

## 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 mm<sup>2</sup>) 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 (253.35mm<sup>2</sup>) 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

**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	TBA	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 <sup>◇</sup>	677370	673791 <sup>◇</sup>
300 Kcmil	672866	674116	674117	674118	674120	TBA	674121
350 Kcmil	649415 <sup>◇</sup>	674662 <sup>◇</sup>	674664 <sup>◇</sup>	674665 <sup>◇</sup>	674666 <sup>◇</sup>	672017	652964 <sup>◇</sup>
500 Kcmil	648948 <sup>◇</sup>	646978 <sup>◇</sup>	646979 <sup>◇</sup>	646980 <sup>◇</sup>	646981 <sup>◇</sup>	646982 <sup>◇</sup>	677701
600 Kcmil	649416 <sup>◇</sup>	678431 <sup>◇</sup>	678432 <sup>◇</sup>	678434 <sup>◇</sup>	678435 <sup>◇</sup>	678436	673748
750 Kcmil	649549	677721	677722	677723	677725	677726	TBA
1000 Kcmil	674459	TBA	TBA	TBA	TBA	TBA	TBA

<sup>◇</sup> Cable marked with this symbol is a standard stock item



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



Southwire



Services