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: -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	6x14	0.54	50	1.215	655	8.5	502
1 (19)	0.322	0.92	280	1.02	6x14	0.54	50	1.248	678	8.7	502
1/0 (SOLID)	0.325	0.923	280	1.023	6x14	0.54	50	1.251	700	8.8	633
1/0 (19)	0.352	0.95	280	1.05	6x14	0.54	50	1.278	719	8.9	633
2/0 (19)	0.395	0.993	280	1.093	7x14	0.463	50	1.321	789	9.2	798
3/0 (19)	0.443	1.041	280	1.161	9x14	0.36	50	1.389	904	9.7	1006
4/0 (19)	0.498	1.096	280	1.216	11x14	0.295	50	1.444	1010	10.1	1269
250 (37)	0.558	1.164	280	1.284	13x14	0.249	50	1.512	1126	10.6	1500
350 (37)	0.661	1.267	280	1.387	18x14	0.18	75	1.665	1433	11.7	2100
500 (37)	0.789	1.395	280	1.515	25x14	0.13	75	1.793	1763	12.6	3000
750 (61)	0.968	1.584	280	1.734	24x12	0.085	75	2.046	2379	14.3	4500
1000 (61)	1.117	1.733	280	1.883	20x10	0.064	75	2.237	2905	15.7	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	0.052	0.055	0.31	5	0.514+j0.276	0.178+j0.058	2095	140	175
1 (19)	0.211	0.289	0.049	0.053	0.33	5.3	0.625+j0.277	0.290+j0.058	2095	140	175
1/0 (SOLID)	0.102	0.14	0.049	0.053	0.33	5.4	0.476+j0.274	0.141+j0.056	2095	155	195
1/0 (19)	0.167	0.229	0.046	0.051	0.35	5.6	0.564+j0.275	0.230+j0.056	2095	155	195
2/0 (19)	0.133	0.182	0.043	0.049	0.37	6	0.499+j0.229	0.183+j0.054	2444	180	220
3/0 (19)	0.105	0.144	0.04	0.048	0.4	6.5	0.422+j0.167	0.146+j0.053	3142	200	250
4/0 (19)	0.084	0.115	0.037	0.046	0.43	7	0.360+j0.127	0.117+j0.051	3840	235	285
250 (37)	0.07	0.096	0.034	0.045	0.47	7.6	0.312+j0.102	0.098+j0.050	4538	256	309
350 (37)	0.051	0.07	0.03	0.043	0.53	8.6	0.236+j0.066	0.073+j0.048	6284	310	370
500 (37)	0.036	0.05	0.027	0.041	0.6	9.8	0.174+j0.045	0.054+j0.045	8727	370	445
750 (61)	0.023	0.033	0.023	0.039	0.71	11.5	0.116+j0.031	0.039+j0.042	13298	460	525
1000 (61)	0.017	0.025	0.02	0.038	0.79	12.8	0.088+j0.025	0.033+j0.040	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	22.53	7.11	25.07	6x14	1.77	1.27	30.86	975	215.90	2234
1 (19)	8.18	23.37	7.11	25.91	6x14	1.77	1.27	31.70	1009	220.98	2234
1/0 (SOLID)	8.25	23.44	7.11	25.98	6x14	1.77	1.27	31.78	1042	223.52	2817
1/0 (19)	8.94	24.13	7.11	26.67	6x14	1.77	1.27	32.46	1070	226.06	2817
2/0 (19)	10.03	25.22	7.11	27.76	7x14	1.52	1.27	33.55	1174	233.68	3551
3/0 (19)	11.25	26.44	7.11	29.49	9x14	1.18	1.27	35.28	1345	246.38	4477
4/0 (19)	12.65	27.84	7.11	30.89	11x14	0.97	1.27	36.68	1503	256.54	5647
250 (37)	14.17	29.57	7.11	32.61	13x14	0.82	1.27	38.40	1676	269.24	6675
350 (37)	16.79	32.18	7.11	35.23	18x14	0.59	1.91	42.29	2133	297.18	9345
500 (37)	20.04	35.43	7.11	38.48	25x14	0.43	1.91	45.54	2624	320.04	13350
750 (61)	24.59	40.23	7.11	44.04	24x12	0.28	1.91	51.97	3540	363.22	20025
1000 (61)	28.37	44.02	7.11	47.83	20x10	0.21	1.91	56.82	4323	398.78	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	0.0158	0.1804	1.017	16.4042	0.514+j0.276	0.178+j0.058	2095	140	175
1 (19)	0.6923	0.95	0.0149	0.1739	1.083	17.3885	0.625+j0.277	0.290+j0.058	2095	140	175
1/0 (SOLID)	0.3346	0.46	0.0149	0.1739	1.083	17.7165	0.476+j0.274	0.141+j0.056	2095	155	195
1/0 (19)	0.5479	0.75	0.0140	0.1673	1.148	18.3727	0.564+j0.275	0.230+j0.056	2095	155	195
2/0 (19)	0.4364	0.60	0.0131	0.1608	1.214	19.6850	0.499+j0.229	0.183+j0.054	2444	180	220
3/0 (19)	0.3445	0.47	0.0122	0.1575	1.312	21.3255	0.422+j0.167	0.146+j0.053	3142	200	250
4/0 (19)	0.2756	0.38	0.0113	0.1509	1.411	22.9659	0.360+j0.127	0.117+j0.051	3840	235	285
250 (37)	0.2297	0.31	0.0104	0.1476	1.542	24.9344	0.312+j0.102	0.098+j0.050	4538	256	309
350 (37)	0.1673	0.23	0.0091	0.1411	1.739	28.2152	0.236+j0.066	0.073+j0.048	6284	310	370
500 (37)	0.1181	0.16	0.0082	0.1345	1.969	32.1522	0.174+j0.045	0.054+j0.045	8727	370	445
750 (61)	0.0755	0.11	0.0070	0.1280	2.329	37.7297	0.116+j0.031	0.039+j0.042	13298	460	525
1000 (61)	0.0558	0.08	0.0061	0.1247	2.592	41.9948	0.088+j0.025	0.033+j0.040	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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