

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

PVC Jacketed, SR; GR; 600 V

CME[®]
wire and cable

A Viakable Company

Features

UL Listed as TC.

Jacket is rated Sunlight Resistance and Oil Resistance I.

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

Singles meet VW-1 flame test.

Meets following 70,000 Btu flame tests:

- ICEA T-30-520

Single conductors are dual rated THHN/THWN-2 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 (19 wires)

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.

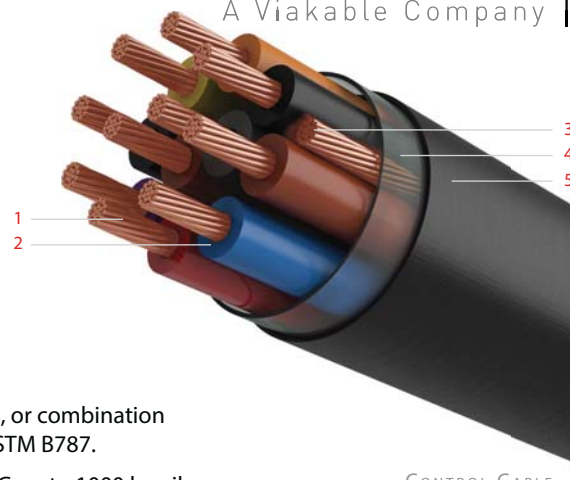
Sizes 8 AWG – 1000 kcmil: Black insulation with Printed numbers, 1, 2, 3, or 4.

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,



CONTROL CABLE



POWER CABLE

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	57
3	45	0.34	78
4	45	0.37	97
5	45	0.40	120
6	45	0.43	143
7	45	0.43	153
8	45	0.50	192
9	60	0.58	220
10	60	0.58	230
12	60	0.59	266
14	60	0.62	302
15	60	0.66	333
16	60	0.66	343
18	60	0.69	383
19	60	0.69	393
20	60	0.72	425
24	60	0.79	513
26	60	0.82	532
30	80	0.89	631
33	80	0.92	689
37	80	0.95	757

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	87
3	45	0.38	113
4	45	0.41	135
5	45	0.45	167
6	45	0.49	200
7	45	0.49	217
8	60	0.60	289
9	60	0.65	307
10	60	0.65	323
12	60	0.67	376
14	60	0.70	430
15	60	0.74	472
16	60	0.74	489
18	60	0.78	548
19	60	0.78	564
20	60	0.82	608
24	80	0.94	773
26	80	0.97	805
30	80	1.00	901
33	80	1.04	987
37	80	1.08	1089

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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	0.25 x 0.42	112
2	45	0.43	128
3	45	0.45	168
4	45	0.49	214
5	60	0.57	271
6	60	0.62	322
7	60	0.62	348
8	60	0.72	436
9	60	0.79	462
10	60	0.79	488
12	60	0.81	571
14	80	0.90	693
15	80	0.94	759
16	80	0.94	785
18	80	0.99	879
19	80	0.99	906
20	80	1.04	976
24	80	1.14	1180
26	80	1.18	1229
30	80	1.22	1383
33	80	1.27	1514
37	80	1.32	1675

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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	215	252
6	19	30/6	8	60	0.63	300	357
4	19	40/7	8	60	0.77	455	520
2	19	40/7	6	80	0.93	694	793
1	19	50/8	6	80	1.05	870	981
1/0	19	50/8	6	80	1.13	1049	1168
2/0	19	50/8	6	80	1.22	1270	1399
3/0	19	50/8	4	80	1.32	1545	1726
4/0	19	50/8	4	80	1.46	1907	2108
250	37	60/9	4	80	1.57	2222	2440
300	37	60/9	3	110	1.74	2708	2971
350	37	60/9	3	110	1.84	3097	3377
500	37	60/9	2	110	2.09	4242	4609
600	61	80/10	2	110	2.33	5123	5544
750	61	80/10	1	110	2.54	6252	6767

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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 mil	Optional Grounding* Conductor AWG	Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight	
						W/O Ground lb/kft	Ground lb/kft
Three Conductors							
8	7	30/6	10	60	0.59	280	313
6	19	30/6	8	60	0.67	398	450
4	19	40/7	8	60	0.82	610	664
2	19	40/7	6	80	0.99	933	1016
1	19	50/8	6	80	1.12	1174	1263
1/0	19	50/8	6	80	1.21	1425	1519
2/0	19	50/8	6	80	1.30	1736	1835
3/0	19	50/8	4	80	1.41	2124	2269
4/0	19	50/8	4	80	1.56	2629	2784
250	37	60/9	4	110	1.74	3175	3339
300	37	60/9	3	110	1.85	3724	3925
350	37	60/9	3	110	1.96	4274	4483
500	37	60/9	2	110	2.24	5895	6166
600	61	80/10	2	110	2.50	7117	7417
750	61	80/10	1	110	2.72	8720	9089
Four Conductors							
8	7	30/6	10	60	0.65	356	389
6	19	30/6	8	60	0.74	511	563
4	19	40/7	8	80	0.95	825	877
2	19	40/7	6	80	1.09	1205	1287
1	19	50/8	6	80	1.23	1516	1599
1/0	19	50/8	6	80	1.33	1846	1932
2/0	19	50/8	6	80	1.44	2255	2345
3/0	19	50/8	4	80	1.56	2765	2899
4/0	19	50/8	4	110	1.79	3535	3677
250	37	60/9	4	110	1.92	4125	4274
300	37	60/9	3	110	2.05	4847	5030
350	37	60/9	3	110	2.17	5570	5760
500	37	60/9	2	110	2.48	7706	7950
600	61	80/10	2	140	2.83	9480	9746
750	61	80/10	1	140	3.08	11609	11937

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