28kV AL 100% EPR (EAM) Full Neutral LLDPE

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 100% 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:** 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 100% 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 280 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	0.887	280	0.987	13x14	0.249	50	1.215	749	8.5	502
1 (19)	0.322	0.92	280	1.02	13x14	0.249	50	1.248	772	8.7	502
1/0 (SOLID)	0.325	0.923	280	1.023	16x14	0.203	50	1.251	834	8.8	633
1/0 (19)	0.352	0.95	280	1.05	16x14	0.203	50	1.278	853	8.9	633
2/0 (19)	0.395	0.993	280	1.093	20x14	0.162	50	1.321	963	9.2	798
3/0 (19)	0.443	1.041	280	1.161	25x14	0.13	50	1.389	1118	9.7	1006
4/0 (19)	0.498	1.096	280	1.216	20x12	0.102	50	1.478	1278	10.3	1269
250 (37)	0.558	1.164	280	1.284	24x12	0.085	50	1.546	1449	10.8	1500
350 (37)	0.661	1.267	280	1.387	21x10	0.061	75	1.741	1894	12.2	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	0.052	0.055	0.31	5	0.395+j0.108	0.179+j0.058	4538	140	170
1 (19)	0.211	0.289	0.049	0.053	0.33	5.3	0.507+j0.108	0.291+j0.058	4538	140	170
1/0 (SOLID)	0.102	0.14	0.049	0.053	0.33	5.4	0.324+j0.083	0.143+j0.056	5585	155	195
1/0 (19)	0.167	0.229	0.046	0.051	0.35	5.6	0.413+j0.083	0.232+j0.056	5585	155	195
2/0 (19)	0.133	0.182	0.043	0.049	0.37	6	0.334+j0.064	0.185+j0.054	6982	180	220
3/0 (19)	0.105	0.144	0.04	0.048	0.4	6.5	0.268+j0.051	0.148+j0.052	8727	205	250
4/0 (19)	0.084	0.115	0.037	0.047	0.43	7	0.214+j0.042	0.120+j0.050	11082	235	285
250 (37)	0.07	0.096	0.034	0.045	0.47	7.6	0.179+j0.036	0.102+j0.049	13298	254	307
350 (37)	0.051	0.07	0.03	0.044	0.53	8.6	0.130+j0.029	0.079+j0.046	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	22.53	7.11	25.07	13x14	0.82	1.27	30.86	1115	215.90	2234
1 (19)	8.18	23.37	7.11	25.91	13x14	0.82	1.27	31.70	1149	220.98	2234
1/0 (SOLID)	8.25	23.44	7.11	25.98	16x14	0.67	1.27	31.78	1241	223.52	2817
1/0 (19)	8.94	24.13	7.11	26.67	16x14	0.67	1.27	32.46	1269	226.06	2817
2/0 (19)	10.03	25.22	7.11	27.76	20x14	0.53	1.27	33.55	1433	233.68	3551
3/0 (19)	11.25	26.44	7.11	29.49	25x14	0.43	1.27	35.28	1664	246.38	4477
4/0 (19)	12.65	27.84	7.11	30.89	20x12	0.33	1.27	37.54	1902	261.62	5647
250 (37)	14.17	29.57	7.11	32.61	24x12	0.28	1.27	39.27	2156	274.32	6675
350 (37)	16.79	32.18	7.11	35.23	21x10	0.20	1.91	44.22	2819	309.88	9345

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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	0.0158	0.1804	1.017	16.4042	0.395+j0.108	0.179+j0.058	4538	140	170
1 (19)	0.6923	0.95	0.0149	0.1739	1.083	17.3885	0.507+j0.108	0.291+j0.058	4538	140	170
1/0 (SOLID)	0.3346	0.46	0.0149	0.1739	1.083	17.7165	0.324+j0.083	0.143+j0.056	5585	155	195
1/0 (19)	0.5479	0.75	0.0140	0.1673	1.148	18.3727	0.413+j0.083	0.232+j0.056	5585	155	195
2/0 (19)	0.4364	0.60	0.0131	0.1608	1.214	19.6850	0.334+j0.064	0.185+j0.054	6982	180	220
3/0 (19)	0.3445	0.47	0.0122	0.1575	1.312	21.3255	0.268+j0.051	0.148+j0.052	8727	205	250
4/0 (19)	0.2756	0.38	0.0113	0.1542	1.411	22.9659	0.214+j0.042	0.120+j0.050	11082	235	285
250 (37)	0.2297	0.31	0.0104	0.1476	1.542	24.9344	0.179+j0.036	0.102+j0.049	13298	254	307
350 (37)	0.1673	0.23	0.0091	0.1444	1.739	28.2152	0.130+j0.029	0.079+j0.046	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.
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Concentric Neutral Calculator

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