28kV AL 133% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, One-third 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 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. **Concentric Neutral:** Helically applied soft drawn bare copper one-third 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 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-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: -40ºC and MV 90ºC optional marking available upon request

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

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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	1.137	6x14	0.54	50	1.365	809	9.6	502
1 (19)	0.322	1.05	345	1.17	6x14	0.54	50	1.398	837	9.8	502
1/0 (SOLID)	0.325	1.053	345	1.173	6x14	0.54	50	1.401	859	9.8	633
1/0 (19)	0.352	1.08	345	1.2	6x14	0.54	50	1.428	882	10	633
2/0 (19)	0.395	1.123	345	1.243	7x14	0.463	50	1.471	957	10.3	798
3/0 (19)	0.443	1.171	345	1.291	9x14	0.36	50	1.519	1057	10.6	1006
4/0 (19)	0.498	1.226	345	1.346	11x14	0.295	50	1.574	1169	11	1269
250 (37)	0.558	1.294	345	1.414	13x14	0.249	75	1.692	1367	11.8	1500
350 (37)	0.661	1.397	345	1.517	18x14	0.18	75	1.795	1618	12.6	2100
500 (37)	0.789	1.525	345	1.675	25x14	0.13	75	1.953	2011	13.7	3000
750 (61)	0.968	1.714	345	1.864	24x12	0.085	75	2.176	2603	15.2	4500
1000 (61)	1.117	1.863	345	2.013	20x10	0.064	75	2.367	3147	16.6	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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)	0.129	0.177	0.059	0.057	0.27	4.4	0.511+j0.279	0.178+j0.060	2095	140	175
1 (19)	0.211	0.289	0.056	0.055	0.29	4.7	0.622+j0.280	0.290+j0.061	2095	140	175
1/0 (SOLID)	0.102	0.14	0.056	0.055	0.29	4.7	0.473+j0.277	0.141+j0.058	2095	155	195
1/0 (19)	0.167	0.229	0.053	0.054	0.3	4.9	0.562+j0.278	0.230+j0.059	2095	155	195
2/0 (19)	0.133	0.182	0.05	0.052	0.33	5.3	0.496+j0.232	0.183+j0.057	2444	180	220
3/0 (19)	0.105	0.144	0.046	0.05	0.35	5.6	0.421+j0.170	0.146+j0.055	3142	200	250
4/0 (19)	0.084	0.115	0.043	0.048	0.37	6.1	0.359+j0.130	0.117+j0.053	3840	235	285
250 (37)	0.07	0.096	0.04	0.047	0.41	6.6	0.312+j0.105	0.098+j0.052	4538	256	309
350 (37)	0.051	0.07	0.036	0.045	0.45	7.4	0.235+j0.069	0.073+j0.050	6284	310	370
500 (37)	0.036	0.05	0.031	0.043	0.51	8.3	0.173+j0.047	0.054+j0.047	8727	370	445
750 (61)	0.023	0.033	0.027	0.04	0.6	9.7	0.116+j0.032	0.039+j0.044	13298	460	525
1000 (61)	0.017	0.025	0.024	0.039	0.67	10.8	0.088+j0.027	0.033+j0.041	17615	520	575

*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.

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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	28.88	6x14	1.77	1.27	34.67	1204	243.84	2234
1 (19)	8.18	26.67	8.76	29.72	6x14	1.77	1.27	35.51	1246	248.92	2234
1/0 (SOLID)	8.25	26.75	8.76	29.79	6x14	1.77	1.27	35.59	1278	248.92	2817
1/0 (19)	8.94	27.43	8.76	30.48	6x14	1.77	1.27	36.27	1313	254.00	2817
2/0 (19)	10.03	28.52	8.76	31.57	7x14	1.52	1.27	37.36	1424	261.62	3551
3/0 (19)	11.25	29.74	8.76	32.79	9x14	1.18	1.27	38.58	1573	269.24	4477
4/0 (19)	12.65	31.14	8.76	34.19	11x14	0.97	1.27	39.98	1740	279.40	5647
250 (37)	14.17	32.87	8.76	35.92	13x14	0.82	1.91	42.98	2034	299.72	6675
350 (37)	16.79	35.48	8.76	38.53	18x14	0.59	1.91	45.59	2408	320.04	9345
500 (37)	20.04	38.73	8.76	42.55	25x14	0.43	1.91	49.61	2993	347.98	13350
750 (61)	24.59	43.54	8.76	47.35	24x12	0.28	1.91	55.27	3874	386.08	20025
1000 (61)	28.37	47.32	8.76	51.13	20x10	0.21	1.91	60.12	4683	421.64	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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)	0.4232	0.58	0.0180	0.1870	0.886	14.4357	0.511+j0.279	0.178+j0.060	2095	140	175
1 (19)	0.6923	0.95	0.0171	0.1804	0.951	15.4199	0.622+j0.280	0.290+j0.061	2095	140	175
1/0 (SOLID)	0.3346	0.46	0.0171	0.1804	0.951	15.4199	0.473+j0.277	0.141+j0.058	2095	155	195
1/0 (19)	0.5479	0.75	0.0162	0.1772	0.984	16.0761	0.562+j0.278	0.230+j0.059	2095	155	195
2/0 (19)	0.4364	0.60	0.0152	0.1706	1.083	17.3885	0.496+j0.232	0.183+j0.057	2444	180	220
3/0 (19)	0.3445	0.47	0.0140	0.1640	1.148	18.3727	0.421+j0.170	0.146+j0.055	3142	200	250
4/0 (19)	0.2756	0.38	0.0131	0.1575	1.214	20.0131	0.359+j0.130	0.117+j0.053	3840	235	285
250 (37)	0.2297	0.31	0.0122	0.1542	1.345	21.6535	0.312+j0.105	0.098+j0.052	4538	256	309
350 (37)	0.1673	0.23	0.0110	0.1476	1.476	24.2782	0.235+j0.069	0.073+j0.050	6284	310	370
500 (37)	0.1181	0.16	0.0094	0.1411	1.673	27.2310	0.173+j0.047	0.054+j0.047	8727	370	445
750 (61)	0.0755	0.11	0.0082	0.1312	1.969	31.8241	0.116+j0.032	0.039+j0.044	13298	460	525
1000 (61)	0.0558	0.08	0.0073	0.1280	2.198	35.4331	0.088+j0.027	0.033+j0.041	17615	520	575

*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.

Concentric Neutral Calculator

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