

# INTERMATIC® RC2000 SERIES REMOTE CONTROLS

## INSTALLATION OPERATION & SERVICE MANUAL

### ONE CIRCUIT AIR SWITCH WITH TIMER

### Model: RC2123PT - Plastic Outdoor (Type 3R) Enclosure

SUITABLE FOR POOL/SPA EQUIPMENT CONTROL

SWITCH: Single Pole Double Throw (SPDT)

RATINGS: 20 A Resistive - 120V or 240V; 1 HP - 120V, 2 HP - 240V, 60 HZ.

### DANGER! To Reduce the Risk of Injury:

- ...do not permit small children to operate the control 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 service technician.
- ...always disconnect electricity before servicing this Control or the equipment connected to it. THIS CONTROL IS NOT TO BE USED AS A POWER DISCONNECT.

### IMPORTANT SAFETY INSTRUCTIONS

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

1. Read and follow all instructions.
2. This Control must be installed by a qualified person, 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 1 foot (30 cm) or more above ground. USE COPPER CONDUCTORS ONLY, rated 75°C minimum.
4. Do not exceed the maximum ratings of individual components, wiring devices, and current carrying capacity of conductors.
5. For Control grounding and bonding, 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

## GENERAL INFORMATION

### MODEL RC2123PT

This Air Switch is designed to control safely, without electricity at the spa side, the filter pump, 120V or 240V, single or two speed. Each time pressure is applied to the remote air button, the connected equipment will operate in the sequence shown below. In addition, the timer will automatically turn the pump ON/OFF (low speed if two speed pump) for daily filtration.

EQUIPMENT	SEQUENCE	
	1	2
PUMP, SINGLE SPEED	Timer ON/OFF	ON
PUMP, TWO SPEED	Timer ON/OFF Low Speed	ON High Speed



# INSTALLATION - MODEL RC2123PT

This Air Switch can control either a 120 volt or 240 volt, single or two speed pump, up to its rated capacity. It also has a connection for a freeze protection device to turn ON the pump in case the temperature would drop below freezing.

1. Select the appropriate wiring diagram on Page 4 and prepare your installation layout. Make sure only copper (solid or stranded) min. 75°C type conductors are used, properly sized and suitable for the installation. The equipment must have its own power disconnect and must be grounded properly.

**IMPORTANT: NEUTRAL MUST ALWAYS BE CONNECTED TO THE WHITE LEAD OF THE CONTROL.**

2. Hang Air Switch 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 Switch. **NOTE:** *The optimum range of this Air Switch is 100 feet. However, factors beyond control of the manufacturer (like the size of the air pump, the I.D. of the air hose, etc.) will determine the actual distance between the mechanism and the air pump.*
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 proper wiring diagram on page 4, make **SUPPLY, PUMP, and FREEZE PROTECTION** connections (if needed) as shown. Make sure the installation is securely grounded.

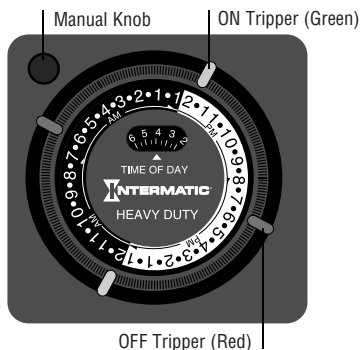
5. Make air hose connections.

**REMOVE COMPRESSION NUT FROM PULSE SWITCH, FEED AIR HOSE THROUGH HOLE, CONNECT HOSE TO PULSE SWITCH AND RE-INSTALL COMPRESSION NUT. REPEAT PROCEDURE AT AIR BUTTON END OF HOSE. MAKE SURE CONNECTIONS ARE TIGHT.**

6. Check wiring, tightness of connections and grounding. Close wiring compartment and test installation.

7. Set timer, see instructions below.

## OPERATION



1. Insert ON (green) and OFF (red) trippers into dial at desired ON and OFF times (Fig. 1). Be sure trippers are firmly pressed against dial surface and at least one space is left between ON and OFF trippers (Fig. 2).
2. Turn dial clockwise one or more revolutions until correct time of day is next to arrow in center of dial (Fig. 3).

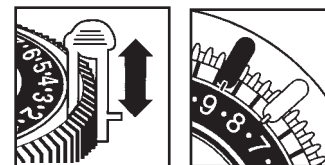


Figure 1

Figure 2

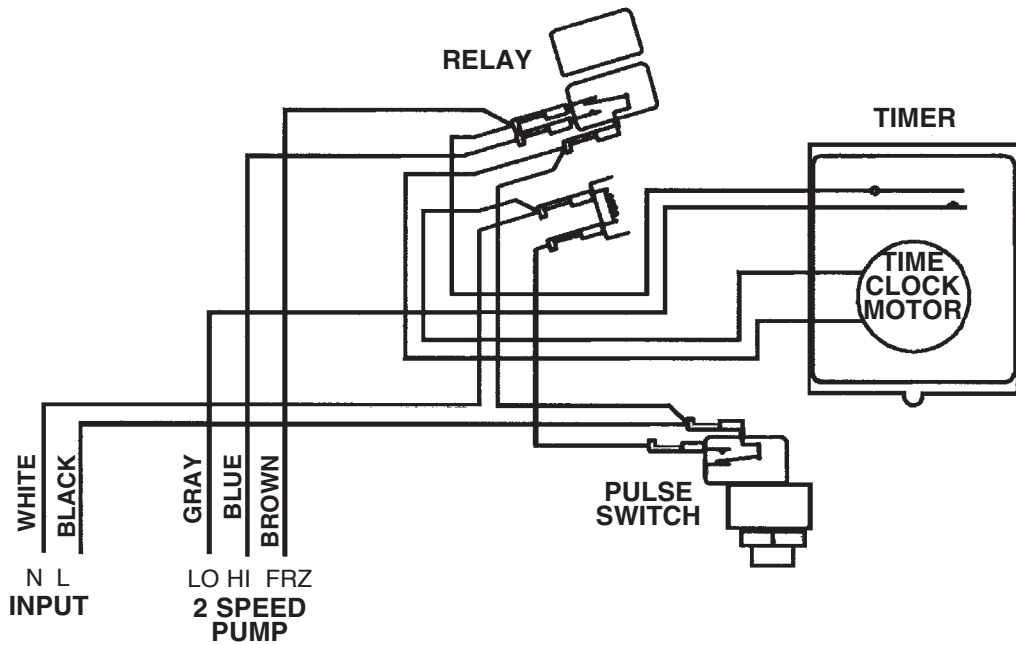


Figure 3

1. The knob in the upper left corner of timer is for operating the Filter pump manually when needed. By turning it COUNTERCLOCKWISE, it will start or stop the filtering/heating cycle ahead of the scheduled start/stop time. Automatic operation will resume with the next scheduled cycle.
2. Timer comes with two sets of trippers, allowing the choice of two cycles per day. If only one cycle is needed, the extra trippers may be stored on the dial by placing SAME color trippers next to each other.

3. To suspend automatic operation, remove red and green trippers from Dial and Store them in a convenient place.
4. Additional trippers can be obtained by contracting an Intermatic distributor or Intermatic Consumer Service at (815-675-7000 and asking for 156PB10398A tripper kit (2 ON and 2 OFF trippers.)

# INTERNAL WIRING - MODEL RC2123PT



## TROUBLESHOOTING

SYMPTOM	CAUSE(S)	CORRECTIVE ACTION
1. Pump will not operate or operates on low speed only.	1a. Air hose disconnected 1b. Defective air button 1c. Water in air hose 1d. Defective pulse switch 1e. Defective relay 1f. Air button is too far	Check hose connections. Replace air button - see note 1. Blow-out air hose - see note 2. Replace pulse switch - see note 2. Replace relay - see note 3. Install larger air button.
2. Pump will not turn off or operates on high speed only.	2a. Air hose disconnected 2b. Defective air button 2c. Defective relay	Check hose connections. Replace air button - see note 1. Replace relay - see note 3.
3. Pump turns on/off by itself.	3a. Defective pulse switch 3b. Water in air hose 3c. Changing air pressure in air hose	Replace pulse switch. Blow-out air hose - see note 2. Reroute air hose.
4. Blank Timer Display during power failure	4a. Dead battery	Replace battery.

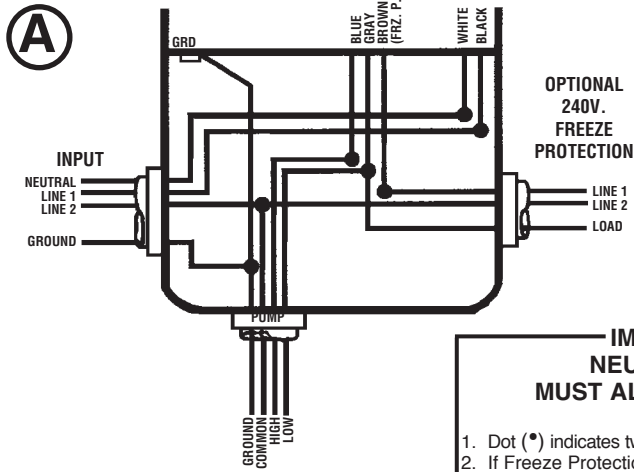
## NOTES

A Pneumatic Remote Control (Air Switch) consists of an air button (air pump, transmitter), a pulse switch (air Sensor, receiver) and a relay (either alternate action or stepper). The air button is connected to the pulse switch by the air hose. By pressing on the air button at one end of the air hose, the increased pressure will momentarily close the contacts of the pulse switch at the other end of the air hose, thus energizing the coil of the relay. The relay turns ON or OFF the connected equipment.

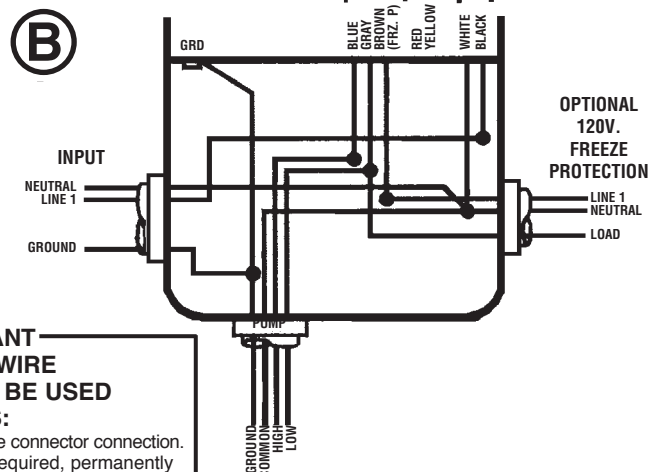
1. An air button with ruptured seal or bellows inside, will not produce sufficient air pressure to operate the momentary air switch and could lead to total break down.
2. Water in air hose will damage the pulse switch and it is caused by a faulty air button (see note 1 above) or condensation. In either case, it must be drained and the cause found and corrected. To reduce condensation, protect the air hose from exposure to direct sun, ice or frequent temperature fluctuations.
3. A defective relay is either due to contact or coil failure. Contact failure is caused by over-load or cross-wiring and coil failure is caused by 240 volt connected across the 120 volt coil or permanently applied 120 volt. (The relay is designed for intermittent duty only). Permanently applied 120 volt could be the result of water in the air hose (see note 2 above) or a spa cover placed over (and depressing) the air button. In any case, the cause must be found, corrected and the relay replaced.

# WIRING DIAGRAMS - RC2123PT

**TYPICAL WIRING**  
240V. TWO SPEED PUMP  
240V. FREEZE PROTECTION



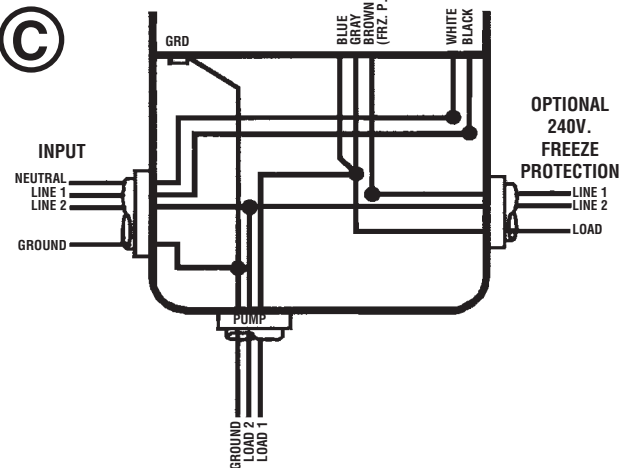
**TYPICAL WIRING**  
120V. TWO SPEED PUMP  
120V. FREEZE PROTECTION



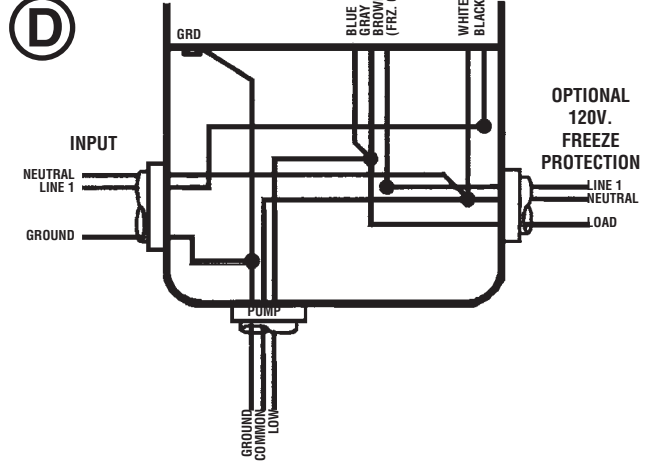
**IMPORTANT NEUTRAL WIRE MUST ALWAYS BE USED NOTES:**

1. Dot (\*) indicates twist on wire connector connection.
2. If Freeze Protection is not required, permanently insulate brown lead.

**TYPICAL WIRING**  
240V. SINGLE SPEED PUMP  
240V. FREEZE PROTECTION



**TYPICAL WIRING**  
120V. SINGLE SPEED PUMP  
120V. FREEZE PROTECTION



## 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.

**INTERMATIC INCORPORATED WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY MODIFIED TO EXIST ONLY AS CONTAINED IN THIS LIMITED WARRANTY, AND SHALL BE OF THE SAME DURATION AS THE WARRANTY PERIOD STATED ABOVE.**

This warranty service is available by either (a) returning the product to the dealer from whom the unit was purchased, or (b) mailing the product, along with proof of purchase, postage prepaid to the authorized service center listed below. 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> Please be sure to wrap the product securely when mailing to avoid shipping damage.

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