

# Southwire® RenewaFLEX™ Power Cables for Battery Energy Storage Systems

Single Conductor Copper 2000V XLPE insulation Type RHH/RHW-2 Flexible Power Cable.



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** 6 - 4/0 AWG: Class K, Flexible stranded bare copper. 250 - 750 kcmil: Class I, Flexible stranded bare copper
2. **Insulation:** Cross Linked Polyethylene (XLPE) Type RHH/RHW-2

## APPLICATIONS AND FEATURES:

Southwire's 2000 Volt power cables are suited for use in the internal wiring of Battery Energy Storage Systems (BESS), in wet and dry locations, conduits, ducts, troughs, covered trays, 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, 130°C for emergency overload, and 250°C for short circuit conditions. Gasoline and Oil Resistant. For CT USE sizes 1/0 AWG and larger. Rated 1000 lbs./FT maximum sidewall pressure.

Also available in different colors like: Black, Red, Green, Brown, Yellow, etc.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors
- UL 44 Thermoset-Insulated Wires and Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- RoHS-3 Complies with European Directive 2015/863
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661

## SAMPLE PRINT LEGEND:

For 6-2 AWG: {SQFTG} SOUTHWIRE E30117 {UL} XX AWG CU TYPE RHH OR RHW-2 XX MILS XLP PRI/II GRI/II 2000 VOLTS

For 1/0-4/0 AWG: {SQFTG} SOUTHWIRE E30117 {UL} XX AWG CU TYPE RHH OR RHW-2 XX MILS XLP FOR CT USE PRI/II GRI/II 2000 VOLTS

For 250-750 kcmil: {SQFTG} SOUTHWIRE E30117 {UL} XX kcmil CU TYPE RHH OR RHW-2 XX MILS XLP FOR CT USE PRI/II GRI/II 2000 VOLTS



**Table 1 – Weights and Measurements**

| Stock Number | Cond. Size<br>AWG/Kcmil | Strand<br>No. | Diameter Over Conductor<br>inch | Insul. Thickness<br>mil | Approx. OD<br>inch | Approx. Weight<br>lb/1000ft |
|--------------|-------------------------|---------------|---------------------------------|-------------------------|--------------------|-----------------------------|
| 665777       | 6                       | 273           | 0.190                           | 70                      | 0.338              | 119                         |
| 665776       | 4                       | 413           | 0.235                           | 70                      | 0.383              | 164                         |
| 665775       | 2                       | 665           | 0.302                           | 70                      | 0.448              | 252                         |
| 665422       | 1/0                     | 1064          | 0.385                           | 90                      | 0.570              | 426                         |
| 138923       | 2/0                     | 1330          | 0.410                           | 90                      | 0.620              | 510                         |
| 138924       | 4/0                     | 2109          | 0.550                           | 90                      | 0.740              | 788                         |
| 138925       | 250                     | 627           | 0.580                           | 105                     | 0.825              | 908                         |
| 138926       | 350                     | 893           | 0.670                           | 105                     | 0.890              | 1242                        |
| 138927       | 500                     | 1221          | 0.858                           | 105                     | 1.078              | 1709                        |
| 138950       | 600                     | 1480          | 0.963                           | 120                     | 1.215              | 2112                        |
| 138951       | 750                     | 1850          | 1.094                           | 120                     | 1.346              | 2650                        |

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**

| Cond. Size<br>AWG/Kcmil | Min Bending Radius<br>inch | Max Pull Tension<br>lb | DC Resistance @ 25°C<br>Ω/1000ft | AC Resistance @ 90°C<br>Ω/1000ft | Inductive Reactance @ 60Hz<br>Ω/1000ft | Allowable Ampacity In Air 90°C<br>Amp | Allowable Ampacity In Raceway 90°C<br>Amp |
|-------------------------|----------------------------|------------------------|----------------------------------|----------------------------------|----------------------------------------|---------------------------------------|-------------------------------------------|
| 6                       | 2.7                        | 209                    | 0.419                            | 0.524                            | 0.051                                  | 105                                   | 75                                        |
| 4                       | 3.0                        | 333                    | 0.263                            | 0.329                            | 0.048                                  | 140                                   | 95                                        |
| 2                       | 3.5                        | 531                    | 0.165                            | 0.207                            | 0.045                                  | 190                                   | 130                                       |
| 1/0                     | 4.5                        | 845                    | 0.105                            | 0.132                            | 0.044                                  | 260                                   | 170                                       |
| 2/0                     | 4.7                        | 1065                   | 0.084                            | 0.105                            | 0.043                                  | 300                                   | 195                                       |
| 4/0                     | 5.8                        | 1693                   | 0.053                            | 0.067                            | 0.041                                  | 405                                   | 260                                       |
| 250                     | 6.5                        | 2000                   | 0.045                            | 0.056                            | 0.041                                  | 455                                   | 290                                       |
| 350                     | 7.0                        | 2800                   | 0.032                            | 0.040                            | 0.040                                  | 570                                   | 350                                       |
| 500                     | 8.5                        | 4000                   | 0.022                            | 0.029                            | 0.039                                  | 700                                   | 430                                       |
| 600                     | 9.6                        | 4800                   | 0.019                            | 0.024                            | 0.039                                  | 780                                   | 475                                       |
| 750                     | 10.6                       | 6000                   | 0.015                            | 0.025                            | 0.038                                  | 885                                   | 535                                       |

† Ampacities based upon 2023 NEC Table 310.16 for Raceway, Cable, or Earth.

† NEC Table 310.17 for single conductors in Air.

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing.



**Table 3 – Weights and Measurements (Metric)**

| Stock Number | Cond. Size<br>AWG/Kcmil | Strand<br>No. | Diameter Over Conductor<br>mm | Insul. Thickness<br>mm | Approx. OD<br>mm | Approx. Weight<br>kg/km |
|--------------|-------------------------|---------------|-------------------------------|------------------------|------------------|-------------------------|
| 665777       | 6                       | 273           | 4.83                          | 1.78                   | 8.59             | 177                     |
| 665776       | 4                       | 413           | 5.97                          | 1.78                   | 9.73             | 244                     |
| 665775       | 2                       | 665           | 7.67                          | 1.78                   | 11.38            | 375                     |
| 665422       | 1/0                     | 1064          | 9.78                          | 2.29                   | 14.48            | 634                     |
| 138923       | 2/0                     | 1330          | 10.41                         | 2.29                   | 15.75            | 759                     |
| 138924       | 4/0                     | 2109          | 13.97                         | 2.29                   | 18.80            | 1173                    |
| 138925       | 250                     | 627           | 14.73                         | 2.67                   | 20.96            | 1351                    |
| 138926       | 350                     | 893           | 17.02                         | 2.67                   | 22.61            | 1848                    |
| 138927       | 500                     | 1221          | 21.79                         | 2.67                   | 27.38            | 2543                    |
| 138950       | 600                     | 1480          | 24.46                         | 3.05                   | 30.86            | 3143                    |
| 138951       | 750                     | 1850          | 27.79                         | 3.05                   | 34.19            | 3944                    |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

**Table 4 – Electrical and Engineering Data (Metric)**

| Cond. Size<br>AWG/Kcmil | Min Bending Radius<br>mm | Max Pull Tension<br>newton | DC Resistance @ 25°C<br>Ω/km | AC Resistance @ 90°C<br>Ω/km | Inductive Reactance @ 60Hz<br>Ω/km | Allowable Ampacity In Air 90°C<br>Amp | Allowable Ampacity In Raceway 90°C<br>Amp |
|-------------------------|--------------------------|----------------------------|------------------------------|------------------------------|------------------------------------|---------------------------------------|-------------------------------------------|
| 6                       | 68.58                    | 930                        | 1.3747                       | 1.72                         | 0.1673                             | 105                                   | 75                                        |
| 4                       | 76.20                    | 1482                       | 0.8629                       | 1.08                         | 0.1575                             | 140                                   | 95                                        |
| 2                       | 88.90                    | 2363                       | 0.5413                       | 0.68                         | 0.1476                             | 190                                   | 130                                       |
| 1/0                     | 114.30                   | 3760                       | 0.3445                       | 0.43                         | 0.1444                             | 260                                   | 170                                       |
| 2/0                     | 119.38                   | 4739                       | 0.2756                       | 0.34                         | 0.1411                             | 300                                   | 195                                       |
| 4/0                     | 147.32                   | 7534                       | 0.1739                       | 0.22                         | 0.1345                             | 405                                   | 260                                       |
| 250                     | 165.10                   | 8900                       | 0.1476                       | 0.18                         | 0.1345                             | 455                                   | 290                                       |
| 350                     | 177.80                   | 12460                      | 0.1050                       | 0.13                         | 0.1312                             | 570                                   | 350                                       |
| 500                     | 215.90                   | 17800                      | 0.0722                       | 0.10                         | 0.1280                             | 700                                   | 430                                       |
| 600                     | 243.84                   | 21360                      | 0.0623                       | 0.08                         | 0.1280                             | 780                                   | 475                                       |
| 750                     | 269.24                   | 26700                      | 0.0492                       | 0.08                         | 0.1247                             | 885                                   | 535                                       |

† Ampacities based upon 2023 NEC Table 310.16 for Raceway, Cable, or Earth.

† NEC Table 310.17 for single conductors in Air.

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing.

