POWERFLEET®

CONTAINER, CHASSIS, AND TRAILER TRACKING

Environmental Sensor

Wireless Multi-Sensor with Extended Battery Life, and Highly Accurate Environment Sensing (Temperature, Humidity, EN EN12830:2018 and EN 13485 compliance)
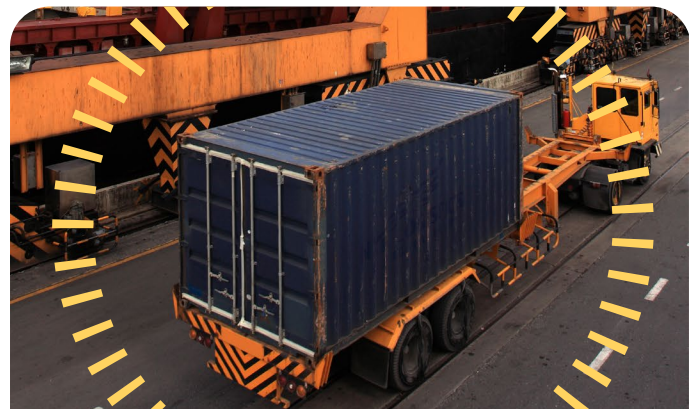
The **Environmental Sensor** is an extremely accurate and reliable wireless sensor, featuring rapid response times for precise measurements and extended battery life. The Environmental Sensor, with its small form factor, offers a wide array of integrated sensing capabilities. It can detect temperature, relative humidity, impact, motion, orientation change, and magnetic field variations.

Its innovative design optimises temperature and humidity sensing performance, by optimising surrounding airflow, shielding out PCB heat, and preventing moisture buildup to maintain a consistently dry environment. This design sets a new standard for wireless measurement and logging.

The Environmental Sensor can be mounted in cold chain storage and transportation or can be packaged with commodities, to provide end-to-end remote environmental visibility and high-frequency history/logging. It operates across a broad temperature range (-40°C to +85°C) and humidity range (0% to 100%), ensuring reliable data retention, with storage capacity for up to 3,000 readings between uploads.

The Environmental Sensor employs 2.4 GHz wireless technology for communication with Powerfleet's

Logistics and Vehicle Gateways, as well as other 2.4 GHz hubs like smartphones, tablets, and OEM hubs. It provides real-time event reporting through Powerfl eet's Gateways, which seamlessly integrate with Unity, Powerfleet's SaaS-based fleet intelligence platform that ingests, processes, and consolidates data from every asset, vehicle, and person.

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Key features

Real-time environment sensing functionality includes temperature, humidity, motion/impact, orientation, and magnet (for device on/off switching)

Operating temperature/humidity: -40°C to +85°C with ± 0.1°C accuracy, 0% to 100% with ± 0.15% typical accuracy, and remarkable low response time that complies with industry standards

Sample storage: 3,000 samples

BLE 5.3 Long Range and Waterproof protection – IP67 rating

Easy install and on-the-fly event-based alert notifications

High accuracy temperature and humidity sensing

Cold Chain compliance - EN 12830 for vibration resistance and EN 60068-2-27 for shock resistance

Up to
5-year
battery life

Designed to **Revolutionise** Your **Operations**

The **Environmental Sensor** provides a wide range of commodity and operating environment sensing and monitoring features to revolutionize your operations:

Ensure Good Distribution Practices (GDP) and food safety operation

Avoid compliance issues

Ensure commodity temperature and humidity visibility and history

Capture operating environment details

Drive continuous improvement

Shrink operating costs

Minimise liability

Increase customer satisfaction

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Technical Specifications

BLE

BLE Technology	BLE 5.3 /2.4GHz. by Nordic nRF52833

Power

Internal Battery	3.6V Lithium-Thionyl Chloride, AA size, 2500mAh
Consumption	75uA at Temperature & Humidity sampling and transmitting every 1 min

Environmental

Temp, operation	-40°C to +85°C (Depending on battery type)
Temp, storage	-40°C to +85°C (Depending on battery type)
Humidity	Operating range 0% to 100%
Ingress Protection	IP67
Vibration, Impact	Shock resistance according to EN 60068-2-27 Vibration according to EN 12830
Power transients	Unit passes all relevant environmental regulation tests

Certifications

Communication	FCC, CE
Regional	EN 13485 and EN 12830 - Temperature recorders for transporting, storing, and distributing chilled, forzen, deep-frozen food and ice cream. Tests performance and suitability. Response time: Maximum 5 minutes Class 0,2: ±0,2°C Suitability for storage (S) and/or transport (T);

Data Retention

Memory	Up to 3,000 Temp and Humidity Samples

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Technical Specifications (cont'd)

Size

Dimensions	94.1 × 39.2 × 26.4 mm (L x W x H)
Weight	13 gr

Installation

Mounting	Nylon/metal tie-wraps, 2 screws and/or two-sided adhesive

Features

Movement	3D, ±2g/±8g range, 12 Bit representation, 1mg/4mg resolution Vibration sensing with programmable threshold • Free-fall sensing with programmable threshold • Impact sensing with threshold up to 8g
Humidity Sensor	Operating range and accuracy (%RH): Operating range 0% to 100% Accuracy 10% to 50% RH; TYP ±0.5% RH; MAX ±2.0% RH 50% to 70% RH; TYP ±1.0% RH; MAX ±2.0% RH 70% to 80% RH; TYP ±1.0% RH; MAX ±2.5% RH 80% to 90% RH; TYP ±1.5% RH; MAX ±3.0% RH Resolution 0.1% RH, Tested at 25°C
Movement	Operating range: -40°C to 85°C Accuracy (°C): -40°C to 0°C; TYP ±0.1°C; MAX ±0.3°C 0°C to 50°C; TYP ±0.1°C; MAX ±0.2°C 50°C to 85°C; TYP ±0.1°C; MAX ±0.3°C Resolution: 0.1°
Magnetic Sensor	10-30mm range an optionally provided magnet. Used to detect open/closed door and/or power "On"/"Off"

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