28kV CU 133% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

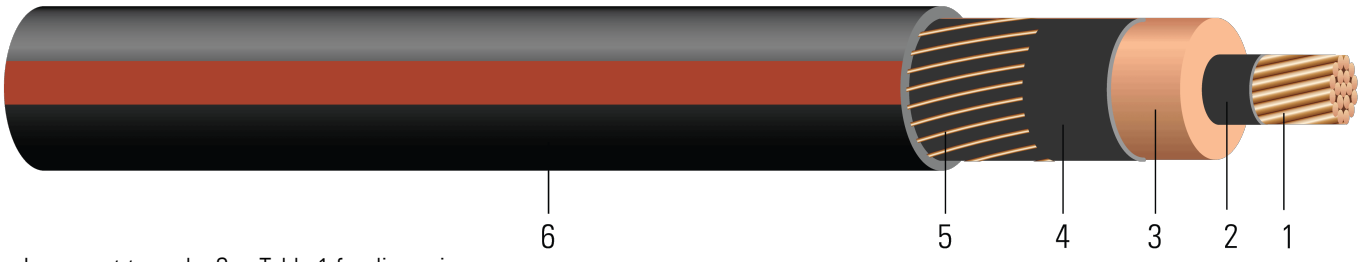


Image not to scale. See Table 1 for dimensions.

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; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
3. **Insulation:** 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 133% 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 105°C for normal operation. 140°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 EPR INSULATION 345 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	1.017	345	1.137	7x14	0.463	50	1.365	1001	9.6	669
1 (19)	0.322	1.05	345	1.17	7x14	0.463	50	1.398	1029	9.8	669
1/0 (SOLID)	0.325	1.053	345	1.173	9x14	0.36	50	1.401	1125	9.8	844
1/0 (19)	0.362	1.09	345	1.21	9x14	0.36	50	1.438	1157	10.1	844
2/0 (19)	0.405	1.133	345	1.253	11x14	0.295	50	1.481	1304	10.4	1064
3/0 (19)	0.456	1.184	345	1.304	14x14	0.231	50	1.532	1492	10.7	1342
4/0 (19)	0.512	1.24	345	1.36	18x14	0.18	50	1.588	1727	11.1	1692
250 (37)	0.558	1.294	345	1.414	21x14	0.154	75	1.692	2008	11.8	2000
350 (37)	0.661	1.397	345	1.517	29x14	0.112	75	1.795	2513	12.6	2800
500 (37)	0.789	1.525	345	1.675	26x12	0.079	75	1.987	3285	13.9	4000
750 (61)	0.968	1.714	345	1.864	25x10	0.051	75	2.218	4525	15.5	6000
1000 (61)	1.117	1.863	345	2.013	21x8	0.038	75	2.421	5713	16.9	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
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	0.059	0.057	0.27	4.4	0.491+j0.235	0.176+j0.060	2444	180	220
1 (19)	0.128	0.175	0.056	0.055	0.29	4.7	0.491+j0.236	0.176+j0.061	2444	180	220
1/0 (SOLID)	0.102	0.139	0.056	0.055	0.29	4.7	0.417+j0.172	0.141+j0.058	3142	200	250
1/0 (19)	0.102	0.139	0.052	0.053	0.31	5	0.417+j0.173	0.141+j0.059	3142	200	250
2/0 (19)	0.082	0.112	0.049	0.052	0.33	5.3	0.356+j0.134	0.114+j0.057	3840	230	285
3/0 (19)	0.064	0.087	0.046	0.05	0.35	5.7	0.291+j0.098	0.089+j0.055	4887	260	320
4/0 (19)	0.051	0.07	0.042	0.048	0.38	6.2	0.236+j0.072	0.073+j0.053	6284	300	360
250 (37)	0.043	0.059	0.04	0.047	0.41	6.6	0.204+j0.060	0.063+j0.052	7331	325	
350 (37)	0.031	0.043	0.036	0.045	0.45	7.4	0.151+j0.043	0.048+j0.049	10123	390	460
500 (37)	0.021	0.03	0.031	0.043	0.51	8.3	0.107+j0.033	0.037+j0.046	14406	455	525
750 (61)	0.014	0.021	0.027	0.041	0.6	9.7	0.072+j0.026	0.03+j0.042	22019	545	580
1000 (61)	0.011	0.018	0.024	0.039	0.67	10.8	0.056+j0.023	0.029+j0.038	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)

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	25.83	8.76	28.88	7x14	1.52	1.27	34.67	1490	243.84	2977
1 (19)	8.18	26.67	8.76	29.72	7x14	1.52	1.27	35.51	1531	248.92	2977
1/0 (SOLID)	8.25	26.75	8.76	29.79	9x14	1.18	1.27	35.59	1674	248.92	3756
1/0 (19)	9.19	27.69	8.76	30.73	9x14	1.18	1.27	36.53	1722	256.54	3756
2/0 (19)	10.29	28.78	8.76	31.83	11x14	0.97	1.27	37.62	1941	264.16	4735
3/0 (19)	11.58	30.07	8.76	33.12	14x14	0.76	1.27	38.91	2220	271.78	5972
4/0 (19)	13.00	31.50	8.76	34.54	18x14	0.59	1.27	40.34	2570	281.94	7529
250 (37)	14.17	32.87	8.76	35.92	21x14	0.51	1.91	42.98	2988	299.72	8900
350 (37)	16.79	35.48	8.76	38.53	29x14	0.37	1.91	45.59	3740	320.04	12460
500 (37)	20.04	38.73	8.76	42.55	26x12	0.26	1.91	50.47	4889	353.06	17800
750 (61)	24.59	43.54	8.76	47.35	25x10	0.17	1.91	56.34	6734	393.70	26700
1000 (61)	28.37	47.32	8.76	51.13	21x8	0.12	1.91	61.49	8502	429.26	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
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	0.0180	0.1870	0.886	14.4357	0.491+j0.235	0.176+j0.060	2444	180	220
1 (19)	0.4199	0.57	0.0171	0.1804	0.951	15.4199	0.491+j0.236	0.176+j0.061	2444	180	220
1/0 (SOLID)	0.3346	0.46	0.0171	0.1804	0.951	15.4199	0.417+j0.172	0.141+j0.058	3142	200	250
1/0 (19)	0.3346	0.46	0.0158	0.1739	1.017	16.4042	0.417+j0.173	0.141+j0.059	3142	200	250
2/0 (19)	0.2690	0.37	0.0149	0.1706	1.083	17.3885	0.356+j0.134	0.114+j0.057	3840	230	285
3/0 (19)	0.2100	0.29	0.0140	0.1640	1.148	18.7008	0.291+j0.098	0.089+j0.055	4887	260	320
4/0 (19)	0.1673	0.23	0.0128	0.1575	1.247	20.3412	0.236+j0.072	0.073+j0.053	6284	300	360
250 (37)	0.1411	0.19	0.0122	0.1542	1.345	21.6535	0.204+j0.060	0.063+j0.052	7331	325	
350 (37)	0.1017	0.14	0.0110	0.1476	1.476	24.2782	0.151+j0.043	0.048+j0.049	10123	390	460
500 (37)	0.0689	0.10	0.0094	0.1411	1.673	27.2310	0.107+j0.033	0.037+j0.046	14406	455	525
750 (61)	0.0459	0.07	0.0082	0.1345	1.969	31.8241	0.072+j0.026	0.03+j0.042	22019	545	580
1000 (61)	0.0361	0.06	0.0073	0.1280	2.198	35.4331	0.056+j0.023	0.029+j0.038	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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