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

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	720	9.6	502
1 (19)	0.322	0.920	280	1.010	13x14	0.202	50	1.238	740	9.9	502
1/0 (Solid)	0.324	0.922	280	1.012	16x14	0.164	50	1.240	804	9.9	633
1/0 (19)	0.351	0.949	280	1.039	16x14	0.164	50	1.267	821	10.1	633
2/0 (19)	0.395	0.993	280	1.083	20x14	0.131	50	1.311	929	10.5	798
3/0 (19)	0.443	1.041	280	1.151	25x14	0.105	50	1.379	1081	11.0	1006
4/0 (19)	0.498	1.096	280	1.206	32x14	0.082	50	1.434	1251	11.5	1269
250 (37)	0.558	1.164	280	1.274	25x12	0.066	50	1.536	1427	12.3	1500
350 (37)	0.661	1.267	280	1.377	32x12	0.051	75	1.689	1819	13.5	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	0.058	0.054	0.159	9.77	0.216 + j0.758	0.162 + j0.052	4533	140	170
1 (19)	0.211	0.266	0.054	0.053	0.170	10.44	0.320 + j0.757	0.266 + j0.053	4533	140	170
1/0 (Solid)	0.102	0.128	0.054	0.052	0.171	10.50	0.182 + j0.754	0.128 + j0.050	5579	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	5579	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	6974	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	8718	205	250
4/0 (19)	0.084	0.105	0.041	0.046	0.227	13.95	0.159 + j0.739	0.105 + j0.046	11159	235	285
250 (37)	0.071	0.090	0.038	0.045	0.243	14.93	0.144 + j0.734	0.090 + j0.045	13852	254	307
350 (37)	0.050	0.065	0.033	0.043	0.275	16.89	0.119 + j0.726	0.065 + j0.043	17730	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.

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	1071	243.84	2234
1 (19)	8.18	23.37	7.11	25.65	13x14	0.66	1.27	31.45	1101	251.46	2234
1/0 (Solid)	8.23	23.42	7.11	25.70	16x14	0.54	1.27	31.50	1196	251.46	2817
1/0 (19)	8.92	24.10	7.11	26.39	16x14	0.54	1.27	32.18	1222	256.54	2817
2/0 (19)	10.03	25.22	7.11	27.51	20x14	0.43	1.27	33.30	1383	266.70	3551
3/0 (19)	11.25	26.44	7.11	29.24	25x14	0.34	1.27	35.03	1609	279.40	4477
4/0 (19)	12.65	27.84	7.11	30.63	32x14	0.27	1.27	36.42	1862	292.10	5647
250 (37)	14.17	29.57	7.11	32.36	25x12	0.22	1.27	39.01	2124	312.42	6675
350 (37)	16.79	32.18	7.11	34.98	32x12	0.17	1.91	42.90	2707	342.90	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	0.0177	0.1772	0.522	32.0538	0.216 + j0.758	0.162 + j0.052	4533	140	170
1 (19)	0.6923	0.87	0.0165	0.1739	0.558	34.2520	0.320 + j0.757	0.266 + j0.053	4533	140	170
1/0 (Solid)	0.3346	0.42	0.0165	0.1706	0.561	34.4488	0.182 + j0.754	0.128 + j0.050	5579	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	5579	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	6974	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	8718	205	250
4/0 (19)	0.2756	0.34	0.0125	0.1509	0.745	45.7677	0.159 + j0.739	0.105 + j0.046	11159	235	285
250 (37)	0.2329	0.30	0.0116	0.1476	0.797	48.9829	0.144 + j0.734	0.090 + j0.045	13852	254	307
350 (37)	0.1640	0.21	0.0101	0.1411	0.902	55.4134	0.119 + j0.726	0.065 + j0.043	17730	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.

CN Calculator