

# Operating Instructions

## Digital Cooling Thermostat

Model 300-205

# Robertshaw

Your new Robertshaw thermostat has been designed to provide accurate control and display of the room temperature. In addition, it will also display all relevant information pertaining to your system.

The clearly marked buttons and informative display make it extremely easy to understand and simple to use.

Please take a few moments to read the brief instructions and familiarize yourself with the various functions in order to obtain maximum benefit from this truly unique electronic control.

## GENERAL INFORMATION

The thermostat normally displays room temperature, and whether cooling is currently on. The six buttons on the front of the unit allow complete control of the equipment.

Raising or lowering the setpoints in cooling is as simple as pushing a button. In addition, you may choose to display the temperature in °F or °C.

## ENERGY STAR COMPLIANT

Energy Star labeled products use less energy than other products, save you money on utility bills and help protect the environment. Energy Star setpoints are now standard on all thermostats to ensure maximum efficiency and comfort.

### Non-Programmable

Cooling 78°F (25°C)/Setback Cooling 82°F (27°C)

## THERMOSTAT OPERATION

### MODE

The 300-205 thermostat is a cooling-only control and is permanently in the cool mode.

### COOLING ❄️

Controls the cooling system only. Select the temperature you want by pressing the ▲ or ▼ buttons. (The word COOL and the temperature setting is displayed for 5 seconds.)

### CELSIUS / FAHRENHEIT

Simultaneously press ▲ and ▼ to switch between Celsius (C) and Fahrenheit (F) temperature display.

### TEMPERATURE ACCURACY

Full temperature accuracy will only be realized after the thermostat has been installed and powered for at least one (1) hour.

### POWER FAILURES

Your thermostat employs the latest in solid state electronic technology.

One of the unique features of your thermostat is that there is no battery required to maintain your selected setpoints in the event of a power loss as the memory is unaffected by power failures of any duration.

When power is restored, the thermostat will continue operating as if the power had never been off.

### LIMITED OVERRIDE

When the keyboard is locked (switch #2 locked), the user may override the temperature setpoint for 1 hour by pressing either the ▼ or ▲ button. The range of temperature override is ± 3 °F or °C.

## INSTALLATION INSTRUCTIONS

### CAUTION

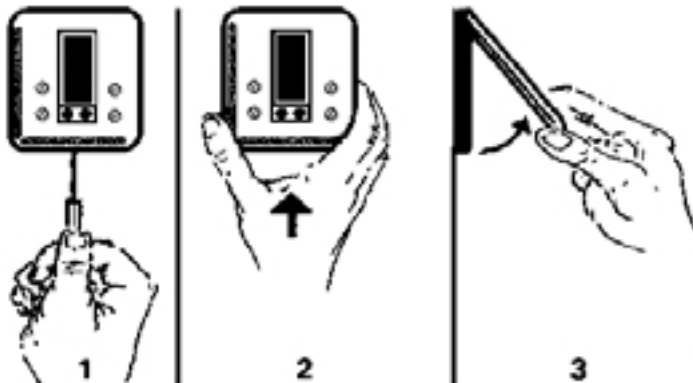
THIS DEVICE SHOULD BE INSTALLED BY A QUALIFIED TECHNICIAN WITH DUE REGARD FOR SAFETY, AS IMPROPER INSTALLATION COULD RESULT IN A HAZARDOUS CONDITION

### LOCATION

To ensure proper operation, the thermostat should be mounted on an inside wall in a frequently occupied area of the building. In addition, its position must be at least 18" (46cm) from any outside wall, and approximately 5' (1.5m) above the floor in a location with freely circulating air of an average temperature. You should avoid the following locations:

- behind doors or in corners where freely circulating air is unavailable;
- where direct sunlight or radiant heat from appliances might affect control operation;
- on an outside wall;
- adjacent to, or in line with, conditioned air discharge grilles, stairwells, or outside doors;
- where its operation may be affected by steam or water pipes or warm air stacks in an adjacent partition space, or by an area behind the thermostat which is not climate controlled;
- where its operation will be affected by the supply air of an adjacent climate control HVAC device; and
- near sources of electrical interference such as arcing relay contacts

### REMOVING THE THERMOSTAT FROM THE SUBBASE



1. Insert a flat blade screwdriver or a coin 1/8" into the slot located in the bottom center of the thermostat case and twist 1/4 turn. When you feel or hear a "click," grasp the case from the bottom two corners and separate from the subbase. *Some models require more force than others when separating due to the number of terminals on the subbase.*
2. Swing the thermostat out from the bottom.
3. Lift the thermostat up and off the subbase.
4. Place the rectangular opening in the subbase over the equipment control wires protruding from the wall and, using the subbase as a template, mark the location of the two mounting holes (exact vertical mounting is necessary only for appearance).
5. Use the supplied anchors and screws for mounting on drywall or plaster; drill two 3/16" (5mm) diameter holes at the marked locations; use a hammer to tap the nylon anchors in flush to the wall surface and fasten subbase using the supplied screws. (Do not overtighten!)

## INSTALLATION INSTRUCTIONS (CONT)

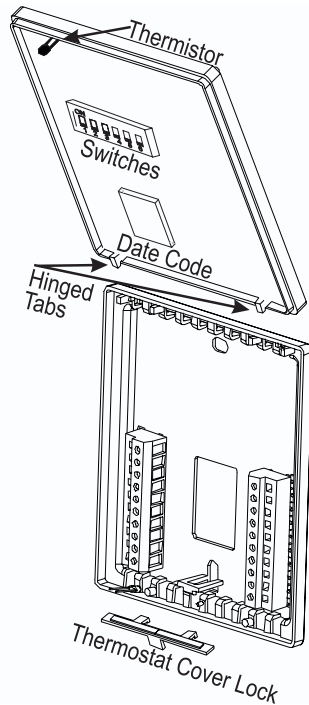
- Connect the wires from your system to the thermostat terminals. Carefully dress the wires so that any excess is pushed back into the wall cavity or junction box. Ensure that the wires are flush to the plastic subbase. The access hole should be sealed or stuffed to prevent drafts from the wall affecting the thermostat.
- Before the thermostat is reinstalled on the subbase, install the optional clock/timer, indoor remote sensor and outdoor remote sensor, if used. Refer to the installation instructions supplied with each option. Also check the position of the DIP switches on the back of the thermostat.

### REPLACING THE THERMOSTAT ON SUBBASE

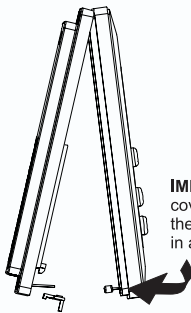
- Position the thermostat on the hinged tabs at the top of the subbase.
- Gently swing the thermostat down and press on the bottom center until it snaps into place.

### THERMOSTAT COVER LOCK

You may lock the cover down to prevent unauthorized access to the thermostat by adding the clear plastic lock (included in the installation bag.) Insert the plastic lock piece into the bottom of the mounted base. The ends of the lock piece fit snugly under the lock pins extending from the bottom of the mounted base. The tab in the middle of the lock piece extends down from the base. To release the locking mechanism, press the lock piece up and into the base while gently prying open.



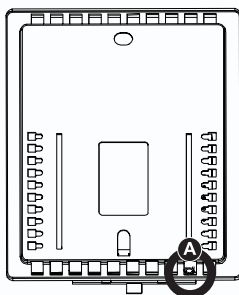
### THERMISTOR MOUNTING INSTRUCTIONS



**IMPORTANT:** When placing the front cover on the thermostat ensure that the thermistor is not bent or misaligned in any way.

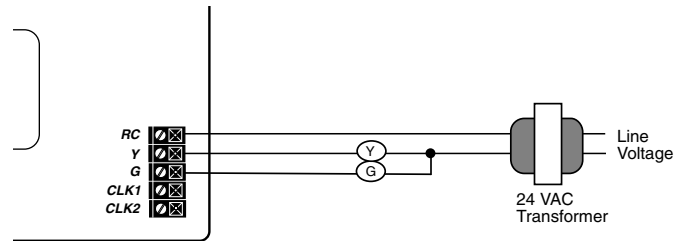
#### DETAIL A

**IMPORTANT:** Ensure that the thermistor does not touch the thermostat case. The thermistor should be placed horizontal to the wall. Ensure the thermistor is not pushed upward into the thermostat case. The thermistor should be aligned such that it is visible between the ribs on the bottom of the backplate.

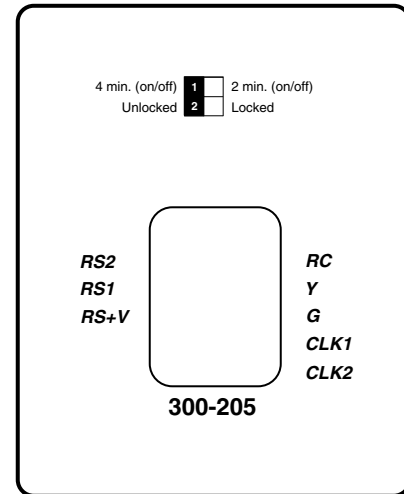


Outside rear view with backplate closed

## WIRING DIAGRAM



## TERMINAL AND SWITCH DESIGNATIONS



- RH** .....24 VAC from equipment transformer
- W** .....Energizes on a call for cooling
- G** .....Energizes the fan circuit
- CLK1** .....Use with remote clock/timer for alternate setpoints
- RS2**.....Use to connect remote temperature sensor(s).
- RS1** Refer to the instructions included with the sensors.
- RS+V** with the sensors.

### CLOCK TERMINALS (OPTION) CLK1 – CLK2

This thermostat is equipped with remote clock terminals. By connecting a remote clock/timer the thermostat can be alternated between the DAY/NIGHT setpoints automatically.

### REMOTE SENSOR (OPTION) RS1 – RS2 – RSV+1

The thermostat is designed to accept the electronic remote sensor (Uni-Line part #10-528), which will allow you to locate your thermostat in an area away from view.

### DIP SWITCH OPTIONS

Located on the back of the thermostat, once the subbase is removed.

- Switch #1 – Allows for a 4-minute or 2-minute minimum on/off time.
- Switch #2 – Allows for the keypad to be locked or unlocked.

### SPECIFICATIONS

<b>Rated Voltage</b>	20-30 VAC, 24 nominal
<b>Rated Current</b>	0.08 Amps to 1.5 Amps continuous per output with surges to 4 Amps max.
<b>Control Range</b>	Cooling: 60° to 108°F in 1° Steps 16° to 40°C in 1° Steps
<b>Thermostat Measurement Range</b>	28° to 124°F or 0° to 48°C
<b>O.D.T. Displayed Range</b>	-50° to 124°F or -48° to 48°C
<b>Control Accuracy</b>	±0.5°C at 20°C, ±1°F at 68°F