

LoRaWAN™ ATM'O SENSOR



The Atm'O sensor measures temperature, relative humidity and atmospheric pressure in outdoor and industrial settings and transmits data via a public or private radiofrequency network LoRaWAN™.

APPLICATIONS

- Agriculture: supervision of greenhouses and vineyards
- Railway infrastructure: sending ice detection alert on catenary
- Roads: local weather information, prevention and optimization of salting roads in winter
- In industrial environment: regulation of unit heaters.

BENEFITS & KEY FEATURES

- LoRaWAN™, Class A
- Autonomy: 5 years mini (with "real time" configuration)
- Operating range: -20 ° C to + 55 ° C
- Measure temperature, relative humidity and atmospheric pressure:
 - ✓ Range: 90kPa / 115kPa; -20 ° C / + 55 ° C; 0% / 100% RH
 - ✓ Accuracy: +/- 1.5%; +/- 0.1 ° C; +/- 1.5% rH
 - ✓ Tropicalized measuring board
 - ✓ Vertical antenna
 - ✓ IP68 outdoor box.

QUALITY & RELIABILITY

- RoHS, CE



The ATM'O sensor measures temperature, relative humidity and atmospheric pressure outdoors or in industrial settings. Data transmission on public or private LoRaWAN™ network is done periodically and in case of warning of exceeding previously configured thresholds:

- Temperature Min. and max.
- Humidity min. and max.
- Pressure Min. and max.

ATM'O makes possible to trace the necessary information to the managers of railway and road infrastructures, as well as the farmers of greenhouses and the vintners for the determination of the frost point. In industrial settings, it helps to determine the blowing conditions to maintain constant temperature and hygrometry in a room dedicated to an industrial process.

The sensor has been specially designed for outdoor operation. The case is waterproof and the electronic map carrying out measurements is tropicalized.

Commissioning is fast and easy. The sensor is equipped with:

- An NFC identification tag (product number, serial number, production batch)
- A magnetic switch that allows the installer to easily activate / deactivate the sensor by placing a magnet on the upper dome of the sensor at the location of the ILS tag.

Atmospheric pressure, temperature and relative humidity data can be stored in local memory (aggregation) and compressed before being transmitted on the LoRaWAN™ network. This transfer technique considerably reduces the amount of data transmitted while preserving the autonomy of the sensor.

When powered by a 3.6V / 7.2Ah battery, the sensor's autonomy ranges from 5 to 7 years for a "real-time" configuration of 1 measurement every 10 minutes, transmitted immediately. If aggregation is used, autonomy ranges from 8 to 10 years.

NKE WATTECO, YOUR PARTNER IN SMART SENSORS & ACTUATORS

nke Watteco est un leader européen concevant et fabricant des capteurs et actionneurs radiofréquences intelligents ainsi que des solutions de télérelève et de télécollecte de données multiprotocoles.

nke Watteco est membre de la LoRa® Alliance

TECHNICAL CHARACTERISTICS

RF TRANSCEIVER	
Frequency (MHz)	EU: 863-870
Transmit power (dBm)	+14
Receiver sensitivity (dBm)	-140
FIRMWARE	
Protocol	LoRaWAN™, Class A
Transmission cycle	10mn, 1h, 12h or specified by the network
Data compression	yes (differential coding) or not
Activation method	Activation by Personalization (ABP) Over-The-Air Activation (OTAA)
Data encryption	AES128
PRESSURE MEASURE	
Range	90kPa / 115kPa
Accuracy	+/- 1,5% between 0°C & 55°C
TEMPERATURE MEASURE	
Range	-20°C / +55°C
Accuracy	+/-0,1°C between 20°C & 55°C ; +/-0,2°C if not
HYGROMÉTRY MEASURE	
Range	0%rH / 100%rH
Accuracy	+/- 1,5%rH between +10%rH & 80% rH from 0°C to 55°C ; +/- 2%rH if not
POWER	
Power supply	3,6V / 7200mAh – lithium battery
Autonomy	From 5 to 7 years: 1 measure transmitted every 10 minutes From 8 to 10 years: 2 measures / hour, 1 transmission / hour max.
INTERFACE	
Magnetic switch	Reset, ON/OFF
ALARMS	
Temperature	Threshold - Programmable from -20 ° C to 55 ° C in steps of 0.1 ° C
Humidity	Threshold – Programmable from 0%rH to 100%rH in steps of 1%rH
Pressure	Threshold – Programmable from 90kPa to 115kPa in steps of 0,1kPa
ON/OFF	
MECHANICAL FEATURES	
Dimension (mm)	Diameter: 150mm; Height: 250mm including antenna
ENVIRONMENTAL	
Operating temperature(°C)	-20°C / +55°C
Storage	+10°C / +30°C ; +20%rH / +60%rH
DIRECTIVES & STANDARD	
EN, 61000-4-2 EN 300-220-1 V2-4-1, EN 301 489 V1-6-1 CE, RoHS	



ORDERING INFORMATION

REFERENCE	DESCRIPTION
50-70-099	LoRaWAN™ ATM'O SENSOR OPTIONAL : SUPPORT FOR MAT

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