



RTD HIGH
TEMPERATURE

Wireless High Temperature Sensor

General Description

The RF Wireless High Temperature Sensor uses a glass coated platinum RTD sensor to accurately measure temperatures from -50°C to +370°C (-58°F to 700°F).

- Standard accuracy at 0°C: +/- 3.3°C
- Calibrated accuracy at 0°C: +/- 0.5°C
- RTD temperature range: -50°C to +370°C (-58°F to 700°F)



Online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

Principle of Operation

The Wireless High Temperature Sensor outputs the ambient temperature in degrees Celsius or Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat) and then wakeup, power up the RTD sensor and wait for it to stabilize then mathematically compute the temperature and transmit the data to the gateway.

Industry leading 25 month NIST certified product included on leaded temperature sensors.



The High Temperature Sensor is not meant for wet, damp, high humidity environments. This sensor should only be operated in dry, low humidity environments. Should you need a temperature sensor that operates at extreme temperatures and can withstand getting wet or condensed on, please consider our Thermocouple Sensors.

Example Applications

- Heaters & Boilers
- Ovens & Cooking Devices
- Environmental Monitoring
- Smart Machines & Smart Structures
- HVAC Operation & Testing

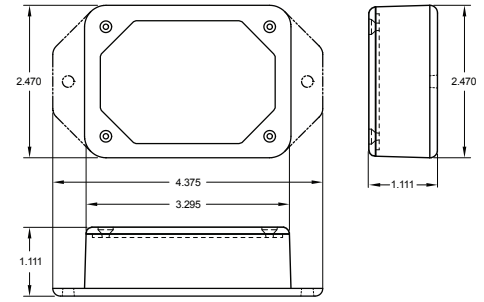
Sensor Core Specifications

- Wireless Range: 250 - 300 ft. (non-line-of-sight / indoors / through walls, ceilings & floors) *
- RF Communication: 900, 920, 868 and 433 MHz
- Power: Replaceable batteries (optimized for long battery life, line-power and solar (Industrial only) options are available)
- Battery Life (at 1 hour heartbeat setting): **
 - AA battery > 4-8 years
 - Industrial > 4-8 years

* Actual range may vary depending on environment.

** Battery life is determined by sensor reporting frequency and other variables.

Wireless High Temperature Sensor (AA)



Technical Specifications

Supply Voltage	2.0 - 3.6 VDC (3.0 - 3.6 VDC Using Power Supply) *
Current Consumption	0.7 μ A (sleep mode)
Operating Temperature Range (Board Circuitry and Batteries)	-18°C to 55°C (0°F to 130°F) using alkaline -40°C to 85°C (-40°F to 185°F) using lithium **
Weight	3.7 oz. (3.7 oz w/ 3' probe)
Wireless Range	250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables

RTD Technical Specifications

RTD Temperature Range (RTD and Cable Only)	-50°C to +370°C (-58°F to +700°F)
Accuracy @ 0°C	+/- 3.3°C Standard (+/- 0.5°C Calibrated **)
Dissipation Constant	2mW/°C
Thermal Time Constant	15 sec max.

RTD Tolerances

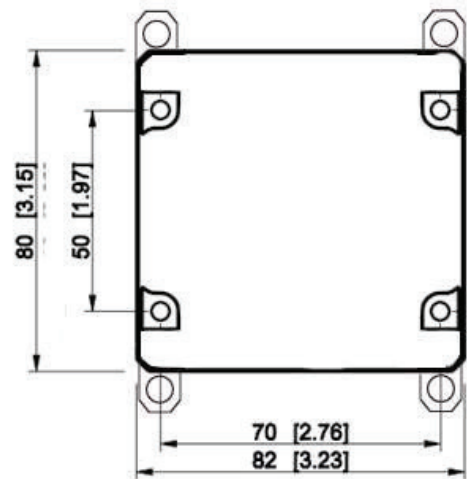
Temperature (°C)	Tolerance (\pm °C)	
	Uncalibrated	Calibrated
- 50°C	3.55	0.75
- 30°C	3.45	0.65
- 10°C	3.35	0.55
0°C	3.30	0.50
10°C	3.35	0.55
30°C	3.45	0.65
50°C	3.55	0.75
70°C	3.65	0.85
90°C	3.75	0.95
110°C	3.85	1.05
130°C	3.95	1.15
150°C	4.05	1.25
170°C	4.15	1.35
190°C	4.25	1.45
210°C	4.35	1.55
230°C	4.45	1.65
250°C	4.55	1.75
270°C	4.65	1.85
290°C	4.75	1.95
310°C	4.85	2.05
330°C	4.95	2.15
350°C	5.05	2.25
370°C	5.15	2.35


Certifications



900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RF-SC1. 920 MHz product; ARIB STD-T108 R210-103733. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).

Wireless High Temperature Sensor (Industrial)



Technical Specifications		
Supply Voltage		2.0 - 3.6 VDC *
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 (Board Circuitry and Battery)		
Included Battery	Max Temperature Range:	-40°C to +85°C (-40°F to +185°F) **
	Capacity:	1500 mAh
Optional Solar Feature	Solar Panel:	5VDC / 30mA (53mm x 30mm)
	Charging Temperature Range:	0° to 45°C (32° to 113°F)
	Max Temperature Range:	-20° to 60°C (-4° to 140°F)
	Included Rechargeable Battery:	600 mAh / >2000 Charge Cycles (80% of initial capacity)
	Charging efficiency	5% ***
	Luminous sustainability	Minimum of 10,000 LUX ***
Enclosure Rating		NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof
UL Rating		UL Listed to UL508-4x specifications (File E194432)
Lead Wire Length		3' (36 in.)
Weight		4.8 oz (solar option 5.2 oz.)
Wireless Range		250 - 300 ft. (Indoors / Through walls, ceilings & floors) Range may vary according to environmental variables.
Certifications 		900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1. 920 MHz product; ARIB STD-T108 R210-103733. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).

RTD Technical Specifications	
RTD Temperature Range (RTD and Cable Only)	-50°C to +370°C (-58°F to 700°F)
Accuracy @ 25°C	+/- 0.5°C (0.9°F)
Dissipation Constant	2mW/°C
Thermal Time Constant	15 sec max.

*** For best results, calibrate at 0°C..

Wireless High Temperature Sensor (Industrial continued)

RTD Tolerances		
Temperature (°C)	Tolerance (±°C)	
	Uncalibrated	Calibrated
- 50°C	3.55	0.75
- 30°C	3.45	0.65
- 10°C	3.35	0.55
0°C	3.30	0.50
10°C	3.35	0.55
30°C	3.45	0.65
50°C	3.55	0.75
70°C	3.65	0.85
90°C	3.75	0.95
110°C	3.85	1.05
130°C	3.95	1.15
150°C	4.05	1.25
170°C	4.15	1.35
190°C	4.25	1.45
210°C	4.35	1.55
230°C	4.45	1.65
250°C	4.55	1.75
270°C	4.65	1.85
290°C	4.75	1.95
310°C	4.85	2.05
330°C	4.95	2.15
350°C	5.05	2.25
370°C	5.15	2.35

Notes

Commercial Grade Sensors

Commercial grade sensors 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.

Industrial Grade Sensors - Type 1, 2, 4, 4X, 12 and 13 NEMA Rated Enclosure

Industrial sensors are enclosed in reliable, weatherproof NEMA rated enclosures. Our NEMA rated enclosures are constructed for both indoor or outdoor use and protect the sensor circuitry against the ingress of solid foreign objects like dust as well as the damaging effects of water (rain, sleet, snow, splashing water, and hose directed water).

- Safe from falling dirt.
- Protects against wind-blown dust.
- Protects against rain, sleet, snow, splashing water, and hose directed water
- Increased level of corrosion resistance
- Will remain undamaged by ice formation on the enclosure