

PVC/Nylon Type TC 600 Volt Power and Control Cable Temperature rating of 90°C dry / 75°C wet

Applications

Nexans 600V Ultrax® VN Tray Cables are listed as type TC under UL 1277 Electrical Power and Control Cables. These cables may be installed in wet or dry locations; in cable trays, raceways and open air; and are suitable for exposure to weather, direct burial and for Class I, Div. 2 (also Zone 2) and Class II, Div. 2 hazardous locations per NEC.

Construction

Conductor: bare, annealed copper conforming to ASTM B-3 and B-8, from #18 AWG to 500 kcmil. Compressed copper for #14 AWG through 500 kcmil.

Insulation: flame-retardant PVC/Nylon type THHN/THWN per UL 83 for sizes #14 AWG to 500 kcmil and type TFN per UL 62 for #18 AWG and #16 AWG.

Assembly:

Non-shielded: cables with 3 or more conductors are cabled in concentric layers with interstices filled with suitable fillers, as required. Two-conductor cables are supplied in a flat/parallel configuration. Bare grounds, when provided, are sized as required by UL 1277 (refer to the applicable product table(s) for the standard sizes provided). A binder tape of synthetic material assembles the core in a tight circular configuration.

Shielded: cabled in concentric layers with interstices filled with suitable fillers as required. A helically wrapped aluminum tape, with synthetic backing, gives 100% shielding. A tinned copper drain wire is placed in contact with the aluminum side of the tape, to lower the resistance and to assist in the termination of the shield.

Jacket: UL listed sunlight and moisture resistant, sequentially length marked, black, flame retardant polyvinyl chloride (PVC) material meeting the requirements of UL 1277. A Nylon ripcord is included for ease of jacket removal.

Conductor Identification

#18 AWG to #10 AWG: color coded per Method #1-E2 per ICEA S-73-532

#8 AWG to 500 kcmil: black with number coding per Method 4 of ICEA S-73-532

Composite

Power: Method 4 per ICEA S-73-5
Control: Method #1-E2 per ICEA S-73-532

Specifications

- Meets UL 1277: Power and Control Tray Cables with Optional Fiber Members.
- Meets UL 83: Thermoplastic-Insulated Wires and Cables for #14 AWG and larger.
- Meets UL 62: Flexible Cord and Fixture Wire for #18 AWG and #16 AWG.

Product Features

- UL approved cables Type TC, 600V.
- UL approved insulated conductors.
- Cables pass UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr.
- Cables are UL listed to IEEE 1202 70,000 BTU/hr flame test.
- For use in power, lighting, control and signal circuits.

- Can be used within industrial establishments where serviced by qualified personnel and not subject to physical damage.
- Can operate at continuous temperatures of 90°C dry or 75°C wet (TFN dry locations only), cold bend of -25°C per UL 1277 Section 15.
- Can be used In Class I Division 2 and Class II Division 2 Hazardous Locations and Intrinsically Safe applications as permitted by NEC Art. 392, 501, 502, 503, and 505.*
- As indicated in UL 1277: The overall jackets of these cables are a "gas/vapour tight continuous sheath" as discussed in NEC Sections 501.5(D) and 501.5(E).*
- For use in cable trays, raceways, conduits, or for aerial applications where installed with a messenger.
- UL listed for Open Wiring for sizes 2/0 and larger. (4-1/0 upon request.)
- For Direct Burial applications.
- As permitted in NEC Section 336.10 and Art. 725 for Class 1 circuits.
- As permitted for non-power-limited fire alarm circuits as defined in NEC Sections 336.10 and 760.27.

Options

The following constructions can be provided on special orders:

- Dow Construction
- DuPont Construction
- Composite Cable Construction
- Insulated or bare ground wires
- Different conductor identification methods

* Use in hazardous locations: Please note that no investigation of these cables has been performed regarding the transmission of gases or vapours through the core. When these cables are used in hazardous locations they should be sealed properly as required by the NEC.



Ultrex® VN

Unshielded Tray Cable
UL Type TC, 600V, 90°C dry / 75°C wet rated

3 Conductors with Bare Ground Type THHN/THWN

Part Number	Conductor Size	Ground Size	Insulation Thickness PVC/Nylon		Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity ^(1,3,4)
	AWG/kcmil	AWG	mils	mm	mils	mm	inches	mm	lb/kft	kg/km	amps
664995	14	14	15/4	.38/.10	45	1.14	.350	8.89	90	134	25
685578	12	12	15/4	.38/.10	45	1.14	.385	9.78	126	187	30
665000	10	10	20/4	.51/.10	45	1.14	.475	12.07	192	290	40
697219	8	10	30/5	.76/.13	60	1.52	.604	15.34	295	439	55
697615	6	8	30/5	.76/.13	60	1.52	.680	17.27	426	634	75
697201	4	8	40/6	1.02/.15	80	2.06	.872	22.15	662	985	95
697193	2	6	40/6	1.02/.15	80	2.03	1.002	25.45	965	1436	130
685560	1	6	50/7	1.27/.18	80	2.03	1.132	28.75	1187	1766	150
697185	1/0	6	50/7	1.27/.18	80	2.03	1.218	30.94	1423	2118	170
665018	2/0	6	50/7	1.27/.18	80	2.03	1.315	33.40	1718	2557	195
216341	3/0	4	50/7	1.27/.18	80	2.03	1.423	36.14	2131	3171	225
665026	4/0	4	50/7	1.27/.18	80	2.03	1.543	39.19	2592	3857	260
665034	250	4	60/8	1.52/.20	110	2.79	1.754	44.55	3123	4648	290
665042	350	3	60/8	1.52/.20	110	2.79	1.970	50.04	4204	6256	350
665059	500	2	60/8	1.52/.20	110	2.79	2.252	57.20	5792	8620	430

Bend Radius: 5 x overall diameter installed (up to 2.0") / 6 x overall diameter installed (over 2.0")
 8 x overall diameter during installation pull-in.

Notes:

Dimensions and weights shown are nominal values. They are subject to standard industry tolerances.
 Cables with different conductor counts and bare or insulated grounds are also available.

⁽¹⁾ Ampacities are in accordance with NEC Table 310.16 for conductors in a raceway or direct buried at 30°C ambient temperature and 90°C rated conductors. Ampacities for cables having more than three conductors have been derated per NEC Table 310.16 and Table 310.15(B)(2)(a).

⁽²⁾ For correction factors to different ambient temperatures and ampacities for different conductor temperature ratings see NEC Table 310-16.

⁽³⁾ NEC 240.4(D) requires that overcurrent protection not exceed 20 amperes for 12 AWG copper conductors and 30 amperes for 10 AWG copper conductors. Exceptions to this may be covered in NEC 240.4(E) through (G).