



28kV CU 100% EPR (EAM) LCT LLDPE

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 100% Insulation Level, Longitudinally Corrugated Tape Shield, 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. **Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
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-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 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	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	0.887	280	0.967	80	1.227	860	14.7	669
1 (19)	0.322	0.920	280	1.000	80	1.260	886	15.1	669
1/0 (Solid)	0.324	0.922	280	1.002	80	1.262	954	15.1	844
1/0 (19)	0.361	0.959	280	1.039	80	1.299	983	15.6	844
2/0 (19)	0.405	1.003	280	1.083	80	1.343	1103	16.1	1064
3/0 (19)	0.456	1.054	280	1.134	80	1.394	1251	16.7	1342
4/0 (19)	0.512	1.110	280	1.190	80	1.450	1430	17.4	1692
250 (37)	0.558	1.164	280	1.244	80	1.504	1594	18.0	2000
350 (37)	0.661	1.267	280	1.347	80	1.607	1986	19.3	2800
500 (37)	0.789	1.395	280	1.475	110	1.795	2655	21.5	4000
750 (61)	0.968	1.584	280	1.664	110	1.984	3597	23.8	6000
1000 (61)	1.117	1.733	280	1.813	110	2.133	4496	25.6	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	0.052	0.055	0.310	43.1	0.464 + j0.195	0.163 + j0.055	3847	175	220
1 (19)	0.128	0.162	0.048	0.053	0.330	45.9	0.458 + j0.186	0.163 + j0.054	3958	175	220
1/0 (Solid)	0.102	0.128	0.048	0.053	0.332	46.2	0.424 + j0.185	0.129 + j0.053	3965	200	250
1/0 (19)	0.102	0.128	0.045	0.051	0.354	49.2	0.418 + j0.175	0.129 + j0.052	4090	200	250
2/0 (19)	0.081	0.102	0.042	0.049	0.379	52.7	0.384 + j0.165	0.103 + j0.050	4239	230	285
3/0 (19)	0.064	0.081	0.039	0.047	0.408	56.7	0.355 + j0.154	0.082 + j0.048	4412	260	320
4/0 (19)	0.051	0.065	0.036	0.046	0.441	61.3	0.331 + j0.144	0.066 + j0.046	4602	300	365
250 (37)	0.043	0.056	0.034	0.044	0.472	65.6	0.314 + j0.135	0.057 + j0.045	4784	315	396
350 (37)	0.031	0.041	0.030	0.042	0.531	73.8	0.285 + j0.120	0.042 + j0.043	5133	390	475
500 (37)	0.022	0.030	0.026	0.041	0.603	83.8	0.258 + j0.105	0.032 + j0.041	5566	470	565
750 (61)	0.014	0.023	0.022	0.038	0.710	98.7	0.231 + j0.088	0.025 + j0.039	6206	585	680
1000 (61)	0.011	0.019	0.020	0.037	0.793	110.3	0.213 + j0.077	0.021 + j0.037	6711	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	22.53	7.11	24.56	2.03	31.17	1280	373.38	2977
1 (19)	8.18	23.37	7.11	25.40	2.03	32.00	1319	383.54	2977
1/0 (Solid)	8.23	23.42	7.11	25.45	2.03	32.05	1420	383.54	3756
1/0 (19)	9.17	24.36	7.11	26.39	2.03	32.99	1463	396.24	3756
2/0 (19)	10.29	25.48	7.11	27.51	2.03	34.11	1641	408.94	4735
3/0 (19)	11.58	26.77	7.11	28.80	2.03	35.41	1862	424.18	5972
4/0 (19)	13.00	28.19	7.11	30.23	2.03	36.83	2128	441.96	7529
250 (37)	14.17	29.57	7.11	31.60	2.03	38.20	2372	457.20	8900
350 (37)	16.79	32.18	7.11	34.21	2.03	40.82	2955	490.22	12460
500 (37)	20.04	35.43	7.11	37.47	2.79	45.59	3951	546.10	17800
750 (61)	24.59	40.23	7.11	42.27	2.79	50.39	5353	604.52	26700
1000 (61)	28.37	44.02	7.11	46.05	2.79	54.18	6691	650.24	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	0.0158	0.1804	1.017	141.4042	0.464 + j0.195	0.163 + j0.055	3847	175	220
1 (19)	0.4199	0.53	0.0146	0.1739	1.083	150.5906	0.458 + j0.186	0.163 + j0.054	3958	175	220
1/0 (Solid)	0.3346	0.42	0.0146	0.1739	1.089	151.5748	0.424 + j0.185	0.129 + j0.053	3965	200	250
1/0 (19)	0.3346	0.42	0.0137	0.1673	1.161	161.4173	0.418 + j0.175	0.129 + j0.052	4090	200	250
2/0 (19)	0.2657	0.33	0.0128	0.1608	1.243	172.9003	0.384 + j0.165	0.103 + j0.050	4239	230	285
3/0 (19)	0.2100	0.27	0.0119	0.1542	1.339	186.0236	0.355 + j0.154	0.082 + j0.048	4412	260	320
4/0 (19)	0.1673	0.21	0.0110	0.1509	1.447	201.1155	0.331 + j0.144	0.066 + j0.046	4602	300	365
250 (37)	0.1411	0.18	0.0104	0.1444	1.549	215.2231	0.314 + j0.135	0.057 + j0.045	4784	315	396
350 (37)	0.1017	0.13	0.0091	0.1378	1.742	242.1260	0.285 + j0.120	0.042 + j0.043	5133	390	475
500 (37)	0.0722	0.10	0.0079	0.1345	1.978	274.9344	0.258 + j0.105	0.032 + j0.041	5566	470	565
750 (61)	0.0459	0.08	0.0067	0.1247	2.329	323.8189	0.231 + j0.088	0.025 + j0.039	6206	585	680
1000 (61)	0.0361	0.06	0.0061	0.1214	2.602	361.8766	0.213 + j0.077	0.021 + j0.037	6711	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.

