Quick Start Guide

ACCUTROL LLC

Please read this entire document to familiarize yourself with the installation and wiring instructions for the RTS110-H

The RTS110-H is a wall mounted Room Temperature and Humidity Sensor with Display, that can be ordered with options for Set Point Adjustment, Occupancy Switch or an Ethernet connection.

- **Room Temperature Sensor** (all units): The sensor on this unit is a Type II thermistor (10K Ohm @ 77° F (25° C).

- **Room Humidity Sensor** (all units): The sensor is +/- 2% accuracy, with a 0-10 Vdc analog signal to your controller.

- **Set Point Adjustment Option**:   The set point slider option is a 0 to 10K Ohm potentiometer and labeled Cool / Warm on the housing. The input on your controller can be scaled and limited to the range of temperature adjustment per your requirements.

- **Occupancy Switch Option**:   The occupancy switch provides a momentary contact closure as a signal to an external controller to initiate a sequence of operation. This switch can be configured in parallel with the sensor, set point, or as a separate momentary contact output.

- **Ethernet Connection Option**:   This is a RJ45 connection under the front cover that can be wired with CAT5 communication wire to a remote mounted controller, allowing the technician to access the controller remotely.
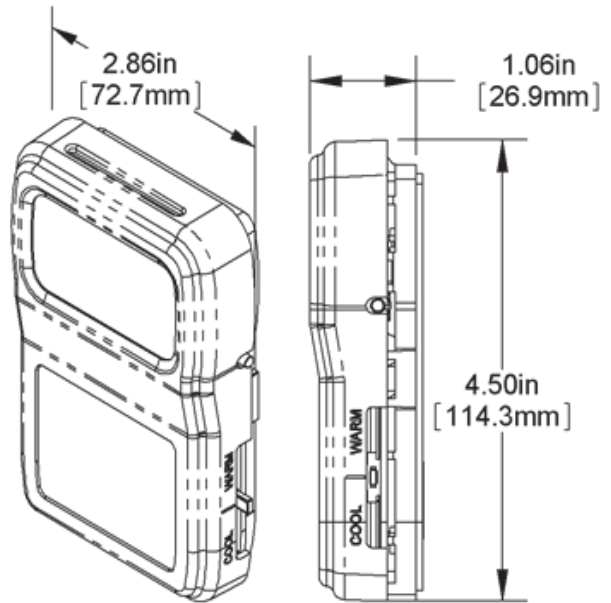
JUNCTION BOX MOUNTING

1. Pull the wire through the wall and out of the junction box, leaving about six inches free.
2. Pull the wire through the hole in the base plate.
3. Connect the Ethernet cable to the RJ45 connector (if required).
4. Secure the base to the box using the #6-32 x 1/2 inch mounting screw provided.
5. Terminate the unit according to the guidelines in the **Termination** section.
6. Attach Cover by latching it to the top of the base, rotating the cover down and snapping it into place.
7. Secure the cover by backing out the lock-down screws using a 1/16" Allen wrench until they are flush with the bottom of the cover.

DRYWALL MOUNTING

1. Place the base plate against the wall where you want to mount the sensor.
2. Using a pencil, mark out the two mounting holes and the area where the wires will come through the wall.
3. Drill two 3/16" holes in the center of each marked mounting hole. Insert a drywall anchor into each hole.
4. Drill one 1/2" hole in the middle of the marked wiring area.
5. Pull the wire through the wall and out of the 1/2" hole, leaving about six inches free.
6. Pull the wire through the hole in the base plate.
7. Secure the base to the drywall anchors using the #6 x 1 inch mounting screws provided.
8. Terminate the unit according to the guidelines in the following section.
9. Attach Cover by latching it to the top of the base, rotating the cover down and snapping it into place.
10. Secure the cover by backing out the lock-down screws using a 1/16" Allen wrench until they are flush with the bottom of the cover.

NOTE: *In a wall-mount application, the mixing of room air and air from within the wall cavity can lead to erroneous readings, condensation, and premature failure of the sensor. To prevent this condition, plug the conduit hole with insulation in the junction box.*

TERMINATION

Accutrol recommends using twisted pair of at least 22AWG and sealant filled connectors for all wire connections. Larger gauge wire may be required for long runs. All wiring must comply with the National Electric Code (NEC) and local codes. Do NOT run this device's wiring in the same conduit as AC power wiring. Our tests show fluctuating and inaccurate signals are possible when AC power wiring is in the same conduit as the signal lines. If you are experiencing any of these difficulties, please contact your Accutrol representative.

STOP Accutrol recommends wiring the product with power disconnected. Proper supply voltage, polarity and wiring connections are important to a successful installation. Not observing these recommendations may damage the product and void the warranty.
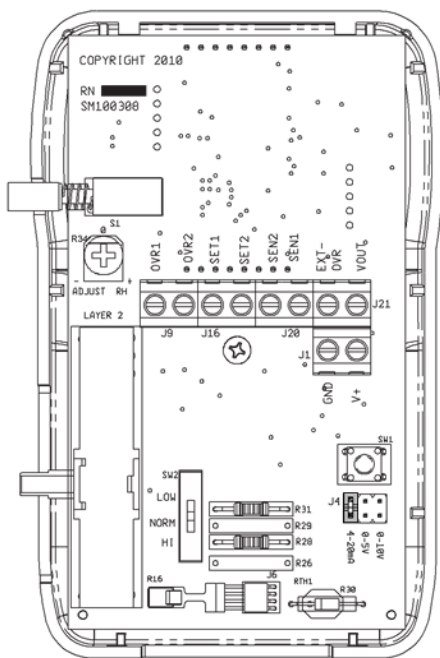
Terminal	Description
GND……………. ..	Power Supply Ground (Common to the controller)
V+………………...	Power Supply Hot (See specification for voltage details)
EXT OVR………...	Icon Occ / Un-Occ indicator Input. Ground terminal to fill in the icon for Occupied.
SEN1 & SEN2…...	Resistive Temp. Sensor Output. No polarity *
SET1 & SET2…...	Resistive Set Point Output, No polarity *
OVR1 & OVR2…..	Override output (Dry contact) the contact is configured as a separate momentary contact *
VOUT……….....	Voltage Humidity Signal [to analog input of controller]

* Grounding Note

These units have an Internal Common Connection as a Common Ground for several of the terminations. Please maintain polarity to prevent damage to sensor board and external controller

Specifications subject to change without notice

Display, Set Point and Override Descriptions

NUMERICAL DISPLAY:

The default display shows current temperature and humidity, and is configurable by the user to show one of 9 different ways. When the slider set point is moved enough to change the set point by 0.5 degrees , the set point will be displayed for 3 to 4 seconds. The unit can be set up to display Temperature and /or Humidity only, along with temperature set point in various ways.

OCCUPIED ICON:

The Icon shows the status of the room Solid for "Occupied", Hollow for "Unoccupied".

Note: The unit must receive a confirmation (ground) signal on the

"EXT OVR" terminal for the Icon to remain visible on the screen. Pressing the Override button will light the Icon; however, if no confirmation signal is received, then the Icon will go blank (disappear after 5 seconds).

Upon receiving a first confirmation (ground) signal on the "EXT OVR" terminal, the Icon will show occupied (Solid). The Icon will then show unoccupied (Hollow) whenever the confirmation signal is removed and occupied when the signal is returned. The only way to blank the Icon from the display is to cycle power.

SET POINT:

When the slide set point is moved enough to change the set point by 0.5 degrees, the set point will be displayed. Slide the set point up or down to the desired set point.

OVERRIDE:

When the override button is pressed, The override output of the RTS 110-H will shunt or short momentarily. This override output is connected to it's associated controller which requires latching logic to initiate an alternate sequence of operation and should include driving a contact closure wired to the "EXT OVR" input of the RTS110-H to maintain the Icon showing "Occupied Status".

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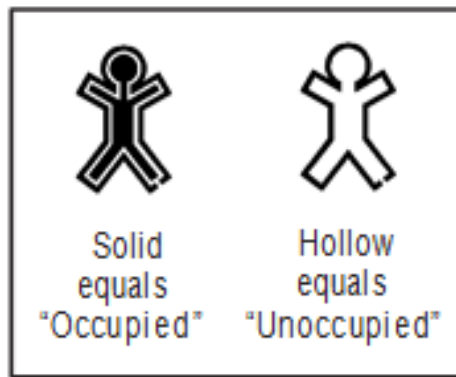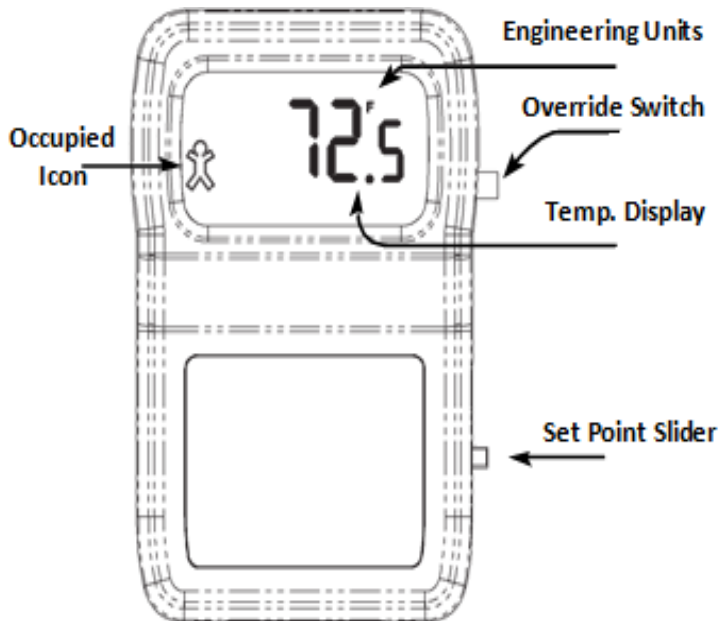
Specifications

Power :
15-40VDC (24 VDC nominal) or
15-28 VAC (24 VAC nominal)
Note: AC power requires a separate pair of shielded wires

Power Consumption: 30mA max DC; .17 VA max AC

Wiring: .... 22 to 16AWG

Mounting: .... Standard 2 x 4 box or drywall direct (Screws provided)

Outputs:
Passive Sensor.......... Thermistor, Type II, 10K Ohm @ 77° F (25° C).
Set point .... Resistive, 10K Ohm potentiometer, reverse or direct acting

Inputs: .... Dry contact (24V, <1mA)
Occupied .... EXT OVR terminal "Grounded"
Unoccupied................ EXT OVR terminal "Open to Ground"

Display: .... LCD, Overall, 2"W x 1.1"H (Temp/Set point/Occupied)
LCD .... 3.5 Digits @0.6"H
Icon .... Filled is occupied, Hollow is Unoccupied
Display Limits .... 1.0°, 0.5° and 0.1° (F/C) increments, Set points in 1° steps
Range .... -40 to 185°F (-40 to 85°C)
Display Setup .... Temp and / or Humidity, Temp Set point when active

Options:...................... Factory set options
Set point .... Slide potentiometer
Over ride.................... Side button
Communication.......... RJ45 Ethernet connector to external controller

Override Operation: Factory Set Momentary isolated contact

Setup Options:
Offset .... ±5°
Temp Display .... Display in ºF or ºC
Set point .... Disabled or Set point display only
Temp. Resolution....... Display in 1.0°, 0.5º or 0.1° increments
RH Resolution……….. Display in 0.5 or 0.1% increments

Environmental Ambient:
Temperature .... 32 to 122ºF (0 to 50ºC)
Humidity..................... 0 to 95% RH
Non-cond. Storage .... 32 to 185°F (0 to 85°C)

Encl. Material: .... ABS Plastic, UL94V-0

Agency: .... RoHS, CE* (*Units with passive Thermistors are CE compliant.)

For Additional help in configuring this device, contact Accutrol at (203) 445-9991

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