



# Kaiterra Sensedge BACnet User Manual

April 2023

# 1.

## Introduction

The Kaiterra Sensedge is a smart air quality monitor that supports multiple communication methods, including BACnet.

BACnet, acronym for "Building Automation Control Network", is a communications protocol for Building Automation and Control (BAC) defined by the ANSI/ASHRAE Standard 135-2004. The protocol defines a model for building-automation, describing the interaction between devices and systems.

BACnet can be used by different communication channels, such as:

- Ethernet cable
- Wi-Fi
- RS-232
- RS-485

The Sensedge provides BACnet/IP support, which could be used via Wi-Fi and Ethernet.

Please make sure your Sensedge is running the latest firmware.

Please go to **Settings** -> **Device Details** and check the Firmware Version.

**Latest Firmware Version:** 1.15.0.2 (May 2022)

# 2.

## Setting up BACnet on the Sensedge

### 1. Enable BACnet

By default, the BACnet feature on the Sensedge is not turned on.

Navigate to **Settings** –> **Device Details** –> **Connectivity** –> **BACnet/IP** to turn on the feature.

### 2. Setting the Device ID

On the **Settings** –> **Device Details** –> **Connectivity** –> **BACnet/IP** screen, the Device ID is customizable. This Device ID is used to identify the device in the system, therefore, each Sensedge should have a unique Device ID, and the Device ID should also be different from other devices in the same system.

A default Device ID is already provided in the Device ID field. This is a randomly generated number. It is recommended to customize your own device ID when you have a huge system, so you can manage your system in a more structured manner.

The range of allowed Device IDs is 0-4194302.

It is recommended to set the Device ID on site during or after installation, so it is easier to keep track of the Device ID and installation locations.

### 3. Setting the UDP Port

On the **Settings** –> **Device Details** –> **Connectivity** –> **BACnet/IP** screen, the UDP port is customizable.

The default UDP port is filled in as 47808, which is a commonly used UDP port for BACnet/IP, but it can also be customized and can be any round number in the range of **47808 – 47823**. It is recommended that the UDP port stays unchanged, since the default value is widely used.

Please consult with your BMS admin before changing the UDP port.

### 4. Restarting the service

On the **Settings** –> **Device Details** –> **Connectivity** –> **BACnet/IP** screen, there is a **Restart Service** button.

Please use this button when you need to restart the BACnet service during setup.

# 3.

## Setting up network connection on Sensedge

BACnet/IP requires a connection to the local network for data transmission. This connection can be achieved by having your Sensedge connected via Ethernet or Wi-Fi to your local network.

### 1. Setting up your Wi-Fi connection on the Sensedge

On the **Settings** –> **Wi-Fi** screen, you can select the SSID for the Sensedge to connect to.

The Sensedge supports 2.4GHz Wi-Fi, 802.11b/g/n. And, for security, it supports the latest 64/128 WEP, WPA-PSK, WPA2-PSK, WPA, WPA2. It also supports 2-step verification via CaptivePortal.

Internal PKI (Public Key Infrastructure) is **NOT supported**.

On the **Settings** –> **Wi-Fi** –> **IP address** –> **Configure** screen, you can toggle between “Auto” and “Manual” Connection Types. This setting regulates the method that your Sensedge uses to acquire its IP address, Subnet Mask, and Gateway.

Please consult with your network admin if you have question regarding your local network.



## 2. Setting up your Ethernet connection on the Sensedge

On the **Settings** -> **Ethernet** screen, you can see the connection status, IP, DNS, MAC Address, and IP configure method (auto/manual).

When the "Configure IP" is toggled to Manual, you can manually set the IP address, Subnet Mask, and Gateway.

Please consult with your network admin if you have question regarding your local network.

# 4.

## Protocol Implementation Conformance Statement (PICS)

PICS is a standard documentation that includes all the parameters and information you may need to set up your BACnet connection.

You can find the PICS document on [support.kaiterra.com](https://support.kaiterra.com).

# 5.

## Frequently Asked Questions (FAQ)

Can BACnet be daisy-chained (looped)?

No. While BACnet MS/TP is wired in a daisy chain configuration, we support BACnet/IP and, for that, daisy-chaining does not apply: it would mean daisy-chaining Ethernet, which we do not support as it would require two Ethernet ports and some Ethernet-switching hardware, which our devices do not have.