

25kV AL 133% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 320 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 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:

1. **Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 ¾ hard H16/H26 (Non Moisture Blocked Optional)
2. **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
3. **Insulation:** 320 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
6. **Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

APPLICATIONS AND FEATURES:

Southwire's 25kV cables are suited for use in wet and dry areas, conduits, ducts, 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 (Qualification Test Requirements)
- 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 25000 VOLTS EPR INSULATION 320 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



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UPDATED: Dec. 11, 2023, 9:37 p.m. UTC REVISION: 1.000.000

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 (Solid)	0.289	0.967	320	1.057	6x14	0.438	50	1.285	700	10.3	502
TBA	1 (19)	0.322	1.000	320	1.110	6x14	0.438	50	1.338	743	10.7	502
TBA	1/0 (Solid)	0.324	1.002	320	1.112	6x14	0.438	50	1.340	765	10.7	633
TBA	1/0 (19)	0.351	1.029	320	1.139	6x14	0.438	50	1.367	784	10.9	633
TBA	2/0 (19)	0.395	1.073	320	1.183	7x14	0.375	50	1.411	855	11.3	798
TBA	3/0 (19)	0.443	1.121	320	1.231	9x14	0.292	50	1.459	951	11.7	1006
TBA	4/0 (19)	0.498	1.176	320	1.286	11x14	0.239	50	1.514	1057	12.1	1269
TBA	250 (37)	0.558	1.244	320	1.354	13x14	0.202	50	1.582	1173	12.7	1500
663870	350 (37)	0.661	1.341	320	1.451	18x14	0.146	75	1.733	1533	13.9	2100
TBA	500 (37)	0.789	1.475	320	1.585	16x12	0.103	75	1.897	1829	15.2	3000
TBA	750 (61)	0.968	1.664	320	1.804	24x12	0.069	75	2.116	2448	16.9	4500
TBA	1000 (61)	1.117	1.813	320	1.953	20x10	0.052	75	2.307	2980	18.5	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 (Solid)	0.129	0.162	0.062	0.056	0.132	7.24	0.216 + j0.755	0.162 + j0.054	2092	140	175
1 (19)	0.211	0.266	0.059	0.054	0.141	7.73	0.320 + j0.753	0.266 + j0.055	2092	140	175
1/0 (Solid)	0.102	0.128	0.058	0.054	0.141	7.73	0.182 + j0.750	0.128 + j0.052	2092	155	195
1/0 (19)	0.167	0.211	0.055	0.053	0.149	8.17	0.265 + j0.749	0.211 + j0.053	2092	155	195
2/0 (19)	0.133	0.167	0.052	0.051	0.160	8.78	0.221 + j0.745	0.167 + j0.051	2441	180	220
3/0 (19)	0.105	0.132	0.048	0.049	0.172	9.43	0.186 + j0.741	0.132 + j0.049	3138	200	250
4/0 (19)	0.084	0.105	0.044	0.047	0.186	10.20	0.159 + j0.737	0.105 + j0.047	3836	235	285
250 (37)	0.071	0.090	0.041	0.046	0.199	10.92	0.144 + j0.733	0.090 + j0.046	4533	256	309
350 (37)	0.050	0.065	0.037	0.044	0.224	12.29	0.119 + j0.724	0.065 + j0.044	6277	310	370
500 (37)	0.035	0.046	0.032	0.042	0.255	13.99	0.011 + j0.716	0.046 + j0.042	8865	370	445
750 (61)	0.024	0.033	0.028	0.040	0.295	16.18	0.087 + j0.706	0.033 + j0.040	13298	460	525
1000 (61)	0.018	0.026	0.025	0.038	0.330	18.10	0.080 + j0.699	0.026 + j0.038	17615	520	575

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.



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 (Solid)	7.34	24.56	8.13	26.85	6x14	1.44	1.27	32.64	1042	261.62	2234
TBA	1 (19)	8.18	25.40	8.13	28.19	6x14	1.44	1.27	33.99	1106	271.78	2234
TBA	1/0 (Solid)	8.23	25.45	8.13	28.24	6x14	1.44	1.27	34.04	1138	271.78	2817
TBA	1/0 (19)	8.92	26.14	8.13	28.93	6x14	1.44	1.27	34.72	1167	276.86	2817
TBA	2/0 (19)	10.03	27.25	8.13	30.05	7x14	1.23	1.27	35.84	1272	287.02	3551
TBA	3/0 (19)	11.25	28.47	8.13	31.27	9x14	0.96	1.27	37.06	1415	297.18	4477
TBA	4/0 (19)	12.65	29.87	8.13	32.66	11x14	0.78	1.27	38.46	1573	307.34	5647
TBA	250 (37)	14.17	31.60	8.13	34.39	13x14	0.66	1.27	40.18	1746	322.58	6675
663870	350 (37)	16.79	34.06	8.13	36.86	18x14	0.48	1.91	44.02	2281	353.06	9345
TBA	500 (37)	20.04	37.47	8.13	40.26	16x12	0.34	1.91	48.18	2722	386.08	13350
TBA	750 (61)	24.59	42.27	8.13	45.82	24x12	0.23	1.91	53.75	3643	429.26	20025
TBA	1000 (61)	28.37	46.05	8.13	49.61	20x10	0.17	1.91	58.60	4435	469.90	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 (Solid)	0.4232	0.53	0.0189	0.1837	0.433	23.7533	0.216 + j0.755	0.162 + j0.054	2092	140	175
1 (19)	0.6923	0.87	0.0180	0.1772	0.463	25.3609	0.320 + j0.753	0.266 + j0.055	2092	140	175
1/0 (Solid)	0.3346	0.42	0.0177	0.1772	0.463	25.3609	0.182 + j0.750	0.128 + j0.052	2092	155	195
1/0 (19)	0.5479	0.69	0.0168	0.1739	0.489	26.8045	0.265 + j0.749	0.211 + j0.053	2092	155	195
2/0 (19)	0.4364	0.55	0.0158	0.1673	0.525	28.8058	0.221 + j0.745	0.167 + j0.051	2441	180	220
3/0 (19)	0.3445	0.43	0.0146	0.1608	0.564	30.9383	0.186 + j0.741	0.132 + j0.049	3138	200	250
4/0 (19)	0.2756	0.34	0.0134	0.1542	0.610	33.4646	0.159 + j0.737	0.105 + j0.047	3836	235	285
250 (37)	0.2329	0.30	0.0125	0.1509	0.653	35.8268	0.144 + j0.733	0.090 + j0.046	4533	256	309
350 (37)	0.1640	0.21	0.0113	0.1444	0.735	40.3215	0.119 + j0.724	0.065 + j0.044	6277	310	370
500 (37)	0.1148	0.15	0.0098	0.1378	0.837	45.8990	0.011 + j0.716	0.046 + j0.042	8865	370	445
750 (61)	0.0787	0.11	0.0085	0.1312	0.968	53.0840	0.087 + j0.706	0.033 + j0.040	13298	460	525
1000 (61)	0.0591	0.09	0.0076	0.1247	1.083	59.3832	0.080 + j0.699	0.026 + j0.038	17615	520	575

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.

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Calculator

