

MachineFLEX™ Power

90°C Wet/90°C Dry. 600 Volts. Flexible Stranded Copper Conductor. PVC Insulation and Nylon Jacket (THHN/THWN-2). Oil & Gasoline Resistant. Sunlight Resistant. Rated UL VW-1 and CSA FT1 & FT4 Flame Resistant.



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** 8 - 4/0 AWG: Class K, Flexible stranded bare copper. 250 - 750 KCMIL: Class I, Flexible stranded bare copper
- Insulation:** Polyvinyl Chloride (PVC) with Nylon sheath

APPLICATIONS AND FEATURES:

Southwire's MachineFLEX™ Power cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, aerial supported by a messenger, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation in wet and dry locations, 130°C for emergency overload, and 105°C for short circuit conditions. 1/0 AWG & Larger rated for CT use.

SPECIFICATIONS:

- ASTM B3 Standard Specification for Soft or Annealed Copper Wire
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors
- ASTM B174 Standard Specification for Bunch-Stranded Copper
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 758 Standard for Appliance Wiring Material Style 2463 (80C, 600V)
- UL 1063 Machine Tool Wiring (MTW)
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- ICEA S-95-658 (NEMA WC70) Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy
- **CE/RoHS-2 – The CE Marking has been applied solely to express the conformance to the material restrictions identified in the RoHS-2 (2011/65/EU) Directive**

SAMPLE PRINT LEGEND:

8AWG-1AWG

SOUTHWIRE #P# (UL) 1 AWG (42.406 mm²) CU TYPE THHN/THWN-2 600V 90(D)C DRY/90(D)C WET PRI/GRI VW-1 OR AWM [Applicable Styles] OR MTW SUN RES --- (CSA) T90 NYLON OR TWN75 FT1 FT4 --- CE RoHS-2 Made in USA. [SEQUENTIAL FOOTAGE MARKS]

1/0 AWG - 500 KCMIL

SOUTHWIRE #P# (UL) 500 KCMIL (253.35mm²) CU TYPE THHN/THWN-2 600V 90(D)C DRY/90(D)C WET PRI/GRI VW-1 FOR CT USE OR AWM [Applicable Styles] OR MTW SUN RES --- (CSA) T90 NYLON OR TWN75 FT1 FT4 --- CE RoHS-2 Made in USA. [SEQUENTIAL FOOTAGE MARKS]



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com



Southwire

**CABLETECH
SUPPORT™**

Services

Table 1 – Weights and Measurements

| Stock Number | Cond. Size AWG/Kcmil | Diameter Over Conductor inch | Insul. Thickness mil | Approx. OD inch | Copper Weight lb/1000ft | Approx. Weight lb/1000ft |
|--------------|-------------------------|---------------------------------|-------------------------|--------------------|----------------------------|-----------------------------|
| TBA | 8 | 0.158 | 35 | 0.227 | 51 | 64 |
| TBA | 6 | 0.19 | 35 | 0.26 | 81 | 97 |
| TBA | 4 | 0.235 | 46 | 0.332 | 129 | 157 |
| TBA | 3 | 0.270 | 48 | 0.366 | 169 | 198 |
| TBA | 2 | 0.298 | 46 | 0.392 | 205 | 240 |
| TBA | 1 | 0.340 | 57 | 0.454 | 258 | 310 |
| TBA | 1/0 | 0.4 | 57 | 0.514 | 326 | 377 |
| TBA | 2/0 | 0.43 | 57 | 0.544 | 411 | 468 |
| TBA | 3/0 | 0.49 | 57 | 0.604 | 518 | 590 |
| TBA | 4/0 | 0.55 | 58 | 0.664 | 653 | 747 |
| TBA | 250 | 0.605 | 68 | 0.741 | 772 | 853 |
| TBA | 300 | 0.655 | 68 | 0.774 | 930 | 1023 |
| TBA | 350 | 0.67 | 68 | 0.806 | 1081 | 1157 |
| TBA | 500 | 0.858 | 68 | 0.994 | 1544 | 1622 |
| TBA | 600 | 0.963 | 79 | 1.119 | 1853 | 2025 |
| TBA | 750 | 1.094 | 79 | 1.252 | 2316 | 2571 |
| TBA | 1000 | 1.190 | 79 | 1.350 | 3088 | 3260 |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

Table 2 – Electrical and Engineering Data

| Stock Number | Cond. Size AWG/Kcmil | Min Bending Radius inch | Max Pull Tension lb | DC Resistance @ 25°C Ω/1000ft | AC Resistance @ 90°C Ω/1000ft | Inductive Reactance @ 60Hz Ω/1000ft | Allowable Ampacity At 60° C† Amp | Allowable Ampacity At 75° C† Amp | Allowable Ampacity At 90° C† Amp |
|--------------|-------------------------|----------------------------|------------------------|----------------------------------|----------------------------------|--|-------------------------------------|-------------------------------------|-------------------------------------|
| TBA | 8 | 0.91 | 132 | 0.652 | 0.815 | 0.03 | 40 | 50 | 55 |
| TBA | 6 | 1.04 | 210 | 0.411 | 0.514 | 0.028 | 55 | 65 | 75 |
| TBA | 4 | 1.33 | 334 | 0.258 | 0.323 | 0.029 | 70 | 85 | 95 |
| TBA | 3 | 1.46 | 421 | 0.2226 | 0.295 | 0.029 | 85 | 100 | 115 |
| TBA | 2 | 1.65 | 531 | 0.162 | 0.203 | 0.028 | 95 | 115 | 130 |
| TBA | 1 | 1.82 | 670 | 0.129 | 0.161 | 0.028 | 110 | 130 | 145 |
| TBA | 1/0 | 2.06 | 845 | 0.102 | 0.128 | 0.028 | 125 | 150 | 170 |
| TBA | 2/0 | 2.18 | 1065 | 0.081 | 0.102 | 0.027 | 145 | 175 | 195 |
| TBA | 3/0 | 2.42 | 1342 | 0.064 | 0.081 | 0.027 | 165 | 200 | 225 |
| TBA | 4/0 | 2.66 | 1693 | 0.051 | 0.064 | 0.026 | 195 | 230 | 260 |
| TBA | 250 | 2.96 | 2000 | 0.043 | 0.055 | 0.027 | 215 | 255 | 290 |
| TBA | 300 | 3.00 | 2400 | 0.038 | 0.048 | 0.026 | 240 | 285 | 320 |
| TBA | 350 | 3.22 | 2800 | 0.031 | 0.040 | 0.026 | 260 | 310 | 350 |
| TBA | 500 | 3.98 | 4000 | 0.022 | 0.029 | 0.026 | 320 | 380 | 430 |
| TBA | 600 | 5.6 | 4800 | 0.018 | 0.024 | 0.025 | 350 | 420 | 475 |
| TBA | 750 | 6.26 | 6000 | 0.014 | 0.020 | 0.026 | 400 | 475 | 535 |
| TBA | 1000 | 6.75 | 8000 | 0.0117 | 0.0167 | 0.026 | 455 | 545 | 615 |



Southwire



Services

† Ampacities are based on Table 310.15 (B)(16) of the NEC, 2014 Edition. Allowable Ampacities of Insulated Conductors Rated Up to and Including 2000 Volts, 60°C Through 90°C (140°F Through 194°F) Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried), Based on ambient temperature of 30°C (86°F)

Stock Codes and Colors

| Size | BLACK | BROWN | ORANGE | YELLOW | GRAY | GREEN/YELLOW | GREEN |
|------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| #4 | 672867 | TBA | TBA | TBA | TBA | TBA | 674667 |
| #3 | TBA | TBA | TBA | TBA | TBA | TBA | 664229 |
| #2 | TBA | TBA | TBA | TBA | TBA | TBA | TBA |
| 1/0 | TBA | TBA | TBA | TBA | TBA | 677368 | 674668 |
| 3/0 | TBA | 664217 | 664220 | 664223 | 664226 | TBA | TBA |
| 4/0 | 679607 | TBA | TBA | TBA | TBA | 679606 | TBA |
| 250 Kcmil | 649414 | 672218 | 672217 | 672219 | 673792 [◇] | 677370 | 673791 [◇] |
| 300 Kcmil | 672866 | 674116 | 674117 | 674118 | 674120 | TBA | 674121 |
| 350 Kcmil | 649415 [◇] | 674662 [◇] | 674664 [◇] | 674665 [◇] | 674666 [◇] | 672017 | 652964 [◇] |
| 500 Kcmil | 648948 [◇] | 646978 [◇] | 646979 [◇] | 646980 [◇] | 646981 [◇] | 646982 [◇] | 677701 |
| 600 Kcmil | 649416 [◇] | 678431 [◇] | 678432 [◇] | 678434 [◇] | 678435 [◇] | 678436 | 673748 |
| 750 Kcmil | 649549 | 677721 | 677722 | 677723 | 677725 | 677726 | TBA |
| 1000 Kcmil | 674459 | TBA | TBA | TBA | TBA | TBA | TBA |

[◇] Cable marked with this symbol is a standard stock item

