

**Ultrax<sup>®</sup> VN****Shielded Tray Cable****UL Type TC, 600V, 90°C dry / 75°C wet rated**[Previous](#) [Contents](#) [Next](#)**Multiconductor 12 AWG Type THHN/THWN**

Insulation Thickness: 15 mils / .38 mm PVC, 4 mils / .10 mm Nylon

Drain Wire: 16 AWG (7w) Tinned Copper

Part Number	# of Cond.	Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity (1,3,4)
		mils	mm	inches	mm	lb/kft	kg/km	amps
631044	2	45	1.14	.368	9.35	89	132	30.0
627539	3	45	1.14	.388	9.87	117	174	30.0
631051	4	45	1.14	.423	10.74	147	219	24.0/30.0 <sup>(2)</sup>
690032	5	45	1.14	.460	11.69	178	265	24.0
-----	6	45	1.14	.500	12.70	208	310	24.0
631069	7	45	1.14	.500	12.70	227	338	21.0
-----	8	60	1.52	.572	14.53	265	394	21.0
688929	9	60	1.52	.614	15.60	316	470	21.0
-----	10	60	1.52	.654	16.61	345	513	15.0
-----	11	60	1.52	.663	16.84	369	549	15.0
631077	12	60	1.52	.683	17.34	388	577	15.0
-----	13	60	1.52	.695	17.64	426	634	15.0
696641	14	60	1.52	.717	18.21	455	677	15.0
-----	15	60	1.52	.736	18.68	482	717	15.0
-----	16	60	1.52	.755	19.19	502	747	15.0
697425	19	60	1.52	.795	20.19	585	870	15.0
-----	20	60	1.52	.819	20.80	627	933	15.0
-----	25	80	2.03	.958	24.33	790	1176	13.5
-----	30	80	2.03	1.021	25.94	927	1379	13.5
689588	37	80	2.03	1.099	27.91	1119	1665	12.0
-----	40	80	2.03	1.140	28.95	1228	1827	12.0
-----	45	80	2.03	1.206	30.63	1370	2039	10.5
-----	50	80	2.03	1.251	31.77	1509	2245	10.5

**Bend Radius:** 5 x overall diameter installed / 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 310.15(B)(2)(a).

(2) Where the 4<sup>th</sup> conductor is the neutral of a balanced 3 phase system.

(3) For load diversity of 50%, refer to NEC Table B.310.11.

(4) For correction factors to different ambient temperatures and ampacities for different conductor temperature ratings see NEC Table 310.16.

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

## Ultrax<sup>®</sup> VN

PVC/Nylon Type TC 600 Volt  
Power and Control Cable

Temperature rating of 90°C dry / 75°C wet

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### Applications

Nexans 600V Ultrax<sup>®</sup> 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 B3 and B8, 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 66 for #18 AWG and #16 AWG.

### Assembly:

Non-Shielded: cables with 3 or more conductors are assembled into 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). Where necessary, 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.

### Identification of Conductors

**#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-73-532

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 66: Fixture Wire for #18 AWG and #16 AWG.
- Meets ICEA S-95-658, NEMA Publication No. WC-70: Non-shielded Power Cables rated 2000 volts or less for the Distribution of Electrical Energy.

## 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 and 75°C wet (TFN dry locations only), cold bend of -25°C per UL 1277 Section 16.
- 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/vaportight continuous sheath" as discussed in NEC Sections 501.15(D) and 501.15(E).\*
- For use in cable trays, raceways, conduits, or for aerial applications where installed with a messenger.
- UL listed for Exposed Run (ER) use in external runs per NEC Article 336.10(7) for sizes 2/0 AWG and larger (4 AWG - 1/0 AWG 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.