# PRO

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Aranet offers innovative industrial IOT solutions for business, making environmental monitoring easy!

**Aranet PRO is an industrial grade environment monitoring solution. Up to 100 wireless sensors can be added per single gateway within the line-of-sight range of 3km/1.9 mi*.**

1. Aranet PRO offers 3 gateway versions – Aranet PRO 100, Aranet PRO 50 and Aranet PRO 12.
2. Aranet PRO comes with a free software- Aranet SensorHUB. Easy to use web interface allows viewing, analysing and comparing data in real time from a computer, tablet or even a smartphone.
3. Aranet wireless sensors measure temperature, relative humidity and $CO_2$ levels.
4. Aranet PRO allows setting of alert thresholds and receiving warnings via e-mail notifications when something needs attention.
5. Centralized data aggregation saves time and money by eliminating potential human error and saving time previously spent on manual data readings.
6. Portability of the sensors and the gateway offers flexibility. Devices can be moved when necessary without extra costs of installation or extensive planning.
7. These capabilities offer new solutions for different businesses including food manufacturing, grocery stores, warehouse management, museums and exhibition halls, hotels and restaurants, agricultural facilities and many others.


Aranet PRO kit: a) Aranet PRO gateway; b) AC power adapter with USB cable; c) Gateway mounting bracket; d) Aranet SensorHUB software.

| Aranet PRO | |
|---|---|
| Maximum sensors amount | 100 / 50 / 12 |
| Interface accessibility | PC, tablet or smart phone connected via Ethernet cable or local WiFi connection |
| Ports | AC power port, 1 Ethernet port, 1 USB A |
| Alarm type | E-mail, SMS (optional) |
| Memory | Saves data for 10 years |
| Data storage type | Local |
| Protection class | IP 40 |
| Receiver sensitivity | -133dBm |
| Dimensions | 107x170x26 mm / 4.2x6.7x1.02 in |

## Aranet PRO base station datasheet

| | | | | |
|---|---|---|---|---|
| Maximum sensor count | | 12 | 50 | 100 |
| Alarm type | | Email / SMS notification through USB modem | | |
| Local data storage | | Measurement data for up to 10 years with 100 sensors | | |
| Measurement interval | | 1, 2, 5, 10 minutes | | |
| Receiver sensitivity | | Europe, Russia -127 dBm<br>North America -129 dBm | | |
| Channels | | Europe<br>Channel 1: 868.10 MHz<br>Channel 2: 868.30 MHz<br>Channel 3: 868.50 MHz<br>Russia<br>Channel 1: 868.85 MHz<br>Channel 2: 869.05 MHz | | North America<br>Channel 1: 917.3 MHz<br>Channel 2: 917.5 MHz<br>Channel 3: 917.7 MHz<br>Channel 4: 917.9 MHz<br>Channel 5: 922.9 MHz<br>Channel 6: 923.1 MHz<br>Channel 7: 923.3 MHz<br>Channel 8:923.5 MHz |
| Data protection | | Password protected user accounts, encryption for data | | |
| Communication | | Ethernet cable, local WiFi | | |
| Power options | | AC/DC power adapter<br>Optional power supply with Passive 12V PoE injector<br>Built-in battery (backup power up to 30min) | | |
| Operating temperature | | 0 °C to 40 °C / 32 °F to 104 °F | | |
| Operating humidity | | 0 % to 100 % non-condensing | | |
| Interface languages | | English, German, French, Spanish, Russian, Italian, Dutch, Portuguese, Latvian | | |
| Dimensions | | 107x170x26 mm / 4.2”×6.7”×1.02”<br>w/o mounting bracket | | |
| Ports | | 12VDC power port, 1 Ethernet, 1 USB A | | |
| Weight | | 190 g / 6.7 oz w/o mounting bracket | | |
| Construction | | ABS Plastic, steel mounting bracket | | |
| Protection class | | IP40 | | |
| CE/ FCC/ IC Marking | | Yes | | |
| Included | | AC/DC power adapter, mounting bracket | | |
| SensorHUB Software | | Built-in web server supporting browsers like Chrome, Firefox, Edge, Safari | | |
| Part number | EU | TDSBWPA1.012 | TDSBWPA1.050 | TDSBWPA1.100 |
| | NA | TDSBWPA2.012 | TDSBWPA2.050 | TDSBWPA2.100 |
| | RU | TDSBWPR1.012 | TDSBWPR1.050 | TDSBWPR1.100 |

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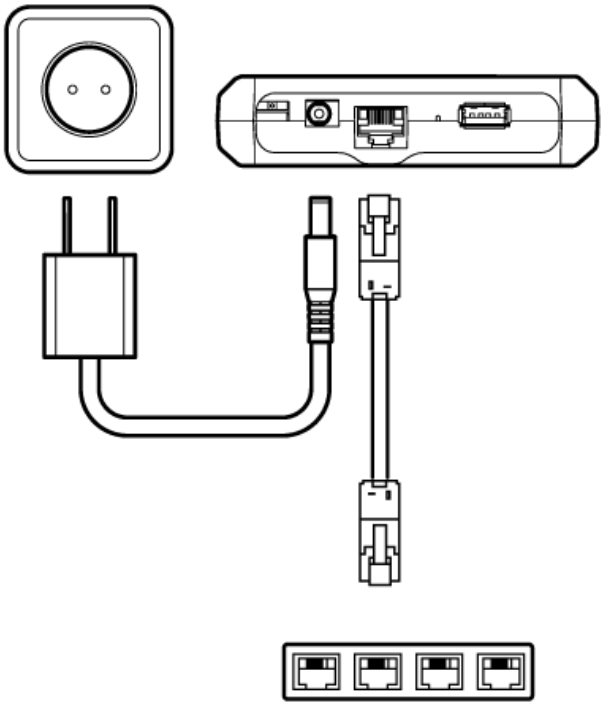
# PoE injectors

## for Aranet PRO base station

**PoE or Power over Ethernet** is a technology for passing electric power along with data. PoE injector ensures both data connection and electrical power to the device.

## Aranet PRO base station and PoE injector connection

**Aranet PRO base station** can be powered by a power adaptor (included in the packaging), and the network connection can be ensured by a regular ethernet cable or Wi-Fi connection.



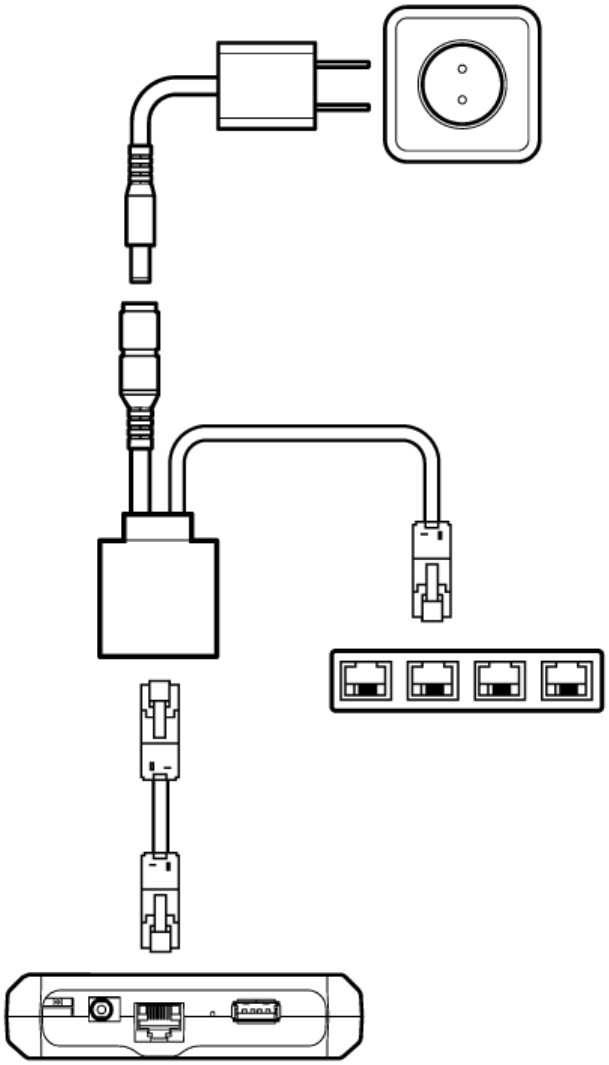
Option 1: Aranet PRO base station is connected to mains electricity with a power adaptor and connected to the network with an ethernet cable

## Information for completing your order

- The PoE injectors should be purchased based on your necessity
- Please note that the Aranet PRO base station is only compatible with a passive PoE injector

| | |
|---|---|
| Aranet PRO | TDSBWB*1 |
| Passive PoE injector (for Aranet PRO) | TDAPOE01 |

If needed, a passive PoE injector can be used for powering and ensuring network connection to the device. Aranet PRO base station is connected to the passive PoE injector with a regular ethernet cable. Further, the PoE injector, which is connected to the power adapter, passes the electricity and adds it to the network cable to power the base station. Additionally, a regular ethernet cable is added to ensure connection to the network.

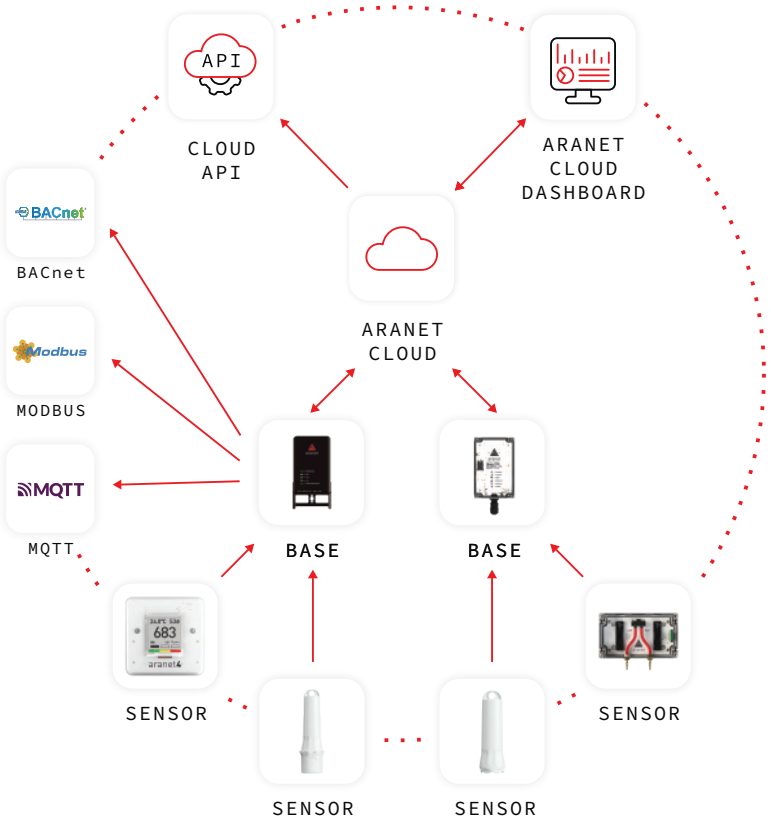


Option 2: Aranet PRO base station and passive PoE injector

# 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.

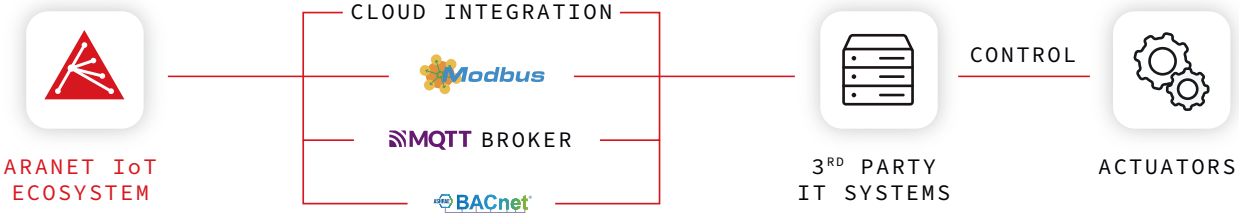
Aranet sensors can be set up in spaces where it is necessary to monitor various physical parameters. Sensors measure and send data wirelessly to the Aranet PRO base station that collects and stores all the measurements. Finally, Aranet Cloud gathers the data from base stations and enables 24/7 uninterrupted 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, BACnet IP or Modbus TCP/IP data communication protocols
- Aranet Cloud level integration via Aranet Cloud APIs



# PRO base station integrations

## 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, and other cloud platforms or with local BMS or HVAC controllers or climate computers that might not even have access to the Internet.

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

## via Modbus TCP/IP

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.

- 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 sensors measurement data and alarm messages

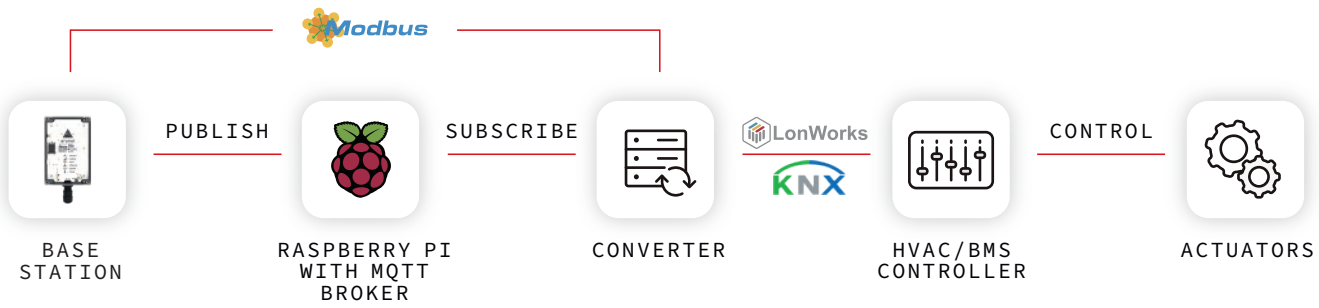
## via BACnet IP

BACnet IP is a communication protocol specifically designed for building automation and control networks.

- Aranet base corresponds to BACnet Smart Sensor device profile B-SS-B
- Analog Inputs or Analog Values objects for measurement data
- Engineering Data Exchange file generation for ease of offline integration configuration

## MQTT/Modbus to other protocols

If the IT system does not support MQTT, Modbus or BACnet protocol directly, it is possible to use proxy devices to convert Aranet data to the necessary format, for example, 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