

Ultrax[®] 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[®] 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

Dupont Construction

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.

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Unshielded Tray Cable - DuPont Construction(*)

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

Part Number	Number of Conductors	Copper Content	Jacket Thickness		Nominal Diameter over Jacket		Approximate Net Cable Weight		Ampacity (1,2,3,4)
			mils	mm	inches	mm	lb/kft	kg/km	amps
Multiconductor 14 AWG Type THHN/THWN									
Insulation Thickness: 15 mils / .38 mm PVC, 4 mils / .10 mm Nylon									
697821	2	25.6	45	1.14	.207x.320	5.26x8.13	57	85	25
627505	3	39.4	45	1.14	.370	9.398	79	118	25
631192	4	52.6	45	1.14	.373	9.474	99	147	20/25 ⁽²⁾
684738	5	65.7	45	1.14	.395	10.033	119	177	20
697839	7	92.0	45	1.14	.439	11.151	152	226	17.5
627653	9	119.4	45	1.14	.510	12.954	200	298	17.5
631523	19	254.6	60	1.52	.690	17.526	400	595	12.5
Multiconductor 12 AWG Type THHN/THWN									
Insulation Thickness: 15 mils / .38 mm PVC, 4 mils / .10 mm Nylon									
631168	2	40.6	45	1.14	.225x.355	5.72x9.02	77	114	30
631515	3	62.7	45	1.14	.384	9.754	108	161	30
631176	4	81.8	45	1.14	.419	10.643	137	203	24/30 ⁽²⁾
684688	7	146.4	45	1.14	.490	12.446	217	323	21
Multiconductor 10 AWG Type THHN/THWN									
Insulation Thickness: 20 mils / .51 mm PVC, 4 mils / .10 mm Nylon									
684639	2	64.1	45	1.14	.261x.428	6.63x10.87	112	166	40
627224	3	99.1	45	1.14	.456	11.582	158	236	40
627232	4	129.5	45	1.14	.498	12.649	202	301.	32/40 ⁽²⁾
Multiconductor 8 AWG Type THHN/THWN									
Insulation Thickness: 30 mils / .76 mm PVC, 5 mils / .13 mm Nylon									
627166	2	103	60	1.52	.560	14.224	208	310	55
697870	3	154.4	60	1.52	.588	14.935	262	389	55
697904	4	205.9	60	1.52	.649	16.485	333	469	44
Multiconductor 6 AWG Type THHN/THWN									
Insulation Thickness: 30 mils / .76 mm PVC, 5 mils / .13 mm Nylon									
627513	2	163.7	60	1.52	.636	16.154	290	432	75
697862	3	245.6	60	1.52	.680	17.272	373	555	75
627968	4	327.4	60	1.52	.741	18.821	480	714	60
Multiconductor 4 AWG Type THHN/THWN									
Insulation Thickness: 40 mils / 1.02 mm PVC, 6 mils / .15 mm Nylon									
627943	3	390.6	80	2.03	.866	21.996	602	896	95
627950	4	520.8	80	2.03	.950	24.130	828	1232	76
Multiconductor 2 AWG Type THHN/THWN									
Insulation Thickness: 40 mils / 1.02 mm PVC, 6 mils / .15 mm Nylon									
684837	3	620.8	80	2.03	.982	24.943	910	1354	130
684894	4	827.8	80	2.03	1.090	27.686	1126	1676	104

Note: See next page for product details.