



Process
Automation

Our product brands:
IMI

NEON Temperature Transmitter Non-Ex Variant

Fully LoRaWAN compatible



Breakthrough
engineering for
a better world



NEON Temperature Transmitter Non-Ex Variant

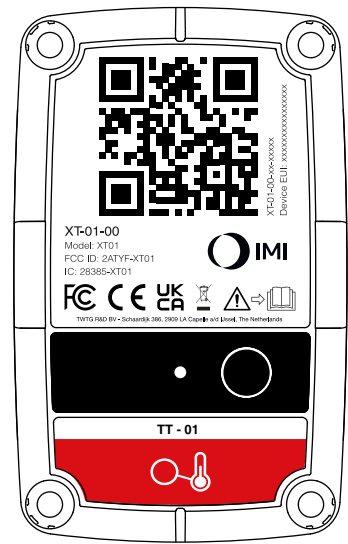
Description

IMI's Neon technology represents a standardised approach to collecting data points from operational environments. This creates a general approach to integrated data collection within existing IT ecosystems.

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

The LoRaWAN network provides industrial operations with a secure solution that can scale up tens of thousands of sensors. It can cover entire sites with only a few gateways while the low-power approach extends the lifetime of our NEON product range.

Knowledge is the basis of good decision making. The NEON Temperature Transmitter Non-Ex Variant is designed to be implemented within minutes and to transmit the signal for monitoring purposes by being connected to an industrial thermocouple or RTD. The device can be connected to a thermocouple via an M12 connector with a three metre long extension cable. It uses on-board intelligence to determine average values over user-determined time scales to provide insights that can be used directly within existing systems.



Key Benefits

NEON Product Family

- Fully LoRaWAN compatible
- End-to-end encryption & cryptographic algorithms from field to software
- 100% ownership of data
- Battery powered for easy deployment
- Installation within live environments
 - continuous operation
- Integration with existing data backends or DCS
- Visualisation via IMI's SolidRed Suite or any other IoT platform
- Detailed and extensive documentation
- Provision of life cycle support

IMI Firmware Features

- Transmitter supports Firmware Update Over the Air
- Event-based message triggers
- Advanced scheduling features
- Time synchronisation with other NEON sensors
- Time stamp for process values
- Supports Class A & B communication

NEON Temperature Transmitter Non-Ex Variant

- **Sensor:**
Thermocouple (B, E, J, K, N, R, S, T)
compatible RTD PT100, 2 wire or 3 wires
- **Measuring range:**
-270°C .. 2300°C (-454°F .. 4172°F)
depending on the type of element
- **Wireless protocols:**
EU868 / US915 / AU915 / AS923-1 / AS923-2 /
AS923-3 / AS923-4 / IN865
- **Dimensions:** 110mm x 72mm x 54mm



3. Specifications

Product name	
Product name	NEON Temperature Transmitter Non-Ex Variant
Type identification transmitter	XT-01-00

3.1 Product Specifications Transmitter

Environmental conditions	
Operating temperature range	-40°C .. 80°C (-40°F .. 158°F)
Operating humidity range	0% RH .. 100% RH
Storage temperature range	10°C .. 30°C (50°F .. 86°F)
Water and dust resistance	IP66
Altitude	Up to 2000m (6561 ft)
Usage	Indoor and outdoor
Mechanical	
Weight (including mounting bracket)	250 g
Dimensions	110 mm x 72 mm x 54 mm
Installation	
Transmitter	Band clamp or bolts (not included, customer supplied) Optional mounting brackets (not included, see accessories)
Battery	
Battery type (user replaceable)	1 x Type D
Battery rated voltage	3.6 V
Battery rated capacity	19 Ah
Battery life	10 years, at 25°C (77°F) (Depending on average ambient temperature, type of sensor and network quality)
Conditions, at 25°C (77°F)	Message interval: 1 message / hour Measurement interval: 1 measurement / 5 min
Connectivity	
Protocol	LoRaWAN (private LoRaWAN)
Frequency band	EU868 / US915 / AU915 / AS923-1 / AS923-2 / AS923-3 / AS923-4 / IN865
Maximum RF output power	EU868, AU915, AS923, IN865: +14 dBm / US915: +22 dBm
Provisioning	
QR Code	Serial number, Device EUI, Join EUI
Firmware features	
Independent event-based message triggers	1. Above 2. Below
Adjustable measurement interval	Flexible, 1 minute resolution, (either relative or absolute)
Adjustable measurement message send condition	Always, or on condition
Time synchronisation	Time synchronisation for multiple sensors Accuracy 12mSec
Firmware update over air	In Accordance with LoRa Alliance specifications TS006-1.0.0 TS005-2.0.0 TS004-2.0.0



3.2a Supported Sensors - Thermocouples

Default sensor	
Temperature sensors	Thermocouple Type-K (other types configurable over LoRa)
Functional specifications	
Input	M12 Connector; 4 Pins, A coded, female
Supported thermocouples	
Sensor Type (<T/Cs>)	Input range:
B	400°C to 1820°C (752°F to 3300°F)
E	-100°C to 1000°C (-148°F to 1830°F)
J	-100°C to 1200°C (-148°F to 2190°F)
K (Default)*	-180°C to 1372°C (-290°F to 2500°F)
N	-180°C to 1300°C (-290°F to 2370°F)
R	-50°C to 1760°C (-58°F to 3200°F)
S	-50°C to 1760°C (-58°F to 3200°F)
T	-200°C to 400°C (-328°F to 752°F)
Accuracy (value whichever is greater)	+/- 0.1% of span
Temperature effects / 10°C (value whichever is greater)	+/- 0.5 % of span
Units	°C (°F can be supported on request)
Open circuit monitoring	Yes
Calibration	Factory calibrated
Cold junction compensation	Integrated digital measurement

*Online configurator can be used to adjust settings

3.2b Supported Sensors - RTD

Supported sensor	
Temperature sensors	RTD PT100, (1 off 3 wire sensor, or 2 off 2 wire sensors)
Functional specifications	
Input	M12 Connector; 4 Pins, A coded, female (Use the assessed connectors for the thermocouple installation)
Resistance temperature detector RTD	
Sensor Type (<T/Cs>)	Input range:
PT100	-200°C to 400°C (-328°F to 752°F)
Accuracy (value whichever is greater)	+/- 0.1% of span
Temperature effects / 10°C (value whichever is greater)	+/- 0.05 % of span
Units	°C (°F can be supported on request)
Interface	Three-wire system (Reference current <-1.0 mA)
Open circuit monitoring	Yes
Short circuit monitoring	Yes

3.3 Certifications

Certifications	
CE (Europe)	EN 303 446-1 V1.2.1
	EN 301 489-3 V2.3.2
	EN 301 489-1 V2.2.3
	EN 61326-1:2021
	EN 62311:2020
	EN 300 220-1 V3.1.1
	EN 300 220-2 V3.2.1
	EN 60529:1991 + A1:2000 + A2:2013
EN IEC 62368-1:2023	
UKCA	Radio Equipment Regulation 2017
WEEE	Directive 2033/108/EC
RoHS	2011/65/EU
FCC (United States)	FCC Part 15
ISED (Canada)	RSS-247
	RSS-Gen



4. Order Matrix Temperature Transmitter

Solution includes:

XT-01-00 Transmitter

For special requirements please contact IMI sales.

Order Matrix Temperature Transmitter	Options	TT	0	X	X	X
User Case	Temperature Transmitter	TT				
Ex Approval	non-Ex		1			
LoRa Region	EU868			1		
	US915			2		
	AS923-1			3		
	AS923-2			4		
	AS923-3			5		
	AS923-4			6		
	AU915			7		
	IN865			8		
Hardware Variant	Reserved for future use					0
Software Variant	Reserved for future use					0

Accessories

Description	Order code
Magnet kit temp. installation (for Transmitter) - including 2 magnets, 4 washers, 4 screws	MKT-DS-XX
Bracket set installation (for Transmitter) - including 1 bracket, 2 washers, 2 screws	BRK-XT-01
Thermocouple connector - straight (f)	TCC-F02

Spare parts

Description	Order code
Battery replacement kit - including 1 battery assembly	BATT-XT-01
Gasket	GSK-XT-01

Process Automation

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