35kV AL 133% TRXLPE Full Neutral LLDPE Primary UD

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Full Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket

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 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 full 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, troughs, trays, 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
- UL 1072 - Listed Listed as MV 90 When Specified

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
TBA	1/0 (1)	0.325	1.202	420	1.302	16x14	0.164	50	1.530	1000	18.4	634
TBA	1/0 (19)	0.352	1.229	420	1.329	16x14	0.164	50	1.557	1031	18.7	634
TBA	2/0 (19)	0.395	1.272	420	1.372	13x12	0.128	50	1.632	1179	19.6	799
TBA	3/0 (19)	0.443	1.320	420	1.420	16x12	0.104	80	1.740	1370	20.9	1007
TBA	4/0 (19)	0.498	1.375	420	1.475	13x10	0.080	80	1.839	1594	22.1	1270
TBA	250 (37)	0.558	1.444	420	1.544	16x10	0.065	80	1.908	1790	22.9	1500
TBA	350 (37)	0.661	1.547	420	1.647	16x9	0.052	80	2.036	2135	24.4	2100

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
1/0 (1)	0.168	0.211	0.082	0.055	0.247	1.500	0.370+j0.082	0.213+j0.054	6004.7	160	195
1/0 (19)	0.168	0.211	0.078	0.054	0.258	1.565	0.370+j0.080	0.213+j0.053	6004.7	160	195
2/0 (19)	0.133	0.167	0.073	0.052	0.275	1.667	0.295+j0.066	0.170+j0.052	7751.5	185	220
3/0 (19)	0.105	0.132	0.069	0.051	0.294	1.780	0.238+j0.055	0.135+j0.050	9540.3	210	250
4/0 (19)	0.0836	0.105	0.064	0.050	0.315	1.907	0.186+j0.048	0.110+j0.048	12321.7	240	285
250 (37)	0.0707	0.089	0.059	0.048	0.341	2.065	0.156+j0.042	0.094+j0.046	15165.1		
350 (37)	0.0505	0.064	0.053	0.046	0.379	2.299	0.117+j0.037	0.070+j0.043	19124.4	315	370

* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter
† Ampacities are based on Figure 7 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)
‡ Ampacities are based on Figure 1 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

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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 (1)	8.25	30.53	10.67	33.07	16x14	0.54	1.27	38.86	1488	467.36	2821
TBA	1/0 (19)	8.94	31.22	10.67	33.76	16x14	0.54	1.27	39.55	1534	474.98	2821
TBA	2/0 (19)	10.03	32.31	10.67	34.85	13x12	0.42	1.27	41.45	1755	497.84	3556
TBA	3/0 (19)	11.25	33.53	10.67	36.07	16x12	0.34	2.03	44.20	2039	530.86	4481
TBA	4/0 (19)	12.65	34.93	10.67	37.47	13x10	0.26	2.03	46.71	2372	561.34	5652
TBA	250 (37)	14.17	36.68	10.67	39.22	16x10	0.21	2.03	48.46	2664	581.66	6675
TBA	350 (37)	16.79	39.29	10.67	41.83	16x9	0.17	2.03	51.71	3177	619.76	9345

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
1/0 (1)	0.5512	0.69	0.0250	0.1804	0.810	4.9213	0.370+j0.082	0.213+j0.054	6004.7	160	195
1/0 (19)	0.5512	0.69	0.0238	0.1772	0.846	5.1345	0.370+j0.080	0.213+j0.053	6004.7	160	195
2/0 (19)	0.4364	0.55	0.0223	0.1706	0.902	5.4692	0.295+j0.066	0.170+j0.052	7751.5	185	220
3/0 (19)	0.3445	0.43	0.0210	0.1673	0.965	5.8399	0.238+j0.055	0.135+j0.050	9540.3	210	250
4/0 (19)	0.2743	0.34	0.0195	0.1640	1.033	6.2566	0.186+j0.048	0.110+j0.048	12321.7	240	285
250 (37)	0.2320	0.29	0.0180	0.1575	1.119	6.7749	0.156+j0.042	0.094+j0.046	15165.1		
350 (37)	0.1657	0.21	0.0162	0.1509	1.243	7.5427	0.117+j0.037	0.070+j0.043	19124.4	315	370

* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter
† Ampacities are based on Figure 7 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)
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