

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



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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 (Solid)	0.289	0.887	280	0.977	6x14	0.438	50	1.205	626	9.6	502
TBA	1 (19)	0.322	0.920	280	1.010	6x14	0.438	50	1.238	646	9.9	502
TBA	1/0 (Solid)	0.324	0.922	280	1.012	6x14	0.438	50	1.240	669	9.9	633
TBA	1/0 (19)	0.351	0.949	280	1.039	6x14	0.438	50	1.267	685	10.1	633
TBA	2/0 (19)	0.395	0.993	280	1.083	7x14	0.375	50	1.311	753	10.5	798
TBA	3/0 (19)	0.443	1.041	280	1.151	9x14	0.292	50	1.379	865	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	13x14	0.202	50	1.502	1080	12.0	1500
TBA	350 (37)	0.661	1.267	280	1.377	18x14	0.146	75	1.655	1391	13.2	2100
TBA	500 (37)	0.789	1.395	280	1.505	16x12	0.103	75	1.817	1717	14.5	3000
TBA	750 (61)	0.968	1.584	280	1.724	24x12	0.069	75	2.036	2321	16.3	4500
TBA	1000 (61)	1.117	1.733	280	1.873	20x10	0.052	75	2.227	2843	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	0.076	0.054	0.122	1.97	0.216 + j0.758	0.162 + j0.052	2092	140	175
1 (19)	0.211	0.266	0.071	0.053	0.130	2.10	0.320 + j0.757	0.266 + j0.053	2092	140	175
1/0 (Solid)	0.102	0.128	0.070	0.052	0.131	2.12	0.182 + j0.754	0.128 + j0.050	2092	155	195
1/0 (19)	0.167	0.211	0.067	0.051	0.138	2.23	0.265 + j0.753	0.211 + j0.051	2092	155	195
2/0 (19)	0.133	0.167	0.062	0.049	0.148	2.39	0.221 + j0.749	0.167 + j0.049	2441	180	220
3/0 (19)	0.105	0.132	0.058	0.048	0.160	2.59	0.186 + j0.744	0.132 + j0.047	3138	200	250
4/0 (19)	0.084	0.105	0.053	0.046	0.174	2.81	0.159 + j0.739	0.105 + j0.046	3836	235	285
250 (37)	0.071	0.090	0.050	0.044	0.186	3.01	0.144 + j0.735	0.090 + j0.045	4533	256	309
350 (37)	0.050	0.065	0.044	0.043	0.211	3.41	0.119 + j0.727	0.065 + j0.043	6277	310	370
500 (37)	0.035	0.046	0.038	0.041	0.240	3.88	0.011 + j0.718	0.046 + j0.041	8865	370	445
750 (61)	0.024	0.033	0.033	0.039	0.278	4.49	0.087 + j0.708	0.033 + j0.039	13298	460	525
1000 (61)	0.018	0.026	0.029	0.038	0.312	5.04	0.080 + j0.701	0.026 + j0.038	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.



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	6x14	1.44	1.27	30.61	932	243.84	2234
TBA	1 (19)	8.18	23.37	7.11	25.65	6x14	1.44	1.27	31.45	961	251.46	2234
TBA	1/0 (Solid)	8.23	23.42	7.11	25.70	6x14	1.44	1.27	31.50	996	251.46	2817
TBA	1/0 (19)	8.92	24.10	7.11	26.39	6x14	1.44	1.27	32.18	1019	256.54	2817
TBA	2/0 (19)	10.03	25.22	7.11	27.51	7x14	1.23	1.27	33.30	1121	266.70	3551
TBA	3/0 (19)	11.25	26.44	7.11	29.24	9x14	0.96	1.27	35.03	1287	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	13x14	0.66	1.27	38.15	1607	304.80	6675
TBA	350 (37)	16.79	32.18	7.11	34.98	18x14	0.48	1.91	42.04	2070	335.28	9345
TBA	500 (37)	20.04	35.43	7.11	38.23	16x12	0.34	1.91	46.15	2555	368.30	13350
TBA	750 (61)	24.59	40.23	7.11	43.79	24x12	0.23	1.91	51.71	3454	414.02	20025
TBA	1000 (61)	28.37	44.02	7.11	47.57	20x10	0.17	1.91	56.57	4231	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	0.0232	0.1772	0.400	6.4633	0.216 + j0.758	0.162 + j0.052	2092	140	175
1 (19)	0.6923	0.87	0.0216	0.1739	0.427	6.8898	0.320 + j0.757	0.266 + j0.053	2092	140	175
1/0 (Solid)	0.3346	0.42	0.0213	0.1706	0.430	6.9554	0.182 + j0.754	0.128 + j0.050	2092	155	195
1/0 (19)	0.5479	0.69	0.0204	0.1673	0.453	7.3163	0.265 + j0.753	0.211 + j0.051	2092	155	195
2/0 (19)	0.4364	0.55	0.0189	0.1608	0.486	7.8412	0.221 + j0.749	0.167 + j0.049	2441	180	220
3/0 (19)	0.3445	0.43	0.0177	0.1575	0.525	8.4974	0.186 + j0.744	0.132 + j0.047	3138	200	250
4/0 (19)	0.2756	0.34	0.0162	0.1509	0.571	9.2192	0.159 + j0.739	0.105 + j0.046	3836	235	285
250 (37)	0.2329	0.30	0.0152	0.1444	0.610	9.8753	0.144 + j0.735	0.090 + j0.045	4533	256	309
350 (37)	0.1640	0.21	0.0134	0.1411	0.692	11.1877	0.119 + j0.727	0.065 + j0.043	6277	310	370
500 (37)	0.1148	0.15	0.0116	0.1345	0.787	12.7297	0.011 + j0.718	0.046 + j0.041	8865	370	445
750 (61)	0.0787	0.11	0.0101	0.1280	0.912	14.7310	0.087 + j0.708	0.033 + j0.039	13298	460	525
1000 (61)	0.0591	0.09	0.0088	0.1247	1.024	16.5354	0.080 + j0.701	0.026 + j0.038	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.

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Calculator



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