35kV AL 100% TRXLPE One-Third Neutral LLDPE

Single Conductor, 345 Mils Tree Retardant Cross Linked Polyethylene, 100% 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:** 345 Mils Tree Retardant Cross Linked Polyethylene 100% 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 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 345 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	1/0 (SOLID)	0.325	1.053	345	1.173	6x14	0.54	50	1.401	859	9.8	633
615150^	1/0 (19)	0.362	1.072	345	1.182	6x14	0.54	50	1.41	786	9.9	633
620726	1/0 (19)	0.362	1.072	345	1.182	6x14	0.54	50	1.41	786	9.9	633
627879	2/0 (19)	0.395	1.115	345	1.225	7x14	0.463	50	1.453	855	10.2	798
TBA	3/0 (19)	0.443	1.171	345	1.291	9x14	0.36	50	1.519	1057	10.6	1006
615151^	4/0 (19)	0.498	1.218	345	1.328	11x14	0.295	50	1.556	1052	10.9	1269
626296^^^	4/0 (19)	0.498	1.218	345	1.328	11x14	0.295	50	1.556	1052	10.9	1269
254815	4/0 (19)	0.498	1.218	345	1.328	11x14	0.295	50	1.556	1052	10.9	1269
584524^^	350 (37)	0.661	1.391	345	1.501	18x14	0.18	75	1.783	1463	12.5	2100
619322	350 (37)	0.661	1.391	345	1.501	18x14	0.18	75	1.783	1462	12.5	2100
625222	500 (37)	0.789	1.519	345	1.629	25x14	0.13	75	1.911	1783	13.4	3000
620816^^	500 (37)	0.789	1.519	345	1.629	16x12	0.128	75	1.945	1838	13.6	3000
626322^	500 (37)	0.789	1.519	345	1.629	16x12	0.128	75	1.945	1838	13.6	3000
614633	500 (37)	0.789	1.519	345	1.629	16x12	0.128	75	1.945	1837	13.6	3000
257724	750 (61)	0.968	1.708	345	1.848	24x12	0.085	75	2.164	2443	15.1	4500
614634	1000 (61)	1.117	1.857	345	1.997	20x10	0.064	75	2.355	3023	16.5	6000
617368	1250 (91)	1.25	2.001	345	2.141	25x10	0.051	75	2.5	3562	17.5	7500

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
^^ HiDri Plus® - Water Blocking Powder. All Black Jacket
^^^ HiDri Plus® - Water Blocking Powder, UL listed MV-90 Rated
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
1/0 (SOLID)	0.102	0.14	0.072	0.055	0.28	5.6	0.473+j0.277	0.141+j0.058	2095	160	195
1/0 (19)	0.167	0.229	0.067	0.053	0.3	6.1	0.562+j0.278	0.230+j0.059	2095	160	195
1/0 (19)	0.167	0.229	0.067	0.053	0.3	6.1	0.562+j0.278	0.230+j0.059	2095	160	195
2/0 (19)	0.133	0.182	0.064	0.052	0.31	6.3	0.497+j0.232	0.183+j0.057	2444	185	220
3/0 (19)	0.105	0.144	0.061	0.05	0.33	6.7	0.421+j0.170	0.146+j0.055	3142	210	250
4/0 (19)	0.084	0.115	0.056	0.048	0.36	7.3	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.084	0.115	0.056	0.048	0.36	7.3	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.084	0.115	0.056	0.048	0.36	7.3	0.359+j0.130	0.117+j0.053	3840	235	285
350 (37)	0.051	0.07	0.046	0.045	0.44	8.9	0.235+j0.068	0.073+j0.050	6284	315	370
350 (37)	0.051	0.07	0.046	0.045	0.44	8.9	0.235+j0.068	0.073+j0.050	6284	315	370
500 (37)	0.036	0.05	0.041	0.042	0.5	10	0.173+j0.047	0.054+j0.047	8727	380	445
500 (37)	0.036	0.05	0.041	0.042	0.5	10	0.172+j0.047	0.054+j0.047	8865	380	445
500 (37)	0.036	0.05	0.041	0.042	0.5	10	0.172+j0.047	0.054+j0.047	8865	380	445
500 (37)	0.036	0.05	0.041	0.042	0.5	10	0.172+j0.047	0.054+j0.047	8865	380	445
750 (61)	0.023	0.033	0.035	0.04	0.58	11.7	0.116+j0.032	0.039+j0.044	13298	470	530
1000 (61)	0.017	0.025	0.031	0.039	0.65	13.1	0.088+j0.026	0.033+j0.041	17615	530	585
1250 (91)	0.014	0.022	0.029	0.038	0.7	14.2	0.073+j0.023	0.031+j0.039	22019		

*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	1/0 (SOLID)	8.25	26.75	8.76	29.79	6x14	1.77	1.27	35.59	1278	248.92	2817
615150^	1/0 (19)	9.19	27.23	8.76	30.02	6x14	1.77	1.27	35.81	1170	251.46	2817
620726	1/0 (19)	9.19	27.23	8.76	30.02	6x14	1.77	1.27	35.81	1170	251.46	2817
627879	2/0 (19)	10.03	28.32	8.76	31.12	7x14	1.52	1.27	36.91	1272	259.08	3551
TBA	3/0 (19)	11.25	29.74	8.76	32.79	9x14	1.18	1.27	38.58	1573	269.24	4477
615151^	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.97	1.27	39.52	1566	276.86	5647
626296^^^	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.97	1.27	39.52	1566	276.86	5647
254815	4/0 (19)	12.65	30.94	8.76	33.73	11x14	0.97	1.27	39.52	1566	276.86	5647
584524^^	350 (37)	16.79	35.33	8.76	38.13	18x14	0.59	1.91	45.29	2177	317.50	9345
619322	350 (37)	16.79	35.33	8.76	38.13	18x14	0.59	1.91	45.29	2176	317.50	9345
625222	500 (37)	20.04	38.58	8.76	41.38	25x14	0.43	1.91	48.54	2653	340.36	13350
620816^^	500 (37)	20.04	38.58	8.76	41.38	16x12	0.42	1.91	49.40	2735	345.44	13350
626322^	500 (37)	20.04	38.58	8.76	41.38	16x12	0.42	1.91	49.40	2735	345.44	13350
614633	500 (37)	20.04	38.58	8.76	41.38	16x12	0.42	1.91	49.40	2734	345.44	13350
257724	750 (61)	24.59	43.38	8.76	46.94	24x12	0.28	1.91	54.97	3636	383.54	20025
614634	1000 (61)	28.37	47.17	8.76	50.72	20x10	0.21	1.91	59.82	4499	419.10	26700
617368	1250 (91)	31.75	50.83	8.76	54.38	25x10	0.17	1.91	63.50	5301	444.50	33375

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
^^ HiDri Plus® - Water Blocking Powder. All Black Jacket
^^^ HiDri Plus® - Water Blocking Powder, UL listed MV-90 Rated
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
1/0 (SOLID)	0.3346	0.46	0.0219	0.1804	0.919	18.3727	0.473+j0.277	0.141+j0.058	2095	160	195
1/0 (19)	0.5479	0.75	0.0204	0.1739	0.984	20.0131	0.562+j0.278	0.230+j0.059	2095	160	195
1/0 (19)	0.5479	0.75	0.0204	0.1739	0.984	20.0131	0.562+j0.278	0.230+j0.059	2095	160	195
2/0 (19)	0.4364	0.60	0.0195	0.1706	1.017	20.6693	0.497+j0.232	0.183+j0.057	2444	185	220
3/0 (19)	0.3445	0.47	0.0186	0.1640	1.083	21.9816	0.421+j0.170	0.146+j0.055	3142	210	250
4/0 (19)	0.2756	0.38	0.0171	0.1575	1.181	23.9501	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.2756	0.38	0.0171	0.1575	1.181	23.9501	0.359+j0.130	0.117+j0.053	3840	235	285
4/0 (19)	0.2756	0.38	0.0171	0.1575	1.181	23.9501	0.359+j0.130	0.117+j0.053	3840	235	285
350 (37)	0.1673	0.23	0.0140	0.1476	1.444	29.1995	0.235+j0.068	0.073+j0.050	6284	315	370
350 (37)	0.1673	0.23	0.0140	0.1476	1.444	29.1995	0.235+j0.068	0.073+j0.050	6284	315	370
500 (37)	0.1181	0.16	0.0125	0.1378	1.640	32.8084	0.173+j0.047	0.054+j0.047	8727	380	445
500 (37)	0.1181	0.16	0.0125	0.1378	1.640	32.8084	0.172+j0.047	0.054+j0.047	8865	380	445
500 (37)	0.1181	0.16	0.0125	0.1378	1.640	32.8084	0.172+j0.047	0.054+j0.047	8865	380	445
500 (37)	0.1181	0.16	0.0125	0.1378	1.640	32.8084	0.172+j0.047	0.054+j0.047	8865	380	445
750 (61)	0.0755	0.11	0.0107	0.1312	1.903	38.3858	0.116+j0.032	0.039+j0.044	13298	470	530
1000 (61)	0.0558	0.08	0.0094	0.1280	2.133	42.9790	0.088+j0.026	0.033+j0.041	17615	530	585
1250 (91)	0.0459	0.07	0.0088	0.1247	2.297	46.5879	0.073+j0.023	0.031+j0.039	22019		

*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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