



28kV CU 133% EPR (EAM) LCT LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- 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)
- Conductor Shield:** Conventional Semi-conducting cross-linked copolymer; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
- Insulation:** 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
- 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-97-682 Standard for Shielded Utility Cable Rated for 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

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





Table 1 – Weights and Measurements

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
1 (Solid)	0.289	1.017	345	1.097	80	1.357	1000	16.3	669
1 (19)	0.322	1.050	345	1.130	80	1.390	1029	16.7	669
1/0 (Solid)	0.324	1.052	345	1.132	80	1.392	1098	16.7	844
1/0 (19)	0.361	1.089	345	1.169	80	1.429	1131	17.1	844
2/0 (19)	0.405	1.133	345	1.213	80	1.473	1256	17.7	1064
3/0 (19)	0.456	1.184	345	1.264	80	1.524	1409	18.3	1342
4/0 (19)	0.512	1.240	345	1.320	80	1.580	1593	19.0	1692
250 (37)	0.558	1.294	345	1.374	80	1.634	1764	19.6	2000
350 (37)	0.661	1.397	345	1.477	110	1.797	2272	21.6	2800
500 (37)	0.789	1.525	345	1.605	110	1.925	2857	23.1	4000
750 (61)	0.968	1.714	345	1.794	110	2.114	3818	25.4	6000
1000 (61)	1.117	1.863	345	1.943	110	2.263	4733	27.2	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



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	0.059	0.057	0.273	38.0	0.442 + j0.171	0.163 + j0.058	4287	175	220
1 (19)	0.128	0.162	0.055	0.055	0.289	40.2	0.437 + j0.163	0.163 + j0.056	4398	175	220
1/0 (Solid)	0.102	0.128	0.055	0.055	0.291	40.5	0.403 + j0.162	0.129 + j0.056	4405	200	250
1/0 (19)	0.102	0.128	0.052	0.053	0.309	43.0	0.397 + j0.155	0.129 + j0.054	4531	200	250
2/0 (19)	0.081	0.102	0.048	0.051	0.329	45.7	0.364 + j0.146	0.103 + j0.052	4679	230	285
3/0 (19)	0.064	0.081	0.045	0.049	0.354	49.2	0.336 + j0.137	0.082 + j0.050	4852	260	320
4/0 (19)	0.051	0.065	0.042	0.048	0.381	53.0	0.312 + j0.129	0.066 + j0.048	5042	300	365
250 (37)	0.043	0.056	0.039	0.046	0.406	56.4	0.296 + j0.121	0.057 + j0.047	5225	315	396
350 (37)	0.031	0.041	0.035	0.045	0.454	63.1	0.269 + j0.109	0.043 + j0.045	5573	390	475
500 (37)	0.022	0.030	0.031	0.042	0.514	71.5	0.244 + j0.096	0.032 + j0.043	6007	470	565
750 (61)	0.014	0.023	0.026	0.040	0.601	83.6	0.218 + j0.081	0.025 + j0.040	6646	585	680
1000 (61)	0.011	0.019	0.024	0.038	0.669	93.0	0.202 + j0.072	0.021 + j0.038	7151	670	750

*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	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
1 (Solid)	7.34	25.83	8.76	27.86	2.03	34.47	1488	414.02	2977
1 (19)	8.18	26.67	8.76	28.70	2.03	35.31	1531	424.18	2977
1/0 (Solid)	8.23	26.72	8.76	28.75	2.03	35.36	1634	424.18	3756
1/0 (19)	9.17	27.66	8.76	29.69	2.03	36.30	1683	434.34	3756
2/0 (19)	10.29	28.78	8.76	30.81	2.03	37.41	1869	449.58	4735
3/0 (19)	11.58	30.07	8.76	32.11	2.03	38.71	2097	464.82	5972
4/0 (19)	13.00	31.50	8.76	33.53	2.03	40.13	2371	482.60	7529
250 (37)	14.17	32.87	8.76	34.90	2.03	41.50	2625	497.84	8900
350 (37)	16.79	35.48	8.76	37.52	2.79	45.64	3381	548.64	12460
500 (37)	20.04	38.73	8.76	40.77	2.79	48.89	4252	586.74	17800
750 (61)	24.59	43.54	8.76	45.57	2.79	53.70	5682	645.16	26700
1000 (61)	28.37	47.32	8.76	49.35	2.79	57.48	7043	690.88	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





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	0.0180	0.1870	0.896	124.6719	0.442 + j0.171	0.163 + j0.058	4287	175	220
1 (19)	0.4199	0.53	0.0168	0.1804	0.948	131.8898	0.437 + j0.163	0.163 + j0.056	4398	175	220
1/0 (Solid)	0.3346	0.42	0.0168	0.1804	0.955	132.8740	0.403 + j0.162	0.129 + j0.056	4405	200	250
1/0 (19)	0.3346	0.42	0.0158	0.1739	1.014	141.0761	0.397 + j0.155	0.129 + j0.054	4531	200	250
2/0 (19)	0.2657	0.33	0.0146	0.1673	1.079	149.9344	0.364 + j0.146	0.103 + j0.052	4679	230	285
3/0 (19)	0.2100	0.27	0.0137	0.1608	1.161	161.4173	0.336 + j0.137	0.082 + j0.050	4852	260	320
4/0 (19)	0.1673	0.21	0.0128	0.1575	1.250	173.8845	0.312 + j0.129	0.066 + j0.048	5042	300	365
250 (37)	0.1411	0.18	0.0119	0.1509	1.332	185.0394	0.296 + j0.121	0.057 + j0.047	5225	315	396
350 (37)	0.1017	0.13	0.0107	0.1476	1.490	207.0210	0.269 + j0.109	0.043 + j0.045	5573	390	475
500 (37)	0.0722	0.10	0.0094	0.1378	1.686	234.5801	0.244 + j0.096	0.032 + j0.043	6007	470	565
750 (61)	0.0459	0.08	0.0079	0.1312	1.972	274.2782	0.218 + j0.081	0.025 + j0.040	6646	585	680
1000 (61)	0.0361	0.06	0.0073	0.1247	2.195	305.1181	0.202 + j0.072	0.021 + j0.038	7151	670	750

*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.

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