

TC-THHN/THWN-2 Copper, PVC/Nylon Insulated

CME[®]
wire and cable

PVC Jacketed, VW-1; SR; ER; FT4; Dir Bur; 600 V

A Viakable Company

Features

UL Listed as TC.

Jacket is rated Sunlight Resistance.

Singles meet VW-1 flame test.

The complete cable (14 AWG and up) is UL listed as FT4 rated and meets the following 70,000 Btu/h Vertical Tray Flame Tests:

- IEEE 383
- ICEA T-30-520
- IEEE 1202/FT4

Also, passed the 210,000 Btu flame test per ICEA T-29-520.

Single conductors are dual rated THHN/THWN-2 in sizes 14 AWG and larger.

Cable is rated ER and Direct Buried in sizes 14 AWG and larger.

On request, can have overall shield. A metal laminated shield tape with drain will be used for conductor sizes smaller than 6 AWG and copper braid shield will be used for conductor 6 AWG and larger.

Application

These cables are specifically approved for power, control, lighting and signal circuits, in manufacturing, industrial and commercial installations.

For use in accordance with NEC, Article 336, in cable trays, in raceways, or where supported in outdoor locations supported by a messenger wire.

In cable tray in hazardous

(classified) locations Class I, Division 2 per NEC, also as Class I circuits per Article 725.

Standards

UL 1277

Electrical Power and Control Tray Cables with Optional Optical-Fiber Members.

UL 83

Thermoplastic-Insulated Wires and Cables.

ICE A S-73-5 32

NEMA WC57

Standard for Control Cables.

ICE A S-95-658

Standard for Non-shielded Power Cables Rated 2000 Volts or Less.

Specifications

Maximum operating voltage:

- 600 volts

Maximum conductor operation temperatures:

- THWN-2:
90 °C wet and dry
- THHN/THWN:
75 °C wet/90 °C dry

Engineering Information

1. Conductor: Soft annealed uncoated copper compressed Class B or C stranding or unilay-compressed per ASTM B8, or combination unilay per ASTM B787.

Sizes: 14 AWG up to 1000 kcmil.

2. Insulation: Flame retardant

thermoplastic polyvinyl chloride (PVC) and nylon covering.

Conductor Identification ICEA:

14 AWG – 10 AWG: Color coded per Method 1 Table E-2, without White and Green colors.

On request, Table E-1, which includes White and Green colors.

Sizes 8 AWG – 1000 kcmil: Black insulation with Printed numbers, 1, 2, 3, or 4.

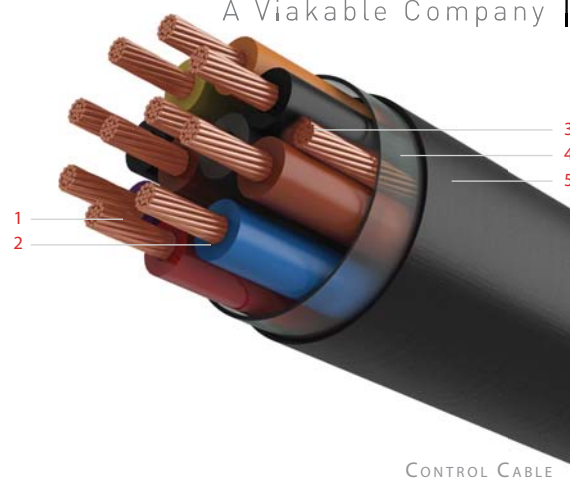
On request, Color coded, BL, WH and Red or Green.

3. Grounding (Optional):

One bare or one or more insulated conductors.

4. Assembly: Phase and optional grounding conductor(s) cabled with non hygroscopic fillers, as required and binder tape.

5. Jacket: Black sunlight resistant and flame retardant polyvinyl chloride (PVC) compound.



Technical Data continued

THHN/THWN-2 600V

Size	Number of Strands	Insulation: PVC/Nylon	Nominal Insulated OD
14 AWG	19	15/5 mil	102 mil
Number of Conductors	Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight lb/kft
2 Flat	45	0.21 x 0.32	59
3	45	0.34	78
4	45	0.37	98
5	45	0.40	121
6	45	0.43	144
7	45	0.43	154
8	45	0.50	194
9	60	0.58	222
10	60	0.58	232
12	60	0.59	268
14	60	0.62	305
15	60	0.66	335
16	60	0.66	345
18	60	0.69	386
19	60	0.69	396
20	60	0.72	428
24	60	0.79	516
26	60	0.82	535
30	80	0.89	635
33	80	0.92	693
37	80	0.95	762

The above data are approximate and subject to normal manufacturing tolerances. Where required, the compatibility with glands, connectors and accessories should be verified using actual dimensions of the product. Other sizes available upon request.
Ampacities: Refer to beginning of section.

Technical Data continued

THHN/THWN-2 600V

Size	Number of Strands	Insulation: PVC/Nylon	Nominal Insulated OD
12 AWG	19	15/5 mil	120 mil
Number of Conductors	Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight lb/kft
2 Flat	45	0.22 x 0.35	77
2	45	0.36	88
3	45	0.38	114
4	45	0.41	136
5	45	0.45	169
6	45	0.49	202
7	45	0.49	218
8	60	0.60	291
9	60	0.65	310
10	60	0.65	326
12	60	0.67	378
14	60	0.70	433
15	60	0.74	475
16	60	0.74	491
18	60	0.78	551
19	60	0.78	567
20	60	0.82	612
24	80	0.94	778
26	80	0.97	810
30	80	1.00	907
33	80	1.04	992
37	80	1.08	1094

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Ampacities: Refer to beginning of section.

Technical Data continued

THHN/THWN-2 600V

Size	Number of Strands	Insulation: PVC/Nylon	Nominal Insulated OD
10 AWG	19	20/5 mil	154 mil
Number of Conductors	Jacket Thickness	Approximate Outside Diameter	Approximate Net Weight
	mil	in	lb/kft
2 Flat	45	0.26 x 0.42	115
2	45	0.43	129
3	45	0.45	169
4	45	0.49	215
5	60	0.57	274
6	60	0.62	325
7	60	0.62	351
8	60	0.72	439
9	60	0.79	466
10	60	0.79	491
12	60	0.81	574
14	80	0.90	698
15	80	0.94	764
16	80	0.94	790
18	80	0.99	885
19	80	0.99	911
20	80	1.04	982
24	80	1.14	1186
26	80	1.18	1235
30	80	1.22	1390
33	80	1.27	1521
37	80	1.32	1682

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Ampacities: Refer to beginning of section.

Size AWG or kcmil	Number of Strands	Insulation Thickness PVC/Nylon mil	Optional Grounding* Conductor AWG	Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight	
						W/O Ground lb/kft	Ground lb/kft
Two Conductors							
8	7	30/6	10	60	0.56	217	254
6	19	30/6	8	60	0.63	303	359
4	19	40/7	8	60	0.77	458	523
2	19	40/7	6	80	0.93	699	798
1	19	50/8	6	80	1.05	876	986
1/0	19	50/8	6	80	1.13	1055	1174
2/0	19	50/8	6	80	1.22	1276	1406
3/0	19	50/8	4	80	1.32	1552	1733
4/0	19	50/8	4	80	1.46	1915	2116
250	37	60/9	4	80	1.57	2231	2448
300	37	60/9	3	110	1.74	2721	2984
350	37	60/9	3	110	1.84	3110	3391
500	37	60/9	2	110	2.09	4257	4624
600	61	80/10	2	110	2.33	5140	5561
750	61	80/10	1	110	2.54	6271	6786

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Ampacities: Refer to beginning of section.

* At the option of manufacturer, Ground Conductor can be divided in three, one in each interstice.

Technical Data continued

THHN/THWN-2 600V

Size AWG or kcmil	Number of Strands	Insulation Thickness PVC/Nylon	Optional Grounding* Conductor	Jacket Thickness	Approximate Outside Diameter	Approximate Net Weight	
		mil	AWG	mil	in	W/O Ground lb/kft	Ground lb/kft
Three Conductors							
8	7	30/6	10	60	0.59	282	315
6	19	30/6	8	60	0.67	401	453
4	19	40/7	8	60	0.82	613	667
2	19	40/7	6	80	0.99	938	1021
1	19	50/8	6	80	1.12	1180	1269
1/0	19	50/8	6	80	1.21	1431	1525
2/0	19	50/8	6	80	1.30	1743	1842
3/0	19	50/8	4	80	1.41	2131	2276
4/0	19	50/8	4	80	1.56	2637	2792
250	37	60/9	4	110	1.74	3188	3352
300	37	60/9	3	110	1.85	3738	3938
350	37	60/9	3	110	1.96	4288	4498
500	37	60/9	2	110	2.24	5912	6183
600	61	80/10	2	110	2.50	7136	7435
750	61	80/10	1	110	2.72	8740	9109
Four Conductors							
8	7	30/6	10	60	0.65	359	392
6	19	30/6	8	60	0.74	514	566
4	19	40/7	8	80	0.95	830	882
2	19	40/7	6	80	1.09	1210	1293
1	19	50/8	6	80	1.23	1523	1605
1/0	19	50/8	6	80	1.33	1853	1939
2/0	19	50/8	6	80	1.44	2262	2353
3/0	19	50/8	4	80	1.56	2773	2908
4/0	19	50/8	4	110	1.79	3548	3690
250	37	60/9	4	110	1.92	4139	4288
300	37	60/9	3	110	2.05	4862	5045
350	37	60/9	3	110	2.17	5586	5776
500	37	60/9	2	110	2.48	7725	7969
600	61	80/10	2	140	2.83	9507	9772
750	61	80/10	1	140	3.08	11638	11966

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