46kV AL 100% TRXLPE One-Third Neutral LLDPE

Single Conductor, 445 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:** 445 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 46kV 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
- CSA C68.3 Shielded & Concentric Neutral Power Cable - 5 to 46 kV
- 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)
- 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 46000 VOLTS TRXLPE INSULATION 445 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
628091	500 (37)	0.789	1.719	445	1.859	16x12	0.128	75	2.175	2147	15.2	3000
628094	750 (61)	0.968	1.908	445	2.048	24x12	0.085	75	2.364	2731	16.5	4500
628097	1000 (61)	1.117	2.057	445	2.197	20x10	0.064	75	2.555	3336	17.9	6000
628101	1250 (91)	1.25	2.201	445	2.341	25x10	0.051	75	2.699	3890	18.9	7500
628104	1500 (91)	1.37	2.32	445	2.46	30x10	0.043	75	2.818	4407	19.7	9000

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 - moisture absorbing powder under jacket. CSA Listed
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
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
500 (37)	0.036	0.05	0.049	0.045	0.54	14.4	0.172+j0.050	0.054+j0.050	8865	380
750 (61)	0.023	0.033	0.042	0.042	0.63	16.7	0.116+j0.035	0.039+j0.046	13298	470
1000 (61)	0.017	0.025	0.038	0.041	0.69	18.5	0.088+j0.029	0.033+j0.043	17615	530
1250 (91)	0.014	0.022	0.035	0.039	0.75	20	0.073+j0.025	0.031+j0.041	22019	
1500 (91)	0.012	0.02	0.033	0.038	0.81	21.4	0.062+j0.023	0.030+j0.038	26423	

*****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
628091	500 (37)	20.04	43.66	11.30	47.22	16x12	0.42	1.91	55.24	3195	386.08	13350
628094	750 (61)	24.59	48.46	11.30	52.02	24x12	0.28	1.91	60.05	4064	419.10	20025
628097	1000 (61)	28.37	52.25	11.30	55.80	20x10	0.21	1.91	64.90	4965	454.66	26700
628101	1250 (91)	31.75	55.91	11.30	59.46	25x10	0.17	1.91	68.55	5789	480.06	33375
628104	1500 (91)	34.80	58.93	11.30	62.48	30x10	0.14	1.91	71.58	6558	500.38	40050

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 - moisture absorbing powder under jacket. CSA Listed
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
AWG/ Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp
500 (37)	0.1181	0.16	0.0149	0.1476	1.772	47.2441	0.172+j0.050	0.054+j0.050	8865	380
750 (61)	0.0755	0.11	0.0128	0.1378	2.067	54.7900	0.116+j0.035	0.039+j0.046	13298	470
1000 (61)	0.0558	0.08	0.0116	0.1345	2.264	60.6955	0.088+j0.029	0.033+j0.043	17615	530
1250 (91)	0.0459	0.07	0.0107	0.1280	2.461	65.6168	0.073+j0.025	0.031+j0.041	22019	
1500 (91)	0.0394	0.07	0.0101	0.1247	2.657	70.2100	0.062+j0.023	0.030+j0.038	26423	

*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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