



## 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: -40°C and MV 90°C 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





**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	7x14	0.375	50	1.205	822	9.6	669
TBA	1 (19)	0.322	0.920	280	1.010	7x14	0.375	50	1.238	843	9.9	669
TBA	1/0 (Solid)	0.324	0.922	280	1.012	9x14	0.292	50	1.240	939	9.9	844
TBA	1/0 (19)	0.361	0.959	280	1.049	9x14	0.292	50	1.277	963	10.2	844
TBA	2/0 (19)	0.405	1.003	280	1.113	11x14	0.239	50	1.341	1124	10.7	1064
TBA	3/0 (19)	0.456	1.054	280	1.164	14x14	0.187	50	1.392	1307	11.1	1342
TBA	4/0 (19)	0.512	1.110	280	1.220	18x14	0.146	50	1.448	1533	11.6	1692
TBA	250 (37)	0.558	1.164	280	1.274	21x14	0.125	50	1.502	1733	12.0	2000
TBA	350 (37)	0.661	1.267	280	1.377	29x14	0.090	75	1.655	2301	13.2	2800
663142^	500 (37)	0.789	1.389	280	1.499	26x12	0.063	75	1.814	2947	14.5	4000
TBA	750 (61)	0.968	1.584	280	1.724	25x10	0.041	75	2.078	4272	16.6	6000
TBA	1000 (61)	1.117	1.733	280	1.873	33x10	0.031	75	2.227	5424	17.8	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



**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	0.162	0.067	0.054	0.238	1.2	0.216 + j1.203	0.162 + j0.506	2441	180	220
1 (19)	0.128	0.162	0.063	0.053	0.253	1.2	0.216 + j1.145	0.162 + j0.450	2441	180	220
1/0 (Solid)	0.102	0.128	0.063	0.052	0.254	1.2	0.182 + j1.142	0.128 + j0.445	3138	200	250
1/0 (19)	0.102	0.128	0.059	0.051	0.271	1.3	0.182 + j1.089	0.128 + j0.395	3138	200	250
2/0 (19)	0.081	0.102	0.055	0.049	0.290	1.4	0.156 + j1.040	0.102 + j0.348	3836	230	285
3/0 (19)	0.064	0.081	0.051	0.047	0.313	1.5	0.135 + j0.994	0.081 + j0.303	4882	260	320
4/0 (19)	0.051	0.065	0.047	0.046	0.338	1.6	0.119 + j0.954	0.065 + j0.265	6277	300	360
250 (37)	0.043	0.056	0.044	0.044	0.362	1.8	0.110 + j0.926	0.056 + j0.240	7323	325	
350 (37)	0.031	0.041	0.039	0.043	0.407	2.0	0.095 + j0.876	0.041 + j0.197	10113	390	460
500 (37)	0.022	0.030	0.034	0.041	0.466	2.3	0.084 + j0.832	0.030 + j0.159	14406	455	525
750 (61)	0.014	0.023	0.029	0.039	0.544	2.6	0.077 + j0.787	0.023 + j0.124	22019	545	580
1000 (61)	0.011	0.019	0.026	0.038	0.608	2.9	0.073 + j0.762	0.019 + j0.103	29065		

\*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	7x14	1.23	1.27	30.61	1223	243.84	2977
TBA	1 (19)	8.18	23.37	7.11	25.65	7x14	1.23	1.27	31.45	1255	251.46	2977
TBA	1/0 (Solid)	8.23	23.42	7.11	25.70	9x14	0.96	1.27	31.50	1397	251.46	3756
TBA	1/0 (19)	9.17	24.36	7.11	26.64	9x14	0.96	1.27	32.44	1433	259.08	3756
TBA	2/0 (19)	10.29	25.48	7.11	28.27	11x14	0.78	1.27	34.06	1673	271.78	4735
TBA	3/0 (19)	11.58	26.77	7.11	29.57	14x14	0.61	1.27	35.36	1945	281.94	5972
TBA	4/0 (19)	13.00	28.19	7.11	30.99	18x14	0.48	1.27	36.78	2281	294.64	7529
TBA	250 (37)	14.17	29.57	7.11	32.36	21x14	0.41	1.27	38.15	2579	304.80	8900
TBA	350 (37)	16.79	32.18	7.11	34.98	29x14	0.30	1.91	42.04	3424	335.28	12460
663142 <sup>^</sup>	500 (37)	20.04	35.28	7.11	38.07	26x12	0.21	1.91	46.08	4386	368.30	17800
TBA	750 (61)	24.59	40.23	7.11	43.79	25x10	0.13	1.91	52.78	6357	421.64	26700
TBA	1000 (61)	28.37	44.02	7.11	47.57	33x10	0.10	1.91	56.57	8072	452.12	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

<sup>^</sup> Supersmooth conductor shield. HIDRI Plus Moisture Absorbing Powder Jacket



**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	0.53	0.0204	0.1772	0.781	3.9370	0.216 + j1.203	0.162 + j0.506	2441	180	220
1 (19)	0.4199	0.53	0.0192	0.1739	0.830	3.9370	0.216 + j1.145	0.162 + j0.450	2441	180	220
1/0 (Solid)	0.3346	0.42	0.0192	0.1706	0.833	3.9370	0.182 + j1.142	0.128 + j0.445	3138	200	250
1/0 (19)	0.3346	0.42	0.0180	0.1673	0.889	4.2651	0.182 + j1.089	0.128 + j0.395	3138	200	250
2/0 (19)	0.2657	0.33	0.0168	0.1608	0.951	4.5932	0.156 + j1.040	0.102 + j0.348	3836	230	285
3/0 (19)	0.2100	0.27	0.0155	0.1542	1.027	4.9213	0.135 + j0.994	0.081 + j0.303	4882	260	320
4/0 (19)	0.1673	0.21	0.0143	0.1509	1.109	5.2493	0.119 + j0.954	0.065 + j0.265	6277	300	360
250 (37)	0.1411	0.18	0.0134	0.1444	1.188	5.9055	0.110 + j0.926	0.056 + j0.240	7323	325	
350 (37)	0.1017	0.13	0.0119	0.1411	1.335	6.5617	0.095 + j0.876	0.041 + j0.197	10113	390	460
500 (37)	0.0722	0.10	0.0104	0.1345	1.529	7.5459	0.084 + j0.832	0.030 + j0.159	14406	455	525
750 (61)	0.0459	0.08	0.0088	0.1280	1.785	8.5302	0.077 + j0.787	0.023 + j0.124	22019	545	580
1000 (61)	0.0361	0.06	0.0079	0.1247	1.995	9.5144	0.073 + j0.762	0.019 + j0.103	29065		

\*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.

CN  
Calculator

