

15kV AL 100% EPR LCT LLDPE Primary UD

Single Conductor, 175 Mils Ethylene Propylene Rubber (EPR), 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:

- Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 ¾ 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:** 175 Mils Ethylene Propylene Rubber (EPR) 100% 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 15kV 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-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 15000 VOLTS EPR INSULATION 175 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	2 (1)	0.258	0.645	175	0.705	80	0.965	481	11.6	398
TBA	2 (7)	0.283	0.670	175	0.730	80	0.990	504	11.9	398
TBA	1 (1)	0.289	0.676	175	0.736	80	0.996	512	12.0	502
TBA	1 (19)	0.322	0.709	175	0.769	80	1.029	539	12.3	502
TBA	1/0 (1)	0.325	0.712	175	0.772	80	1.032	548	12.4	634
TBA	1/0 (19)	0.352	0.739	175	0.799	80	1.059	571	12.7	634
TBA	2/0 (19)	0.395	0.782	175	0.842	80	1.102	619	13.2	799
TBA	3/0 (19)	0.443	0.830	175	0.890	80	1.150	721	13.8	1007
TBA	4/0 (19)	0.498	0.885	175	0.945	80	1.205	791	14.5	1270
TBA	250 (37)	0.558	0.954	175	1.014	80	1.274	875	15.3	1500
TBA	350 (37)	0.661	1.057	175	1.117	80	1.377	1030	16.5	2100
TBA	500 (37)	0.789	1.185	175	1.245	80	1.505	1248	18.1	3000
TBA	750 (61)	0.968	1.373	175	1.433	80	1.659	1641	19.9	4500
TBA	1000 (61)	1.117	1.522	175	1.582	110	1.868	2042	22.4	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
2 (1)	0.266	0.334	0.044	0.049	0.198	34.304	0.667+j0.234	0.335+j0.049	2864.4	120	150
2 (7)	0.266	0.334	0.041	0.048	0.210	36.315	0.661+j0.223	0.335+j0.048	2946.2	120	150
1 (1)	0.211	0.265	0.041	0.047	0.212	36.796	0.591+j0.221	0.266+j0.047	2965.9	140	170
1 (19)	0.211	0.265	0.038	0.046	0.228	39.432	0.584+j0.208	0.266+j0.046	3074.0	140	170
1/0 (1)	0.168	0.211	0.038	0.046	0.229	39.671	0.529+j0.207	0.212+j0.046	3083.8	155	195
1/0 (19)	0.168	0.211	0.036	0.045	0.241	41.817	0.524+j0.198	0.212+j0.045	3172.3	155	195
2/0 (19)	0.133	0.167	0.033	0.043	0.261	45.220	0.471+j0.184	0.168+j0.043	3313.1	180	220
3/0 (19)	0.105	0.132	0.031	0.042	0.283	49.001	0.426+j0.170	0.133+j0.042	3470.4	200	250
4/0 (19)	0.0836	0.105	0.028	0.040	0.308	53.316	0.389+j0.156	0.106+j0.040	3650.5	235	285
250 (37)	0.0707	0.089	0.026	0.039	0.339	58.708	0.360+j0.141	0.090+j0.039	3876.5		
350 (37)	0.0505	0.064	0.022	0.037	0.385	66.727	0.318+j0.123	0.065+j0.037	4213.9	310	375
500 (37)	0.0354	0.045	0.020	0.035	0.443	76.657	0.280+j0.105	0.046+j0.035	4633.2	375	455
750 (61)	0.0236	0.030	0.016	0.033	0.526	91.195	0.241+j0.085	0.031+j0.033	5249.1	470	560
1000 (61)	0.0177	0.023	0.015	0.032	0.593	102.692	0.217+j0.073	0.025+j0.032	5737.1	540	645

* 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	2 (1)	6.55	16.38	4.44	17.91	2.03	24.51	716	294.64	1771
TBA	2 (7)	7.19	17.02	4.44	18.54	2.03	25.15	750	302.26	1771
TBA	1 (1)	7.34	17.17	4.44	18.69	2.03	25.30	762	304.80	2234
TBA	1 (19)	8.18	18.01	4.44	19.53	2.03	26.14	802	312.42	2234
TBA	1/0 (1)	8.25	18.08	4.44	19.61	2.03	26.21	816	314.96	2821
TBA	1/0 (19)	8.94	18.77	4.44	20.29	2.03	26.90	850	322.58	2821
TBA	2/0 (19)	10.03	19.86	4.44	21.39	2.03	27.99	921	335.28	3556
TBA	3/0 (19)	11.25	21.08	4.44	22.61	2.03	29.21	1073	350.52	4481
TBA	4/0 (19)	12.65	22.48	4.44	24.00	2.03	30.61	1177	368.30	5652
TBA	250 (37)	14.17	24.23	4.44	25.76	2.03	32.36	1302	388.62	6675
TBA	350 (37)	16.79	26.85	4.44	28.37	2.03	34.98	1533	419.10	9345
TBA	500 (37)	20.04	30.10	4.44	31.62	2.03	38.23	1857	459.74	13350
TBA	750 (61)	24.59	34.87	4.44	36.40	2.03	42.14	2442	505.46	20025
TBA	1000 (61)	28.37	38.66	4.44	40.18	2.79	47.45	3039	568.96	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
2 (1)	0.8727	1.10	0.0134	0.1608	0.650	112.5459	0.667+j0.234	0.335+j0.049	2864.4	120	150
2 (7)	0.8727	1.10	0.0125	0.1575	0.689	119.1437	0.661+j0.223	0.335+j0.048	2946.2	120	150
1 (1)	0.6923	0.87	0.0125	0.1542	0.696	120.7218	0.591+j0.221	0.266+j0.047	2965.9	140	170
1 (19)	0.6923	0.87	0.0116	0.1509	0.748	129.3701	0.584+j0.208	0.266+j0.046	3074.0	140	170
1/0 (1)	0.5512	0.69	0.0116	0.1509	0.751	130.1542	0.529+j0.207	0.212+j0.046	3083.8	155	195
1/0 (19)	0.5512	0.69	0.0110	0.1476	0.791	137.1949	0.524+j0.198	0.212+j0.045	3172.3	155	195
2/0 (19)	0.4364	0.55	0.0101	0.1411	0.856	148.3596	0.471+j0.184	0.168+j0.043	3313.1	180	220
3/0 (19)	0.3445	0.43	0.0094	0.1378	0.928	160.7644	0.426+j0.170	0.133+j0.042	3470.4	200	250
4/0 (19)	0.2743	0.34	0.0085	0.1312	1.010	174.9213	0.389+j0.156	0.106+j0.040	3650.5	235	285
250 (37)	0.2320	0.29	0.0079	0.1280	1.112	192.6115	0.360+j0.141	0.090+j0.039	3876.5		
350 (37)	0.1657	0.21	0.0067	0.1214	1.263	218.9206	0.318+j0.123	0.065+j0.037	4213.9	310	375
500 (37)	0.1161	0.15	0.0061	0.1148	1.453	251.4993	0.280+j0.105	0.046+j0.035	4633.2	375	455
750 (61)	0.0774	0.10	0.0049	0.1083	1.726	299.1962	0.241+j0.085	0.031+j0.033	5249.1	470	560
1000 (61)	0.0581	0.08	0.0046	0.1050	1.946	336.9160	0.217+j0.073	0.025+j0.032	5737.1	540	645

* 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)

