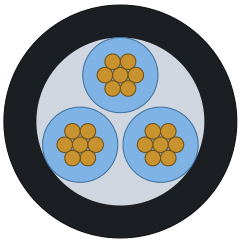
TC / TC-ER Tray Cable, 600 V

SORIVO Product Series: **Nonmetallic-jacketed tray cable** | 600 V | UL 1277 · NEC 336 | 14–10 AWG, 2–4 core



- PVC jacket — 45 mil, sunlight resistant, direct burial
- PVC / nylon insulation — 20 mil, THHN or THWN
- Fillers and binder tape
- Class B compact stranded bare copper, ASTM B3 / B8

APPLICATION

Factory assembly of two or more insulated conductors under a nonmetallic jacket, for control, signal and power circuits run in cable tray, conduit, raceway and — in the TC-ER construction — on exposed runs without conduit. Used in industrial plants, substations, wastewater works and process skids where circuits are pulled as a bundle and terminated in a panel.

CONSTRUCTION

Conductor
Bare copper — 14 to 10 AWG Class B compact stranded, 7 strands, ASTM B3 and B8

Insulation
PVC with a nylon layer, 20 mil on 14 and 12 AWG, 25 mil on 10 AWG — type THHN or THWN, VW-1 rated

Assembly
Conductors laid up with fillers and binder tape, numbered or colour-coded to Method 1

Jacket
PVC, 45 mil, sunlight resistant, marked for direct burial

MODEL DESIGNATION

TC Tray Cable, 600 V, UL 1277 · **-ER** Exposed Run — may be run without conduit where listed for the purpose · **PLTC** Power-Limited Tray Cable, 300 V, UL 13

KEY FEATURES

- UL 1277 Type TC with the TC-ER exposed-run rating on three or more conductors
- NEC 336.10(10) direct burial — no conduit needed below grade
- Sunlight resistant jacket; CT rated for cable tray
- Ampacity from NEC Table 310.16, already adjusted for more than three current-carrying conductors, with the NEC 240.4(D) limit stated

STANDARDS

- UL 1277 — Electrical Power and Control Tray Cables
- UL 83 / UL 66 — the insulated conductors inside the assembly
- UL 1685 — vertical tray flame propagation and smoke release
- NEC Article 336 — installation of tray cable
- ASTM B3 / B8, ICEA S-95-658 (NEMA WC70), IEEE 1202 FT4

TECHNICAL PARAMETERS

Rated Voltage
600 V — TC / TC-ER

Conductor Temperature
+90 °C dry / +75 °C wet
105 °C emergency overload
250 °C short circuit

Conductor
Bare copper, Class B compact stranded, 7 strands

Core Count
2–37; 2, 3 and 4 core tabulated in Table 1

Jacket
PVC, 45 mil, sunlight resistant, direct burial

Tray Rating
CT rated — UL 1685 vertical tray

Hazardous Locations
Class I, II and III, Division 2 (NEC 501 / 502)

600 V UL 1277	**TC-ER** exposed run	**Direct burial** NEC 336.10(10)

DIMENSIONS, RESISTANCE & AMPACITY

Table 1 — 600 V TC / TC-ER, 14 to 10 AWG, 2 to 4 core

SIZE	CORES	OVERALL DIA. mm (in)	WEIGHT kg/km (lb/1000 ft)	R @20 °C Ω/km	AMPACITY 75 °C A	AMPACITY 90 °C A
14 AWG	2	7.75 (0.305)	83 (56)	8.63	20	25
14 AWG	3	8.18 (0.322)	110 (74)	8.63	20	25
14 AWG	4	8.92 (0.351)	140 (94)	8.63	16	20
12 AWG	2	8.84 (0.348)	115 (77)	5.45	25	30
12 AWG	3	9.37 (0.369)	161 (108)	5.45	25	30
12 AWG	4	10.19 (0.401)	222 (149)	5.45	20	24
10 AWG	2	10.67 (0.420)	171 (115)	3.41	35	40
10 AWG	3	11.33 (0.446)	237 (159)	3.41	35	40
10 AWG	4	12.83 (0.505)	308 (207)	3.41	28	32

Conductor resistance is the 25 °C value published for the assembly; the 75 °C AC resistance is in the manufacturer's full table and is the figure to use for voltage drop on a loaded tray. Ampacity is taken from NEC Table 310.16 **already adjusted** for more than three current-carrying conductors, and does not include the overcurrent limits of NEC 240.4(D).

TC AND PLTC ARE NOT INTERCHANGEABLE

Table 2 — two tray cable families, two different code articles

PROPERTY	TC / TC-ER	PLTC / PLTC-ER
Rated voltage	600 V	300 V
Product standard	UL 1277	UL 13
Installation standard	NEC Article 336	NEC Article 725
Conductor temperature	+90 °C dry / +75 °C wet	105 °C
Construction	2 or more insulated conductors, nonmetallic jacket	2 or more insulated conductors, nonmetallic jacket
Exposed runs	TC-ER, three or more conductors	PLTC-ER, with an equipment grounding conductor
Direct burial	Yes — NEC 336.10(10)	Not stated for this construction
Sunlight	Jacket marked sunlight resistant	Must be marked sunlight resistant to be used exposed

The two families look alike and are governed by different articles of the code. A 300 V PLTC cable cannot be substituted where 600 V TC is specified, even if the copper is the same size, and the temperature ratings belong to different systems: 90 °C for TC, 105 °C for PLTC. They are never quoted on one line as "TC/PLTC 600 V".

VERIFICATION

Table 3 — inspection programme

CHECK	REFERENCE
ROUTINE — EVERY DELIVERY LENGTH	
Conductor resistance at 20 °C	UL 1277 / ASTM B193
Insulation and jacket wall, overall diameter	UL 1277
High-voltage withstand on the completed assembly	UL 1277
TYPE TEST — PROVED ONCE ON THE DESIGN	
Vertical tray flame propagation and smoke release	UL 1685 / IEEE 1202 FT4
Cold bend	UL 1277
Sunlight resistance of the jacket	UL 1581, 720 h
Oil resistance of the jacket	UL 1277

Ampacity is tabulated adjusted, and that is deliberate. Tray cable is almost never installed as three conductors in a raceway — it is installed as a bundle of circuits in a tray, where the adjustment for more than three current-carrying conductors applies. Quoting the unadjusted Table 310.16 column would overstate every circuit on the tray, so the tabulated values here are the adjusted ones, and the NEC 240.4(D) overcurrent limit is stated separately rather than folded in.

Disclaimer. The information in this datasheet is for guidance only and is subject to change without notice. Dimensions and masses are nominal and subject to manufacturing tolerance; confirm against the certificate of the delivered product. This document is uncontrolled once printed or forwarded — the current revision, issued under document number SORIVO-TM-TC-001, governs. © 2026 SORIVO. All rights reserved. Ampacity values are taken from NEC Table 310.16, adjusted for more than three current-carrying conductors in a raceway or cable, and do not include the overcurrent protection limits of NEC 240.4(D). Direct burial applies to constructions marked for the purpose, per NEC 336.10(10).