

**CSA TRAY RATED**

**HVTC SPECIFICATIONS**

# HVTC AL 1/C 115EPR TS PVC 5KV 133% CSA



## PRODUCT HIGHLIGHTS

Southwire's 5KV 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: 133%
- 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

### Overall Jacket

- Orange PVC (optional colours available)
- Nominal Thickness:  
No.2 AWG to No.1/0 AWG = 0.06 inches (1.52mm)  
No.2/0 AWG to 1000 kcmil = 0.08 inches (2.03mm)

### Typical Print Legend

- (CSA) SOUTHWIRE (NESC) #P# [#AWG or #kcmil] CPT AL 115 EPR 5KV 133% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

**TABLE 1 - WEIGHTS & MEASUREMENTS**

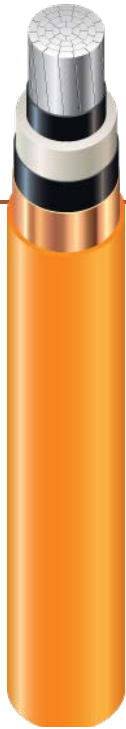
HVTC Product Code	Conductor Size *	Conductor Diameter		Diameter Over Insulation		Diameter Over Insulation Shield		Approx. Overall Diameter		Minimum Bend Radius		Approx. Weight of Cable		Max. Reel Weight (reel and cable) **		Max. Reel Diameter / Width **		Max. Length of Cable on Reel **	
	AWG or Kcmil	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL115E58-002	2(7)	0.268	6.8	0.528	13.4	0.608	15.4	0.748	19.0	9.0	228	302	450	2088	947	60/32	1.52/0.81	6000	1829
AL115E58-001	1(19)	0.299	7.6	0.559	14.2	0.639	16.2	0.779	19.8	9.3	237	332	495	2269	1029	60/32	1.52/0.81	6000	1829
AL115E58-010	1/0(19)	0.336	8.5	0.596	15.1	0.676	17.2	0.816	20.7	9.8	249	370	550	2418	1097	72/42	1.83/1.07	6000	1829
AL115E58-020	2/0(19)	0.376	9.6	0.636	16.2	0.716	18.2	0.896	22.8	10.8	273	446	664	2878	1305	72/42	1.83/1.07	6000	1829
AL115E58-030	3/0(19)	0.423	10.7	0.683	17.3	0.763	19.4	0.943	24.0	11.3	287	502	747	3211	1456	72/42	1.83/1.07	6000	1829
AL115E58-040	4/0(19)	0.475	12.1	0.735	18.7	0.815	20.7	0.995	25.3	11.9	303	568	846	3611	1638	72/42	1.83/1.07	6000	1829
AL115E58-250	250(37)	0.520	13.2	0.790	20.1	0.870	22.1	1.050	26.7	12.6	320	635	946	4562	2069	78/54	1.98/1.37	6000	1829
AL115E58-350	350(37)	0.616	15.6	0.886	22.5	0.966	24.5	1.146	29.1	13.8	349	777	1156	5411	2454	78/54	1.98/1.37	6000	1829
AL115E58-500	500(37)	0.736	18.7	1.006	25.6	1.086	27.6	1.266	32.2	15.2	386	977	1454	6612	2999	78/54	1.98/1.37	6000	1829
AL115E58-750	750(61)	0.908	23.1	1.188	30.2	1.268	32.2	1.448	36.8	17.4	441	1310	1949	9016	4090	96/54.5	2.44/1.38	6000	1829
AL115E58-1000	1000(61)	1.060	26.9	1.340	34.0	1.420	36.1	1.600	40.6	19.2	488	1620	2411	11062	5018	104/56.5	2.64/1.44	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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**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**

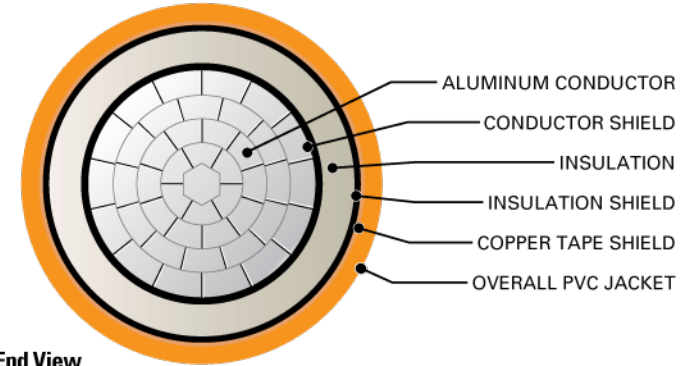
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 (marked TC for No. 1/0 AWG and larger)\*\*\*

**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**

HVTC Product Code	Maximum Pulling Tension		DC Resistance @ 25°C R <sub>DC</sub>		AC Resistance @ 90°C 60 Hz (triplex formation) R <sub>AC</sub>		Inductance L		Capacitance C		Inductive Reactance @ 60Hz (triplexed) X <sub>L</sub>		Capacitive Reactance @ 60Hz (triplexed) X <sub>C</sub>		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
AL115E58-002	398	1771	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 + j0.045	0.699 + j0.514	2.9	169	176
AL115E58-001	502	2234	0.211	0.692	0.265	0.870	0.0957	0.3140	0.0785	0.2577	0.0361	0.1184	0.0338	0.0103	0.266 + j0.044	0.633 + j0.496	3.7	194	198
AL115E58-010	634	2818	0.168	0.551	0.211	0.693	0.0925	0.3035	0.0858	0.2813	0.0349	0.1144	0.0309	0.0094	0.212 + j0.042	0.581 + j0.476	4.7	222	223
AL115E58-020	799	3552	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 + j0.042	0.538 + j0.455	5.9	255	250
AL115E58-030	1007	4478	0.105	0.345	0.132	0.433	0.0868	0.2847	0.1026	0.3366	0.0327	0.1073	0.0259	0.0079	0.133 + j0.040	0.503 + j0.432	7.4	290	278
AL115E58-040	1270	5647	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 + j0.039	0.476 + j0.408	9.4	329	309
AL115E58-250	1500	6672	0.071	0.232	0.089	0.292	0.0831	0.2725	0.1175	0.3856	0.0313	0.1027	0.0226	0.0069	0.090 + j0.038	0.458 + j0.385	11.1	370	347
AL115E58-350	2100	9341	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 + j0.036	0.428 + j0.348	15.5	446	402
AL115E58-500	3000	13345	0.035	0.116	0.045	0.148	0.0766	0.2514	0.1573	0.5160	0.0289	0.0948	0.0169	0.0051	0.046 + j0.034	0.401 + j0.308	22.2	533	451
AL115E58-750	4500	20017	0.024	0.077	0.030	0.100	0.0740	0.2426	0.1828	0.5999	0.0279	0.0915	0.0145	0.0044	0.031 + j0.032	0.370 + j0.258	33.2	631	500
AL115E58-1000	6000	26689	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 + j0.031	0.348 + j0.225	44.3	707	539

\* 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

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

