

# TYPE PHOTOVOLTAIC/RHH/RHW-2 - ALUMINUM CONDUCTOR - SMARTSUN® - 600V & 1KV/2KV

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories® Standards UL-44, UL-854, UL-1581, UL-2556, UL-4703 ; NEMA WC70/ICEA S-95-658; NEMA RV4-2012; NFPA 70 (NEC®); RoHS Compliant; American National Standards Institute; Compact Stranded Aluminum Alloy 8000 Series per ASTM B800, ASTM B801, ASTM B836; IEEE 1202/FT4 Flame Test; ICEA T-29-520 (210,000 Btu/hr) Flame Test; ARRA 2009 Section 1605 "Buy American" Compliant; MasterSpec Division 26 Sections 260519, 260523; UL Listing #E - 326525



## CONSTRUCTION

### Conductors

Compact Stranded Conductors, Aluminum Alloy 8000 Series per ASTM B800, ASTM B801 and ASTM B836

### Insulation

Cross-linked polyethylene (XLPE) insulation per UL-44, UL-854 and UL-4703



## APPLICATIONS

Type Photovoltaic building wire is suitable for outdoor rooftop applications without conduit and raceways installed underground, in wet locations, and where condensation and moisture accumulations do not exceed 90°C. Permitted for Type Photovoltaic per UL-854 and UL-4703 for applications requiring direct burial. For applications requiring type Photovoltaic conductor, temperatures shall not exceed 90°C in wet or dry locations. When installed in accordance with NEC Section 690.31(C)(2), PV Source and PV Output, single-conductor cable of all sizes, can be installed in outdoor Cable Trays, where applicable.

## FEATURES

Available in 600V and 1KV/2KV. Cables comply with UL's VW-1 (vertical wire flame) rating. Insulation compound is rated sunlight-resistant in all sizes and colors. Photovoltaic conductors of 1/0 and larger are rated for CT use. Compliant with IEEE 1202/FT4 Flame Test and ICEA T-29-520 Flame Test. May be used for direct burial per UL-854. SmartSun PV wire is UL-4703 certified, sunlight-resistant in all sizes and colors.



- ① SmartSun XLPE Insulation
- ② Compact Stranded Conductor, AA-8000 Series

| Size<br>(AWG or KCMIL) | No. of Strands |            | Compact Diameter of<br>Aluminum Conductor<br>(in) | Insulation Thickness<br>XLPE<br>(in) |            | Outside Diameter<br>(in) |            | Approximate Net<br>Weight<br>(lbs/1000 ft) |            | Allowable<br>Ampacity @ 90°<br>(Amps) <sup>1</sup> |            | Standard Packaging<br>(ft)   |
|------------------------|----------------|------------|---|--------------------------------------|------------|--------------------------|------------|--|------------|--|------------|------------------------------|
|                        | 600V           | 1KV<br>2KV |   | 600V                                 | 1KV<br>2KV | 600V                     | 1KV<br>2KV | 600V                                       | 1KV<br>2KV | 600V   | 1KV<br>2KV |                              |
|                        | 600V & 1KV/2KV |            |   |                                      |            |                          |            |  |            |  |            |                              |
| 8                      | 7              | 7          | 0.134   | 0.075                                | 0.085      | 0.284                    | 0.304      | 37   | 41         | 45   | 45         | 500' 1000' 2500' 5000' Reels |
| 6                      | 7              | 7          | 0.169   | 0.075                                | 0.085      | 0.319                    | 0.339      | 50   | 54         | 55   | 55         | 500' 1000' 2500' 5000' Reels |
| 4                      | 7              | 7          | 0.213   | 0.075                                | 0.085      | 0.363                    | 0.383      | 69   | 74         | 75   | 75         | 500' 1000' 2500' 5000' Reels |
| 3                      | 7              | 7          | 0.238   | 0.075                                | 0.085      | 0.388                    | 0.408      | 81   | 86         | 85   | 85         | 500' 1000' 2500' 5000' Reels |
| 2                      | 7              | 7          | 0.268   | 0.075                                | 0.085      | 0.418                    | 0.438      | 98   | 104        | 100  | 100        | 500' 1000' 2500' 5000' Reels |
| 1                      | 8              | 8          | 0.299   | 0.095                                | 0.105      | 0.489                    | 0.509      | 130  | 137        | 115  | 115        | 500' 1000' 2500' 5000' Reels |
| 1/0                    | 10             | 10         | 0.336   | 0.095                                | 0.105      | 0.526                    | 0.546      | 156  | 163        | 135  | 135        | 500' 1000' 2500' 5000' Reels |
| 2/0                    | 12             | 12         | 0.376   | 0.095                                | 0.105      | 0.566                    | 0.586      | 187  | 194        | 150  | 150        | 500' 1000' 2500' 5000' Reels |
| 3/0                    | 15             | 15         | 0.423   | 0.095                                | 0.105      | 0.613                    | 0.633      | 226  | 234        | 175  | 175        | 500' 1000' 2500' 5000' Reels |
| 4/0                    | 19             | 19         | 0.475   | 0.095                                | 0.105      | 0.665                    | 0.685      | 273  | 283        | 205  | 205        | 500' 1000' 2500' 5000' Reels |
| 250                    | 22             | 22         | 0.520   | 0.110                                | 0.120      | 0.740                    | 0.760      | 330  | 341        | 230  | 230        | 500' 1000' 2500' 4000' Reels |
| 300                    | 21             | 21         | 0.570   | 0.110                                | 0.120      | 0.790                    | 0.810      | 384  | 395        | 260  | 260        | 500' 1000' 3500' Reels       |
| 350                    | 24             | 24         | 0.616   | 0.110                                | 0.120      | 0.836                    | 0.856      | 439  | 451        | 280  | 280        | 500' 1000' 3000' Reels       |
| 400                    | 27             | 27         | 0.659   | 0.110                                | 0.120      | 0.879                    | 0.899      | 492  | 505        | 305  | 305        | 500' 1000' 3000' Reels       |
| 500                    | 34             | 34         | 0.736   | 0.110                                | 0.120      | 0.956                    | 0.976      | 599  | 612        | 350  | 350        | 500' 1000' 2500' Reels       |
| 600                    | 41             | 41         | 0.813   | 0.125                                | 0.135      | 1.063                    | 1.083      | 726  | 741        | 385  | 385        | 500' 1000' 2000' Reels       |
| 700                    | 45             | 45         | 0.877   | 0.125                                | 0.135      | 1.127                    | 1.147      | 834  | 850        | 425  | 425        | 500' 1000' 1500' Reels       |
| 750                    | 47             | 47         | 0.908   | 0.125                                | 0.135      | 1.158                    | 1.178      | 884  | 900        | 435  | 435        | 500' 1000' 1500' Reels       |
| 900                    | 58             | 58         | 0.999   | 0.125                                | 0.135      | 1.249                    | 1.269      | 1045                                       | 1062       | 480  | 480        | 500' 1000' Reels             |
| 1000                   | 61             | 61         | 1.060   | 0.125                                | 0.135      | 1.310                    | 1.330      | 1145                                       | 1163       | 500  | 500        | 500' 1000' Reels             |

<sup>1</sup> Ampacity of conductors are based on the National Electrical Code (NFPA 70) Table 310.15(B)(16). See 110.14(C), 240.4(D) and 310.15(B) for other limitations where applicable.

### 600V PRINT LEGEND:

**8 AWG THROUGH 1 AWG:** ENCORE\*WIRE\*CORP\*(SIZE)\*AA-8000\*AL\*CDR\*TYPE\*PHOTOVOLTAIC\*WIRE\*OR\*RHH\*OR\*RHW\*OR\*RHW-2\*GR2\*DIR-BUR\*90C\*WET\*OR\*DRY\*VW-1\*SUN-RES\*-40C\*600V\*XLPE\*(UL)\*DATE\*TIME\*OPERATOR\*QC

**1/0 AWG THROUGH 1000 KCMIL:** ENCORE\*WIRE\*CORP\*(SIZE)\*AA-8000\*AL\*CDR\*TYPE\*PHOTOVOLTAIC\*WIRE\*OR\*RHH\*OR\*RHW\*OR\*RHW-2\*GR2\*DIR-BUR\*90C\*WET\*OR\*DRY\*VW-1\*FT4\*IEEE1202\*SUN-RES\*-40C\*600V\*XLPE\*(UL)\*FOR\*CT\*USE\*DATE\*TIME\*OPERATOR\*QC

### 1KV/2KV PRINT LEGEND:

**8 AWG THROUGH 1 AWG:** ENCORE\*WIRE\*CORP\*(SIZE)\*AA-8000\*AL\*CDR\*TYPE\*PHOTOVOLTAIC\*WIRE\*OR\*RHH\*OR\*RHW\*OR\*RHW-2\*GR2\*DIR-BUR\*90C\*WET\*OR\*DRY\*VW-1\*SUN-RES\*-40C\*2000V\*XLPE\*(UL)\*DATE\*TIME\*OPERATOR\*QC

**1/0 AWG THROUGH 1000 KCMIL:** ENCORE\*WIRE\*CORP\*(SIZE)\*AA-8000\*AL\*CDR\*TYPE\*PHOTOVOLTAIC\*WIRE\*OR\*RHH\*OR\*RHW\*OR\*RHW-2\*GR2\*DIR-BUR\*90C\*WET\*OR\*DRY\*VW-1\*FT4\*IEEE1202\*SUN-RES\*-40C\*2000V\*XLPE\*(UL)\*FOR\*CT\*USE\*DATE\*TIME\*OPERATOR\*QC