

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; Supersmooth conductor shield optional; 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



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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	1.127	20x14	0.131	50	1.355	1139	10.8	669
1 (19)	0.322	1.050	345	1.160	20x14	0.131	50	1.388	1165	11.1	669
1/0 (Solid)	0.324	1.052	345	1.162	25x14	0.105	50	1.390	1300	11.1	844
1/0 (19)	0.361	1.089	345	1.199	25x14	0.105	50	1.427	1330	11.4	844
2/0 (19)	0.405	1.133	345	1.243	32x14	0.082	50	1.471	1544	11.8	1064
3/0 (19)	0.456	1.184	345	1.294	25x12	0.066	50	1.556	1782	12.4	1342
4/0 (19)	0.512	1.240	345	1.350	32x12	0.051	75	1.662	2188	13.3	1692
250 (37)	0.558	1.294	345	1.404	25x10	0.041	75	1.758	2526	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	M Ω *1000ft	Ω /1000ft	A/1000ft	W/1000ft	Ω /1000ft	Ω /1000ft	Amp	Amp	Amp
1 (Solid)	0.128	0.162	0.065	0.057	0.142	8.7	0.216 + j0.752	0.162 + j0.055	6974	175	220
1 (19)	0.128	0.162	0.061	0.055	0.151	9.3	0.216 + j0.751	0.162 + j0.056	6974	175	220
1/0 (Solid)	0.102	0.128	0.061	0.055	0.152	9.3	0.182 + j0.749	0.128 + j0.053	8718	200	250
1/0 (19)	0.102	0.128	0.057	0.053	0.162	10.0	0.182 + j0.747	0.128 + j0.054	8718	200	250
2/0 (19)	0.081	0.102	0.053	0.051	0.174	10.7	0.156 + j0.743	0.102 + j0.052	11159	225	280
3/0 (19)	0.064	0.081	0.049	0.050	0.187	11.5	0.135 + j0.738	0.081 + j0.050	13852	260	315
4/0 (19)	0.051	0.065	0.046	0.049	0.202	12.4	0.119 + j0.732	0.065 + j0.049	17730	295	355
250 (37)	0.043	0.056	0.043	0.048	0.212	13.0	0.110 + j0.728	0.056 + j0.048	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.



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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	28.63	20x14	0.43	1.27	34.42	1695	274.32	2977
1 (19)	8.18	26.67	8.76	29.46	20x14	0.43	1.27	35.26	1734	281.94	2977
1/0 (Solid)	8.23	26.72	8.76	29.51	25x14	0.34	1.27	35.31	1935	281.94	3756
1/0 (19)	9.17	27.66	8.76	30.45	25x14	0.34	1.27	36.25	1979	289.56	3756
2/0 (19)	10.29	28.78	8.76	31.57	32x14	0.27	1.27	37.36	2298	299.72	4735
3/0 (19)	11.58	30.07	8.76	32.87	25x12	0.22	1.27	39.52	2652	314.96	5972
4/0 (19)	13.00	31.50	8.76	34.29	32x12	0.17	1.91	42.21	3256	337.82	7529
250 (37)	14.17	32.87	8.76	35.66	25x10	0.13	1.91	44.65	3759	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	0.0198	0.1870	0.466	28.5433	0.216 + j0.752	0.162 + j0.055	6974	175	220
1 (19)	0.4199	0.53	0.0186	0.1804	0.495	30.5118	0.216 + j0.751	0.162 + j0.056	6974	175	220
1/0 (Solid)	0.3346	0.42	0.0186	0.1804	0.499	30.5118	0.182 + j0.749	0.128 + j0.053	8718	200	250
1/0 (19)	0.3346	0.42	0.0174	0.1739	0.531	32.8084	0.182 + j0.747	0.128 + j0.054	8718	200	250
2/0 (19)	0.2657	0.33	0.0162	0.1673	0.571	35.1050	0.156 + j0.743	0.102 + j0.052	11159	225	280
3/0 (19)	0.2100	0.27	0.0149	0.1640	0.614	37.7297	0.135 + j0.738	0.081 + j0.050	13852	260	315
4/0 (19)	0.1673	0.21	0.0140	0.1608	0.663	40.6824	0.119 + j0.732	0.065 + j0.049	17730	295	355
250 (37)	0.1411	0.18	0.0131	0.1575	0.696	42.6509	0.110 + j0.728	0.056 + j0.048	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 7.

*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.



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