

15kV AL 133% EPR One-Third Neutral LLDPE Primary UD

Single Conductor, 220 Mils Ethylene Propylene Rubber (EPR), 133% 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 $\frac{3}{4}$ 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:** 220 Mils Ethylene Propylene Rubber (EPR) 133% 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 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-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
- 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 15000 VOLTS EPR INSULATION 220 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	2 (1)	0.258	0.735	220	0.815	6x14	0.438	50	1.043	505	12.5	398
629560	2 (7)	0.283	0.760	220	0.840	6x14	0.438	50	1.068	531	12.8	398
TBA	1 (1)	0.289	0.766	220	0.846	6x14	0.438	50	1.074	540	12.9	502
TBA	1 (19)	0.322	0.799	220	0.879	6x14	0.438	50	1.107	571	13.3	502
TBA	1/0 (1)	0.325	0.802	220	0.882	6x14	0.438	50	1.110	581	13.3	634
TBA	1/0 (19)	0.352	0.829	220	0.909	6x14	0.438	50	1.137	607	13.6	634
TBA	2/0 (19)	0.395	0.872	220	0.952	7x14	0.376	50	1.180	672	14.2	799
TBA	3/0 (19)	0.443	0.920	220	1.000	9x14	0.292	50	1.228	758	14.7	1007
616135	4/0 (19)	0.498	0.975	220	1.055	11x14	0.239	50	1.283	858	15.4	1270
TBA	250 (37)	0.558	1.044	220	1.144	13x14	0.202	50	1.372	994	16.5	1500
TBA	350 (37)	0.661	1.147	220	1.247	18x14	0.146	50	1.475	1220	17.7	2100
616186	500 (37)	0.789	1.275	220	1.375	16x12	0.104	50	1.635	1574	19.6	3000
617104	750 (61)	0.968	1.463	220	1.563	24x12	0.069	80	1.883	2170	22.6	4500
660002	750 (61)	0.968	1.463	220	1.563	15x10	0.069	80	1.925	2216	22.6	4500
616837	1000 (61)	1.117	1.612	220	1.742	20x10	0.052	80	2.106	2775	25.3	6000
625181	1500 (91)	1.370	1.887	220	2.017	30x10	0.034	80	2.367	3832	28.4	9000

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	0.051	0.051	0.170	29.395	0.652+j0.233	0.335+j0.051	2025.6	120	150
2 (7)	0.266	0.334	0.048	0.049	0.179	31.023	0.651+j0.232	0.335+j0.049	2025.6	120	150
1 (1)	0.211	0.265	0.048	0.049	0.181	31.412	0.582+j0.232	0.266+j0.049	2025.6	140	175
1 (19)	0.211	0.265	0.045	0.048	0.194	33.542	0.581+j0.230	0.266+j0.048	2025.6	140	175
1/0 (1)	0.168	0.211	0.044	0.047	0.195	33.735	0.527+j0.230	0.212+j0.047	2025.6	155	195
1/0 (19)	0.168	0.211	0.042	0.046	0.205	35.466	0.527+j0.230	0.212+j0.046	2025.6	155	195
2/0 (19)	0.133	0.167	0.039	0.045	0.221	38.206	0.459+j0.190	0.168+j0.045	2363.3	180	225
3/0 (19)	0.105	0.132	0.036	0.043	0.238	41.247	0.383+j0.137	0.133+j0.043	3038.5	200	255
4/0 (19)	0.0836	0.105	0.034	0.042	0.258	44.712	0.322+j0.105	0.107+j0.042	3713.7	235	285
250 (37)	0.0707	0.089	0.031	0.041	0.283	49.037	0.279+j0.085	0.091+j0.040	4388.9		
350 (37)	0.0505	0.064	0.027	0.039	0.320	55.458	0.208+j0.057	0.066+j0.038	6076.9	310	375
500 (37)	0.0354	0.045	0.024	0.037	0.366	63.399	0.151+j0.042	0.048+j0.036	8582.3	370	450
750 (61)	0.0236	0.030	0.020	0.036	0.433	75.010	0.102+j0.029	0.035+j0.034	12873.4	460	545
750 (61)	0.0236	0.030	0.020	0.036	0.433	75.010	0.102+j0.029	0.035+j0.034	12873.4	460	545
1000 (61)	0.0177	0.023	0.018	0.035	0.486	84.184	0.077+j0.026	0.029+j0.032	17052.9	520	620
1500 (91)	0.0118	0.016	0.015	0.033	0.584	101.075	0.052+j0.021	0.023+j0.028	25806.0		

* 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 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	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	2 (1)	6.55	18.67	5.59	20.70	6x14	1.44	1.27	26.49	752	317.50	1771
629560	2 (7)	7.19	19.30	5.59	21.34	6x14	1.44	1.27	27.13	790	325.12	1771
TBA	1 (1)	7.34	19.46	5.59	21.49	6x14	1.44	1.27	27.28	804	327.66	2234
TBA	1 (19)	8.18	20.29	5.59	22.33	6x14	1.44	1.27	28.12	850	337.82	2234
TBA	1/0 (1)	8.25	20.37	5.59	22.40	6x14	1.44	1.27	28.19	865	337.82	2821
TBA	1/0 (19)	8.94	21.06	5.59	23.09	6x14	1.44	1.27	28.88	903	345.44	2821
TBA	2/0 (19)	10.03	22.15	5.59	24.18	7x14	1.23	1.27	29.97	1000	360.68	3556
TBA	3/0 (19)	11.25	23.37	5.59	25.40	9x14	0.96	1.27	31.19	1128	373.38	4481
616135	4/0 (19)	12.65	24.76	5.59	26.80	11x14	0.78	1.27	32.59	1277	391.16	5652
TBA	250 (37)	14.17	26.52	5.59	29.06	13x14	0.66	1.27	34.85	1479	419.10	6675
TBA	350 (37)	16.79	29.13	5.59	31.67	18x14	0.48	1.27	37.47	1816	449.58	9345
616186	500 (37)	20.04	32.39	5.59	34.93	16x12	0.34	1.27	41.53	2342	497.84	13350
617104	750 (61)	24.59	37.16	5.59	39.70	24x12	0.23	2.03	47.83	3229	574.04	20025
660002	750 (61)	24.59	37.16	5.59	39.70	15x10	0.23	2.03	48.89	3298	574.04	20025
616837	1000 (61)	28.37	40.94	5.59	44.25	20x10	0.17	2.03	53.49	4130	642.62	26700
625181	1500 (91)	34.80	47.93	5.59	51.23	30x10	0.11	2.03	60.12	5703	721.36	40050

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	0.0155	0.1673	0.558	96.4403	0.652+j0.233	0.335+j0.051	2025.6	120	150
2 (7)	0.8727	1.10	0.0146	0.1608	0.587	101.7815	0.651+j0.232	0.335+j0.049	2025.6	120	150
1 (1)	0.6923	0.87	0.0146	0.1608	0.594	103.0577	0.582+j0.232	0.266+j0.049	2025.6	140	175
1 (19)	0.6923	0.87	0.0137	0.1575	0.636	110.0459	0.581+j0.230	0.266+j0.048	2025.6	140	175
1/0 (1)	0.5512	0.69	0.0134	0.1542	0.640	110.6791	0.527+j0.230	0.212+j0.047	2025.6	155	195
1/0 (19)	0.5512	0.69	0.0128	0.1509	0.673	116.3583	0.527+j0.230	0.212+j0.046	2025.6	155	195
2/0 (19)	0.4364	0.55	0.0119	0.1476	0.725	125.3478	0.459+j0.190	0.168+j0.045	2363.3	180	225
3/0 (19)	0.3445	0.43	0.0110	0.1411	0.781	135.3248	0.383+j0.137	0.133+j0.043	3038.5	200	255
4/0 (19)	0.2743	0.34	0.0104	0.1378	0.846	146.6929	0.322+j0.105	0.107+j0.042	3713.7	235	285
250 (37)	0.2320	0.29	0.0094	0.1345	0.928	160.8825	0.279+j0.085	0.091+j0.040	4388.9		
350 (37)	0.1657	0.21	0.0082	0.1280	1.050	181.9488	0.208+j0.057	0.066+j0.038	6076.9	310	375
500 (37)	0.1161	0.15	0.0073	0.1214	1.201	208.0020	0.151+j0.042	0.048+j0.036	8582.3	370	450
750 (61)	0.0774	0.10	0.0061	0.1181	1.421	246.0958	0.102+j0.029	0.035+j0.034	12873.4	460	545
750 (61)	0.0774	0.10	0.0061	0.1181	1.421	246.0958	0.102+j0.029	0.035+j0.034	12873.4	460	545
1000 (61)	0.0581	0.08	0.0055	0.1148	1.594	276.1942	0.077+j0.026	0.029+j0.032	17052.9	520	620
1500 (91)	0.0387	0.05	0.0046	0.1083	1.916	331.6109	0.052+j0.021	0.023+j0.028	25806.0		

* 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 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)

