TEKTELIC TUNDRA

LoRaWAN® Device for Cold Chain Environment Monitoring

TEKTELIC's TUNDRA Temperature and Humidity Sensor is the ideal solution for maintaining optimal and consistent temperatures within cold rooms and refrigerated areas. The device can be implemented within cold storage such as fridges, coolers, cold rooms and even freezers with minimal impact on battery life or radio signal strength. TUNDRA Sensor is seamlessly integrated with TEKTELIC's end-to-end IoT solution.
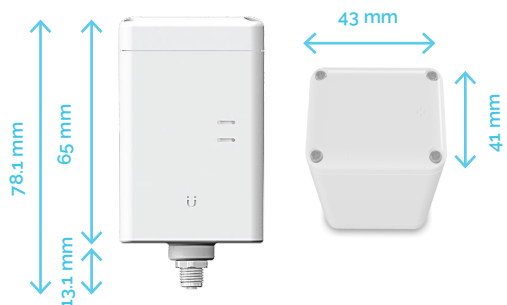

Features

» **15+ year battery life*** enabled by a low-power design for extended maintenance-free operation

» **Stores 3000 entries of data** to prevent loss during connectivity gaps while on the go

» Offers an **optional external thermistor probe** for additional temperature sensing flexibility

» Offers an **optional external reed switch probe for pulse counting** by magnetic actuation

» Provides strong, consistent wireless performance with its **built-in internal antenna**

» **Compatible with standard LoRaWAN® gateways and network servers** for broad interoperability

» **User-configurable parameters and thresholds** allow the device to be tailored to a wide range of monitoring applications

» **Quick and easy device onboarding & data viewing** using TEKTELIC **LeapX™** mobile application

» TEKTELIC **Kona Atlas™ support** for payload encoding and decoding

» **Locus™ integration** for centralized device, data, and fleet management

» **Compact industrial form factor** designed for discrete deployment

» **Rapid deployment** for scalable commercial and enterprise installations

Sensing Functions

» Ambient Temperature

» Ambient Relative Humidity

» Accelerometer

» External Probe Temperature (Analog Probe Model Only)

» Pulse Counting from External Probe (Digital Probe Model Only)

43 mm

78.1 mm

65 mm

13.1 mm

41 mm

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Technical and Functional System Specifications

General System Parameters

Operational Temperature	-40°C to 70°C
Storage Temperature	-25°C to 55°C
Operational Relative Humidity	5% to 95% Non-Condensing
Ingress Protection	IP67
Sensor Size	65 x 45 x 41 mm (with bracket) 65 x 43 x 41 mm (without bracket)
Probe Length	1.5 m
Weight (without the bracket or probe)	120 g total = 63.5 g (enclosure) + 56.5 g (battery)
Battery	1 x C-Cell LTC (8500 mAh)

Battery Life

Reporting Period = 10 min @SF7	15 years
Reporting Period = 10 min @SF10	7 years

Certifications & Compliance

Regulatory	FCC, ISED, CE (RED)
Product Safety	IEC 62368-1
Environmental	RoHS

Wireless Parameters (LoRa)

RF Power (Max)	20 dBm
RF Sensitivity	-137 dBm (SF12, 125 kHz)
Channel Plans	EU868, US915, AU915, AS923-1,-2,-3,-4, IN865, KR920
Antenna	Internal
LoRa Device Class	Class A
Specification Version	1.0.2

Sensor Specifications

	Range	Accuracy	Resolution
Ambient Temperature	-40°C to 40°C	+/- 0.9°C	0.1°C
	-20°C to 0°C	+/- 0.3°C	
	40°C to 70°C	+/- 1.2°C	
External Probe Temperature	-40°C to 105°C	+/- 2°C	0.1°C
Ambient Relative Humidity	0% - 100%	+/- 4%	0.5%
	20% - 80%	+/- 2%	
Accelerometer Sensitivity	Sample rate: 1, 10, 25, 50, 100, 200, 400 Hz Measurement range: +/-2, +/-4, +/-8, +/-16 g Precision: 16, 32, 64, 192 mg		