28kV CU 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 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 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 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

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	0.987	7x14	0.463	50	1.215	847	8.5	669
TBA	1 (19)	0.322	0.92	280	1.02	7x14	0.463	50	1.248	870	8.7	669
TBA	1/0 (SOLID)	0.325	0.923	280	1.023	9x14	0.36	50	1.251	966	8.8	844
TBA	1/0 (19)	0.362	0.96	280	1.06	9x14	0.36	50	1.288	992	9	844
TBA	2/0 (19)	0.405	1.003	280	1.123	11x14	0.295	50	1.351	1155	9.5	1064
TBA	3/0 (19)	0.456	1.054	280	1.174	14x14	0.231	50	1.402	1338	9.8	1342
TBA	4/0 (19)	0.512	1.11	280	1.23	18x14	0.18	50	1.458	1566	10.2	1692
TBA	250 (37)	0.558	1.164	280	1.284	21x14	0.154	50	1.512	1767	10.6	2000
TBA	350 (37)	0.661	1.267	280	1.387	29x14	0.112	75	1.665	2328	11.7	2800
663142^	500 (37)	0.789	1.389	280	1.499	26x12	0.079	75	1.815	2948	12.7	4000
TBA	750 (61)	0.968	1.584	280	1.734	25x10	0.051	75	2.088	4300	14.6	6000
TBA	1000 (61)	1.117	1.733	280	1.883	21x8	0.038	75	2.291	5472	16	8000

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
^ Supersmooth conductor shield. HIDRI Plus Moisture Absorbing Powder Jacket
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 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	0.494+j0.231	0.176+j0.058	2444	180	220
1 (19)	0.128	0.175	0.064	0.053	0.25	4.1	0.493+j0.232	0.176+j0.058	2444	180	220
1/0 (SOLID)	0.102	0.139	0.064	0.053	0.25	4.1	0.419+j0.169	0.141+j0.056	3142	200	250
1/0 (19)	0.102	0.139	0.06	0.051	0.27	4.4	0.418+j0.170	0.141+j0.056	3142	200	250
2/0 (19)	0.082	0.112	0.056	0.049	0.29	4.7	0.357+j0.130	0.114+j0.055	3840	230	285
3/0 (19)	0.064	0.087	0.052	0.048	0.31	5.1	0.292+j0.095	0.089+j0.053	4887	260	320
4/0 (19)	0.051	0.07	0.048	0.046	0.34	5.5	0.236+j0.069	0.073+j0.051	6284	300	360
250 (37)	0.043	0.059	0.045	0.045	0.36	5.9	0.204+j0.058	0.063+j0.050	7331	325	
350 (37)	0.031	0.043	0.04	0.043	0.41	6.6	0.151+j0.041	0.048+j0.047	10123	390	460
500 (37)	0.021	0.03	0.035	0.041	0.47	7.6	0.107+j0.030	0.037+j0.044	14406	455	525
750 (61)	0.014	0.021	0.03	0.039	0.54	8.8	0.072+j0.024	0.030+j0.040	22019	545	580
1000 (61)	0.011	0.018	0.027	0.038	0.61	9.8	0.056+j0.021	0.029+j0.036	29419		

*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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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	25.07	7x14	1.52	1.27	30.86	1260	215.90	2977
TBA	1 (19)	8.18	23.37	7.11	25.91	7x14	1.52	1.27	31.70	1295	220.98	2977
TBA	1/0 (SOLID)	8.25	23.44	7.11	25.98	9x14	1.18	1.27	31.78	1438	223.52	3756
TBA	1/0 (19)	9.19	24.38	7.11	26.92	9x14	1.18	1.27	32.72	1476	228.60	3756
TBA	2/0 (19)	10.29	25.48	7.11	28.52	11x14	0.97	1.27	34.32	1719	241.30	4735
TBA	3/0 (19)	11.58	26.77	7.11	29.82	14x14	0.76	1.27	35.61	1991	248.92	5972
TBA	4/0 (19)	13.00	28.19	7.11	31.24	18x14	0.59	1.27	37.03	2330	259.08	7529
TBA	250 (37)	14.17	29.57	7.11	32.61	21x14	0.51	1.27	38.40	2630	269.24	8900
TBA	350 (37)	16.79	32.18	7.11	35.23	29x14	0.37	1.91	42.29	3464	297.18	12460
663142^	500 (37)	20.04	35.28	7.11	38.07	26x12	0.26	1.91	46.10	4387	322.58	17800
TBA	750 (61)	24.59	40.23	7.11	44.04	25x10	0.17	1.91	53.04	6399	370.84	26700
TBA	1000 (61)	28.37	44.02	7.11	47.83	21x8	0.12	1.91	58.19	8143	406.40	35600

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
^ Supersmooth conductor shield. HIDRI Plus Moisture Absorbing Powder Jacket
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	0.494+j0.231	0.176+j0.058	2444	180	220
1 (19)	0.4199	0.57	0.0195	0.1739	0.820	13.4514	0.493+j0.232	0.176+j0.058	2444	180	220
1/0 (SOLID)	0.3346	0.46	0.0195	0.1739	0.820	13.4514	0.419+j0.169	0.141+j0.056	3142	200	250
1/0 (19)	0.3346	0.46	0.0183	0.1673	0.886	14.4357	0.418+j0.170	0.141+j0.056	3142	200	250
2/0 (19)	0.2690	0.37	0.0171	0.1608	0.951	15.4199	0.357+j0.130	0.114+j0.055	3840	230	285
3/0 (19)	0.2100	0.29	0.0158	0.1575	1.017	16.7323	0.292+j0.095	0.089+j0.053	4887	260	320
4/0 (19)	0.1673	0.23	0.0146	0.1509	1.115	18.0446	0.236+j0.069	0.073+j0.051	6284	300	360
250 (37)	0.1411	0.19	0.0137	0.1476	1.181	19.3570	0.204+j0.058	0.063+j0.050	7331	325	
350 (37)	0.1017	0.14	0.0122	0.1411	1.345	21.6535	0.151+j0.041	0.048+j0.047	10123	390	460
500 (37)	0.0689	0.10	0.0107	0.1345	1.542	24.9344	0.107+j0.030	0.037+j0.044	14406	455	525
750 (61)	0.0459	0.07	0.0091	0.1280	1.772	28.8714	0.072+j0.024	0.030+j0.040	22019	545	580
1000 (61)	0.0361	0.06	0.0082	0.1247	2.001	32.1522	0.056+j0.021	0.029+j0.036	29419		

*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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