

35kV AL 133% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 420 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:** 420 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 35kV 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 35000 VOLTS EPR INSULATION 420 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	4/0 (19)	0.498	1.376	420	1.486	11x14	0.239	75	1.764	1390	14.1	1269
TBA	250 (37)	0.558	1.444	420	1.554	13x14	0.202	75	1.832	1520	14.7	1500
TBA	350 (37)	0.661	1.547	420	1.687	18x14	0.146	75	1.965	1824	15.7	2100
TBA	500 (37)	0.789	1.675	420	1.815	16x12	0.103	75	2.127	2182	17.0	3000
TBA	750 (61)	0.968	1.864	420	2.004	24x12	0.069	75	2.316	2789	18.5	4500
661319^	1000 (61)	1.117	2.007	420	2.147	20x10	0.052	75	2.504	3516	20.0	6000
TBA	1000 (61)	1.117	2.013	420	2.173	20x10	0.052	75	2.527	3383	20.2	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

^ Hi-Dri-Plus® - Water Blocking Powder

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	M Ω *1000ft	Ω /1000ft	A/1000ft	W/1000ft	Ω /1000ft	Ω /1000ft	Amp	Amp	Amp
4/0 (19)	0.084	0.105	0.053	0.051	0.220	16.9	0.159 + j0.730	0.105 + j0.050	3836	235	285
250 (37)	0.071	0.090	0.049	0.049	0.235	18.0	0.144 + j0.726	0.090 + j0.049	4533	257	
350 (37)	0.050	0.065	0.044	0.047	0.263	20.2	0.119 + j0.719	0.065 + j0.047	6277	315	370
500 (37)	0.035	0.046	0.039	0.044	0.297	22.8	0.100 + j0.711	0.046 + j0.045	8865	380	445
750 (61)	0.024	0.033	0.034	0.042	0.341	26.2	0.087 + j0.702	0.033 + j0.042	13298	470	530
1000 (61)	0.018	0.026	0.030	0.040	0.380	29.2	0.080 + j0.695	0.026 + j0.040	17615	530	585
1000 (61)	0.018	0.026	0.030	0.040	0.380	29.2	0.080 + j0.695	0.026 + j0.040	17615	530	585

*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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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	4/0 (19)	12.65	34.95	10.67	37.74	11x14	0.78	1.91	44.81	2069	358.14	5647
TBA	250 (37)	14.17	36.68	10.67	39.47	13x14	0.66	1.91	46.53	2262	373.38	6675
TBA	350 (37)	16.79	39.29	10.67	42.85	18x14	0.48	1.91	49.91	2714	398.78	9345
TBA	500 (37)	20.04	42.55	10.67	46.10	16x12	0.34	1.91	54.03	3247	431.80	13350
TBA	750 (61)	24.59	47.35	10.67	50.90	24x12	0.23	1.91	58.83	4150	469.90	20025
661319 [^]	1000 (61)	28.37	50.98	10.67	54.53	20x10	0.17	1.91	63.60	5232	508.00	26700
TBA	1000 (61)	28.37	51.13	10.67	55.19	20x10	0.17	1.91	64.19	5034	513.08	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

[^] Hi-Dri-Plus® - Water Blocking Powder

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
4/0 (19)	0.2756	0.34	0.0162	0.1673	0.722	55.4462	0.159 + j0.730	0.105 + j0.050	3836	235	285
250 (37)	0.2329	0.30	0.0149	0.1608	0.771	59.0551	0.144 + j0.726	0.090 + j0.049	4533	257	
350 (37)	0.1640	0.21	0.0134	0.1542	0.863	66.2730	0.119 + j0.719	0.065 + j0.047	6277	315	370
500 (37)	0.1148	0.15	0.0119	0.1444	0.974	74.8031	0.100 + j0.711	0.046 + j0.045	8865	380	445
750 (61)	0.0787	0.11	0.0104	0.1378	1.119	85.9580	0.087 + j0.702	0.033 + j0.042	13298	470	530
1000 (61)	0.0591	0.09	0.0091	0.1312	1.247	95.8005	0.080 + j0.695	0.026 + j0.040	17615	530	585
1000 (61)	0.0591	0.09	0.0091	0.1312	1.247	95.8005	0.080 + j0.695	0.026 + j0.040	17615	530	585

*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.

Calculator

