

28kV AL 100% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 100% 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:** 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 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: -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	6x14	0.438	50	1.205	626	9.6	502
1 (19)	0.322	0.920	280	1.010	6x14	0.438	50	1.238	646	9.9	502
1/0 (Solid)	0.324	0.922	280	1.012	6x14	0.438	50	1.240	669	9.9	633
1/0 (19)	0.351	0.949	280	1.039	6x14	0.438	50	1.267	685	10.1	633
2/0 (19)	0.395	0.993	280	1.083	7x14	0.375	50	1.311	753	10.5	798
3/0 (19)	0.443	1.041	280	1.151	9x14	0.292	50	1.379	865	11.0	1006
4/0 (19)	0.498	1.096	280	1.206	11x14	0.239	50	1.434	967	11.5	1269
250 (37)	0.558	1.164	280	1.274	13x14	0.202	50	1.502	1080	12.0	1500
350 (37)	0.661	1.267	280	1.377	18x14	0.146	75	1.655	1391	13.2	2100
500 (37)	0.789	1.395	280	1.505	16x12	0.103	75	1.817	1717	14.5	3000
750 (61)	0.968	1.584	280	1.724	24x12	0.069	75	2.036	2321	16.3	4500
1000 (61)	1.117	1.733	280	1.873	20x10	0.052	75	2.227	2843	17.8	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	0.058	0.054	0.159	9.77	0.216 + j0.758	0.162 + j0.052	2092	140	175
1 (19)	0.211	0.266	0.054	0.053	0.170	10.44	0.320 + j0.757	0.266 + j0.053	2092	140	175
1/0 (Solid)	0.102	0.128	0.054	0.052	0.171	10.50	0.182 + j0.754	0.128 + j0.050	2092	155	195
1/0 (19)	0.167	0.211	0.051	0.051	0.180	11.06	0.265 + j0.753	0.211 + j0.051	2092	155	195
2/0 (19)	0.133	0.167	0.048	0.049	0.194	11.92	0.221 + j0.749	0.167 + j0.049	2441	180	220
3/0 (19)	0.105	0.132	0.044	0.048	0.209	12.84	0.186 + j0.744	0.132 + j0.047	3138	200	250
4/0 (19)	0.084	0.105	0.041	0.046	0.227	13.95	0.159 + j0.739	0.105 + j0.046	3836	235	285
250 (37)	0.071	0.090	0.038	0.044	0.243	14.93	0.144 + j0.735	0.090 + j0.045	4533	256	309
350 (37)	0.050	0.065	0.033	0.043	0.275	16.89	0.119 + j0.727	0.065 + j0.043	6277	310	370
500 (37)	0.035	0.046	0.029	0.041	0.314	19.29	0.011 + j0.718	0.046 + j0.041	8865	370	445
750 (61)	0.024	0.033	0.025	0.039	0.363	22.30	0.087 + j0.708	0.033 + j0.039	13298	460	525
1000 (61)	0.018	0.026	0.022	0.038	0.407	25.00	0.080 + j0.701	0.026 + j0.038	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.



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	6x14	1.44	1.27	30.61	932	243.84	2234
1 (19)	8.18	23.37	7.11	25.65	6x14	1.44	1.27	31.45	961	251.46	2234
1/0 (Solid)	8.23	23.42	7.11	25.70	6x14	1.44	1.27	31.50	996	251.46	2817
1/0 (19)	8.92	24.10	7.11	26.39	6x14	1.44	1.27	32.18	1019	256.54	2817
2/0 (19)	10.03	25.22	7.11	27.51	7x14	1.23	1.27	33.30	1121	266.70	3551
3/0 (19)	11.25	26.44	7.11	29.24	9x14	0.96	1.27	35.03	1287	279.40	4477
4/0 (19)	12.65	27.84	7.11	30.63	11x14	0.78	1.27	36.42	1439	292.10	5647
250 (37)	14.17	29.57	7.11	32.36	13x14	0.66	1.27	38.15	1607	304.80	6675
350 (37)	16.79	32.18	7.11	34.98	18x14	0.48	1.91	42.04	2070	335.28	9345
500 (37)	20.04	35.43	7.11	38.23	16x12	0.34	1.91	46.15	2555	368.30	13350
750 (61)	24.59	40.23	7.11	43.79	24x12	0.23	1.91	51.71	3454	414.02	20025
1000 (61)	28.37	44.02	7.11	47.57	20x10	0.17	1.91	56.57	4231	452.12	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	0.0177	0.1772	0.522	32.0538	0.216 + j0.758	0.162 + j0.052	2092	140	175
1 (19)	0.6923	0.87	0.0165	0.1739	0.558	34.2520	0.320 + j0.757	0.266 + j0.053	2092	140	175
1/0 (Solid)	0.3346	0.42	0.0165	0.1706	0.561	34.4488	0.182 + j0.754	0.128 + j0.050	2092	155	195
1/0 (19)	0.5479	0.69	0.0155	0.1673	0.591	36.2861	0.265 + j0.753	0.211 + j0.051	2092	155	195
2/0 (19)	0.4364	0.55	0.0146	0.1608	0.636	39.1076	0.221 + j0.749	0.167 + j0.049	2441	180	220
3/0 (19)	0.3445	0.43	0.0134	0.1575	0.686	42.1260	0.186 + j0.744	0.132 + j0.047	3138	200	250
4/0 (19)	0.2756	0.34	0.0125	0.1509	0.745	45.7677	0.159 + j0.739	0.105 + j0.046	3836	235	285
250 (37)	0.2329	0.30	0.0116	0.1444	0.797	48.9829	0.144 + j0.735	0.090 + j0.045	4533	256	309
350 (37)	0.1640	0.21	0.0101	0.1411	0.902	55.4134	0.119 + j0.727	0.065 + j0.043	6277	310	370
500 (37)	0.1148	0.15	0.0088	0.1345	1.030	63.2874	0.011 + j0.718	0.046 + j0.041	8865	370	445
750 (61)	0.0787	0.11	0.0076	0.1280	1.191	73.1627	0.087 + j0.708	0.033 + j0.039	13298	460	525
1000 (61)	0.0591	0.09	0.0067	0.1247	1.335	82.0210	0.080 + j0.701	0.026 + j0.038	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.

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Calculator



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