46kV AL 100% TRXLPE One-Third Neutral LLDPE Primary UD

Single Conductor, 445 Mils Tree Retardant Cross Linked Polyethylene, 100% Insulation Level, One-third 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:** 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, 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
- 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
- UL 1072 - Listed Listed as MV 90 When Specified

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

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 (19)	0.362	1.289	445	1.389	6x14	0.438	50	1.617	985	19.4	634
TBA	2/0 (19)	0.405	1.332	445	1.432	7x14	0.376	50	1.660	1059	19.9	799
TBA	3/0 (19)	0.456	1.383	445	1.483	9x14	0.292	80	1.771	1227	21.3	1007
660322^	4/0 (19)	0.512	1.439	445	1.539	18x16	0.239	80	1.827	1344	21.9	1270
TBA	250 (37)	0.558	1.494	445	1.594	13x14	0.202	80	1.882	1453	22.6	1500
628088	350 (37)	0.661	1.597	445	1.727	18x14	0.146	80	2.015	1749	24.2	2100
628091	500 (37)	0.789	1.725	445	1.855	16x12	0.104	80	2.175	2147	26.1	3000
628094	750 (61)	0.968	1.913	445	2.043	24x12	0.069	80	2.363	2721	28.4	4500
628097	1000 (61)	1.117	2.062	445	2.192	20x10	0.052	80	2.556	3324	30.7	6000
628101	1250 (91)	1.250	2.217	445	2.347	20x9	0.041	80	2.736	3924	32.8	7500
628104	1500 (91)	1.370	2.337	445	2.467	24x9	0.034	80	2.856	4441	34.3	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
^Hi-Dri-Plus® - Water Blocking Absorbing Powder under jacket. CSA Listed

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 (19)	0.168	0.211	0.080	0.054	0.333	2.652	0.519+j0.241	0.212+j0.054	2251.8	160	195
2/0 (19)	0.133	0.167	0.075	0.052	0.354	2.819	0.454+j0.201	0.168+j0.052	2627.1	185	220
3/0 (19)	0.105	0.132	0.070	0.051	0.378	3.015	0.379+j0.148	0.133+j0.051	3377.6	210	250
4/0 (19)	0.0836	0.105	0.066	0.049	0.405	3.227	0.319+j0.116	0.107+j0.049	4128.2	235	285
250 (37)	0.0707	0.089	0.062	0.048	0.431	3.434	0.277+j0.094	0.091+j0.048	4878.8		
350 (37)	0.0505	0.064	0.055	0.046	0.479	3.816	0.207+j0.065	0.066+j0.045	6755.3	315	370
500 (37)	0.0354	0.045	0.049	0.044	0.538	4.286	0.151+j0.049	0.048+j0.043	9540.3	380	450
750 (61)	0.0236	0.030	0.043	0.041	0.623	4.968	0.102+j0.036	0.034+j0.039	14310.5	470	545
1000 (61)	0.0177	0.023	0.038	0.040	0.691	5.504	0.077+j0.032	0.029+j0.037	18956.4	530	620
1250 (91)	0.0141	0.019	0.035	0.038	0.760	6.059	0.062+j0.029	0.025+j0.035	23905.5		
1500 (91)	0.0118	0.016	0.033	0.037	0.814	6.487	0.052+j0.026	0.023+j0.033	28686.7		

* 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)

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 (19)	9.19	32.74	11.30	35.28	6x14	1.44	1.27	41.07	1466	492.76	2821
TBA	2/0 (19)	10.29	33.83	11.30	36.37	7x14	1.23	1.27	42.16	1576	505.46	3556
TBA	3/0 (19)	11.58	35.13	11.30	37.67	9x14	0.96	2.03	44.98	1826	541.02	4481
660322^	4/0 (19)	13.00	36.55	11.30	39.09	18x16	0.78	2.03	46.41	2000	556.26	5652
TBA	250 (37)	14.17	37.95	11.30	40.49	13x14	0.66	2.03	47.80	2162	574.04	6675
628088	350 (37)	16.79	40.56	11.30	43.87	18x14	0.48	2.03	51.18	2603	614.68	9345
628091	500 (37)	20.04	43.82	11.30	47.12	16x12	0.34	2.03	55.24	3195	662.94	13350
628094	750 (61)	24.59	48.59	11.30	51.89	24x12	0.23	2.03	60.02	4049	721.36	20025
628097	1000 (61)	28.37	52.37	11.30	55.68	20x10	0.17	2.03	64.92	4947	779.78	26700
628101	1250 (91)	31.75	56.31	11.30	59.61	20x9	0.13	2.03	69.49	5840	833.12	33375
628104	1500 (91)	34.80	59.36	11.30	62.66	24x9	0.11	2.03	72.54	6609	871.22	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
^Hi-Dri-Plus® - Water Blocking Absorbing Powder under jacket. CSA Listed

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 (19)	0.5512	0.69	0.0244	0.1772	1.093	8.7008	0.519+j0.241	0.212+j0.054	2251.8	160	195
2/0 (19)	0.4364	0.55	0.0229	0.1706	1.161	9.2487	0.454+j0.201	0.168+j0.052	2627.1	185	220
3/0 (19)	0.3445	0.43	0.0213	0.1673	1.240	9.8917	0.379+j0.148	0.133+j0.051	3377.6	210	250
4/0 (19)	0.2743	0.34	0.0201	0.1608	1.329	10.5873	0.319+j0.116	0.107+j0.049	4128.2	235	285
250 (37)	0.2320	0.29	0.0189	0.1575	1.414	11.2664	0.277+j0.094	0.091+j0.048	4878.8		
350 (37)	0.1657	0.21	0.0168	0.1509	1.572	12.5197	0.207+j0.065	0.066+j0.045	6755.3	315	370
500 (37)	0.1161	0.15	0.0149	0.1444	1.765	14.0617	0.151+j0.049	0.048+j0.043	9540.3	380	450
750 (61)	0.0774	0.10	0.0131	0.1345	2.044	16.2992	0.102+j0.036	0.034+j0.039	14310.5	470	545
1000 (61)	0.0581	0.08	0.0116	0.1312	2.267	18.0577	0.077+j0.032	0.029+j0.037	18956.4	530	620
1250 (91)	0.0463	0.06	0.0107	0.1247	2.493	19.8786	0.062+j0.029	0.025+j0.035	23905.5		
1500 (91)	0.0387	0.05	0.0101	0.1214	2.671	21.2828	0.052+j0.026	0.023+j0.033	28686.7		

* 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)