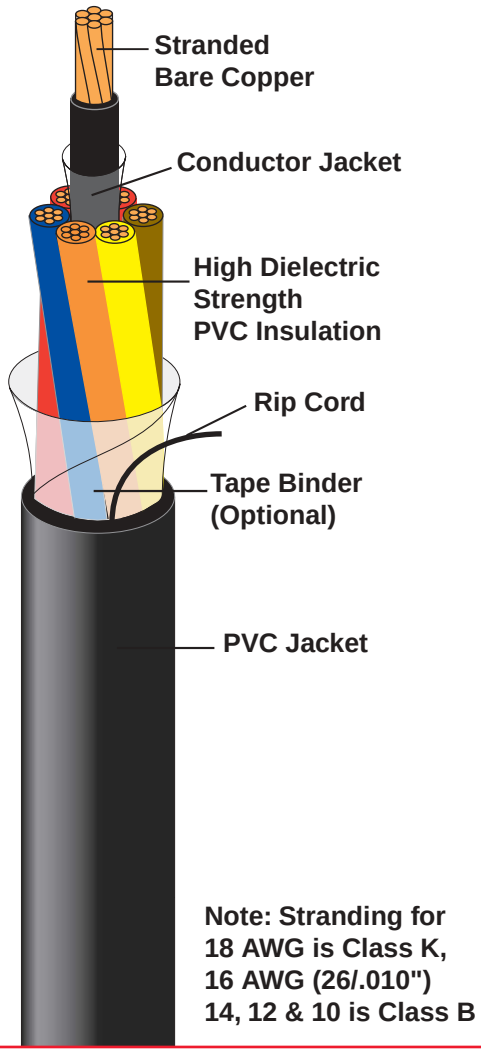
TYPE TC - CONTROL OR INSTRUMENTATION CABLE

PVC/Nylon Insulation with Overall PVC Jacket
18 - 10 AWG • 600 Volts • 90°C Dry and 75°C Wet

OSHA

Scope

This specification covers multiconductor cables having TFFN or VW-1 THHN/THWN (PVC/Nylon) conductors with an overall gas/vapor-tight polyvinyl chloride (PVC) jacket, conforming to Article 392 “Cable Trays” and Article 336 “Power and Control Cable Type TC” of the 2002 National Electrical Code, and Standard 1277 of Underwriters Laboratories, Inc. They meet the requirements of the ICEA T-30-520 flame test as well as the 70,000 BTU “Cable Tray 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. UL file no. E60749. They also meet the CSA FT4 and the IEEE 1202 70,000 BTU flame test.



Applications

UL listed and OSHA acceptable. Recognized for use in Class 1 or 2, Division 2 hazardous locations and for installation in trays, wire-ways, 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 Table 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 strength 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-62 table 6.2 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-62 paragraph 28.3 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: Gas/vapor-tight Polyvinyl Chloride (black) - UL 1277 table 11.1. The surface profile of the jacket shall approximate that of the underlying assembly.

Cable Identification:
Sizes 18 and 16 AWG (Ink print on jacket): *“Size AWG/No. of Cdrs. Type TC 90°C dry 75°C wet Sunlight Resistant 600V A.I.W. Corp. (UL) Direct Burial sequential footage”*

Sizes 14, 12 and 10 AWG (Ink print on jacket): *“Size AWG/No. of Cdrs. Type TC THHN or THWN cdrs. Sunlight Resistant 600V A.I.W. Corp. (UL) Direct Burial sequential footage”*

Color Coding: Method 3 Table E-2, except colors and numbers are printed on solid base colors for easy identification. See Color Code Charts on page 34.

Construction Options: Consult factory for specifiations 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.

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	.089
16	26/.0130	.015	.004	.100
14	7/.0242	.015	.004	.113
12	7/.0305	.015	.004	.132
10	7/.0385	.020	.004	.166

Cable Data

	18 AWG • ES08136				16 AWG • ES08137				14 AWG • ES12300				12 AWG • ES12301				10 AWG • ES12302			
No. of Conds.	Part No.	OA Jkt. Thick. (IN)	Approx. O.D. (IN)	Approx. Weight Lbs./ M Ft.	Part No.	OA Jkt. Thick. (IN)	Approx. O.D. (IN)	Approx. Weight Lbs./ M Ft.	Part No.	OA Jkt. Thick. (IN)	Approx. O.D. (IN)	Approx. Weight Lbs./ M Ft.	Part No.	OA Jkt. Thick. (IN)	Approx. O.D. (IN)	Approx. Weight Lbs./ M Ft.	Part No.	OA Jkt. Thick. (IN)	Approx. O.D. (IN)	Approx. Weight Lbs./ M Ft.
2 Fl	17600	45	.185x.275	41	17625	45	.195x.295	49	20837	45	.210x.325	64	20876	45	.230x.365	83	20912	45	.265x.430	115
2 Rd	17601	45	.275	46	17626	45	.295	54	20839	45	.325	71	20878	45	.370	92	20914	45	.430	127
3	17603	45	.290	50	17628	45	.310	66	20840	45	.340	87	20880	45	.390	113	20915	45	.455	167
4	17605	45	.310	60	17630	45	.335	79	20843	45	.370	107	20885	45	.420	145	20919	45	.500	212
5	17606	45	.340	71	17633	45	.365	94	20848	45	.405	129	20889	45	.460	175	20922	60	.575	269
6	17607	45	.365	85	17634	45	.395	109	20851	45	.440	147	20891	45	.500	199	20925	60	.630	317
7	17608	45	.365	89	17635	45	.395	118	20852	45	.440	162	20892	45	.505	223	20926	60	.630	352
8	17609	45	.395	99	17637	45	.430	133	20854	45	.475	184	20895	60	.575	268	30408	60	.680	399
9	17610	45	.420	112	17638	45	.460	147	20855	45	.515	221	20896	60	.615	304	20929	60	.730	445
10	17611	45	.445	121	17639	45	.475	162	20857	60	.565	237	20898	60	.640	327	20930	60	.760	490
11	-	45	.455	130	17640	45	.490	176	-	60	.580	257	-	60	.655	357	-	60	.780	527
12	17613	45	.465	156	17641	45	.500	202	20859	60	.595	281	20899	60	.675	388	20931	60	.810	579
13	-	45	.485	158	17642	60	.550	217	-	60	.615	293	-	60	.700	413	-	80	.880	657
14	-	45	.500	160	17643	60	.570	230	20862	60	.635	316	20901	60	.720	442	-	80	.910	706
15	17614	45	.510	169	17644	60	.580	243	20863	60	.650	340	20902	60	.740	466	30409	80	.930	750
16	17615	60	.555	192	17645	60	.595	258	20864	60	.665	356	20903	60	.760	500	-	80	.955	795
17	-	60	.570	203	-	60	.620	274	23302	60	.685	375	-	60	.780	530	-	80	.985	844
18	-	60	.580	214	-	60	.630	284	-	60	.700	393	-	60	.800	558	-	80	1.005	893
19	17616	60	.580	220	17647	60	.630	296	20865	60	.700	408	20904	60	.800	581	20933	80	1.005	918
20	17617	60	.595	228	17650	60	.650	310	20867	60	.720	424	20906	60	.825	647	20934	80	1.035	975
21	-	60	.610	239	-	60	.665	327	-	60	.735	450	-	80	.880	680	-	80	1.055	1011
22	-	60	.625	251	-	60	.680	340	20868	60	.755	469	-	80	.905	711	-	80	1.085	1058
23	-	60	.635	259	-	60	.695	353	31109	60	.770	488	31242	80	.920	738	31279	80	1.105	1104
24	17618	60	.645	268	17651	60	.705	367	20869	60	.785	508	20907	80	.935	768	31280	80	1.125	1151
25	17619	60	.655	279	17652	60	.715	379	20870	60	.795	526	20908	80	.950	796	30410	80	1.145	1204
26	26386	60	.665	287	17653	60	.725	391	-	60	.805	582	-	80	.965	822	20935	80	1.160	1238
27	-	60	.670	298	-	60	.730	405	20871	60	.815	601	-	80	.975	850	-	80	1.175	1273
28	-	60	.680	306	-	60	.745	418	-	80	.870	621	-	80	.990	880	-	80	1.195	1317
29	-	60	.690	314	-	60	.755	431	-	80	.880	640	-	80	1.005	907	-	80	1.210	1360
30	17620	60	.705	325	17654	60	.780	456	20872	80	.900	666	20909	80	1.030	938	31281	80	1.240	1404
31	-	60	.710	333	-	60	.785	458	-	80	.905	679	-	80	1.035	964	-	80	1.245	1450
32	-	60	.720	343	-	60	.795	507	25004	80	.915	698	-	80	1.050	992	-	80	1.265	1495
33	-	60	.735	353	-	60	.810	522	-	80	.935	718	-	80	1.070	1022	-	80	1.290	1540
34	17621	60	.740	361	-	60	.810	536	-	80	.940	737	-	80	1.075	1050	-	80	1.300	1585
35	-	60	.750	371	-	80	.865	549	-	80	.955	756	-	80	1.090	1077	-	80	1.315	1625
36	-	60	.760	381	-	80	.880	564	-	80	.970	780	-	80	1.110	1106	-	80	1.340	1675
37	17622	60	.760	390	17655	80	.880	580	20873	80	.970	794	20910	80	1.110	1134	31282	80	1.340	1700