Smart Crosswalk™ Solar Power Control Unit (PCU)

LightGuard Systems Part Number: LGS-Solar System

Description: Solar powered PCU with programmable interface, cabinet and batteries

Features/Benefits

- Stand alone solar powered
- Pad or pole mount enclosure
- Available with DC upgrade kits
- Lockable weatherproof cabinet
- Internal branch circuit protection
- Long life SLA batteries
- Easy to install electrical connections

Application Notes:

The solar powered control unit accepts call signals from either manual push button or automatic activation (Bollards). The activation devices initiate the Enlighten1 flashing light sequence. Approaching motorists are alerted to the presence of pedestrians entering the crosswalk.

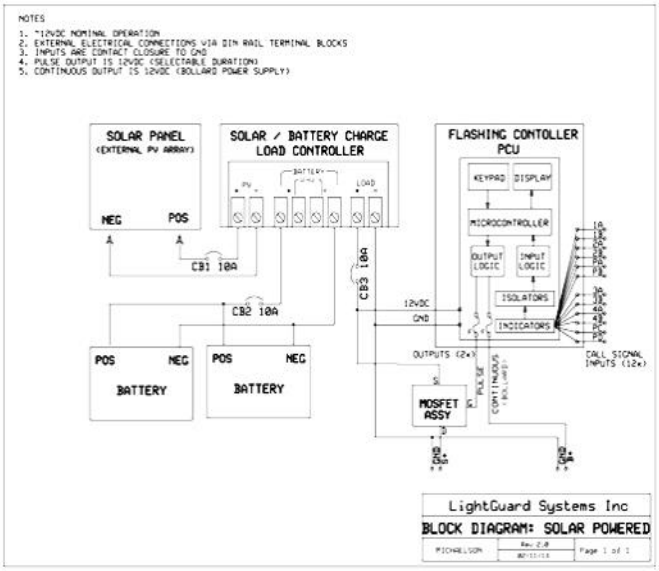
The programmable control unit user interface allows for multiple option selections, data collection, and preset programming. PCU memory contains a limited number (approximately 65,000) of "date/time stamped" activation counts, diagnostic and power-up events. The PCU is capable of data transfer and remote communication via the PCU RS232 serial port.

Upgrade kits available: DC beacons, constant DC output and audible notifications. The enclosure contains two 12 volt SLA batteries. Each battery is rated at approximately 100 amp hours. The batteries are wired in parallel to give 12 volts nominal at 200 amp hours of storage. System includes: solar panel, enclosure, batteries and mounting brackets.

General Performance Specifications

Parameter	Value
Power consumption	1 Watt (in standby mode)
Operating Temp	0°C to 50°C
Input Operating Voltage	17 VDC Solar Panel (peak sun)
Input Current Protection	10A Fast acting circuit breaker
Input Solar Panel Power	80 Watts @ 4.7A (peak sun)
Output Operating Voltage	13.5 VDC to 15 VDC
Output DC Load maximum	10 Amps
Enclosure Type	11 GA Corrosion Resistant Aluminum (lockable)
Enclosure Color	White (standard)
Enclosure Size	45" x 24" x 14"

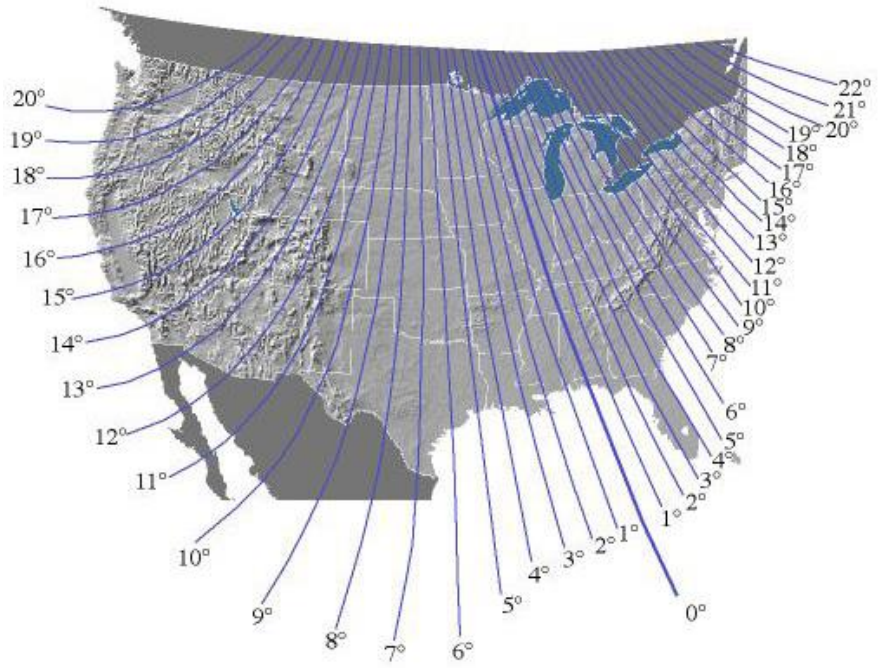
Solar Control Panel Schematic



2292 Airport Blvd. Santa Rosa, CA. 95403 | Phone (707) 542-4547 | Fax (707) 525-6333 5/9/18

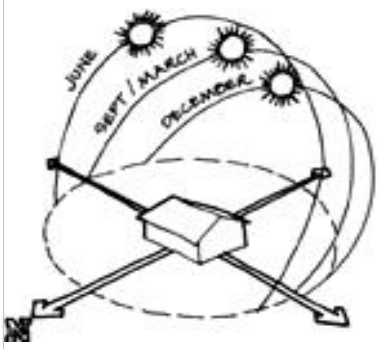
ORIENTING THE SOLAR MODULE

It is important for proper system operation that the array be oriented true South (if you are located in the northern hemisphere). The directions of magnetic South and true South differ from one another depending on geographic location. This variance is called deviation. Check the deviation for your region in order to extrapolate true South from a compass heading of magnetic South. The map in this section shows the magnetic deviation for the US.



DECLINATION ANGLE FOR SOLAR PANELS

When installing photovoltaic modules, be aware that they generate maximum power when facing the sun directly. The fixed position which approximates this ideal over the course of the year, thus maximizing annual energy production, is facing due South at the angle listed in the table in the next column. Note that these orientations are **true.** The table below shows the fixed angle above horizontal at which modules should be installed in order to maximize annual energy output.



Latitude Site	Tilt Angle
0-15°	15°
15-25°	SAME As latitude
25-30°	Add 5° to local latitude
30-35°	Add 10° to local latitude
35-40°	Add 15° to local latitude
40° +	Add 20° to local latitude

At some installations, it may be cost-effective to adjust the tilt seasonally. At most latitudes, performance can be improved during the summer by using an angle flatter than the chart's recommendation; conversely, a steeper angle can improve winter performance.

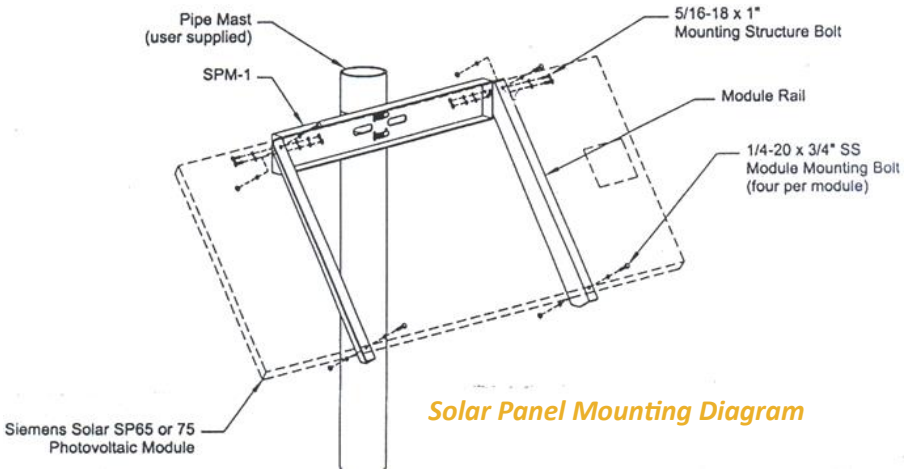
If modules are not cleaned regularly, it is recommended that they not be mounted at an angle flatter than 15°. Flatter angles cannot take full advantage of the cleansing action of rainfall.

SOLAR MODULE MOUNTING

The solar module typically mounted to the side of a 4" galvanized mast using the aluminum side-of-pole mount and hardware supplied. The solar module must be oriented to face **Due South**.

Attach the mounting rails to the pole bracket and adjust the tilt angle to create an angle setting for your local latitude from horizontal facing South. Use U-bolts to secure the mount to the mast.

In areas of high winds additional wind braces may be needed. Contact LightGuard Systems® for details.



Solar Panel Mounting Diagram