

# IoT-ENABLED WIRELESS MEASURING INSTRUMENTS

Operates on the LoRaWAN network  
for wireless connectivity



- **Accurate measuring of**
  - Temperature
  - Humidity
  - Dew point
  - Barometric pressure
- **Affordable wireless communication for long distances**
- **Rugged design**
- **Long battery life, up to 10 years**
- **Short and adjustable transmit intervals**
- **Alarm signalisation via email and mobile application**
- **Data transmitting via LoRaWAN network**



**ATAL**



# LoRa® Internet of Things (IoT)

## A solution for long-range, low-power communication

LoRa® (Long Range) is a wireless technology for low-power, long-distance data transmission, ideal for IoT applications. Suitable for battery-powered devices that need extended life. Frequency: 868 MHz in Europe.

- Long Range: Covers up to 15 km in rural areas and 2-5 km in urban areas.
- Cost Efficiency: Uses unlicensed frequencies, reducing costs; messages are limited to a minimum interval of 5 minutes, suitable for applications with less frequent data needs.
- Low Power Use: Optimized for long battery life, up to 10 years based on transmission settings.
- Flexible Network: Supports public and private networks for custom infra structure.
- Secure: End-to-end encryption ensures data protection.
- Low Operating Costs: Long battery life and low energy usage minimize maintenance costs.
- Remote Management: Cloud-based settings for intervals, alarms, and pressure adjustments reduce the need for on-site access.
- Alarm Function: Sends alerts for exceeded limits, even with long message intervals, enhancing monitoring flexibility.

## Five steps for getting your measured data into OnlineSensor Cloud

### 1. Register the sensor under your account in the OnlineSensor Cloud

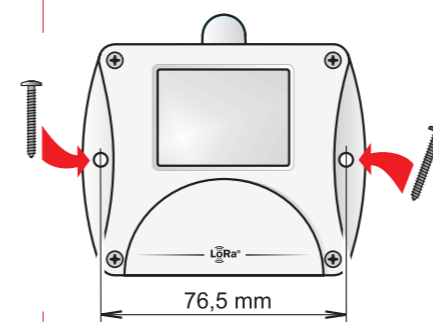
All configuration parameters of the device, including cable resistance correction for temperature probes, can be set from the cloud. The new configuration can be transferred to the device multiple times a day without delay.



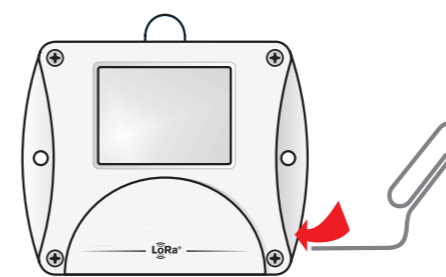
### 2. Registration of LoRa gateway to OnlineSensor Cloud



### 3. Mounting sensor



### 4. Pressing the activation button



### 5. Data is sent to OnlineSensor Cloud



# OnlineSensor Cloud

## Measured data where you need

OnlineSensor Cloud is the internet storage of data measured by ATAL sensors. The data is accessible in the internet and displayed in an internet browser. Every user has the access to his account OnlineSensor Cloud protected by password. OnlineSensor Cloud enables to add sensors, creates organisational structures such as sensor groups and user groups. The different rights can be set up for displaying and administration for each user.

- unlimited space for data
- management and organization of
  - equipment
  - measured points
  - users and their access rights
- email alarming when
  - exceeding alarm limits with the option define recipients according to the level of exceedance
  - a fault occurs (connection, measurement error)
- easy report creating
- device setup from OnlineSensor Cloud
- Mobile applications for Android and iOS for data management and notifications



The ALR-series of sensors from ATAL enables accurate measurement of temperature, relative humidity, and atmospheric pressure, with data transmitted via the low-power LoRaWAN network. This technology allows data to be sent to a cloud storage, where users can easily view both current and historical values through a standard web browser. Each sensor has an LCD display showing the measured value and battery status, with battery life ranging from 1 to 10 years, depending on transmission frequency and temperature conditions.



## Alarm functions

- two alarms can be set for each measured quantity
- each alarm has an adjustable limit, direction of exceeding the limit, delay and hysteresis
- the content of both regular and extraordinary alarm messages is identical, both contain the measured values of all channels and current alarm states on all channels

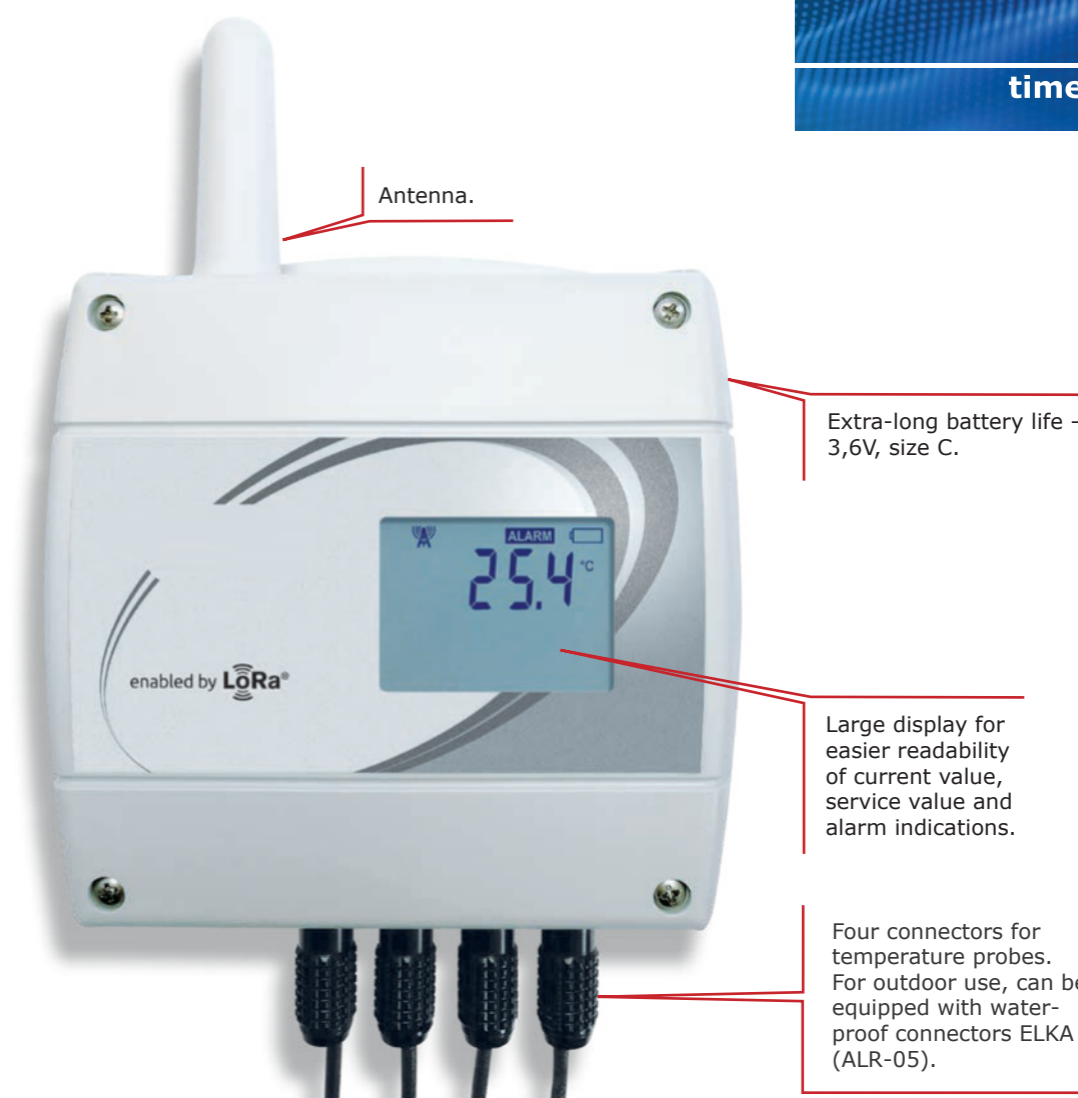
The Wx9xx devices are durable against external influences and offer alarm settings for each measured variable. Alarms can be monitored through the cloud, alerting users when set limits are reached via email or smartphone notifications through an app. With flexibility and a wide range of models, including internal sensors and external probes, Wx9xx sensors are suitable for various industrial and commercial applications, where reliability and long-term measurement accuracy are essential.



### Your measured data into OnlineSensor Cloud

Short 5-min transmit intervals with 13 adjustable intervals up to 24 hours.

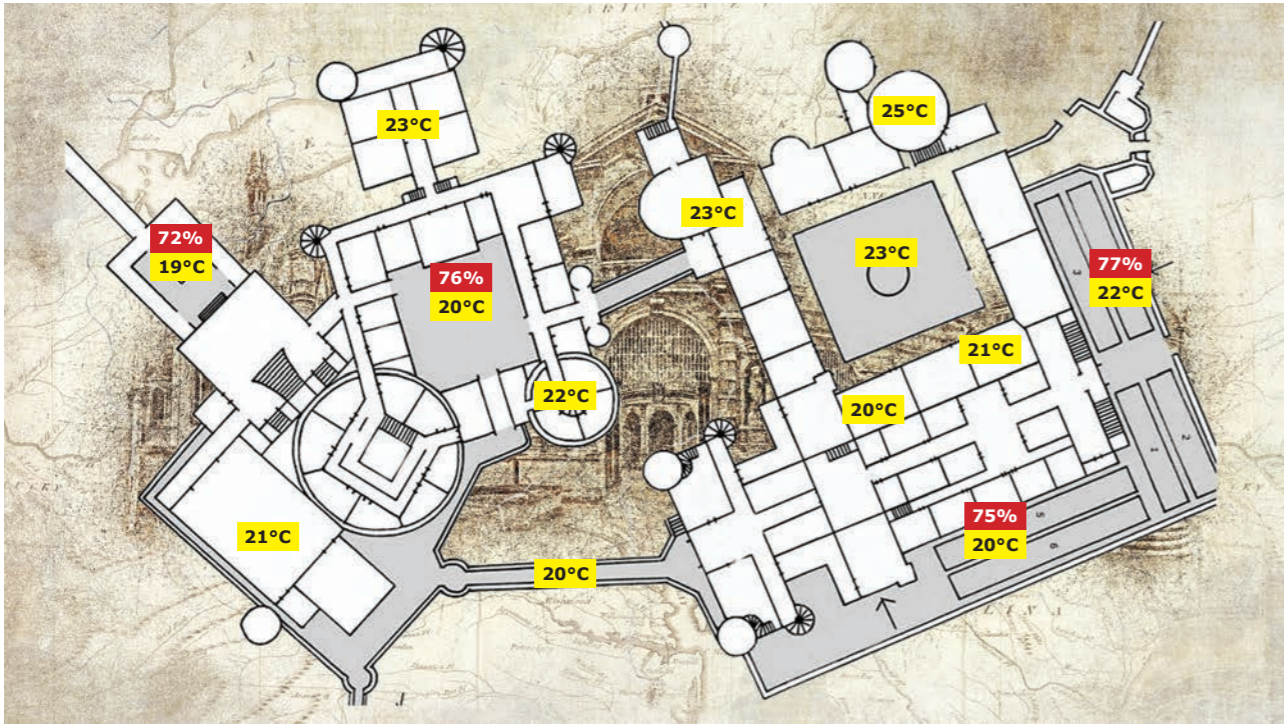
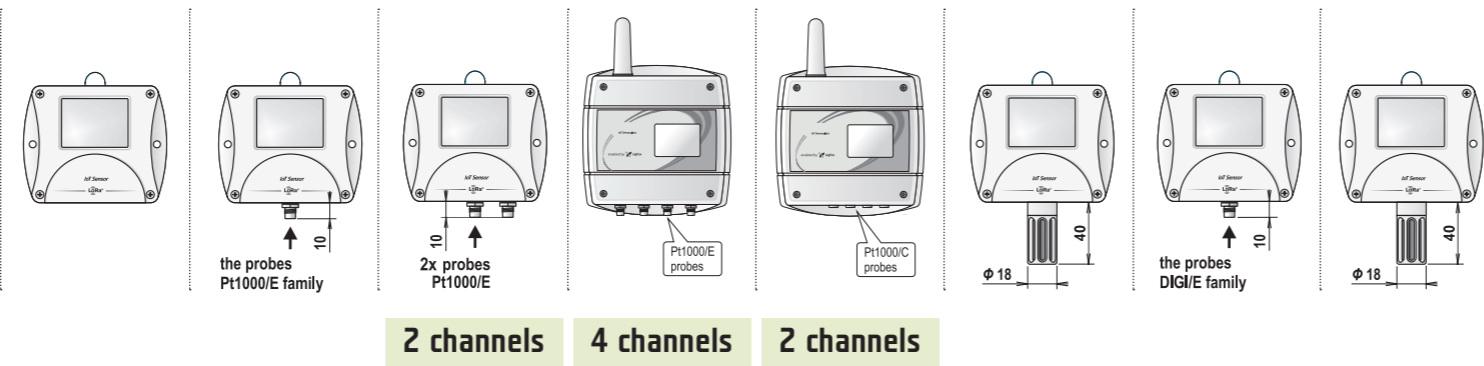
Data is transmitted to the OnlineSensor Cloud for storage and analysis.



Temperature, humidity and barometric pressure wireless measurment

MEASURED VALUES			temperature					temperature, relative humidity		temperature, relative humidity, bar. pressure
SENSOR MODELS			ALR-01	ALR-02	ALR-03	ALR-05	ALR-05C	ALR-11	ALR-11R	ALR-18
temperature	Internal	range	-30 to +60 °C	-	-30 to +60 °C	-	-	-30 to +60 °C	according to the probe	-30 to +60 °C
		accuracy	±0.4 °C		±0.4 °C			±0.4 °C		
	External	range	-	-90 to +260 °C	-200 to +260 °C	-200 to +260 °C	-200 to +260 °C	-		-
		accuracy*		±0.2 °C	±0.2 °C	±0.2 °C	±0.2 °C			
relative humidity		range	-					0 to 100 % RH	± 1.8% RH	0 to 100 % RH
		accuracy**						± 1.8% RH		± 1.8% RH
dew point***		range						-		
barometric pressure		range	-							
		accuracy								
class of protection of case with electronics / sensors			IP65 / -				IP20 / -	IP65 / IP40		

\* accuracy of device w/o probe in measuring range of -90 to 100 °C (in range +100 to +260 °C is accuracy ±0,2 % of measured value)  
\*\* Accuracy of sensing element; from 0 to 90 %RH at 23 °C  
\*\*\* for accuracy of dew point see graphs at device manual



In the OnlineSensor Cloud, you can view measurements of temperature, relative humidity, dew point, atmospheric pressure.

External temperature probes

Temperature probes attached to cables are specifically designed for measuring temperatures in certain applications. These probes are available in lengths of 1, 2, 5, and 10 meters. To ensure high-precision measurements, it is not recommended to use probes that exceed 20 meters in length. Unless otherwise specified, the probes are manufactured to Class A accuracy standards.

Ultra thin temperature probe.

Pt1000TG3/E  
(-50°C to +200°C)

Universal, watertight temperature probe rated IP68, designed for long-term monitoring of temperature in liquids.

Pt1000TG68/E  
(-80°C to +200°C)

Cryogenic temperature probe designed for ultra-low temperature measurements.

Pt1000TR125/E  
(-190 to +150°C)

Cost-effective probe featuring a plastic housing and slow response time, rated with IP67 for protection.

Pt1000TR160/E  
(-30°C to +80°C)



Battery powered

The device is powered by an internal Lithium battery, whose lifetime is dependent on the transmission range and operating temperature. The battery operation lifetime is from 1 year to 10 years.

Battery life

MODEL	ALR-01 ALR-02, ALR-03, ALR-11, ALR-11R, ALR-18	ALR-05, ALR-05C
sending interval	battery life (mobile operation)*	
5 minutes	1 year	3.0 years
10 minutes	2 years	6.0 years
15 minutes	2.5 years	7.5 years
20 minutes	3 years	9.0 years
30 minutes	4 years	>10 years
1 hour	6 years	>10 years
2 hours	7 years	>10 years
3 hours	8 years	>10 years
4 hours**	8.5 years	>10 years

\* Battery life in standard operation is approximately up to 2.5 times longer than in Mobile Operation mode at maximum range.  
\*\* Other possible intervals are 6, 8, 12, and 24 hours.

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