35kV AL 100% EPR (EAM) LCT LLDPE

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 100% Insulation Level, Longitudinally Corrugated Tape Shield, 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. **Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
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-97-682 Standard for Shielded Utility Cable Rated for 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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Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
	AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
TBA	1/0 (Solid)	0.324	1.052	345	1.132	80	1.392	805	16.7	633
TBA	1/0 (19)	0.351	1.079	345	1.159	80	1.419	827	17.0	633
TBA	2/0 (19)	0.395	1.123	345	1.203	80	1.463	889	17.6	798
TBA	3/0 (19)	0.443	1.171	345	1.251	80	1.511	961	18.1	1006
TBA	4/0 (19)	0.498	1.226	345	1.306	80	1.566	1048	18.8	1269
TBA	250 (37)	0.558	1.294	345	1.374	80	1.634	1142	19.6	1500
TBA	350 (37)	0.661	1.397	345	1.477	110	1.797	1428	21.6	2100
TBA	500 (37)	0.789	1.525	345	1.605	110	1.925	1680	23.1	3000
TBA	750 (61)	0.968	1.714	345	1.794	110	2.114	2105	25.4	4500
663041#	1000 (61)	1.117	1.857	345	1.937	110	2.257	2719	27.1	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
# Solid Black Jacket

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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	0.128	0.061	0.055	0.190	14.6	0.182 + j0.749	0.128 + j0.053	3192	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	3267	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	3389	185	220
3/0 (19)	0.105	0.132	0.050	0.050	0.230	17.7	0.186 + j0.739	0.132 + j0.050	3522	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	3674	235	280
250 (37)	0.071	0.090	0.043	0.046	0.266	20.4	0.144 + j0.731	0.090 + j0.047	3863		
350 (37)	0.050	0.065	0.039	0.045	0.299	23.0	0.119 + j0.723	0.065 + j0.045	4148	315	370
500 (37)	0.035	0.046	0.034	0.042	0.339	26.0	0.100 + j0.716	0.046 + j0.042	4503	380	435
750 (61)	0.024	0.033	0.029	0.040	0.391	30.0	0.087 + j0.706	0.033 + j0.040	5027	480	545
1000 (61)	0.018	0.026	0.026	0.038	0.437	33.6	0.080 + j0.700	0.026 + j0.038	5439	550	625

*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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Table 3 – Weights and Measurements (Metric)

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
	AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
TBA	1/0 (Solid)	8.23	26.72	8.76	28.75	2.03	35.36	1198	424.18	2817
TBA	1/0 (19)	8.92	27.41	8.76	29.44	2.03	36.04	1231	431.80	2817
TBA	2/0 (19)	10.03	28.52	8.76	30.56	2.03	37.16	1323	447.04	3551
TBA	3/0 (19)	11.25	29.74	8.76	31.78	2.03	38.38	1430	459.74	4477
TBA	4/0 (19)	12.65	31.14	8.76	33.17	2.03	39.78	1560	477.52	5647
TBA	250 (37)	14.17	32.87	8.76	34.90	2.03	41.50	1699	497.84	6675
TBA	350 (37)	16.79	35.48	8.76	37.52	2.79	45.64	2125	548.64	9345
TBA	500 (37)	20.04	38.73	8.76	40.77	2.79	48.89	2500	586.74	13350
TBA	750 (61)	24.59	43.54	8.76	45.57	2.79	53.70	3133	645.16	20025
663041#	1000 (61)	28.37	47.17	8.76	49.20	2.79	57.33	4046	688.34	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
# Solid Black Jacket

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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	0.42	0.0186	0.1804	0.623	47.9003	0.182 + j0.749	0.128 + j0.053	3192	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	3267	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	3389	185	220
3/0 (19)	0.3445	0.43	0.0152	0.1640	0.755	58.0709	0.186 + j0.739	0.132 + j0.050	3522	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	3674	235	280
250 (37)	0.2329	0.30	0.0131	0.1509	0.873	66.9291	0.144 + j0.731	0.090 + j0.047	3863		
350 (37)	0.1640	0.21	0.0119	0.1476	0.981	75.4593	0.119 + j0.723	0.065 + j0.045	4148	315	370
500 (37)	0.1148	0.15	0.0104	0.1378	1.112	85.3018	0.100 + j0.716	0.046 + j0.042	4503	380	435
750 (61)	0.0787	0.11	0.0088	0.1312	1.283	98.4252	0.087 + j0.706	0.033 + j0.040	5027	480	545
1000 (61)	0.0591	0.09	0.0079	0.1247	1.434	110.2362	0.080 + j0.700	0.026 + j0.038	5439	550	625

*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.