



CSA TRAY RATED

HVTC SPECIFICATIONS

HVTC AL 3/C 115EPR TS PVC 8KV 100% CSA



Southwire®
CANADA

PRODUCT HIGHLIGHTS

Southwire's 8KV HVTC is a CSA approved copper tape shielded cable for Industrial and Commercial medium voltage applications. FT4, -40°C, and 105°C rated for use in harsh Canadian environments. Rated for installation in cable trays, duct banks, direct burial, troughs, continuous rigid cable supports and concrete encaseable. For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

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

- No-lead EPR (Ethylene Propylene Rubber)
- 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
- Phase identification as per ICEA Method 3, using printed circuit numbers
- Meets requirement of ICEA but built to CSA standards

Copper Tape Shield

- Helically wrapped 5 mil copper tape with 25% overlap

Bonding Conductor

- Class B compressed stranded bare copper
- in accordance with ASTM B3 and B8

Fillers

- Non-wicking, non-hygroscopic

Overall Jacket

- Black PVC (optional colours available)
- Nominal Thickness:
No.2 AWG to No.1 AWG = 0.08 inches (2.03mm)
No.1/0 AWG to 500 kcmil = 0.11 inches (2.79mm)
750 kcmil to 1000 kcmil = 0.14 inches (3.56mm)

Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 115 EPR 8KV 100% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

HVTC Product Code	Conductor Size *		Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		Bonding Cond. Size	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	AWG	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL115S46-002	2(7)		0.268	6.8	0.528	13.4	0.608	15.4	8	1.516	38.5	10.6	270	1052	1565	6418	2911	96/54.5	2.44/1.38	5000	1524
AL115S46-001	1(19)		0.299	7.6	0.559	14.2	0.639	16.2	6	1.583	40.2	11.1	282	1183	1761	7076	3210	96/54.5	2.44/1.38	5000	1524
AL115S46-010	1/0(19)		0.336	8.5	0.596	15.1	0.676	17.2	6	1.723	43.8	12.1	306	1404	2089	8360	3792	104/56.5	2.64/1.44	5000	1524
AL115S46-020	2/0(19)		0.376	9.6	0.636	16.2	0.716	18.2	6	1.810	46.0	12.7	322	1556	2316	9123	4138	104/56.5	2.64/1.44	5000	1524
AL115S46-030	3/0(19)		0.423	10.7	0.683	17.3	0.763	19.4	6	1.911	48.5	13.4	340	1742	2593	10267	4657	108/70.5	2.74/1.79	5000	1524
AL115S46-040	4/0(19)		0.475	12.1	0.735	18.7	0.815	20.7	6	2.024	51.4	14.2	360	1966	2926	11385	5164	108/70.5	2.74/1.79	5000	1524
AL115S46-250	250(37)		0.520	13.2	0.790	20.1	0.870	22.1	4	2.142	54.4	15.0	381	2241	3335	11976	5432	108/70.5	2.74/1.79	4650	1417
AL115S46-350	350(37)		0.616	15.6	0.886	22.5	0.966	24.5	4	2.350	59.7	16.4	418	2716	4041	11603	5263	108/70.5	2.74/1.79	3700	1128
AL115S46-500	500(37)		0.736	18.7	1.006	25.6	1.086	27.6	3	2.609	66.3	18.3	464	3420	5089	11644	5281	108/70.5	2.74/1.79	2950	899
AL115S46-750	750(61)		0.908	23.1	1.188	30.2	1.268	32.2	2	3.062	77.8	21.4	544	4752	7072	11297	5124	108/70.5	2.74/1.79	2050	625
AL115S46-1000	1000(61)		1.060	26.9	1.340	34.0	1.420	36.1	2	3.390	86.1	23.7	603	5818	8658	10282	4664	108/70.5	2.74/1.79	1500	457

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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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. 230 - Tray Cables
- 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 FT4 - for Flame Retardancy rating
- CSA SUN RES - for Sunlight Resistant rating
- CSA TC-ER ***

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

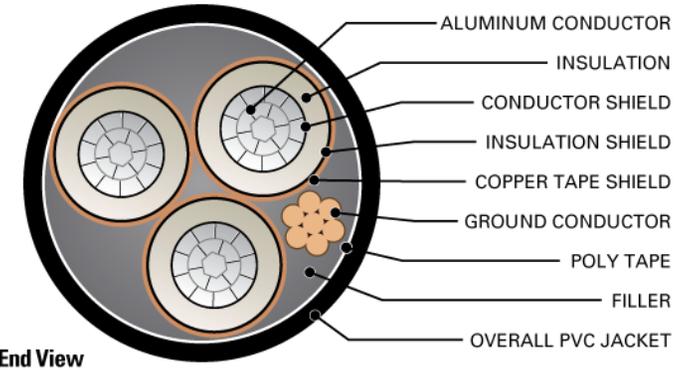


TABLE 2 - ENGINEERING SPECIFICATIONS

HVTC 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 Buried 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
AL115S46-002	1194	5313	0.265	0.869	0.333	1.093	0.0989	0.3245	0.0725	0.2378	0.0373	0.1223	0.0366	0.0112	0.333 + j0.041	0.703 + j0.516	2.9	135	157
AL115S46-001	1506	6701	0.211	0.692	0.265	0.870	0.0957	0.3140	0.0785	0.2577	0.0361	0.1184	0.0338	0.0103	0.265 + j0.040	0.638 + j0.498	3.7	154	178
AL115S46-010	1901	8455	0.168	0.551	0.211	0.693	0.0925	0.3035	0.0858	0.2813	0.0349	0.1144	0.0309	0.0094	0.211 + j0.038	0.586 + j0.478	4.7	176	202
AL115S46-020	2396	10657	0.133	0.436	0.167	0.549	0.0896	0.2940	0.0935	0.3068	0.0338	0.1108	0.0284	0.0086	0.168 + j0.037	0.543 + j0.456	5.9	204	229
AL115S46-030	3020	13435	0.105	0.345	0.132	0.433	0.0868	0.2847	0.1026	0.3366	0.0327	0.1073	0.0259	0.0079	0.132 + j0.036	0.508 + j0.433	7.4	234	260
AL115S46-040	3809	16942	0.084	0.274	0.105	0.345	0.0842	0.2762	0.1126	0.3694	0.0317	0.1041	0.0236	0.0072	0.106 + j0.035	0.480 + j0.409	9.4	268	294
AL115S46-250	4500	20017	0.071	0.232	0.089	0.292	0.0831	0.2725	0.1175	0.3856	0.0313	0.1027	0.0226	0.0069	0.089 + j0.034	0.462 + j0.386	11.1	296	323
AL115S46-350	6300	28024	0.051	0.166	0.064	0.209	0.0797	0.2616	0.1352	0.4436	0.0301	0.0986	0.0196	0.0060	0.064 + j0.032	0.431 + j0.348	15.5	363	386
AL115S46-500	9000	40034	0.035	0.116	0.045	0.148	0.0766	0.2514	0.1573	0.5160	0.0289	0.0948	0.0169	0.0051	0.045 + j0.031	0.403 + j0.308	22.2	447	465
AL115S46-750	13500	60051	0.024	0.077	0.031	0.100	0.0740	0.2426	0.1828	0.5999	0.0279	0.0915	0.0145	0.0044	0.031 + j0.030	0.372 + j0.258	33.2	566	563
AL115S46-1000	18000	80068	0.018	0.058	0.023	0.077	0.0719	0.2358	0.2097	0.6879	0.0271	0.0889	0.0127	0.0039	0.024 + j0.029	0.349 + j0.224	44.3	661	638

* Calculations are based on 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 D17N of the 2015 Canadian Electrical Code Part I (40°C Ambient Air Temperature, indoor installation)

‡ Ampacities are based on Table D17E of the 2015 Canadian Electrical Code Part I

*** For use in cable trays, exposed run and hazardous locations as per the limitations in the Canadian Electrical Code Part I, particularly Table 19.

