

TYPE VNTC TC-ER - CONTROL OR INSTRUMENTATION CABLE

PVC/Nylon 600 Volt 90°C Overall PVC Jacket

18 -10 AWG • 600 Volts • 90°C Dry and 75°C Wet

SCOPE:

This specification covers the construction requirements for multi-conductor cables having TFFN or VW-1 THHN/THWN (PVC/Nylon) insulation with an overall gas/vapor tight and oil resistant Polyvinyl Chloride (PVC) jacket; Underwriters' Laboratories, Inc. listed as TC-ER per UL Standard 1277. These cables also conform to Article 392 "Cable Trays", and Article 336 "Power and Control Cable Type TC" of the 2008 National Electric Code. They meet the requirements of the ICEA T-30-520 flame test as well as the 70,000 BTU "Cable Propagation Test" per IEEE-383 and show reserve capabilities by also passing the ICEA T-29-520 210,000 BTU flame test. Rated 600 Volts, 90°C dry and 75°C wet. They also meet the CSA FT4 and the IEEE 1202 70,000 BTU flame tests.

APPLICATIONS:

UL listed and OSHA acceptable. Recognized for use in Class 1 or 2, Division 2 hazardous locations and for installation in trays, wireways, troughs, channels, ducts and conduit. Specifically approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required. Designed for control, power, lighting, telemetering, signals and relay or traffic control.

CONSTRUCTION:

CONDUCTORS

Bare, soft annealed copper per ASTM B-3.

Sizes 18 and 16 AWG (TFFN)

Bunch stranded. Size 18 (16/.010") and Size 16 (26/.010") per UL-62 paragraph 11.1.

Sizes 14, 12 and 10 AWG (THHN/THWN)

Concentric stranded, class B (7 strands) per ASTM B-8 and UL-83 Table 13.1.

INSULATION:

High dielectric polyvinyl chloride

UL-1581 Table 50.145 (THWN 75°C)

UL-1581 Table 50.155 (THHN 90°C)

UL-1581 Table 50.155 Class 12B (TFFN 90°C)

Thickness:

UL-83 Table 15.8 for THHN/THWN

UL-66 Table 4.7 for TFFN

CONDUCTOR JACKET:

Nylon

UL-83 paragraph 14.1 for THHN/THWN

UL-62 paragraph 22.1 for TFFN

Thickness

UL-83 Table 15.8 for THHN/THWN

UL-66 paragraph 9.1 for TFFN

CABLING:

Three or more conductors are assembled with fillers in the core as needed.

A nylon rip cord is inserted under the jacket for ease of stripping. Two conductors are assembled flat parallel (round, with fillers as needed, is available upon request).

OVERALL JACKET:

A black, gas/vapor tight, flame resistant, VW-1 rated Polyvinyl Chloride (PVC) jacket is applied over the assembly. The surface profile of the jacket shall approximate that of the underlying assembly. A high strength nylon rip cord shall be placed under the jacket to facilitate stripping of the jacket.

CABLE IDENTIFICATION:

Sizes 18 and 16 AWG (Ink print on jacket): "Size AWG/No. of CDRs. Type TC-ER TFFN CDRs. 90°C dry, 75°C wet, sunlight resistant, 600V, (UL) Direct Burial FT4/IEEE1202 (Sequential Footage)".

Sizes 14, 12 and 10 AWG (Ink print on jacket): "Size AWG/No. of CDRs. Type TC-ER THHN or THWN CDRs. 90°C dry, 75°C wet, sunlight resistant, 600V, A.I.W. Corp. (UL) Direct Burial FT4/IEEE1202 (Sequential Footage)".

COLOR CODE:

Colored insulation and stripes plus print on one side with a contrasting ink per Table VI.

CONSTRUCTION OPTIONS:

Consult factory for specifications on cables with available shields. (See pages 12 and 13 for cable specifications with an aluminum/polyester tape shield.) Cables made in accordance with Dupont Spec. SE-33.4 B are also available.

»The data listed above is approximate and subject to change without notice.

CONDUCTOR DATA

SIZE (AWG)	STRANDS NO./O.D. (INCHES)	PVC INSUL. THICK. (INCHES)	NYLON ARMOR (INCHES)	APPROX. O.D. (INCHES)
18	16/.0100	.015	.004	.088
16	26/.0100	.015	.004	.091
14	7/.0242	.015	.004	.112
12	7/.0305	.015	.004	.130
10	7/.0385	.020	.004	.164