



28kV AL 100% TRXLPE One-Third Neutral LLDPE

Single Conductor, 280 Mils Tree Retardant Cross Linked Polyethylene, 100% 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:** 280 Mils Tree Retardant Cross Linked Polyethylene 100% 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: -40°C and MV 90°C optional marking available upon request

SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 28000 VOLTS TRXLPE INSULATION 280 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



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 (Solid)	0.289	0.887	280	0.977	4x14	0.657	50	1.205	600	9.6	502
TBA	1 (19)	0.322	0.920	280	1.010	4x14	0.657	50	1.238	620	9.9	502
TBA	1/0 (Solid)	0.324	0.922	280	1.012	5x14	0.526	50	1.240	657	9.9	633
TBA	1/0 (19)	0.351	0.949	280	1.039	5x14	0.526	50	1.267	674	10.1	633
TBA	2/0 (19)	0.395	0.993	280	1.083	7x14	0.375	50	1.311	756	10.5	798
TBA	3/0 (19)	0.443	1.041	280	1.151	8x14	0.328	50	1.379	853	11.0	1006
618979	4/0 (19)	0.498	1.102	280	1.212	11x14	0.239	50	1.440	938	11.5	1269
TBA	250 (37)	0.558	1.164	280	1.274	12x14	0.219	50	1.502	1069	12.0	1500
TBA	350 (37)	0.661	1.267	280	1.377	17x14	0.154	75	1.655	1378	13.2	2100
TBA	500 (37)	0.789	1.395	280	1.505	25x14	0.105	75	1.783	1718	14.3	3000
TBA	750 (61)	0.968	1.584	280	1.724	23x12	0.072	75	2.036	2303	16.3	4500
TBA	1000 (61)	1.117	1.733	280	1.873	20x10	0.052	75	2.227	2844	17.8	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 (Solid)	0.129	0.162	0.067	0.054	0.238	1.2	0.215 + j0.748	0.162 + j0.055	1443	140	175
1 (19)	0.211	0.266	0.063	0.053	0.253	1.2	0.319 + j0.744	0.266 + j0.053	1443	140	175
1/0 (Solid)	0.102	0.128	0.063	0.052	0.254	1.2	0.181 + j0.747	0.128 + j0.053	1821	155	195
1/0 (19)	0.167	0.211	0.060	0.051	0.267	1.3	0.264 + j0.745	0.211 + j0.052	1821	155	195
2/0 (19)	0.133	0.167	0.056	0.049	0.286	1.4	0.221 + j0.744	0.167 + j0.050	2296	180	220
3/0 (19)	0.105	0.132	0.052	0.048	0.307	1.5	0.186 + j0.740	0.132 + j0.048	2895	200	250
4/0 (19)	0.084	0.105	0.049	0.046	0.329	1.6	0.159 + j0.738	0.105 + j0.047	3836	235	285
250 (37)	0.071	0.090	0.044	0.044	0.362	1.8	0.144 + j0.733	0.090 + j0.045	4313	256	309
350 (37)	0.050	0.065	0.039	0.043	0.407	2.0	0.119 + j0.726	0.065 + j0.043	6038	310	370
500 (37)	0.035	0.046	0.034	0.040	0.462	2.2	0.100 + j0.719	0.046 + j0.041	8626	370	445
750 (61)	0.024	0.033	0.029	0.039	0.544	2.6	0.087 + j0.708	0.033 + j0.039	12940	460	525
1000 (61)	0.018	0.026	0.026	0.038	0.608	2.9	0.080 + j0.700	0.026 + j0.038	17253	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, Spacing: one diameter spacing center-to-center.



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 (Solid)	7.34	22.53	7.11	24.82	4x14	2.16	1.27	30.61	893	243.84	2234
TBA	1 (19)	8.18	23.37	7.11	25.65	4x14	2.16	1.27	31.45	923	251.46	2234
TBA	1/0 (Solid)	8.23	23.42	7.11	25.70	5x14	1.73	1.27	31.50	978	251.46	2817
TBA	1/0 (19)	8.92	24.10	7.11	26.39	5x14	1.73	1.27	32.18	1003	256.54	2817
TBA	2/0 (19)	10.03	25.22	7.11	27.51	7x14	1.23	1.27	33.30	1125	266.70	3551
TBA	3/0 (19)	11.25	26.44	7.11	29.24	8x14	1.08	1.27	35.03	1269	279.40	4477
618979	4/0 (19)	12.65	27.99	7.11	30.78	11x14	0.78	1.27	36.58	1396	292.10	5647
TBA	250 (37)	14.17	29.57	7.11	32.36	12x14	0.72	1.27	38.15	1591	304.80	6675
TBA	350 (37)	16.79	32.18	7.11	34.98	17x14	0.51	1.91	42.04	2051	335.28	9345
TBA	500 (37)	20.04	35.43	7.11	38.23	25x14	0.34	1.91	45.29	2557	363.22	13350
TBA	750 (61)	24.59	40.23	7.11	43.79	23x12	0.24	1.91	51.71	3427	414.02	20025
TBA	1000 (61)	28.37	44.02	7.11	47.57	20x10	0.17	1.91	56.57	4232	452.12	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 (Solid)	0.4232	0.53	0.0204	0.1772	0.781	3.9370	0.215 + j0.748	0.162 + j0.055	1443	140	175
1 (19)	0.6923	0.87	0.0192	0.1739	0.830	3.9370	0.319 + j0.744	0.266 + j0.053	1443	140	175
1/0 (Solid)	0.3346	0.42	0.0192	0.1706	0.833	3.9370	0.181 + j0.747	0.128 + j0.053	1821	155	195
1/0 (19)	0.5479	0.69	0.0183	0.1673	0.876	4.2651	0.264 + j0.745	0.211 + j0.052	1821	155	195
2/0 (19)	0.4364	0.55	0.0171	0.1608	0.938	4.5932	0.221 + j0.744	0.167 + j0.050	2296	180	220
3/0 (19)	0.3445	0.43	0.0158	0.1575	1.007	4.9213	0.186 + j0.740	0.132 + j0.048	2895	200	250
4/0 (19)	0.2756	0.34	0.0149	0.1509	1.079	5.2493	0.159 + j0.738	0.105 + j0.047	3836	235	285
250 (37)	0.2329	0.30	0.0134	0.1444	1.188	5.9055	0.144 + j0.733	0.090 + j0.045	4313	256	309
350 (37)	0.1640	0.21	0.0119	0.1411	1.335	6.5617	0.119 + j0.726	0.065 + j0.043	6038	310	370
500 (37)	0.1148	0.15	0.0104	0.1312	1.516	7.2178	0.100 + j0.719	0.046 + j0.041	8626	370	445
750 (61)	0.0787	0.11	0.0088	0.1280	1.785	8.5302	0.087 + j0.708	0.033 + j0.039	12940	460	525
1000 (61)	0.0591	0.09	0.0079	0.1247	1.995	9.5144	0.080 + j0.700	0.026 + j0.038	17253	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, Spacing: one diameter spacing center-to-center.

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Calculator

