

Atomsenses LoRaWAN Temperature Sensor

Product Specification

Applicability

This guide applies to the following Atomsenses products, unless otherwise specified:

Model	Description
ATS-301	- LoRaWAN Food Grade Temperature Sensor

Declaration of Conformity

Atomsenses sensors and other products comply with the essential requirements and relevant provisions of CE/EMC, and RoHS standards.



Product Overview

The Resistance Temperature Sensor exhibits characteristics such as extensible connecting lines and a comprehensive assortment of detecting probes, encompassing A-class, B-class, and A-class food-grade temperature probes. Additionally, it offers the option of incorporating a magnetic contact switch sensor. The ATS-301 places a high emphasis on security and reliability, guaranteeing traceable data and facilitating effortless data exports to enable seamless integration. It is specifically engineered for the measurement of a broad temperature range within harsh environments and for the transmission of data via LoRaWAN® technology. Leveraging this low-power consumption technology, the sensor can sustain a long operational lifespan with its embedded batteries. In combination with the Atomsenses LoRaWAN® gateway and the IoT Cloud solution, users are empowered to manage all sensor data remotely and in a visually intuitive manner. The ATS-301 is widely deployed in temperature monitoring applications, including food processing, cold chain storage of food or medicine, among others..

Device Appearance



Dimensions(mm)



Features

- Four types of high-accuracy temperature probes and one magnetic contact switch sensor are available as options.
- The IP65 waterproof enclosure, accompanied by a dust plug, is suitable for harsh environmental conditions.
- It supports automated temperature monitoring and anti-tamper data recording in accordance with HACCP, fulfilling the authenticity requirements of 21 CFR Part 11B electronic records.
- EN12830 certification is obtained for cold-chain applications.
- A simplified PDF data export is provided to facilitate documentation without the need for complex paperwork.
- Two large-capacity replaceable batteries are built-in, ensuring an extended battery lifespan.
- Up to 10,000 historical records can be stored locally and it supports retransmission to avoid data loss.
- Equipped with Type-C USB for rapid and convenient configuration.
- It functions effectively in conjunction with standard LoRaWAN[®] gateways and network servers. As well as Atomsenses IoT Cloud QTLab

Technical specifications and standards

Specifications	Parameters
Technology	LoRaWAN®
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16dBm(868MHz)/20dBm(915MHz)/19dBm(470MHz)
Sensitivity	-137dBm @300bps
Mode	OTAA/ABP Class A
Connection Type	3-wire connection
Range	-30 °C~70 °C (Customizable from -200 °C~ 800 °C)
Accuracy	±0.5°C
Resolution	0.1°C
Connector Type	5-pin M12 A-Coded Male Connector
Connector Number	1 × Connector for PT100 Probe or Magnet Switch Sensor
Data Logging	10, 000 measurements and supports to export as CSV or PDF file
Power Supply	2 × 4000 mAh ER18505 Li-SOCL2 Batteries or Type-C USB (5V/1A)
Battery Life (30°C, 10 min interval)	ATS301 + One or Two PT100 Probes: Around 5 years ATS301 + One Magnet Sensor: Over 10 years (10 triggers per day)
Relative Humidity	0% to 95% (non-condensing)
Ingress Protection	IP65
Connector Type	5-pin M12 A-Coded Male Connector
Connector Number	1 × Connector for PT100 Probe or Magnet Switch Sensor
Data Logging	10, 000 measurements and supports to export as CSV or PDF file
Power Supply	2 × 4000 mAh ER18505 Li-SOCL2 Batteries or Type-C USB (5V/1A)
Battery Life (30°C, 10 min interval)	ATS301 + One or Two PT100 Probes: Around 5 years ATS301 + One Magnet Sensor: Over 10 years (10 triggers per day)
Relative Humidity	0% to 95% (non-condensing)
Dimension	90 × 56 × 150 mm
Installation	Wall Screw Mounting, Magnetic Mounting (Opt.)