General Specifications

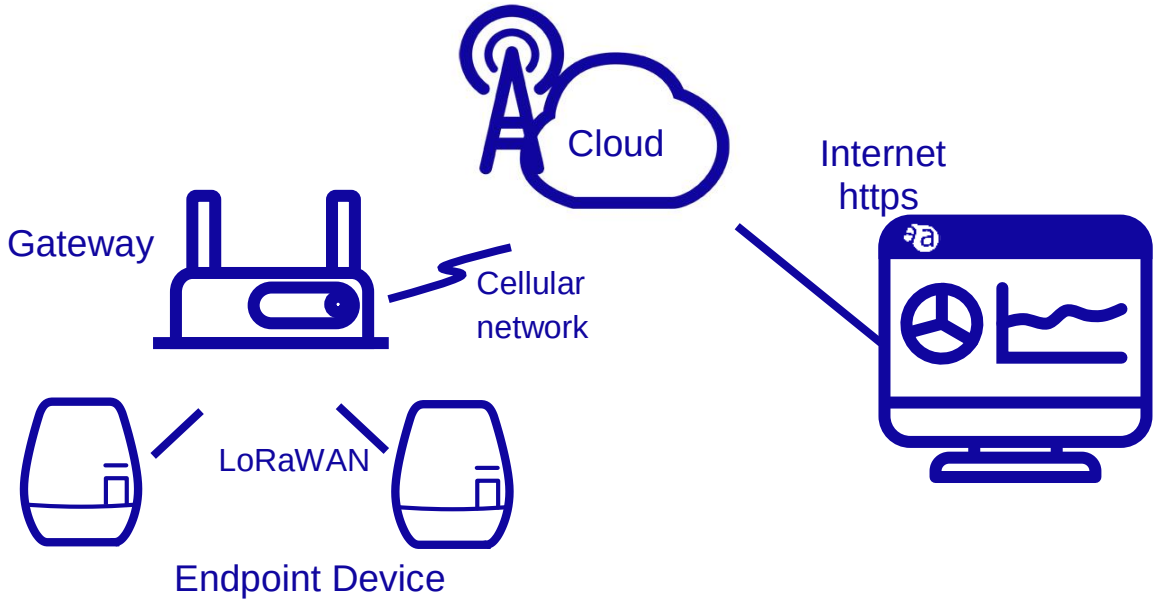
amnimo sense
AM1001

GS AMC53A01-01EN

■ Overview

amnimo sense (hereafter referred to as this service) collects data from sensors, devices, and the like in an amnimo Industrial IoT (IIoT) cloud system from amnimo endpoint devices through gateways and provides a feature for users to view the data. Digital display, trend graph display, and so on are available for viewing the data.

■ System Configuration



LTE (Long Term Evolution) is a type of communication standard for cellular network.

LoRaWAN is a type of wireless communication system of a Low Power Wide Area Network.

■ Scope

- Countries in Which This Service Can Be Provided and Sold

  Malaysia, Japan

  Note : This service has limitations due to restrictions in the country that it is used in.
  Check the specifications for the country before use.
  For the specifications for each country, view the notes on usage.

■ Connected Devices

● amnimo T series endpoint devices (hereafter referred to as endpoint devices)

These devices are lightweight and compact with a two-stage structure. The bottom stage contains an I/O module section and the top stage a wireless section.

Connections are made to amnimo G series gateways (hereafter referred to as gateways) through LoRaWAN communication.
Up to 30 endpoint devices can be connected to a single gateway.

● amnimo G series gateway (made by Multi-Tech Systems, Inc.)

This is a node (repeater) for connecting the amnimo IIoT cloud system and various field instruments through a network.

The gateway connects to an IIoT cloud system through a cellular network and connects endpoint devices through LoRaWAN.
This service allows up to 10 gateways to be connected.

■ Basic Specifications

● User: An application owner or user that can use this service.

Number of users: 10 (default)
The number of users can be increased up to 20. (Paid option)

User privileges:

Owner: All functions including configuration can be used.

User: Only the data display function can be used. Device configuration cannot be changed.

● Data transmission interval: 1 hour (default)

Available options are 1 minute, 5 minutes, 10 minutes, 30 minutes, 1 hour, 3 hours, 6 hours, 12 hours, 24 hours.

※ If the transmission interval is one minute, up to three endpoint devices can be connected.
If the transmission interval is 5 minutes, up to 15 endpoint devices can be connected.
If the transmission interval is 10 minutes or more, up to 30 endpoint devices can be connected.

If more than the maximum number of endpoint devices indicated above are connected, the data is transmitted at a random interval longer than the specified data up the interval.
For the relationship between the number of endpoint devices connected to each gateway and the transmission interval, refer to the communication traffic volume lookup table.

● Data storage period: Last 14 days (within the contract period)

● Display language: English, Japanese

■ Functional Specifications

● Device Configuration and Management

• Activation using a smartphone

Devices that can connect to this service can easily be activated and configured for connection by reading the QR code affixed to the devices, using a dedicated application (see note) on a smartphone. After the devices are activated, periodic transmission of specific data to the cloud begins.

On the dedicated application on a smartphone, the location information of connected devices can be configured and changed.

Note : OS supporting smartphone application: Android 6.0.x and later or iOS 9.0 and later.
iPadOS is not supported.

• Data conversion function

Data acquired from connected devices can be converted into values that you need. In the case of analog input devices, the analog input values can be converted into physical quantities of your choice. The available conversions are linear conversion and piecewise linear conversion.

● Data Communication

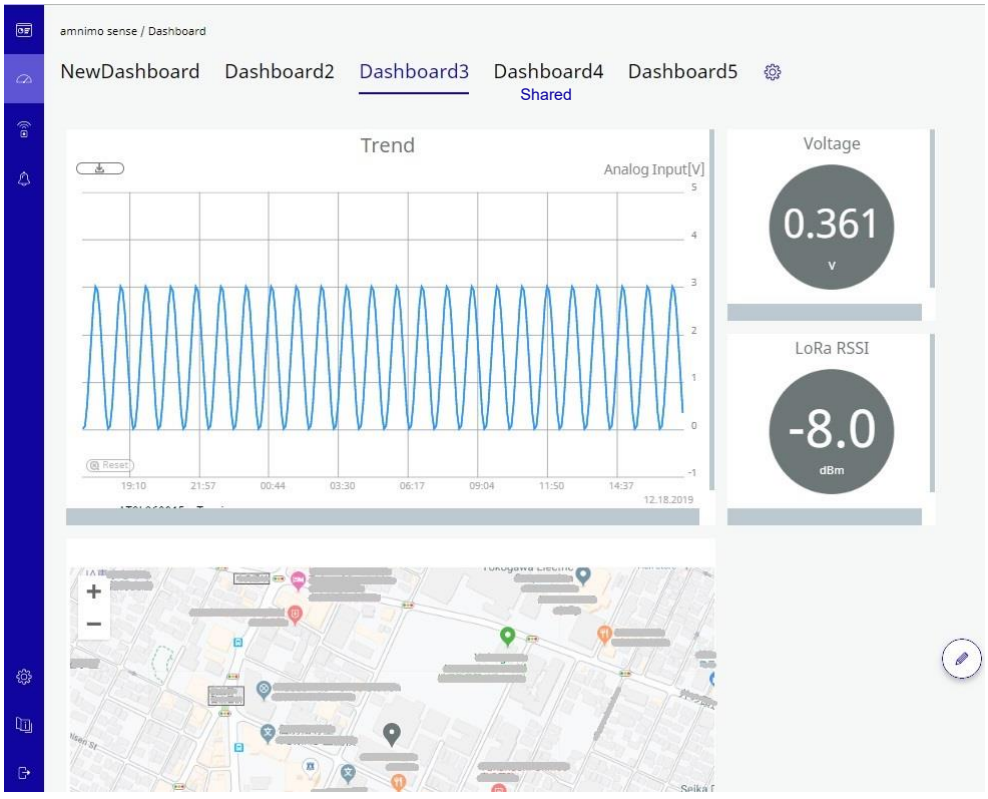
• Data acquisition and cloud transmission

Data acquired from connected devices is sent to the cloud.

Communication traffic volume varies depending on the transmission interval. Select the communication traffic volume when subscribing for the service by referring to the communication traffic volume lookup table.

● Display Function (Dashboard)

On the dashboard, you can add and arrange data display functions (widgets) to set display items separately for each user, for each factory, and the like. Dashboards can also be shared among users. The application administrator can set up to 5 dashboards that can be shared.



● Data Display Function (Widget)

Each view function shows graphs, values, and so on by specifying connected devices.

• Trend graph

The collected data from the specified connected device is displayed on a trend graph. You can set the axis scale, line color, and so on. Up to eight sets of data with the same property name and unit from multiple devices can be assigned.

Moreover, a specified range of data displayed on the trend graph can be downloaded to a local computer. (see note)

Note: Downloading is not possible from an iOS browser.

• Numeric display

The collected data from the specified connected device is displayed numerically. You can set the number of digits to display and the like.

• Bar graph

The collected data from the specified connected device is displayed on a bar graph. You can set the bar color. In addition, when alert detection target data is set, the threshold setting status of alert detection is displayed next to the bar graph.

• Event list

Events that occur in this service are stored in a database. These events are displayed. You can set dynamic filters to display only the event data you need.

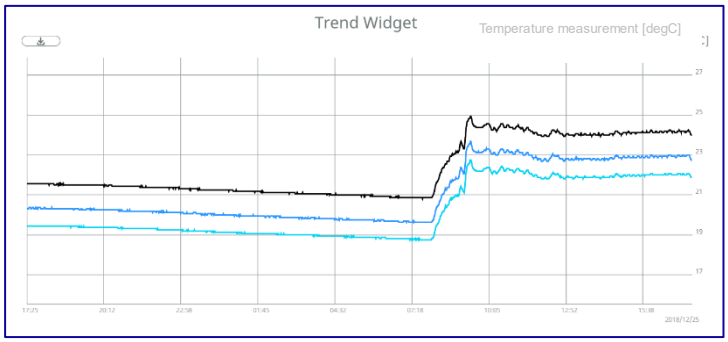
• Symbol map

The position information obtained when devices were activated through smartphones are displayed on a map.

• Radar chart

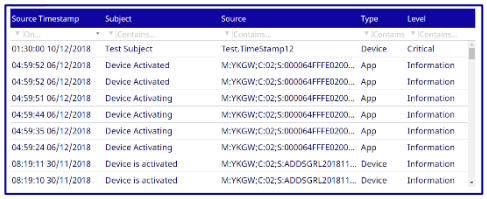
The collected data from the specified connected device is displayed on a radar chart. To use the radar chart, you need to specify at least three sets of data with the same property name and unit.

Trend graph

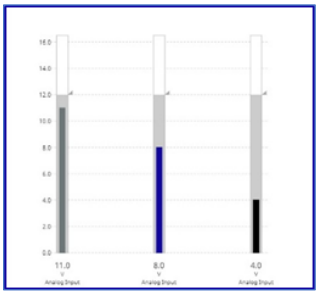


Numeric display

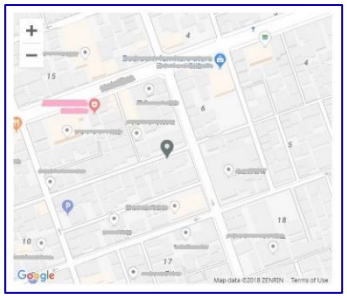
Event list



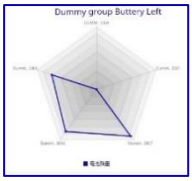
Bar graph



Symbol map



Radar chart



● Alert detection and notification function

• Alert detection function

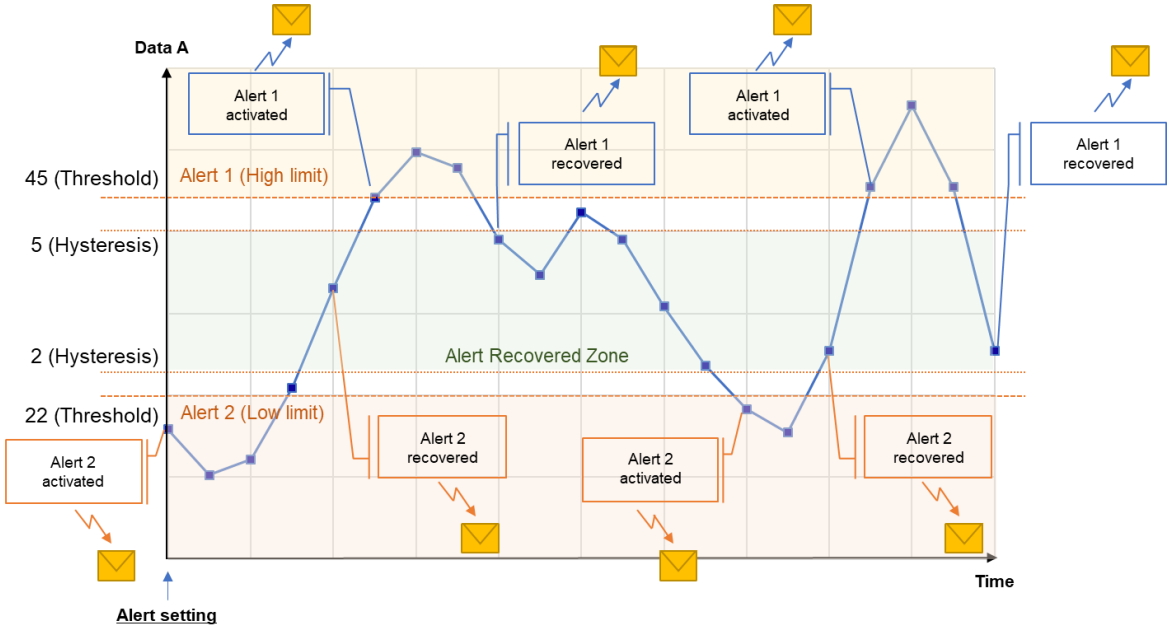
An upper limit or lower limit is set on the collected data. When the threshold is exceeded, an alert is detected. In addition, an event is detected when an alert state is cleared. The same conditions can be used to detect multiple sets of data collectively.

Up to 10 alert detection definitions can be created. Each alert detection definition can be linked to up to 10 sets of device data.

Data that is in the alert state are displayed in the alert list, and those detected in the past are displayed in the event list. In addition, the alert is displayed on the widget to which the target data is assigned.

Note: The alert detection timing depends on the transmission interval of each device.

If data is already in the alert state when an alert is set, the alert is detected at that point.



Hysteresis: This is a value used to clear alerts to prevent repetitive occurrence of alert detections due to fluctuations in the collected data.

• Notification function

Email is sent to an address specified in advance when an alert is detected or cleared. Up to 10 email addresses (including mailing lists) can be specified for the notification destinations.

■ System Requirements

OS supporting cloud usage, browser (tested for compatibility)

OS	Browser	Operation guaranteed conditions
Windows 10	Google Chrome	Latest version
iOS 10 and later, iPadOS (see note)	Google Chrome Safari	Latest version
Android 6.0.x and later	Android Google Chrome	Latest version

Note: Downloading from the trend graph is not supported.

■ Notes on Usage

● Checking the Radio Signal Conditions

- This service uses a cellular network (LTE, 3G) to transmit data from the gateway to the cloud. Before signing up for a contract, check the radio signal quality of the cellular network at the location where the system will be used in.
- Data communication between gateways and endpoint devices uses a wireless communication system called LoRaWAN. Because radio signal conditions are affected by the installation locations and other external environment factors, install devices at high locations with a good line of sight whenever possible, and check that metal objects are not near antennas. In addition, the radio signal directivity is perpendicular to the gateway antenna. Adjust the orientation of the antennas if necessary.

● Installation Environment of Connected Devices

- The connected devices (endpoint devices and gateways) are not water-proof or dust-proof.

<Uses restrictions in Japan>

- This service can be used only when the gateways and the endpoint devices assigned to these gateways **are installed in "the same premises" (※) (including regions complying with this definition) or "the same building"**.
- For other details regarding the operating environment, see the relevant general specifications.

※Reference: The area that falls under "the same premises" complies with the definition provided in the latest "Wireless LAN Business Guideline" by the Ministry of Internal Affairs and Communications. The following is a link to the second edition of the guideline.)
http://www.soumu.go.jp/main_content/000440108.pdf
The following frame contains an excerpt from the guideline.

"The same premises" excludes areas where a large number of people go in and out, such as public underground shopping centers, and those that are not commonly regarded as a single area. As such, even an area conceptually regarded as a part of a land structure, if it possesses characteristics close to an outdoor public street, "the same premises" does not apply.

Examples that "the same premises" applies

Inside a convenience store, inside a game center, inside each shop in a shopping district or public underground shopping center, inside a museum or art gallery, inside a hotel, inside a government building, inside a coffee shop or restaurant, inside a multi-tenant building, inside a mansion, inside a university campus (including accompanying parking lots)

Examples that "the same premises" does not apply

Inside an airport, inside a train station, inside a subway station, shopping district arcade, underground shopping center

● Network Environment

- This service includes the communication fees for using the cellular network as standard. There is no need for you to subscribe separately to a communication carrier. You cannot connect the gateway to the Internet network that you are using.

● Checking the Communication Capacity

Note that the same communication capacity specified in the communication capacity plan selected on the shop page applies to all the gateways.

● Data Handling

- To ensure customer satisfaction, amnimo may access the cloud environment in use, anonymize or process the data, and use it. When subscribing for a service, view the terms and conditions of site use.

■ Models of Connected Devices (specifications by country)

◆ Malaysia

● amnimo T Series endpoint device

Model: AT01-011MY (analog voltage input (0 to 5VDC), LoRaWAN)

For the general specifications, see GS AMD02A01-01EN.

● amnimo G series gateway (made by Multi-Tech Systems, Inc.)

Model: AG01-083MY (MTCDT-LEU1-246A-915LBT-YK3S)

For the general specifications, see GS AMD01A01-01EN.

◆ Japan

● amnimo T Series endpoint device

Model: AT01-011JP (analog voltage input (0 to 5VDC), LoRaWAN)

For the general specifications, see GS AMD02A01-01JA.

● amnimo G series gateway (made by Multi-Tech Systems, Inc.)

Model: AG01-083JP (MTCDT-LDC3-246A-923-JP-YK3S)

For the general specifications, see GS AMD01A01-01JA.

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