

35kV AL 133% EPR (EAM) LCT LLDPE Primary UD

Single Conductor, 420 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

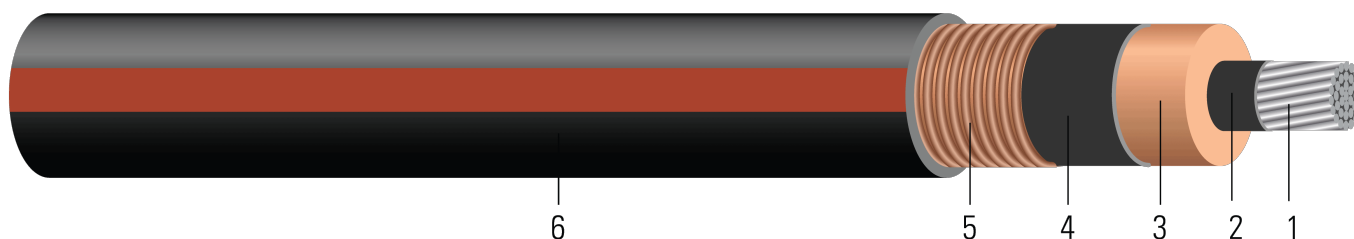


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 $\frac{3}{4}$ hard H16/H26 (Non Moisture Blocked Optional)
- 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
- Insulation:** 420 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
- 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, troughs, trays, 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
- 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-DR(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 35000 VOLTS EPR INSULATION 420 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com



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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 (1)	0.325	1.202	420	1.262	80	1.522	1050	12.1	634
TBA	1/0 (19)	0.352	1.229	420	1.289	80	1.549	1084	12.3	634
TBA	2/0 (19)	0.395	1.272	420	1.332	80	1.558	1190	12.4	799
TBA	3/0 (19)	0.443	1.320	420	1.380	80	1.606	1267	12.8	1007
TBA	4/0 (19)	0.498	1.375	420	1.435	80	1.661	1359	13.2	1270
TBA	250 (37)	0.558	1.444	420	1.504	110	1.790	1537	14.	1500
TBA	350 (37)	0.661	1.547	420	1.607	110	1.893	1737	15.1	2100
TBA	500 (37)	0.789	1.675	420	1.735	110	2.021	2012	16.1	3000
TBA	750 (61)	0.968	1.863	420	1.923	110	2.209	2446	17.6	4500
TBA	1000 (61)	1.117	2.012	420	2.072	110	2.358	2843	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



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 (1)	0.168	0.211	0.067	0.055	0.301	121.741	0.443+j0.122	0.212+j0.055	4822.0	160	195
1/0 (19)	0.168	0.211	0.064	0.053	0.314	127.003	0.440+j0.118	0.212+j0.053	4913.0	160	195
2/0 (19)	0.133	0.167	0.060	0.051	0.335	135.289	0.390+j0.112	0.168+j0.051	5057.8	185	220
3/0 (19)	0.105	0.132	0.057	0.049	0.357	144.425	0.349+j0.106	0.133+j0.049	5219.5	210	250
4/0 (19)	0.0836	0.105	0.053	0.048	0.383	154.777	0.315+j0.099	0.106+j0.048	5404.8	235	285
250 (37)	0.0707	0.089	0.049	0.047	0.415	167.624	0.292+j0.092	0.091+j0.047	5637.2		
350 (37)	0.0505	0.064	0.044	0.044	0.462	186.581	0.256+j0.083	0.066+j0.044	5984.2	315	375
500 (37)	0.0354	0.045	0.039	0.042	0.519	209.874	0.225+j0.074	0.047+j0.042	6415.4	380	450
750 (61)	0.0236	0.030	0.034	0.039	0.603	243.726	0.195+j0.064	0.032+j0.039	7048.7	480	555
1000 (61)	0.0177	0.023	0.030	0.038	0.669	270.348	0.178+j0.057	0.025+j0.038	7550.7	550	640

* Calculations are based on three cables triplexed / tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)



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 (1)	8.25	30.53	10.67	32.05	2.03	38.66	1563	307.34	2821
TBA	1/0 (19)	8.94	31.22	10.67	32.74	2.03	39.34	1613	312.42	2821
TBA	2/0 (19)	10.03	32.31	10.67	33.83	2.03	39.57	1771	314.96	3556
TBA	3/0 (19)	11.25	33.53	10.67	35.05	2.03	40.79	1886	325.12	4481
TBA	4/0 (19)	12.65	34.93	10.67	36.45	2.03	42.19	2022	335.28	5652
TBA	250 (37)	14.17	36.68	10.67	38.20	2.79	45.47	2287	355.60	6675
TBA	350 (37)	16.79	39.29	10.67	40.82	2.79	48.08	2585	383.54	9345
TBA	500 (37)	20.04	42.55	10.67	44.07	2.79	51.33	2994	408.94	13350
TBA	750 (61)	24.59	47.32	10.67	48.84	2.79	56.11	3640	447.04	20025
TBA	1000 (61)	28.37	51.10	10.67	52.63	2.79	59.89	4231	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



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 (1)	0.5512	0.69	0.0204	0.1804	0.988	399.4127	0.443+j0.122	0.212+j0.055	4822.0	160	195
1/0 (19)	0.5512	0.69	0.0195	0.1739	1.030	416.6765	0.440+j0.118	0.212+j0.053	4913.0	160	195
2/0 (19)	0.4364	0.55	0.0183	0.1673	1.099	443.8615	0.390+j0.112	0.168+j0.051	5057.8	185	220
3/0 (19)	0.3445	0.43	0.0174	0.1608	1.171	473.8353	0.349+j0.106	0.133+j0.049	5219.5	210	250
4/0 (19)	0.2743	0.34	0.0162	0.1575	1.257	507.7986	0.315+j0.099	0.106+j0.048	5404.8	235	285
250 (37)	0.2320	0.29	0.0149	0.1542	1.362	549.9475	0.292+j0.092	0.091+j0.047	5637.2		
350 (37)	0.1657	0.21	0.0134	0.1444	1.516	612.1424	0.256+j0.083	0.066+j0.044	5984.2	315	375
500 (37)	0.1161	0.15	0.0119	0.1378	1.703	688.5630	0.225+j0.074	0.047+j0.042	6415.4	380	450
750 (61)	0.0774	0.10	0.0104	0.1280	1.978	799.6260	0.195+j0.064	0.032+j0.039	7048.7	480	555
1000 (61)	0.0581	0.08	0.0091	0.1247	2.195	886.9685	0.178+j0.057	0.025+j0.038	7550.7	550	640

* Calculations are based on three cables triplexed / tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Figure 7 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

