

SMARTMISER™

INSTRUCTIONS

U.S. PATENT NO. 6,276,200 – FOREIGN PATENTS PENDING

Congratulations on your Smartmiser purchase. To ensure proper installation, please read these instructions completely before installing your Smartmiser.

1.0 YOUR SMARTMISER PARTS:

1.1 Overview:

Your Smartmiser parts include a Transmitter which sends the radio signal to the Receiver, the Float in the Transmitter which monitors the water level, the Cap which helps control the position of the float, and the Receiver which turns on or off the water source to the pool.

1.2 The Transmitter:

The Transmitter (Figure 1) senses the water level in your pool. When an “on” signal is sent from the Transmitter, the Receiver turns on the water to your pool. When the water level rises approximately 1 inch, the Transmitter will send an “off” signal and shut off the water.

The Transmitter can be opened by removing the six socket head cap screws, but should be opened **only** to replace the battery which is a 3-volt lithium coin cell (CR 2032). By carefully lifting the Transmitter cover, the circuit board will slide out of the base. Gently rotate the board to expose the top of the battery for replacement. Then slide the board back into the base, being careful not to damage any electronic components. Normal battery life should be from 2 to 4 years under normal use. Be sure to replace a worn battery in the Transmitter as failure to do so will cause the Smartmiser to stop working and could result in serious damage to your pool equipment. Be sure to reprogram the unit whenever the battery is replaced. (See Section 2.4) The Transmitter unit is waterproof. Whenever the lid of the Transmitter is removed, the six screws should be reattached applying even pressure to make sure that a completely waterproof seal is achieved.

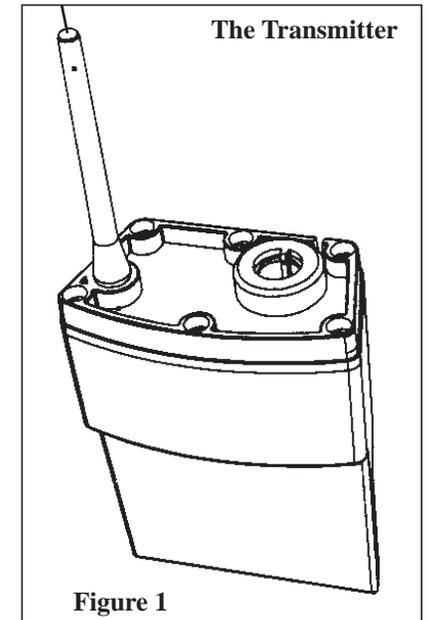


Figure 1

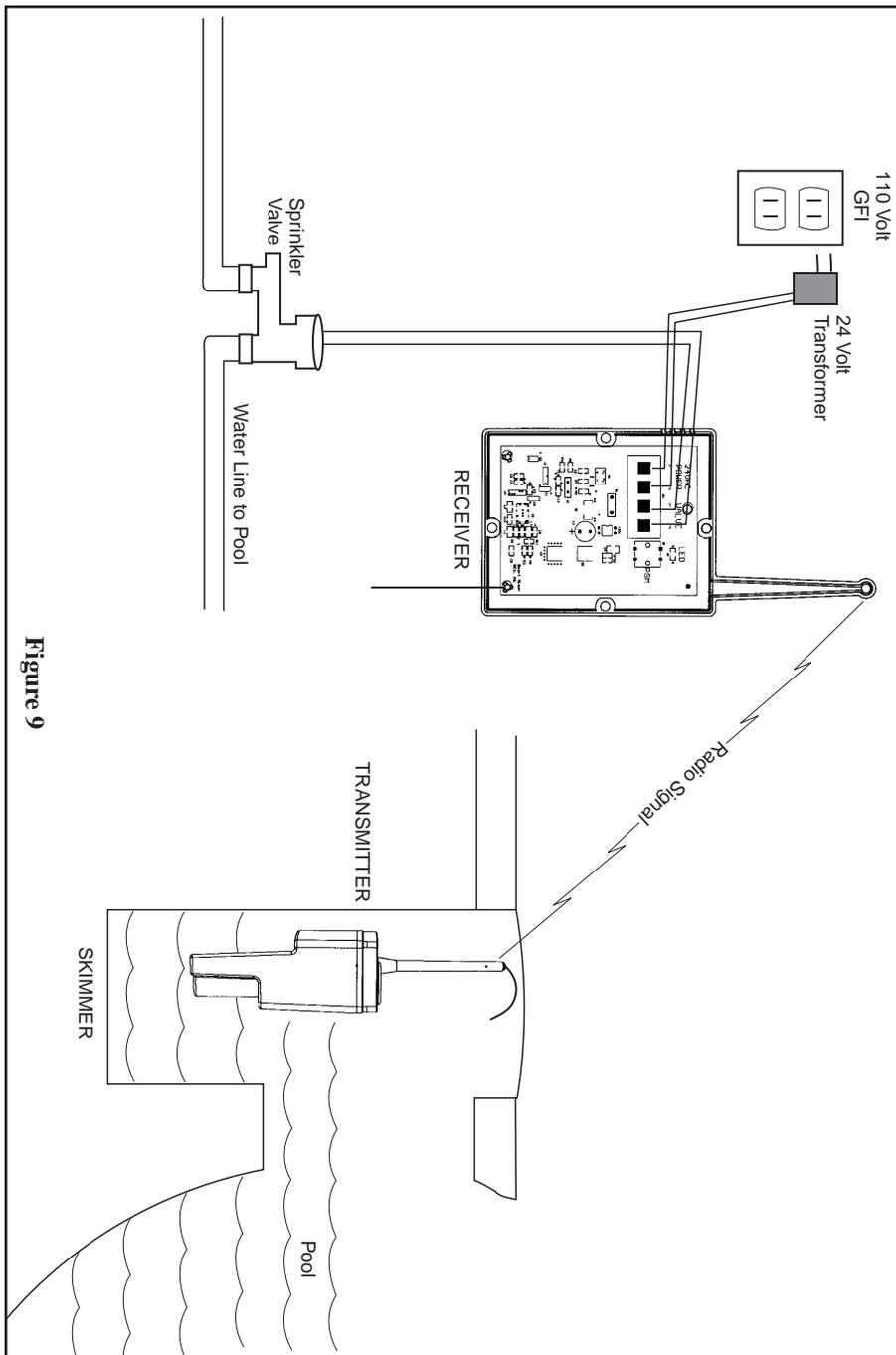


Figure 9

Modifications to the Transmitter, including changes to the length of the antennae, are prohibited and will void the purchaser's authority to use this device (47CFR15).

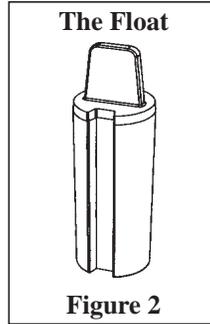
1.3 The Float:

The Float (Figure 2) contains a small magnet which activates the Transmitter unit. The Float moves up and down with the water level in your pool and moves between the off and on switches within the Transmitter. When the Float is at the bottom of the Transmitter the magnet is at the "on" switch. When the Float is raised one and a half inches the magnet is at the "off" switch.

The Float must be in the same position for six seconds to activate the "on" or "off" functions. This will eliminate activations caused by splashing in the pool. The Float will be inserted into the top of the Transmitter unit as described in *Section 2.4* of the Instructions. ON OCCASION, REMOVE THE FLOAT AND CLEAN THE FLOAT CHAMBER IN THE TRANSMITTER WITH THE BRUSH PROVIDED. AREAS WITH HARD WATER MAY REQUIRE MORE REGULAR CLEANING.

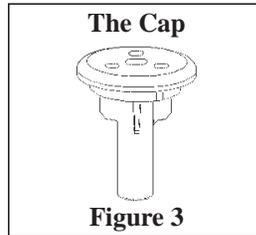
1.4 The Cap:

The Cap fits in the top of the Transmitter and is essential to proper operation. It not only keeps debris out of the Float chamber, but also controls the position of the Float in the "off" position.



The Float

Figure 2



The Cap

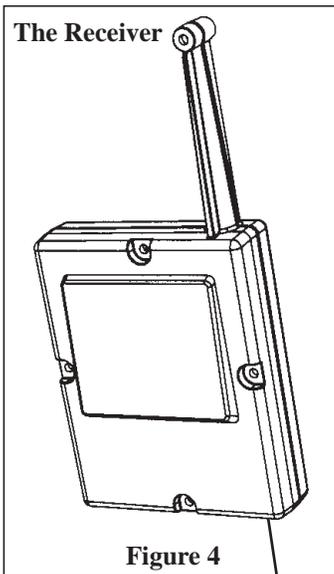
Figure 3

1.5 The Receiver:

The Receiver reads the signal from the Transmitter and turns on and off the water to your pool. As a safety feature, once an "on" signal is received, the Receiver automatically begins to time the filling process. The number of flashes of the LED light indicates the length of time before the Receiver automatically shuts off the water. Four flashes is pre-set at the factory and will automatically shut off the water 2 hours after an "on" signal is received. Pushing the PGM switch (*See Figure 5*) will change the length of time on this safety shut off feature. Each quick press of the PGM switch will advance the time function as follows:

<u>Time</u>	<u>Flashes</u>	<u>Time</u>	<u>Flashes</u>
2 Hours	4 Flashes	10 Minutes	1 Flash
8 Hours	5 Flashes	30 Minutes	2 Flashes
24 Hours	6 Flashes	1.25 Hours	3 Flashes

Larger pools should be set for a longer time interval.



The Receiver

Figure 4

- The signal is sent and received but the water does not turn on.
- Water shuts off before the pool level reaches the high water indicator on the Transmitter.

Possibly a problem with the valve. Re-check wiring and connections from the Receiver unit to the valve. Check the solenoid on the top of the valve and replace if necessary.

Possible that automatic shut off function is set for a smaller pool. Reset the automatic shut off function in the Receiver to a longer time interval per Section 1.5.

For all other problems, either contact your pool installer or contact Poolmiser directly and speak to one of our technicians.

5.0 FCC INFORMATION:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio technician for help.

POOLMISER

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You may now replace the top of the skimmer. For better reception, you can allow the top of the Transmitter antennae to slightly extend through one of the holes in the skimmer lid. Your installation is now complete.

3.0 CLEANING THE SKIMMER UNIT:

The Smartmiser has been designed to allow for easy removal to accommodate cleaning the Skimmer basket. If you need to remove the basket from the Skimmer unit, merely pull the Transmitter off of the velcro on the side of the Skimmer which will allow easy removal of the Skimmer basket. Once the basket is replaced, merely re-attach the Smartmiser to its previous location. However, remember that when the Transmitter is removed, the Float may fall to the bottom of the Transmitter and may turn on your water. Be sure you promptly reinstall the Transmitter after the Skimmer basket is replaced.

4.0 TROUBLESHOOTING:

Problem

1. The LED light is not blinking.
2. The Transmitter is not sending a signal.
3. The Receiver is not receiving the Transmitter's signal

Possible Solution

- Check for loss of power supply. Make sure the Transformer is plugged in. Check to make sure that the re-set button on the GFI protected outlet is properly set.
- Possible obstruction of Float. Check to see that Float moves freely. Remove Float and wash. Using bottle brush provided clean Float chamber and flush out thoroughly.
- Possible loss of code signal. Re-program the Transmitter and Receiver units to speak to each other per Section 2.4.
- Possible loss of power. Replace battery per Section 1.2.
- Possible loss of code signal. Re-program the units to read each other per Section 2.4.
- Possibly a problem with obstructions or interference between the Receiver and Transmitter units. Consider re-positioning the Receiver unit closer to the Transmitter or in a more direct line of sight, or allow the top of the antenna to extend slightly above the Skimmer through the hole in the Skimmer lid. Consider placing the Transmitter along the inside edge of the pool instead of the Skimmer.

1.6 Miscellaneous Parts:

Your Smartmiser package also contains a standard 24-volt UL rated Interior Use Transformer, mounting screws, extra velcro, 30' of 2 conductor wire, cleaning brush, alcohol pad, sand paper and 2 wire nuts.

2.0 INSTALLATION:

2.1 Mounting and Connecting the Receiver:

The Receiver unit is not waterproof, but it is weatherproof and can be installed outside. Depending on obstructions between the units, the Receiver is designed to Receive a radio transmission up to 50 feet from the Transmitter. However, because this is a low voltage system, the receiver can be wired to its power and water source at any distance convenient for the installer. As the most common installation location for the Transmitter is in the pool skimmer, (See Section 2.3) you will get optimum performance from the Smartmiser if the Receiver is located within 50 feet of your skimmer. Higher placement of the Receiver will improve reception at greater distances.

Remove the cover of the Receiver. Using the attachment screws provided, mount the Receiver on to a flat surface using the two openings on the top and bottom of the Receiver. Bend the dipole antennae down towards the ground. (See Figure 5)

We recommend that you use a weather protected 110-volt GFI outlet for the Transformer. Using a portion of the 30 feet of 2 conductor wire provided, attach 2 wires to the connections on the Transformer and attach those 2 wires to the terminals on the Receiver marked 24 VAC as shown in Figure 5. Plug in the Transformer. Press the wires into the wire slots in the Receiver as shown in Figure 5. The LED light on the Receiver will flash in a series of 4 short bursts which means the Receiver will automatically shut off the water to the pool after 2 hours. See Section 1.5 for more details.

The LED light is also an on/off indicator. When the transmitter sends either an on or off signal (See Section 2.3) the LED will go on for 2-3 seconds indicating that the transmission has been received. This is a way to check that the unit is working.

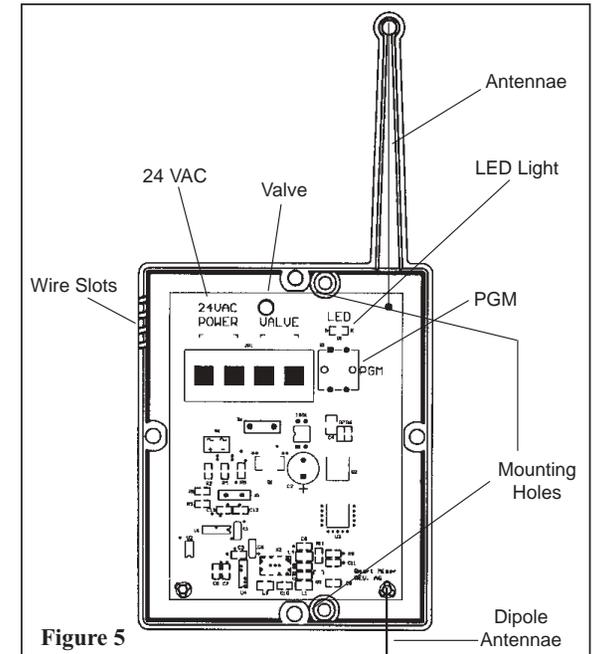


Figure 5

2.2 Hooking up the Gate Valve:

It is now time to hook up the Receiver to a valve to fill the pool. For this function, you will need to purchase a standard 24-volt sprinkler valve that can be purchased at most plumbing and hardware stores, directly from Poolmiser, or your local Poolmiser distributor.

If your pool is already plumbed with water, install the valve per manufacturer's instructions into the existing water line. Using the wire provided, connect two of the wires to the terminals in the Receiver marked "valve" as shown in Figure 5. Press the 2 wires into the wire slots as shown. Use the wire nuts to attach the wires to the valve. If you need additional wire, make sure to use 18-gauge wire rated for exterior and underground use, which can be purchased from Poolmiser. If water is not plumbed to your pool, you will need to have a water line installed. (See Figure 9)

2.3 Positioning the Transmitter:

The Transmitter is attached in the pool with the enclosed velcro. The Transmitter has two easily identifiable ledges which will help you position the Transmitter in your pool. The top ledge is the approximate high water mark and the bottom ledge is the approximate low water mark. (See Figure 6) Depending on the water level of your pool, you will attach the Transmitter either higher or lower in the water between these 2 ledges. If the water level is at or near its low point at time of installation, then the Transmitter should be installed with the bottom ledge slightly out of the water. If the water level is at or near its high point at the time of installation, the Transmitter should be installed with the top ledge slightly below the water.

While the Transmitter can be placed anywhere along the inside edge of the pool, the preferred location is in the Skimmer. Remove the Skimmer lid. You will note that the curve of the Skimmer is the same as the curve of the Transmitter. Make sure that the portion of the Skimmer above the water line where you will place the velcro is dry. Lightly sand the Skimmer surface and clean with alcohol (both included). After it has thoroughly dried, peel off the back of the matching velcro and firmly press it to the Skimmer. Do not attach the Transmitter until you have completed the final step of programming (See Section 2.4). The height of

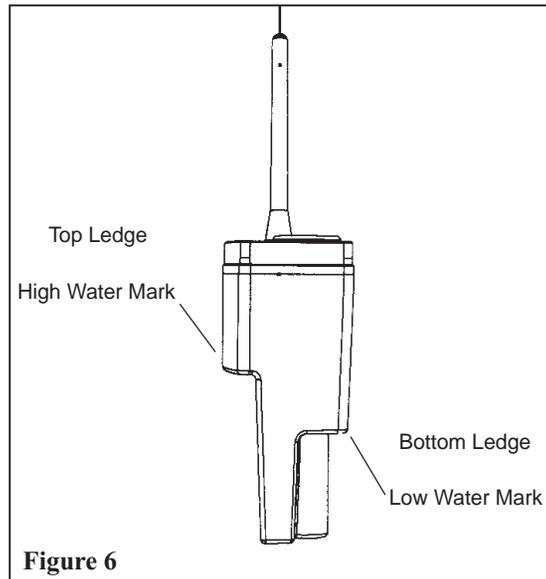


Figure 6

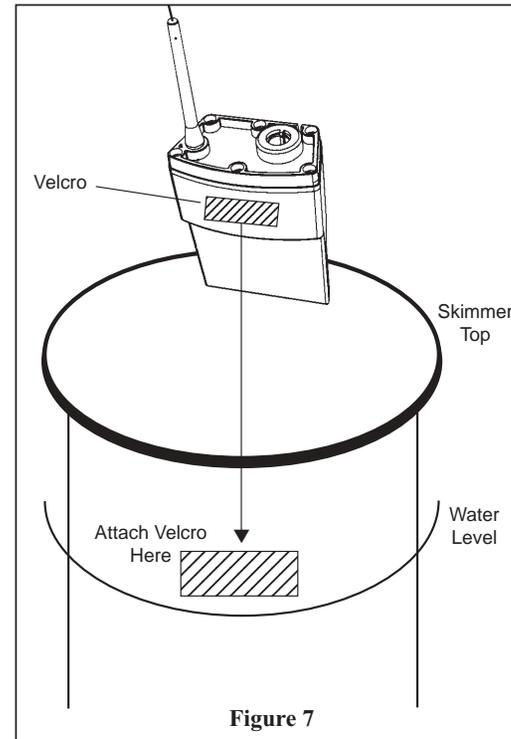


Figure 7

Transmitter can be re-set at any time by simply placing the Transmitter higher or lower on the velcro attached to the Skimmer. Additional velcro can be attached to the Skimmer if necessary. The Transmitter antennae is flexible and will bend over when the Skimmer lid is replaced. Do not change the length of the antennae.

2.4 Programming the Receiver and Transmitter:

Program the Receiver by holding down the PGM switch for approximately 3 seconds until the LED light flashes quickly. (See Figure 5) Push the Float completely into the Transmitter top until it "pops" in. (See Figure 8) Holding the Transmitter in an upright position, the Float will drop to the bottom of the Transmitter unit. Hold the Transmitter near the Receiver.

After approximately 6 seconds, the rapid flashing of the LED will stop and the water valve will open. This means that the Transmitter and the Receiver have randomly selected a code and are now programmed to speak to each other. This programming will keep your Smartmiser from accidentally activating a neighbor's Smartmiser. You may re-set the programming function at any time by repeating these steps. You must firmly press the Cap into the top hole of the Transmitter for proper operation. To turn off the water, turn the Transmitter upside down for at least six seconds with the Cap in place. To turn the water off if the cap is missing, hold the Transmitter in an upright position, and raise the Float 1.5 inches for six seconds by using a something thin enough to enter the hole at the bottom of the Transmitter. After 6 seconds the water will turn off. Now replace the Receiver cover and attach the Transmitter in the skimmer.

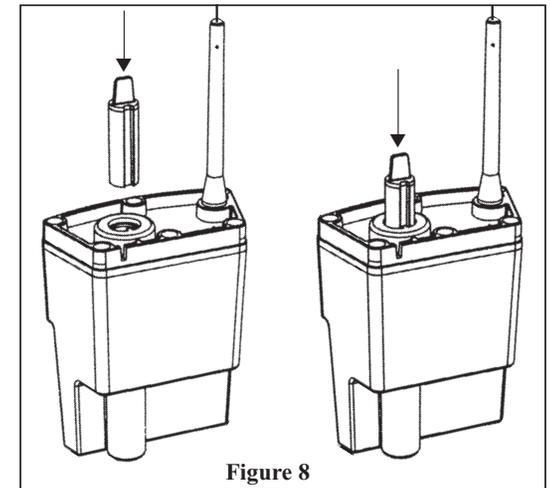


Figure 8