NODE+ SERIES

Datasheets

Sematics® introduces Node+ Series the next generation of LoRaWAN® enabled wireless sensor nodes, purpose built for precise environmental monitoring and industrial-grade compliance.

Engineered for mission-critical environments such as pharmaceutical storage, laboratories and healthcare facilities, to deliver real-time data, automated alerts, and audit-ready reporting. With seamless integration into the Sematics® platform to ensure continuous compliance and operational efficiency.

Node+ IO

Always Connected, Anywhere.

The SEN-AED is a compact wireless sensor designed to track door activity in real time. It connects easily to a dry contact input (like a door switch) and reliably detects when doors open or close. Ideal for cold rooms, medical and pharmacy fridges, storage units, and delivery vehicles — anywhere door status matters but other conditions aren't being tracked. Integrated with the Sematics platform, it supports alerts, activity logs, and compliance monitoring, all with minimal hardware and maximum efficiency.

Typical Applications

- Fridge and freezer doors
- Cold room and chill store access
- Vehicle doors & compartments
- Storage cabinets and enclosures
- Pharmaceutical warehouses
- Hospital pharmacies and labs
- Food and cold chain logistics
- Secure labs with tracking

Key Features

Flexible Logging
Set how often data is recorded — default is every 5 minutes.

Built-in Backup Memory
Stores up to two weeks of data if the network goes down — nothing gets lost.

Long-Lasting, Replaceable Batteries
Runs over 4 years on standard settings — even longer with less frequent logging.

Extra Long Range
Covers up to 20 km outdoors and about 1 km indoors.

Automatic Data Recovery
If the connection drops, data is sent automatically when it's back.

Secure, Encryoted Transmissions
Encrypted, Reliable wireless transmissions on 868 MHz - low interference, Class A.

Tough, Waterproof Design
IP67-rated — fully sealed and water-resistant (1 m for 30 minutes).

Works with the Sematics Platform
Give live alerts, reports, dashboards and performance insights.

Compatibility Matrix

Sensor / Input	SEN-AIN	SEN-AED	SEN-AEA	SEN-BEP	SEN-CED
External PT100 Sensor				◉	
Analog Cable (4-20mA / 0-5V / 0-10V)			◉		
External Temp & Humidity Sensor (Digital)					◉
Dry Contact (Door) Switch - Small		◉	◉	◉	◉
Dry Contact (Door) Switch - Industrial		◉	◉	◉	◉
2-Wire Dry Contact Input (Volt-free connection)		◉	◉	◉	◉
Dual Input - PT100 and Door					
Dual Input - Temp/RH and Door					
Dual Input - Analog Cable and Door					

Dry Contact (Door) Input

Parameter	Specification
Input Type	Volt-free dry contact (Normally Closed)
Detection Method	Interrupt-driven digital input (event triggered on state change)
Event Logging	State changes are timestamped with duration tracking (e.g. “door open for 2 min”)
Use Cases	Magnetic switches, access control relays, door sensors

Wireless Communication

Parameter	Specification
Protocol	LoRaWAN Class A
Frequency Band	868MHz (EU)
Typical Range	~1 km (in built environments)
Max Range	Up to 20km (line-of-sight, elevated antenna conditions)
Antenna Type	Integrated PCB antenna (Velox SR42I052)
Antenna Gain	-0.4 dBi typical
Radiation Pattern	Omnidirectional (approximate)
Module Certification	Pre-certified LoRa radio module (RED & FCC Part 15 compliant)
Network Compatibility	Private LoRaWAN networks; Sematics Platform

Power and Battery

Parameter	Specification
Battery Type	2x AA Lithium cells (replaceable)
Battery Capacity	~1500 mAh (typical)
Nominal Voltage	1.8 V per cell (3.6V combined nominal)
Battery Life	Up to 4 years @ 5-minute logging (typical)
	Up to 8+ years with 10-15 minute logging intervals
Power Management	Ultra-low power operation (LoRaWAN Class A protocol + sleep-mode optimisations)
Battery Replacement	Field-replaceable via sealed compartment (tool access required)

**Enclosure dimensions shown without mounting bracket in mm*

Mechanical & Environmental

Parameter	Specification
Enclosure Material	ABS, white
Ingress Protection	IP67 (dust-tight and submersible to 1 m for 30 mins)
Dimensions	99 × 56 × 32 mm (H × W × D)*
Mounting Options	Adhesive pad, cable ties, or screw mount (mounting accessories available)
Mounting Bracket	Included, ABS bracket with slotted holes for secure installation
Operating Temperature	-40°C to +85°C
Operating Humidity	0-95% RH (non-condensing)

Compliance and Certification

Standard / Directive	Description
CE Marking	Radio Equipment Directive (RED 2014/53/EU)
UKCA Marking	UK Radio Equipment Regulations
RoHS 3	Restriction of Hazardous Substances (2011/65/EU)
EN 12830:2018	Designed to meet Accuracy Class 0.2 - Temperature Data Loggers
ETSI EN 300 220	Radio performance (868 MHz)
ETSI EN 301 489-1 / EN 301 489-3	EMC for radio equipment
EN 62368-1	Electrical safety for communication equipment
FCC Part 15 Subpart C	US radio compliance (pre-certified module)
IP67	Dust-tight and submersible to 1m
WEEE	Waste Electrical & Electronic Equipment
NIST Traceability	Factory calibration traceable to NIST standards
ISO 17025	Optional UKAS-accredited calibration available

Smart Features & Software Integration

Feature	Description
Platform Integration	Fully integrated with the Sematics Platform
Logging Interval Config	Customisable logging interval via platform (default: 5 minutes)
OTA Firmware Updates	Over-the-air firmware upgrade support
Real-Time Alarms	Configurable threshold alerts with escalation paths
Data Visualisation	Live and historical graphing, trends, and compliance dashboards
Reporting & Compliance	Automated temperature reports and audit-ready logs
Wireless Backlog Recovery	Automatic wireless backfill of missed readings after connectivity interruption

JTF wireless monitoring

Delivering the Technology that's redefining monitoring standards

JTF Wireless is the trusted service partner of Sematics - delivering industry-leading monitoring systems across healthcare, life sciences, food production and logistics. We specialise in the deployment, calibration and support of cutting edge Sematics hardware and software, ensuring our clients benefit from seamless installations, reliable data and audit-ready compliance from day one. From system design and validation to proactive support and ongoing optimisation, our expert team helps you unlock the full value of your environmental monitoring investment.

Let's connect

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