28kV AL 133% TRXLPE One-Third Neutral LLDPE

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:

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 one-third 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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	6x14	0.438	50	1.355	769	10.8	502
1 (19)	0.322	1.050	345	1.160	6x14	0.438	50	1.388	794	11.1	502
1/0 (Solid)	0.324	1.052	345	1.162	6x14	0.438	50	1.390	816	11.1	633
1/0 (19)	0.351	1.079	345	1.189	6x14	0.438	50	1.417	837	11.3	633
2/0 (19)	0.395	1.123	345	1.233	7x14	0.375	50	1.461	910	11.7	798
3/0 (19)	0.443	1.171	345	1.281	9x14	0.292	50	1.509	1007	12.1	1006
4/0 (19)	0.498	1.226	345	1.336	11x14	0.239	50	1.564	1116	12.5	1269
250 (37)	0.558	1.294	345	1.404	13x14	0.202	75	1.682	1317	13.5	1500
350 (37)	0.661	1.397	345	1.507	18x14	0.146	75	1.785	1563	14.3	2100
500 (37)	0.789	1.525	345	1.665	16x12	0.103	75	1.977	1947	15.8	3000
750 (61)	0.968	1.714	345	1.854	24x12	0.069	75	2.166	2531	17.3	4500
1000 (61)	1.117	1.863	345	2.003	20x10	0.052	75	2.357	3068	18.9	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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	2092	140	175
1 (19)	0.211	0.266	0.080	0.055	0.116	1.88	0.320 + j0.751	0.266 + j0.056	2092	140	175
1/0 (Solid)	0.102	0.128	0.079	0.055	0.116	1.88	0.182 + j0.749	0.128 + j0.053	2092	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	2092	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	2441	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	3138	200	250
4/0 (19)	0.084	0.105	0.061	0.048	0.152	2.46	0.159 + j0.735	0.105 + j0.048	3836	235	285
250 (37)	0.071	0.090	0.057	0.047	0.163	2.64	0.144 + j0.730	0.090 + j0.047	4533	256	309
350 (37)	0.050	0.065	0.050	0.045	0.183	2.96	0.119 + j0.723	0.065 + j0.045	6277	310	370
500 (37)	0.035	0.046	0.044	0.043	0.208	3.36	0.011 + j0.714	0.046 + j0.043	8865	370	445
750 (61)	0.024	0.033	0.038	0.040	0.240	3.88	0.087 + j0.705	0.033 + j0.040	13298	460	525
1000 (61)	0.018	0.026	0.034	0.039	0.268	4.33	0.080 + j0.698	0.026 + j0.039	17615	520	575

*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.

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	6x14	1.44	1.27	34.42	1144	274.32	2234
1 (19)	8.18	26.67	8.76	29.46	6x14	1.44	1.27	35.26	1182	281.94	2234
1/0 (Solid)	8.23	26.72	8.76	29.51	6x14	1.44	1.27	35.31	1214	281.94	2817
1/0 (19)	8.92	27.41	8.76	30.20	6x14	1.44	1.27	35.99	1246	287.02	2817
2/0 (19)	10.03	28.52	8.76	31.32	7x14	1.23	1.27	37.11	1354	297.18	3551
3/0 (19)	11.25	29.74	8.76	32.54	9x14	0.96	1.27	38.33	1499	307.34	4477
4/0 (19)	12.65	31.14	8.76	33.93	11x14	0.78	1.27	39.73	1661	317.50	5647
250 (37)	14.17	32.87	8.76	35.66	13x14	0.66	1.91	42.72	1960	342.90	6675
350 (37)	16.79	35.48	8.76	38.28	18x14	0.48	1.91	45.34	2326	363.22	9345
500 (37)	20.04	38.73	8.76	42.29	16x12	0.34	1.91	50.22	2897	401.32	13350
750 (61)	24.59	43.54	8.76	47.09	24x12	0.23	1.91	55.02	3767	439.42	20025
1000 (61)	28.37	47.32	8.76	50.88	20x10	0.17	1.91	59.87	4566	480.06	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

Copyright © 2024 Southwire Company, LLC. All Rights Reserved

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	2092	140	175
1 (19)	0.6923	0.87	0.0244	0.1804	0.381	6.1680	0.320 + j0.751	0.266 + j0.056	2092	140	175
1/0 (Solid)	0.3346	0.42	0.0241	0.1804	0.381	6.1680	0.182 + j0.749	0.128 + j0.053	2092	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	2092	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	2441	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	3138	200	250
4/0 (19)	0.2756	0.34	0.0186	0.1575	0.499	8.0709	0.159 + j0.735	0.105 + j0.048	3836	235	285
250 (37)	0.2329	0.30	0.0174	0.1542	0.535	8.6614	0.144 + j0.730	0.090 + j0.047	4533	256	309
350 (37)	0.1640	0.21	0.0152	0.1476	0.600	9.7113	0.119 + j0.723	0.065 + j0.045	6277	310	370
500 (37)	0.1148	0.15	0.0134	0.1411	0.682	11.0236	0.011 + j0.714	0.046 + j0.043	8865	370	445
750 (61)	0.0787	0.11	0.0116	0.1312	0.787	12.7297	0.087 + j0.705	0.033 + j0.040	13298	460	525
1000 (61)	0.0591	0.09	0.0104	0.1280	0.879	14.2060	0.080 + j0.698	0.026 + j0.039	17615	520	575

*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.

CN Calculator