



Wireless Thermostat

General Description

The ICARE thermostat is designed specifically for remote configuration and energy savings. It features an integrated motion sensor to auto detect if an area or room is occupied and can be set to enter an energy saving state when not needed. The thermostat will allow you to set a maximum and minimum temperature range for both occupied and non-occupied states. The system will auto adjust comfort levels when personnel arrive and automatically return to normal when they leave. It is also a perfect solution for public buildings such as corporate facilities or schools and churches as there are no physical buttons on the device. This prevents random adjustments by unauthorized people.

Features

- Allows for remote setting and monitoring of HVAC systems.
- Detects motion for occupied/non-occupied status.
- Prevents unauthorized adjustments or tampering.
- Configuration lockout jumper prevents changes at the hardware level.
- Full functionality and startup without a gateway (gateway is required for configuration changes and to monitor the device in the online software).

Example Applications

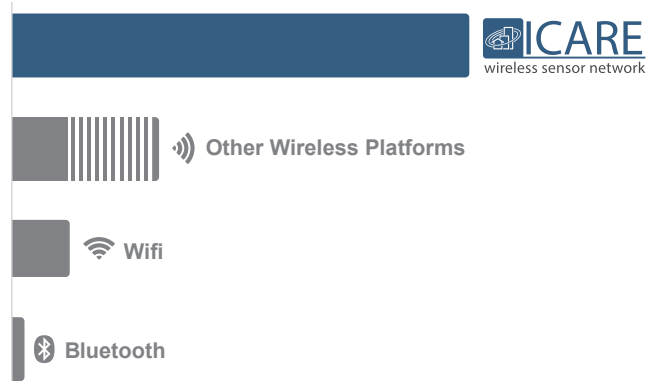
- Office buildings.
- Schools and churches.
- Stores and restaurants.
- Sports and concert venues.
- Remote buildings.

Wireless Thermostat Features

- Wireless range of 1,200+ feet through 12+ walls *
- 900 MHz Frequency Hopping Spread Spectrum
- Improved interference immunity
- Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Onboard data memory stores up to 3200 readings per sensor:
 - 10-minute heartbeats = 22 days
 - 2-hour heartbeats = 266 days
- Over-the-air updates (future proof)
- Powered by HVAC system

* Actual range may vary depending on environment.

Wireless Range Comparison



Wireless Thermostat Specifications

Supply Voltage	12 VAC - 24 VAC (powered via HVAC system)
Current Consumption	0.7 μ A (sleep mode) 2 mA (radio idle/off mode) 2 mA (measurement mode) 25 mA (radio RX mode) 35 mA (radio TX mode)
Operating Temperature Range	-40°C to 85°C (-40°F to 185°F) *
Temperature Reading Accuracy	\pm 1°C
RH Accuracy	\pm 3% under normal conditions (10% - 90% RH) **
RH Operating Range	0 – 100% RH **
RH Response Time	8 sec (tau 63%) **
Motion Sensor Detection Range	16.4 ft (5 m)
Indicator Lights	Six LED indicators (Heating, Cooling, Fan, Power, Occupied, Radio (RF))
Pass-through Current Rating on Heat, Cool, and Fan Connections	Continuous: 1 A RMS Surge: 8.5 A Peak
Peak Voltage on Heat, Cool, and Fan Connections	+/- 800 Volts
Dimensions	5.5 x 3.355 x 1.25 in. (139.7 x 85.217 x 31.75 mm)
Wireless Range	1,200+ ft. non-line-of-sight
Security	256-bit key exchange and AES-128 CTR
Certifications	900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1.

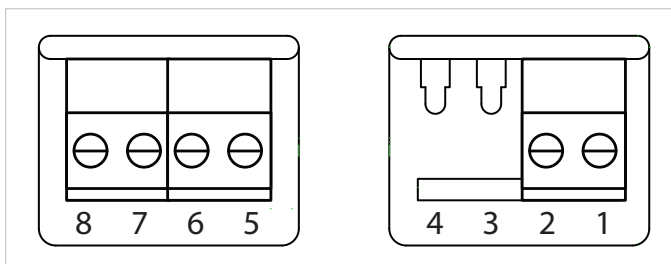


* At temperatures above 100°C, it is possible for the board circuitry to lose programmed memory.

** If humidity sensor option is installed. If thermistor option is present the thermostat only reads temperature and reports a value of 0% humidity.

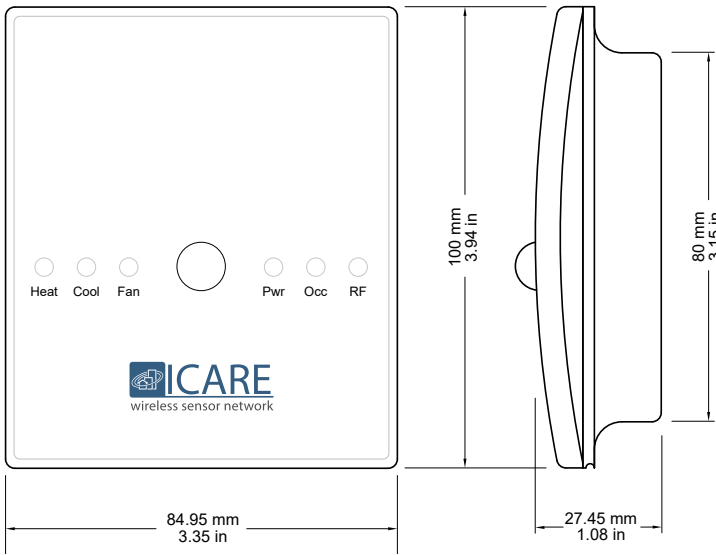
Note: The thermostat features a physical configuration lockout jumper which can be set to prevent changes to any settings, even through the ICARE online software. This prevents any hacking or remote tampering of any kind. If used, the physical jumper will need to be removed to change settings.

Thermostat Connections

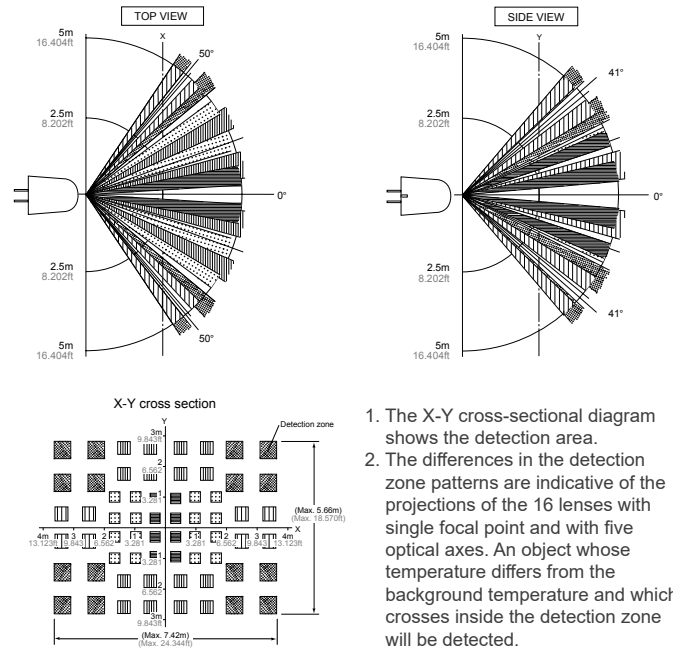


Pin	Description	Color	Identifier
1	Common	Blue or Black	C
2	Line	Red	R, Rc
3	No Connect		
4	No Connect		
5	Fan	Green	G
6	Cool	Yellow	Y
7	Heat	White	W
8	No Connect		

Thermostat Dimensions



Motion Sensor Specifications



1. The X-Y cross-sectional diagram shows the detection area.
2. The differences in the detection zone patterns are indicative of the projections of the 16 lenses with single focal point and with five optical axes. An object whose temperature differs from the background temperature and which crosses inside the detection zone will be detected.

Caution / Notice:

ICARE commercial grade products are designed for applications in ordinary environments (normal room temperature, humidity and atmospheric pressure). Do not use these sensors under the following conditions as these factors can deteriorate the product characteristics and cause failures and burn-out.

- Corrosive gas or deoxidizing gas - chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxides gas, etc.)
- Volatile or flammable gas
- Dusty conditions
- Under low or high pressure
- Wet or excessively humid locations
- Places with salt water, oils chemical liquids or organic solvents
- Where there are excessively strong vibrations
- Other places where similar hazardous conditions exist

Use these products within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality of this product.



For more information about our products or to place an order, please contact our sales department at 586-899-1150.

Visit us on the web at www.icaremonitoring.com.

ICARE Monitoring
Saint Clair Shores, MI 48082
586-899-1150
www.icaremonitoring.com