CSA TRAY RATED

HVTC SPECIFICATIONS

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

Southwire® CANADA

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
- No-lead EPR (Ethylene Propylene Rubber)
- 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 EPR 28KV 100% INS LEVEL 25% TS SUN RES TC-ER 105° FT4 (-40°C) LTGG RoHS YEAR [SEQUENTIAL METER MARKS]

TABLE 1 - WEIGHTS & MEASUREMENTS

	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 **	
HVTC Product Code	AWG or Kcmil	inches	mm	inches	mm	inches	mm	AWG	inches	mm	inches	mm	lb / 1000ft	kg/km	lbs	kg	inches	m	feet	m
AL280X64-001	1(19)	0.299	7.6	0.889	22.6	0.969	24.6	6	2.356	59.8	16.5	419	2265	3370	9934	4506	108/70.5	2.74/1.79	3700	1128
AL280X64-010	1/0(19)	0.336	8.5	0.926	23.5	1.006	25.6	6	2.436	61.9	17.1	433	2430	3616	10180	4617	108/70.5	2.74/1.79	3550	1082
AL280X64-020	2/0(19)	0.376	9.6	0.966	24.5	1.046	26.6	6	2.523	64.1	17.7	449	2620	3899	9546	4330	108/70.5	2.74/1.79	3050	930
AL280X64-030	3/0(19)	0.423	10.7	1.013	25.7	1.093	27.8	6	2.624	66.7	18.4	467	2851	4242	9965	4520	108/70.5	2.74/1.79	2950	899
AL280X64-040	4/0(19)	0.475	12.1	1.065	27.1	1.145	29.1	6	2.796	71.0	19.6	497	3279	4879	9096	4126	108/70.5	2.74/1.79	2300	701
AL280X64-250	250(37)	0.520	13.2	1.120	28.4	1.200	30.5	4	2.915	74.0	20.4	518	3613	5376	9503	4310	108/70.5	2.74/1.79	2200	671
AL280X64-350	350(37)	0.616	15.6	1.216	30.9	1.296	32.9	4	3.123	79.3	21.9	555	4190	6235	8678	3936	108/70.5	2.74/1.79	1700	518
AL280X64-500	500(37)	0.736	18.7	1.336	33.9	1.416	36.0	3	3.382	85.9	23.7	601	5023	7474	9089	4123	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

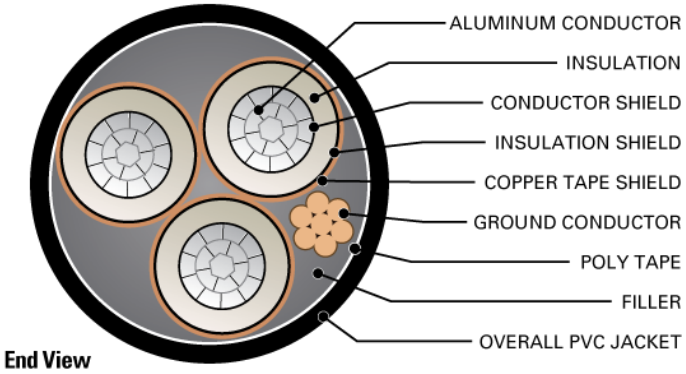
- FT1 - Flame Test - (1,706 BTU/Hr. nominal - Vertical Wire Flame Test)
- FT4, Flame Test - (70,000 BTU/Hr. - Vertical Tray Flame Test)
- IEEE 1202 - Flame Test - (70,000 BTU/Hr. - Vertical Tray Test)
- IEEE 383 - Flame Test - (70,000 BTU/Hr.)
- ICEA T-29-520 - Vertical Cable Tray Flame Test - (210,000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



End View

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 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
AL280X64-001	1506	6701	0.211	0.692	0.265	0.870	0.1240	0.4069	0.0451	0.1480	0.0467	0.1534	0.0588	0.0179	0.266 + j0.049	0.633 + j0.364	3.7	158	177
AL280X64-010	1901	8455	0.168	0.551	0.211	0.693	0.1194	0.3917	0.0485	0.1591	0.0450	0.1477	0.0547	0.0167	0.212 + j0.047	0.576 + j0.349	4.7	181	200
AL280X64-020	2396	10657	0.133	0.436	0.167	0.549	0.1151	0.3776	0.0521	0.1709	0.0434	0.1424	0.0509	0.0155	0.168 + j0.046	0.529 + j0.335	5.9	208	228
AL280X64-030	3020	13435	0.105	0.345	0.132	0.433	0.1108	0.3636	0.0563	0.1846	0.0418	0.1371	0.0471	0.0144	0.132 + j0.044	0.490 + j0.319	7.4	239	258
AL280X64-040	3809	16942	0.084	0.274	0.105	0.345	0.1068	0.3504	0.0609	0.1997	0.0403	0.1321	0.0436	0.0133	0.106 + j0.042	0.458 + j0.302	9.4	273	292
AL280X64-250	4500	20017	0.071	0.232	0.089	0.292	0.1043	0.3424	0.0641	0.2102	0.0393	0.1291	0.0414	0.0126	0.089 + j0.041	0.437 + j0.286	11.1	302	321
AL280X64-350	6300	28024	0.051	0.166	0.064	0.209	0.0990	0.3249	0.0723	0.2371	0.0373	0.1225	0.0367	0.0112	0.064 + j0.039	0.402 + j0.261	15.5	368	385
AL280X64-500	9000	40034	0.035	0.116	0.045	0.147	0.0939	0.3081	0.0824	0.2705	0.0354	0.1162	0.0322	0.0098	0.045 + j0.037	0.371 + j0.234	22.2	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.