# UL and CSA Approved Wire and Cable

**UL and CSA approved** wires have been tested to Underwriters Laboratories and / or the Canadian Standards Association safety standards. In many cases, a single Thermax part number may meet several UL or CSA standards, as noted on the product specification pages beginning on page 97.

Standard colors: Where noted on product pages, UL wires are available with insulation in any of these ten standard colors: Black, brown, red, orange, yellow, green, blue, violet, grey, and white.

Below, and on the the following four pages, is a quick guide to CSA and UL wires by insulation material. Each table shows conductor material options and size range availability for the type. To find wires listed by UL number, see the index by part number beginning on page 131.

Contact your Thermax representative for styles not shown.

## UL Wires by Insulation Material



## CSA-Approved Appliance Wiring Material

| Insulation Material | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|
| ETFE | 105 | 150 | .005 (.13) | 20–32 | NI, NPC, SPC, TPC | 103 |
| ETFE | 105 | 300 | .010 (.25) | 16–30 | NI, NPC, SPC, TPC | ** |
| ETFE | 200 | 300 | .007 (.13) | 10–36 | NI, NPC, SPC, TPC | 110 |
| ETFE | 200 | 600 | .010 (.25) | 10–36 | NI, NPC, SPC, TPC | 109 |
| FEP | 180 | 150 | .008 (.20) | 16–32 | NI, NPC, SPC, TPC | ** |
| FEP | 180 | 300 | .013 (.33) | 10–28 | NI, NPC, SPC, TPC | ** |
| FEP | 180 | 600* | .020 (.51) | 10–28 | NI, NPC, SPC, TPC | ** |
| Mica-Glass | 450 | 300 | .015 (.38) | 12–22 | NC | 113 |
| with Glass braid | | | .007 (.13) | | | |
| Mica-Glass | 450 | 300 | .020 (.51) | 4–10 | NC | 113 |
| with Glass braid | | | .014 (.36) | | | |
| Mica-Glass | 450 | 600 | .025 (.64) | 12–22 | NC | 113 |
| with Glass braid | | | .007 (.13) | | | |
| Mica-Glass | 450 | 600 | .035 (.89) | 4–10 | NC | 113 |
| with Glass braid | | | .020 (.51) | | | |
| PTFE | 200 | 150 | .008 (.20) | 16–32 | NI, NPC, SPC | 99 |
| PTFE | 200 | 300 | .013 (.33) | 10–28 | NI, NPC, SPC | 97 |
| PTFE | 200 | 600* | .020 (.51) | 10–28 | NI, NPC, SPC | 98 |
| | | | .030 (.76) | 8 | | |
| PTFE | 250 | 300 | .013 (.33) | 10–28 | NI, NPC, SPC | 108 |
| PTFE | 250 | 600 | .020 (.51) | 10–28 | NI, NPC, SPC | 105 |
| | | | .030 (.76) | 8 | | |
| PTFE (Mineral-filled) | 250 | 600 | .030 (.76) | 10–28 | NI, NPC, SPC | 104 |
| | | | .045 (1.14) | 8 | | |

Dimensions in inches (mm). • Temperature rating in ° C, maximum. • Voltage rating in volts AC, RMS.

* 1,000V when protected by a ballast, resistor, or transformer. • All values are nominal unless otherwise indicated.

## Materials Abbreviations

**Insulation Materials:**

ETFE: Ethylene Tetrafluoroethylene
FEP: Fluorinated Ethylene Polypropylene
PTFE: Polytetrafluoroethylene

**Conductor Materials:**

BC: Bare (unplated) copper
NC: 27% nickel-coated copper
Ni: Nickel
NPC: Nickel-plated copper
SPC: Silver-plated copper
TPC: Tin-plated copper



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## UL-Approved Wires—ETFE (Ethylene Tetrafluoroethylene) Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| ETFE | **1508** | 105 | 30 | .0055 (.14) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1513** | 105 | — | .005 (.13) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1516** | 105 | — | .004 (.10) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1517** | 105 | — | .006 (.15) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1523** | 105 | — | .005 (.13) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1558** | 125 | — | .004 (.10) | 20–32 | NPC, SPC, TPC | 103 |
| ETFE | **1586** | 105 | — | .0055 (.14) | 20–36 | Ni, NPC, SPC, TPC | ** |
| | | | | .008 (.20) | 16–19 | | |
| | | | | .013 (.33) | 10–15 | | |
| | | | | .020 (.51) | 6–9 | | |
| ETFE | **1609** | 105 | 125 | .0055 (.14) | 20–36 | Ni, NPC, SPC, TPC | ** |
| | | | | .008 (.20) | 16–19 | | |
| | | | | .013 (.33) | 10–15 | | |
| | | | | .020 (.51) | 6–9 | | |
| ETFE | **1610** | 105 | — | .010 (.25) | 10–32 | BC, NPC, SPC, TPC | ** |
| ETFE | **1643** | 150 | 300 | .013 (.33) | 10–32 | Ni, NPC, SPC, TPC | ** |
| | | | | .020 (.51) | 2–8 | | |
| | | | | .030 (.76) | 4/0–1 | | |
| ETFE | **1644** | 150 | 600 | .020 (.51) | 10–30 | BC, NC, Ni, NPC, SPC, TPC | ** |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| ETFE | **1671** | 150 | 300 | .010 (.25) | 10–32 | BC, NPC, SPC, TPC | ** |
| ETFE | **1814** | 150 | 150 | .006 (.15) | 20–32 | Ni, NPC, SPC, TPC | ** |
| ETFE | **1828** | 150 | 300 | .013 (.33) | 10–32 | BC, TPC | ** |
| ETFE | **1829** | 150 | 600 | .020 (.51) | 10–32 | BC, TPC | ** |
| ETFE | **10086** | 150/200 | 600 | .010 (.25) | 14–32 | BC, NPC, SPC, TPC | 109 |
| | | | | .015 (.38) | 10–12 | | |
| | | | | .025 (.64) | 4–8 | | |
| | | | | .035 (.89) | 1–3 | | |
| | | | | .045 (1.14) | 4/0–1/0 | | |
| ETFE | **10109** | 150/200 | 300 | .006 (.15) | 18–32 | BC, NPC, SPC, TPC | 110 |
| | | | | .008 (.20) | 14–16 | | |
| | | | | .010 (.25) | 10–12 | | |
| | | | | .025 (.64) | 4–8 | | |
| | | | | .035 (.89) | 1–3 | | |
| | | | | .045 (1.14) | 4/0–1/0 | | |
| ETFE | **10125** | 150 | 300 | .006 (.15) | 18–32 | BC, NPC, SPC, TPC | ** |
| | | | | .008 (.20) | 14–16 | | |
| | | | | .010 (.25) | 10–12 | | |
| | | | | .025 (.64) | 4–8 | | |
| | | | | .035 (.89) | 1–3 | | |
| | | | | .045 (1.14) | 4/0–1/0 | | |
| ETFE | **10126** | 150 | 600 | .010 (.25) | 14–32 | BC, NPC, SPC, TPC | ** |
| | | | | .015 (.38) | 10–12 | | |
| | | | | .025 (.64) | 4–8 | | |
| | | | | .035 (.89) | 1–3 | | |
| | | | | .045 (1.14) | 4/0–1/0 | | |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS.
**Contact your Thermax representative for availability. • All values are nominal unless otherwise indicated.

### Conductor Materials Abbreviations

BC: Bare (unplated) copper
NC: 27% nickel-coated copper
Ni: Nickel
NPC: Nickel-plated copper
SPC: Silver-plated copper
TPC: Tin-plated copper

# UL Approved Wire—FEP, Mica/Glass Insulation

## UL-Approved Wires—FEP (Fluorinated Ethylene Polypropylene) Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| FEP | **1226** | 80 | — | .008 (.20) | 20–32 | BC, Ni, NPC, SPC, TPC | ** |
| | | | | .013 (.33) | 14–19 | | |
| FEP | **1227** | 105 | — | .008 (.20) | 20–32 | BC, Ni, NPC, SPC, TPC | ** |
| | | | | .013 (.33) | 14–19 | | |
| FEP | **1330** | 200 | 600 | .020 (.51) | 10–30 | Ni, NPC, SPC, TPC | 100 |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| FEP | **1331** | 150 | 600 | .020 (.51) | 10–30 | Ni, NPC, SPC, TPC | 100 |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| FEP | **1332** | 200 | 300 | .013 (.33) | 10–30 | Ni, NPC, SPC, TPC | 101 |
| FEP | **1333** | 150 | 300 | .013 (.33) | 10–30 | Ni, NPC, SPC, TPC | 101 |
| FEP | **1371** | 105 | — | .0055 (.14) | 20–32 | Ni, NPC, SPC, TPC | 102 |
| | | | | .008 (.20) | 16–19 | | |
| | | | | .013 (.33) | 10–15 | | |
| | | | | .020 (.51) | 6–9 | | |
| FEP | **1538** | 105 | 125 | .0055 (.14) | 20–32 | Ni, NPC, SPC, TPC | ** |
| | | | | .008 (.20) | 16–19 | | |
| | | | | .013 (.33) | 10–15 | | |
| | | | | .020 (.51) | 6–9 | | |
| FEP | **1577** | 200 | — | .012 (.30) | 16–32 | Ni, NPC, SPC, TPC | ** |
| FEP | **1591** | 150 | 300 | .016 (.41) | 16–32 | Ni, NPC, SPC, TPC | ** |
| FEP | **1592** | 200 | 300 | .016 (.41) | 16–32 | Ni, NPC, SPC, TPC | ** |
| FEP | **1716** | 150 | 150 | .0055 (.14) | 20–32 | Ni, NPC, SPC, TPC | ** |
| | | | | .008 (.20) | 15–19 | | |
| | | | | .013 (.33) | 10–14 | | |
| | | | | .020 (.51) | 6–9 | | |
| FEP-polyimide | **1355** | 200 | — | .0055 (.14) | 20–32 | Ni, NPC, SPC | ** |
| FEP (modified) | **3239** | 200 | 10,000 | .018 (.46) | 10–24 | NPC, SPC, TPC | 111 |
| | | 200 | 15,000 | .020 (.51) | 10–24 | | |
| | | 200 | 20,000 | .024 (.61) | 10–24 | | |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS.
**Contact your Thermax representative for availability.

## UL-Approved Wires—Mica / Glass Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| Mica / Glass | **5107** | 200/450 | 600 | .025 (.20) / .007 (.18) | 12–22 | BC,* NC, NPC | 113 |
| | | | | .030 (.76) / .015 (.38) | 4–11 | | |
| | | | | .035 (.89) / .020 (.51) | 4/0–3 | | |
| Mica / Glass | **5108** | 250 | 600 | .025 (.20) / .007 (.18) | 12–22 | Ni, NPC | ** |
| | | | | .030 (.76) / .015 (.38) | 4–11 | | |
| | | | | .035 (.89) / .020 (.51) | 4/0–3 | | |
| Mica / Glass | **5128** | 450 | 300 | .015 (.38) / .007 (.18) | 12–24 | NC, NPC | 113 |
| | | | | .020 (.51) / .015 (.38) | 4–11 | | |
| Mica / Glass | **5134** | 250 | 300 | .015 (.38) / .007 (.18) | 12–22 | Ni, NPC | ** |
| | | | | .020 (.51) / .015 (.38) | 4–11 | | |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS.
**Contact your Thermax representative for availability. *Temperature rating is 200˚ C with BC conductor.
All values are nominal unless otherwise indicated.

### Conductor Materials Abbreviations

BC: Bare (unplated) copper
NC: 27% nickel-coated copper
Ni: Nickel
NPC: Nickel-plated copper
SPC: Silver-plated copper
TPC: Tin-plated copper


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## UL-Approved Wires—Mica / PTFE / Glass Braid Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| Mica / PTFE / Glass Braid | **5259** | 250 | 600 | .012 (.30) / .005 (.13) / .0075 (.19) | 12–22 | NC, Ni | ** |
| | | | | .020 (.51) / .005 (.13) / .0075 (.19) | 6–10 | | |
| | | | | .030 (.76) / .010 (.25) / .0075 (.19) | 4/0–4 | | |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS.
All values are nominal unless otherwise indicated.

## UL-Approved Wires—PFA (Perfluoroalkoxy) Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| PFA | **1538** | 105 | 125 | .0055 (.14) | 20–32 | Ni, NPC, SPC | 102 |
| | | | | .008 (.20) | 15–19 | | |
| | | | | .013 (.33) | 10–14 | | |
| | | | | .020 (.51) | 6–9 | | |
| PFA | **1709** | 200 | 300 | .013 (.33) | 10–32 | BC, NC, Ni, NPC, SPC, TPC | ** |
| PFA | **1710** | 200 | 600 | .020 (.51) | 10–30 | BC, NC, Ni, NPC, SPC, TPC | ** |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| PFA | **1716** | 150 | 150 | .0055 (.14) | 20–38 | Ni, NPC, SPC | ** |
| | | | | .008 (.20) | 15–19 | | |
| | | | | .013 (.33) | 10–14 | | |
| | | | | .020 (.51) | 8 | | |
| PFA | **1726** | 250 | 300 | .013 (.33) | 10–32 | NC, Ni, NPC, SPC | 106 |
| | | | | .020 (.51) | 6–8 | | |
| | | | | .030 (.76) | 2–4 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| PFA | **1727** | 250 | 600 | .020 (.51) | 10–32 | NC, Ni, NPC, SPC | 107 |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| PFA | **1857** | 150 | 150 | .010 (.25) | 16–32 | BC, NC, Ni, NPC, SPC, TPC | ** |
| PFA | **1858** | 150 | 300 | .013 (.33) | 10–32 | BC, NC, Ni, NPC, SPC, TPC | ** |
| PFA | **1859** | 150 | 600 | .020 (.51) | 10–32 | BC, NC, Ni, NPC, SPC, TPC | ** |
| | | | | .030 (.76) | 2–8 | | |
| | | | | .045 (1.14) | 4/0–1 | | |
| PFA | **1860** | 200 | 150 | .010 (.25) | 16–32 | BC, NC, Ni, NPC, SPC, TPC | ** |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS.
**Contact your Thermax representative for availability. • All values are nominal unless otherwise indicated.

### Conductor Materials Abbreviations

BC: Bare (unplated) copper
NC: 27% nickel-coated copper
Ni: Nickel
NPC: Nickel-plated copper
SPC: Silver-plated copper
TPC: Tin-plated copper

# UL Approved Wire—PTFE, PTFE/Glass Braid Insulation

## UL-Approved Wires—PTFE (Polytetrafluoroethylene) Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| PTFE | **1164** | 150 | 300 | .013 (.33) | 10–32 | Ni, NPC, SPC | 97 |
| PTFE | **1180** | 200 | 300 | .013 (.33) | 10–32 | Ni, NPC, SPC | 97 |
| PTFE | **1198** | 150 | 600 | .020 (.51) | 10–30 | Ni, NPC, SPC | 98 |
| | | | | .030 (.76) | 8 | | |
| PTFE | **1199** | 200 | 600 | .020 (.51) | 10–30 | Ni, NPC, SPC | 98 |
| | | | | .030 (.76) | 8 | | |
| PTFE | **1212** | 80 | — | .008 (.20) | 16–36 | Ni, NPC, SPC | 99 |
| PTFE | **1213** | 105 | — | .008 (.20) | 16–36 | Ni, NPC, SPC | 99 |
| PTFE | **1371** | 105 | — | .006 (.15) | 20–32 | Ni, NPC, SPC | 102 |
| | | | | .008 (.20) | 16–19 | | |
| | | | | .013 (.33) | 10–15 | | |
| | | | | .020 (.51) | 8 | | |
| PTFE | **1512** | 105 | — | .010 (.25) | 14–16 | NPC, SPC | ** |
| PTFE | **1538** | 105 | 125 | .0055 (.14) | 20–36 | Ni, NPC, SPC | 102 |
| | | | | .008 (.20) | 15–19 | | |
| | | | | .013 (.33) | 10–14 | | |
| | | | | .020 (.51) | 8 | | |
| PTFE | **1577** | 200 | — | .012 (.30) | 16–32 | Ni, NPC, SPC | ** |
| PTFE | **1584** | 200 | 1,000 | .022 (.56) | 10–32 | Ni, NPC, SPC | ** |
| PTFE | **1659** | 250 | 600 | .020 (.51) | 10–26 | Ni, NPC, SPC | 105 |
| | | | | .030 (.76) | 8 | | |
| PTFE | **1716** | 150 | 150 | .0055 (.14) | 20–36 | Ni, NPC, SPC | ** |
| | | | | .008 (.20) | 15–19 | | |
| | | | | .013 (.33) | 10–14 | | |
| | | | | .020 (.51) | 8 | | |
| PTFE | **1815** | 250 | 300 | .013 (.33) | 10–32 | Ni, NPC, SPC | 108 |
| PTFE-Polyimide | **1394** | 200 | — | .0055 (.14) | 20–32 | Ni, NPC, SPC | ** |
| PTFE (mineral-filled) | **1570** | 250 | 600 | .020 (.51) | 12–24 | Ni, NPC, SPC | 104 |
| | | | | .030 (.76) | 8–10 | | |
| PTFE (expanded) | **1875** | 105 | 30 | .0055 (.14) | 20–32 | NPC, SPC | ** |

## UL-Approved Wires—PTFE / Glass Braid Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| PTFE / Glass Braid | **5181** | 250 | 600 | .020 (.51) / .010 (.25) | 9–24 | Ni, NPC | ** |
| | | | | .030 (.76) / .012 (.30) | 1–8 | | |
| | | | | .045 (1.14) / .015 (.38) | 4/0–1/0 | | |

## UL-Approved Wires—PTFE Served Glass / Glass Braid Insulation

| Insulation Material | UL Style | Temperature Rating | Voltage Rating | Insulation Wall Thickness (Min.) | AWG Size Range | Conductor Types | Page |
|---|---|---|---|---|---|---|---|
| PTFE Served Glass / Glass Braid | **5127** | 250 | 600 | .015 (.38) / .010 (.25) | 8–24 | NC, Ni | 114 |
| PTFE Served Glass / Glass Braid | **5180** | 250 | 300 | .004 (.10) / .010 (.25) | 18–24 | NC, Ni | 114 |
| | | | | .008 (.20) / .010 (.25) | 8–16 | | |
| | | | | .012 (.30) / .015 (.38) | 2–6 | | |

Dimensions in inches (mm). • Temperature rating in ˚ C, maximum. • Voltage rating in volts AC, RMS. • **Contact factory for availability.
All values are nominal unless otherwise indicated.

### Conductor Materials Abbreviations

BC: Bare (unplated) copper
NC: 27% nickel-coated copper
Ni: Nickel
NPC: Nickel-plated copper
SPC: Silver-plated copper
TPC: Tin-plated copper


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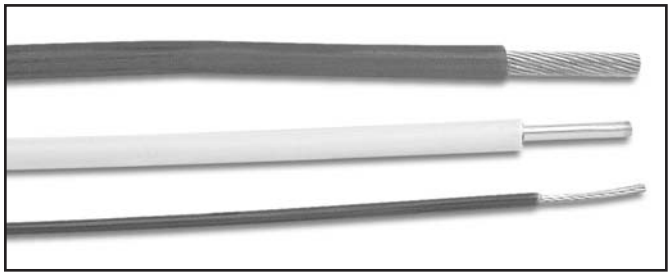
# UL 1164, 1180; CSA 300V wire—extruded PTFE insulation



## Construction Details

**Insulation:** Extruded PTFE, .013" (.33 mm) wall thickness.

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**UL 1164, 1180, CSA 300V (200˚ C)** wires have extruded PTFE (Polytetrafluoroethylene) insulation for weight and space savings.

These wires are ideal for general appliance wiring and other applications where chemical exposure, temperature extremes, and dielectric stresses are possible.

For heavy-wall versions of these wires, see UL 1198, 1199, CSA 600V wires (following page).

## Performance:

**Voltage rating:** 300V (UL allows 600V for electronic use only).

**Temperature rating:** UL 1164: 150˚ C;
UL 1180, CSA: 200˚ C.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1164, 1180, and CSA styles.

## Dimensions, Weights, and Resistance—UL 1164, 1180; CSA 300V (200˚ C) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/.0167 | .113 | (2.87) | .146 | (3.71) | 39.3 | (58.5) | 1.19 | (3.90) | 10-XT-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .141 | (3.58) | 35.1 | (52.2) | 1.19 | (3.90) | 10-XT-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .125 | (3.18) | 26.3 | (39.1) | 1.81 | (5.94) | 12-XT-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .116 | (2.95) | 23.2 | (34.5) | 1.81 | (5.94) | 12-XT-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .105 | (2.67) | 17.1 | (25.4) | 2.87 | (9.41) | 14-XT-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .102 | (2.59) | 16.4 | (24.4) | 2.87 | (9.41) | 14-XT-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .090 | (2.29) | 11.6 | (17.3) | 4.52 | (14.8) | 16-XT-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .086 | (2.18) | 11.0 | (16.4) | 4.54 | (14.9) | 16-XT-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .079 | (2.01) | 8.79 | (13.1) | 5.80 | (19.0) | 18-XT-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .079 | (2.01) | 8.72 | (13.0) | 6.01 | (19.7) | 18-XT-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .068 | (1.73) | 6.09 | (9.06) | 8.87 | (29.1) | 20-XT-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .068 | (1.73) | 6.01 | (8.94) | 9.56 | (31.4) | 20-XT-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .061 | (1.55) | 5.12 | (7.62) | 10.1 | (33.1) | 20-XT-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .060 | (1.52) | 4.34 | (6.46) | 14.8 | (48.5) | 22-XT-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .060 | (1.52) | 4.29 | (6.38) | 15.2 | (49.9) | 22-XT-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .054 | (1.37) | 3.65 | (5.43) | 16.5 | (54.1) | 22-XT-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .053 | (1.35) | 3.13 | (4.66) | 23.6 | (77.4) | 24-XT-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .053 | (1.35) | 3.13 | (4.66) | 23.9 | (78.4) | 24-XT-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .049 | (1.24) | 2.72 | (4.05) | 25.7 | (84.3) | 24-XT-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .048 | (1.22) | 2.40 | (3.57) | 37.3 | (122) | 26-XT-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .048 | (1.22) | 2.36 | (3.51) | 38.7 | (127) | 26-XT-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .045 | (1.14) | 2.09 | (3.11) | 41.0 | (134) | 26-XT-126-UL/CSA |
| 28 | 19/40 | .015 | (.381) | .045 | (1.14) | 1.91 | (2.84) | 63.1 | (207) | 28-XT-1940-UL/CSA |
| 28 | 7/36 | .015 | (.381) | .045 | (1.14) | 1.91 | (2.84) | 62.0 | (203) | 28-XT-736-UL/CSA |
| 28 | SOLID | .013 | (.330) | .042 | (1.07) | 1.68 | (2.50) | 65.3 | (214) | 28-XT-128-UL/CSA |
| 30 | 7/38 | .012 | (.305) | .041 | (1.04) | 1.52 | (2.26) | 97.5 | (320) | 30-XT-738-UL |
| 32 | 7/40 | .009 | (.229) | .039 | (.991) | 1.29 | (1.92) | 166 | (544) | 32-XT-740-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.

# UL 1198, 1199; CSA 600V wire—extruded PTFE insulation (heavy wall)

**UL 1198, UL 1199, CSA 600V (200˚ C)** wires have heavy-wall extruded PTFE (Polytetrafluoroethylene) insulation for higher voltage ratings.

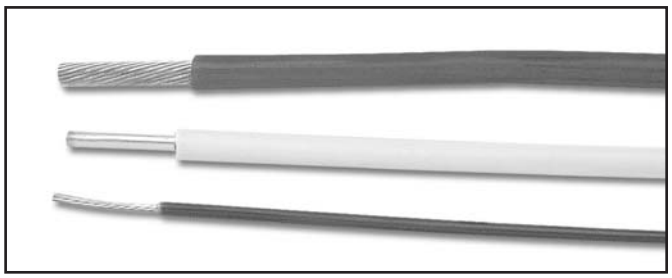
These wires are ideal for general appliance wiring and other applications where chemical exposure, temperature extremes, and dielectric stresses are possible.

For thin-wall versions of these wires, see UL 1164, UL 1180, CSA 300V wires (previous page).

## Performance:

**Voltage rating:** 600V. (UL allows 2,500V peak for electronic use only).

**Temperature rating:** UL 1198: 150˚ C; UL 1199, CSA: 200˚ C.



## Construction Details

**Insulation:** Extruded PTFE, wall thickness:
8 AWG: .030" (.76 mm);
10-30 AWG: .020" (.51 mm).

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1198, 1199, and CSA styles.

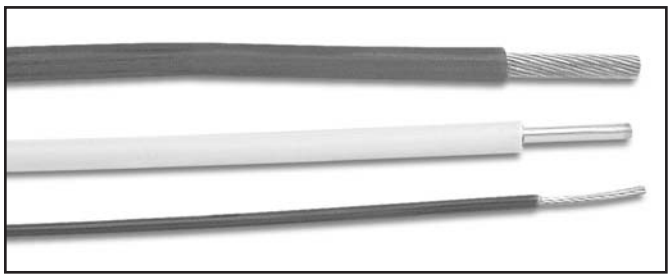
## Dimensions, Weights, and Resistance—UL1198, 1199; CSA 600V (200˚ C) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .162 | (4.11) | .230 | (5.84) | 76.5 | (114) | .658 | (2.16) | 8-5XT-13329-UL/CSA |
| 10 | 37/.0167 | .113 | (2.87) | .159 | (4.04) | 41.8 | (62.2) | 1.19 | (3.90) | 10-3XT-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .154 | (3.91) | 37.6 | (56.0) | 1.19 | (3.90) | 10-3XT-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .134 | (3.40) | 28.1 | (41.8) | 1.81 | (5.94) | 12-3XT-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .130 | (3.30) | 26.0 | (38.7) | 1.81 | (5.94) | 12-3XT-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .115 | (2.92) | 18.7 | (27.8) | 2.87 | (9.41) | 14-3XT-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .111 | (2.82) | 17.5 | (26.0) | 2.87 | (9.41) | 14-3XT-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .102 | (2.59) | 13.3 | (19.8) | 4.52 | (14.8) | 16-3XT-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .099 | (2.51) | 12.5 | (18.6) | 4.54 | (14.9) | 16-3XT-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .093 | (2.36) | 10.6 | (15.8) | 5.80 | (19.0) | 18-3XT-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .093 | (2.36) | 10.5 | (15.6) | 6.01 | (19.7) | 18-3XT-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .083 | (2.11) | 7.79 | (11.6) | 8.87 | (29.1) | 20-3XT-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .083 | (2.11) | 7.71 | (11.5) | 9.56 | (31.4) | 20-3XT-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .077 | (1.96) | 7.00 | (10.4) | 10.1 | (33.1) | 20-3XT-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .074 | (1.88) | 5.78 | (8.60) | 14.8 | (48.5) | 22-3XT-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .074 | (1.88) | 5.78 | (8.60) | 15.2 | (49.9) | 22-3XT-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .069 | (1.75) | 5.03 | (7.49) | 16.5 | (54.1) | 22-3XT-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .068 | (1.73) | 4.49 | (6.68) | 23.6 | (77.4) | 24-3XT-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .068 | (1.73) | 4.49 | (6.68) | 23.9 | (78.4) | 24-3XT-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .064 | (1.63) | 4.01 | (5.97) | 25.7 | (84.3) | 24-3XT-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .063 | (1.60) | 3.65 | (5.43) | 37.3 | (122) | 26-3XT-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .063 | (1.60) | 3.65 | (5.43) | 38.7 | (127) | 26-3XT-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .060 | (1.52) | 3.27 | (4.87) | 41.0 | (134) | 26-3XT-126-UL/CSA |
| 28 | 7/36 | .015 | (.381) | .058 | (1.47) | 2.92 | (4.35) | 62.0 | (203) | 28-3XT-736-UL/CSA |
| 30 | 7/38 | .012 | (.305) | .055 | (1.40) | 2.53 | (3.77) | 97.5 | (320) | 30-3XT-738-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 1212, 1213, CSA 150V wire—extruded PTFE insulation (low voltage)



## Construction Details

**Insulation:** Extruded PTFE, .008" (.20 mm) wall thickness.

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Nickel-plated copper conductor; silver or nickel-plated high-strength copper alloy conductor

**UL 1212, 1213, CSA 150V** wires have thin-wall extruded PTFE (Polytetrafluoroethylene) insulation for weight and space savings. The very thin wall insulation of these wires restricts their usage to low-voltage applications.

## Performance:

**Voltage rating:** Not specified by UL; 150 V for CSA.

**Temperature rating:** UL 1212: 80˚ C;
UL 1213: 150˚ C;
CSA: 200˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.
Thermax part numbers shown below meet specifications for both UL 1212 and 1213 styles.
For optional nickel-plated copper conductor, change **TE** in Thermax part number to **TEN**.

## Dimensions, Weights, and Resistance—UL 1212, 1213 wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 19/29 | .053 | (1.35) | .077 | (1.96) | 9.65 | (14.4) | 4.52 | (14.8) | 16-TE-1929-UL/CSA |
| 16 | 19/.0117 | .056 | (1.42) | .076 | (1.93) | 10.0 | (14.9) | 4.52 | (14.8) | 16-TE-19/0117-UL/CSA |
| 18 | 19/30 | .047 | (1.19) | .068 | (1.73) | 7.50 | (11.2) | 5.79 | (19.0) | 18-TE-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .068 | (1.73) | 7.50 | (11.2) | 6.01 | (19.7) | 18-TE-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .058 | (1.47) | 5.15 | (7.66) | 8.87 | (29.1) | 20-TE-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .058 | (1.47) | 5.05 | (7.52) | 9.56 | (31.4) | 20-TE-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .054 | (1.37) | 4.89 | (7.28) | 10.1 | (33.1) | 20-TE-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .050 | (1.27) | 3.51 | (5.22) | 14.8 | (48.5) | 22-TE-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .050 | (1.27) | 3.47 | (5.16) | 15.2 | (49.9) | 22-TE-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .046 | (1.17) | 3.06 | (4.55) | 16.5 | (54.1) | 22-TE-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .043 | (1.09) | 2.41 | (3.59) | 23.6 | (77.4) | 24-TE-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .043 | (1.09) | 2.41 | (3.59) | 23.9 | (78.4) | 24-TE-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .040 | (1.02) | 2.12 | (3.15) | 25.7 | (84.3) | 24-TE-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .038 | (.965) | 1.74 | (2.59) | 37.3 | (122) | 26-TE-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .038 | (.965) | 1.71 | (2.54) | 38.7 | (127) | 26-TE-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .035 | (.889) | 1.49 | (2.22) | 41.0 | (134) | 26-TE-126-UL/CSA |
| 28 | 19/40 | .015 | (.381) | .035 | (.889) | 1.32 | (1.96) | 63.1 | (207) | 28-TE-1940-UL/CSA |
| 28 | 7/36 | .015 | (.381) | .035 | (.889) | 1.32 | (1.96) | 62.0 | (203) | 28-TE-736-UL/CSA |
| 28 | SOLID | .013 | (.330) | .032 | (.813) | 1.13 | (1.68) | 65.3 | (214) | 28-TE-128-UL/CSA |
| 30 | 19/42 | .012 | (.305) | .032 | (.813) | 1.03 | (1.53) | 96.1 | (315) | 30-TE-1942-UL/CSA |
| 30 | 7/38 | .012 | (.305) | .032 | (.813) | 1.02 | (1.52) | 97.5 | (320) | 30-TE-738-UL/CSA |
| 30 | SOLID | .010 | (.254) | .029 | (.737) | .862 | (1.28) | 104 | (341) | 30-TE-130-UL/CSA |
| 32 | 19/44 | .010 | (.254) | .029 | (.737) | .801 | (1.19) | 153 | (502) | 32-TE-1944-UL/CSA |
| 32 | 7/40 | .009 | (.229) | .029 | (.737) | .784 | (1.17) | 166 | (544) | 32-TE-740-UL/CSA |
| 32 | SOLID | .008 | (.203) | .027 | (.686) | .692 | (1.03) | 162 | (531) | 32-TE-132-UL/CSA |
| 34 | 7/42 | .008 | (.191) | .028 | (.711) | .671 | (1.00) | 258 | (846) | 34-TE-742-UL/CSA |
| 36 | 7/44 | .006 | (.152) | .025 | (.635) | .518 | (.771) | 412 | (1351) | 36-TE-744-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 ft (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

# UL 1330, 1331; CSA 600V wire—extruded FEP insulation (heavy wall)

**UL 1330, 1331, CSA 600V** wires have heavy-wall extruded FEP (Fluorinated Ethylene Polypropylene) insulation for higher voltage ratings. UL 1330 rates these wires for up to 200˚ C continuous usage.

These wires are ideal for general appliance wiring and other applications where exposure to gasoline, gasoline vapor, or oil is expected.

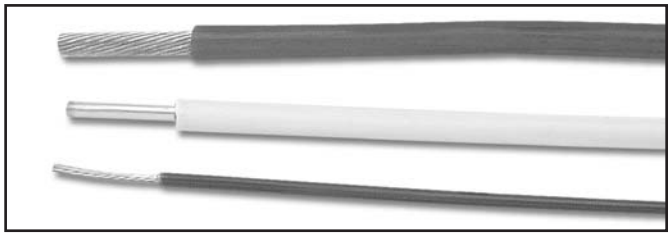
For thin-wall versions of these wires, see UL 1332, UL 1333, CSA 300V wires (following page).

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** UL 1330: 200˚ C (see note below);
UL 1331: 150˚ C;
CSA: 180˚ C (see note below).

* For tin-plated conductors, the 200˚ C temperature rating of UL 1330 (and CSA's 180˚ rating) applies only to wires with individual strand diameters .015" (26 AWG) or larger. For wires with smaller strand diameters, the temperature rating is 150˚ C.



## Construction Details

**Insulation:** Extruded FEP, wall thickness:
1 AWG: .045" (1.14 mm);
2–8 AWG: .030" (.76 mm);
10–26 AWG: .020" (.51 mm).

**Conductor:** Tin-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Silver-plated copper conductor. (When ordered with silver-plated copper conductors, all strandings are approved for 200˚ C under UL 1330 specifications.)

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1330, 1331, and CSA styles.
For optional silver-plated conductor, change **XDXZ** in Thermax part number to **XDX**.

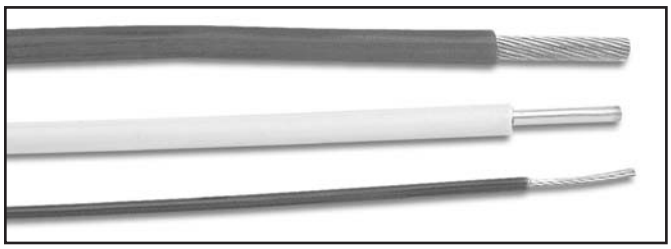
## Dimensions, Weights, and Resistance—UL 1330, 1331; CSA 600V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 817/30 | .370 | (9.40) | .485 | (12.3) | 339.0 | (504.0) | .138 | (.453) | 1-8XDXZ-817/30-UL |
| 2 | 665/30 | .332 | (8.43) | .406 | (10.3) | 261.0 | (388.0) | .165 | (.541) | 2-5XDXZ-66530-UL |
| 4 | 133/25 | .260 | (6.60) | .325 | (8.26) | 166.0 | (248.0) | .263 | (.863) | 4-5XDXZ-13325-UL |
| 6 | 133/27 | .206 | (5.23) | .272 | (6.91) | 111.0 | (165.0) | .418 | (1.37) | 6-5XDXZ-13327-UL |
| 8 | 133/29 | .165 | (4.19) | .230 | (5.84) | 72.8 | (108.0) | .680 | (2.23) | 8-5XDXZ-13329-UL |
| 10 | 37/.0167 | .113 | (2.87) | .158 | (4.01) | 41.0 | (61.0) | 1.19 | (3.90) | 10-3XDXZ-37/0167-UL/CSA |
| 10 | 37/26* | .110 | (2.79) | .156 | (3.96) | 38.7 | (57.6) | 1.19 | (3.90) | 10-3XDXZ-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .134 | (3.40) | 27.9 | (41.5) | 1.75 | (5.74) | 12-3XDXZ-19/0186-UL/CSA |
| 12 | 19/25* | .086 | (2.18) | .132 | (3.35) | 26.4 | (39.3) | 1.89 | (6.20) | 12-3XDXZ-1925-UL |
| 14 | 19/.0147 | .071 | (1.80) | .115 | (2.92) | 18.7 | (27.8) | 2.95 | (9.68) | 14-3XDXZ-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .111 | (2.82) | 17.9 | (26.6) | 2.99 | (9.81) | 14-3XDXZ-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .100 | (2.54) | 13.2 | (19.6) | 4.45 | (14.6) | 16-3XDXZ-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .097 | (2.46) | 12.6 | (18.8) | 4.73 | (15.5) | 16-3XDXZ-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .091 | (2.31) | 10.6 | (15.8) | 6.03 | (19.8) | 18-3XDXZ-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .091 | (2.31) | 10.3 | (15.3) | 6.26 | (20.5) | 18-3XDXZ-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .081 | (2.06) | 7.64 | (11.4) | 9.68 | (31.8) | 20-3XDXZ-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .081 | (2.06) | 7.50 | (11.2) | 9.96 | (32.7) | 20-3XDXZ-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .075 | (1.91) | 6.73 | (10.0) | 10.1 | (33.1) | 20-3XDXZ-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .074 | (1.88) | 5.73 | (8.53) | 15.2 | (49.9) | 22-3XDXZ-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .074 | (1.88) | 5.62 | (8.36) | 15.8 | (51.8) | 22-3XDXZ-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .068 | (1.73) | 5.03 | (7.49) | 16.2 | (53.1) | 22-3XDXZ-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .067 | (1.70) | 4.45 | (6.62) | 25.1 | (82.3) | 24-3XDXZ-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .067 | (1.70) | 4.43 | (6.59) | 25.4 | (83.3) | 24-3XDXZ-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .064 | (1.63) | 3.98 | (5.92) | 25.7 | (84.3) | 24-3XDXZ-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .063 | (1.60) | 3.61 | (5.37) | 41.0 | (134) | 26-3XDXZ-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .063 | (1.60) | 3.56 | (5.30) | 41.2 | (135) | 26-3XDXZ-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .060 | (1.52) | 3.27 | (4.87) | 41.0 | (134) | 26-3XDXZ-126-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 1332, 1333, CSA 300V wire—extruded FEP insulation (thin wall)



## Construction Details

**Insulation:** Extruded FEP, .013" (.33 mm) wall thickness.

**Conductor:** Tin-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Silver-plated copper conductor. (When ordered with silver-plated copper conductors, all strandings are approved for 200˚ C under UL 1332 specifications.)

**UL 1332, 1333, CSA 300V** wires have thin-wall extruded FEP (Fluorinated Ethylene Polypropylene) insulation for space and weight savings. UL 1332 rates these wires for up to 200˚ C continuous usage.

These wires are ideal for general appliance wiring and other applications where exposure to gasoline, gasoline vapor, or oil is expected.

For heavy-wall versions of these wires, see UL 1330, UL 1331, CSA 600V wires (previous page).

## Performance:

**Voltage rating:** 300V.

**Temperature rating:** UL 1332: 200˚ C (see note below);
UL 1333: 150˚ C;
CSA: 180˚ C (see note below).

* For tin-plated conductors, the 200˚ C temperature rating of UL 1332 (and CSA's 180˚ rating) applies only to wires with individual strand diameters .015" (26 AWG) or larger. For wires with smaller strand diameters, the temperature rating is 150˚ C.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1332, 1333, and CSA styles.
For optional silver-plated conductor, change **XDXZ** in Thermax part number to **XDX**.

## Dimensions, Weights, and Resistance—UL 1332, 1333; CSA 300V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/.0167 | .113 | (2.87) | .144 | (3.66) | 38.5 | (57.3) | 1.19 | (3.90) | 10-XDXZ-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .140 | (3.56) | 34.8 | (51.8) | 1.26 | (4.13) | 10-XDXZ-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .118 | (3.00) | 25.6 | (38.1) | 1.75 | (5.74) | 12-XDXZ-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .114 | (2.90) | 22.9 | (34.1) | 1.92 | (6.30) | 12-XDXZ-1925-UL |
| 14 | 19/.0147 | .071 | (1.80) | .101 | (2.57) | 16.9 | (25.2) | 2.95 | (9.68) | 14-XDXZ-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .097 | (2.46) | 15.7 | (23.4) | 3.03 | (9.94) | 14-XDXZ-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .086 | (2.18) | 11.3 | (16.8) | 4.45 | (14.6) | 16-XDXZ-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .086 | (2.18) | 10.8 | (16.1) | 4.73 | (15.5) | 16-XDXZ-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .079 | (2.01) | 8.70 | (12.9) | 6.03 | (19.8) | 18-XDXZ-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .079 | (2.01) | 8.46 | (12.6) | 6.26 | (20.5) | 18-XDXZ-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .068 | (1.73) | 6.04 | (8.99) | 9.68 | (31.8) | 20-XDXZ-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .068 | (1.73) | 5.87 | (8.74) | 9.96 | (32.7) | 20-XDXZ-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .061 | (1.55) | 5.12 | (7.62) | 10.1 | (33.1) | 20-XDXZ-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .060 | (1.52) | 4.28 | (6.37) | 15.2 | (49.9) | 22-XDXZ-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .060 | (1.52) | 4.20 | (6.25) | 15.8 | (51.8) | 22-XDXZ-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .054 | (1.37) | 3.65 | (5.43) | 16.2 | (53.1) | 22-XDXZ-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .053 | (1.35) | 3.07 | (4.57) | 25.1 | (82.3) | 24-XDXZ-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .053 | (1.35) | 3.07 | (4.57) | 25.4 | (83.3) | 24-XDXZ-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .049 | (1.24) | 2.72 | (4.05) | 25.7 | (84.3) | 24-XDXZ-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .048 | (1.22) | 2.36 | (3.51) | 41.0 | (134) | 26-XDXZ-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .048 | (1.22) | 2.32 | (3.45) | 41.2 | (135) | 26-XDXZ-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .045 | (1.14) | 2.09 | (3.11) | 41.0 | (134) | 26-XDXZ-126-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.

# UL 1371, 1538 wire—extruded PTFE insulation (low voltage)

**UL 1371 and 1538** wires have thin-wall extruded PTFE (Polytetrafluoroethylene) insulation for weight and space savings. The very thin wall insulation of these wires restricts their usage to low-voltage applications.

## Performance:

**Voltage rating:** UL 1371: Not specified by UL;
UL 1538: 125V.

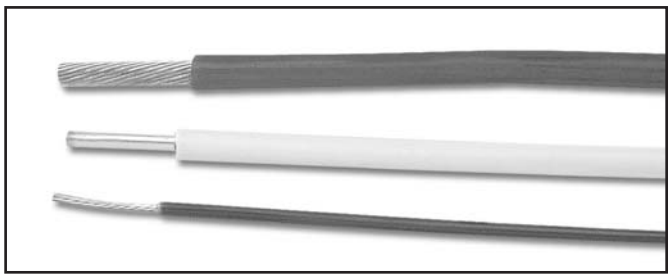
**Temperature rating:** 105˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color. Thermax part numbers shown below meet specifications for UL 1371 and UL 1538 styles.

For nickel-plated copper conductor, change **XT** in Thermax part number to **XTN**, **TE** to **TEN**, or **MT** to **MTN**.

For optional silver-plated high-strength copper conductor, change **XT** in Thermax part number to **XTTF**, **TE** to **TETF**, or **MT** to **MTTF**.

For optional nickel-plated high-strength copper conductor, change **XT** in Thermax part number to **XTTFN**, **TE** to **TETFN**, or **MT** to **MTTFN**.



## Construction Details

**Insulation:** Extruded PTFE, wall thickness:
8 AWG: .020" (.51 mm);
10–15 AWG: .013" (.33 mm);
16–19 AWG: .008" (.20 mm);
20–36 AWG: .0055" (.14 mm).

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL.

**Options:** Nickel-plated copper conductor;
nickel-plated high-strength copper alloy conductor;
silver-plated high-strength copper alloy conductor.

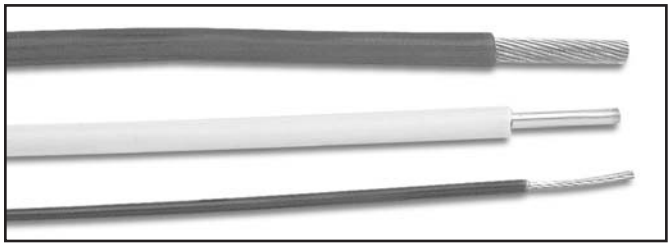
## Dimensions, Weights, and Resistance—UL 1371, 1538 wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .162 | (4.11) | .209 | (5.31) | 68.7 | (102) | .658 | (2.16) | 8-3XT-13329-UL |
| 10 | 37/26 | .108 | (2.74) | .141 | (3.58) | 35.1 | (52.2) | 1.19 | (3.90) | 10-XT-3726-UL |
| 12 | 19/25 | .084 | (2.13) | .120 | (3.05) | 24.8 | (36.9) | 1.81 | (5.94) | 12-XT-1925-UL |
| 14 | 19/27 | .067 | (1.70) | .102 | (2.59) | 16.4 | (24.4) | 2.87 | (9.41) | 14-XT-1927-UL |
| 16 | 19/29 | .053 | (1.35) | .076 | (1.93) | 9.75 | (14.5) | 4.54 | (14.9) | 16-TE-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .067 | (1.70) | 7.48 | (11.1) | 5.80 | (19.0) | 18-TE-1930-UL |
| 20 | 19/32 | .038 | (.965) | .052 | (1.32) | 4.67 | (6.95) | 8.87 | (29.1) | 20-MT-1932-UL |
| 20 | 7/28 | .038 | (.965) | .052 | (1.32) | 4.57 | (6.80) | 9.56 | (31.4) | 20-MT-728-UL |
| 22 | 19/34 | .030 | (.762) | .044 | (1.12) | 3.09 | (4.60) | 14.8 | (48.5) | 22-MT-1934-UL |
| 22 | 7/30 | .030 | (.762) | .044 | (1.12) | 3.05 | (4.54) | 15.2 | (49.9) | 22-MT-730-UL |
| 24 | 19/36 | .024 | (.610) | .038 | (.965) | 2.11 | (3.14) | 23.6 | (77.4) | 24-MT-1936-UL |
| 24 | 7/32 | .024 | (.610) | .038 | (.965) | 2.11 | (3.14) | 23.9 | (78.4) | 24-MT-732-UL |
| 26 | 19/38 | .019 | (.483) | .034 | (.864) | 1.52 | (2.26) | 37.3 | (122) | 26-MT-1938-UL |
| 26 | 7/34 | .019 | (.483) | .033 | (.838) | 1.43 | (2.13) | 38.7 | (127) | 26-MT-734-UL |
| 26 | SOLID | .016 | (.406) | .029 | (.737) | 1.21 | (1.80) | 41.0 | (134) | 26-MT-126-UL |
| 28 | 19/40 | .015 | (.381) | .029 | (.737) | 1.03 | (1.53) | 63.1 | (207) | 28-MT-1940-UL |
| 28 | 7/36 | .015 | (.381) | .028 | (.711) | .989 | (1.47) | 62.0 | (203) | 28-MT-736-UL |
| 28 | SOLID | .013 | (.330) | .026 | (.660) | .871 | (1.30) | 65.3 | (214) | 28-MT-128-UL |
| 30 | 19/42 | .012 | (.305) | .026 | (.660) | .776 | (1.15) | 96.1 | (315) | 30-MT-1942-UL |
| 30 | 7/38 | .012 | (.305) | .025 | (.635) | .719 | (1.07) | 97.5 | (320) | 30-MT-738-UL |
| 30 | SOLID | .010 | (.254) | .023 | (.584) | .623 | (.927) | 104 | (341) | 30-MT-130-UL |
| 32 | 19/44 | .010 | (.254) | .023 | (.584) | .572 | (.851) | 153 | (502) | 32-MT-1944-UL |
| 32 | 7/40 | .009 | (.229) | .022 | (.559) | .519 | (.772) | 166 | (544) | 32-MT-740-UL |
| 32 | SOLID | .008 | (.203) | .021 | (.533) | .481 | (.716) | 162 | (531) | 32-MT-132-UL |
| 34 | 7/42 | .007 | (.191) | .020 | (.508) | .410 | (.611) | 274 | (897) | 34-MT-742-UL |
| 34 | SOLID | .006 | (.160) | .019 | (.483) | .363 | (.541) | 286 | (939) | 34-MT-134-UL |
| 36 | 7/44 | .006 | (.152) | .019 | (.483) | .339 | (.505) | 415 | (1360) | 36-MT-744-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 1508, 1513, 1516, 1517, 1523, 1558; CSA 105˚ 150V wire



## Construction Details

**Insulation:** Extruded ETFE, .0065" (.165 mm) wall thickness, exceeding the requirements of:
UL 1508: .0055" (.14 mm),
UL 1513: .005" (.13 mm),
UL 1516: .004" (.10 mm),
UL 1517: .006" (.15 mm),
UL 1523: .005" (.13 mm),
UL 1558: .004" (.10 mm),
CSA: .005" (.13 mm).

**Conductor:** Tin-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** None required (under .050" diameter).

**Options:** Silver- or nickel-plated copper or high-strength copper alloy conductor.

**UL 1508, 1513, 1516, 1517,1523, 1558, and CSA 105˚150V** wires have thin-wall extruded ETFE (ethylene Tetrafluoroethylene) insulation for weight and space savings.

ETFE insulation is mechanically tough, and has exceptional resistance to radiation and chemicals.

Heavier-wall versions of these wires (UL 1643 and 1644) are also available.

## Performance:

**Voltage rating:** CSA:150V;
UL 1508: 30V;
Other UL styles: no voltage specified.

**Temperature rating:** CSA: 105˚ C;
UL 1558: 125˚ C;
Other UL styles: 105˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.
Thermax part numbers shown below meet specifications for all listed UL and CSA styles.
To order with optional conductor materials:
For silver-plated copper conductor, change **MCFZ** in Thermax part number to **MCF**.
For silver-plated high-strength copper conductor, change **MCFZ** in Thermax part number to **MCFTF**.
For nickel-plated copper conductor, change **MCFZ** in Thermax part number to **MCFN**.
For nickel-plated high-strength copper conductor, change **MCFZ** in Thermax part number to **MCFTFN**.

## Dimensions, Weights, and Resistance—UL 1508, 1513, 1516, 1517, 1523, 1558; CSA 105˚150V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 19/32 | .038 | (.965) | .051 | (1.30) | 4.48 | (6.67) | 9.68 | (31.8) | 20-MCFZ-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .051 | (1.30) | 4.35 | (6.47) | 9.96 | (32.7) | 20-MCFZ-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .045 | (1.14) | 3.87 | (5.76) | 10.1 | (33.1) | 20-MCFZ-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .044 | (1.12) | 3.02 | (4.49) | 15.2 | (49.9) | 22-MCFZ-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .044 | (1.12) | 2.93 | (4.36) | 15.8 | (51.8) | 22-MCFZ-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .039 | (.991) | 2.57 | (3.82) | 16.2 | (53.1) | 22-MCFZ-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .037 | (.940) | 1.94 | (2.89) | 25.1 | (82.3) | 24-MCFZ-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .037 | (.940) | 1.92 | (2.86) | 25.4 | (83.3) | 24-MCFZ-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .033 | (.838) | 1.69 | (2.52) | 25.7 | (84.3) | 24-MCFZ-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .032 | (.813) | 1.34 | (1.99) | 40.1 | (132) | 26-MCFZ-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .032 | (.813) | 1.34 | (1.99) | 41.2 | (135) | 26-MCFZ-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .029 | (.737) | 1.15 | (1.71) | 41.0 | (134) | 26-MCFZ-126-UL/CSA |
| 28 | 7/36 | .015 | (.381) | .028 | (.711) | .870 | (1.29) | 66.0 | (216) | 28-MCFZ-736-UL/CSA |
| 28 | SOLID | .013 | (.330) | .026 | (.660) | .800 | (1.19) | 65.3 | (214) | 28-MCFZ-128-UL/CSA |
| 30 | 7/38 | .012 | (.305) | .025 | (.635) | .637 | (.948) | 107 | (351) | 30-MCFZ-738-UL/CSA |
| 30 | SOLID | .010 | (.254) | .023 | (.584) | .555 | (.826) | 104 | (341) | 30-MCFZ-130-UL/CSA |
| 32 | 7/40 | .009 | (.229) | .022 | (.559) | .457 | (.680) | 182 | (597) | 32-MCFZ-740-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

# UL 1570; CSA 600V wire—mineral-filled PTFE insulation (abrasion resistant)

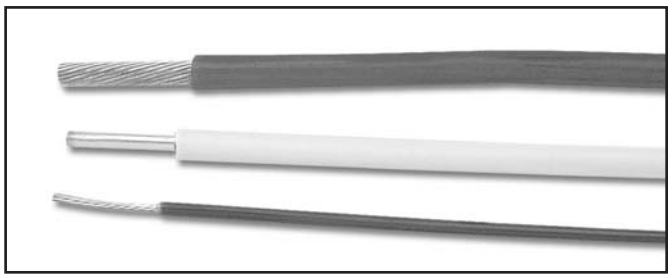
**UL 1570, CSA 600V** wires have extruded mineral-filled PTFE (Polytetrafluoroethylene) insulation. This insulation's enhanced abrasion resistance makes these wires suitable as replacements for wires with asbestos or braided glass insulations.

These wires are ideal for applications where chemical exposure, temperature extremes, and dielectric stresses are possible.

## Performance:

**Voltage rating:** 600V. (UL allows 2,500V peak for electronic use only).

**Temperature rating:** 250˚ C.



## Construction Details

**Insulation:** Extruded mineral-filled PTFE, wall thickness:
8–10 AWG: .030" (.76 mm);
12–28 AWG: .020" (.05 mm).

**Conductor:** Nickel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Nickel-plated high-strength copper alloy conductor.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1570 and CSA styles.
For optional nickel-plated high-strength copper conductor, change **XTN** in Thermax part number to **XTTFN**.

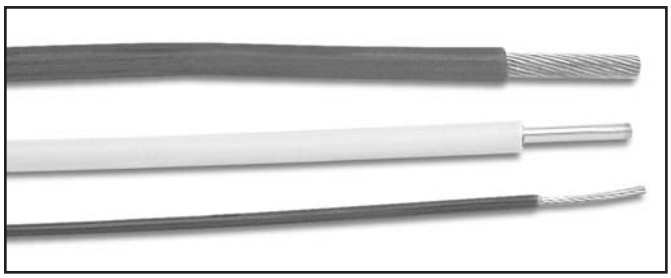
## Dimensions, Weights, and Resistance—UL 1570; CSA 600V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .163 | (4.14) | .230 | (5.84) | 71.7 | (107) | .694 | (2.28) | 8-F5XTN-13329-UL/CSA |
| 10 | 37/.0167 | .113 | (2.87) | .179 | (4.55) | 44.9 | (66.8) | 1.25 | (4.10) | 10-F5XTN-37/0167-UL/CSA |
| 10 | 37/26* | .108 | (2.74) | .174 | (4.42) | 42.3 | (63.0) | 1.23 | (4.03) | 10-F5XTN-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .134 | (3.40) | 27.1 | (40.3) | 1.66 | (5.44) | 12-F3XTN-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .130 | (3.30) | 26.4 | (39.3) | 1.89 | (6.20) | 12-F3XTN-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .115 | (2.92) | 19.2 | (28.6) | 2.70 | (8.86) | 14-F3XTN-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .112 | (2.84) | 17.8 | (26.5) | 3.00 | (9.84) | 14-F3XTN-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .102 | (2.59) | 13.4 | (19.9) | 4.41 | (14.5) | 16-F3XTN-190117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .099 | (2.51) | 12.7 | (19.0) | 4.76 | (15.6) | 16-F3XTN-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .093 | (2.36) | 10.7 | (16.0) | 6.10 | (20.0) | 18-F3XTN-1930-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .083 | (2.11) | 7.89 | (11.7) | 9.68 | (31.8) | 20-F3XTN-1932-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .074 | (1.88) | 5.82 | (8.66) | 15.7 | (51.5) | 22-F3XTN-1934-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .068 | (1.73) | 4.54 | (6.76) | 25.2 | (82.7) | 24-F3XTN-1936-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 1659; CSA 600V wire—extruded PTFE insulation (heavy wall)



## Construction Details

**Insulation:** Extruded PTFE, wall thickness:
8 AWG: .030" (.76 mm);
10-30 AWG: .020" (.51 mm).

**Conductor:** NIckel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**UL 1659, CSA 600V (250˚ C)** wires have heavy-wall extruded PTFE (Polytetrafluoroethylene) insulation for durability and higher voltage rating.

These wires are ideal for general appliance wiring and other applications where chemical exposure, temperature extremes, and dielectric stresses are possible.

For thin-wall versions of these wires, see UL 1815, CSA 300V wires (page 104).

## Performance:

**Voltage rating:** 600V. (UL allows 2,500V peak for electronic use only).

**Temperature rating:** 250˚ C.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1659 and CSA styles.

## Dimensions, Weights, and Resistance—UL 1659; CSA 600V (250˚ C) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .162 | (4.11) | .230 | (5.84) | 76.5 | (114) | .658 | (2.16) | 8-5XTN-13329-UL/CSA |
| 10 | 37/.0167 | .113 | (2.87) | .159 | (4.04) | 41.8 | (62.2) | 1.19 | (3.90) | 10-3XTN-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .154 | (3.91) | 37.6 | (56.0) | 1.19 | (3.90) | 10-3XTN-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .134 | (3.40) | 28.1 | (41.8) | 1.81 | (5.94) | 12-3XTN-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .130 | (3.30) | 26.0 | (38.7) | 1.81 | (5.94) | 12-3XTN-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .115 | (2.92) | 18.7 | (27.8) | 2.87 | (9.41) | 14-3XTN-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .111 | (2.82) | 17.5 | (26.0) | 2.87 | (9.41) | 14-3XTN-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .102 | (2.59) | 13.3 | (19.8) | 4.52 | (14.8) | 16-3XTN-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .099 | (2.51) | 12.5 | (18.6) | 4.54 | (14.9) | 16-3XTN-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .093 | (2.36) | 10.6 | (15.8) | 5.80 | (19.0) | 18-3XTN-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .093 | (2.36) | 10.5 | (15.6) | 6.01 | (19.7) | 18-3XTN-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .083 | (2.11) | 7.79 | (11.6) | 8.87 | (29.1) | 20-3XTN-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .083 | (2.11) | 7.71 | (11.5) | 9.56 | (31.4) | 20-3XTN-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .077 | (1.96) | 7.00 | (10.4) | 10.1 | (33.1) | 20-3XTN-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .074 | (1.88) | 5.78 | (8.60) | 14.8 | (48.5) | 22-3XTN-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .074 | (1.88) | 5.78 | (8.60) | 15.2 | (49.9) | 22-3XTN-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .069 | (1.75) | 5.03 | (7.49) | 16.5 | (54.1) | 22-3XTN-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .068 | (1.73) | 4.49 | (6.68) | 23.6 | (77.4) | 24-3XTN-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .068 | (1.73) | 4.49 | (6.68) | 23.9 | (78.4) | 24-3XTN-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .064 | (1.63) | 4.01 | (5.97) | 25.7 | (84.3) | 24-3XTN-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .063 | (1.60) | 3.65 | (5.43) | 37.3 | (122) | 26-3XTN-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .063 | (1.60) | 3.65 | (5.43) | 38.7 | (127) | 26-3XTN-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .060 | (1.52) | 3.27 | (4.87) | 41.0 | (134) | 26-3XTN-126-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.

# UL 1726, 300V wire—extruded PFA insulation (thin wall)

**UL 1726** wires have thin-wall extruded PFA (Perfluoroalkoxy) insulation for weight and space savings.

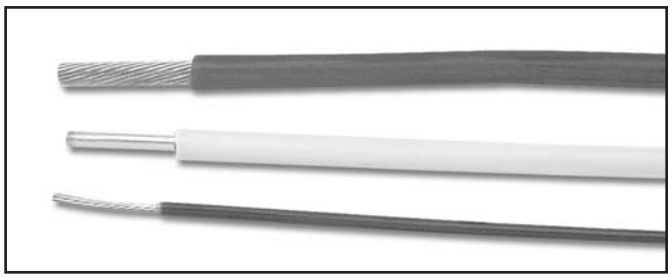
This insulation offers excellent long-term mechanical stability in high-temperature environments, and has superior resistance to chemical exposure.

For heavy-wall versions of these wires, see UL 1727 wires (following page).

## Performance:

**Voltage rating:** 300V.

**Temperature rating:** 250˚ C.



## Construction Details

**Insulation:** Extruded PFA, wall thickness:
2–4 AWG: .030" (.76 mm);
6–8 AWG: .020" (.51 mm);
10–32 AWG: .013" (.33 mm).

**Conductor:** Nickel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL.

**Options:** Silver-plated copper or high-strength copper alloy conductor.

**Ordering Information:** Specify Thermax part number, UL style, and color.
To order with optional conductor materials:
For silver-plated copper conductor, change **XPAN** in Thermax part number to **XPA**.
For silver-plated high-strength copper alloy conductor, change **XPAN** in Thermax part number to **XPATF**.

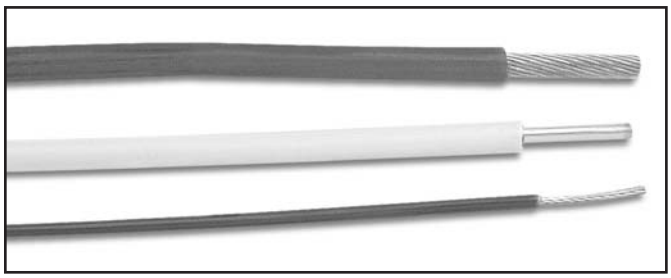
## Dimensions, Weights, and Resistance—UL 1726 wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 665/30 | .330 | (8.38) | .406 | (10.3) | 259 | (385) | .170 | (.558) | 2-5XPAN-66530-UL |
| 4 | 133/25 | .256 | (6.50) | .327 | (8.31) | 165 | (246) | .275 | (.902) | 4-5XPAN-13325-UL |
| 6 | 133/27 | .204 | (5.18) | .252 | (6.40) | 100 | (150) | .436 | (1.43) | 6-3XPAN-13327-UL |
| 8 | 133/29 | .163 | (4.14) | .210 | (5.33) | 66.3 | (98.7) | .694 | (2.28) | 8-3XPAN-13329-UL |
| 10 | 37/26 | .108 | (2.74) | .139 | (3.53) | 34.1 | (50.7) | 1.23 | (4.03) | 10-XPAN-3726-UL |
| 12 | 19/25 | .084 | (2.13) | .116 | (2.95) | 24.1 | (35.9) | 1.89 | (6.20) | 12-XPAN-1925-UL |
| 14 | 19/27 | .067 | (1.69) | .098 | (2.49) | 15.6 | (23.2) | 3.00 | (9.84) | 14-XPAN-1927-UL |
| 16 | 19/29 | .053 | (1.35) | .086 | (2.18) | 10.8 | (16.1) | 4.76 | (15.6) | 16-XPAN-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .079 | (2.01) | 8.70 | (12.9) | 6.10 | (20.0) | 18-XPAN-1930-UL |
| 18 | 7/26 | .048 | (1.21) | .079 | (2.01) | 8.46 | (12.6) | 6.50 | (21.3) | 18-XPAN-726-UL |
| 20 | 19/32 | .038 | (.955) | .068 | (1.73) | 6.04 | (8.99) | 9.68 | (31.8) | 20-XPAN-1932-UL |
| 20 | 7/28 | .038 | (.960) | .068 | (1.73) | 5.87 | (8.74) | 9.96 | (32.7) | 20-XPAN-728-UL |
| 20 | SOLID | .032 | (.813) | .061 | (1.55) | 5.12 | (7.62) | 10.3 | (33.8) | 20-XPAN-120-UL |
| 22 | 19/34 | .030 | (.752) | .060 | (1.52) | 4.28 | (6.37) | 15.7 | (51.5) | 22-XPAN-1934-UL |
| 22 | 7/30 | .030 | (.762) | .060 | (1.52) | 4.20 | (6.25) | 16.0 | (52.5) | 22-XPAN-730-UL |
| 22 | SOLID | .025 | (.643) | .054 | (1.37) | 3.65 | (5.43) | 17.3 | (56.7) | 22-XPAN-122-UL |
| 24 | 19/36 | .024 | (.597) | .053 | (1.35) | 3.07 | (4.57) | 25.9 | (85.0) | 24-XPAN-1936-UL |
| 24 | 7/32 | .024 | (.610) | .053 | (1.35) | 3.07 | (4.57) | 25.4 | (83.4) | 24-XPAN-732-UL |
| 24 | SOLID | .020 | (.511) | .049 | (1.24) | 2.72 | (4.05) | 26.7 | (87.6) | 24-XPAN-124-UL |
| 26 | 19/38 | .019 | (.483) | .048 | (1.22) | 2.43 | (3.62) | 42.2 | (138) | 26-XPAN-1938-UL |
| 28 | 7/36 | .015 | (.381) | .045 | (1.14) | 1.96 | (2.92) | 67.9 | (223) | 28-XPAN-736-UL |
| 30 | 7/38 | .012 | (.305) | .042 | (1.07) | 1.61 | (2.40) | 107 | (351) | 30-XPAN-738-UL |
| 32 | 7/40 | .010 | (.244) | .036 | (.914) | 1.15 | (1.71) | 182 | (597) | 32-XPAN-740-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 1727, 600V wire—extruded PFA insulation (thick wall)



## Construction Details

**Insulation:** Extruded PFA, wall thickness:
4/0–1 AWG: .045" (1.14 mm);
2–8 AWG: .030" (.76 mm);
10–32 AWG: .020" (.51 mm).

**Conductor:** Nickel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL.

**Options:** Silver-plated copper or high-strength copper alloy conductor.

**UL 1727** wires have thick-wall extruded PFA (Perfluoroalkoxy) insulation for durability and higher voltage rating.

This insulation offers excellent long-term mechanical stability in high-temperature environments, and has superior resistance to chemical exposure.

For thin-wall versions of these wires, see UL 1726 wires (previous page).

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** 250˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.
To order with optional conductor materials:
For silver-plated copper conductor, change **XPAN** in Thermax part number to **XPA**.
For silver-plated high-strength copper alloy conductor, change **XPAN** in Thermax part number to **XPATF**.

## Dimensions, Weights, and Resistance—UL 1727 wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 665/30 | .330 | (8.38) | .406 | (10.3) | 259 | (385) | .170 | (.558) | 2-5XPAN-66530-UL |
| 4 | 133/25 | .256 | (6.50) | .327 | (8.31) | 165 | (246) | .275 | (.902) | 4-5XPAN-13325-UL |
| 6 | 133/27 | .204 | (5.18) | .272 | (6.91) | 108 | (161) | .436 | (1.43) | 6-5XPAN-13327-UL |
| 8 | 133/29 | .163 | (4.14) | .230 | (5.84) | 72.9 | (108) | .694 | (2.28) | 8-5XPAN-13329-UL |
| 10 | 37/26 | .108 | (2.74) | .156 | (3.96) | 38.9 | (57.9) | 1.23 | (4.03) | 10-3XPAN-3726-UL |
| 12 | 19/25 | .084 | (2.13) | .132 | (3.35) | 26.4 | (39.3) | 1.89 | (6.20) | 12-3XPAN-1925-UL |
| 14 | 19/27 | .067 | (1.69) | .111 | (2.82) | 17.9 | (26.6) | 3.00 | (9.84) | 14-3XPAN-1927-UL |
| 16 | 19/29 | .053 | (1.35) | .097 | (2.46) | 12.9 | (19.2) | 4.76 | (15.6) | 16-3XPAN-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .091 | (2.31) | 10.5 | (15.6) | 6.10 | (20.0) | 18-3XPAN-1930-UL |
| 18 | 7/26 | .048 | (1.21) | .091 | (2.31) | 10.3 | (15.3) | 6.50 | (21.3) | 18-3XPAN-726-UL |
| 20 | 19/32 | .038 | (.955) | .081 | (2.06) | 7.64 | (11.4) | 9.68 | (31.8) | 20-3XPAN-1932-UL |
| 20 | 7/28 | .038 | (.960) | .081 | (2.06) | 7.50 | (11.2) | 9.96 | (32.7) | 20-3XPAN-728-UL |
| 20 | SOLID | .032 | (.813) | .075 | (1.91) | 6.73 | (10.0) | 10.3 | (33.8) | 20-3XPAN-120-UL |
| 22 | 19/34 | .030 | (.752) | .073 | (1.85) | 5.73 | (8.53) | 15.7 | (51.5) | 22-3XPAN-1934-UL |
| 22 | 7/30 | .030 | (.762) | .073 | (1.85) | 5.62 | (8.36) | 16.0 | (52.5) | 22-3XPAN-730-UL |
| 22 | SOLID | .025 | (.643) | .068 | (1.73) | 5.03 | (7.49) | 17.3 | (56.7) | 22-3XPAN-122-UL |
| 24 | 19/36 | .024 | (.597) | .067 | (1.70) | 4.45 | (6.62) | 25.2 | (82.7) | 24-3XPAN-1936-UL |
| 24 | 7/32 | .024 | (.610) | .067 | (1.70) | 4.43 | (6.59) | 25.4 | (83.3) | 24-3XPAN-732-UL |
| 24 | SOLID | .020 | (.511) | .063 | (1.60) | 3.98 | (5.92) | 26.7 | (87.6) | 24-3XPAN-124-UL |
| 26 | 19/38 | .019 | (.483) | .062 | (1.57) | 3.59 | (5.34) | 41.0 | (134) | 26-3XPAN-1938-UL |
| 28 | 7/36 | .015 | (.381) | .059 | (1.50) | 3.05 | (4.54) | 66.0 | (216) | 28-3XPAN-736-UL |
| 30 | 7/38 | .012 | (.305) | .056 | (1.42) | 2.64 | (3.93) | 107 | (351) | 30-3XPAN-738-UL |
| 32 | 7/40 | .010 | (.244) | .053 | (1.35) | 2.28 | (3.39) | 182 | (597) | 32-3XPAN-740-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

# UL 1815; CSA 300V wire—extruded PTFE insulation (thin wall)

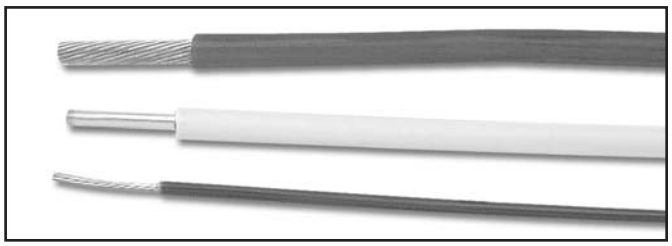
**UL 1815** wires have thin-wall extruded PTFE (Polytetrafluoroethylene) insulation for weight and space savings.

These wires are ideal for general appliance wiring and other applications where chemical exposure, temperature extremes, and dielectric stresses are possible.

## Performance:

**Voltage rating:** 300V (UL allows 600V for electronic use only).

**Temperature rating:** 250˚ C.



## Construction Details

**Insulation:** Extruded PTFE, .013" (.33 mm) wall thickness.

**Conductor:** Nickel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Ordering Information:** Specify Thermax part number, UL or CSA style, and color.
Thermax part numbers shown below meet specifications for UL 1815 and CSA styles.

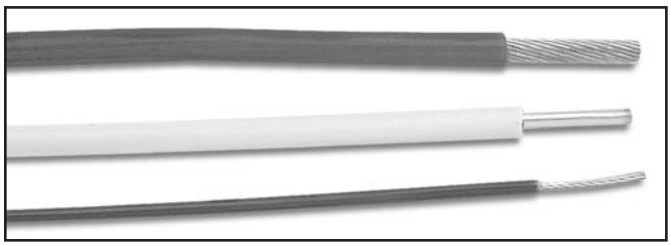
## Dimensions, Weights, and Resistance—UL 1815; CSA 300V (250˚ C) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/.0167 | .113 | (2.87) | .146 | (3.71) | 39.3 | (58.5) | 1.19 | (3.90) | 10-XTN-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .141 | (3.58) | 35.1 | (52.2) | 1.19 | (3.90) | 10-XTN-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .125 | (3.18) | 26.3 | (39.1) | 1.81 | (5.94) | 12-XTN-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .116 | (2.95) | 23.2 | (34.5) | 1.81 | (5.94) | 12-XTN-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .105 | (2.67) | 17.1 | (25.4) | 2.87 | (9.41) | 14-XTN-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.70) | .102 | (2.59) | 16.4 | (24.4) | 2.87 | (9.41) | 14-XTN-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .090 | (2.29) | 11.6 | (17.3) | 4.52 | (14.8) | 16-XTN-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .086 | (2.18) | 11.0 | (16.4) | 4.54 | (14.9) | 16-XTN-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .079 | (2.01) | 8.79 | (13.1) | 5.80 | (19.0) | 18-XTN-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.22) | .079 | (2.01) | 8.72 | (13.0) | 6.01 | (19.7) | 18-XTN-726-UL/CSA |
| 20 | 19/32 | .038 | (.965) | .068 | (1.73) | 6.09 | (9.06) | 8.87 | (29.1) | 20-XTN-1932-UL/CSA |
| 20 | 7/28 | .038 | (.965) | .068 | (1.73) | 6.01 | (8.94) | 9.56 | (31.4) | 20-XTN-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .061 | (1.55) | 5.12 | (7.62) | 10.1 | (33.1) | 20-XTN-120-UL/CSA |
| 22 | 19/34 | .030 | (.762) | .060 | (1.52) | 4.34 | (6.46) | 14.8 | (48.5) | 22-XTN-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .060 | (1.52) | 4.29 | (6.38) | 15.2 | (49.9) | 22-XTN-730-UL/CSA |
| 22 | SOLID | .025 | (.635) | .054 | (1.37) | 3.65 | (5.43) | 16.5 | (54.1) | 22-XTN-122-UL/CSA |
| 24 | 19/36 | .024 | (.610) | .053 | (1.35) | 3.13 | (4.66) | 23.6 | (77.4) | 24-XTN-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .053 | (1.35) | 3.13 | (4.66) | 23.9 | (78.4) | 24-XTN-732-UL/CSA |
| 24 | SOLID | .020 | (.508) | .049 | (1.24) | 2.72 | (4.05) | 25.7 | (84.3) | 24-XTN-124-UL/CSA |
| 26 | 19/38 | .019 | (.483) | .048 | (1.22) | 2.40 | (3.57) | 37.3 | (122) | 26-XTN-1938-UL/CSA |
| 26 | 7/34 | .019 | (.483) | .048 | (1.22) | 2.36 | (3.51) | 38.7 | (127) | 26-XTN-734-UL/CSA |
| 26 | SOLID | .016 | (.406) | .045 | (1.14) | 2.09 | (3.11) | 41.0 | (134) | 26-XTN-126-UL/CSA |
| 28 | 19/40 | .015 | (.381) | .045 | (1.14) | 1.91 | (2.84) | 63.1 | (207) | 28-XTN-1940-UL/CSA |
| 28 | 7/36 | .015 | (.381) | .045 | (1.14) | 1.91 | (2.84) | 62.0 | (203) | 28-XTN-736-UL/CSA |
| 28 | SOLID | .013 | (.330) | .042 | (1.07) | 1.68 | (2.50) | 65.3 | (214) | 28-XTN-128-UL/CSA |
| 30 | 7/38 | .012 | (.305) | .041 | (1.04) | 1.52 | (2.26) | 97.5 | (320) | 30-XTN-738-UL |
| 32 | 7/40 | .009 | (.229) | .039 | (.991) | 1.29 | (1.92) | 166 | (544) | 32-XTN-740-UL |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
* CSA specifies these wires as "for electronic use only."
All values are nominal unless otherwise indicated.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 10086; CSA 600V wire—200˚ C, Tefzel® 750 insulation



## Construction Details

**Insulation:** Extruded modified copolymer of ETFE, .010" (.25 mm) minimum wall thickness.

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Bare copper, nickel-plated copper, or tin-plated copper conductor*.

* For tin-plated conductors, the 200˚ C temperature rating applies only to wires with individual strand diameters .015" (26 AWG) or larger. For wires with smaller strand diameters, the temperature rating is 150˚ C.

**UL 10086, CSA 600V** wires are insulated with an extruded modified copolymer of ETFE (Ethylene Tetrafluoroethylene).

These wires are ideal replacements for older wire constructions with silicone rubber insulation and treated glass braid. They feature improved handling and performance characteristics, thinner size, and lighter weight than identically-rated silicone rubber constructions.

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** 200˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.

To order with optional conductor materials:
For bare copper conductor, change **CF** in Thermax part number to **CFP**.
For nickel-plated copper conductor, change **CF** in Thermax part number to **CFN**.
For tin-plated copper conductor, change **CF** in Thermax part number to **CFZ**.

## Dimensions, Weights, and Resistance—UL 10086, CSA 600V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .162 | (4.11) | .233 | (5.74) | 72.6 | (108) | .658 | (2.16) | 8-CF200-13329-UL |
| 10 | 37/.0167 | .113 | (2.87) | .146 | (3.48) | 38.0 | (56.7) | 1.19 | (3.90) | 10-CF200-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .141 | (3.38) | 33.7 | (50.2) | 1.19 | (3.90) | 10-CF200-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .121 | (2.84) | 24.6 | (36.6) | 1.81 | (5.94) | 12-CF200-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .117 | (2.74) | 22.6 | (33.7) | 1.81 | (5.94) | 12-CF200-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .093 | (2.29) | 14.7 | (22.0) | 2.87 | (9.41) | 14-CF200-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.69) | .090 | (2.18) | 13.8 | (20.5) | 2.88 | (9.45) | 14-CF200-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .079 | (1.93) | 9.77 | (14.6) | 4.52 | (14.8) | 16-CF200-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .076 | (1.83) | 9.11 | (13.6) | 4.52 | (14.8) | 16-CF200-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .070 | (1.63) | 7.42 | (11.0) | 5.79 | (19.0) | 18-CF200-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.21) | .071 | (1.65) | 7.27 | (10.8) | 6.01 | (19.7) | 18-CF200-726-UL/CSA |
| 18 | SOLI D | .040 | (1.02) | .071 | (1.45) | 7.27 | (10.8) | 6.39 | (20.9) | 18-CF200-118-UL/CSA |
| 20 | 19/32 | .038 | (.955) | .061 | (1.40) | 5.04 | (7.50) | 9.10 | (29.8) | 20-CF200-1932-UL/CSA |
| 20 | 7/28 | .038 | (.960) | .061 | (1.40) | 4.91 | (7.31) | 9.56 | (31.4) | 20-CF200-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .055 | (1.24) | 4.36 | (6.49) | 10.3 | (33.8) | 20-CF200-120-UL/CSA |
| 22 | 19/34 | .030 | (.752) | .053 | (1.19) | 3.43 | (5.11) | 14.8 | (48.5) | 22-CF200-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .053 | (1.19) | 3.38 | (5.03) | 15.2 | (49.9) | 22-CF200-730-UL/CSA |
| 22 | SOLID | .025 | (.643) | .048 | (1.07) | 3.00 | (4.47) | 16.5 | (54.1) | 22-CF200-122-UL/CSA |
| 24 | 19/36 | .024 | (.597) | .047 | (1.04) | 2.42 | (3.59) | 23.6 | (77.4) | 24-CF200-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .047 | (1.04) | 2.41 | (3.58) | 23.9 | (78.4) | 24-CF200-732-UL/CSA |
| 24 | SOLID | .020 | (.511) | .043 | (.940) | 2.13 | (3.17) | 25.7 | (84.3) | 24-CF200-124-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.

# UL 10109; CSA 300V wire—200˚ C, Tefzel® 750 insulation

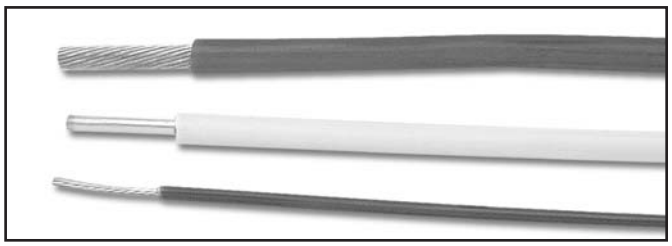
**UL 10109, CSA 300V** wires are insulated with an extruded modified copolymer of ETFE (ethylene Tetrafluoroethylene).

These wires are ideal replacements for older wire constructions with silicone rubber insulation and treated glass braid. They feature improved handling and performance characteristics, thinner size, and lighter weight than identically-rated silicone rubber constructions.

## Performance:

**Voltage rating:** 300V.

**Temperature rating:** 200˚ C.



## Construction Details

**Insulation:** Extruded modified copolymer of ETFE, .006" (.15 mm) minimum wall thickness.

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Surface printed as required by UL or CSA.

**Options:** Bare copper, nickel-plated copper, or tin-plated copper conductor*.

* For tin-plated conductors, the 200˚ C temperature rating applies only to wires with individual strand diameters .015" (26 AWG) or larger. For wires with smaller strand diameters, the temperature rating is 150˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.

To order with optional conductor materials:
For bare copper conductor, change **MCF** in Thermax part number to **MCFP**.
For nickel-plated copper conductor, change **MCF** in Thermax part number to **MCFN**.
For tin-plated copper conductor, change **MCF** in Thermax part number to **MCFZ**.

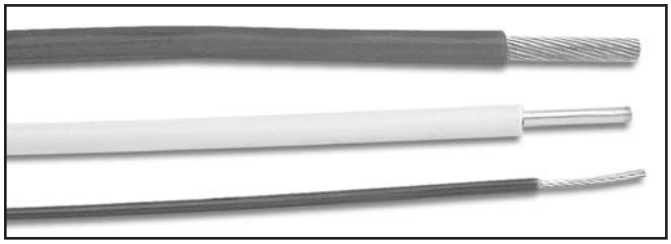
## Dimensions, Weights, and Resistance—UL 10109; CSA 300V wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .162 | (4.11) | .216 | (5.49) | 66.0 | (98.4) | .658 | (2.16) | 8-MCF200-13329-UL |
| 10 | 37/.0167 | .113 | (2.87) | .137 | (3.48) | 34.5 | (51.3) | 1.19 | (3.90) | 10-MCF200-37/0167-UL/CSA |
| 10 | 37/26* | .109 | (2.77) | .133 | (3.38) | 31.4 | (46.7) | 1.19 | (3.90) | 10-MCF200-3726-UL |
| 12 | 19/.0186 | .088 | (2.24) | .112 | (2.84) | 22.1 | (32.9) | 1.81 | (5.94) | 12-MCF200-19/0186-UL/CSA |
| 12 | 19/25* | .084 | (2.13) | .108 | (2.74) | 20.2 | (30.1) | 1.81 | (5.94) | 12-MCF200-1925-UL |
| 14 | 19/.0147 | .070 | (1.78) | .090 | (2.29) | 13.9 | (20.7) | 2.87 | (9.41) | 14-MCF200-19/0147-UL/CSA |
| 14 | 19/27* | .067 | (1.69) | .086 | (2.18) | 12.9 | (19.2) | 2.88 | (9.45) | 14-MCF200-1927-UL |
| 16 | 19/.0117 | .056 | (1.42) | .076 | (1.93) | 9.14 | (13.6) | 4.52 | (14.8) | 16-MCF200-19/0117-UL/CSA |
| 16 | 19/29* | .053 | (1.35) | .072 | (1.83) | 8.39 | (12.5) | 4.52 | (14.8) | 16-MCF200-1929-UL |
| 18 | 19/30 | .047 | (1.19) | .064 | (1.63) | 6.94 | (10.3) | 5.79 | (19.0) | 18-MCF200-1930-UL/CSA |
| 18 | 7/26 | .048 | (1.21) | .065 | (1.65) | 6.78 | (10.1) | 6.01 | (19.7) | 18-MCF200-726-UL/CSA |
| 18 | SOLI D | .040 | (1.02) | .057 | (1.45) | 5.89 | (8.77) | 6.39 | (20.9) | 18-MCF200-118-UL/CSA |
| 20 | 19/32 | .038 | (.955) | .055 | (1.40) | 4.62 | (6.88) | 9.10 | (29.8) | 20-MCF200-1932-UL/CSA |
| 20 | 7/28 | .038 | (.960) | .055 | (1.40) | 4.49 | (6.68) | 9.56 | (31.4) | 20-MCF200-728-UL/CSA |
| 20 | SOLID | .032 | (.813) | .049 | (1.24) | 3.99 | (5.94) | 10.3 | (33.8) | 20-MCF200-120-UL/CSA |
| 22 | 19/34 | .030 | (.752) | .047 | (1.19) | 3.07 | (4.57) | 14.8 | (48.5) | 22-MCF200-1934-UL/CSA |
| 22 | 7/30 | .030 | (.762) | .047 | (1.19) | 3.02 | (4.49) | 15.2 | (49.9) | 22-MCF200-730-UL/CSA |
| 22 | SOLID | .025 | (.643) | .042 | (1.07) | 2.67 | (3.97) | 16.5 | (54.1) | 22-MCF200-122-UL/CSA |
| 24 | 19/36 | .024 | (.597) | .041 | (1.04) | 2.10 | (3.13) | 23.6 | (77.4) | 24-MCF200-1936-UL/CSA |
| 24 | 7/32 | .024 | (.610) | .041 | (1.04) | 2.09 | (3.11) | 23.9 | (78.4) | 24-MCF200-732-UL/CSA |
| 24 | SOLID | .020 | (.511) | .037 | (.940) | 1.84 | (2.74) | 25.7 | (84.3) | 24-MCF200-124-UL/CSA |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated. * CSA allows these strandings for electronic use only.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 3239 high-voltage lead wire—extruded modified FEP insulation



## Construction Details

**Insulation:** Extruded modified FEP, wall thickness:
10 KV wire: .018" (.46 mm);
15 KV wire: .020" (.51 mm);
20 KV wire: .024" (.61 mm).

**Conductor:** Silver-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Not required by UL; available on request.

**Options:** Nickel-plated or tin-plated copper conductor*.

* For tin-plated conductors, the 200˚ C temperature rating applies only to wires with individual strand diameters .015" (26 AWG) or larger. For wires with smaller strand diameters, the temperature rating is 150˚ C.

**UL 3239** wire is a high-voltage lead wire with extruded modified FEP (Fluorinated Ethylene Polypropylene) insulation. This insulation provides easy, clean stripping with automated equipment.

These wires are intended for use in television receivers, transformers, and other demanding high-voltage applications. Versions with different wall thicknesses are available for 10 KV, 15 KV, and 20 KV ratings.

## Performance:

**Voltage rating:** 10,000; 15,000; or 20,000V.

**Dielectric withstanding voltage:** 10 KV wires: 20,000V;
15 KV wires: 30,000V;
20 KV wires: 40,000V.

**Spark test:** 10 KV wires: 10,000V RMS AC, 60 Hz;
15 KV wires: 12,500V RMS AC, 60 Hz;
20 KV wires: 15,000V RMS AC, 60 Hz.

**Insulation tensile strength:** 2,500 PSI.

**Insulation elongation:** 150% minimum.

**Temperature rating:** 200˚ C.

**Ordering Information:** Specify Thermax part number, UL style, and color.

To order with optional conductor materials:
For nickel-plated copper conductor, change **KV** in Thermax part number to **KVN**.
For tin-plated copper conductor, change **KV** in Thermax part number to **KVZ**.

## Dimensions, Weights, and Resistance—UL 3239 (10KV) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/26 | .108 | (2.74) | .157 | (3.99) | 9.71 | (14.5) | 1.19 | (3.90) | 10-10KV-3726 |
| 12 | 19/25 | .084 | (2.13) | .133 | (3.38) | 7.95 | (11.8) | 1.81 | (5.94) | 12-10KV-1925 |
| 14 | 19/27 | .067 | (1.69) | .115 | (2.92) | 6.53 | (9.72) | 2.88 | (9.45) | 14-10KV-1927 |
| 16 | 19/29 | .053 | (1.35) | .101 | (2.57) | 5.52 | (8.21) | 4.52 | (14.8) | 16-10KV-1929 |
| 18 | 19/30 | .047 | (1.19) | .095 | (2.41) | 5.10 | (7.59) | 5.79 | (19.0) | 18-10KV-1930 |
| 18 | 7/26 | .048 | (1.21) | .096 | (2.44) | 5.10 | (7.59) | 6.01 | (19.7) | 18-10KV-726 |
| 20 | 19/32 | .038 | (.955) | .085 | (2.16) | 4.32 | (6.43) | 9.10 | (29.8) | 20-10KV-1932 |
| 20 | 7/28 | .038 | (.960) | .085 | (2.16) | 3.83 | (5.70) | 9.56 | (31.4) | 20-10KV-728 |
| 20 | SOLID | .032 | (.813) | .068 | (1.73) | 3.44 | (5.12) | 10.3 | (33.8) | 20-10KV-120 |
| 22 | 19/34 | .030 | (.752) | .077 | (1.96) | 3.76 | (5.60) | 14.8 | (48.5) | 22-10KV-1934 |
| 22 | 7/30 | .030 | (.762) | .077 | (1.96) | 3.76 | (5.60) | 15.2 | (49.9) | 22-10KV-730 |
| 22 | SOLID | .025 | (.643) | .064 | (1.63) | 2.60 | (3.87) | 16.5 | (54.1) | 22-10KV-122 |
| 24 | 19/36 | .024 | (.597) | .071 | (1.80) | 3.34 | (4.97) | 23.6 | (77.4) | 24-10KV-1936 |
| 24 | 7/32 | .024 | (.610) | .071 | (1.80) | 3.34 | (4.97) | 23.9 | (78.4) | 24-10KV-732 |
| 24 | SOLID | .020 | (.511) | .059 | (1.50) | 2.30 | (3.42) | 25.0 | (84.3) | 24-10KV-124 |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

# UL 3239 high-voltage lead wire—extruded modified FEP insulation

**(Continued from previous page.)**

**Ordering Information:** Specify Thermax part number, UL style, and color.

To order with optional conductor materials:
For nickel-plated copper conductor, change **KV** in Thermax part number to **KVN**.
For tin-plated copper conductor, change **KV** in Thermax part number to **KVZ**.

## Dimensions, Weights, and Resistance—UL 3239 (15KV) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/26 | .108 | (2.74) | .160 | (4.06) | 10.4 | (15.5) | 1.19 | (3.90) | 10-15KV-3726 |
| 12 | 19/25 | .084 | (2.13) | .136 | (3.45) | 8.56 | (12.7) | 1.81 | (5.94) | 12-15KV-1925 |
| 14 | 19/27 | .067 | (1.69) | .119 | (3.02) | 7.23 | (10.8) | 2.88 | (9.45) | 14-15KV-1927 |
| 16 | 19/29 | .053 | (1.35) | .104 | (2.64) | 5.98 | (8.90) | 4.52 | (14.8) | 16-15KV-1929 |
| 18 | 19/30 | .047 | (1.19) | .098 | (2.49) | 5.53 | (8.23) | 5.79 | (19.0) | 18-15KV-1930 |
| 18 | 7/26 | .048 | (1.21) | .099 | (2.51) | 5.53 | (8.23) | 6.01 | (19.7) | 18-15KV-726 |
| 20 | 19/32 | .038 | (.955) | .089 | (2.26) | 4.84 | (7.20) | 9.10 | (29.8) | 20-15KV-1932 |
| 20 | 7/28 | .038 | (.960) | .089 | (2.26) | 4.84 | (7.20) | 9.56 | (31.4) | 20-15KV-728 |
| 20 | SOLID | .032 | (.813) | .075 | (1.91) | 3.44 | (5.12) | 10.3 | (33.8) | 20-15KV-120 |
| 22 | 19/34 | .030 | (.752) | .081 | (2.06) | 4.23 | (6.30) | 14.8 | (48.5) | 22-15KV-1934 |
| 22 | 7/30 | .030 | (.762) | .081 | (2.06) | 4.23 | (6.30) | 15.2 | (49.9) | 22-15KV-730 |
| 22 | SOLID | .025 | (.643) | .068 | (1.73) | 2.99 | (4.45) | 16.5 | (54.1) | 22-15KV-122 |
| 24 | 19/36 | .024 | (.597) | .075 | (1.91) | 3.78 | (5.63) | 23.6 | (77.4) | 24-15KV-1936 |
| 24 | 7/32 | .024 | (.610) | .075 | (1.91) | 3.78 | (5.63) | 23.9 | (78.4) | 24-15KV-732 |
| 24 | SOLID | .020 | (.511) | .063 | (1.60) | 2.67 | (3.97) | 25.7 | (84.3) | 24-15KV-124 |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

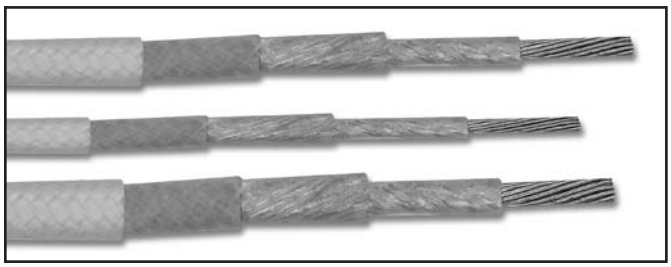
## Dimensions, Weights, and Resistance—UL 3239 (20KV) wires

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 37/26 | .108 | (2.74) | .170 | (4.32) | 12.9 | (19.2) | 1.19 | (3.90) | 10-20KV-3726 |
| 12 | 19/25 | .084 | (2.13) | .146 | (3.71) | 10.7 | (15.9) | 1.81 | (5.94) | 12-20KV-1925 |
| 14 | 19/27 | .067 | (1.69) | .129 | (3.28) | 9.09 | (13.5) | 2.88 | (9.45) | 14-20KV-1927 |
| 16 | 19/29 | .053 | (1.35) | .115 | (2.92) | 7.79 | (11.6) | 4.52 | (14.8) | 16-20KV-1929 |
| 18 | 19/30 | .047 | (1.19) | .109 | (2.77) | 7.16 | (10.7) | 5.79 | (19.0) | 18-20KV-1930 |
| 18 | 7/26 | .048 | (1.21) | .110 | (2.79) | 7.16 | (10.7) | 6.01 | (19.7) | 18-20KV-726 |
| 20 | 19/32 | .038 | (.955) | .099 | (2.51) | 6.25 | (9.30) | 9.10 | (29.8) | 20-20KV-1932 |
| 20 | 7/28 | .038 | (.960) | .099 | (2.51) | 6.25 | (9.30) | 9.56 | (31.4) | 20-20KV-728 |
| 20 | SOLID | .032 | (.813) | .083 | (2.11) | 4.39 | (6.53) | 10.3 | (33.8) | 20-20KV-120 |
| 22 | 19/34 | .030 | (.752) | .091 | (2.31) | 5.52 | (8.21) | 14.8 | (48.5) | 22-20KV-1934 |
| 22 | 7/30 | .030 | (.762) | .091 | (2.31) | 5.52 | (8.21) | 15.2 | (49.9) | 22-20KV-730 |
| 22 | SOLID | .025 | (.643) | .076 | (1.93) | 3.85 | (5.73) | 16.5 | (54.1) | 22-20KV-122 |
| 24 | 19/36 | .024 | (.59)7 | .085 | (2.16) | 4.97 | (7.40) | 23.6 | (77.4) | 24-20KV-1936 |
| 24 | 7/32 | .024 | (.610) | .085 | (2.16) | 4.97 | (7.40) | 23.9 | (78.4) | 24-20KV-732 |
| 24 | SOLID | .020 | (.511) | .071 | (1.80) | 3.47 | (5.16) | 25.7 | (84.3) | 24-20KV-124 |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.


Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
Asia: (818) 701-0565 • Other International: (203) 284-9610

# UL 5107, 5128 wire—ultra-high-temperature, abrasion resistant



## Construction Details

**Jacket:** Glass braid with PTFE high-temperature saturant (or silicone high-temperature saturant).

**Insulation:** Multiple layers of mica / glass composite tape.

**Conductor:** 27% nickel-coated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** Temperature ID as required by UL and CSA.

**Options:** Nickel-coated iron conductor; solid nickel conductor; nickel-plated copper conductor (250˚ C temperature rating with this option).

**UL 5107 and 5128** wires have glass-reinforced mica tape insulation and a braided fiberglass jacket for enhanced abrasion resistance. They meet all UL requirements for appliance lead wire, and are also available with CSA certification.

These wires are ideal for use in heaters, ovens, and other ultra-high-temperature applications.

## Performance:

**Voltage rating:** 600V (UL 5107); 300V (UL 5128).

**Temperature rating:** 450˚ C; 250˚ C with optional nickel-plated copper conductor.

**Ordering Information:** Specify Thermax part number and UL style.
Contact factory for part numbers of wires with optional conductor materials
For jacket with optional silicone braid saturant, change **TMIT** in Thermax part number to **TMIS** (jacket color is brown with this option).

## Dimensions, Weights, and Resistance—UL 5107 wires (600V)

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .168 | (4.27) | .270 | (6.86) | 90.2 | (134) | .920 | (3.02) | 8-TMIT600-13329 |
| 10 | 49/27 | .126 | (3.20) | .228 | (5.79) | 60.2 | (89.5) | 1.68 | (5.51) | 10-TMIT600-4927 |
| 10 | 37/26 | .110 | (2.79) | .212 | (5.38) | 57.1 | (85.0) | 1.60 | (5.25) | 10-TMIT600-3726 |
| 12 | 19/25 | .088 | (2.24) | .162 | (4.11) | 33.5 | (49.8) | 2.49 | (8.17) | 12-TMIT600-1925 |
| 14 | 19/27 | .071 | (1.80) | .145 | (3.68) | 23.5 | (34.9) | 4.32 | (14.2) | 14-TMIT600-1927 |
| 16 | 19/29 | .056 | (1.42) | .130 | (3.30) | 17.9 | (26.6) | 6.54 | (21.5) | 16-TMIT600-1929 |
| 18 | 19/30 | .050 | (1.27) | .124 | (3.15) | 15.6 | (23.2) | 8.16 | (26.8) | 18-TMIT600-1930 |
| 18 | 7/26 | .048 | (1.21) | .122 | (3.10) | 14.4 | (21.4) | 8.25 | (27.1) | 18-TMIT600-726 |
| 20 | 19/32 | .040 | (1.02) | .114 | (2.90) | 12.3 | (18.3) | 14.6 | (47.9) | 20-TMIT600-1932 |
| 22 | 19/34 | .032 | (.81) | .106 | (2.69) | 9.58 | (14.3) | 22.5 | (73.8) | 22-TMIT600-1934 |

## Dimensions, Weights, and Resistance—UL 5128 wires (300V)

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .168 | (4.27) | .246 | (6.25) | 81.9 | (122) | .920 | (3.02) | 8-TMIT300-13329 |
| 10 | 49/27 | .126 | (3.20) | .203 | (5.16) | 52.6 | (78.2) | 1.68 | (5.51) | 10-TMIT300-4927 |
| 10 | 37/26 | .110 | (2.79) | .187 | (4.75) | 49.8 | (74.1) | 1.60 | (5.25) | 10-TMIT300-3726 |
| 12 | 19/25 | .088 | (2.24) | .140 | (3.56) | 29.2 | (43.4) | 2.49 | (8.17) | 12-TMIT300-1925 |
| 14 | 19/27 | .071 | (1.80) | .123 | (3.12) | 20.1 | (30.0) | 4.32 | (14.2) | 14-TMIT300-1927 |
| 16 | 19/29 | .056 | (1.42) | .108 | (2.74) | 14.5 | (21.6) | 6.54 | (21.5) | 16-TMIT300-1929 |
| 18 | 19/30 | .050 | (1.27) | .102 | (2.59) | 10.7 | (15.8) | 8.16 | (26.8) | 18-TMIT300-1930 |
| 18 | 7/26 | .048 | (1.21) | .100 | (2.54) | 11.2 | (16.6) | 8.25 | (27.1) | 18-TMIT300-726 |
| 20 | 19/32 | .040 | (1.02) | .092 | (2.34) | 9.24 | (13.8) | 14.6 | (47.9) | 20-TMIT300-1932 |
| 22 | 19/34 | .032 | (.81) | .084 | (2.13) | 6.63 | (9.87) | 22.5 | (73.8) | 22-TMIT300-1934 |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.

# UL 5127, 5180 wire—high-temperature, abrasion resistant

**UL 5127 and 5180** wires combine the outstanding performance of a PTFE (Polytetrafluoroethylene) dielectric with the mechanical toughness of served fiberglass insulation and glass outer jacket.

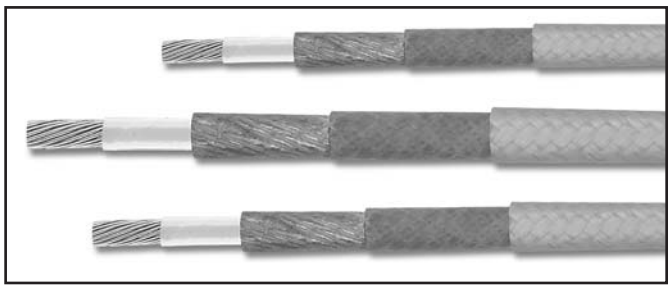
These wires are an ideal replacement for asbestos-jacketed wires in high-temperature applications such as household appliances, band/cartridge heaters, or any other high-temperature commercial, industrial, or consumer application.

This insulation system offers easy stripping with automatic equipment and high resistance to mechanical stress, abrasion, moisture, and fluids.

## Performance:

**Voltage rating:** 600V (UL 5127); 300V (UL 5180).

**Temperature rating:** 250˚ C.



## Construction Details

**Jacket:** PTFE-impregnated glass braid.

**Insulation:** Outer: two served layers of fiberglass. Inner: PTFE tape.

**Conductor:** Nickel-plated copper.

**Colors:** Available in 10 standard colors (see page 92).

**Identification:** 8–18 AWG: two black marker threads under tape or braid; 20–22 AWG: No identification.

**Options:** Other conductor strandings—contact factory for details.

**Ordering Information:** Specify Thermax part number and UL style.

## Dimensions, Weights, and Resistance—UL 5127 wires (600V)

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .163 | (4.14) | .244 | (6.20) | 75.9 | (113) | .694 | (2.28) | 8-TGGT6-13329 |
| 10 | 37/26 | .108 | (2.74) | .189 | (4.80) | 46.7 | (69.5) | 1.23 | (4.03) | 10-TGGT6-3726 |
| 12 | 19/25 | .084 | (2.13) | .163 | (4.14) | 33.0 | (49.1) | 1.89 | (6.20) | 12-TGGT6-1925 |
| 14 | 19/27 | .067 | (1.69) | .146 | (3.71) | 23.6 | (35.1) | 3.00 | (9.84) | 14-TGGT6-1927 |
| 16 | 19/29 | .053 | (1.35) | .132 | (3.35) | 17.7 | (26.3) | 4.76 | (15.6) | 16-TGGT6-1929 |
| 18 | 19/30 | .047 | (1.19) | .126 | (3.20) | 14.5 | (21.6) | 6.10 | (20.0) | 18-TGGT6-1930 |
| 18 | 7/26 | .048 | (1.21) | .127 | (3.23) | 14.6 | (21.7) | 6.50 | (21.3) | 18-TGGT6-726 |
| 20 | 19/32 | .038 | (.97) | .117 | (2.97) | 12.3 | (18.3) | 9.68 | (31.8) | 20-TGGT6-1932 |
| 20 | 7/28 | .038 | (.97) | .117 | (2.97) | 12.3 | (18.2) | 9.96 | (32.7) | 20-TGGT6-728 |
| 22 | 19/34 | .030 | (.76) | .109 | (2.77) | 10.0 | (14.9) | 15.7 | (51.5) | 22-TGGT6-1934 |
| 22 | 7/30 | .030 | (.76) | .109 | (2.77) | 10.0 | (14.9) | 16.0 | (52.5) | 22-TGGT6-730 |

## Dimensions, Weights, and Resistance—UL 5180 wires (300V)

| AWG Size | Stranding | Conductor Diameter | | Insulation Diameter | | Weight | | Maximum Resistance | | Thermax P/N |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 133/29 | .163 | (4.14) | .232 | (5.89) | 71.5 | (106) | .694 | (2.28) | 8-TGGT3-13329 |
| 10 | 37/26 | .108 | (2.74) | .177 | (4.50) | 43.4 | (64.5) | 1.23 | (4.03) | 10-TGGT3-3726 |
| 12 | 19/25 | .084 | (2.13) | .151 | (3.84) | 30.2 | (44.9) | 1.89 | (6.20) | 12-TGGT3-1925 |
| 14 | 19/27 | .067 | (1.69) | .134 | (3.40) | 21.1 | (31.4) | 3.00 | (9.84) | 14-TGGT3-1927 |
| 16 | 19/29 | .053 | (1.35) | .120 | (3.05) | 15.4 | (23.0) | 4.76 | (15.6) | 16-TGGT3-1929 |
| 18 | 19/30 | .047 | (1.19) | .114 | (2.90) | 13.3 | (19.8) | 6.10 | (20.0) | 18-TGGT3-1930 |
| 18 | 7/26 | .048 | (1.21) | .115 | (2.92) | 13.3 | (19.8) | 6.50 | (21.3) | 18-TGGT3-726 |
| 20 | 19/32 | .038 | (.97) | .105 | (2.67) | 10.4 | (15.4) | 9.68 | (31.8) | 20-TGGT3-1932 |
| 20 | 7/28 | .038 | (.97) | .105 | (2.67) | 10.3 | (15.3) | 9.96 | (32.7) | 20-TGGT3-728 |
| 22 | 19/34 | .030 | (.76) | .096 | (2.44) | 8.18 | (12.2) | 15.7 | (51.5) | 22-TGGT3-1934 |
| 22 | 7/30 | .030 | (.76) | .097 | (2.46) | 8.18 | (12.2) | 16.0 | (52.5) | 22-TGGT3-730 |

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20˚ C.
All values are nominal unless otherwise indicated.



Eastern USA: (888) 761-7800 • Western USA: (800) 423-5873
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