



28kV CU 133% EPR (EAM) Full Neutral LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, Full 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 full 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: -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	21x14	0.125	50	1.355	1154	10.8	669
1 (19)	0.322	1.050	345	1.160	21x14	0.125	50	1.388	1180	11.1	669
1/0 (Solid)	0.324	1.052	345	1.162	26x14	0.101	50	1.390	1316	11.1	844
1/0 (19)	0.361	1.089	345	1.199	26x14	0.101	50	1.427	1344	11.4	844
2/0 (19)	0.405	1.133	345	1.243	21x12	0.079	50	1.505	1553	12.0	1064
3/0 (19)	0.456	1.184	345	1.294	26x12	0.063	50	1.556	1806	12.4	1342
4/0 (19)	0.512	1.240	345	1.350	21x10	0.049	75	1.704	2230	13.6	1692
250 (37)	0.558	1.294	345	1.404	25x10	0.041	75	1.758	2529	14.1	2000

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 + j1.202	0.162 + j0.509	7323	175	220
1 (19)	0.128	0.162	0.055	0.055	0.289	40.2	0.216 + j1.144	0.162 + j0.452	7323	175	220
1/0 (Solid)	0.102	0.128	0.055	0.055	0.291	40.5	0.182 + j1.139	0.128 + j0.448	9067	200	250
1/0 (19)	0.102	0.128	0.052	0.053	0.309	43.0	0.182 + j1.087	0.128 + j0.397	9067	200	250
2/0 (19)	0.081	0.102	0.048	0.052	0.329	45.7	0.156 + j1.036	0.102 + j0.350	11635	225	280
3/0 (19)	0.064	0.081	0.045	0.050	0.354	49.2	0.135 + j0.990	0.081 + j0.306	14406	260	315
4/0 (19)	0.051	0.065	0.042	0.049	0.381	53.0	0.119 + j0.946	0.065 + j0.269	18496	295	355
250 (37)	0.043	0.056	0.039	0.048	0.406	56.4	0.110 + j0.919	0.056 + j0.243	22019	318	360

*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	21x14	0.41	1.27	34.42	1717	274.32	2977
1 (19)	8.18	26.67	8.76	29.46	21x14	0.41	1.27	35.26	1756	281.94	2977
1/0 (Solid)	8.23	26.72	8.76	29.51	26x14	0.33	1.27	35.31	1958	281.94	3756
1/0 (19)	9.17	27.66	8.76	30.45	26x14	0.33	1.27	36.25	2000	289.56	3756
2/0 (19)	10.29	28.78	8.76	31.57	21x12	0.26	1.27	38.23	2311	304.80	4735
3/0 (19)	11.58	30.07	8.76	32.87	26x12	0.21	1.27	39.52	2688	314.96	5972
4/0 (19)	13.00	31.50	8.76	34.29	21x10	0.16	1.91	43.28	3319	345.44	7529
250 (37)	14.17	32.87	8.76	35.66	25x10	0.13	1.91	44.65	3764	358.14	8900

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 + j1.202	0.162 + j0.509	7323	175	220
1 (19)	0.4199	0.53	0.0168	0.1804	0.948	131.8898	0.216 + j1.144	0.162 + j0.452	7323	175	220
1/0 (Solid)	0.3346	0.42	0.0168	0.1804	0.955	132.8740	0.182 + j1.139	0.128 + j0.448	9067	200	250
1/0 (19)	0.3346	0.42	0.0158	0.1739	1.014	141.0761	0.182 + j1.087	0.128 + j0.397	9067	200	250
2/0 (19)	0.2657	0.33	0.0146	0.1706	1.079	149.9344	0.156 + j1.036	0.102 + j0.350	11635	225	280
3/0 (19)	0.2100	0.27	0.0137	0.1640	1.161	161.4173	0.135 + j0.990	0.081 + j0.306	14406	260	315
4/0 (19)	0.1673	0.21	0.0128	0.1608	1.250	173.8845	0.119 + j0.946	0.065 + j0.269	18496	295	355
250 (37)	0.1411	0.18	0.0119	0.1575	1.332	185.0394	0.110 + j0.919	0.056 + j0.243	22019	318	385

*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.

