Sun Surveillance

SOLSTICECAM™
Installation manual

Model: SS-1903281659

Sun Surveillance Inc. 418 Old Greenville Rd. Spartanburg South Carolina 29301

Wireless Setup

Tools required for this section

Cordless Drill and 5/16” Socket

Slotted Screwdriver

Wireless Setup

Choose the location where your wireless receiver (Access Point) will be mounted. Ideally, the receiver should be located in close proximity to where your NVR, computer, or Internet connection is located at your home or business and where there is a clear visual line of sight to the wireless transmitter. If your wireless setup requires individualized assistance, please contact technical support (contact information is listed in the back of this guide).

If your SolsticeCam wireless receiver comes equipped with an antenna mount, attach the antenna mount to your pole or structure and secure the wireless receiver to the mount using the supplied zip ties or clamps.

Connect your wireless receiver to your network using a CAT5 or better rated patch cable (if mounting outdoors, a shielded cable is strongly recommended). Terminate the patch cable from the wireless receiver to the POE port on the supplied midspan PoE injector. Using a second patch cable, connect the LAN port of the PoE Injector to your NVR, computer, or router.

Wireless Setup

The Ubiquiti NanoStations supplied with your SolsticeCam system have been preprogrammed for your convenience. If you need to access the devices, you can log in by typing the device IP address into your web browser.

The following security information is provided:

Default Network Address:

AP:	192.168.7.2
Station:	192.168.7.20

Login Credentials:

Username:	admin
Password:	sun007

WPA2-AES Preshared Key:

3#UB277NT@

Pole installation

Tools required for this section

1/8” Allen Wrench

Adjustable Wrench

Socket Wrench

3/4” Socket

Pole installation

General guidelines for 6 inch hinged pole installations:

Note: The installer is solely responsible for use of the general guidelines.

Dig the hole at least 52 inches deep with a 24-inch diameter. Fill the bottom 4 inches with gravel to allow water drainage. If a finished look is desirable, use 24-inch diameter concrete tube form for top of pole base.

Place rebar cage inside concrete form. If required for your application, bring conduit into form and cover conduit opening.

Using bolt pattern template, arrange anchor bolts in the form according to the pattern on the template. Note: Anchor bolts must be vertically straight.

Pour concrete into form to level specified on template, ensuring no voids exist. Allow concrete to set up for at least 24 hours before installing pole.

Pole installation

The following variances can affect your installation:

- The required diameter and depth of the hole depend on soil type. Sandy soil, for example, requires more concrete.

- The diameter and depth of the hole should also be enlarged wherever extreme wind conditions may be present, particularly in locations where the site is open and unprotected.

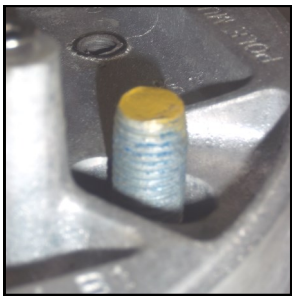
- Poles taller than 20 feet require the depth of the hole be increased.

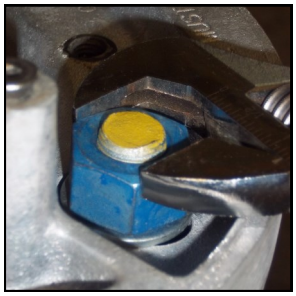
Note: To ensure foundation designs meet local regulations and are adequate for site soil conditions and wind loading requirements, we recommend customers consult a professional civil engineer.

Pole installation

Remove one nut and washer from each anchor bolt, leaving a washer and nut to provide a level base for the pole.

Using socket wrench and 3/4” socket, loosen and remove the three bolts on pole hinge. Open hinge on pole and set pole onto base, aligning holes in pole base with anchor bolts.





Using adjustable wrench, attach a washer and nut to each of the four anchor bolts.

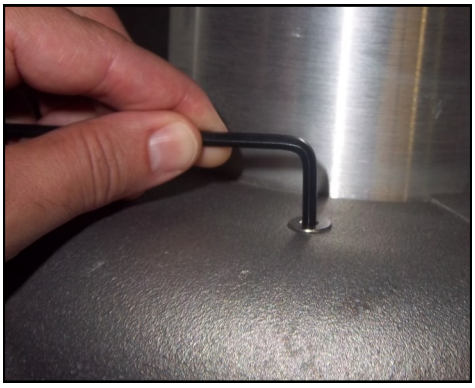
Raise pole to upright position. Using socket wrench and 3/4” socket, secure bolts on pole hinge.

Pole installation

Ensure pole is plumb by making any necessary adjustments in the heights of the base nuts on the anchor bolts.

Lower pole to horizontal position for installation of solar array and other attached hardware.

Raise pole to upright position. Using socket wrench and 3/4” socket, secure bolts on pole hinge.



Using 1/8” Allen wrench and four bolts, attach the two cover halves to the pole base.

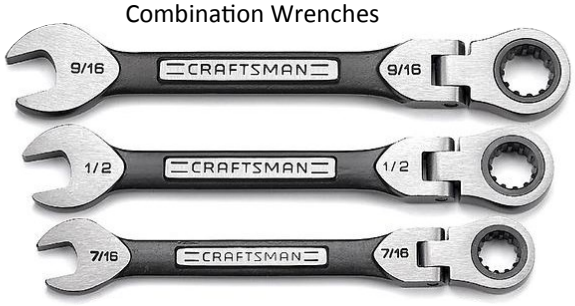
Solar panel mount

Tools required for this section

Socket Wrench

Deep Well Sockets

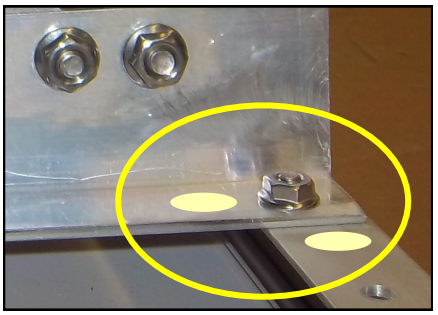
Combination Wrenches



Compass

Solar panel mount

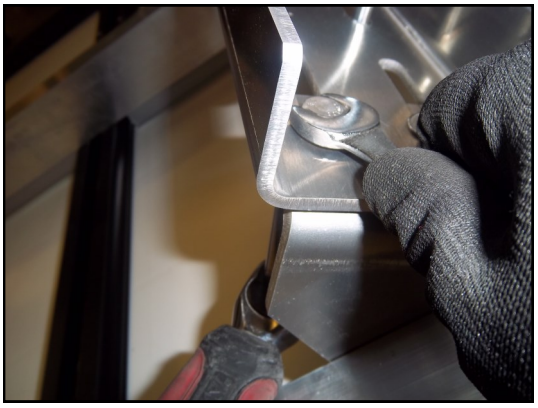
Match colored stickers on solar panels to the corresponding colors on the solar panel mount.



Using 7/16” wrench, secure solar panels to solar panel rails with (8) 1/4-20 x 3/4” bolts and lock nuts.

Solar panel mount

Using 9/16” combination wrench and a 9/16” socket, verify ear brackets are securely fastened to pole brackets with (8) 3/8-16 x 1” bolts and lock nuts.



Note: The following steps requires a minimum of two persons. Do not attempt installation of solar panel array on pole individually.

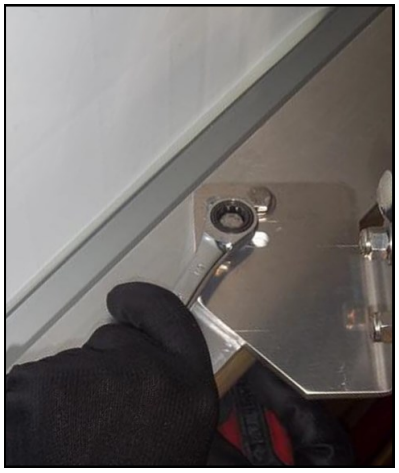
Place assembled solar panel array on pole, aligning notches in pole brackets with pole.

Solar panel mount

Using 9/16” socket, secure assembled solar panel array to pole with (4) carriage bolts and lock nuts.

Note: The tilt angle for the solar panel array is preset at the factory.

Using 1/2” combination wrench and 1/2” socket, verify ear brackets are securely fastened to solar panel rails with (4) 5/16-18 x 7/8” bolts and lock nuts and support rails with (4) 5/16-18 x 7/8” bolts and lock nuts.



Solar panel mount

Using 9/16” combination wrench and a 9/16” socket, verify support rails are securely fastened to solar rails with (2) 3/8-16 x 1” bolts and lock nuts.

Solar panel orientation

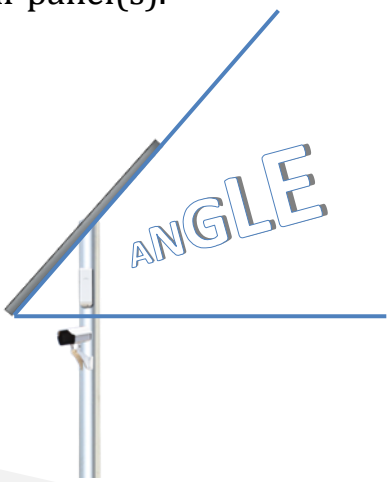
Please observe the following guidelines for proper placement and orientation of the solar panel(s):

Do not place the SolsticeCam™ where the solar panel(s) will be shaded by trees, buildings, or other obstructions at any time throughout the year.

Using a compass, orient the solar panel array to face due South for locations in the northern hemisphere and due North for locations in the southern hemisphere.

Verify proper tilt angle on solar panel(s).

The solar panel tilt angle is preset at the factory and should be rechecked at the time of installation using the table at right.



Latitude	Tilt Angle
0-15	15
15-25	Latitude
25-30	Latitude + 5
30-35	Latitude + 10
35-40	Latitude + 15
40	Latitude + 20

Batteries

Tools required for this section

Socket Wrench

Deep Well Socket

Batteries

Locate battery wiring diagram included with your system.

Note: Sun Surveillance batteries are sealed AGM type and, therefore, safe to be placed vertically in battery enclosures.

Place batteries in enclosures vertically, with terminals oriented closest to the center of enclosure.

Note: If your system has an odd number of batteries, the first battery will be placed in top battery or electronics enclosure as pictured in battery wiring diagram.

Batteries

NOTE: ALLOWING THE POSITIVE AND NEGATIVE TERMINALS TO CONTACT SIMULTANEOUSLY WILL CAUSE ARCING AND POSSIBLE ELECTRIC SHOCK.

12VDC System:

Before connecting batteries, ensure all fuses and disconnects are in the open (down) position.

Using 1/2” socket, red battery cables, and bolts supplied with your batteries, connect red (+) cables according to battery wiring diagram.

Using 1/2” socket, black battery cables, and bolts supplied with your batteries, connect black (-) cables according to battery wiring diagram.

If your system is equipped with a battery temperature sensor cable, connect the cable to the (+) terminal on the first battery in the string.

Batteries

NOTE: ALLOWING THE POSITIVE AND NEGATIVE TERMINALS TO CONTACT SIMULTANEOUSLY WILL CAUSE ARCING AND POSSIBLE ELECTRIC SHOCK.

24/48VDC System:

Before connecting batteries, ensure all fuses and disconnects are in the open (down) position.

Using 1/2” socket, red battery cables, and bolts supplied with your batteries, connect red (+) cables according to battery wiring diagram.

Separate the 6” black battery cables from the other cables for use in the next step. Using 1/2” socket, remaining black battery cables, and bolts supplied with your batteries, connect black (-) cables according to battery wiring diagram.

Using 6” black battery cables, wire battery strings in series according to battery wiring diagram.

If your system is equipped with a battery temperature sensor cable, connect the cable to the (-) terminal on the first battery in the string.

STOP

SOLAR PANEL(S) AND BATTERY(S) MUST BE CONNECTED BEFORE THIS PROCEDURE!

MAIN BREAKER

TURN ON MAIN

BATTERY STATUS LED

SOLAR BREAKER

TURN ON SOLAR

CHARGING LED

CLOSE COMPONENT.

REPEAT.

POWER DOWN IN REVERSE SEQUENCE.

Sun Surveillance Terms of Warranty and Repair Information

LIMITED THREE YEAR WARRANTY

1. Sun Surveillance warrants SolsticeCam™ or PowerBox™ systems for a period of three (3) years from the date of shipment from its manufacturing location. This warranty is valid against defects in materials and workmanship for the three (3) year warranty period. It is not valid against defects or failures resulting from, but not limited to:
    - Misuse and/or abuse, neglect or accident.
    - Exceeding the unit's design limits, including loads that exceed those specified in the system design.
    - Improper installation, including, but not limited to, improper environmental protection and improper hook-up.
    - Acts of God, including lightning, floods, earthquakes, fire and high winds.
    - Damage in handling, including damage encountered during shipment.
2. This warranty shall be considered void if the warranted product is in any way disassembled or altered. The warranty will be void if any eyelet, rivets, or other fasteners used to seal the unit are removed or altered, or if the unit's serial number is in any way removed, altered, replaced, defaced or rendered illegible.
3. The three (3) year term of this warranty does not apply to equipment where another manufacturers' warranty is available. The time limit for this warranty may be less than the Sun Surveillance limited warranty. Sun Surveillance will assist the claimant in attempts to seek warranty claims for such equipment, where appropriate. The following warranties apply:
    - Photovoltaic Module(s) - 10-25 year limited warranty on power output
    - Battery(s) - One year limited warranty
    - Charge Controller - Five year limited warranty

Please refer to supplemental manufacturer's warranty sheet(s) provided with the Sun Surveillance instruction manual for further details.

4. Sun Surveillance cannot assume responsibility for any damages to any customer supplied system components used in conjunction with Sun Surveillance products, nor for claims for personal injury or property damage resulting from the use of Sun Surveillance products or the improper operation thereof, or consequential damages arising from the products or use of the products.
5. Sun Surveillance cannot guarantee compatibility of its products with other components used in conjunction with Sun Surveillance products, including, but not limited to, solar modules, batteries, and system interconnects, and such loads as inverters, transmitters, and other loads which produce "noise" or electromagnetic interference, in excess of the levels to which Sun Surveillance products are compatible.
6. Warranty repair and/or evaluation will be provided only at the South Carolina facility headquarters of Sun Surveillance. Units for such repair and/or evaluation must be returned with prior authorization, freight prepaid, to Sun Surveillance with a written description of any apparent defects. Sun Surveillance will not be required at any time to visit the installation site wherein Sun Surveillance products are subject to warranty repair and/or evaluation.
7. Only Sun Surveillance is authorized to repair any of its products, and they reserve the right to repair or replace any unit returned for warranty repair. The party returning a unit for repair is responsible for proper packaging and for shipping and insurance charges, as well as any other charges incurred in shipping to Sun Surveillance.
8. Purchaser's exclusive remedy for any and all losses or damages resulting from the date of sale of this product including, but not limited to, any allegations of breach of warranty, breach of contract, negligence or strict liability, shall be limited, at the option of Sun Surveillance, to either the return of the purchase price or the replacement of the particular product for which claim is made and proved. In no event shall Sun Surveillance be liable to purchaser or purchaser's customers or to anyone else for any punitive, special, consequential, incidental or indirect losses or damages resulting from the sale of the product, whether based upon loss of goodwill, lost profits, work stoppages, impairments of other goods, breach of contract, or otherwise.
9. This warranty supersedes all other verbal or written warranties and may only be modified by statement in writing, signed by Sun Surveillance.
10. Warranty terms effective as of September 1, 2006.

LIMITED ONE YEAR PERFORMANCE WARRANTY

We stand behind every system we design for our customers and guarantee our solar and battery systems are sized appropriately for your application.

1. Sun Surveillance warrants SolsticeCam™ or PowerBox™ systems for a period of one (1) year from the date of shipment from its manufacturing location for power deficiencies caused exclusively by inadequate system sizing. Power deficiencies determined by Sun Surveillance to be caused exclusively by inadequate system sizing will be corrected with the shipment of a customer installable retrofit kit at no charge.
2. Sun Surveillance cannot assume responsibility under this performance warranty for power deficiencies due to any cause other than inadequate system sizing, including: failure to install or activate the system per the manufacturer's installation instructions, exceeding the design load budget for any reason, damage to the system, or due to improper connection of customer supplied equipment.
3. This warranty supersedes all other verbal or written warranties and may only be modified by statement in writing, signed by Sun Surveillance.
4. Warranty terms effective as of January 1, 2015.

REPAIR INFORMATION - Directions for return in the event of a unit needing repair:

1. You must contact Sun Surveillance Technical Support before returning any product. Returns will not be accepted unless prior authorization has been given by Sun Surveillance. Once Technical Support has approved a return, an RMA will be issued.
2. Include the following information with your returned item:
    - Name / Company Name
    - RMA #
    - Return Address: (For USA/Canada: Must be FedEx Freight Deliverable. Avoid PO Boxes)
    - Daytime Phone
    - Description of the problem or failure
    - Specify amount of repair charges you will pre-approve. (We will contact you if repair charges are greater than this amount.)
3. Box up, palletize, or crate unit (as applicable) with copy of sales receipt (if available).
4. Contact Sun Surveillance, Inc. for return address: Phone: 864-699-9911 Fax: 864-699-9916

Warranty Registration

Please take a moment to register and activate the warranty on your Sun Surveillance system. Registration serves as proof of purchase in the event your system is in need of warranty repair or service.

1 Go to Website | **https://sunsurveillance.typeform.com/to/QKAfYT**

2 Enter Info | Enter product serial number found on the barcode label in your system

You may also record your product serial number below for easy reference:

Serial Number: _____

Troubleshooting Guide

SYMPTOM	PROBABLE CAUSE	ITEMS TO CHECK
Batteries not charging (The charging status LED will flicker once every 5 seconds)	PV disconnected PV wiring	Set solar breaker to on (up) position. Verify solar panels wired per installation manual.
Batteries not charging (No battery LEDs illuminated)	Battery breaker tripped Battery wiring	Reset breaker. If breaker continues to trip, check battery wiring for a short circuit. Verify battery wiring matches battery wiring diagram supplied with your unit.
Batteries not maintaining charge (system may be operational at times, especially in the daytime, but powers down, typically at night)	Shading issue PV orientation Tilt angle Load budget exceeded	Relocate solar panel to avoid any shading from trees, buildings, or other objects. Verify solar panel is facing due South (Northern hemisphere) or due North (Southern hemisphere). Verify solar panel tilt angle set as specified in the installation manual. Verify devices match those specified in system design (device list appears on invoice). A support technician can help determine if your load budget exceeds the system design. Contact support for assistance.
Individual device has no power	Component Fuse blown	Replace component fuse. If fuses continue to blow, check wiring for a short circuit.
Water ingress	Water seepage from wiring	Ensure a drip loop is in place wherever wiring enters an enclosure or junction box.

Technical Support

Thank you for your purchase of a Sun Surveillance powered system. Our highest goal is your satisfaction. To ensure a trouble-free installation, Sun Surveillance provides access to free technical support for assistance with installation and configuration questions/issues.

The following support options are available:

Email | **support@sunsurveillance.com**

Phone | **(864) 699-9911 Monday - Friday: 9AM—5PM ET**

To provide you with the best support, please be at the unit if possible, and have the following available when you call:

- Unit serial number, located on a barcode label inside your system
- Voltmeter / multimeter (if issue is power related)