Southwire® CANADA

HVTECK SPECIFICATIONS

HVTECK AL 1/C 115TRXLPE TS PVC AIA PVC 8KV 100% CSA

PRODUCT HIGHLIGHTS

Southwire's 8KV HVTECK is a CSA armoured cable for industrial and commercial medium voltage applications. Rated FT4, -40°C, Hazardous Locations (HL) and 105°C for use in harsh Canadian environments. For installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable.

CONSTRUCTION

Conductor
- Class B - compact stranded -8000 Series Aluminum -ACM

Options
- Class B compact stranded copper
- Class B compressed stranded copper
- Strand blocking technology
- Tinning on copper conductors

Conductor Shield
- Extruded semi-conducting thermosetting polymeric layer

Insulation
- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.115 inches (2.92mm) - nominal
- Insulation level: 100% - grounded system
- 105°C rated

Insulation Shield
- Extruded Semi-conducting thermosetting polymeric layer
- CSA 68.10 - Shield Removal/termination requirements are printed on the surface
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield
- Helically wrapped 5 mil copper tape with 25% overlap
- Not designed to carry ground fault current
- A separate bonding/grounding conductor may be required

Inner Jacket
- Black PVC
- Thickness:
  No.2 AWG to No.1/0 AWG = 0.06 inches (1.52mm)
  No.2/0 AWG to 750 kcmil = 0.08 inches (2.03mm)

Armour
- Aluminum Interlocked Armour (AIA)
- Optional Galvanized Steel Interlocked Armour (GSIA)

Overall Jacket
- Black PVC (optional colours available)
- Nominal Thickness:
  No.2 AWG to 350 kcmil = 0.05 inches (1.27mm)
  500 kcmil to 750 kcmil = 0.06 inches (1.52mm)

Typical Print Legend
- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 115 TRXLPE AIA 8KV 100% INS LEVEL 25% TS SUN RES 105° FT4 HL (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

HVTECK Product Code	Conductor Size *	Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		Diameter Over Inner Jacket		Diameter Over Armour		Approx. Overall Diameter		Minimum Bend Radius		Approx. Weight of Cable		Max. Reel Weight (reel and cable) **		Max. Reel Diameter / Width **		Max. Length of Cable on Reel **	
	AWG or Kcmil	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL115S97-002	2(7)	0.268	6.8	0.528	13.4	0.608	15.4	0.748	19.0	1.068	27.1	1.168	29.7	14.0	356	557	829	4092	1856	78/54	1.98/1.37	6000	1829
AL115S97-001	1(19)	0.299	7.6	0.559	14.2	0.639	16.2	0.779	19.8	1.099	27.9	1.199	30.5	14.4	365	595	886	4320	1960	78/54	1.98/1.37	6000	1829
AL115S97-010	1/0(19)	0.336	8.5	0.596	15.1	0.676	17.2	0.816	20.7	1.136	28.9	1.236	31.4	14.8	377	642	955	4600	2087	78/54	1.98/1.37	6000	1829
AL115S97-020	2/0(19)	0.376	9.6	0.636	16.2	0.716	18.2	0.896	22.8	1.216	30.9	1.316	33.4	15.8	401	740	1102	5191	2355	78/54	1.98/1.37	6000	1829
AL115S97-030	3/0(19)	0.423	10.7	0.683	17.3	0.763	19.4	0.943	24.0	1.263	32.1	1.363	34.6	16.4	415	808	1202	6005	2724	96/54.5	2.44/1.38	6000	1829
AL115S97-040	4/0(19)	0.475	12.1	0.735	18.7	0.815	20.7	0.995	25.3	1.315	33.4	1.415	35.9	17.0	431	888	1321	6484	2941	96/54.5	2.44/1.38	6000	1829
AL115S97-250	250(37)	0.520	13.2	0.790	20.1	0.870	22.1	1.050	26.7	1.370	34.8	1.470	37.3	17.6	448	1006	1497	7193	3263	96/54.5	2.44/1.38	6000	1829
AL115S97-350	350(37)	0.616	15.6	0.886	22.5	0.966	24.5	1.146	29.1	1.466	37.2	1.566	39.8	18.8	477	1175	1748	8208	3723	96/54.5	2.44/1.38	6000	1829
AL115S97-500	500(37)	0.736	18.7	1.006	25.6	1.086	27.6	1.266	32.2	1.586	40.3	1.706	43.3	20.5	520	1441	2145	9990	4531	104/56.5	2.64/1.44	6000	1829
AL115S97-750	750(61)	0.908	23.1	1.188	30.2	1.268	32.2	1.448	36.8	1.768	44.9	1.888	48.0	22.7	575	1830	2723	12535	5686	108/70.5	2.74/1.79	6000	1829

NOTE: These are minimum average dimensions as per CSA Standards.

* Other conductor sizes and outer jacket colours are available upon request. (#s in brackets represent # of strands / conductor)

** Longer maximum lengths may be possible. Standard sizes and lengths may be supplied. Reel sizes are not guaranteed. The factory reserves the right to make changes as necessary to optimize manufacturing requirements.

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HVTECK SPECIFICATIONS

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DESIGN

Qualification Standards

- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C68.3 - Shielded & Concentric Neutral Power Cable - 5 to 46 kV
- CSA C22.2 No. 174 - Cables in Hazardous Locations
- ICEA S-93-639 (NEMA WC 74) 5 to 46 kV - Shielded Power Cable
- AEIC CS-8 - Qualification Testing Requirements

Flame Test Ratings

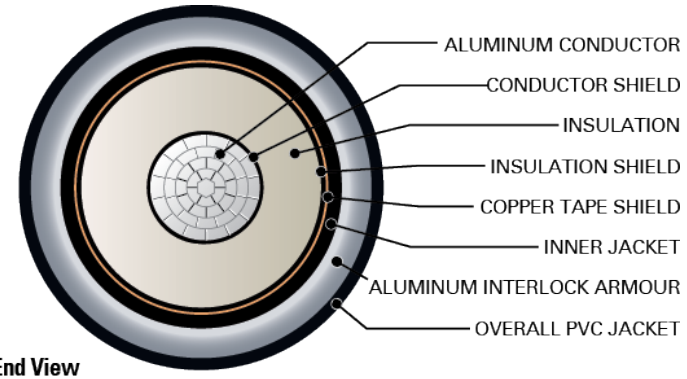
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 BTU/Hr)

Product Ratings

- CSA C22.2 No. 2556 & No. 0.3. - Wire and Cable Test Methods
- CSA LTGG [-40°C] - as per C68.10 - for Cold Bend and Impact rating
- CSA HL - for Hazardous Locations rating
- CSA FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating

Operating Temperatures

- -40°C - CSA Cold Bend and Impact Temperature
- -25°C - Min. Installation Temperature
- 105°C - Max Continuous Operating Temperature
- 140°C for Emergency Overload Temperature
- 250°C for Short Circuit Temperature



End View

TABLE 2 - ENGINEERING SPECIFICATIONS

HVTECK Product Code	Maximum Pulling Tension		DC Resistance @ 25°C R_{DC}		AC Resistance @ 90°C 60 Hz (triplex formation) R_{AC}		Inductance L		Capacitance C		Inductive Reactance @ 60Hz (triplexed) X_L		Capacitive Reactance @ 60Hz (triplexed) X_C		Positive - Sequence Impedance*	Zero - Sequence Impedance*	Short Circuit Current (each phase conductor) @ 60Hz	Allowable Ampacities in Ventilated Cable Tray †	Allowable Ampacities Directly Buries in Earth ‡
	lb	Newtons	Ω / 1000 ft.	Ω / km	Ω / 1000 ft.	Ω / km	mH / 1000 ft	mH / km	µF / 1000 ft	µF / km	Ω / 1000 ft.	Ω / km	MΩ • 1000ft	MΩ • km	Ω / 1000ft	Ω / 1000ft	kAmps	Amps	Amps
AL115S97-002	398	1771	0.265	0.869	0.333	1.093	0.0989	0.3245	0.0575	0.1886	0.0373	0.1223	0.0461	0.0141	0.334 + j0.055	0.686 + j0.509	3.1	169	176
AL115S97-001	502	2234	0.211	0.692	0.265	0.870	0.0957	0.3140	0.0623	0.2044	0.0361	0.1184	0.0426	0.0130	0.266 + j0.054	0.622 + j0.491	3.9	194	198
AL115S97-010	634	2818	0.168	0.551	0.211	0.693	0.0925	0.3035	0.0680	0.2231	0.0349	0.1144	0.0390	0.0119	0.212 + j0.052	0.571 + j0.472	5.0	222	223
AL115S97-020	799	3552	0.133	0.436	0.167	0.549	0.0896	0.2940	0.0742	0.2433	0.0338	0.1108	0.0358	0.0109	0.168 + j0.050	0.528 + j0.452	6.3	255	250
AL115S97-030	1007	4478	0.105	0.345	0.132	0.433	0.0868	0.2847	0.0814	0.2669	0.0327	0.1073	0.0326	0.0099	0.133 + j0.049	0.494 + j0.429	7.9	290	278
AL115S97-040	1270	5647	0.084	0.274	0.105	0.345	0.0842	0.2762	0.0893	0.2929	0.0317	0.1041	0.0297	0.0091	0.106 + j0.047	0.468 + j0.406	9.9	329	309
AL115S97-250	1500	6672	0.071	0.232	0.089	0.292	0.0831	0.2725	0.0932	0.3058	0.0313	0.1027	0.0285	0.0087	0.090 + j0.046	0.451 + j0.384	11.8	370	347
AL115S97-350	2100	9341	0.051	0.166	0.064	0.209	0.0797	0.2616	0.1072	0.3519	0.0301	0.0986	0.0247	0.0075	0.065 + j0.043	0.422 + j0.348	16.5	446	402
AL115S97-500	3000	13345	0.035	0.116	0.045	0.147	0.0766	0.2514	0.1247	0.4092	0.0289	0.0948	0.0213	0.0065	0.046 + j0.041	0.395 + j0.308	23.5	533	451
AL115S97-750	4500	20017	0.024	0.077	0.030	0.099	0.0740	0.2426	0.1450	0.4758	0.0279	0.0915	0.0183	0.0056	0.031 + j0.038	0.365 + j0.259	35.3	631	500

* Calculations are based on three cables triplexed / 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Table D17M of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17A of the 2015 Canadian Electrical Code Part I

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