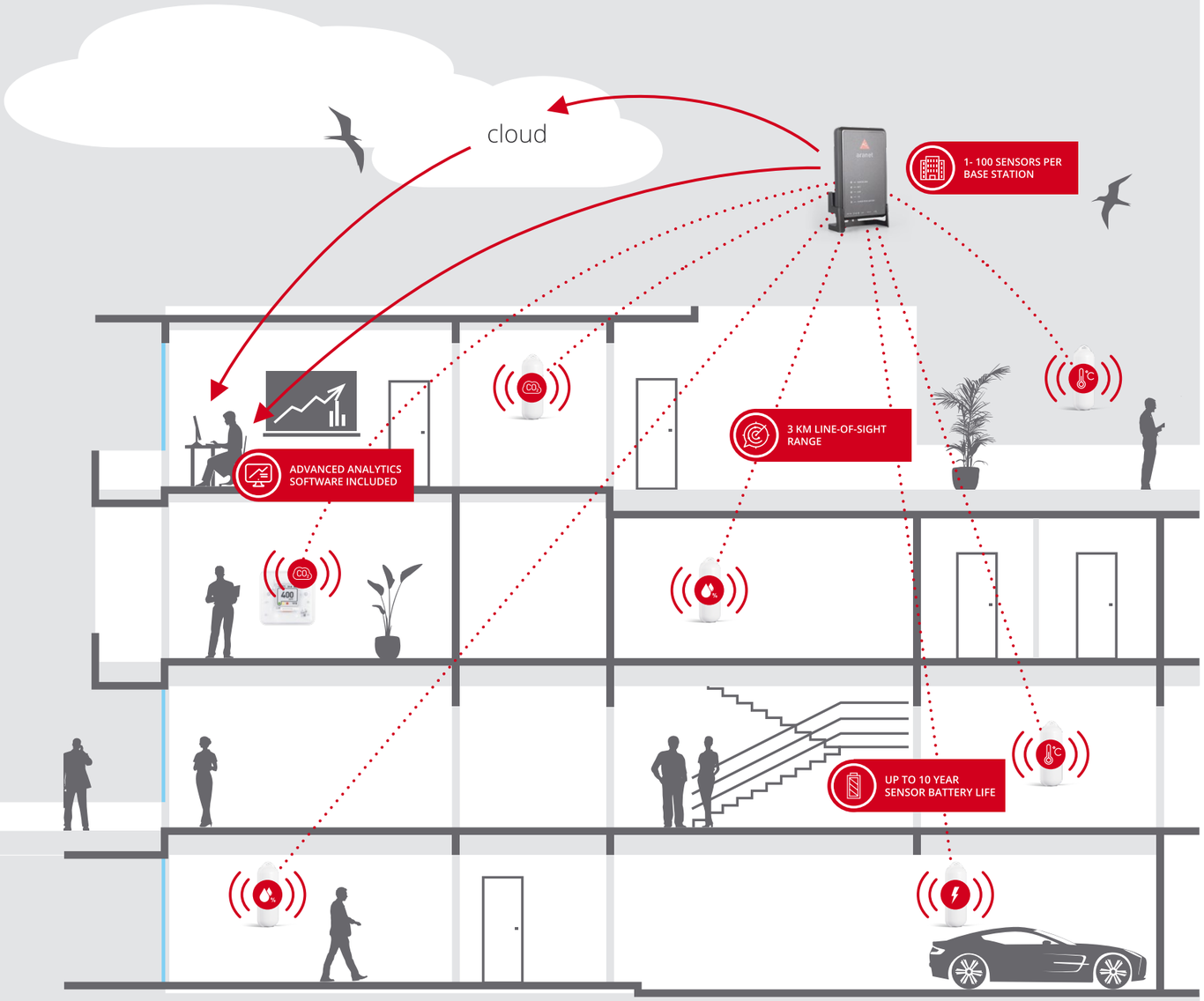
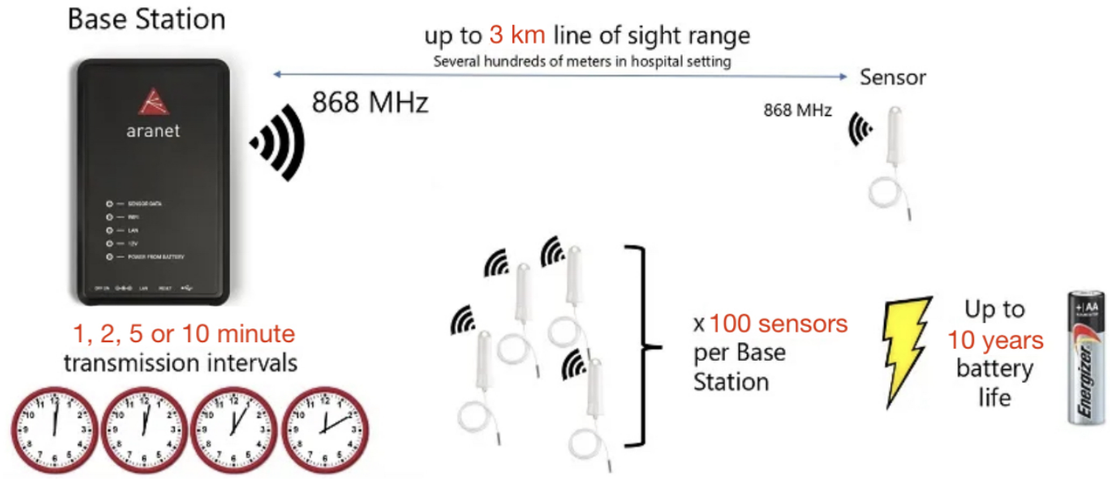
aranet

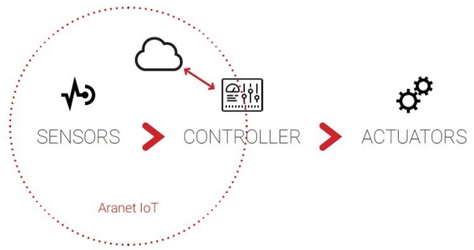


BUILDING MANAGEMENT

aranet



1. 24/7 access to the data
2. multiple base stations in one network
3. configure all assets in one place



Temperature sensors measure and monitor air, liquid and solid surface temperature. The probe can be placed in liquids or places that require close contact temperature measurements, like heating pipes or soil. Use cases include air conditioning and ventilation systems (HVAC), food industry, pharmaceutical industry, R&D laboratories.

	Measurement range	Battery*	IP class
T-probe sensor	-55°C to 105 °C	10 years	IP68
T Compact sensor	-40°C to 60°C	7 years	IP68
PT100 / PT1000 transmitter	-200°C to 800°C	10 years	IP68
PT100 sensor	-50°C to 180°C	10 years	IP68
PT100 EXT sensor	-190°C to 260°C	10 years	IP68

Wireless T/RH sensors measure temperature and relative humidity. Aranet sensors are extremely durable and can be placed in both inside and outside environments as well humid locations.

	Measurement range	Battery*	IP class
T/RH sensor	temperature: -40°C to 60°C	10 years	IP42
T/RH IP68 sensor	relative humidity: 0% to 100%	10 years	IP68

CO_2 sensors have a built-in infrared CO_2 sensor that actually measures the real CO_2 gas content, and provides high precision measurements. Does not extrapolate the CO_2 value from other gases.

	Measures	Battery*	IP class
CO_2 sensor	CO_2: 0-9999 ppm	7 years	IP40

Gas sensors are designed for leak detection, workplace safety and personal safety. Aranet sensors are wireless, battery-powered and suitable for the most challenging environments.

	Measures	Battery*	IP class
CO sensor	CO: 0-1000 ppm	5 years	IP67
CO_2 sensor	CO_2: 0-9999 ppm	5 years	IP67
NH_3 sensor	NH_3: 0-300 ppm	5 years	IP67
NO_2 sensor	NO_2: 0-30 ppm	5 years	IP67
O_2 sensor	O_2: 0-25%	5 years	IP67

Ambient light sensors are wireless and battery-powered, made to easily monitor whether your building is sufficiently lit, as well as to see if you're not wasting energy on excess lighting.

	Measurement range	Battery*	IP class
LUX sensor	0 - 200 000 lux	7 years	IP68

Current and voltage sensors are battery-powered and energy-efficient solutions designed to integrate with any 3rd party sensor that uses V/mA as an output. This solution allows the Aranet system to be opened up to virtually any parameter monitoring so that you can have all of your required sensors in a single system.

	Measurement range	Battery*	IP class
Voltage sensor	voltage (-32 to +32 VDC)	7 years	IP68
4-20 mA sensor	current (0-30 mA)	7 years	IP68

Distance sensor works with all kinds of liquid or solid surfaces, for a broad range of practical applications, such as measuring the grain level in a silo, or the level of a liquid in a container.

	Measurement range	Battery*	IP class
Ultrasonic Distance sensor	0.3 to 5 m or 0.5 to 10 m	7 years	IP67

Aranet4 sensor is an innovative, standalone device for effortless monitoring of indoor air quality - CO_2, relative humidity, temperature and atmospheric pressure.

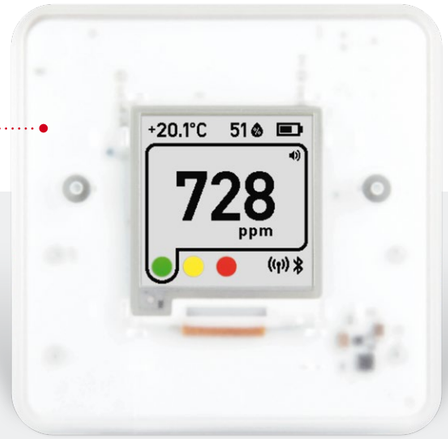
	Measures	Battery*	IP class
Aranet4	CO_2: 0-9999 ppm temperature: -10°C to 60°C relative humidity: 0% to 85% atmospheric pressure: 0.3 to 1.1 atm (4.4 to 16.0 psi)	2 years	IP20

Aranet windows- / door-sensor is an innovate, standalone device for monitoring of open windows and doors.

	Measures	Battery*	IP class
Aranet Dry Contact Hour Meter	Detects for how long the contact is opened or closed between two wired contact points.	10 years	IP68

* Battery life up to...

BASE STATION GATHERS READINGS FROM WIRELESS SENSORS WITHIN THE RANGE OF UP TO 3 KM / 1.9 MI



E-ink screen and real time results

Wireless

Precise measurements

Up to 2 year battery life

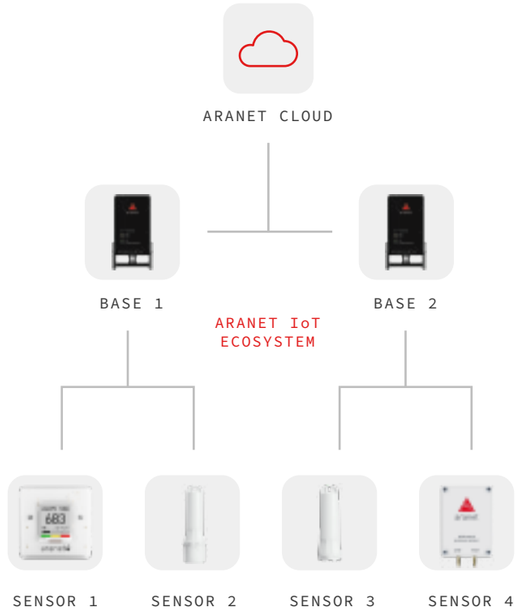
Aranet4 uses the most precise nondispersive infrared (NDIR) sensor technology for accurate CO_2 measurements. It has a super-efficient e-ink display that extends it's battery life up to 2 years (2xAA).

Aranet4 shows CO_2 measurements directly on its e-ink screen with a corresponding color indicator and configurable sound alarms.

Aranet IoT ecosystem

Aranet is a smart wireless monitoring IoT solution that collects, records, reports, and analyzes real-time data from distributed sensor networks. Aranet ecosystem comprises Aranet sensors, Aranet PRO base stations, and Aranet Cloud.

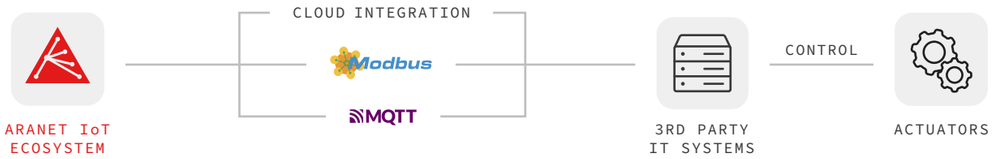
Aranet sensors can be set up in spaces where it is necessary to monitor various physical parameters. Sensors measure and send data wirelessly to the Aranet PRO base station that collects and stores all the measurements. Finally, Aranet Cloud gathers the data from base stations and enables 24/7 uninterrupted and secure centralized data monitoring and analysis across all the monitored locations, regardless of whether it's a single venue or multiple geographically distributed locations.



Integration with 3rd parties

Aranet ecosystem is a simple and effective solution that can be integrated with 3rd party IT systems at two interconnection levels:

- Aranet PRO base station level integration via MQTT or Modbus data communication protocols
- Aranet Cloud level integration via Aranet Cloud APIs



Integration from PRO base stations

via MQTT

MQTT is a lightweight publish/subscribe messaging transport protocol that can be used for Aranet integration both with web-based and cloud IT systems like, Amazon AWS IoT Core services, Azure IoT Hub, IBM Maximo, My Priva, and other cloud platforms or with local BMS or HVAC controllers or climate computers that might not even have access to the Internet.

Main features:

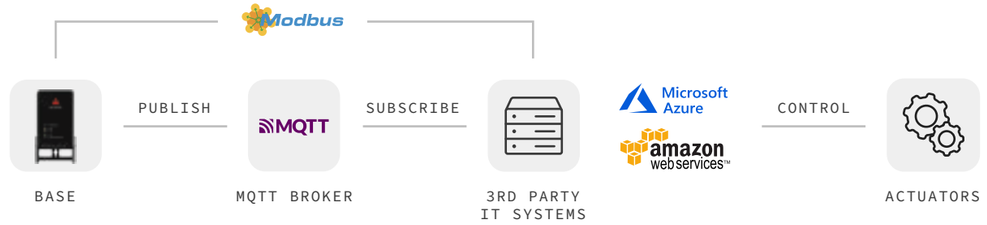
- Instant push-type Aranet data upload to 3rd party IT systems
- Latest sensor measurements, alarm messages and their inventory data
- Supported data formats: MQTT generic (raw), JSON array, Azure IoT Hub defined format

via Modbus

Modbus is a proven, widely available, and well-adopted data exchange protocol in various IT and IoT monitoring and management systems. It is the de facto standard for connecting industrial electronic devices and one of the preferred protocols for data exchange also in BMS as well.

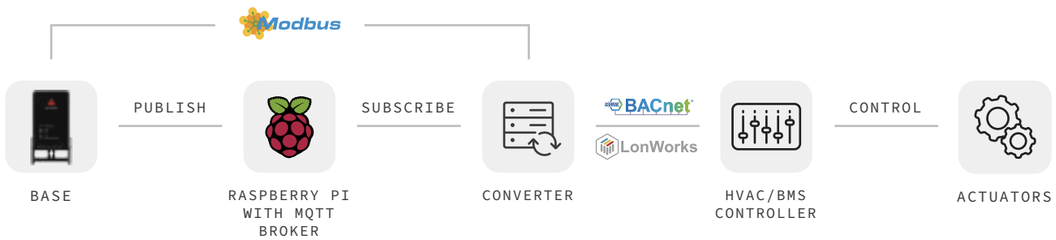
Main features:

- Pull-type integration when 3rd party IT system requests data from the Aranet bases
- Modbus TCP/IP version supported with Aranet bases acting as Modbus servers
- Latest sensor measurement data



MQTT/Modbus to other protocols

If the IT system does not support MQTT or Modbus protocol directly, it is possible to use proxy devices to convert Aranet data to the necessary format, for example, BACnet, OPC UA, LonWorks, KNX, or even analog 4-20mA or 0-10V signals. Raspberry Pi or other single-board computers and MQTT or Modbus converters can be used as proxy devices. Typical scenarios for such installations would be to connect to existing BMS or HVAC controllers or building automation systems.



Aranet Cloud level integration

Aranet Cloud integrations enable developers and partners to instantly access Aranet ecosystem data of all their devices via a single connection regardless of whether it's a single venue or multiple geographically distributed locations.

Push-type integrations

Push-type integrations are a widely used data exchange solution in various IT monitoring and management systems. It is a standardized way for centralized sensor data transfer from multiple base station installations via one centralized endpoint.

The main features of Push-type integrations:

- Centralized data upload for all the necessary sensors via a single connection
- Push-type integration with instant Aranet data upload to 3rd party IT system
- Latest or historic sensor measurement data upload during the initial data transmissions
- User-defined data transmission intervals and sensor selection for which measurements should be uploaded
- Guaranteed data delivery to 3rd party IT systems and historic data retransmission if the connection is temporarily lost
- Supported data format: JSON Array

Aranet Cloud API

Aranet Cloud API allows to access the sensor and cloud data outside of the Aranet ecosystem. Cloud API is a Pull-type integration. By using Aranet Cloud API, Aranet Cloud can be integrated with any other Web or cloud-based IT system or used as a data source for 3rd party applications.

The main features of Aranet Cloud API:

- Centralized data access for all the necessary sensors via a single connection
- Pull-type API integration providing access to data in Aranet Cloud
- On-demand data access from Aranet Cloud without the need to establish data storage on 3rd party IT system
- Ability to request current, latest, and specified period data
- Access to cloud-specific data like virtual sensors, alarms, assets
- Authorization using API key
- API documentation – all currently available endpoints are documented via Swagger
- Supported data format: JSON

Aranet News

On-site integrations

Modbus TCP/IP

- Electronic devices communication protocol typically used to transmit signals from instrumentation and control devices back to the main controller or data gathering system. Widely used in industrial automation solutions.

Available

BACnet/IP

- Data communication protocol for Building Automation and Control Networks. The protocol is used in Building Management Systems.

Planned release: Q1.2023

Global SIM card for Aranet PRO Plus LTE

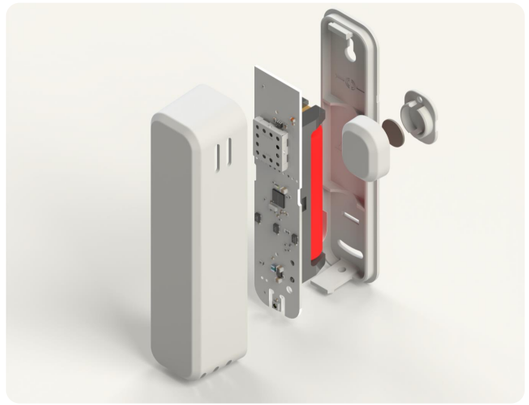
- New option to buy Aranet PRO Plus LTE base station with Aranet Cloud subscription
- Physical SIM card
- Data connectivity only
- Instant connection to the internet
- Monthly/yearly Aranet Cloud subscription

Aranet News

Door sensor

- Open door & window time counting (per period and cumulative)
- Normally opened
- Battery-operated
- For indoor use

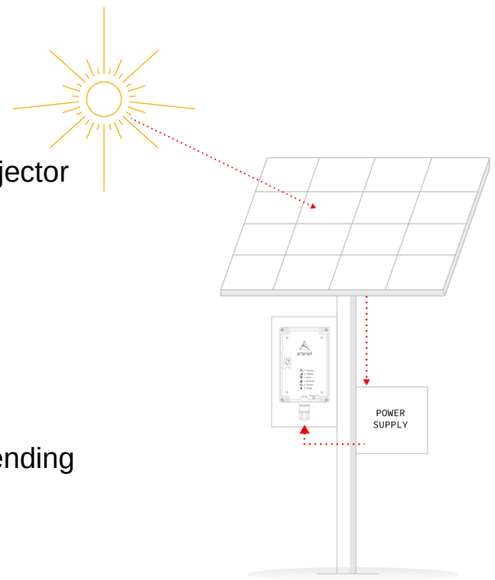
Applications: Doors, windows, automatic shades and many other



Solar power supply for Aranet base stations

- Contains battery charge controller & PoE injector
- 12/24V battery compatible
- 12/24V solar panel compatible
- Nominal solar panel power: 145/290W
- For Aranet PRO Plus base stations

Solar (Photovoltaic) panel size can differ depending on the geographical place of installation.



Aranet users worldwide

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