

# **INTERMATIC®**

## **RC2000 SERIES REMOTE CONTROLS**

### **INSTALLATION OPERATION & SERVICE MANUAL**

## **AIR OPERATED CONTROLS FOR POOL - SPA COMBINATIONS**

Suitable for Pool Equipment Control and for Direct Connection of Underwater Lights

**Model: RC2163E Control Center / Model: RC2163BE Control Panel**

**ONE BUTTON CONTROL FOR FILTER PUMP, HEATER AND VALVES**

**ELECTRICAL RATING: 20 Amp. Resistive - 120V or 240V; 1.5 HP - 120V, 3 HP - 240V, DPST.**

**Low Voltage: 24V - 40VA Maximum**

### **⚠ DANGER! TO AVOID RISK OF INJURY: ⚠**

...do not permit children to operate the Control Unit or use the Pool/Spa unless they are closely supervised at all times.

...test GROUND FAULT protection regularly. If it fails to reset, DO NOT USE THE POOL or SPA!

Contact a qualified service technician immediately.

...always disconnect electricity before servicing this control or the equipment connected to it.

**READ, FOLLOW & SAVE THIS INSTRUCTION MANUAL**

## **GENERAL INFORMATION**

Many of today's pools and spas utilize the advantages of a single electrical control panel, containing all the necessary components for the safe, cost effective and automatic operation of a pool or spa.

**Model RC2163E** is designed to operate the shared equipment, like the pump, filter and the heater of a Pool/Spa combination safely from the spa side with only one air button.

The 24 hour timer turns ON the filter pump and automatically filters and, if so set, heats the pool water on a daily schedule. In addition, by the push of the air button at the spa side, the Control turns ON the pump, the heater and rotates the valves thus allowing the water to circulate in the spa. The Control also features a selector switch for the heater. The switch has three positions and it can be set to heat the water either in the spa only or both in the spa and in the pool to two different pre-selected temperatures.

The Control also has provisions for connecting a freeze or heater protection thermostat to its filter pump control logic board.

**Model RC2163BE** is the same as the one described above, except it is built into an 8 circuit 100 AMP. sub-panel.

The Control coordinates the operation of the various pool/spa equipment according to the following table:



<b>EQUIPMENT</b>	<b>Sequence 1 POOL MODE</b>	<b>Sequence 2 SPA MODE</b>
<b>Filter Pump</b>	Timer Controlled	ON - Continuously
<b>Heater</b>	If selected, Water Temperature is as Set by Pool Thermostat	Water Temperature is as Set by Spa Thermostat
<b>Valves</b>	Set to Pool Circulation	Set to Spa Circulation

## IMPORTANT SAFETY INSTRUCTIONS

When installing and operating this Product and other associated equipment, basic safety precautions should always be followed, including the following:

1. Read and follow all instructions.
2. This Control must be installed by a qualified electrician, according to National and Local Electrical Codes.
3. Install this Control not less than 5 feet (3 meters in Canada) from inside edge of pool. USE COPPER CONDUCTORS ONLY.
4. Do not exceed the maximum ratings of individual components, wiring devices, and current carrying capacity of conductors.
5. For control grounding, bonding, installing and the wiring of underwater lights, refer to Article 680 of the National Electrical Code or Article 68 of the Canadian Electrical Code.
6. The Control should not operate any equipment which would cause bodily injury or property damage should it be activated unexpectedly.

**READ, FOLLOW AND SAVE THIS INSTRUCTION MANUAL**

## INSTALLATION


This Air Control can operate either a 120 volt or 240 volt, single speed pump, together with a gas heater and up to three 24 volt valve actuators. It also has a connection for a freeze or heater protection device to turn ON the pump if needed.

**IMPORTANT: High and low voltage conductors should not occupy the same conduits or compartments.**

1. Follow wiring diagram on Page 4 and prepare your installation layout. Make sure only copper (solid or stranded) conductors are used, properly sized and suitable for the installation. Each piece of equipment must be grounded properly. **IMPORTANT: NEUTRAL MUST ALWAYS BE CONNECTED TO THE WHITE LEAD OF THE CONTROL.**
2. Hang Air Control on a flat vertical surface or other support, using hardware suitable for the purpose. Make sure the air button is within the range of the Air Control. NOTE: The optimum range of this Air Control is 100 feet.
3. Prepare the necessary conduit runs, including one for the air hose, terminate them at both ends and pull-in the conductors as specified by the installation layout.
4. Follow wiring diagram, make LINE and LOAD (PUMP) connections as shown in the high voltage compartment. Make sure the installation is securely grounded and bonded, if required.
5. Remove screw next to Heater Switch and gain access to printed circuit (P.C.) board assembly in low voltage compartment. Follow wiring diagram on page 4, plug valve actuators into designated sockets on P.C. board and make heater connections to terminals 1, 2 and 3. **Place jumper between terminals 1 and 2 if heater is single stage.** See page 4 for details. Replace P.C. board assembly.
6. Make air hose connections, follow instructions provided with Air Button.
7. Check wiring, tightness of connections and grounding. Close wiring compartment and test installation.
8. Set times, see instructions below.

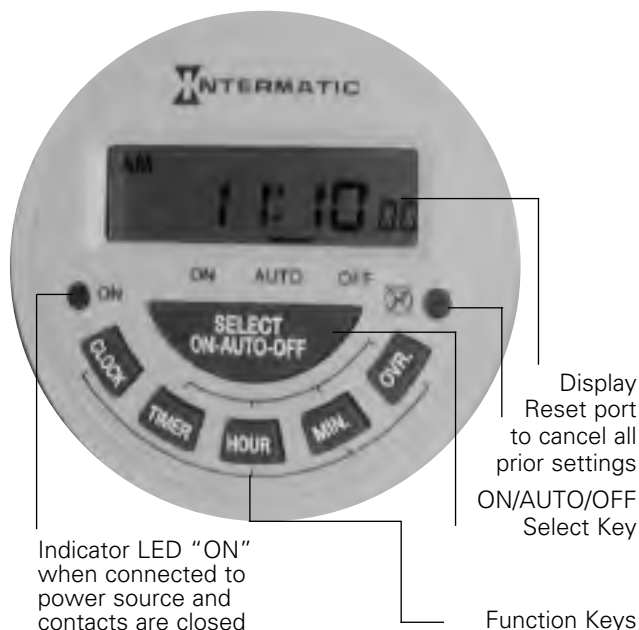
## SETTING / OPERATING INSTRUCTIONS

### Programming Instructions

**To Set or Change the Time of Day:** To clear entire memory, press  key. Hold down the CLOCK key while pressing either the HOUR or MINUTE keys. Continue pressing until the desired number is shown. Then simply lift finger off the CLOCK key to set.

**To Set Program (ON/OFF times):** Press TIMER key once to enter into program mode. Display will show "1 ON-- --". Press the HOUR key and then the MINUTE key to select the desired first ON time. Press TIMER key once. Display will show "1 OFF -- --". Repeat previous step to select the desired first OFF time. Repeat the entire sequence to complete up to eight total ON/OFF times as desired. When programming is done, press the CLOCK key then the SELECT key repeatedly until the indicator bar is above the word "AUTO".

**To Review Program:** Press TIMER key repeatedly. When done, press CLOCK key to return to the time



## SETTING / OPERATING INSTRUCTIONS (Continued)

**To Cancel/Change Part of the Program:** Press Timer key repeatedly until the particular ON or OFF time appears. Set new ON or OFF time.

**To Override the Automatic Operation one time:** Press OVR. key.

NOTE: Timer will resume automatic operation with the next opposite setpoint.

**To Override Automatic Operation Permanently:** Press SELECT key to move indicator bar to the desired ON or OFF position. **Note: Timer will not resume automatic operation until indicator bar is repositioned above the word AUTO.**

**To Operate Equipment in Spa Mode:**

1. Press air button at spa side.

2. After using the spa, press air button again and make sure that control is back in the POOL mode.

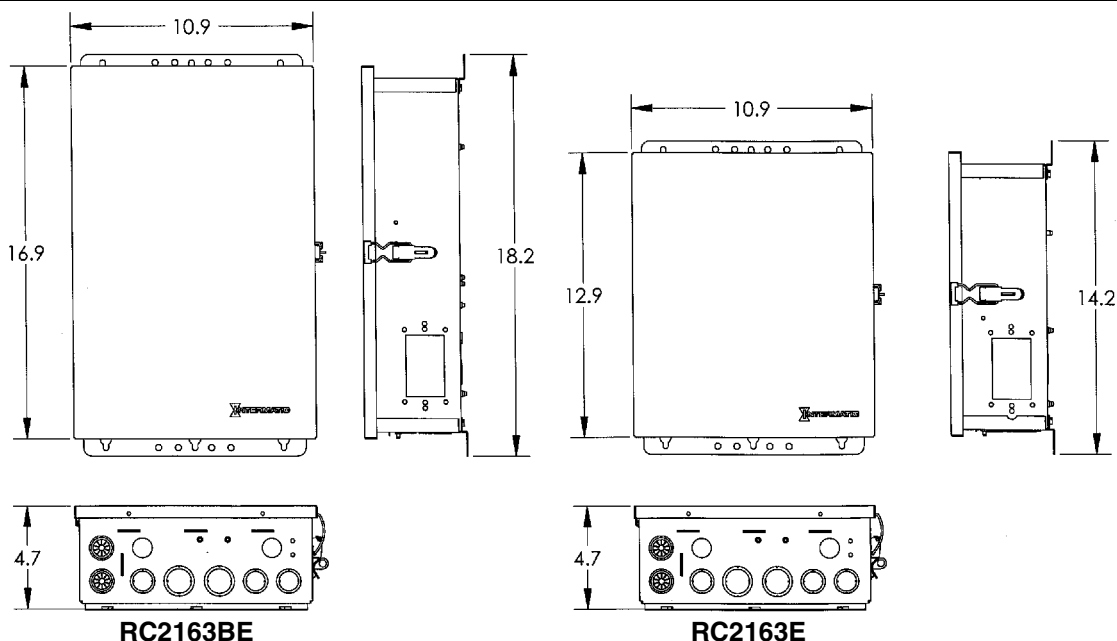
**To Operate Heater:**

Heater Selector Switch is provided to save on heating cost during the summer months or prevent over-heating of pool water if heater is the single thermostat type. Set switch to POOL AND SPA mode if the heater is the DUAL thermostat type and set thermostats on heater to the desired pool and spa water temperatures. Set switch to SPA ONLY mode if the heater is the SINGLE thermostat type or only the spa water needs to be heated. Set switch to OFF if no heater operation is needed.

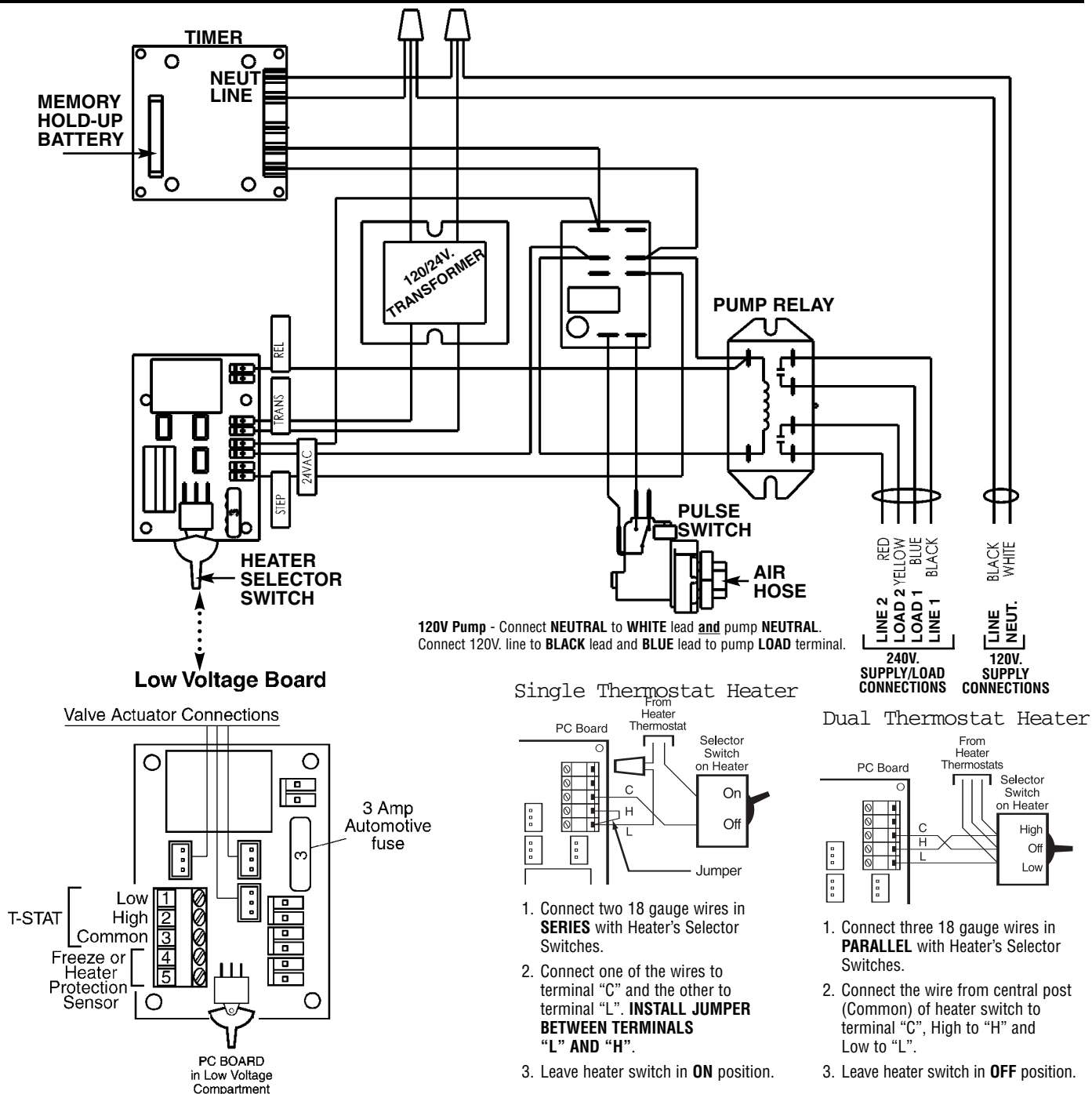
## TROUBLESHOOTING

Symptom	Possible Cause(s)	Corrective Action	NOTES:
Control will not operate in SPA mode	Air hose disconnected Defective air button Water in air hose Defective pulse switch Defective relay Air button is too far Blown fuse	Check hose connections Replace air button - see note 1 Blow-out air hose - see note 2 Replace pulse switch - see note 2 Replace relay Install larger air button Replace fuse	<ol style="list-style-type: none"> <li>1. An air button with ruptured seal or bellows inside, will not produce sufficient air pressure to operate the pulse switch and could lead to total breakdown allowing water to enter the air hose.</li> <li>2. Water in air hose can damage the pulse switch. Water can enter the air hose through a faulty air button (see note 1 above) or by condensation. In either case, it must be drained, the cause found and corrected. To reduce condensation, protect the air hose from exposure to direct sun, ice or frequent temperature</li> </ol>
Timer is not turning pump ON/OFF for daily filtration	Defective timer Defective relay Timer is set to ON/OFF No program in memory Dead battery	Replace timer Replace relay Set timer to AUTO Set program - see instructions Replace battery	
Valve actuators(s) is/are not working	Frozen valve Defective actuator Loose connection Blown fuse	Check/Lubricate valve Replace actuator Check connections Replace fuse	
Pump inoperative	Open circuit breaker Defective relay Defective pump	Check power supply Change relay Check pump	

## ENCLOSURE DETAILS



# WIRING DIAGRAM



## ONE YEAR LIMITED WARRANTY

If within the warranty period specified, this product fails due to a defect in material or workmanship, Intermatic Incorporated will repair or replace it, at its sole option, the unit free of charge. This warranty applies only to the original purchaser and is not transferable. This warranty does not apply to: (a) damage caused by accident, abuse, mishandling, dropping, acts of God, or any negligent use; (b) units which have been subject to unauthorized repair, opened, taken apart, or otherwise modified; (c) units not used in accordance with instructions; (d) damages exceeding the cost of the product. Some states do not allow a limitation of damages, so the foregoing limitation may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state.

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This warranty service is available by either (a) returning the product to the dealer from whom the unit was purchased, or (b) mailing postage prepaid to the nearest authorized service center listed. Please be sure to wrap the product securely when mailing to avoid shipping damage. This warranty is made by: Intermatic Incorporated/After Sales Service, 7777 Winn Rd., Spring Grove, IL 60081-9698/815-675-7000 <http://www.intermatic.com>

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