28kV AL 133% TRXLPE Full Neutral LLDPE

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



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 ¾ hard H16/H26 (Non Moisture Blocked Optional)
2. **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
3. **Insulation:** 345 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Concentric Neutral:** Helically applied soft drawn bare copper full concentric neutral
6. **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, 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 (Qualification Test Requirements)
- 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: -40ºC and MV 90ºC optional marking available upon request

SAMPLE PRINT LEGEND:

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

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Table 1 – Weights and Measurements

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
1 (Solid)	0.289	1.017	345	1.127	13x14	0.202	50	1.355	863	10.8	502
1 (19)	0.322	1.050	345	1.160	13x14	0.202	50	1.388	888	11.1	502
1/0 (Solid)	0.324	1.052	345	1.162	16x14	0.164	50	1.390	951	11.1	633
1/0 (19)	0.351	1.079	345	1.189	16x14	0.164	50	1.417	973	11.3	633
2/0 (19)	0.395	1.123	345	1.233	20x14	0.131	50	1.461	1086	11.7	798
3/0 (19)	0.443	1.171	345	1.281	25x14	0.105	50	1.509	1223	12.1	1006
4/0 (19)	0.498	1.226	345	1.336	32x14	0.082	50	1.564	1400	12.5	1269
250 (37)	0.558	1.294	345	1.404	25x12	0.066	75	1.716	1666	13.7	1500
350 (37)	0.661	1.397	345	1.507	32x12	0.051	75	1.819	1991	14.6	2100

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 (Solid)	0.129	0.162	0.085	0.057	0.109	1.76	0.216 + j0.752	0.162 + j0.055	4533	140	170
1 (19)	0.211	0.266	0.080	0.055	0.116	1.88	0.320 + j0.751	0.266 + j0.056	4533	140	170
1/0 (Solid)	0.102	0.128	0.079	0.055	0.116	1.88	0.182 + j0.749	0.128 + j0.053	5579	155	195
1/0 (19)	0.167	0.211	0.076	0.054	0.122	1.97	0.265 + j0.748	0.211 + j0.053	5579	155	195
2/0 (19)	0.133	0.167	0.071	0.052	0.131	2.12	0.221 + j0.744	0.167 + j0.051	6974	180	220
3/0 (19)	0.105	0.132	0.066	0.050	0.141	2.28	0.186 + j0.740	0.132 + j0.050	8718	205	250
4/0 (19)	0.084	0.105	0.061	0.048	0.152	2.46	0.159 + j0.735	0.105 + j0.048	11159	235	285
250 (37)	0.071	0.090	0.057	0.048	0.163	2.64	0.144 + j0.729	0.090 + j0.048	13852	254	307
350 (37)	0.050	0.065	0.050	0.045	0.183	2.96	0.119 + j0.722	0.065 + j0.045	17730	305	365

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*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3
*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.
*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.

Table 3 – Weights and Measurements (Metric)

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
1 (Solid)	7.34	25.83	8.76	28.63	13x14	0.66	1.27	34.42	1284	274.32	2234
1 (19)	8.18	26.67	8.76	29.46	13x14	0.66	1.27	35.26	1321	281.94	2234
1/0 (Solid)	8.23	26.72	8.76	29.51	16x14	0.54	1.27	35.31	1415	281.94	2817
1/0 (19)	8.92	27.41	8.76	30.20	16x14	0.54	1.27	35.99	1448	287.02	2817
2/0 (19)	10.03	28.52	8.76	31.32	20x14	0.43	1.27	37.11	1616	297.18	3551
3/0 (19)	11.25	29.74	8.76	32.54	25x14	0.34	1.27	38.33	1820	307.34	4477
4/0 (19)	12.65	31.14	8.76	33.93	32x14	0.27	1.27	39.73	2083	317.50	5647
250 (37)	14.17	32.87	8.76	35.66	25x12	0.22	1.91	43.59	2479	347.98	6675
350 (37)	16.79	35.48	8.76	38.28	32x12	0.17	1.91	46.20	2963	370.84	9345

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

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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 (Solid)	0.4232	0.53	0.0259	0.1870	0.358	5.7743	0.216 + j0.752	0.162 + j0.055	4533	140	170
1 (19)	0.6923	0.87	0.0244	0.1804	0.381	6.1680	0.320 + j0.751	0.266 + j0.056	4533	140	170
1/0 (Solid)	0.3346	0.42	0.0241	0.1804	0.381	6.1680	0.182 + j0.749	0.128 + j0.053	5579	155	195
1/0 (19)	0.5479	0.69	0.0232	0.1772	0.400	6.4633	0.265 + j0.748	0.211 + j0.053	5579	155	195
2/0 (19)	0.4364	0.55	0.0216	0.1706	0.430	6.9554	0.221 + j0.744	0.167 + j0.051	6974	180	220
3/0 (19)	0.3445	0.43	0.0201	0.1640	0.463	7.4803	0.186 + j0.740	0.132 + j0.050	8718	205	250
4/0 (19)	0.2756	0.34	0.0186	0.1575	0.499	8.0709	0.159 + j0.735	0.105 + j0.048	11159	235	285
250 (37)	0.2329	0.30	0.0174	0.1575	0.535	8.6614	0.144 + j0.729	0.090 + j0.048	13852	254	307
350 (37)	0.1640	0.21	0.0152	0.1476	0.600	9.7113	0.119 + j0.722	0.065 + j0.045	17730	305	365

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3
*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.
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CN Calculator