35kV AL 133% TRXLPE One-Third Neutral LLDPE

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 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:** Class B compressed Aluminum ASTM 1350 ¾ hard H16/H26; Conductor moisture block (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 Tree Retardant Cross Linked Polyethylene 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 (red extruded stripes optional); 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 90°C for normal operation. 130°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 TRXLPE 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
618589	4/0 (19)	0.498	1.368	420	1.478	11x14	0.295	75	1.76	1269	12.3	1269
661969	250 (37)	0.558	1.438	420	1.548	13x14	0.249	75	1.83	1397	12.8	1500
618590	350 (37)	0.661	1.541	420	1.651	18x14	0.18	75	1.933	1642	13.5	2100
628470	350 (37)	0.661	1.541	420	1.651	18x14	0.18	75	1.933	1643	13.5	2100
618591	500 (37)	0.789	1.669	420	1.809	16x12	0.128	75	2.125	2078	14.9	3000
628573^	750 (61)	0.968	1.858	420	1.998	24x12	0.085	75	2.314	2658	16.2	4500
616939	750 (61)	0.968	1.858	420	1.998	24x12	0.085	75	2.314	2658	16.2	4500
618592	750 (61)	0.968	1.858	420	1.998	15x10	0.085	75	2.356	2717	16.5	4500
618593	1000 (61)	1.117	2.007	420	2.147	20x10	0.064	75	2.505	3255	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
^ HiDri-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.

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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	0.064	0.051	0.32	6.4	0.358+j0.133	0.117+j0.056	3840	235	285
250 (37)	0.07	0.096	0.059	0.049	0.34	6.9	0.311+j0.107	0.098+j0.054	4538	257	
350 (37)	0.051	0.07	0.053	0.046	0.38	7.7	0.235+j0.071	0.073+j0.051	6284	315	370
350 (37)	0.051	0.07	0.053	0.046	0.38	7.7	0.235+j0.071	0.073+j0.051	6284	315	370
500 (37)	0.036	0.05	0.047	0.044	0.43	8.7	0.172+j0.049	0.054+j0.049	8865	380	445
750 (61)	0.023	0.033	0.041	0.042	0.5	10.1	0.116+j0.034	0.039+j0.045	13298	470	530
750 (61)	0.023	0.033	0.041	0.042	0.5	10.1	0.116+j0.034	0.039+j0.045	13298	470	530
750 (61)	0.023	0.033	0.041	0.042	0.5	10.1	0.116+j0.035	0.039+j0.046	13212	470	530
1000 (61)	0.017	0.025	0.037	0.04	0.55	11.2	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
618589	4/0 (19)	12.65	34.75	10.67	37.54	11x14	0.97	1.91	44.70	1888	312.42	5647
661969	250 (37)	14.17	36.53	10.67	39.32	13x14	0.82	1.91	46.48	2079	325.12	6675
618590	350 (37)	16.79	39.14	10.67	41.94	18x14	0.59	1.91	49.10	2444	342.90	9345
628470	350 (37)	16.79	39.14	10.67	41.94	18x14	0.59	1.91	49.10	2445	342.90	9345
618591	500 (37)	20.04	42.39	10.67	45.95	16x12	0.42	1.91	53.97	3092	378.46	13350
628573^	750 (61)	24.59	47.19	10.67	50.75	24x12	0.28	1.91	58.78	3956	411.48	20025
616939	750 (61)	24.59	47.19	10.67	50.75	24x12	0.28	1.91	58.78	3956	411.48	20025
618592	750 (61)	24.59	47.19	10.67	50.75	15x10	0.28	1.91	59.84	4043	419.10	20025
618593	1000 (61)	28.37	50.98	10.67	54.53	20x10	0.21	1.91	63.63	4844	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
^ HiDri-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.

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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	0.0195	0.1673	1.050	20.9974	0.358+j0.133	0.117+j0.056	3840	235	285
250 (37)	0.2297	0.31	0.0180	0.1608	1.115	22.6378	0.311+j0.107	0.098+j0.054	4538	257	
350 (37)	0.1673	0.23	0.0162	0.1509	1.247	25.2625	0.235+j0.071	0.073+j0.051	6284	315	370
350 (37)	0.1673	0.23	0.0162	0.1509	1.247	25.2625	0.235+j0.071	0.073+j0.051	6284	315	370
500 (37)	0.1181	0.16	0.0143	0.1444	1.411	28.5433	0.172+j0.049	0.054+j0.049	8865	380	445
750 (61)	0.0755	0.11	0.0125	0.1378	1.640	33.1365	0.116+j0.034	0.039+j0.045	13298	470	530
750 (61)	0.0755	0.11	0.0125	0.1378	1.640	33.1365	0.116+j0.034	0.039+j0.045	13298	470	530
750 (61)	0.0755	0.11	0.0125	0.1378	1.640	33.1365	0.116+j0.035	0.039+j0.046	13212	470	530
1000 (61)	0.0558	0.08	0.0113	0.1312	1.804	36.7454	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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