



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: -40°C and MV 90°C 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



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	0.977	13x14	0.202	50	1.205	722	9.6	502
1 (19)	0.322	0.920	280	1.010	13x14	0.202	50	1.238	742	9.9	502
1/0 (Solid)	0.324	0.922	280	1.012	16x14	0.164	50	1.240	805	9.9	633
1/0 (19)	0.351	0.949	280	1.039	16x14	0.164	50	1.267	823	10.1	633
2/0 (19)	0.395	0.993	280	1.083	20x14	0.131	50	1.311	932	10.5	798
3/0 (19)	0.443	1.041	280	1.151	25x14	0.105	50	1.379	1083	11.0	1006
4/0 (19)	0.498	1.096	280	1.206	20x12	0.083	50	1.468	1241	11.7	1269
250 (37)	0.558	1.164	280	1.274	24x12	0.069	50	1.536	1409	12.3	1500
350 (37)	0.661	1.267	280	1.377	21x10	0.049	75	1.731	1859	13.8	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

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	0.052	0.054	0.310	43.1	0.216 + j1.207	0.162 + j0.506	4533	140	170
1 (19)	0.211	0.266	0.048	0.053	0.330	45.9	0.320 + j1.148	0.266 + j0.450	4533	140	170
1/0 (Solid)	0.102	0.128	0.048	0.052	0.332	46.2	0.182 + j1.144	0.128 + j0.445	5579	155	195
1/0 (19)	0.167	0.211	0.046	0.051	0.348	48.4	0.265 + j1.104	0.211 + j0.407	5579	155	195
2/0 (19)	0.133	0.167	0.043	0.049	0.373	51.9	0.221 + j1.053	0.167 + j0.357	6974	180	220
3/0 (19)	0.105	0.132	0.040	0.048	0.401	55.8	0.186 + j1.006	0.132 + j0.314	8718	205	250
4/0 (19)	0.084	0.105	0.037	0.047	0.433	60.2	0.159 + j0.962	0.105 + j0.275	11081	235	285
250 (37)	0.071	0.090	0.034	0.045	0.472	65.6	0.144 + j0.925	0.090 + j0.240	13298	254	307
350 (37)	0.050	0.065	0.030	0.044	0.531	73.8	0.119 + j0.874	0.065 + j0.198	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	24.82	13x14	0.66	1.27	30.61	1074	243.84	2234
1 (19)	8.18	23.37	7.11	25.65	13x14	0.66	1.27	31.45	1104	251.46	2234
1/0 (Solid)	8.23	23.42	7.11	25.70	16x14	0.54	1.27	31.50	1198	251.46	2817
1/0 (19)	8.92	24.10	7.11	26.39	16x14	0.54	1.27	32.18	1225	256.54	2817
2/0 (19)	10.03	25.22	7.11	27.51	20x14	0.43	1.27	33.30	1387	266.70	3551
3/0 (19)	11.25	26.44	7.11	29.24	25x14	0.34	1.27	35.03	1612	279.40	4477
4/0 (19)	12.65	27.84	7.11	30.63	20x12	0.27	1.27	37.29	1847	297.18	5647
250 (37)	14.17	29.57	7.11	32.36	24x12	0.23	1.27	39.01	2097	312.42	6675
350 (37)	16.79	32.18	7.11	34.98	21x10	0.16	1.91	43.97	2766	350.52	9345

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	0.0158	0.1772	1.017	141.4042	0.216 + j1.207	0.162 + j0.506	4533	140	170
1 (19)	0.6923	0.87	0.0146	0.1739	1.083	150.5906	0.320 + j1.148	0.266 + j0.450	4533	140	170
1/0 (Solid)	0.3346	0.42	0.0146	0.1706	1.089	151.5748	0.182 + j1.144	0.128 + j0.445	5579	155	195
1/0 (19)	0.5479	0.69	0.0140	0.1673	1.142	158.7927	0.265 + j1.104	0.211 + j0.407	5579	155	195
2/0 (19)	0.4364	0.55	0.0131	0.1608	1.224	170.2756	0.221 + j1.053	0.167 + j0.357	6974	180	220
3/0 (19)	0.3445	0.43	0.0122	0.1575	1.316	183.0709	0.186 + j1.006	0.132 + j0.314	8718	205	250
4/0 (19)	0.2756	0.34	0.0113	0.1542	1.421	197.5066	0.159 + j0.962	0.105 + j0.275	11081	235	285
250 (37)	0.2329	0.30	0.0104	0.1476	1.549	215.2231	0.144 + j0.925	0.090 + j0.240	13298	254	307
350 (37)	0.1640	0.21	0.0091	0.1444	1.742	242.1260	0.119 + j0.874	0.065 + j0.198	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.

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Calculator

