

Electrical Wire Sizes Selection Guide

The chart below indicates the approximate outside diameter of various insulated and uninsulated electrical wires. Utilize this table when selecting abrasion protection or cable accessory products, such as heat shrink or fixed diameter cable clamps.

THHW – Indicates a fine strand flexible wire with Thermoplastic insulation. Moisture, oil and acid resistant. Rated 105°C wet or dry.

THW – Indicates a single conductor having flame-retardant, moisture and heat-resistant thermoplastic insulation. The wire is rated 75°C wet or dry.

TW – Indicates a single conductor having flame-retardant, moisture-resistant thermoplastic insulation. The wire is rated 60°C wet or dry.

TFN – Indicates a thermoplastic-insulated wire. The wire is rated at a 90°C maximum operating temperature.

THHN – Indicates a single conductor having flame-retardant and heat-resistant thermoplastic insulation with a jacket of extruded nylon or equivalent material. The wire is rated 90°C dry only.

| Size | Approximate Wire Outside Diameter In. (mm) | | | |
|----------|--|--------------------------------------|-------------------------------|--------------|
| | With THW/ THHW/TW Insulation | With TFN/ THHN/THWN Insulation | Uninsulated Conductors, Range | |
| | | | Min. | Max. |
| 24 AWG | 0.059 (1.5) | 0.088 (2.2) | 0.020 (0.5) | 0.024 (0.6) |
| 22 AWG | 0.066 (1.7) | 0.094 (2.4) | 0.025 (0.6) | 0.031 (0.8) |
| 20 AWG | 0.071 (1.8) | 0.101 (2.6) | 0.032 (0.8) | 0.038 (1.0) |
| 18 AWG | 0.084 (2.1) | 0.111 (2.8) | 0.040 (1.0) | 0.049 (1.2) |
| 16 AWG | 0.096 (2.4) | 0.124 (3.1) | 0.051 (1.3) | 0.060 (1.5) |
| 14 AWG | 0.111 (2.8) | 0.133 (3.4) | 0.064 (1.6) | 0.073 (1.9) |
| 12 AWG | 0.130 (3.3) | 0.152 (3.9) | 0.081 (2.1) | 0.095 (2.4) |
| 10 AWG | 0.164 (4.2) | 0.176 (4.5) | 0.102 (2.6) | 0.116 (2.9) |
| 8 AWG | 0.216 (5.5) | 0.236 (6.0) | 0.128 (3.3) | 0.146 (3.7) |
| 6 AWG | 0.254 (6.5) | 0.304 (7.7) | 0.162 (4.1) | 0.184 (4.7) |
| 4 AWG | 0.324 (8.2) | 0.352 (8.9) | 0.204 (5.2) | 0.232 (5.9) |
| 3 AWG | 0.352 (8.9) | 0.380 (9.7) | 0.229 (5.8) | 0.260 (6.6) |
| 2 AWG | 0.384 (9.8) | 0.420 (10.7) | 0.258 (6.6) | 0.292 (7.4) |
| 1 AWG | 0.446 (11.3) | 0.492 (12.5) | 0.289 (7.3) | 0.332 (8.4) |
| 1/0 | 0.486 (12.3) | 0.532 (13.5) | 0.325 (8.3) | 0.373 (9.5) |
| 2/0 | 0.532 (13.5) | 0.578 (14.7) | 0.365 (9.3) | 0.418 (10.6) |
| 3/0 | 0.584 (14.8) | 0.630 (16.0) | 0.410 (10.4) | 0.470 (11.9) |
| 4/0 | 0.642 (16.3) | 0.688 (17.5) | 0.460 (11.7) | 0.528 (13.4) |
| 250 MCM | 0.711 (18.1) | 0.765 (19.4) | 0.500 (12.7) | 0.575 (14.6) |
| 300 MCM | 0.766 (19.5) | 0.820 (20.8) | 0.548 (13.9) | 0.630 (16.0) |
| 350 MCM | 0.817 (20.8) | 0.871 (22.1) | 0.592 (15.0) | 0.681 (17.3) |
| 400 MCM | 0.864 (21.9) | 0.918 (23.3) | 0.633 (16.1) | 0.728 (18.5) |
| 500 MCM | 0.949 (24.1) | 1.003 (25.5) | 0.707 (18.0) | 0.813 (20.7) |
| 600 MCM | 1.051 (26.7) | 1.113 (28.3) | 0.775 (19.7) | 0.893 (22.7) |
| 700 MCM | 1.122 (28.5) | 1.184 (30.1) | 0.837 (21.3) | 0.964 (24.5) |
| 750 MCM | 1.156 (29.4) | 1.218 (30.9) | 0.866 (22.0) | 0.998 (25.3) |
| 800 MCM | 1.188 (30.2) | 1.250 (31.8) | 0.894 (22.7) | 1.031 (26.2) |
| 900 MCM | 1.252 (31.8) | 1.314 (33.4) | 0.949 (24.1) | 1.093 (27.8) |
| 1000 MCM | 1.310 (33.3) | 1.372 (34.8) | 1.000 (25.4) | 1.152 (29.3) |
| 1250 MCM | — | 1.539 (39.1) | 1.121 (28.5) | 1.289 (32.7) |
| 1500 MCM | — | 1.662 (42.2) | 1.228 (31.2) | 1.412 (35.9) |
| 1750 MCM | — | 1.776 (45.1) | 1.327 (33.7) | 1.526 (38.8) |
| 2000 MCM | — | 1.882 (47.8) | 1.419 (36.0) | 1.632 (41.5) |

THWN – Indicates a single conductor having flame-retardant, moisture and heat-resistant thermoplastic insulation with a jacket of extruded nylon or equivalent material. The wire is rated 75°C wet or dry. THWN wire suitable for exposure to mineral oil and to liquid gasoline and gasoline vapors at ordinary ambient temperature is marked “Gasoline and Oil Resistant I” if suitable for exposure to mineral oil at 60°C, or “Gasoline and Oil Resistant II” if the compound is suitable for exposure to mineral oil at 75°C. Gasoline-resistant wire has been tested at 23°C when immersed in gasoline. It is considered inherently resistant to gasoline vapors within the limits of the temperature rating.

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7/2011