8.76	29.18	6x14	1.44	1.27	34.98	1100	279.40	2234
TBA	1/0 (1)	8.25	26.72	8.76	29.26	6x14	1.44	1.27	35.05	1116	279.40	2821
TBA	1/0 (19)	8.94	27.41	8.76	29.95	6x14	1.44	1.27	35.74	1158	284.48	2821
TBA	2/0 (19)	10.03	28.50	8.76	31.04	7x14	1.23	1.27	36.83	1260	2794.00	3556
TBA	3/0 (19)	11.25	29.72	8.76	32.26	9x14	0.96	1.27	38.05	1394	302.26	4481
TBA	4/0 (19)	12.65	31.12	8.76	33.65	11x14	0.78	1.27	39.45	1551	314.96	5652
TBA	250 (37)	14.17	32.87	8.76	35.41	13x14	0.66	1.27	41.20	1731	327.66	6675
TBA	350 (37)	16.79	35.48	8.76	38.02	18x14	0.48	2.03	45.34	2177	355.60	9345
TBA	500 (37)	20.04	38.73	8.76	41.28	16x12	0.34	2.03	49.40	2734	381.00	13350
TBA	750 (61)	24.59	43.51	8.76	46.81	24x12	0.23	2.03	54.94	3621	439.42	20025
TBA	1000 (61)	28.37	47.29	8.76	50.60	20x10	0.17	2.03	59.84	4481	477.52	26700

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)	0.6923	0.87	0.0235	0.1772	0.686	3.3268	0.578+j0.239	0.266+j0.054	2251.8	140	175
1 (19)	0.6923	0.87	0.0223	0.1739	0.728	3.5236	0.577+j0.238	0.266+j0.053	2251.8	140	175
1/0 (1)	0.5512	0.69	0.0223	0.1706	0.732	3.5433	0.523+j0.238	0.212+j0.052	2251.8	155	195
1/0 (19)	0.5512	0.69	0.0210	0.1673	0.764	3.7041	0.522+j0.237	0.212+j0.051	2251.8	155	195
2/0 (19)	0.4364	0.55	0.0198	0.1640	0.817	3.9600	0.456+j0.197	0.168+j0.049	2627.1	180	225
3/0 (19)	0.3445	0.43	0.0186	0.1575	0.876	4.2421	0.381+j0.144	0.133+j0.048	3377.6	200	255
4/0 (19)	0.2743	0.34	0.0171	0.1509	0.942	4.5636	0.320+j0.112	0.106+j0.046	4128.2	235	285
250 (37)	0.2320	0.29	0.0158	0.1444	1.024	4.9606	0.278+j0.090	0.091+j0.044	4878.8		
350 (37)	0.1657	0.21	0.0140	0.1411	1.145	5.5512	0.207+j0.062	0.066+j0.043	6755.3	310	375
500 (37)	0.1161	0.15	0.0125	0.1345	1.293	6.2762	0.151+j0.046	0.048+j0.040	9540.3	370	450
750 (61)	0.0774	0.10	0.0107	0.1280	1.512	7.3327	0.102+j0.033	0.035+j0.037	14310.5	460	545
1000 (61)	0.0581	0.08	0.0098	0.1247	1.683	8.1660	0.077+j0.029	0.029+j0.035	18956.4	520	620

\* 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)

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