

For Residential and Commercial Applications

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

DualTemp Digital Thermostat

Dimensions: 3-3/8" x 3-3/8"

The Watts Radiant DualTemp thermostat has the ability to sense the temperature of the air, floor or a combination of air and floor. Each DualTemp comes with an internal air sensor. An OPTIONAL external 10k sensor which allows detection of floor temperatures may be ordered separately. The external sensor does not have to be used if the DualTemp is to detect air temperatures only.

DESCRIPTION	PROPERTY	°C	°F
Operation Voltage	24V	10	50.0
Contact	10A, 230Vac Relay	15	59.0
Sensor	NTC 10K Thermistor	20	68.0
Static Differential	1°F	25	77.0
Proportional	10 minutes for 3.5°F	30	86.0
Built-in manual setback	7°F	35	95.0
Air Temp Range	41 - 99°F		
Floor Temp Range	41 - 99°F		



Optional Floor Sensor



DualTemp Thermostat with optional floor sensor.

Installation & Operation

To mount the thermostat remove the thermostat cover by removing the white Screw Cover (located in the center of the thermostat cover) and the Cover Screw. Secure the Base Unit to the wall. Be sure to feed the electrical wiring (18-3 or 18-4) through the provided slot in the Base Unit and connect to appropriate terminal block(s). Replace the Cover, Cover Screw and Screw Cover.

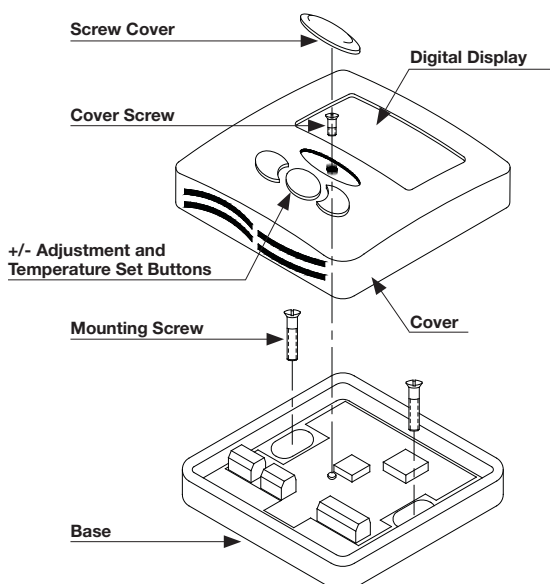
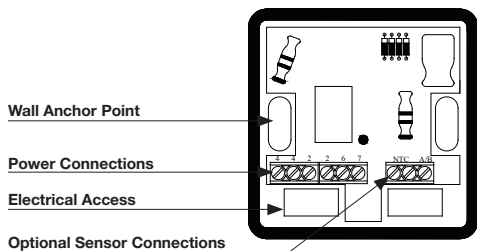
If floor sensing is desired, make sure the floor sensor is connected to the corresponding floor sensor terminals (labeled NTC, the first two terminals on the right terminal block). It may be necessary to adjust the J6 setting. See wiring diagrams for details.

Changing Values

To enter the parameter menu, press and hold the **OK** button for 5 seconds.

Use the +/- keys to select the installation parameter to be adjusted. Press **OK** to toggle the parameter setting or to edit its value. When the value begins to blink, use the +/- keys to adjust its value. Press **OK** to select the adjusted value. Use the +/- keys to select the next parameter and repeat.

Toggle to "End" and press **OK** to exit the installation parameter menu.



Product Options

Qty	Description	Model #	Order #
	DualTemp, 24V Digital, Air/Floor	P-3285	81009395
	Floor Sensor, 10K	500802	81000505

 **Watts Radiant**
Floor Heating & Snowmelting

A subsidiary of Watts Water Technologies, Inc.

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CONTROL SETTINGS AND PARAMETERS

- J0:** °C/°F Temperature display section.
- J1:** Hot/Cold regulation mode. Select Hot for Heating, Cold for cooling.
Hot: opens actuator when temperature rises above setpoint.
Cold: closes actuator when temperature closes below setpoint.
- Cy:** Proportional Integral regulation time cycle, value in minutes (default: 15 minute cycle).
 This setting adjusts how frequently the control monitors the sensor readings. Lower mass systems (frame floor applications) can loose heat faster than high mass systems (slabs) and may require a faster cycle time.
- bp:** Proportional Integral regulation band amplitude value in degrees °C/°F (default: 2.0°C/3.6°F).
- J4:** NO/NC Normally Open or Normally Close actuator selection.
 NC: If using an isolation relay and/or a relay box.
 NO: if connecting to a Watts Zone Valve control.
- J5:** Select PMP (Pump Maintenance Program) to perform a 1 minute exercise everyday.
 Use this setting to allow the thermostat to cycle the circulator for 1 minute every day. This setting helps maintain lubrication during no-heat periods.
- J6:** Air: Air (room) setpoint. Displays air temperature with floor low (FL) and high (FH) limits.
 Flr: Floor (external sensor) setpoint. Displays floor temperature without floor low/high limits. Air temperature is not a control boundary.
- J7:** rEG (proportional Integral) or HYs (0.3°C Hysteresis) regulation type selection.
rEG is preferred setting for use with radiant applications.
HYs is preferred setting for use with forced air or other convection systems.
- Cp:** Proportional Integral regulation temperature compensation value in °C/°F (default: 2.0°C/3.6°F).
 Adjusts the calibration between the displayed temperature reading and the calibrated temperature reading. Do not adjust this value unless necessary.
- Ao:** Air Sensor offset adjustment (default: no offset), display measure air sensor value.
 Adjust the display reading to match the air sensor reading.
- Fo:** Floor sensor offset adjustment (default: no offset), display measure floor sensor value.
 Adjust the display reading to match the floor sensor reading.
- FL:** Floor temperature LOW limitation (default: 5°C/41°F), effective only if floor sensor present and set **J6** to **Air**.
 This setting keeps the floor from dropping below the designated temperature.
- FH:** Floor temperature HIGH limitation (default: 28°C/82°F), effective only if floor sensor present and set **J6** to **Air**.
 This setting keeps the floor from rising above the designated temperature.
- CLr:** Press **OK** to reset to factory defaults.
- End:** Press **OK** to exit installation parameters.

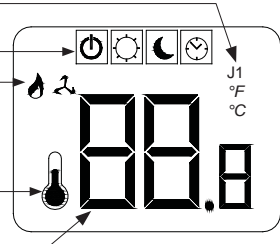
Operation Parameter (see chart for details)

Operating Mode Menu (power, comfort, set-back, timer)

Heat/Cool Operation Indicator

Indicates Display is Showing Current Temperature

Shows Measured or Set Temperature



Comfort Operating Mode (Sun): Press +/- button(s) to adjust the desired setpoint.



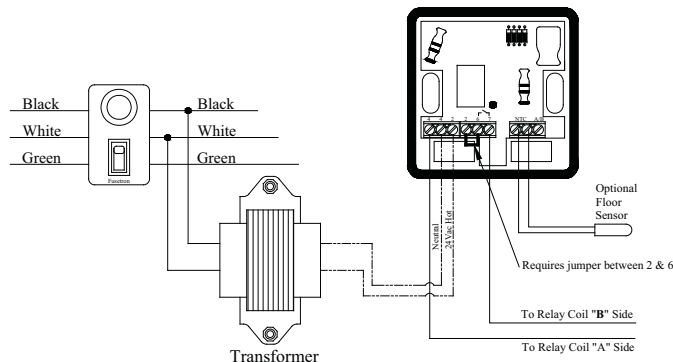
Night Setback Mode (Moon): Sets the operating temperature to a lower point. Use the +/- button(s) to adjust the setback temperature.



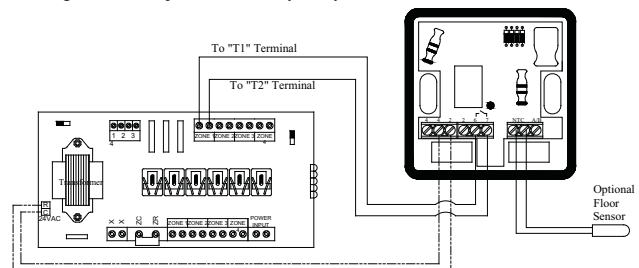
Timer (Clock): Thermostat can be tied into an external timer to control system operation.

Blinking sun indicates system is in Comfort Mode.
 Blinking moon indicated system is in Setback Mode.

Digital DualTemp with Transformer and Relay



Digital DualTemp with Third Party Relay Box



Note: Do not apply power to the relay ("dry" contact) terminals on the DualTemp. Doing so will cause damage to the thermostat.

Do not apply line voltage (120 volt) power to thermostat. Applying anything other than the recommended 24 volt power will damage the thermostat.