

28kV AL 100% EPR LCT LLDPE Primary UD

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR), 100% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

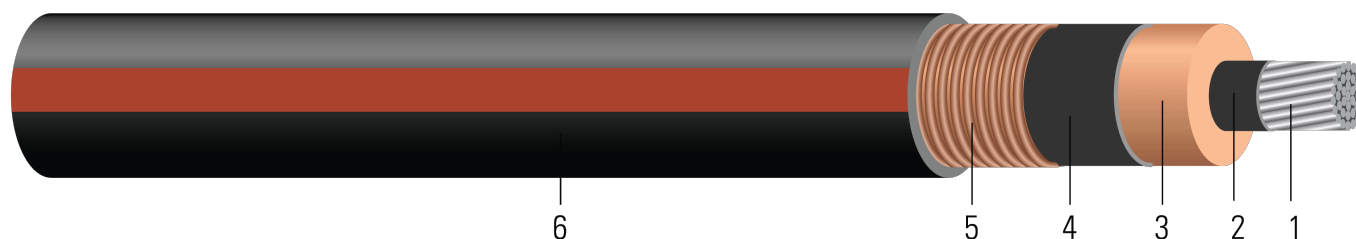


Image not to scale. See Table 1 for dimensions.

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:** 280 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 28kV 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 28000 VOLTS EPR INSULATION 280 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 (1)	0.289	0.886	280	0.946	80	1.206	722	14.5	502
TBA	1 (19)	0.322	0.919	280	0.979	80	1.239	755	14.9	502
TBA	1/0 (1)	0.325	0.922	280	0.982	80	1.242	765	14.9	634
TBA	1/0 (19)	0.352	0.949	280	1.009	80	1.269	792	15.2	634
TBA	2/0 (19)	0.395	0.992	280	1.052	80	1.312	848	15.7	799
TBA	3/0 (19)	0.443	1.040	280	1.100	80	1.360	913	16.3	1007
TBA	4/0 (19)	0.498	1.095	280	1.155	80	1.415	993	17.0	1270
TBA	250 (37)	0.558	1.164	280	1.224	80	1.484	1089	17.8	1500
TBA	350 (37)	0.661	1.267	280	1.327	80	1.553	1302	18.6	2100
TBA	500 (37)	0.789	1.395	280	1.455	80	1.681	1542	20.2	3000
TBA	750 (61)	0.968	1.583	280	1.643	110	1.929	1999	23.1	4500
TBA	1000 (61)	1.117	1.732	280	1.792	110	2.078	2361	24.9	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 (1)	0.211	0.265	0.056	0.052	0.289	93.521	0.548+j0.168	0.266+j0.052	3757.5	140	170
1 (19)	0.211	0.265	0.053	0.050	0.308	99.477	0.542+j0.159	0.266+j0.050	3868.7	140	170
1/0 (1)	0.168	0.211	0.052	0.050	0.309	100.015	0.488+j0.159	0.212+j0.050	3878.8	155	195
1/0 (19)	0.168	0.211	0.050	0.049	0.324	104.846	0.483+j0.152	0.212+j0.049	3969.7	155	195
2/0 (19)	0.133	0.167	0.046	0.047	0.348	112.480	0.432+j0.143	0.168+j0.047	4114.6	180	220
3/0 (19)	0.105	0.132	0.043	0.046	0.374	120.934	0.389+j0.134	0.133+j0.046	4276.3	200	250
4/0 (19)	0.0836	0.105	0.040	0.044	0.404	130.549	0.353+j0.124	0.106+j0.044	4461.6	235	285
250 (37)	0.0707	0.089	0.037	0.042	0.441	142.528	0.327+j0.114	0.090+j0.042	4694.0		
350 (37)	0.0505	0.064	0.033	0.040	0.496	160.282	0.288+j0.101	0.065+j0.040	5041.0	310	375
500 (37)	0.0354	0.045	0.029	0.038	0.563	182.193	0.253+j0.088	0.046+j0.038	5472.2	375	455
750 (61)	0.0236	0.030	0.024	0.036	0.662	214.174	0.219+j0.073	0.032+j0.036	6105.5	470	560
1000 (61)	0.0177	0.023	0.022	0.035	0.740	239.408	0.198+j0.064	0.025+j0.035	6607.4	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	1 (1)	7.34	22.50	7.11	24.03	2.03	30.63	1074	368.30	2234
TBA	1 (19)	8.18	23.34	7.11	24.87	2.03	31.47	1124	378.46	2234
TBA	1/0 (1)	8.25	23.42	7.11	24.94	2.03	31.55	1138	378.46	2821
TBA	1/0 (19)	8.94	24.10	7.11	25.63	2.03	32.23	1179	386.08	2821
TBA	2/0 (19)	10.03	25.20	7.11	26.72	2.03	33.32	1262	398.78	3556
TBA	3/0 (19)	11.25	26.42	7.11	27.94	2.03	34.54	1359	414.02	4481
TBA	4/0 (19)	12.65	27.81	7.11	29.34	2.03	35.94	1478	431.80	5652
TBA	250 (37)	14.17	29.57	7.11	31.09	2.03	37.69	1621	452.12	6675
TBA	350 (37)	16.79	32.18	7.11	33.71	2.03	39.45	1938	472.44	9345
TBA	500 (37)	20.04	35.43	7.11	36.96	2.03	42.70	2295	513.08	13350
TBA	750 (61)	24.59	40.21	7.11	41.73	2.79	49.00	2975	586.74	20025
TBA	1000 (61)	28.37	43.99	7.11	45.52	2.79	52.78	3514	632.46	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 (1)	0.6923	0.87	0.0171	0.1706	0.948	306.8274	0.548+j0.168	0.266+j0.052	3757.5	140	170
1 (19)	0.6923	0.87	0.0162	0.1640	1.010	326.3681	0.542+j0.159	0.266+j0.050	3868.7	140	170
1/0 (1)	0.5512	0.69	0.0158	0.1640	1.014	328.1332	0.488+j0.159	0.212+j0.050	3878.8	155	195
1/0 (19)	0.5512	0.69	0.0152	0.1608	1.063	343.9829	0.483+j0.152	0.212+j0.049	3969.7	155	195
2/0 (19)	0.4364	0.55	0.0140	0.1542	1.142	369.0289	0.432+j0.143	0.168+j0.047	4114.6	180	220
3/0 (19)	0.3445	0.43	0.0131	0.1509	1.227	396.7651	0.389+j0.134	0.133+j0.046	4276.3	200	250
4/0 (19)	0.2743	0.34	0.0122	0.1444	1.325	428.3104	0.353+j0.124	0.106+j0.044	4461.6	235	285
250 (37)	0.2320	0.29	0.0113	0.1378	1.447	467.6115	0.327+j0.114	0.090+j0.042	4694.0		
350 (37)	0.1657	0.21	0.0101	0.1312	1.627	525.8596	0.288+j0.101	0.065+j0.040	5041.0	310	375
500 (37)	0.1161	0.15	0.0088	0.1247	1.847	597.7461	0.253+j0.088	0.046+j0.038	5472.2	375	455
750 (61)	0.0774	0.10	0.0073	0.1181	2.172	702.6706	0.219+j0.073	0.032+j0.036	6105.5	470	560
1000 (61)	0.0581	0.08	0.0067	0.1148	2.428	785.4593	0.198+j0.064	0.025+j0.035	6607.4	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)

