

# ProTAACS

## Wireless Quad Temperature Sensor



### Technical Overview

#### General Description

Industrial wireless quad temperature sensor uses four individual sensor probes to measure and track temperatures with reliable accuracy. Perfect for monitoring a variety of temperature critical applications such as food coolers, HVAC systems and data centers.

#### Features

- Accurate to  $\pm 1^\circ \text{C}$  ( $\pm 1.8^\circ \text{F}$ ).
- Increased accuracy by user calibration to  $\pm 0.25^\circ \text{C}$  ( $\pm 0.45^\circ \text{F}$ ).
- 4 individual 3 ft. temperature probes.
- High gain puck antenna can be fixed to structures away from sensor hardware.
- Free iProTAACS basic online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email.

#### Principle of Operation

ProTAACS industrial wireless temperature sensor outputs the ambient temperature in degrees Fahrenheit. It is programmed to sleep for a user-given time interval (heartbeat) and then wakeup, send power to the NTC thermistor probes, wait for them to stabilize, convert the analog data and mathematically compute the temperatures then transmit the data through the gateway to the online monitoring software. To stay within the abilities of the processor, the temperature is computed off a data table provided by the manufacturer. To reduce error, a variable resistor configuration is implemented over specified temperature ranges.

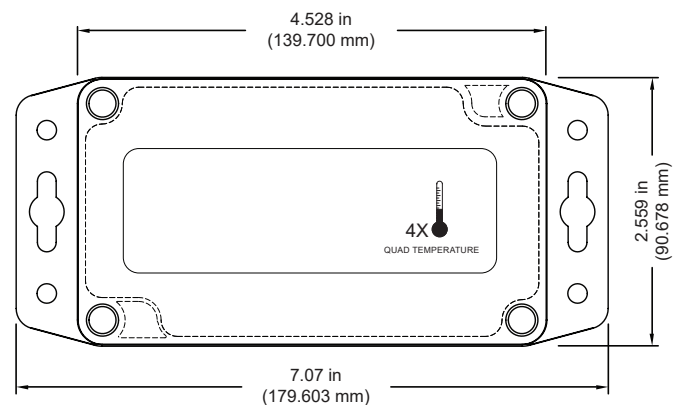
#### Applications


- Coolers & Freezers
- Environmental Monitoring
- Smart Machines & Smart Structures
- HVAC Operation & Testing
- Data Center Monitoring

#### Industrial Sensor Electronics Specifications

- Power: replaceable 3.6V battery (included)
- Communication: RF 900, 920, 868 and 433 MHz
- Dimensions: 3.7" x 2.23" x 1.38"
- Antenna: 3dBi RP SMA antenna
- Operating Temperature:  $-40^\circ$  to  $85^\circ \text{C}$  ( $-40^\circ$  to  $185^\circ \text{F}$ )
- Transmission Range: 300 - 350 ft. non-line-of-sight\*
- Battery Life: at 1 hour heartbeat setting, battery will last ~ 4-5 years.\*\*

\* Actual range may vary depending on environment.  
\*\* Battery life is determined by sensor reporting frequency and other variables.



Technical Specifications	
Supply Voltage	2.0 - 3.6 VDC *
Current Consumption	0.7 $\mu$ 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)	-40°C to +85°C ( -40°F to +185°F ) **
Optimal Battery Temperature Range (Battery)	+10°C to +60°C ( +50°F to +140°F )
Thermistor Temperature Range (Probes Only)	-40°C to +125°C ( -40°F to +257°F )
Accuracy @ 25°C	+/- 1% (1° C or 1.8° F)
User Calibrated Accuracy	+/- 0.25° C ( $\pm$ 0.45° F)
Time Constant @ 25°C	30 sec
Number of Temperature Probes	4 individual temperature probes
Temperature Probe Length	3 ft. ( 36 in. ) / each
Antenna	Comes standard with high gain puck antenna for external mounting
Enclosure Rating	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof
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).

\* Hardware can not withstand negative voltage. Please take care when connecting a power device.

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

### 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