



## 28kV CU 100% EPR (EAM) Full Neutral LLDPE

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 100% 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:** 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 100% 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 280 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	0.887	280	0.977	21x14	0.125	50	1.205	1011	9.6	669
1 (19)	0.322	0.920	280	1.010	21x14	0.125	50	1.238	1032	9.9	669
1/0 (Solid)	0.324	0.922	280	1.012	26x14	0.101	50	1.240	1168	9.9	844
1/0 (19)	0.361	0.959	280	1.049	26x14	0.101	50	1.277	1192	10.2	844
2/0 (19)	0.405	1.003	280	1.113	21x12	0.079	50	1.375	1415	11.0	1064
3/0 (19)	0.456	1.054	280	1.164	26x12	0.063	50	1.426	1662	11.4	1342
4/0 (19)	0.512	1.110	280	1.220	21x10	0.049	50	1.524	1997	12.2	1692
250 (37)	0.558	1.164	280	1.274	25x10	0.041	50	1.578	2288	12.6	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	0.052	0.054	0.310	43.1	0.216 + j1.208	0.162 + j0.506	7323	175	220
1 (19)	0.128	0.162	0.048	0.053	0.330	45.9	0.216 + j1.149	0.162 + j0.450	7323	175	220
1/0 (Solid)	0.102	0.128	0.048	0.052	0.332	46.2	0.182 + j1.145	0.128 + j0.445	9067	200	250
1/0 (19)	0.102	0.128	0.045	0.051	0.354	49.2	0.182 + j1.092	0.128 + j0.395	9067	200	250
2/0 (19)	0.081	0.102	0.042	0.050	0.379	52.7	0.156 + j1.040	0.102 + j0.348	11635	225	280
3/0 (19)	0.064	0.081	0.039	0.048	0.408	56.7	0.135 + j0.994	0.081 + j0.304	14406	260	315
4/0 (19)	0.051	0.065	0.036	0.047	0.441	61.3	0.119 + j0.951	0.065 + j0.266	18496	295	355
250 (37)	0.043	0.056	0.034	0.046	0.472	65.6	0.110 + j0.924	0.056 + j0.241	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	22.53	7.11	24.82	21x14	0.41	1.27	30.61	1505	243.84	2977
1 (19)	8.18	23.37	7.11	25.65	21x14	0.41	1.27	31.45	1536	251.46	2977
1/0 (Solid)	8.23	23.42	7.11	25.70	26x14	0.33	1.27	31.50	1738	251.46	3756
1/0 (19)	9.17	24.36	7.11	26.64	26x14	0.33	1.27	32.44	1774	259.08	3756
2/0 (19)	10.29	25.48	7.11	28.27	21x12	0.26	1.27	34.93	2106	279.40	4735
3/0 (19)	11.58	26.77	7.11	29.57	26x12	0.21	1.27	36.22	2473	289.56	5972
4/0 (19)	13.00	28.19	7.11	30.99	21x10	0.16	1.27	38.71	2972	309.88	7529
250 (37)	14.17	29.57	7.11	32.36	25x10	0.13	1.27	40.08	3405	320.04	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	0.0158	0.1772	1.017	141.4042	0.216 + j1.208	0.162 + j0.506	7323	175	220
1 (19)	0.4199	0.53	0.0146	0.1739	1.083	150.5906	0.216 + j1.149	0.162 + j0.450	7323	175	220
1/0 (Solid)	0.3346	0.42	0.0146	0.1706	1.089	151.5748	0.182 + j1.145	0.128 + j0.445	9067	200	250
1/0 (19)	0.3346	0.42	0.0137	0.1673	1.161	161.4173	0.182 + j1.092	0.128 + j0.395	9067	200	250
2/0 (19)	0.2657	0.33	0.0128	0.1640	1.243	172.9003	0.156 + j1.040	0.102 + j0.348	11635	225	280
3/0 (19)	0.2100	0.27	0.0119	0.1575	1.339	186.0236	0.135 + j0.994	0.081 + j0.304	14406	260	315
4/0 (19)	0.1673	0.21	0.0110	0.1542	1.447	201.1155	0.119 + j0.951	0.065 + j0.266	18496	295	355
250 (37)	0.1411	0.18	0.0104	0.1509	1.549	215.2231	0.110 + j0.924	0.056 + j0.241	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.

