Wireless, Ambient Light Harvesting Temperature & Humidity Transmitter

Overview

The Resonate family of temperature and relative humidity sensors have been designed to provide a reliable and simple method to set up intelligent automation of interior spaces for energy savings.

The Resonate family sets a new bench mark in temperature accuracy and update speed of temperature changes. The units are accurate to 0.3°C and 3% relative humidity. These sensors are suitable for Variable Volume Temperature (VVT) or Variable Air Volume (VAV) forced air systems.

Batteries are not required for everyday operation due to the advanced solar energy harvesting and power management features of the sensor. Upon installation, the sensor will operate with exposure to 200 Lux (20 fc) in as little as 2 minutes. The RTS is capable of operating up to 200 hours in darkness from maximum charge levels.

The RTS sensor incorporates our latest diagnostic and configuration features to ensure reliable communications and solar harvesting capability. The RTS supports range confirmation technology whereby simple button press and hold sequences result in LED indication of signal strength. Solar energy harvesting level indication under existing light levels is also provided on demand through LED indication.

These built-in features assist the installer to position the sensor and be confident of its operation without using separate light meters and signal strength indicators.

*Note: Range Confirmation requires an "F" series of Echoflex controller ("F" series is exclusive to 902 MHz at this time).
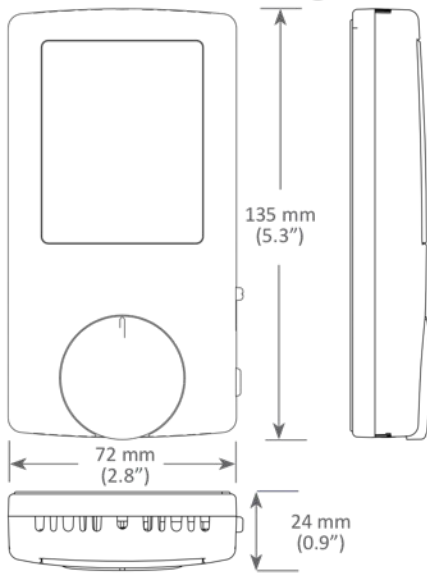
Features

- Solar powered wireless temperature and optional relative humidity sensor
- Temperature accuracy of 0.5°F/ 0.3°C
- Relative Humidity accuracy of 3%
- Integrated range confirmation via tricolored LED indication (patent pending)
- Integrated solar harvesting light level LED indication
- Reliable radio reception range of 24 m (80 ft) - commercial office spaces (typical), up to 100m (330 ft) line of sight
- Quick start-up operation, 2 minutes @ 200 lux
- Up to 200 hours operation in complete darkness
- Operates in low light conditions, 15 lux (2 fc)
- Occupancy override button (in RTS-2HS models)
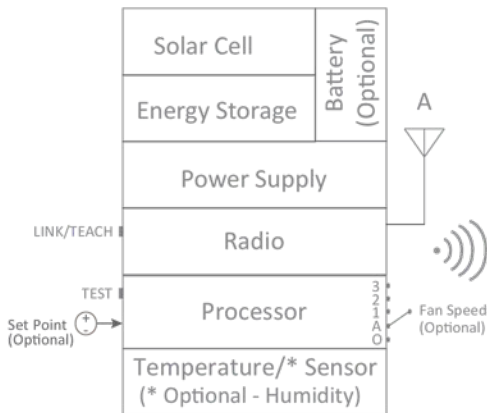- Optional battery start assist

Ordering Information

Description	902 MHz Models	868 MHz Models	315 MHz Models
	USA/Canada	Europe/China	USA/Canada/Asia
Temperature Sensor	TR4301-EO	TR4301-EO-868	TR4301-EO-315
Temperature Sensor with setpoint	TR4302-EO	TR4302-EO-868	TR4302-EO-315
Temperature Sensor with relative humidity (RH)	TR4303-EO	TR4303-EO-868	TR4303-EO-315
Temperature Sensor with fan speed, RH and setpoint	TR4304-EO	TR4304-EO-868	TR4304-EO-315

Note: Other models are available by special order - please contact us for details

Dimensioned Diagram

135 mm
(5.3")

72 mm
(2.8")

24 mm
(0.9")

Block Diagram

Solar Cell	Battery (Optional)
Energy Storage	
Power Supply	
Radio	
Processor	
Temperature/* Sensor (* Optional - Humidity)	

LINK/TEACH

TEST

Set Point (Optional)

A

Fan Speed (Optional)

Agency Listing & Compliance

(902 and 315 MHz only)

FCC   Part 15.231 -
       Remote Control Transmitter
IC   RSS-210

Equipment Profiles (EnOcean Equipment Profile)

EEP A5-02-05	Temperature Sensor
EEP A5-10-03	Temperature + Set Point
EEP A5-04-01	Temperature + Humidity
EEP A5-10-19	Temperature + Humidity + Set Point + Fan Speed +Occupancy Button

Note: Other profiles are available by special order - please contact us for details

Hardware Specifications

Temperature	0°C to 40°C (32°F to 104°F) range
	0.3°C (0.5°F) accuracy
Humidity Sensor	20 to 95% range, 3% accuracy
	0.4% resolution
Power Supply	Integrated solar cell
Operational light level	15 lux (2 fc)
Minimum charge time to begin operation	2 minutes @ 200 lux (20 fc)
Charging Light Level	above 100 lux (10 fc)
Maintain charge time	2 hours per 24 hours @ 200 lux (20 fc)
Maximum charge time	6 hours at 200 lux (20 fc)
Operating life at full charge	200 hours @ 0 lux
Battery - start assist	CR2032 coin cell (optional - not included)
Inputs	Teach Button, Test Button, Set Point Dial*, Fan Speed Switch* *Not all models
Outputs	Test mode LEDs - red, green, and amber

Communications

Radio Frequency	902 MHz(U), 315 MHz(C) or 868 MHz(Y)
Antenna	Integrated whip
Transmission Range	24 m (80 ft) - commercial office spaces(typical), up to 100m (330 ft) line of sight

Temperature Monitoring

	Sampling Rate	Telegram Period
Light level > 100 lux (10 fc)	10 seconds	on 0.3°C (0.5°F) change or 10 samples or 3% humidity change
Light level < 100 lux (10 fc)	100 seconds	
After 24 hrs @ < 15 lux (2 fc)	200 seconds	

Mechanical Specifications

Operating Temperature	-25°C to 65°C (-13°F to 145°F)
Relative Humidity	5% to 92% RH (non-condensing)
Weight	130 g (4.5 oz)
Dimensions	135 x 72 x 24 mm (5.3 x 2.8 x 0.9")
Mounting	screws or double sided tape (not supplied)

7/2/18

Specifications are subject to change without notification. | Range Confirmation Technology - Patent pending
Document 8DC-0353 | Revision 1.7

Manufactured By:

AirTest Technologies Inc

Distributed By:

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