35kV AL 133% EPR (EAM) LCT LLDPE

Single Conductor, 420 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 133% Insulation Level, Longitudinally Corrugated Tape Shield, 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. **Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
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-97-682 Standard for Shielded Utility Cable Rated for 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

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
4/0 (19)	0.498	1.376	420	1.456	110	1.776	1348	21.3	1269
250 (37)	0.558	1.444	420	1.524	110	1.844	1455	22.1	1500
350 (37)	0.661	1.547	420	1.627	110	1.947	1653	23.4	2100
500 (37)	0.789	1.675	420	1.755	110	2.075	1922	24.9	3000
750 (61)	0.968	1.864	420	1.944	110	2.264	2370	27.2	4500
1000 (61)	1.117	2.013	420	2.093	110	2.413	2760	29.0	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
4/0 (19)	0.084	0.105	0.053	0.051	0.220	16.89	0.159 + j0.729	0.105 + j0.051	4090	235	280
250 (37)	0.071	0.090	0.049	0.049	0.235	18.05	0.144 + j0.725	0.090 + j0.049	4278		
350 (37)	0.050	0.065	0.044	0.047	0.263	20.20	0.119 + j0.719	0.065 + j0.047	4564	315	370
500 (37)	0.035	0.046	0.039	0.044	0.297	22.81	0.100 + j0.712	0.046 + j0.044	4919	380	435
750 (61)	0.024	0.033	0.034	0.041	0.341	26.19	0.087 + j0.703	0.033 + j0.041	5442	480	545
1000 (61)	0.018	0.026	0.030	0.039	0.380	29.18	0.080 + j0.697	0.026 + j0.039	5855	550	625

*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)

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
4/0 (19)	12.65	34.95	10.67	36.98	2.79	45.11	2006	541.02	5647
250 (37)	14.17	36.68	10.67	38.71	2.79	46.84	2165	561.34	6675
350 (37)	16.79	39.29	10.67	41.33	2.79	49.45	2460	594.36	9345
500 (37)	20.04	42.55	10.67	44.58	2.79	52.71	2860	632.46	13350
750 (61)	24.59	47.35	10.67	49.38	2.79	57.51	3527	690.88	20025
1000 (61)	28.37	51.13	10.67	53.16	2.79	61.29	4107	736.60	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
4/0 (19)	0.2756	0.34	0.0162	0.1673	0.722	55.4134	0.159 + j0.729	0.105 + j0.051	4090	235	280
250 (37)	0.2329	0.30	0.0149	0.1608	0.771	59.2192	0.144 + j0.725	0.090 + j0.049	4278		
350 (37)	0.1640	0.21	0.0134	0.1542	0.863	66.2730	0.119 + j0.719	0.065 + j0.047	4564	315	370
500 (37)	0.1148	0.15	0.0119	0.1444	0.974	74.8360	0.100 + j0.712	0.046 + j0.044	4919	380	435
750 (61)	0.0787	0.11	0.0104	0.1345	1.119	85.9252	0.087 + j0.703	0.033 + j0.041	5442	480	545
1000 (61)	0.0591	0.09	0.0091	0.1280	1.247	95.7349	0.080 + j0.697	0.026 + j0.039	5855	550	625

*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.