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; 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: -40ºC and MV 90ºC 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	1.496	11x14	0.295	75	1.774	1448	12.4	1269
TBA	250 (37)	0.558	1.444	420	1.564	13x14	0.249	75	1.842	1585	12.9	1500
TBA	350 (37)	0.661	1.547	420	1.697	18x14	0.18	75	1.975	1898	13.8	2100
TBA	500 (37)	0.789	1.675	420	1.825	25x14	0.13	75	2.103	2263	14.7	3000
TBA	750 (61)	0.968	1.864	420	2.014	24x12	0.085	75	2.326	2881	16.3	4500
661319^	1000 (61)	1.117	2.007	420	2.147	20x10	0.064	75	2.505	3514	17.5	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
^ Hi-Dri-Plus® - Water Blocking Powder
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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
4/0 (19)	0.084	0.115	0.049	0.051	0.41	8.3	0.358+j0.133	0.117+j0.056	3840	235	285
250 (37)	0.07	0.096	0.045	0.049	0.44	9	0.311+j0.107	0.098+j0.054	4538	257	
350 (37)	0.051	0.07	0.041	0.047	0.49	10	0.235+j0.072	0.073+j0.052	6284	315	370
500 (37)	0.036	0.05	0.036	0.044	0.56	11.2	0.173+j0.049	0.054+j0.049	8727	380	445
750 (61)	0.023	0.033	0.031	0.042	0.65	13.1	0.116+j0.034	0.039+j0.045	13298	470	530
1000 (61)	0.017	0.025	0.028	0.04	0.72	14.6	0.088+j0.028	0.033+j0.043	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, Spacing: one diameter spacing center-to-center.

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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	38.00	11x14	0.97	1.91	45.06	2155	314.96	5647
TBA	250 (37)	14.17	36.68	10.67	39.73	13x14	0.82	1.91	46.79	2359	327.66	6675
TBA	350 (37)	16.79	39.29	10.67	43.10	18x14	0.59	1.91	50.17	2825	350.52	9345
TBA	500 (37)	20.04	42.55	10.67	46.36	25x14	0.43	1.91	53.42	3368	373.38	13350
TBA	750 (61)	24.59	47.35	10.67	51.16	24x12	0.28	1.91	59.08	4287	414.02	20025
661319^	1000 (61)	28.37	50.98	10.67	54.53	20x10	0.21	1.91	63.63	5229	444.50	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	0.38	0.0149	0.1673	1.345	27.2310	0.358+j0.133	0.117+j0.056	3840	235	285
250 (37)	0.2297	0.31	0.0137	0.1608	1.444	29.5276	0.311+j0.107	0.098+j0.054	4538	257	
350 (37)	0.1673	0.23	0.0125	0.1542	1.608	32.8084	0.235+j0.072	0.073+j0.052	6284	315	370
500 (37)	0.1181	0.16	0.0110	0.1444	1.837	36.7454	0.173+j0.049	0.054+j0.049	8727	380	445
750 (61)	0.0755	0.11	0.0094	0.1378	2.133	42.9790	0.116+j0.034	0.039+j0.045	13298	470	530
1000 (61)	0.0558	0.08	0.0085	0.1312	2.362	47.9003	0.088+j0.028	0.033+j0.043	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, Spacing: one diameter spacing center-to-center.

Concentric Neutral Calculator

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