



## NB-IoT

# Wireless carbon dioxide (CO<sub>2</sub>), atmospheric pressure, temperature and humidity logger

The Efento NB-IoT wireless data logger is designed for continuous monitoring of CO<sub>2</sub>, atmospheric pressure, temperature, and humidity, ensuring reliable data transmission and high measurement accuracy. Using Narrowband IoT connectivity, it communicates directly over the cellular network. No gateways or additional infrastructure required.



## Key Features

- **Effortless installation** - thanks to built-in NB-IoT connectivity, installation is as simple as mounting the device on a wall or placing it on a shelf - no gateways, cabling, or Wi-Fi configuration required.
- **Fast and intuitive setup** - with an integrated Bluetooth Low Energy (BLE) module and a dedicated mobile app, the sensor can be configured and activated in under 15 minutes.
- **Up to 8 years of battery life** - engineered for long-term, maintenance-free operation, the device uses intelligent data handling and optimized transmissions to achieve up to 8 years of operation on a single battery.
- **Cloud and system integration** - seamlessly connects with the Efento Cloud platform for data visualization, analysis, and alerting. Standard communication protocols also enable easy integration with custom server-based systems.
- **Remote management** - supports over-the-air firmware updates and secure remote configuration, reducing the need for on-site maintenance.
- **Calibration certificate (optional)** - the device can be supplied with a certificate issued by an accredited laboratory in accordance with ISO/IEC 17025, confirming measurement accuracy for high-precision applications.

## Applications

The device is designed for comprehensive monitoring of environmental parameters, including carbon dioxide (CO<sub>2</sub>) concentration, temperature, relative humidity, and atmospheric pressure. It is ideal for use in office buildings, public facilities, schools, kindergartens, laboratories, server rooms, and building management systems.

## Sensors

|                   | Temperature     | Humidity                                              |
|-------------------|-----------------|-------------------------------------------------------|
| Model             | Sensirion SHT41 | Sensirion SHT41                                       |
| Measurement range | -25° to 70°C    | 0 to 100% RH                                          |
| Accuracy          | +/- 0.2°C       | 2% in the 0–90% RH range<br>3% in the 90–99% RH range |
| Resolution        | 0.1°C           | 0.1%                                                  |
| Drift             | <0.1°C /year    | <0.2% RH / year                                       |

  

|                   | CO2                                              | Atmospheric pressure |
|-------------------|--------------------------------------------------|----------------------|
| Model             | Sensirion SCD43                                  | Bosch BMP390         |
| Measurement range | 400-5000 ppm                                     | 300-1250 hPa         |
| Accuracy          | +/- (30 ppm +3% of reading)                      | +/- 0.5 hPa          |
| Resolution        | 1 ppm                                            | 0.1 hPa              |
| Drift             | +/- (5 ppm +0.5% of reading) /year after 5 years | +/- 0.16 hPa /year   |

## Technical data

| Data logging         |                                                               |
|----------------------|---------------------------------------------------------------|
| Memory size          | 100 000 measurements (evenly distributed across each channel) |
| Measurement interval | 1 min - 7 days (user-configurable)                            |

  

| Bluetooth interface    |                            |
|------------------------|----------------------------|
| Radio module frequency | 2.4 GHz                    |
| Power                  | 2.5 mW (4 dBm)             |
| Range                  | Up to 100 m (LOS)          |
| Transmission period    | 1 s                        |
| Bluetooth version      | Bluetooth Low Energy (4.0) |

  

| NB-IoT interface |                                                                      |
|------------------|----------------------------------------------------------------------|
| NB-IoT bands     | 1, 2, 3, 4, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66, 70, 71, 85 |
| 3GPP             | 13 i 14 (LTE Cat NB2)                                                |
| Power            | 23 dBm ±2 dB                                                         |

  

| Communication         |                                    |
|-----------------------|------------------------------------|
| Protocol              | CoAP                               |
| Transmission interval | 1 min - 7 days (user-configurable) |

  

| Operating and Storage Conditions                          |                                                                  |
|-----------------------------------------------------------|------------------------------------------------------------------|
| Main unit operating conditions                            | Temperature: -25°C to +70°C, humidity: 0-99% RH (non-condensing) |
| Storage conditions                                        | Temperature: -25°C to +70°C                                      |
| Charging conditions (variants with external power supply) | Temperature: 0°C to +45°C                                        |

  

| Certifications |               |
|----------------|---------------|
| Regulatory     | CE (RED), FCC |
| Environmental  | RoHS          |

## Variants

| EAN           | Power Supply                                                                                    | Enclosure                                                 | Weight                   |
|---------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------|
| 5905309603929 | 8,500 mAh battery (replaceable). Battery life up to 8 years                                     | IP30, white ABS plastic<br>Dimensions: 32.5 × 60 × 125 mm | 145g (including battery) |
| 5905309603400 | USB-C, with a 1,300 mAh rechargeable backup battery to maintain operation in case of power loss | IP30, white ABS plastic<br>Dimensions: 32.5 × 60 × 125 mm | 130g                     |