


**CSA TRAY RATED**
**HVTC SPECIFICATIONS**
**HVTC AL 3/C 280TRXLPE TS PVC 28KV 100% CSA**
**PRODUCT HIGHLIGHTS**

Southwire's 28KV 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**

- TR-XLPE - (Tree Retardent Cross Linked Polyethylene)
- Thickness: 0.28 inches (7.11mm) - 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.1 AWG to No.3/0 AWG = 0.11 inches (2.79mm)  
No.4/0 AWG to 500 kcmil = 0.14 inches (3.56mm)

**Typical Print Legend**

- (CSA) SOUTHWIRE (NESC) #P# 3/C [#AWG or #kcmil] CPT AL 280 TRXLPE 28KV 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
AL280K98-001	1(19)	0.299	7.6	0.889	22.6	0.969	24.6	6	2.356	59.8	16.5	419	2118	3152	9392	4260	108/70.5	2.74/1.79	3700	1128
AL280K98-010	1/0(19)	0.336	8.5	0.926	23.5	1.006	25.6	6	2.436	61.9	17.1	433	2274	3384	9628	4367	108/70.5	2.74/1.79	3550	1082
AL280K98-020	2/0(19)	0.376	9.6	0.966	24.5	1.046	26.6	6	2.523	64.1	17.7	449	2455	3653	9043	4102	108/70.5	2.74/1.79	3050	930
AL280K98-030	3/0(19)	0.423	10.7	1.013	25.7	1.093	27.8	6	2.624	66.7	18.4	467	2674	3980	9445	4284	108/70.5	2.74/1.79	2950	899
AL280K98-040	4/0(19)	0.475	12.1	1.065	27.1	1.145	29.1	6	2.796	71.0	19.6	497	3090	4598	8662	3929	108/70.5	2.74/1.79	2300	701
AL280K98-250	250(37)	0.520	13.2	1.120	28.4	1.200	30.5	4	2.915	74.0	20.4	518	3411	5076	9058	4109	108/70.5	2.74/1.79	2200	671
AL280K98-350	350(37)	0.616	15.6	1.216	30.9	1.296	32.9	4	3.123	79.3	21.9	555	3965	5900	8295	3763	108/70.5	2.74/1.79	1700	518
AL280K98-500	500(37)	0.736	18.7	1.336	33.9	1.416	36.0	3	3.382	85.9	23.7	601	4769	7096	8708	3950	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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# HVTC SPECIFICATIONS

## HVTC AL 3/C 280TRXLPE TS PVC 28KV 100% CSA



### 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

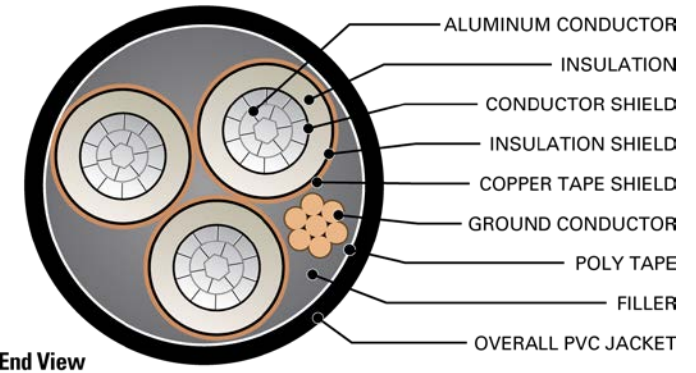
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000 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 <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
AL280K98-001	1506	6701	0.211	0.692	0.265	0.870	0.1240	0.4069	0.0358	0.1174	0.0467	0.1534	0.0742	0.0226	0.266 + j0.049	0.633 + j0.364	3.9	158	177
AL280K98-010	1901	8455	0.168	0.551	0.211	0.693	0.1194	0.3917	0.0384	0.1262	0.0450	0.1477	0.0690	0.0210	0.212 + j0.047	0.576 + j0.349	5.0	181	200
AL280K98-020	2396	10657	0.133	0.436	0.167	0.549	0.1151	0.3776	0.0413	0.1355	0.0434	0.1424	0.0642	0.0196	0.168 + j0.046	0.529 + j0.335	6.3	208	228
AL280K98-030	3020	13435	0.105	0.345	0.132	0.433	0.1108	0.3636	0.0446	0.1464	0.0418	0.1371	0.0594	0.0181	0.132 + j0.044	0.490 + j0.319	7.9	239	258
AL280K98-040	3809	16942	0.084	0.274	0.105	0.345	0.1068	0.3504	0.0483	0.1584	0.0403	0.1321	0.0549	0.0167	0.106 + j0.042	0.458 + j0.302	9.9	273	292
AL280K98-250	4500	20017	0.071	0.232	0.089	0.292	0.1043	0.3424	0.0508	0.1667	0.0393	0.1291	0.0522	0.0159	0.089 + j0.041	0.437 + j0.286	11.8	302	321
AL280K98-350	6300	28024	0.051	0.166	0.064	0.209	0.0990	0.3249	0.0573	0.1880	0.0373	0.1225	0.0463	0.0141	0.064 + j0.039	0.402 + j0.261	16.5	368	385
AL280K98-500	9000	40034	0.035	0.116	0.045	0.147	0.0939	0.3081	0.0654	0.2145	0.0354	0.1162	0.0406	0.0124	0.045 + j0.037	0.371 + j0.234	23.5	454	462

\* 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.

