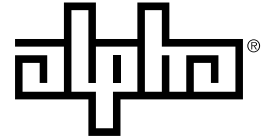


SOLAR POWER
12V, 24V, AND 48V SYSTEMS



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.

Solar Power Systems

System Selection:

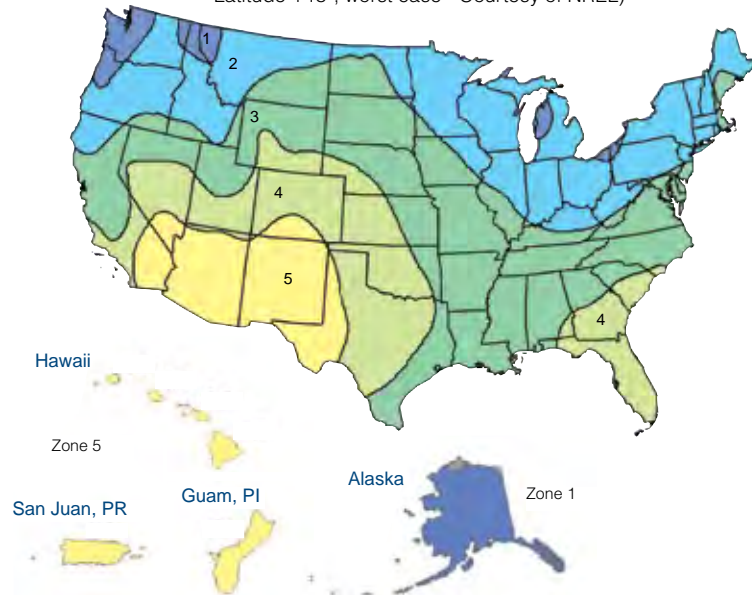
1. Identify your location on the map at right
(Inquire regarding locations outside of the United States).
2. Determine your load in DC Watts
(To convert AC loads to DC, divide AC Watts by 0.80).
3. Refer to the table with your DC Watts load to identify the SPS you need.

Model Number Designation:

SPS---/---/---

└─ Battery Capacity (Ah)
└─ PV Array (W)
└─ System Voltage

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



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