



AVAILABLE MODELS

MS-TS301

Single probe connector
— monitor one point at a time

MS-TS302

Dual probe connectors
— monitor two points simultaneously

KEY FEATURES

- IP65 waterproof housing — deploys in cold storage, food processing, and outdoor environments without an extra enclosure
- Interchangeable probes — digital, temperature & humidity, PT100 standard / food-grade / cryogenic
- On-board LCD display and magnet switch sensor for door/lid monitoring
- 10,000-point onboard memory with PDF/CSV export — no data loss during network outages
- EN12830 & 21 CFR Part 11 compliant — audit-ready for cold chain and regulated environments

Long Battery Life

MS-TS301 with a T/H probe runs **over 4 years** on two 4000 mAh ER18505 Li-SOCl₂ cells (SF10, EU868, 10-min uplink) — dramatically fewer truck rolls in hard-to-reach locations.

CERTIFICATIONS

CE

FCC

EN12830

RoHS

MODEL COMPARISON

Parameter	MS-TS301	MS-TS302
Probe connectors	1	2
Simultaneous probes	1	2
Temperature & humidity probe	✓	✓
Magnet switch sensor	✓	✓
LCD display	✓	✓
Weight	175 g	185 g

TECHNICAL SPECIFICATIONS

Parameter	Specification
WIRELESS TRANSMISSION	
Technology	LoRaWAN® 1.0.x · Class A (OTAA / ABP)
Frequency Bands	EU868, US915, AU915
Tx Power	16 dBm (EU868) / 22 dBm (US915, AU915)
Sensitivity	-137 dBm @ 300 bps
Antenna	Internal
Configuration	NFC + mobile app, or LoRaWAN downlink
SENSORS & PROBES	
Connector	5-pin M12 A-coded (IP67) — 1× (TS301) / 2× (TS302)
Probe types	Digital, Temperature & Humidity, PT100 (Class A / B)
Temp range (probe)	-200 °C to +500 °C (probe-dependent)
Humidity range	0-100 % RH (T/H probe, ±2 % RH)
PHYSICAL	
Operating temp	-30 °C to +70 °C
IP rating	IP65
Dimensions	109 × 75 × 29 mm — 175 g (TS301) / 185 g (TS302)
Power	2 × 4000 mAh ER18505 Li-SOCl ₂ or USB-C 5V/1A

LORAWAN FREQUENCY BANDS

Region	Band
Europe	EU868
North America	US915
South America	AU915

ORDERING INFORMATION

ATEK Part Number	Description
MS-TS301 — SINGLE PROBE	
MS-TS301-DIGITAL	TS301 + digital temperature probe (-40 to +125 °C)
MS-TS301-TH	TS301 + temperature & humidity probe (± 0.2 °C, ± 2 % RH)
MS-TS301-PT100	TS301 + PT100 Class B temperature probe (-40 to +125 °C)
MS-TS301-PT100-FOOD	TS301 + food-grade 316SS needle PT100 Class A
MS-TS301-PT100-CRYO	TS301 + cryogenic PT100 Class A (-200 to +50 °C)
MS-TS301-MAGNET	TS301 + magnet switch sensor (door/lid monitoring)
MS-TS302 — DUAL PROBE	
MS-TS302-2TH	TS302 + two temperature & humidity probes
MS-TS302-TH-MAGNET	TS302 + T/H probe + magnet switch sensor
MS-TS302-2PT100	TS302 + two PT100 Class B probes

Frequency band specified at order. TS302 supports one magnet switch maximum; other probe combinations available on request.

ATEK PLATFORM INTEGRATION

- Zero-touch provisioning — DevEUI pre-linked to your account; sensor joins a LoRaWAN gateway and appears in the dashboard automatically
- Real-time temperature & humidity readings, trends, and alarms within seconds of uplink
- Calibration tracking — certificate storage, expiry alerts, and audit trail tied to each sensor serial number
- Historical reports — CSV / PDF / Excel exports with hourly, daily, monthly aggregations
- Multi-channel alerts — email, SMS, voice call, webhook
- Immutable time-series storage with tamper-evident audit logs
- GxP / 21 CFR Part 11 aligned — user-level audit trails, e-signature, ALCOA+ data integrity
- NFC configuration via mobile — pair and provision on-site without a laptop