



## WLRC-S18T / WLRC-S18T2



### Thermocouple Sensor - Type T

This commercial-grade T Type thermocouple sensor can be used to monitor the temperature of the specific substance or environment and notify personals by SMS, email or phone call from our hosted web platform if the values go out of the optimal range. The device comes in a sealed box making it moisture-proof and withstands extreme conditions. This sensor is rugged and IP65 rated for a humid and moist environment. This device has a magnetic back panel that can be mounted on any metal surfaces.

#### Features:

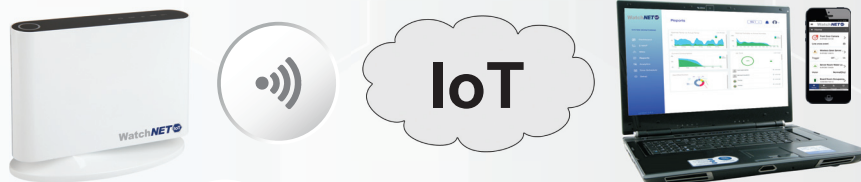
- Super Long Range Signal Penetration
- 5 years plus Battery Life\*
- Easy Installation
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Over-the-air updates
- Interactive WatchNET IoT platform with dashboard, search and notification settings
- \* Magnetized ABS enclosure for easy installation



#### Applications:

- Factories
- Food manufacturing units
- Freezers
- Boiler and furnace rooms
- High heat ovens
- Meat fridge

#### Schematic Diagram:



Boiler/mechanical room



Hot baking oven



Deep freeze storage

## Technical Specifications

Electrical	WLRC-S18T	WLRC-S18T2
Input Power	2x 3.6V ER14505 AA lithium batteries (3.6V2400mah/section)*	
Operating Voltage	3.1V ~ 3.65V	
Battery Life	5years (Conditions: ambient temperature 25°C/77°F, 15min heartbeats, txpower = 20dBm, LoRa spreading factor SF = 10)	
Standby Current	34uA	36uA
Wake up Current	7.33mA (Typical Value) Wake up current range 0.8mA-20 mA *When not transmitting/receiving LoRa data)	
Wake up Mode	0.8mA - 8mA@3.3V	6.3mA@3.3V
Low Voltage Threshold	3.2V	
Transmitting current (max)	120mA@3.3V	
Receiving current (max)	11mA @3.3V	
Battery Measurement Accuracy	±0.1V	

\*Specific electrical characteristics may vary depending on the power supply voltage.

### Thermocouple Characteristics

Measurement accuracy	Measurement error caused by the wire: ≤2°C / 35.6°F
	Thermocouple basic error limit: <b>Type T thermocouple: -40~125°C ±0.5°C / -40~257°F ±32.9°F</b>
	The basic error limit of the host body and thermocouple (theoretical value) <b>The host body and T-type thermocouple are in the <u>same</u> temperature range:</b> Temperature Range: 0°C ≤ t ≤ 55°C, Accuracy: ±0.8°C
	<b>The host body and T-type thermocouple are in <u>different</u> temperature ranges:</b> Temperature Range T1: 0°C ≤ T1 ≤ 55°C (Host body) Temperature Range T2: -40°C ≤ T2 < 0°C (Sensor) Accuracy: ±2°C  Temperature Range T1: 0°C ≤ T1 ≤ 55°C (Host body) Temperature Range T2: 55°C < T2 ≤ 125°C (Sensor) Accuracy: ±1.5°C
Thermocouple Wire Length	1 meter / 39.37"

### Frequency

TX Power	19dBm±1dBm
Rx Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Range	Up to 500m/0.310miles, the actual transmission distance depends on the environment*
Data Transfer Rate	0.3kbps ~ 50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870, US902-928, Configured before shipment

### Physical

Dimension	L:112mm x W:88.19mm x H:32mm / L:4.41" x W:3.47" x H:1.26"
Weight	141g / 0.31lb
Protection class	Main Part IP65/67 / External Sensor IP67
Environment Temp.Range	-20°C ~ 55°C / -4°F ~ 131°F
Environment Humidity Range	<90%RH (No condensation)
Storage Temperature	-40°C ~ 85°C / -40°F ~ 185°F

\* Actual signal range may vary depending on the environment.

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

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