28kV CU 133% EPR (EAM) LCT LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% 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; 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. **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
- Optional CSA 68.5: -40ºC and MV 90ºC 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	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	1.017	345	1.097	80	1.357	938	16.3	669
1 (19)	0.322	1.050	345	1.130	80	1.390	965	16.7	669
1/0 (Solid)	0.324	1.052	345	1.132	80	1.392	1033	16.7	844
1/0 (19)	0.361	1.089	345	1.169	80	1.429	1064	17.1	844
2/0 (19)	0.405	1.133	345	1.213	80	1.473	1185	17.7	1064
3/0 (19)	0.456	1.184	345	1.264	80	1.524	1336	18.3	1342
4/0 (19)	0.512	1.240	345	1.320	80	1.580	1519	19.0	1692
250 (37)	0.558	1.294	345	1.374	80	1.634	1684	19.6	2000
350 (37)	0.661	1.397	345	1.477	110	1.797	2188	21.6	2800
500 (37)	0.789	1.525	345	1.605	110	1.925	2765	23.1	4000
750 (61)	0.968	1.714	345	1.794	110	2.114	3715	25.4	6000
1000 (61)	1.117	1.863	345	1.943	110	2.263	4623	27.2	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

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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	0.065	0.057	0.142	8.7	0.216 + j0.752	0.162 + j0.055	3095	175	220
1 (19)	0.128	0.162	0.061	0.055	0.151	9.3	0.216 + j0.751	0.162 + j0.056	3186	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	3192	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	3295	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	3416	230	285
3/0 (19)	0.064	0.081	0.049	0.049	0.187	11.5	0.135 + j0.739	0.081 + j0.050	3558	260	320
4/0 (19)	0.051	0.065	0.046	0.048	0.202	12.4	0.119 + j0.735	0.065 + j0.048	3713	300	365
250 (37)	0.043	0.056	0.043	0.046	0.212	13.0	0.110 + j0.731	0.056 + j0.047	3863	315	396
350 (37)	0.031	0.041	0.039	0.045	0.239	14.7	0.095 + j0.723	0.041 + j0.045	4148	390	475
500 (37)	0.022	0.030	0.034	0.042	0.271	16.6	0.084 + j0.716	0.030 + j0.042	4503	470	565
750 (61)	0.014	0.023	0.029	0.040	0.313	19.2	0.077 + j0.706	0.023 + j0.040	5027	585	680
1000 (61)	0.011	0.019	0.026	0.038	0.350	21.5	0.073 + j0.700	0.019 + j0.038	5439	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.

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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	25.83	8.76	27.86	2.03	34.47	1396	414.02	2977
1 (19)	8.18	26.67	8.76	28.70	2.03	35.31	1436	424.18	2977
1/0 (Solid)	8.23	26.72	8.76	28.75	2.03	35.36	1537	424.18	3756
1/0 (19)	9.17	27.66	8.76	29.69	2.03	36.30	1583	434.34	3756
2/0 (19)	10.29	28.78	8.76	30.81	2.03	37.41	1763	449.58	4735
3/0 (19)	11.58	30.07	8.76	32.11	2.03	38.71	1988	464.82	5972
4/0 (19)	13.00	31.50	8.76	33.53	2.03	40.13	2261	482.60	7529
250 (37)	14.17	32.87	8.76	34.90	2.03	41.50	2506	497.84	8900
350 (37)	16.79	35.48	8.76	37.52	2.79	45.64	3256	548.64	12460
500 (37)	20.04	38.73	8.76	40.77	2.79	48.89	4115	586.74	17800
750 (61)	24.59	43.54	8.76	45.57	2.79	53.70	5529	645.16	26700
1000 (61)	28.37	47.32	8.76	49.35	2.79	57.48	6880	690.88	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

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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	3095	175	220
1 (19)	0.4199	0.53	0.0186	0.1804	0.495	30.5118	0.216 + j0.751	0.162 + j0.056	3186	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	3192	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	3295	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	3416	230	285
3/0 (19)	0.2100	0.27	0.0149	0.1608	0.614	37.7297	0.135 + j0.739	0.081 + j0.050	3558	260	320
4/0 (19)	0.1673	0.21	0.0140	0.1575	0.663	40.6824	0.119 + j0.735	0.065 + j0.048	3713	300	365
250 (37)	0.1411	0.18	0.0131	0.1509	0.696	42.6509	0.110 + j0.731	0.056 + j0.047	3863	315	396
350 (37)	0.1017	0.13	0.0119	0.1476	0.784	48.2283	0.095 + j0.723	0.041 + j0.045	4148	390	475
500 (37)	0.0722	0.10	0.0104	0.1378	0.889	54.4619	0.084 + j0.716	0.030 + j0.042	4503	470	565
750 (61)	0.0459	0.08	0.0088	0.1312	1.027	62.9921	0.077 + j0.706	0.023 + j0.040	5027	585	680
1000 (61)	0.0361	0.06	0.0079	0.1247	1.148	70.5381	0.073 + j0.700	0.019 + j0.038	5439	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.