28kV CU 100% TRXLPE Full Neutral LLDPE

Single Conductor, 280 Mils Tree Retardant Cross Linked Polyethylene, 100% 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 stranded soft drawn bare copper per ASTM B3 and ASTM B8 (Conductor moisture block optional and tinned copper per ASTM B33 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 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 B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- 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] CU 28000 VOLTS TRXLPE INSULATION 280 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	0.887	280	0.987	21x14	0.154	50	1.215	1029	8.5	669
1 (19)	0.322	0.92	280	1.02	21x14	0.154	50	1.248	1052	8.7	669
1/0 (SOLID)	0.325	0.923	280	1.023	26x14	0.125	50	1.251	1187	8.8	844
1/0 (19)	0.362	0.96	280	1.06	26x14	0.125	50	1.288	1213	9	844
2/0 (19)	0.405	1.003	280	1.123	21x12	0.097	50	1.385	1435	9.7	1064
3/0 (19)	0.456	1.054	280	1.174	26x12	0.079	50	1.436	1679	10.1	1342
4/0 (19)	0.512	1.11	280	1.23	21x10	0.061	50	1.534	2011	10.7	1692
250 (37)	0.558	1.164	280	1.284	25x10	0.051	50	1.588	2301	11.1	2000

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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)	0.128	0.175	0.068	0.055	0.24	3.9	0.320+j0.064	0.179+j0.057	7331	175	220
1 (19)	0.128	0.175	0.064	0.053	0.25	4.1	0.320+j0.065	0.179+j0.058	7331	175	220
1/0 (SOLID)	0.102	0.139	0.064	0.053	0.25	4.1	0.259+j0.052	0.143+j0.055	9076	200	250
1/0 (19)	0.102	0.139	0.06	0.051	0.27	4.4	0.259+j0.053	0.143+j0.056	9076	200	250
2/0 (19)	0.082	0.112	0.056	0.05	0.29	4.7	0.207+j0.044	0.118+j0.054	11636	225	280
3/0 (19)	0.064	0.087	0.052	0.048	0.31	5.1	0.164+j0.038	0.094+j0.052	14406	260	315
4/0 (19)	0.051	0.07	0.048	0.047	0.34	5.5	0.130+j0.033	0.079+j0.049	18496	295	355
250 (37)	0.043	0.059	0.045	0.046	0.36	5.9	0.110+j0.030	0.069+j0.047	22019	318	360

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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, Spacing: one diameter spacing center-to-center.

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	22.53	7.11	25.07	21x14	0.51	1.27	30.86	1531	215.90	2977
1 (19)	8.18	23.37	7.11	25.91	21x14	0.51	1.27	31.70	1566	220.98	2977
1/0 (SOLID)	8.25	23.44	7.11	25.98	26x14	0.41	1.27	31.78	1766	223.52	3756
1/0 (19)	9.19	24.38	7.11	26.92	26x14	0.41	1.27	32.72	1805	228.60	3756
2/0 (19)	10.29	25.48	7.11	28.52	21x12	0.32	1.27	35.18	2136	246.38	4735
3/0 (19)	11.58	26.77	7.11	29.82	26x12	0.26	1.27	36.47	2499	256.54	5972
4/0 (19)	13.00	28.19	7.11	31.24	21x10	0.20	1.27	38.96	2993	271.78	7529
250 (37)	14.17	29.57	7.11	32.61	25x10	0.17	1.27	40.34	3424	281.94	8900

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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)	0.4199	0.57	0.0207	0.1804	0.787	12.7953	0.320+j0.064	0.179+j0.057	7331	175	220
1 (19)	0.4199	0.57	0.0195	0.1739	0.820	13.4514	0.320+j0.065	0.179+j0.058	7331	175	220
1/0 (SOLID)	0.3346	0.46	0.0195	0.1739	0.820	13.4514	0.259+j0.052	0.143+j0.055	9076	200	250
1/0 (19)	0.3346	0.46	0.0183	0.1673	0.886	14.4357	0.259+j0.053	0.143+j0.056	9076	200	250
2/0 (19)	0.2690	0.37	0.0171	0.1640	0.951	15.4199	0.207+j0.044	0.118+j0.054	11636	225	280
3/0 (19)	0.2100	0.29	0.0158	0.1575	1.017	16.7323	0.164+j0.038	0.094+j0.052	14406	260	315
4/0 (19)	0.1673	0.23	0.0146	0.1542	1.115	18.0446	0.130+j0.033	0.079+j0.049	18496	295	355
250 (37)	0.1411	0.19	0.0137	0.1509	1.181	19.3570	0.110+j0.030	0.069+j0.047	22019	318	360

*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.

Concentric Neutral Calculator

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