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; 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: -40ºC and MV 90ºC 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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UPDATED: Aug. 10, 2025, 11:33 p.m.UTC REVISION: 1.000.005

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)	0.325	1.053	345	1.173	6x14	0.54	50	1.401	859	9.8	633
660698	1/0 (19)	0.352	1.072	345	1.182	6x14	0.54	50	1.41	883	9.9	633
TBA	2/0 (19)	0.395	1.123	345	1.243	7x14	0.463	50	1.471	957	10.3	798
TBA	3/0 (19)	0.443	1.171	345	1.291	9x14	0.36	50	1.519	1057	10.6	1006
619195	4/0 (19)	0.498	1.218	345	1.328	11x14	0.295	50	1.556	1168	10.9	1269
660953	4/0 (19)	0.498	1.218	345	1.328	11x14	0.295	50	1.556	1169	10.9	1269
TBA	250 (37)	0.558	1.294	345	1.414	13x14	0.249	75	1.692	1367	11.8	1500
TBA	350 (37)	0.661	1.397	345	1.517	18x14	0.18	75	1.795	1618	12.6	2100
661684	500 (37)	0.789	1.519	345	1.629	25x14	0.13	75	1.911	1947	13.4	3000
628337	500 (37)	0.789	1.519	345	1.629	25x14	0.13	75	1.911	1938	13.4	3000
660962	750 (61)	0.968	1.708	345	1.848	24x12	0.085	75	2.164	2625	15.1	4500
661920?	1000 (61)	1.117	1.857	345	1.997	20x10	0.064	75	2.355	3219	16.5	6000
660970	1000 (61)	1.117	1.857	345	1.997	20x10	0.064	75	2.355	3225	16.5	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
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
1/0 (SOLID)	0.102	0.14	0.056	0.055	0.36	7.4	0.473+j0.277	0.141+j0.058	2095	160	195
1/0 (19)	0.167	0.229	0.053	0.054	0.38	7.7	0.562+j0.278	0.230+j0.059	2095	160	195
2/0 (19)	0.133	0.182	0.05	0.052	0.41	8.2	0.496+j0.232	0.183+j0.057	2444	185	220
3/0 (19)	0.105	0.144	0.046	0.05	0.44	8.8	0.421+j0.170	0.146+j0.055	3142	210	250
4/0 (19)	0.084	0.115	0.043	0.048	0.47	9.5	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.084	0.115	0.043	0.048	0.47	9.5	0.359+j0.130	0.117+j0.053	3840	235	285
250 (37)	0.07	0.096	0.04	0.047	0.51	10.3	0.312+j0.105	0.098+j0.052	4538	257	
350 (37)	0.051	0.07	0.036	0.045	0.57	11.5	0.235+j0.069	0.073+j0.050	6284	315	370
500 (37)	0.036	0.05	0.031	0.042	0.65	13.1	0.173+j0.047	0.054+j0.047	8727	380	445
500 (37)	0.036	0.05	0.031	0.042	0.65	13.1	0.173+j0.047	0.054+j0.047	8727	380	445
750 (61)	0.023	0.033	0.027	0.04	0.76	15.3	0.116+j0.032	0.039+j0.044	13298	470	530
1000 (61)	0.017	0.025	0.024	0.039	0.84	17	0.088+j0.026	0.033+j0.041	17615	530	585
1000 (61)	0.017	0.025	0.024	0.039	0.84	17	0.088+j0.026	0.033+j0.041	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, Spacing: one diameter spacing center-to-center.

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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)	8.25	26.75	8.76	29.79	6x14	1.77	1.27	35.59	1278	248.92	2817
660698	1/0 (19)	8.94	27.23	8.76	30.02	6x14	1.77	1.27	35.81	1314	251.46	2817
TBA	2/0 (19)	10.03	28.52	8.76	31.57	7x14	1.52	1.27	37.36	1424	261.62	3551
TBA	3/0 (19)	11.25	29.74	8.76	32.79	9x14	1.18	1.27	38.58	1573	269.24	4477
619195	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.97	1.27	39.52	1738	276.86	5647
660953	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.97	1.27	39.52	1740	276.86	5647
TBA	250 (37)	14.17	32.87	8.76	35.92	13x14	0.82	1.91	42.98	2034	299.72	6675
TBA	350 (37)	16.79	35.48	8.76	38.53	18x14	0.59	1.91	45.59	2408	320.04	9345
661684	500 (37)	20.04	38.58	8.76	41.38	25x14	0.43	1.91	48.54	2897	340.36	13350
628337	500 (37)	20.04	38.58	8.76	41.38	25x14	0.43	1.91	48.54	2884	340.36	13350
660962	750 (61)	24.59	43.38	8.76	46.94	24x12	0.28	1.91	54.97	3906	383.54	20025
661920?	1000 (61)	28.37	47.17	8.76	50.72	20x10	0.21	1.91	59.82	4790	419.10	26700
660970	1000 (61)	28.37	47.17	8.76	50.72	20x10	0.21	1.91	59.82	4799	419.10	26700

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
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? Cross-Linked Polyethylene Jacket with Red Stripe
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
1/0 (SOLID)	0.3346	0.46	0.0171	0.1804	1.181	24.2782	0.473+j0.277	0.141+j0.058	2095	160	195
1/0 (19)	0.5479	0.75	0.0162	0.1772	1.247	25.2625	0.562+j0.278	0.230+j0.059	2095	160	195
2/0 (19)	0.4364	0.60	0.0152	0.1706	1.345	26.9029	0.496+j0.232	0.183+j0.057	2444	185	220
3/0 (19)	0.3445	0.47	0.0140	0.1640	1.444	28.8714	0.421+j0.170	0.146+j0.055	3142	210	250
4/0 (19)	0.2756	0.38	0.0131	0.1575	1.542	31.1680	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.2756	0.38	0.0131	0.1575	1.542	31.1680	0.359+j0.130	0.117+j0.053	3840	235	285
250 (37)	0.2297	0.31	0.0122	0.1542	1.673	33.7927	0.312+j0.105	0.098+j0.052	4538	257	
350 (37)	0.1673	0.23	0.0110	0.1476	1.870	37.7297	0.235+j0.069	0.073+j0.050	6284	315	370
500 (37)	0.1181	0.16	0.0094	0.1378	2.133	42.9790	0.173+j0.047	0.054+j0.047	8727	380	445
500 (37)	0.1181	0.16	0.0094	0.1378	2.133	42.9790	0.173+j0.047	0.054+j0.047	8727	380	445
750 (61)	0.0755	0.11	0.0082	0.1312	2.493	50.1969	0.116+j0.032	0.039+j0.044	13298	470	530
1000 (61)	0.0558	0.08	0.0073	0.1280	2.756	55.7743	0.088+j0.026	0.033+j0.041	17615	530	585
1000 (61)	0.0558	0.08	0.0073	0.1280	2.756	55.7743	0.088+j0.026	0.033+j0.041	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.
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Concentric Neutral Calculator

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