ZXWB Solar Pump Controller with Battery Powered Wireless Roof Temperature Sensor

Owners Manual

Installation and Operation

⚠WARNING This equipmemt must be installed and serviced by a qualified technician. Improper installation can create electrical hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

Notice to Installer

This manual contains important information about the installation, operation and safe use of this product. Once the product has been installed **this manual must be given to the owner/ operator of this equipment.**

ZANE Pool Heating

www.zane.com.au

IMPORTANT SAFETY INSTRUCTIONS

When installing and using electrical equipment, basic safety precautions should always be followed. This includes the following:

READ AND FOLLOW ALL INSTRUCTIONS

! WARNING: Disconnect all AC power during installation.

! WARNING: In order to avoid the possibility of hyperthermia (heat stress) occurring it is recommended that the average temperature of the spa - pool water does not exceed 40˚C.

! WARNING: The appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been provided supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the appliance.

- The appliance is specially designed to control the solar heating of water in swimming pools. The appliance is designed to allow the solar collectors to heat up water to a temperature not exceeding 40°C (104°F) in swimming pools.
- In certain situations unexpected start up may occur when the appliance is in automatic mode. The installer should assess the risk associated with unexpected start-up of any connected device which, in any circumstance should have no hazardous effect.
- This appliance is not meant to provide safety protection for connected devices. All connected devices should have their own protection for safe operation. The appliance should be deactivated if the pool or spa has been drained. The

appliance operates with 240 volts and must be installed in accordance with current Australian Standards especially HD 384.7.702, the Australian Wiring Rules (AS3000) and local statutory authority regulations and outside the pool zone.

- This product must be mounted vertically, with the socket outlets facing down in a sheltered location out of direct sunlight.
- Parts containing live parts, except parts supplied with safety extra-low voltage not exceeding 12V, must be inaccessible to a person in the spa – pool.
- Parts incorporating electrical components, except remote control devices, must be located or fixed so that they cannot fall into the spa – pool.
- The appliance should be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30mA.
- The user should make sure that assembly and maintenance tasks are carried out by qualified authorized persons and that these persons have first carefully read the Service and Installation Instructions.
- The limit values stated in the Technical Specifications should not be exceeded under any circumstance.
- The solar controller is a complete appliance and should not be modified. If the supply cord is damaged, it shall be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.
- The Solar Controller is approved and conforms to AS3136 Swimming Pool Equipment, as a prescribed article under Australian Registration.
- The appliance conforms to the Australian Electromagnetic Compatibility Standard marked by the Ctick.

INTRODUCTION

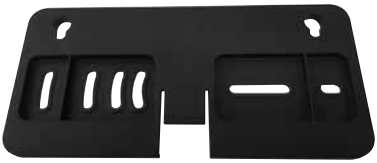
The ZXWB is a premium automatic solar pool heating controller designed for pump control on a solar system with independently installed hydraulic lines separate to filtration. The controller features temperature adjustment, manual, cooling and standby mode with battery powered wireless remote roof sensor.

INSTALLATION

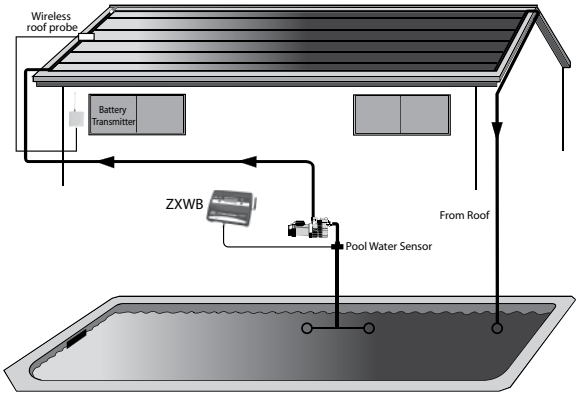
Controller Mounting

Find a suitable location to mount the control box. This equipment should be installed out of direct sunlight and weather. Once installed the controller must be no closer than 3 metres from the water's edge and a minimum 600mm off the finished ground level.

Locate the black mounting plate and use two appropriate sized screws to mount to a wall, then align the screws on the rear of the controller with the keyholes on the mounting plate and slide down until secure.



The attached power cable is 1.8m in length and should be plugged directly into a general power outlet, not into an extension lead.



PUMP CONNECTION

The solar system pump plugs into the 240V socket labelled PUMP.
The maximum load is 9.98 AMPS at 2395W.

POOL SENSOR

The pool sensor must be fitted into the suction line as close to the pool as practical and out of direct sunlight.

Drill a 14.5mm hole in the side of the PVC pipe (not the top of the pipe where water will collect). This can be carried out using a grinding drill bit or a small pilot hole can be drilled with a 14.0mm drill-bit used spinning in a counter clockwise direction to minimize the chance of shattering the pipe. Insert the grommet into the pipe and gently push in the sensor barb. Ideally ~30cm of the cable from the sensor should be tied to the shaded side of the pipe to prevent extreme ambient conditions leeching into the sensor via the copper in the cable. The blue sensor plug is to be fitted to the plug socket marked POOL.

REMOTE TEMPERATURE ROOF SENSOR

Locating the Roof Temperature Sensor

The roof temperature sensor must be fitted into a small piece of solar collector or equivalent and attached to the roof. The best location is within an arm's length of the gutters edge of the house or shed as long as the sensor end is not shaded and is on a roof of similar aspect of the main collector. It must not be fitted on top of the solar collector or fitted to high points on the roof like ridge capping as false readings will be detected.

This unit has been designed to eliminate the need to run a temperature sensor cable from the solar controller to the roof; this is replaced by a battery powered transmitter that transmits the roof temperature. The roof sensor plugs into the radio remote temperature transmitter socket at the bottom of the unit (run the cable behind the box).

Fit the radio remote temperature transmitter with 4xAA alkaline batteries and mount it to a nearby solid fixture (*radio note) by either the two mounting lugs or direct attachment though the controller. The transmitter must be installed out of direct weather and no closer than 3 metres from the water's edge.

Installing the Radio Remote Temperature Transmitter

Test for site suitability (*radio note) then mount the radio remote temperature transmitter unit so battery replacement is possible without needing a ladder if possible with the antenna vertical. If the antenna faces down then water may enter the box through the power entry / sensor entry hole and void the warranty.

*RADIO NOTE: RADIO TRANSMITTER SPECIAL CONSIDERATIONS

Do not permanently fix the radio transmitter until good reception is achievable (See site ZANE ZXWB Instruction test); do not mount the ZANE ZXWB in a position where reception of radio signals may be difficult, avoid mounting near other electrical equipment. The range of the transmitter unit to the controller is 100m with no obstructions and with no interference from other transmitters or sources of electrical noise.

Equipment installed after this product may also interfere with radio reception. Transmission may not occur through objects such as steel, aluminium, re-enforced concrete and large bodies of water (e.g. pump room under a pool). Line of sight is the ideal situation but not always possible and the antennas should always remain vertical.

Echo cancellation or ghosting may occur, which will prevent the signal being received reliably. If the ZANE ZXWB is to be installed in a metal shed there may be reception issues and the controller may need to be optioned antenna extension or moved outside.

Note: Both the transmitter and receiver are tested as a set to 100 metres; do not mix different transmitters with different receivers. Read and understand this manual before attending site. Ensure the customer also understands the workings of the controller before leaving the site.

SITE TEST

Place the radio transmitter in the approximate location. Select test mode on the ZANE ZXWB by holding the DOWN button for 3 seconds and switch power on to the unit. This action activates a mode where only roof temperature transmissions are shown. Once you release the down button the ZANE ZXWB screen indicates RX TEST. Verify on every 5 second interval the LCD screen displays the temperature (e.g. TEST 32°).

Check the sequence is repeated for approximately 30 seconds and ensure no transmission is missed. If a transmission is missed it may be caused by an echo or ghosted signal. Move the location of the radio transmitter or the location of the ZANE ZXWB and retest. If no transmission is missed mount the transmitter and repeat the test, check that no transmission is missed for 2 minutes. Turn OFF power to the ZANE ZXWB then permanently mount the radio transmitter to the facia board. Return to the ZANE ZXWB restart the RX TEST and ensure it continues to receive the transmission, move the location of the ZANE ZXWB if required.

Permanently mount the ZANE ZXWB when satisfied that the unit is receiving transmissions consistently. During normal operation the software allows for missed transmissions however, when more than 50 minutes elapse without a temperature transmission a message will be displayed "Waiting for roof transmission".

Reported Transmitter Faults

If the following messages are displayed, then action is to be taken to rectify the fault(s)

"Transmitter Is In Test Mode"

The radio transmitter has been left in test mode, the ZANE ZXWB will not operate. Instead it will enter into a RX TEST loop, this is to aid installation only, rectify by removing the small plug from TEST and place it onto RUN.

Reported Transmitter Faults

If the following messages are displayed, then action is to be taken to rectify the fault(s)

"Waiting For Roof Transmission"

If the ZANE ZXWB cannot receive a roof temperature from the radio transmitter or more than 50 minutes have elapsed since the last transmission, check installation as per instructions.

"Roof Sensor Disconnected Or Open Circuit"

Check the temperature sensor is firmly connected to the terminals. If the cable has been trimmed ensure the ends have been tinned with solder. Cable joints must also be soldered and sealed (preferably with heat shrink). An unbroken but damaged cable may also cause this fault.

OPERATING INSTRUCTIONS

LCD Screen

The LCD screen displays the pool and roof temperatures, solar temperature limit, pump on status, on/off/locked-out status and the time of day & date (clock).

LCD Indicators

There are arrow icons on the LCD screen that point to current mode text on the label.

Mode Button

When the mode button is no longer being depressed the selected mode of operation is automatically saved.

Heating mode (Auto) is the normal operating mode for solar heating the pool.

Manual mode is for testing the pump installation on a cold or cloudy day. Once manual mode is selected the pump will start. After manual mode time-outs, unit will return to the previous mode.

Standby mode of operation is for off-season maintenance or if pool heating is not required. This is a better option than turning off the controller as it will flush treated pool water through the solar system as well as prolong pump bearing and mechanical seal life. The pump will run for 3 minutes each day from when the Standby mode was selected or at 10am if the time-clock mode was selected.

**The factory default for SOLAR MODE is Heating MODE

↑ AND ↓ BUTTONS (TEMPERATURE SETTING)
Adjusting the temperature limit will allow the controller to heat the pool until the temperature limit +½°C is achieved, heating will then remain off until the sample wait period expires, if no sample wait period is active the heating will remain off until the pool temperature drops ½°C below the temperature limit setting, due to rounding the actual heating hysteresis is ±½°C.
The ability to solar heat the pool will depend on weather conditions.
** The factory default for Top out temperature is 30°C

Enter Button

Pressing the ENTER button will turn on the LCD backlight, pressing the ENTER button while the backlight is lit will enter the SETTINGS MENU;
The following will be displayed;
1) EXIT
The menu system can be navigated using the ↑ or ↓ buttons, all selectable and changeable values will flash on the LCD screen. Press the ENTER button to accept the currently displayed (flashing) item.
All menu items are shown below;

1) EXIT
2) CLOCK
3) SYSTEM

1) EXIT
Press ENTER on this menu to return to automatic operation.
2) CLOCK
When selecting the clock you will have to set the time of day.
3) SYSTEM
System sub-menu;

EXIT
COOLING
LCD TIME
HOURS

EXIT – Press ENTER on this menu to return to automatic operation.
COOLING – is for situations where the pool water overheats beyond the set temperature limit due to direct heating from the sun. **NOTE that heating & cooling is only allowed during the allowable time if solar run hours have been selected.
LCD TIME – Adjust the number of seconds the backlight remains on after the time a button was pressed. (Select NONE for always on.)
HOURS – is for hours of solar operation (24hr Clock) First selecting the start time in hour intervals (6:00 – 12:00) Then the end time (12:00 – 21:00) **Factory default for installer setup is run from 12:00-12:00 (24hrs).

INSTALLER ONLY SETUP:

TO ACCESS MENU PRESS ENTER SCROLL DOWN TO SETTINGS AND PRESS THE MODE BUTTON WARNING PROFESSIONAL ONLY SETTINGS!!

RESTORE DEFAULTS	–	Restore back to factory defaults
RUN	–	When the roof temperature rises to pool +run then the solar will start.
END	–	When the roof temperature falls below pool + end temperature (default 8°C) then solar will stop.
FRZ?	–	Anti freeze function, when switched to ON will start the solar pump when the roof temperature drops to the selected temperature (default 4°C) and operates for 3 minutes every 30 minutes until the roof temperature rises above the selected temperature.
BOIL?	-	Anti boil function (on supported controllers) when switched to ON will start the pump when the roof temperature rises to the selected temperature and operates for 5 minutes every 15 minutes until the roof temperature is below the selected temperature.
PIPE PROTECTION	-	For use when solar collectors are flooded, flat and will require a wetted roof sensor for this mode.
CAL	–	Calibrate the pool sensor.
ROOF SENSOR	–	Allows the use of a wired roof sensor cable temporarily, if the PV Unit has been damaged.

SPECIFICATIONS

Waterco Product Code	8519107
Approval No.	SGS-140679-EA
Power Supply	230 – 240 volt 50Hz
Maximum load	9.98 AMPS / 2395W
IP Rating (controller)	IP33
Power lead length	1.8 metres
Probe length	Factory fitted pool 2.5 metres
Roof sensor transmitter range	100 metres line of sight
Roof sensor battery	4 x AA alkaline
Roof sensor battery change	Annually whilst in STANDBY mode
Display	Digital
Pump outlet	3 pin standard
Dimensions	200 x 164 x 92 mm
Top-out adjustment	External control range 15 to 40°c
Top-out setting	+½°C
Controller installation	In a sheltered position out of direct sunlight on a vertical surface
Operation ON	Adjustable
Operation OFF	+½°C
Pool Hydraulics	Suitable for pump control on a solar system with independently installed hydraulic lines separate to filtration.

NOTES:

1. If any of the menu items are left unattended for 3 minutes the controller will save all settings and return to automatic operation.
2. If a sensor fault is detected the controller will display which sensor and fault message.
3. Should power be interrupted to the controller it will resume normal operation when power is restored, all information will be saved for 10 days.
4. If the controller has turned the pump off and is displaying a higher water temperature than normal it may be caused by the solar system failing to prime, check the pump and if necessary prime the pump as per the pump manufacturers' instructions then reset the controller by turning it off/on.

WARRANTY

- The ZANE WP product range is covered by a limited 3 year warranty against component failure or faulty workmanship from the date of installation.
- Faulty units should be returned in the first instance to the dealer from which the unit was purchased.
- Damage to the unit due to misuse, power surges, lightning strikes or installation not in accordance with the manufacturer's instruction may void the warranty.
- Warranty does not include on-site labour or travel costs to or from installation site. If the power cord is damaged, do not use the controller; return the unit to the supplier for repair.

Please find a copy of our Full Warranty Terms and Conditions on our website

https://www.waterco.com.au/customer-service/warranty-terms

For Australian consumers :-

Our goods come with guarantees that cannot be excluded under Australian Consumer Law .

You are entitled to a replacement refund for a major failure and for compensation for any other reasonable foreseeable loss or damage.

You are also entitled to have the goods repaired or replaced if the goods fail to be of an acceptable quality and the failure does not amount to a major fault.

CUSTOMER RECORD (To be retained by the customer)

DEALER/INSTALLER NAME _____

SERIAL NUMBER _____

DATE INSTALLED _____

OFFICES - AUSTRALIA

NSW - SYDNEY
(HEAD OFFICE)
Tel: +61 2 9898 8600

QLD - BRISBANE
Tel: +61 7 3299 9900

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WA - PERTH
Tel: +61 8 9273 1900

SA/NT - ADELAIDE
Tel: +61 8 8244 6000

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ZANE Pool Heating