

Power

Solar Power Systems

12V, 24V and 48V Systems



Alpha Energy New York SPS Installation.

- Cost-effective alternative to AC line extension
- Reliable power where you need it, when you need it
- Minimum of six days of design load autonomy
- Engineered for pole or pad mounting, and rapid field deployment

Applications include: Security systems, traffic systems, emergency power, cathodic protection, navigational aids, WiMax and SCADA.

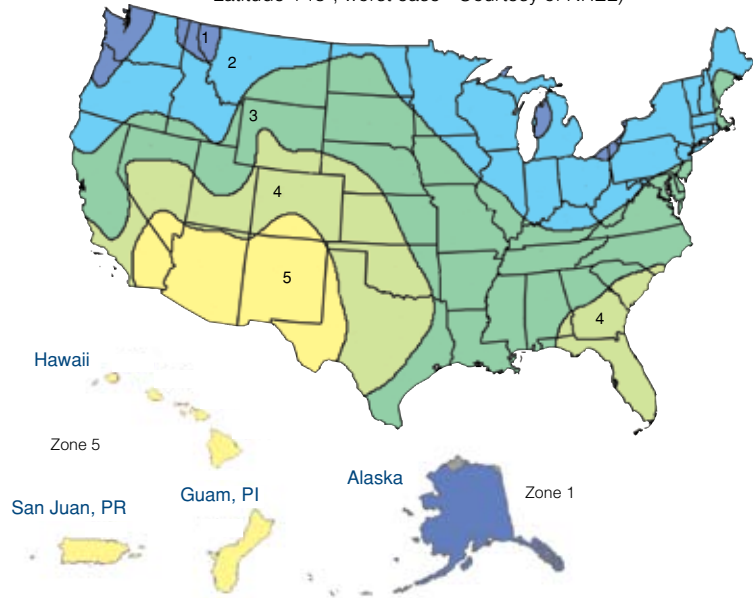
Solar Power Systems (SPS) can be configured to provide a range of DC or AC power outputs. Systems include the most recent advances in PV manufacturing, electronic controls and power management. Standard controls include temperature-compensated 3-stage battery charging, battery low voltage disconnect, lightning protection and complete circuit protection. Each system comes with a two-year limited warranty (extended warranties are available), while the PV modules carry a 20 to 25-year performance guarantee.

The SPS design incorporates a minimum of six days load autonomy, providing reliable power with no operational or maintenance costs and near-zero annual load loss probability. Systems are engineered for pole or pad mounting and packaged for easy installation.

Options Include: Multiple output breakers, data logging of system operating parameters, alarm outputs for critical system parameters, DC to AC inverter for AC loads and additional enclosure for customer use.

United States Solar Radiation Zones

(Average Daily Radiation on South-Facing Flat Plate-Tilted at Latitude +15°, worst case - Courtesy of NREL)



Solar Power Systems

System Selection:

1. Identify your location on the map at right (Inquire regarding locations outside of the United States).
2. Determine your load in DC Watts (To convert AC loads to DC, divide AC Watts by 0.80).
3. Refer to the table with your DC Watts load to identify the SPS you need.

Model Number Designation:

SPS ___ / ___

- SPS: System Voltage
- ___: PV Array (W)
- ___: Battery Capacity (Ah)

Values in table are size of load in Watts (continuous or average) at 12Vdc

| Model Number | Load (Watts DC) Zone 1 | Load (Watts DC) Zone 2 | Load (Watts DC) Zone 3 | Load (Watts DC) Zone 4 | Load (Watts DC) Zone 5 | Array Width (ft) | Array Height (ft) |
|----------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------|-------------------|
| SPS12-80/108G | 2.4 | 4.5 | 6.4 | 7.4 | 8.7 | 1.8 | 3.9 |
| SPS12-100/144G | 3 | 5.7 | 8 | 10 | 11.7 | 2.2 | 4.8 |
| SPS12-123/170G | 3.8 | 7 | 10 | 11.8 | 13.9 | 2.2 | 4.9 |
| SPS12-160/232G | 5 | 9.2 | 13 | 16.3 | 19 | 3.5 | 3.9 |
| SPS12-200/255G | 6.4 | 11.6 | 15.6 | 17.9 | 21 | 4.3 | 4.8 |
| SPS12-246/324G | 7.9 | 14.3 | 20 | 22.8 | 26.7 | 4.3 | 4.9 |
| SPS12-320/432G | 10.4 | 18.7 | 26.4 | 30.6 | 35.7 | 3.5 | 7.9 |
| SPS12-400/540G | 13 | 23.5 | 33 | 38.3 | 44.7 | 4.3 | 9.7 |
| SPS12-600/864G | 19.7 | 35.4 | 49.7 | 61.4 | 71.7 | 6.5 | 9.7 |

Values in table are size of load in Watts (continuous or average) at 24Vdc

| Model Number | Load (Watts DC) Zone 1 | Load (Watts DC) Zone 2 | Load (Watts DC) Zone 3 | Load (Watts DC) Zone 4 | Load (Watts DC) Zone 5 | Array Width (ft) | Array Height (ft) |
|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------|-------------------|
| SPS24-170/116G | 5.1 | 9.5 | 13.6 | 16 | 18.7 | 2.7 | 5.2 |
| SPS24-200/170G | 6.1 | 11.3 | 16.1 | 20.8 | 25.6 | 4.3 | 4.8 |
| SPS24-246/170G | 7.6 | 14 | 19.9 | 23.7 | 27.7 | 4.3 | 4.9 |
| SPS24-340/216G | 10.7 | 19.6 | 26.4 | 30.3 | 35.4 | 5.4 | 5.2 |
| SPS24-400/255G | 12.7 | 23.2 | 31.3 | 35.8 | 41.9 | 4.3 | 9.7 |
| SPS24-510/432G | 16.4 | 29.8 | 41.9 | 54 | 66.2 | 8.1 | 5.2 |
| SPS24-680/540G | 22.1 | 39.9 | 56.1 | 72.3 | 88.4 | 5.4 | 10.3 |
| SPS24-738/540G | 24 | 43.3 | 60.9 | 76.5 | 89.4 | 8.7 | 9.7 |
| SPS24-800/540G | 26.1 | 47 | 66.1 | 76.5 | 89.4 | 8.1 | 10.3 |
| SPS24-1020/840G | 33.4 | 60.1 | 84.4 | 108.7 | 133 | 10.8 | 10.3 |
| SPS24-1360/1050G | 44.7 | 80.4 | 112.7 | 145.1 | 174.4 | 10.8 | 10.3 |

Values in table are size of load in Watts (continuous or average) at 48Vdc

| Model Number | Load (Watts DC) Zone 1 | Load (Watts DC) Zone 2 | Load (Watts DC) Zone 3 | Load (Watts DC) Zone 4 | Load (Watts DC) Zone 5 | Array Width (ft) | Array Height (ft) |
|-----------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------|-------------------|
| SPS48-160/85G | 4 | 8.2 | 12 | 15.8 | 19.6 | 3.3 | 5 |
| SPS48-340/108G | 10 | 18.9 | 25.7 | 29.5 | 34.7 | 5.4 | 5.2 |
| SPS48-400/170G | 11.9 | 22.4 | 31.9 | 41.5 | 51 | 4.3 | 9.7 |
| SPS48-680/216G | 21.3 | 39.1 | 52.6 | 60.3 | 70.6 | 5.4 | 10.3 |
| SPS48-800/324G | 25.3 | 46.2 | 65.3 | 84.3 | 103.4 | 8.7 | 9.7 |
| SPS48-1020/324G | 32.6 | 59.3 | 79.6 | 91.2 | 106.6 | 8.1 | 10.3 |
| SPS48-1360/432G | 43.9 | 79.6 | 106.6 | 122 | 142.6 | 10.8 | 10.3 |
| SPS48-1700/630G | 56.3 | 100.8 | 141.3 | 179.6 | 209.6 | 13.6 | 10.3 |