SEE WATER, INC.

Solar Knight® Solar Powered High Liquid Alarm Installation and Operation Manual CP1003

Solar Powered High Liquid Alarm

The Solar Knight® liquid level alarm will notify maintenance personnel in the event of a high liquid condition. Models containing Pump Portal® provide remote monitoring via cellular connection. All alarms are UL Listed for the United States and Canada and come with a five-year warranty.

Model	Solar Panel Size
CP1003	10W
CP1003-PX	50W

Enclosure Mounting: NEMA 4X RATED

Mounting Brackets - A mounting bracket and screw pack are provided with the premium enclosures. To assemble, turn the enclosure upside down on a flat surface, place the mounting bracket over the square boss either horizontally or vertically, and fasten the mounting bracket with the $1/4''-20 \times 0.5$ SS, countersunk phillips drive screws or vertically, with the mounting brackets in any config., using any acceptable fastening technique.

 ${\bf Covers/Doors}$ - Covers/doors have a gasket pre-assembled to seal against the base.

Note: The alarm should not be mounted in a location that may be subject to submersion.

Installation:

- Caution: To maintain the enclosure's NEMA 4X rating, make all wiring connections with seal tight cable grips or conduit connections.
- Mount the float at the desired level. The float shall have free range of motion without contact to other equipment.
- Mount the solar panel using the provided hardware. For optimal performance, position the solar panel facing due south with a pitch of 30° to 45°.
- 4. Route the float cable to the control panel. Make field connections as shown on wiring schematic.
- Route solar panel cable to the control panel. Wire to terminals per enclosed schematic.
- Mount the float at the desired level. The float shall have free range of motion without contact to other equipment.



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Sequence of Operation:

An alarm activates when the liquid level raises the High Level Alarm Float. This illuminates a 360-degree visible beacon and sounds a buzzer (85 dB at 10').

Remote Monitoring Dry Contacts:

Normally Open dry contacts for high level.
 Note: Refer to wiring schematic for proper termination.

Service Life:

Battery:

- The battery has a float/standby service life of up to five (5) years.
- One component of battery life is operating cycles, which will vary depending on the depth of discharge (DoD). At 100% DoD, the battery is capable of up to 260 cycles. At 50% DoD, the battery is capable of up to 500 cycles.

Solar Panel:

• The solar panel has an electrical life expectancy of 25 years. After that point, a 10-15% reduction in voltage generation can be expected.

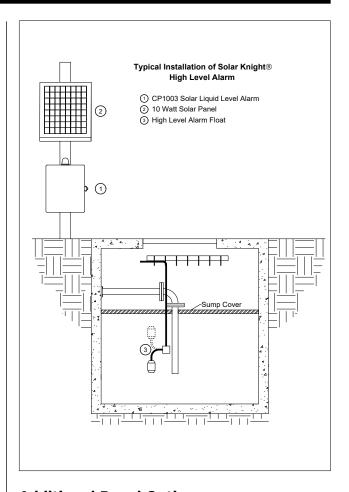
Preventative Maintenance:

Battery:

- The battery is sealed and generally maintenance-free. Periodic voltage checks can be performed. The typical float (standby) voltage is 11.5-13.5VDC.
- If the battery will not be in use (panel completely powered down) for a
 month or longer, it is recommended that the battery be removed from the
 panel and stored in a cool, dry and clean place. Always store the battery
 in a charged condition. Apply a top charge every six months while it is in
 storage. A charged battery will eventually lose its charge if unused. It may
 therefore be necessary to recharge the battery after a storage period.

Solar Panel:

 If the panel is installed with an angle greater than 45 degrees it is generally self-cleaning from rain. If the panel becomes coated with dust or debris, then it can be washed with water as needed.



Additional Panel Options:

28 = Power On Dry Contact

3R = Painted Steel Enclosure

50W = 50W Solar Panel with Larger Battery

AF = Alarm Flasher

C = Additional Cable Length Greater Than 20'*

LL = Low Level Alarm

PX = Pump Portal® - Wireless Remote

Communication

S3 = No Sensors Included

ST = Upgraded Enclosure (Stainless Steel)

*Specify cable length following C. Example: (CP1003-C50). Indicates 50' cable length for all components.



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Troubleshooting:

Caution: Before checking electrical connections or replacing any components within the control panel, turn off all branch circuits supplying power to the control panel.

Power and Fuse

If the power on light is not illuminated on the front panel, check the
voltage across the battery terminals with a voltage meter. The voltage
should read 11.5-13.5 VDC. If voltage is present, check the fuse in the
fuse holder. If the fuse is blown, replace fuse with same type.

Float

Check float for entanglement. Float must have full range of motion.
 Replace damaged float.

Pump Portal® Connectivity

• A blinking LED2 light on the Pump Portal® board indicates cellular connection. If the LED2 light is solid, press reset (RST) button on the board down for 5 seconds to reset the connection. Cellular connection will re-establish within 1-2 minutes.

Warranty:

See Water® Inc. warrants that products of its manufacture are free from defects in material and workmanship for a period of 5 years from the date of purchase. This date shall be determined by the date on the invoice and the serial number on the product.

Replacement of the product is at the discretion of See Water Inc. This warranty is valid when the product is installed in compliance with the manufacturer's installation instructions. The manufacturer's obligation under this warranty shall be limited to the repair or replacement of any parts found by the manufacturer to be defective, provided that the product is returned to See Water's factory, postage prepaid with proof of original purchase included.

The manufacturer of this warranty shall not be liable under this warranty if the product has not been properly installed; any alterations/additions/changes to the product will result in a void warranty. Failure to properly install and test this product can result in personal injury or equipment malfunction.

See Water, Inc. shall not be liable for any loss, damage or expenses from installation or use of its products.



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