

35kV AL 100% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 345 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; Supersmooth conductor shield optional; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
3. **Insulation:** 345 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 35kV 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 35000 VOLTS EPR INSULATION 345 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



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Table 1 – Weights and Measurements

Stock Number	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
TBA	1/0 (Solid)	0.324	1.052	345	1.162	6x14	0.438	50	1.390	816	11.1	633
TBA	1/0 (19)	0.351	1.079	345	1.189	6x14	0.438	50	1.417	837	11.3	633
TBA	2/0 (19)	0.395	1.123	345	1.233	7x14	0.375	50	1.461	910	11.7	798
TBA	3/0 (19)	0.443	1.171	345	1.281	9x14	0.292	50	1.509	1007	12.1	1006
619195	4/0 (19)	0.498	1.218	345	1.328	11x14	0.239	50	1.556	1168	12.4	1269
660953	4/0 (19)	0.498	1.218	345	1.328	11x14	0.239	50	1.556	1168	12.4	1269
TBA	250 (37)	0.558	1.294	345	1.404	13x14	0.202	75	1.682	1317	13.5	1500
TBA	350 (37)	0.661	1.397	345	1.507	18x14	0.146	75	1.785	1563	14.3	2100
661684	500 (37)	0.789	1.519	345	1.629	25x14	0.105	75	1.911	1948	15.3	3000
628337	500 (37)	0.789	1.519	345	1.629	25x14	0.105	75	1.911	1939	15.3	3000
660962	750 (61)	0.968	1.708	345	1.848	24x12	0.069	75	2.163	2626	17.3	4500
661920?	1000 (61)	1.117	1.857	345	1.997	20x10	0.052	75	2.354	3221	18.8	6000
660970	1000 (61)	1.117	1.857	345	1.997	20x10	0.052	75	2.354	3227	18.8	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

? Cross-Linked Polyethylene Jacket with Red Stripe



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
1/0 (Solid)	0.102	0.128	0.061	0.055	0.190	14.6	0.182 + j0.749	0.128 + j0.053	2092	160	195
1/0 (19)	0.167	0.211	0.058	0.054	0.199	15.3	0.265 + j0.748	0.211 + j0.053	2092	160	195
2/0 (19)	0.133	0.167	0.054	0.052	0.214	16.4	0.221 + j0.744	0.167 + j0.051	2441	185	220
3/0 (19)	0.105	0.132	0.050	0.050	0.230	17.7	0.186 + j0.740	0.132 + j0.050	3138	210	250
4/0 (19)	0.084	0.105	0.047	0.048	0.248	19.0	0.159 + j0.735	0.105 + j0.048	3836	235	285
4/0 (19)	0.084	0.105	0.047	0.048	0.248	19.0	0.159 + j0.735	0.105 + j0.048	3836	235	285
250 (37)	0.071	0.090	0.043	0.047	0.266	20.4	0.144 + j0.730	0.090 + j0.047	4533	257	
350 (37)	0.050	0.065	0.039	0.045	0.299	23.0	0.119 + j0.723	0.065 + j0.045	6277	315	370
500 (37)	0.035	0.046	0.034	0.042	0.339	26.0	0.100 + j0.715	0.046 + j0.043	8718	380	445
500 (37)	0.035	0.046	0.034	0.042	0.339	26.0	0.100 + j0.715	0.046 + j0.043	8718	380	445
750 (61)	0.024	0.033	0.029	0.040	0.391	30.0	0.087 + j0.705	0.033 + j0.040	13298	470	530
1000 (61)	0.018	0.026	0.026	0.039	0.437	33.6	0.080 + j0.698	0.026 + j0.039	17615	530	585
1000 (61)	0.018	0.026	0.026	0.039	0.437	33.6	0.080 + j0.698	0.026 + j0.039	17615	530	585

*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)

Stock Number	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
TBA	1/0 (Solid)	8.23	26.72	8.76	29.51	6x14	1.44	1.27	35.31	1214	281.94	2817
TBA	1/0 (19)	8.92	27.41	8.76	30.20	6x14	1.44	1.27	35.99	1246	287.02	2817
TBA	2/0 (19)	10.03	28.52	8.76	31.32	7x14	1.23	1.27	37.11	1354	297.18	3551
TBA	3/0 (19)	11.25	29.74	8.76	32.54	9x14	0.96	1.27	38.33	1499	307.34	4477
619195	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.78	1.27	39.52	1738	314.96	5647
660953	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.78	1.27	39.52	1738	314.96	5647
TBA	250 (37)	14.17	32.87	8.76	35.66	13x14	0.66	1.91	42.72	1960	342.90	6675
TBA	350 (37)	16.79	35.48	8.76	38.28	18x14	0.48	1.91	45.34	2326	363.22	9345
661684	500 (37)	20.04	38.58	8.76	41.38	25x14	0.34	1.91	48.54	2899	388.62	13350
628337	500 (37)	20.04	38.58	8.76	41.38	25x14	0.34	1.91	48.54	2886	388.62	13350
660962	750 (61)	24.59	43.38	8.76	46.94	24x12	0.23	1.91	54.94	3908	439.42	20025
661920?	1000 (61)	28.37	47.17	8.76	50.72	20x10	0.17	1.91	59.79	4793	477.52	26700
660970	1000 (61)	28.37	47.17	8.76	50.72	20x10	0.17	1.91	59.79	4802	477.52	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

? Cross-Linked Polyethylene Jacket with Red Stripe



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
1/0 (Solid)	0.3346	0.42	0.0186	0.1804	0.623	47.9003	0.182 + j0.749	0.128 + j0.053	2092	160	195
1/0 (19)	0.5479	0.69	0.0177	0.1772	0.653	50.1969	0.265 + j0.748	0.211 + j0.053	2092	160	195
2/0 (19)	0.4364	0.55	0.0165	0.1706	0.702	53.8058	0.221 + j0.744	0.167 + j0.051	2441	185	220
3/0 (19)	0.3445	0.43	0.0152	0.1640	0.755	58.0709	0.186 + j0.740	0.132 + j0.050	3138	210	250
4/0 (19)	0.2756	0.34	0.0143	0.1575	0.814	62.3360	0.159 + j0.735	0.105 + j0.048	3836	235	285
4/0 (19)	0.2756	0.34	0.0143	0.1575	0.814	62.3360	0.159 + j0.735	0.105 + j0.048	3836	235	285
250 (37)	0.2329	0.30	0.0131	0.1542	0.873	66.9291	0.144 + j0.730	0.090 + j0.047	4533	257	
350 (37)	0.1640	0.21	0.0119	0.1476	0.981	75.4593	0.119 + j0.723	0.065 + j0.045	6277	315	370
500 (37)	0.1148	0.15	0.0104	0.1378	1.112	85.3018	0.100 + j0.715	0.046 + j0.043	8718	380	445
500 (37)	0.1148	0.15	0.0104	0.1378	1.112	85.3018	0.100 + j0.715	0.046 + j0.043	8718	380	445
750 (61)	0.0787	0.11	0.0088	0.1312	1.283	98.4252	0.087 + j0.705	0.033 + j0.040	13298	470	530
1000 (61)	0.0591	0.09	0.0079	0.1280	1.434	110.2362	0.080 + j0.698	0.026 + j0.039	17615	530	585
1000 (61)	0.0591	0.09	0.0079	0.1280	1.434	110.2362	0.080 + j0.698	0.026 + j0.039	17615	530	585

*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

