



28kV AL 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 Aluminum ASTM B231 1350 ¾ hard H16/H26 (Non Moisture Blocked 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. **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 B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- 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] AL 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	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	819	16.3	502
1 (19)	0.322	1.050	345	1.130	80	1.390	847	16.7	502
1/0 (Solid)	0.324	1.052	345	1.132	80	1.392	870	16.7	633
1/0 (19)	0.351	1.079	345	1.159	80	1.419	894	17.0	633
2/0 (19)	0.395	1.123	345	1.203	80	1.463	959	17.6	798
3/0 (19)	0.443	1.171	345	1.251	80	1.511	1033	18.1	1006
4/0 (19)	0.498	1.226	345	1.306	80	1.566	1123	18.8	1269
250 (37)	0.558	1.294	345	1.374	80	1.634	1222	19.6	1500
350 (37)	0.661	1.397	345	1.477	110	1.797	1512	21.6	2100
500 (37)	0.789	1.525	345	1.605	110	1.925	1772	23.1	3000
750 (61)	0.968	1.714	345	1.794	110	2.114	2208	25.4	4500
1000 (61)	1.117	1.863	345	1.943	110	2.263	2586	27.2	6000

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)	0.129	0.162	0.059	0.057	0.273	38.0	0.442 + j0.171	0.163 + j0.058	4287	140	170
1 (19)	0.211	0.266	0.055	0.055	0.289	40.2	0.541 + j0.163	0.267 + j0.056	4398	140	170
1/0 (Solid)	0.102	0.128	0.055	0.055	0.291	40.5	0.403 + j0.162	0.129 + j0.056	4405	155	195
1/0 (19)	0.167	0.211	0.053	0.054	0.304	42.3	0.481 + j0.157	0.212 + j0.054	4497	155	195
2/0 (19)	0.133	0.167	0.049	0.052	0.325	45.2	0.431 + j0.148	0.168 + j0.052	4646	180	220
3/0 (19)	0.105	0.132	0.046	0.050	0.348	48.4	0.389 + j0.139	0.133 + j0.050	4808	200	250
4/0 (19)	0.084	0.105	0.043	0.048	0.374	52.0	0.354 + j0.131	0.106 + j0.049	4994	235	285
250 (37)	0.071	0.090	0.039	0.046	0.406	56.4	0.330 + j0.121	0.091 + j0.047	5225	256	335
350 (37)	0.050	0.065	0.035	0.045	0.454	63.1	0.293 + j0.109	0.067 + j0.045	5573	310	375
500 (37)	0.035	0.046	0.031	0.042	0.514	71.5	0.260 + j0.096	0.048 + j0.043	6007	375	450
750 (61)	0.024	0.033	0.026	0.040	0.601	83.6	0.228 + j0.081	0.035 + j0.040	6646	470	550
1000 (61)	0.018	0.026	0.024	0.038	0.669	93.0	0.209 + j0.072	0.028 + j0.038	7151		630

*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	25.83	8.76	27.86	2.03	34.47	1219	414.02	2234
1 (19)	8.18	26.67	8.76	28.70	2.03	35.31	1260	424.18	2234
1/0 (Solid)	8.23	26.72	8.76	28.75	2.03	35.36	1295	424.18	2817
1/0 (19)	8.92	27.41	8.76	29.44	2.03	36.04	1330	431.80	2817
2/0 (19)	10.03	28.52	8.76	30.56	2.03	37.16	1427	447.04	3551
3/0 (19)	11.25	29.74	8.76	31.78	2.03	38.38	1537	459.74	4477
4/0 (19)	12.65	31.14	8.76	33.17	2.03	39.78	1671	477.52	5647
250 (37)	14.17	32.87	8.76	34.90	2.03	41.50	1819	497.84	6675
350 (37)	16.79	35.48	8.76	37.52	2.79	45.64	2250	548.64	9345
500 (37)	20.04	38.73	8.76	40.77	2.79	48.89	2637	586.74	13350
750 (61)	24.59	43.54	8.76	45.57	2.79	53.70	3286	645.16	20025
1000 (61)	28.37	47.32	8.76	49.35	2.79	57.48	3848	690.88	26700

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)	0.4232	0.53	0.0180	0.1870	0.896	124.6719	0.442 + j0.171	0.163 + j0.058	4287	140	170
1 (19)	0.6923	0.87	0.0168	0.1804	0.948	131.8898	0.541 + j0.163	0.267 + j0.056	4398	140	170
1/0 (Solid)	0.3346	0.42	0.0168	0.1804	0.955	132.8740	0.403 + j0.162	0.129 + j0.056	4405	155	195
1/0 (19)	0.5479	0.69	0.0162	0.1772	0.997	138.7795	0.481 + j0.157	0.212 + j0.054	4497	155	195
2/0 (19)	0.4364	0.55	0.0149	0.1706	1.066	148.2940	0.431 + j0.148	0.168 + j0.052	4646	180	220
3/0 (19)	0.3445	0.43	0.0140	0.1640	1.142	158.7927	0.389 + j0.139	0.133 + j0.050	4808	200	250
4/0 (19)	0.2756	0.34	0.0131	0.1575	1.227	170.6037	0.354 + j0.131	0.106 + j0.049	4994	235	285
250 (37)	0.2329	0.30	0.0119	0.1509	1.332	185.0394	0.330 + j0.121	0.091 + j0.047	5225	256	335
350 (37)	0.1640	0.21	0.0107	0.1476	1.490	207.0210	0.293 + j0.109	0.067 + j0.045	5573	310	375
500 (37)	0.1148	0.15	0.0094	0.1378	1.686	234.5801	0.260 + j0.096	0.048 + j0.043	6007	375	450
750 (61)	0.0787	0.11	0.0079	0.1312	1.972	274.2782	0.228 + j0.081	0.035 + j0.040	6646	470	550
1000 (61)	0.0591	0.09	0.0073	0.1247	2.195	305.1181	0.209 + j0.072	0.028 + j0.038	7151		630

*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.

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