28kV AL 133% EPR (EAM) Full Neutral LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% 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 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 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 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	13x14	0.249	50	1.365	903	9.6	502
1 (19)	0.322	1.05	345	1.17	13x14	0.249	50	1.398	931	9.8	502
1/0 (SOLID)	0.325	1.053	345	1.173	16x14	0.203	50	1.401	993	9.8	633
1/0 (19)	0.352	1.08	345	1.2	16x14	0.203	50	1.428	1016	10	633
2/0 (19)	0.395	1.123	345	1.243	20x14	0.162	50	1.471	1131	10.3	798
3/0 (19)	0.443	1.171	345	1.291	25x14	0.13	50	1.519	1271	10.6	1006
4/0 (19)	0.498	1.226	345	1.346	20x12	0.102	75	1.658	1509	11.6	1269
250 (37)	0.558	1.294	345	1.414	24x12	0.085	75	1.726	1691	12.1	1500
350 (37)	0.661	1.397	345	1.517	21x10	0.061	75	1.871	2079	13.1	2100

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	0.394+j0.111	0.179+j0.060	4538	140	170
1 (19)	0.211	0.289	0.056	0.055	0.29	4.7	0.506+j0.112	0.291+j0.061	4538	140	170
1/0 (SOLID)	0.102	0.14	0.056	0.055	0.29	4.7	0.324+j0.086	0.143+j0.058	5585	155	195
1/0 (19)	0.167	0.229	0.053	0.054	0.3	4.9	0.413+j0.087	0.232+j0.059	5585	155	195
2/0 (19)	0.133	0.182	0.05	0.052	0.33	5.3	0.333+j0.067	0.185+j0.056	6982	180	220
3/0 (19)	0.105	0.144	0.046	0.05	0.35	5.6	0.268+j0.054	0.148+j0.054	8727	205	250
4/0 (19)	0.084	0.115	0.043	0.049	0.37	6.1	0.214+j0.044	0.121+j0.053	11082	235	285
250 (37)	0.07	0.096	0.04	0.048	0.41	6.6	0.179+j0.039	0.103+j0.051	13298	254	307
350 (37)	0.051	0.07	0.036	0.046	0.45	7.4	0.130+j0.032	0.079+j0.047	18496	305	365

*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	25.83	8.76	28.88	13x14	0.82	1.27	34.67	1344	243.84	2234
1 (19)	8.18	26.67	8.76	29.72	13x14	0.82	1.27	35.51	1385	248.92	2234
1/0 (SOLID)	8.25	26.75	8.76	29.79	16x14	0.67	1.27	35.59	1478	248.92	2817
1/0 (19)	8.94	27.43	8.76	30.48	16x14	0.67	1.27	36.27	1512	254.00	2817
2/0 (19)	10.03	28.52	8.76	31.57	20x14	0.53	1.27	37.36	1683	261.62	3551
3/0 (19)	11.25	29.74	8.76	32.79	25x14	0.43	1.27	38.58	1891	269.24	4477
4/0 (19)	12.65	31.14	8.76	34.19	20x12	0.33	1.91	42.11	2246	294.64	5647
250 (37)	14.17	32.87	8.76	35.92	24x12	0.28	1.91	43.84	2516	307.34	6675
350 (37)	16.79	35.48	8.76	38.53	21x10	0.20	1.91	47.52	3094	332.74	9345

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◊ Cable marked with this symbol is a standard stock item
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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.

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	0.394+j0.111	0.179+j0.060	4538	140	170
1 (19)	0.6923	0.95	0.0171	0.1804	0.951	15.4199	0.506+j0.112	0.291+j0.061	4538	140	170
1/0 (SOLID)	0.3346	0.46	0.0171	0.1804	0.951	15.4199	0.324+j0.086	0.143+j0.058	5585	155	195
1/0 (19)	0.5479	0.75	0.0162	0.1772	0.984	16.0761	0.413+j0.087	0.232+j0.059	5585	155	195
2/0 (19)	0.4364	0.60	0.0152	0.1706	1.083	17.3885	0.333+j0.067	0.185+j0.056	6982	180	220
3/0 (19)	0.3445	0.47	0.0140	0.1640	1.148	18.3727	0.268+j0.054	0.148+j0.054	8727	205	250
4/0 (19)	0.2756	0.38	0.0131	0.1608	1.214	20.0131	0.214+j0.044	0.121+j0.053	11082	235	285
250 (37)	0.2297	0.31	0.0122	0.1575	1.345	21.6535	0.179+j0.039	0.103+j0.051	13298	254	307
350 (37)	0.1673	0.23	0.0110	0.1509	1.476	24.2782	0.130+j0.032	0.079+j0.047	18496	305	365

*****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
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Concentric Neutral Calculator

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