



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
- AIEC 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 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	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	1.127	7x14	0.375	50	1.355	965	10.8	669
1 (19)	0.322	1.050	345	1.160	7x14	0.375	50	1.388	991	11.1	669
1/0 (Solid)	0.324	1.052	345	1.162	9x14	0.292	50	1.390	1087	11.1	844
1/0 (19)	0.361	1.089	345	1.199	9x14	0.292	50	1.427	1115	11.4	844
2/0 (19)	0.405	1.133	345	1.243	11x14	0.239	50	1.471	1262	11.8	1064
3/0 (19)	0.456	1.184	345	1.294	14x14	0.187	50	1.522	1451	12.2	1342
4/0 (19)	0.512	1.240	345	1.350	18x14	0.146	50	1.578	1683	12.6	1692
250 (37)	0.558	1.294	345	1.404	21x14	0.125	75	1.682	1969	13.5	2000
350 (37)	0.661	1.397	345	1.507	29x14	0.090	75	1.785	2475	14.3	2800
500 (37)	0.789	1.525	345	1.665	26x12	0.063	75	1.977	3242	15.8	4000
750 (61)	0.968	1.714	345	1.854	25x10	0.041	75	2.208	4481	17.7	6000
1000 (61)	1.117	1.863	345	2.003	33x10	0.031	75	2.357	5650	18.9	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



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	0.216 + j1.198	0.162 + j0.509	2441	180	220
1 (19)	0.128	0.162	0.055	0.055	0.289	40.2	0.216 + j1.139	0.162 + j0.452	2441	180	220
1/0 (Solid)	0.102	0.128	0.055	0.055	0.291	40.5	0.182 + j1.137	0.128 + j0.448	3138	200	250
1/0 (19)	0.102	0.128	0.052	0.053	0.309	43.0	0.182 + j1.084	0.128 + j0.397	3138	200	250
2/0 (19)	0.081	0.102	0.048	0.051	0.329	45.7	0.156 + j1.036	0.102 + j0.350	3836	230	285
3/0 (19)	0.064	0.081	0.045	0.049	0.354	49.2	0.135 + j0.990	0.081 + j0.306	4882	260	320
4/0 (19)	0.051	0.065	0.042	0.048	0.381	53.0	0.119 + j0.950	0.065 + j0.267	6277	300	360
250 (37)	0.043	0.056	0.039	0.047	0.406	56.4	0.110 + j0.921	0.056 + j0.242	7323	325	
350 (37)	0.031	0.041	0.035	0.045	0.454	63.1	0.095 + j0.873	0.041 + j0.198	10113	390	460
500 (37)	0.022	0.030	0.031	0.043	0.514	71.5	0.084 + j0.828	0.030 + j0.161	14406	455	525
750 (61)	0.014	0.023	0.026	0.041	0.601	83.6	0.077 + j0.785	0.023 + j0.125	22019	545	580
1000 (61)	0.011	0.019	0.024	0.039	0.669	93.0	0.073 + j0.759	0.019 + j0.104	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)

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	28.63	7x14	1.23	1.27	34.42	1436	274.32	2977
1 (19)	8.18	26.67	8.76	29.46	7x14	1.23	1.27	35.26	1475	281.94	2977
1/0 (Solid)	8.23	26.72	8.76	29.51	9x14	0.96	1.27	35.31	1618	281.94	3756
1/0 (19)	9.17	27.66	8.76	30.45	9x14	0.96	1.27	36.25	1659	289.56	3756
2/0 (19)	10.29	28.78	8.76	31.57	11x14	0.78	1.27	37.36	1878	299.72	4735
3/0 (19)	11.58	30.07	8.76	32.87	14x14	0.61	1.27	38.66	2159	309.88	5972
4/0 (19)	13.00	31.50	8.76	34.29	18x14	0.48	1.27	40.08	2505	320.04	7529
250 (37)	14.17	32.87	8.76	35.66	21x14	0.41	1.91	42.72	2930	342.90	8900
350 (37)	16.79	35.48	8.76	38.28	29x14	0.30	1.91	45.34	3683	363.22	12460
500 (37)	20.04	38.73	8.76	42.29	26x12	0.21	1.91	50.22	4825	401.32	17800
750 (61)	24.59	43.54	8.76	47.09	25x10	0.13	1.91	56.08	6668	449.58	26700
1000 (61)	28.37	47.32	8.76	50.88	33x10	0.10	1.91	59.87	8408	480.06	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	0.216 + j1.198	0.162 + j0.509	2441	180	220
1 (19)	0.4199	0.53	0.0168	0.1804	0.948	131.8898	0.216 + j1.139	0.162 + j0.452	2441	180	220
1/0 (Solid)	0.3346	0.42	0.0168	0.1804	0.955	132.8740	0.182 + j1.137	0.128 + j0.448	3138	200	250
1/0 (19)	0.3346	0.42	0.0158	0.1739	1.014	141.0761	0.182 + j1.084	0.128 + j0.397	3138	200	250
2/0 (19)	0.2657	0.33	0.0146	0.1673	1.079	149.9344	0.156 + j1.036	0.102 + j0.350	3836	230	285
3/0 (19)	0.2100	0.27	0.0137	0.1608	1.161	161.4173	0.135 + j0.990	0.081 + j0.306	4882	260	320
4/0 (19)	0.1673	0.21	0.0128	0.1575	1.250	173.8845	0.119 + j0.950	0.065 + j0.267	6277	300	360
250 (37)	0.1411	0.18	0.0119	0.1542	1.332	185.0394	0.110 + j0.921	0.056 + j0.242	7323	325	
350 (37)	0.1017	0.13	0.0107	0.1476	1.490	207.0210	0.095 + j0.873	0.041 + j0.198	10113	390	460
500 (37)	0.0722	0.10	0.0094	0.1411	1.686	234.5801	0.084 + j0.828	0.030 + j0.161	14406	455	525
750 (61)	0.0459	0.08	0.0079	0.1345	1.972	274.2782	0.077 + j0.785	0.023 + j0.125	22019	545	580
1000 (61)	0.0361	0.06	0.0073	0.1280	2.195	305.1181	0.073 + j0.759	0.019 + j0.104	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.

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Calculator

