

28kV AL 100% EPR One-Third Neutral LLDPE Primary UD

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR), 100% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

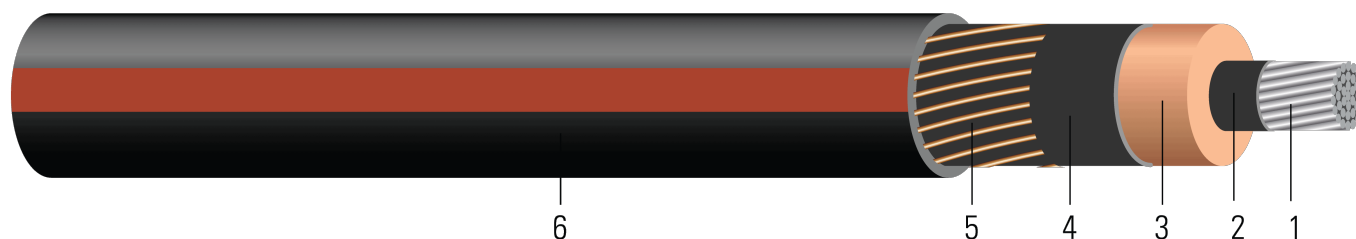


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- 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
- Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
- 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-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
- UL 1072 Listed as MV 90 When Specified
- Optional CSA: CSA 68.5 and -40C optional marking available upon request

SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(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	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 (1)	0.289	0.886	280	0.966	6x14	0.438	50	1.194	646	14.3	502
TBA	1 (19)	0.322	0.919	280	0.999	6x14	0.438	50	1.227	681	14.7	502
TBA	1/0 (1)	0.325	0.922	280	1.002	6x14	0.438	50	1.230	691	14.8	634
TBA	1/0 (19)	0.352	0.949	280	1.029	6x14	0.438	50	1.257	720	15.1	634
TBA	2/0 (19)	0.395	0.992	280	1.072	7x14	0.376	50	1.300	789	15.6	799
TBA	3/0 (19)	0.443	1.040	280	1.120	9x14	0.292	50	1.348	880	16.2	1007
TBA	4/0 (19)	0.498	1.095	280	1.195	11x14	0.239	50	1.423	1007	17.1	1270
TBA	250 (37)	0.558	1.164	280	1.264	13x14	0.202	50	1.492	1130	17.9	1500
TBA	350 (37)	0.661	1.267	280	1.367	18x14	0.146	50	1.595	1365	19.1	2100
TBA	500 (37)	0.789	1.395	280	1.495	16x12	0.104	80	1.815	1802	21.8	3000
TBA	750 (61)	0.968	1.583	280	1.713	24x12	0.069	80	2.033	2401	24.4	4500
TBA	1000 (61)	1.117	1.732	280	1.862	20x10	0.052	80	2.226	2979	26.7	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	0.580+j0.235	0.266+j0.051	2083.1	140	175
1 (19)	0.211	0.265	0.053	0.050	0.308	99.477	0.579+j0.234	0.266+j0.050	2083.1	140	175
1/0 (1)	0.168	0.211	0.052	0.050	0.309	100.015	0.525+j0.234	0.212+j0.050	2083.1	155	195
1/0 (19)	0.168	0.211	0.050	0.049	0.324	104.846	0.525+j0.233	0.212+j0.049	2083.1	155	195
2/0 (19)	0.133	0.167	0.046	0.047	0.348	112.480	0.458+j0.193	0.168+j0.047	2430.3	180	225
3/0 (19)	0.105	0.132	0.043	0.045	0.374	120.934	0.382+j0.141	0.133+j0.045	3124.7	200	255
4/0 (19)	0.0836	0.105	0.040	0.044	0.404	130.549	0.321+j0.109	0.107+j0.044	3819.1	235	285
250 (37)	0.0707	0.089	0.037	0.042	0.441	142.528	0.278+j0.088	0.091+j0.042	4513.5		
350 (37)	0.0505	0.064	0.033	0.040	0.496	160.282	0.208+j0.059	0.066+j0.040	6249.4	310	375
500 (37)	0.0354	0.045	0.029	0.040	0.563	182.193	0.151+j0.044	0.048+j0.039	8825.9	370	450
750 (61)	0.0236	0.030	0.024	0.037	0.662	214.174	0.102+j0.031	0.035+j0.036	13238.9	460	545
1000 (61)	0.0177	0.023	0.022	0.036	0.740	239.408	0.077+j0.028	0.029+j0.034	17537.0	520	620

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

† Ampacities are based on Figure 7 of ICEA T-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 T-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	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 (1)	7.34	22.50	7.11	24.54	6x14	1.44	1.27	30.33	961	363.22	2234
TBA	1 (19)	8.18	23.34	7.11	25.37	6x14	1.44	1.27	31.17	1013	373.38	2234
TBA	1/0 (1)	8.25	23.42	7.11	25.45	6x14	1.44	1.27	31.24	1028	375.92	2821
TBA	1/0 (19)	8.94	24.10	7.11	26.14	6x14	1.44	1.27	31.93	1071	383.54	2821
TBA	2/0 (19)	10.03	25.20	7.11	27.23	7x14	1.23	1.27	33.02	1174	396.24	3556
TBA	3/0 (19)	11.25	26.42	7.11	28.45	9x14	0.96	1.27	34.24	1310	411.48	4481
TBA	4/0 (19)	12.65	27.81	7.11	30.35	11x14	0.78	1.27	36.14	1499	434.34	5652
TBA	250 (37)	14.17	29.57	7.11	32.11	13x14	0.66	1.27	37.90	1682	454.66	6675
TBA	350 (37)	16.79	32.18	7.11	34.72	18x14	0.48	1.27	40.51	2031	485.14	9345
TBA	500 (37)	20.04	35.43	7.11	37.97	16x12	0.34	2.03	46.10	2682	553.72	13350
TBA	750 (61)	24.59	40.21	7.11	43.51	24x12	0.23	2.03	51.64	3573	619.76	20025
TBA	1000 (61)	28.37	43.99	7.11	47.29	20x10	0.17	2.03	56.54	4433	678.18	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	0.580+j0.235	0.266+j0.051	2083.1	140	175
1 (19)	0.6923	0.87	0.0162	0.1640	1.010	326.3681	0.579+j0.234	0.266+j0.050	2083.1	140	175
1/0 (1)	0.5512	0.69	0.0158	0.1640	1.014	328.1332	0.525+j0.234	0.212+j0.050	2083.1	155	195
1/0 (19)	0.5512	0.69	0.0152	0.1608	1.063	343.9829	0.525+j0.233	0.212+j0.049	2083.1	155	195
2/0 (19)	0.4364	0.55	0.0140	0.1542	1.142	369.0289	0.458+j0.193	0.168+j0.047	2430.3	180	225
3/0 (19)	0.3445	0.43	0.0131	0.1476	1.227	396.7651	0.382+j0.141	0.133+j0.045	3124.7	200	255
4/0 (19)	0.2743	0.34	0.0122	0.1444	1.325	428.3104	0.321+j0.109	0.107+j0.044	3819.1	235	285
250 (37)	0.2320	0.29	0.0113	0.1378	1.447	467.6115	0.278+j0.088	0.091+j0.042	4513.5		
350 (37)	0.1657	0.21	0.0101	0.1312	1.627	525.8596	0.208+j0.059	0.066+j0.040	6249.4	310	375
500 (37)	0.1161	0.15	0.0088	0.1312	1.847	597.7461	0.151+j0.044	0.048+j0.039	8825.9	370	450
750 (61)	0.0774	0.10	0.0073	0.1214	2.172	702.6706	0.102+j0.031	0.035+j0.036	13238.9	460	545
1000 (61)	0.0581	0.08	0.0067	0.1181	2.428	785.4593	0.077+j0.028	0.029+j0.034	17537.0	520	620

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

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

