

Process Automation

NEON Temperature Transmitter

Measures extreme temperatures





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Making extreme temperature data visible remotely

The NEON Temperature Transmitter and thermocouple assembly can be installed on existing assets and monitors changes or absolute extremes in temperature. By monitoring these at a variety of locations, insights can positively benefit your operations.

The NEON Temperature Transmitter is designed for quick installation within minutes and transmits monitoring signals by connecting to an industrial thermocouple or RTD. The device can be connected to a thermocouple via an M12 connector with an extension cable.

It uses on-board intelligence to determine average values, based on user-determined time scales, to provide insights that can be used directly within existing systems. With the industrial thermocouple or Pt100 connected, extremely low temperatures can be measured, such as nitrogen or high temperatures that are found within furnaces, and everything in between.

The NEON Temperature Transmitter connects with a Type K thermocouple as standard. Other thermocouple types can be configured over the air which makes the sensor fully flexible for integration. The NEON Temperature Transmitter is available with IECEx / ATEX Zone 0 certification, and comes as a battery powered I-IoT wireless device that communicates via LoRaWAN.

Key Benefits

Maximise efficiency, safety, and insight with intelligent temperature monitoring.

- Reduce manual rounds by enabling remote data access.
- Increase safety through to instant notifications and trigger alarms.
- Minimise downtime through early fault detection.
- Lower implementation and scaling costs with easy deployment options.
- Improve insights with time synchronisation and trend analysis.
- Reduce maintenance time with smart data insights.

Technical Overview

The NEON Temperature Transmitter

Sensor	Configurable over LoRa, Default Type K, Supported types: J, K, T, N, E, B, R & S
Water & dust resistance	IP-66 rated
Wireless protocols	LoRaWAN 868, 915, 923 MHz (Region specific frequencies and certifications upon request)
Dimensions	100 x 70 x 45mm (L x W x H)
Operating temperature	-40°C to 80°C (-40°F to 176°F)
Certifications	IECEX Class 0 / ATEX Zone 0
Lifetime	Battery life up to 10 years, at 25°C
Mounting Options	Transmitter: Bandclamp or bolts

LoRa Devices Designed For Heavy Industry

The NEON product line supports all industrial customers moving towards LoRaWAN as the Industrial IoT network of the future.

LoRaWAN networks provide industrial facilities with a secure solution with no vendor lock-in that is quickly becoming an industry standard. The network can scale tens of thousands of sensors and cover sites in their entirety with only a small number of gateways. Best of all, the low power approach can extend the lifetime of our NEON products significantly.

NEON offers you a standardised approach to collecting data points and an approach to creating integrated solutions within existing IT ecosystems.

- Fully LoRaWAN compatible¹
- Based on the highest security standards
- 100% ownership of data
- IECEx class 0 / ATEX zone 0
- Battery powered for easy deployment
- Installation within live environments ensuring continuous operation
- Integration with existing data backends or DCS
- Visualisation via IMI TWTG's SolidRed Suite or any other IoT platform
- Detailed and extensive documentation
- Easy LoRa configuration using the NEON Configurator
- No legacy; compatible with all types of different assets
- Provision of lifecycle support
- Availability of spare parts and refurbishment packages

¹ Compatible with international LoRaWAN standards (long-range, low power wide-area network)

IECEX Class 0 ATEX Zone 0 Certified

Our NEON technology is designed to operate at industrial sites handling combustible gasses and other hazardous elements.

It has been tested and certified to work in conditions from -40° to 80° Celsius without hampering performance. The devices are designed and engineered for safe, secure deployment in wireless LoRaWAN networks and are fully remotely configurable, ensuring both longevity and reliability within an operation.

The NEON Temperature Transmitter can be installed / mounted using various methods. The thermocouple or dual Pt100 desired, can be specified by the customer. The sensor is flexible and adapts to the various types.

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NEON Temperature Transmitter Non-Ex Variant

The trusted NEON Temperature Transmitter is also available in a non-ATEX / IECEx certified version, designed for industrial environments where such certifications are not required. Delivering the same industry-leading precision as the certified model, it is ideal for facilities outside explosive zones, including manufacturing plants, pulp and paper facilities, water management systems, and industrial automation sites.

Built to the same rigorous standards as the certified version, this non-Ex variant provides high-accuracy monitoring of both temperature fluctuations and extreme values. It combines the proven reliability of the NEON platform with a cost-effective option for environments that do not require intrinsic safety compliance.

Whether you're expanding your monitoring capabilities or just getting started with remote asset monitoring, the non-Ex NEON Temperature Transmitter delivers all the performance, resilience, and connectivity you expect from NEON – without the need for ATEX / IECEx compliance.

Key Benefits

- Cost-effective for non-hazardous environments
- Seamless integration via full LoRaWAN compatibility
- Rugged, industry-grade design with trusted NEON form factor
- Battery life up to 10 years



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16006.01/25EN

