



Omega Link Handbook

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1 Omega Link Ecosystem Overview

How Do Omega Link Products Work?

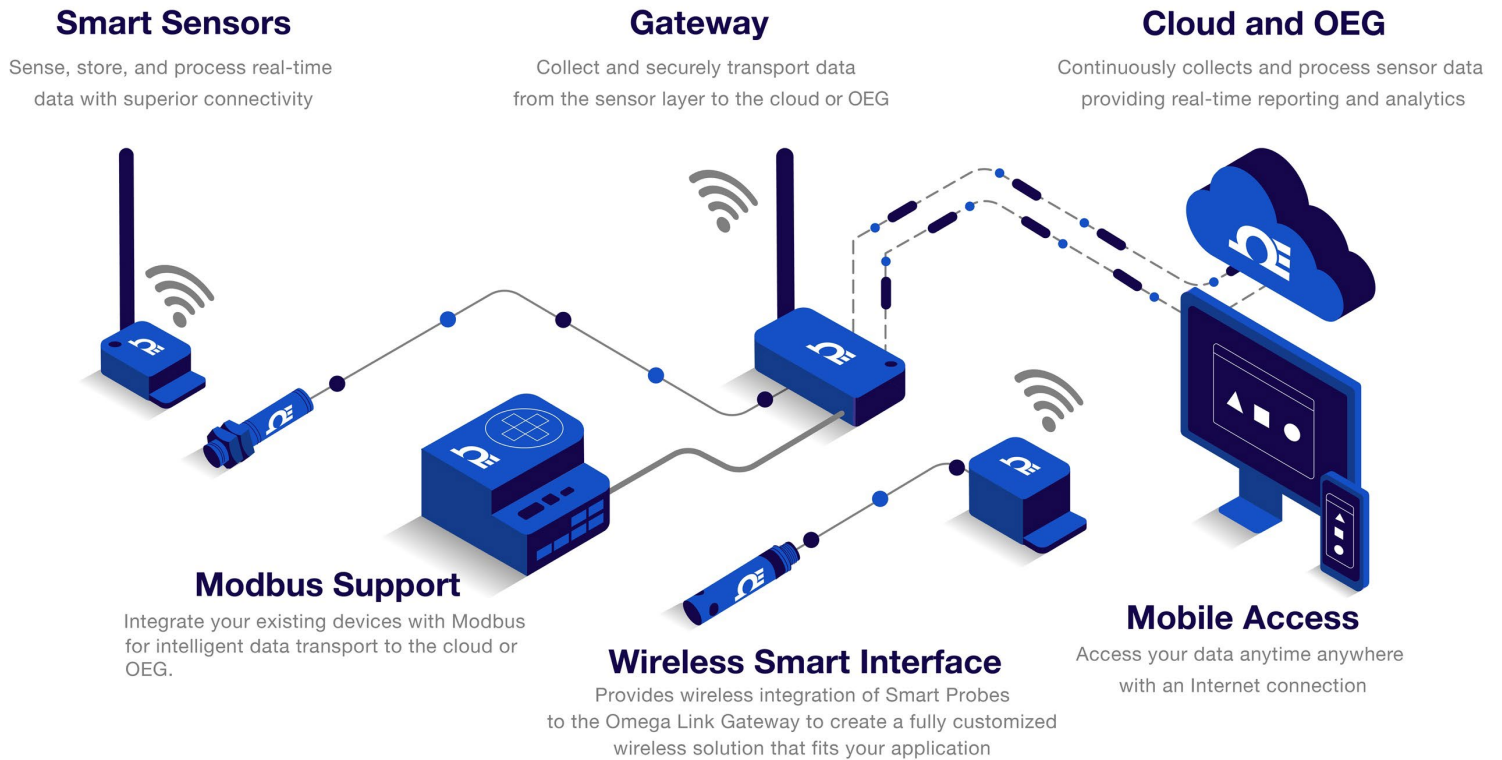


Figure 1: Omega Link Ecosystem Overview

1.1 Smart Sensor Catalog

Omega's Omega Link Smart Sensors utilize precision internal sensing elements to accurately measure environmental conditions for a wide range of applications.

1.1.1 SS-001

The Omega Link SS-001 Smart Sensor utilizes precision internal sensing elements to accurately measure temperature, humidity, barometric pressure, and/or light, depending on the model. When the rugged model is securely inserted into the protective cover, the device can be used for a wide range of rugged sensing applications. Smart Sensors provide a long-range wireless sub-GHz interface that transmits sensor readings to the Omega Link Cloud or OEG. Easily pair to an Omega Link Gateway through a one-button pairing system. The device can be powered by internal batteries or USB power.



Figure 2: SS-001

1.1.2 SS-002

Omega Link SS-002 Smart Sensors provide an external 3-wire RTD, thermocouple, or contact closure solution in addition to the built-in suite of precision internal sensing elements that come standard with the SS-001 to accurately measure environmental conditions for a wide range of applications.

The SS-002-0 offers a configurable choice of an external thermocouple, RTD, or DIN (contact closure).

The SS-002-1 offers a configurable mix of any three of the four internal sensors: Temperature, Humidity, Barometric Pressure, Ambient Light, AND one external sensor option: Thermocouple, RTD, or DIN (contact closure).



Figure 3: SS-002

1.1.3 SS-015

The Omega Link SS-015 Smart Sensor provides an easy way to integrate process and digital pulse inputs into your Omega Link Ecosystem. SS-015 Smart Sensors provide a long-range wireless sub-GHz interface for devices that produce both process and digital signals and transmits them to the Omega Link Cloud or OEG. External process and digital signal devices connect to the SS-015 through an M12 5-pin connector (M12.5-S-M-FM screw terminal accessory sold separately) and easily pair to an Omega Link Gateway through a one-button pairing system. The device can be powered by internal batteries, USB power,



Figure 4: SS-015

or an optional external power source (sold separately).

The SS-015 may be configured to monitor up to 3 industry standard process signals including 4-20 mA, 0-1.0 VDC, and 0-2.0 V DC. The SS-015 may also be configured to monitor the on/off state of the input signals, the pulse rate/width and duty cycle of the primary input, or the pulse delay between the two signals. The pulse totalizing function supports both standard counting and up/down counting.

Each of the 3 inputs can be individually configured to allow mixed configurations to monitor both Process and Pulse Signals simultaneously. Additionally, a low-power sensor signal excitation power output is available.

1.2 Smart Probe and Smart Interface Catalog

Edge Control and Built in I/O

Omega Link Smart Probes feature 2 configurable discrete I/O pins. These can be used for a myriad of applications including driving relays, physical alarms, or sensing dry contacts like door switches. The Smart Probe can then also be utilized as an edge controller, with autonomous independent decision-making capabilities to generate local alarms or provide control outputs based on sensor inputs.

Intuitive Configuration

Configure your Omega Link Smart Probe using SYNC's intuitive configuration interface.

Modularity

Customize your Omega Ecosystem by taking advantage of discrete I/O features accessible through the modular addition of an M12.8-T-SPLIT and M12.8-S-M-FM terminal.



Figure 5: M12.8-T-SPLIT and M12.8-S-M-FM accessories for discrete I/O

Smart Core Enabled

Smart core is integral to all Omega Link Smart Probes. This powerful suite of advanced features enables plug and play connectivity, alarms and notifications, data assurance, data logging, and storage.

1.2.1 SP-001 & SP-002

The Omega Link IR Temperature Probe is a miniature infrared sensor that measures the surface temperature of a solid or liquid without contact. It can measure non-metal surfaces between -70 to 380°C (-94 to 716°F). It also features a built-in sensor to measure the ambient temperature of the probe itself.

Materials including paper, thick plastics, rubber, food, and organic materials, as well as painted metals and most dirty, rusty or oily surfaces, are measured accurately, safely, and cleanly.

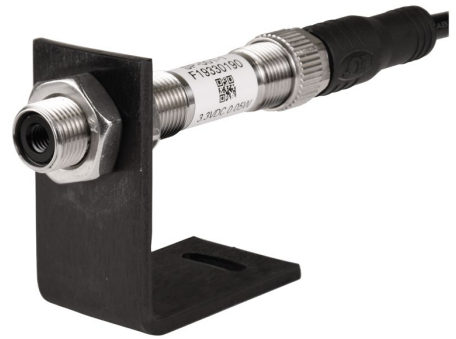


Figure 6: SP-001

1.2.2 SP-003 & SP-004

The Omega Link SP-003 / SP-004 Environmental Monitoring Smart Probe provides temperature, relative humidity, and barometric pressure readings. The SP-003-2 and SP-004-2 models additionally provide real-time Dewpoint, Humidex, and Heat Index readings. The SP-003 / SP-004 accepts Omega Link Smart Interfaces through its M12 8-pin connector.



Figure 7: SP-003 and SP-004

1.2.3 SP-005

The Omega Link SP-005 Thermocouple and RTD Smart Probe provides an easy way to integrate your thermocouple and RTD probes to the Omega Link Ecosystem. The SP-005 accepts standard M12 thermocouples and RTDs through its M12 4-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The optional M12-S-M-FM connector can be utilized to easily connect wire leads typically found on thermocouples or RTD probes to your SP-005.



Figure 8: SP-005

The SP-005 supports up to 2 thermocouple inputs or a single 2, 3, or 4-wire RTD input.

1.2.4 SP-006

The Omega Link Pressure Monitoring Smart Probes measure gas, liquid, and vapor pressure for a wide range of applications featuring all stainless-steel pressure sensor construction and available in 1, 50, 100, and 250 psi configurations. No excitation is required as power is provided by Omega Link modular wireless or wired interfaces via a rugged M12 connector.

Users may apply a calibration correction to the measured pressure using either 1 single offset or a calculated 2-point correction for improved accuracy across the entire measurement range.



Figure 9: SP-006

1.2.5 SP-010

The Omega Link SP-010 Load Cell Smart Probe provides an easy way to integrate your bridge devices to the Omega Link Ecosystem. The SP-010 accepts 4-wire bridge sensors through its M12 4-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The M12-S-M-FM accessory connector can be utilized to easily connect wire leads to your SP-010.

The SP-010 determines the bridge impedance and applies

an optimized pulsed bridge excitation current during measurements to minimize self-heating effects. The bridge voltage is then used to determine the applied force using bridge characteristics provided by the user. A 2-point linearization correction may be applied with the ability to capture the measured values. TARE weight adjustment can be triggered through software or external switch closures.



Figure 10: SP-010

1.2.6 SP-013

The Omega Link SP-013 Digital Interface Smart Probe provides an easy way to integrate digital pulse inputs into the Omega Link Ecosystem. The SP-013 accepts digital pulse inputs through its M12 5-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The optional M12.8-T-SPLIT Sensor Splitter can be used to access the Discrete I/O pins on the M12 8-pin connector. The optional M12.5-S-M-FM and M12.8-S-M-FM mating connectors can be utilized to easily connect wire leads to the SP-013 or sensor splitter.

The SP-013 may be configured to monitor the on/off state of the input signals, the pulse rate/ duty cycle of the



Figure 11: SP-013

primary input, or the pulse delay between the two signals. The pulse totalizing function supports both standard counting and up/ down counting.

A mixed-mode configuration option allows for the measurement of one digital pulse input and one process input which may be independently configured as a 0-24 mA, 0-1.0 V DC, or 0-2.0 V DC input.

1.2.7 SP-014

The Omega Link SP-014 Process Monitoring Smart Probe provides an easy way to integrate process signals into your Omega Link Ecosystem. The SP-014 accepts standard process signals through its M12 5-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The optional M12.8-T-SPLIT Sensor Splitter can be used to access the Discrete I/O pins on the M12 8-pin connector. The optional M12.5-S-M-FM and M12.8-S-M-FM mating connectors can be utilized to easily connect wire leads to the SP-014 or Sensor Splitter. Each of the 3 process inputs may be independently configured as 0-24 mA, 0-1.0 V DC, or 0-2.0 V DC inputs.



Figure 12: SP-014

A mixed-mode configuration option allows for the measurement of one process input and one digital pulse input which supports frequency (rate), pulse width, pulse duty cycle, and pulse counting (totalizer).

1.2.8 SP-016

The Omega Link SP-016 Heat Flux Smart Probe provides an easy way to integrate your thermopile-based heat flux sensor to the Omega Link Ecosystem. The SP-016 performs the necessary calculations to provide the heat flux measurement in W/m². The SP-016 accepts heat flux sensors through its M12 4-pin connector and Omega Link Smart Interfaces through its M12 8-pin connector. The optional M12-S-M-FM connector can be utilized to easily connect wire leads typically found on heat flux sensors to your SP-016.



Figure 13: SP-016

The SP-016 supports any single thermopile sensor input (mV/W/ m²) and an additional thermocouple input for temperature compensation.

1.2.9 IF-001 & IF-002

The Omega Link IF-001 Smart Interface cable provides an easy way to configure and monitor Omega Smart Probes. The USB 2.0 compliant device appears as a serial port and is compatible with Windows, iOS, and Linux. The IF-001 provides a Modbus RTU or Modbus ASCII interface to the entire smart sensor register set. An integrated command-line interface allows for quick smart sensor register configuration and monitoring using standard terminal emulators.



Figure 14: IF-001

The 8-pin M12 connector provides 3.3 Vdc power for external Smart Sensor probe with an integrated power monitor to protect against short circuits.

The IF-002 provides seamless integration of your Omega Link Smart Probe to your Modbus network. The IF-002 utilizes a standard M12 5-pin B code connector for RS485 serial transmission and an M12 8-pin connector for Omega Link Smart Probes.



Figure 15: IF-002

The M12 8-pin connector provides power for external Omega Link Smart Probes with an integrated power monitor to protect against short circuits.

1.2.10 IF-006

The Omega Link IF-006 Interface is designed to be used in conjunction with Omega Link Smart Probes. The two elements snap together with a twist of an M12 connector to create a universal solution for any sensor application.

Sensor installations can be further customized using M12 modular extension cables to quickly tailor solutions for any application.

A wide variety of Omega Link Smart Probes are available to create a customized wireless solution that fits your application. Including temperature, humidity, pressure, thermocouple, RTD, process, count, digital pulse, load cell, heat flux, and more.



Figure 16: IF-006

1.3 Omega Link Cloud

The Omega Link Cloud is the bridge between Omega Link Smart Sensing devices and getting your data when you need it on any device with a web browser. The Omega Link Cloud delivers state and status monitoring, data logging, visualization, and analytics. Both the Standard-Free and Pro plans include SMS text and email notifications sent from the system, history reports, and mobile access. Accounts can be created and accessed by visiting: <http://cloud.omega.com>. Subscriptions can be purchased by visiting: <https://www.omega.com/en-us/omega-link-cloud>.

1.4 Omega Enterprise Gateway

Omega Enterprise Gateway is also a bridge between Omega sensing devices and industrial applications. It is a standalone IoT sensing software that delivers device provisioning, state and status monitoring, data logging, visualization, and analytics. A variety of Omega devices are supported by this Gateway software. Typical application deployment scenarios are shown below:

Integrated with Enterprise Applications

Omega Enterprise Gateway can feed sensing data to the OPC UA compliant applications such as SCADA, HMI, MES, etc. via the OPC UA server (licensed). Once the user adds Omega devices to the Gateway, the Gateway automatically exposes all sensing data as OPC UA nodes. The Enterprise application can then pull all OPC UA node values and display them on the screen.

Standalone Solution for Sensing, Archiving, and Analytics

In many environment sensing applications such as hotel room temperature monitoring a building temperature/humidity monitoring, Omega Enterprise Gateway can provide real-time monitoring, alarms, notifications, archiving, and analytics that are required in these applications.

1.5 SYNC Configuration Software

SYNC by Omega is a device configuration and management software platform for qualifying Omega Smart devices. It allows users to configure device runtime parameters, view process values, export data, and allows you to efficiently set your devices to operate under your preferred preferences. SYNC does not support long-term process value storage. We recommend Omega Enterprise Gateway (OEG) software for long-term data logging and analytics. OEG web client is platform-independent.

Device Configuration

SYNC provides a universal interface for the efficient configuration of qualifying Omega devices. For further information regarding a specific Smart Core device, users should refer to the device User's Manual.

Short-Term Data Graphing

Under certain circumstances, users may want to capture device process values to ensure that the device configuration is done correctly. SYNC supports short-term data trend viewing and export. For long-term data capture, consider using Omega Enterprise Gateway.

2 First-Time Ecosystem Setup and Guides

This section is divided into subsections that can be referenced according to the model of Omega Link Gateway being used. Refer to the table of contents for your application.

2.1 Omega Link GW-001 Initial Setup

Refer to the LED color status table below and follow these instructions to power on the GW-001 unit:

LED Color	Status Description
Amber/Orange (solid)	Gateway is powered on; no network connection
Green (blinking repeatedly)	Gateway is in Pairing Mode or Firmware Upgrade was successful
Amber/Orange (blinking + Reboot)	Gateway firmware automatic update
Red (blinking)	Gateway is powering on or Firmware Upgrade in progress
Amber/Orange (blinking 3 times and a 3 second pause)	Enterprise Mode enabled
Green (solid)	IP Address successfully obtained or network connection successful
No Light	Unit is off or in Sleep Mode



Important: For setups that will use Omega Link Cloud, do not power on the Omega Link Gateway or Omega Link Smart Sensor before the Gateway has been registered to an Omega Link Cloud account. Refer to section **4.1.1 Registering an Omega Link Gateway to Omega Link Cloud** for more information.

Step 1: Connect the antenna included with the gateway to the side of the device housing.

Step 2: Connect the DC 12 V adapter to the back of the gateway.

Step 3: Connect an RJ45 Ethernet cable to the port labeled **Ethernet 1** on the gateway.

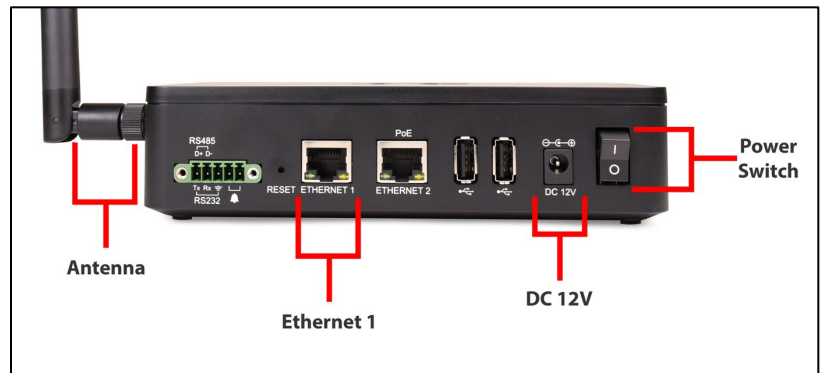


Figure 17: GW-001 connector overview

Step 4: Connect the other end of the Ethernet cable to a DHCP-enabled router with Internet access for first-time setup.




Important: The GW-001 must be connected to a router with internet access when setup for the first time to ensure the latest firmware is automatically downloaded onto the device.

Step 5: Turn the power switch on the gateway to the ON position.

Step 6: The LED light on the Pairing Button will blink red to indicate that the device is booting up and updating firmware.

Once the gateway is connected to the Internet, the Omega Link Gateway unit will automatically download the latest available firmware and the LED status indicator will stay a solid green when the update is complete.

2.1.1.1 Omega Link Cloud Solution

Note  **Note:** Users who will not be creating an Omega Link Cloud account and will be connecting to Omega Enterprise Gateway (OEG) in a non-internet environment should refer to section **2.1.2 Omega Enterprise Gateway Solution**


To register your Omega Link Gateway with Omega Link Cloud, you must first create and register an Omega Link Cloud account. Using any device with a web browser, complete the following steps:

Step 1: Open your browser to *cloud.omega.com*.

Step 2: Click **Sign Up** and complete the registration process.

Once the user credentials are verified, the user can sign in and will be presented with the Omega Link Cloud homepage.

For an organization or company, the person who completes the **Sign Up** process will be considered the Administrator. The Administrator will have the opportunity to create additional non-admin user accounts (Section **4.3.3 Users**).

 **Important:** If multiple Administrator users will be registered under the same company name, it is important that the company name be typed the same way for each admin registration to ensure proper operation when assigning devices.

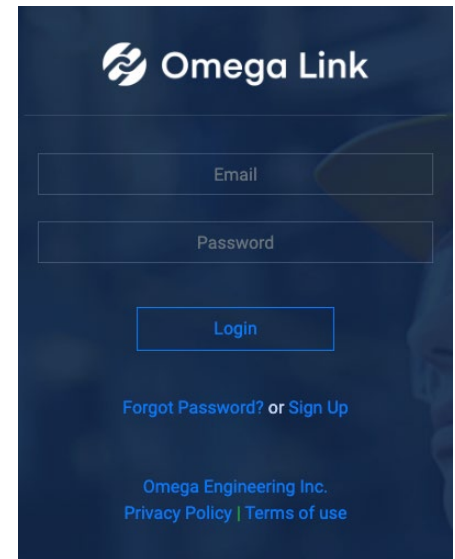


Figure 18: Omega Link Cloud login

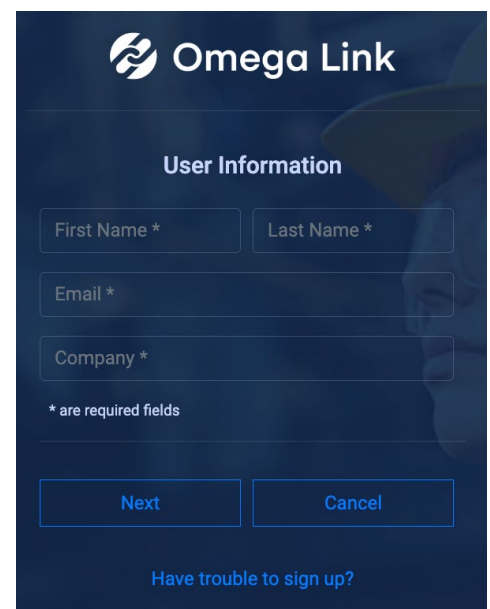


Figure 19: Administrator Account Sign Up

Step 3: From the cloud homepage, click **Add Gateway**.

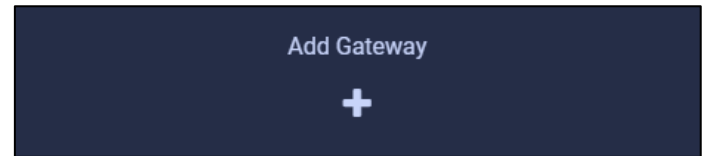


Figure 20: Omega Link Cloud Add Gateway button

Step 4: Type in the **Gateway ID (GID)** from the label on your gateway.

Step 5: Type in the **Registration ID (RID)** from the label on your gateway and click **Register**.



Important: The label containing your Gateway ID and Register ID is located on the bottom of the gateway unit.

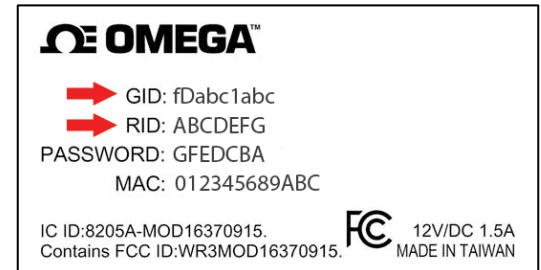




Figure 21: Sample Omega Link Gateway label

Step 6: Once you have successfully registered your gateway, an  icon will appear next to your registered device.

Note

The  icon indicates the gateway may require a firmware update or power cycle. Generally, this icon will disappear once the gateway registration is complete and the device is fully powered on.

2.1.1.1 First-Time Gateway Internal User Interface Access



Important: A firmware update for the GW-001 is required to access the internal UI as listed below. The latest firmware is automatically installed when the GW-001 is connected directly to a router with Internet access.

All Omega Link Gateway models contain an internal user interface (UI) that is used to manually upgrade firmware, add wired sensing devices to the gateway, and add other external accessories and peripherals. When accessing the gateway UI for the first time, with the Gateway still plugged in to the DHCP-enabled router with Internet access, follow the steps below:

Step 1: Using a PC or a device with a web browser on the same network as the connected GW-001, type the following URL: <http://omegaiotgatewayXXXX.local> (Where the XXXX are the last 4 digits of the GW-001 MAC address printed on the rear label).



Important: If the user is unable to access the Gateway UI using the DHCP-router method, the Bonjour Service may need to be installed. The service can be downloaded from the following URL: <http://omegaupdates.azurewebsites.net/software/bonjour>

Step 2: From the gateway UI login screen, enter the password on the rear label of the unit. When entered successfully, the user will be prompted to create a new password.

Once the user has accessed the UI for the first time, they may leave the network settings as DHCP, or they may choose a Static IP under the Network Settings menu. Additionally, after the first-time setup, the user may choose to enable Enterprise Mode to pair the GW-001 to an Omega Enterprise Gateway (OEG) account. Refer to the section titled **2.1.2 Omega Enterprise Gateway Solution** to learn more about how to enable Enterprise Mode and to pair a GW-001 to OEG, or continue below for an explanation of the different menus available in the GW-001 internal UI.

2.1.2 Omega Enterprise Gateway Solution

An Omega Link Gateway can be added to Omega Enterprise Gateway (OEG) in a non-internet environment by enabling **Enterprise Mode** on the Gateway unit. To add an Omega Link Gateway to OEG, the **Cloud Registration** option needs to be disabled by accessing the **System Settings** in the Gateway web UI. Once disabled, the gateway will be in **Enterprise Mode**.



Important: If the OEG License being used has not been activated, an internet connection will be needed for a one-time license activation before proceeding. Adding an Omega Link Gateway as a Device to OEG is only available on non-trial licenses of OEG.

Step 1: Navigate to the **Security Settings** in the Gateway UI.

Step 2: Click the Turn Off Cloud Registration checkbox to disable the feature and set the GW-001 to **Enterprise Mode**.

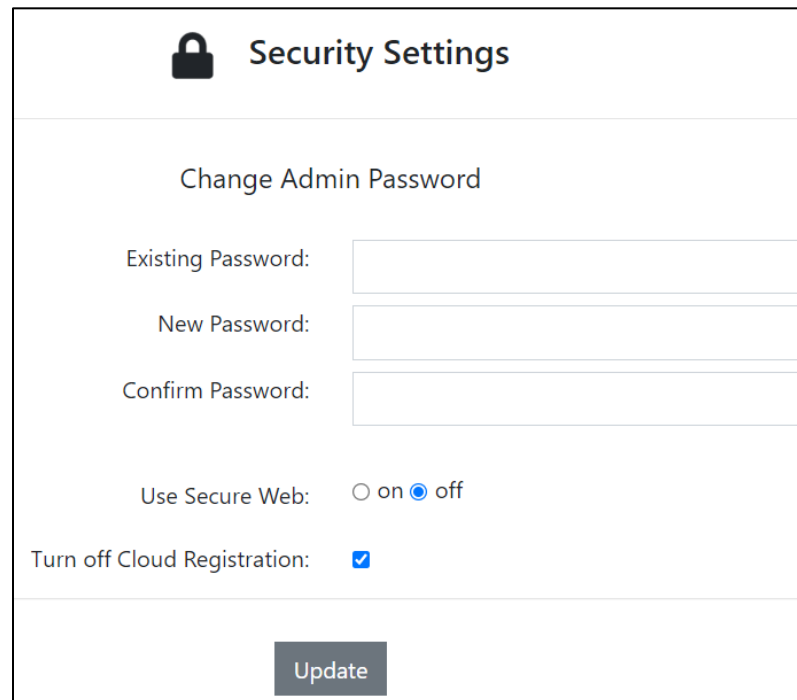


Figure 22: Gateway UI Security Settings – Turn off Cloud Registration


Step 3: Click the **Update** button to save the setting change. The gateway LED will flash orange 3 times indicating the device is in Enterprise Mode.



Note: The GW-001 may be configured to use a Static IP rather than the default DHCP. If these settings are changed, the PC or local-area network router must be on the same local-area network as the Static IP address assigned to the GW-001 unit.

If the GW-001 will be moved and connected to a local-area network, it should be moved now and connected directly to a DHCP-enabled, local-area network router or local-area network PC.

Step 4: Launch and log in to your Omega Enterprise Gateway account.

Step 5: Click the  icon or **Add Devices**. Then select **GW-001-Series Gateway** from the Product Family dropdown and **GW-XXX-X** from the **Product Model** dropdown.

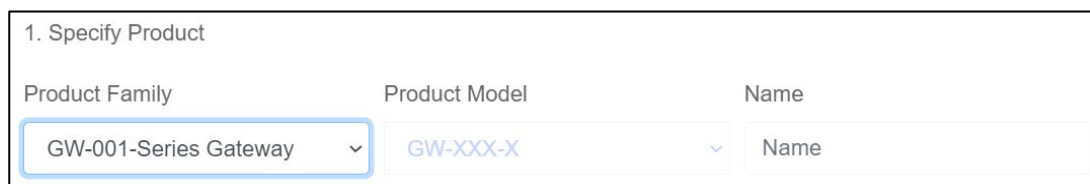


Figure 23: OEG interface Add Device menu – Omega Link GW-XXX-X

Step 6: Input the IP Address of the connected Omega Link Gateway **as it appears in your local-area network**.

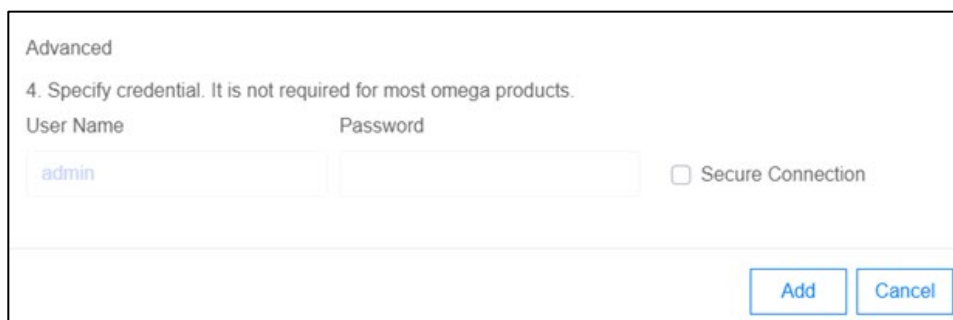


Figure 24: OEG interface Add Device menu – Connection Parameters



Important: If the DHCP-enabled GW-001 unit has been disconnected and moved to a separate DHCP-enabled, local-area network router or PC, the user must log back into the gateway internal UI to identify the new IP Address that the unit has been assigned under the local-area network.

Step 7: Click **Advanced** to reveal the text field for Username and Password. The Username will automatically populate to “admin.” Input the password required to access the gateway internal UI in the **Password** textbox.



The screenshot shows a web form titled "Advanced" with the instruction "4. Specify credential. It is not required for most omega products." Below this, there are two input fields: "User Name" and "Password". The "User Name" field is pre-filled with the text "admin". To the right of the "Password" field is a checkbox labeled "Secure Connection". At the bottom right of the form are two buttons: "Add" and "Cancel".

Figure 25: OEG Interface Add Device menu – Gateway Username and Password input

Step 8: Click Add to finalize your configuration.

All devices connected to the Omega Link Gateway will appear, including those that are offline. The readings from offline units will display NaN. For more information on how to navigate OEG, refer to the OEG Software User's Manual.



Note: The maximum reading interval is 120 seconds for Omega Link Gateway. After switching to **Enterprise Mode** from **Cloud Mode**, the Omega Link Gateway device should be manually powered off and on again. Omega Enterprise Gateway should also be restarted from the Windows OS Services application. In the future, if users will be using the Omega Link Cloud service, they must navigate to the Gateway web UI again to uncheck the **Turn off Cloud Registration** box.

2.1.2.1 Configuring Sensing Devices after Pairing with OEG

If a sensing device paired wirelessly or wired directly to the Omega Link Gateway has been configured or modified after the Omega Link Gateway has been added to OEG, the user must reboot the Omega Link Gateway and restart the OEG software to sync with the configuration made to the connected device.

2.2 Omega Link GW-002 Initial Setup

Refer to the LED color status table below and follow these instructions to power on the GW-002 unit:

Gateway LED Color	Status Description
Amber/Orange (solid)	Gateway is powered on; no network connection
Green (blinking repeatedly)	Gateway is in Pairing Mode or Firmware Upgrade was successful
Amber/Orange (blinking + reboot)	Gateway firmware automatic update
Red (blinking)	Gateway is powering on or Firmware Upgrade in progress
Green (solid)	IP Address successfully obtained or network connection successful
No Light	Unit is off or in Sleep Mode

Once your gateway is registered to your Omega Link Cloud, follow these instructions to power on your gateway:

Step 1: Connect the Sub GHz antenna and the LTE antenna included with your gateway to the sides of the gateway housing.

Step 2: Connect the DC 12V adapter to the back of the gateway.

Step 3: Turn the power switch on the gateway to the ON position.

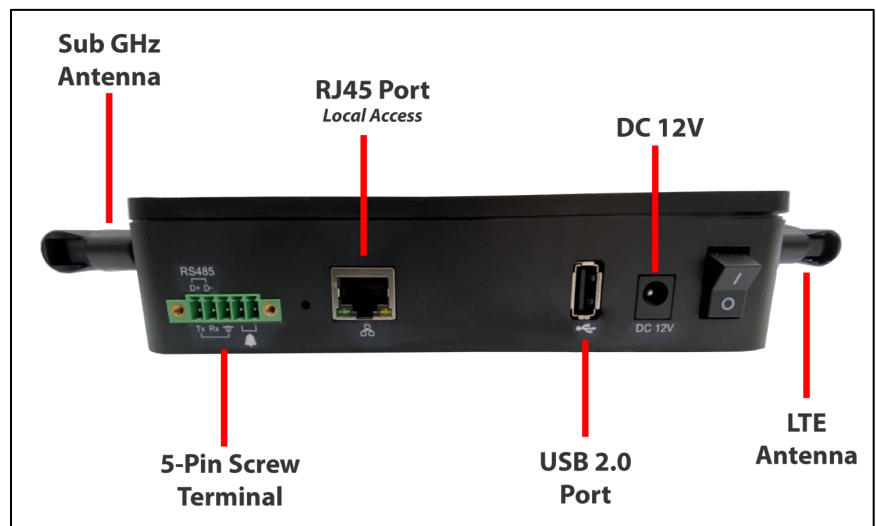


Figure 26: GW-002 Series input connectors (varies by model)

Step 4: The LED light on the **Pairing Button** will blink red to indicate that it is booting up.

Note: If the LED light is solid red, your gateway is unable to connect to the network and there may be an issue with the cellular service. Contact Omega Engineering for additional help.

Once the gateway is communicating through the LTE network, the light will stay a solid green. Your gateway can now accept connections from an Omega Link Smart Sensor, wired sensors, and controller devices such as TCP ModBus or Serial ModBus depending on the gateway model you have purchased.

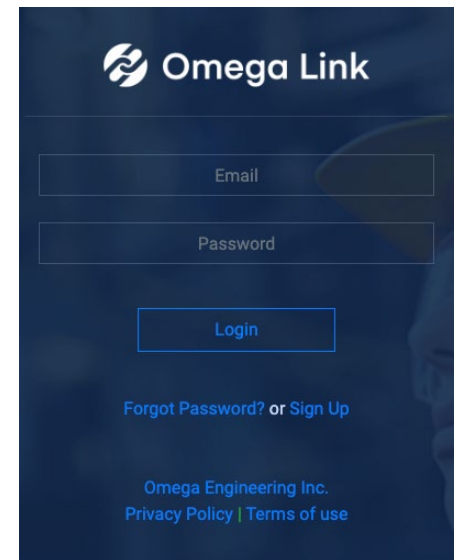
2.2.1 Omega Link Cloud Solution

To register your Omega Link Gateway with Omega Link Cloud, you must first create and register an Omega Link Cloud account. Using any device with a web browser, complete the following steps:

Step 1: Open your browser to *cloud.omega.com*.

Step 2: Click **Sign Up** and complete the registration process.

Once the user credentials are verified, the user can sign in and will be presented with the Omega Link Cloud homepage.



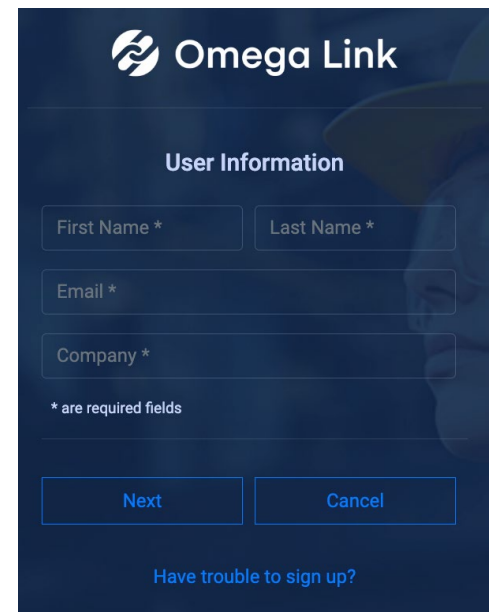
The image shows the Omega Link Cloud login page. It features the Omega Link logo at the top. Below the logo are two input fields for 'Email' and 'Password'. A 'Login' button is positioned below these fields. At the bottom of the form, there is a link for 'Forgot Password? or Sign Up' and a footer for 'Omega Engineering Inc.' with links to 'Privacy Policy' and 'Terms of use'.

Figure 18: Omega Link Cloud login

For an organization or company, the person who completes the **Sign Up** process will be considered the Administrator. The Administrator will have the opportunity to create additional non-admin user accounts (Section 4.3.3 Users).



Important: If multiple Administrator users will be registered under the same company name, it is important that the company name be typed the same way for each admin registration to ensure proper operation when assigning devices.



The image shows the 'User Information' form for Administrator Account Sign Up. It includes input fields for 'First Name *', 'Last Name *', 'Email *', and 'Company *'. A note states '* are required fields'. At the bottom, there are 'Next' and 'Cancel' buttons, and a link for 'Have trouble to sign up?'.

Figure 28: Administrator Account Sign Up

Step 3: From the cloud homepage, click **Add Gateway**.

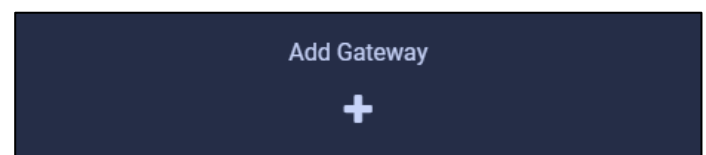


Figure 29: Omega Link Cloud Add Gateway button

Step 4: Type in the *Gateway ID (GID)* from the label on your gateway.


Step 5: Type in the *Registration ID (RID)* from the label on your gateway and click **Register**.




Important: The label containing your Gateway ID and Register ID is located on the bottom of the gateway unit.



Figure 30: Sample Omega Link Gateway label

Step 6: Once you have successfully registered your gateway, an  icon will appear next to your registered device.

Note

Note: The  icon indicates the gateway may require a firmware update or power cycle. Generally, this icon will disappear once the gateway registration is complete and the device is fully powered on.

2.2.1.1 First-Time Gateway Internal User Interface Access



Important: A firmware update for the GW-002 is required to access the internal UI as listed below. The latest firmware is automatically installed when the GW-002 is connected to the Internet.

All Omega Link Gateway models contain an internal user interface (UI) that is used to manually upgrade firmware, add wired sensing devices to the gateway, and add other external accessories and peripherals. The GW-002 comes with a factory default Static IP, however, DHCP can be enabled from the gateway internal UI. To access the internal gateway UI for the first time, connect the gateway unit directly to a PC using an RJ45 Ethernet cable and follow the steps below:



Important: The GW-002-LTE gateway has a default static IP address of **192.168.0.50**.

Step 1: Navigate to the **Windows Control Panel** and click **Network and Sharing Center**.

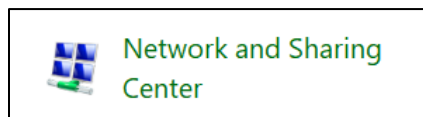


Figure 31: Windows Network and Sharing Center

Step 2: Click the **Unidentified Network** Connection.

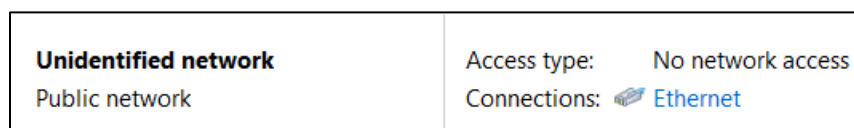


Figure 32: Unidentified Network - Gateway Direct to PC

Step 3: Click Properties

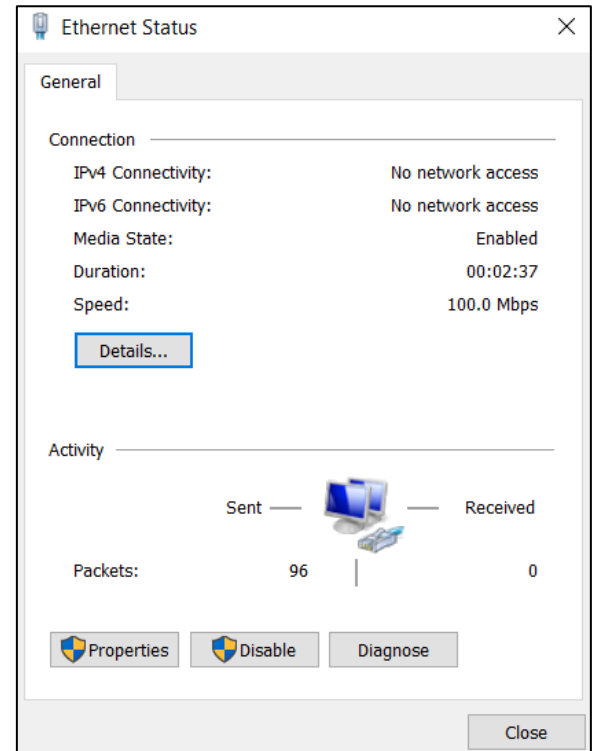


Figure 33: Ethernet Status menu

Step 4: Click Internet Protocol Version 4 (TCP/IPv4) to highlight the selection and then click Properties.

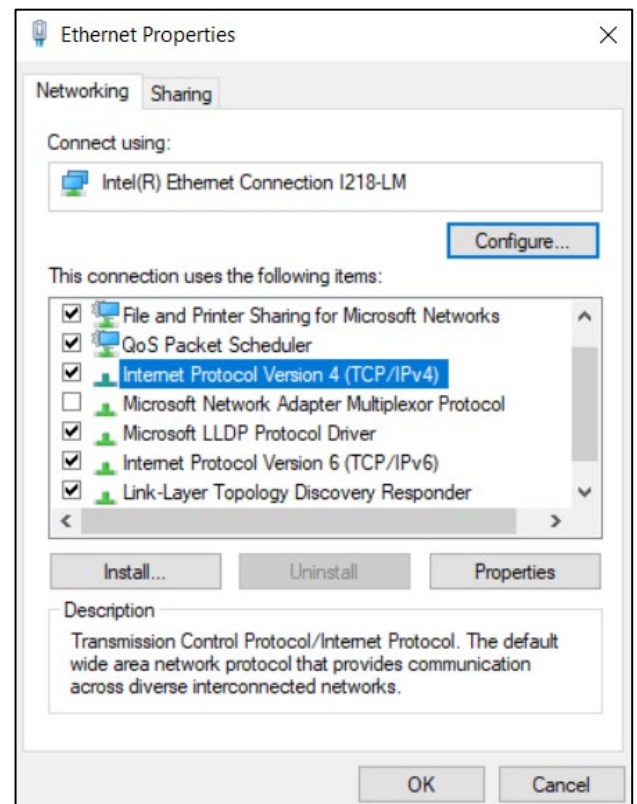


Figure 34: Ethernet Properties and TCP/IPv4

Step 5: Fill out the field for the IP address with the following:

192.68.0.XXX

(Where **XXX** is any value that is **NOT** 50)

Fill the Subnet Mask field with the following: **255.255.255.0**

Click **OK** to finalize the changes.

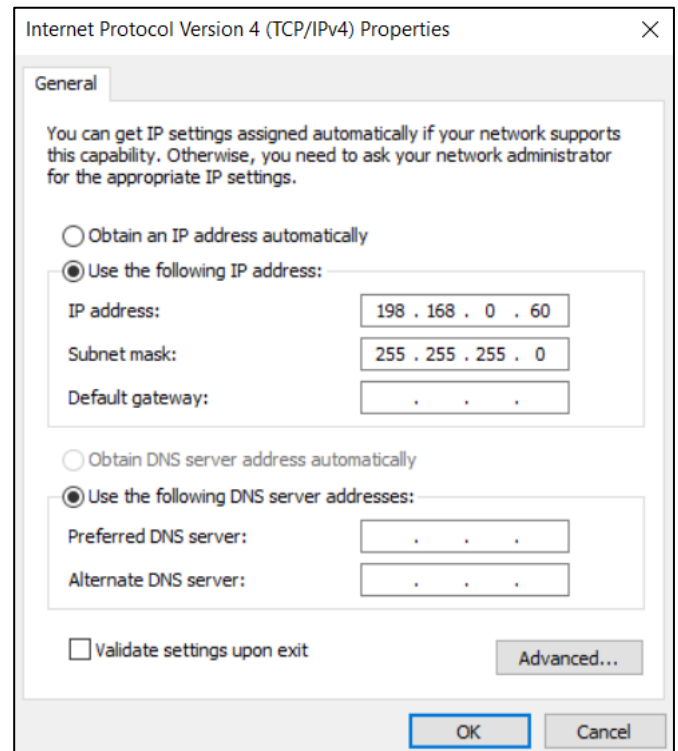


Figure 35: Internet Protocol Version 4 (TCP/IPv4) Properties

Step 6: Open a web browser and navigate to the following address to access the web UI:

http://192.168.0.50

Step 7: From the gateway UI login screen, enter the password on the rear label of the unit. When entered successfully, the user will be prompted to create a new password.



Figure 36: Gateway unit label

Once the user has accessed the UI for the first time, they may leave the network settings as DHCP, or they may choose a Static IP under the **Network Settings** menu of the gateway UI.

2.3 Pairing a Sensing Device to an Omega Link Gateway

Refer to either the Wireless Pairing or Wired Pairing instructions as applicable.

2.3.1 Wireless Pairing

Pairing your wireless Smart Interface (IF-006) or Smart Sensor is made easy with a one-button pairing system between the IF-006 or Smart Sensor and the Omega Link Gateway.



Important: The pairing instructions for the SS-001-RUG differ from the standard wireless pairing procedure. Refer to section **2.3.1.1 SS-001-RUG Pairing** to pair an SS-001-RUG to your Omega Link Gateway.

Step 1: Push the pairing button once on your Smart Sensor or IF-006 device. The LED Status Indicator will blink green indicating it is in Pairing Mode.

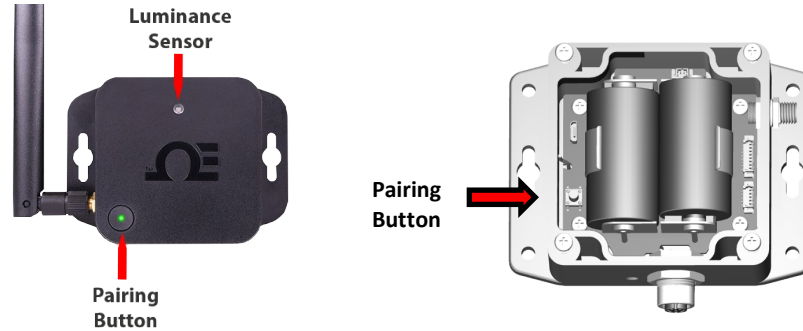


Figure 37: Pairing Button locations

Step 2: Quickly push the pairing button on the Omega Link Gateway. The LED on the Gateway will blink green indicating the Gateway is in Pairing Mode.

When the IF-006 or Smart Sensor has been successfully paired to the Omega Link Gateway, the LED will stop blinking on both devices.

2.3.1.1 SS-001-RUG Pairing

To pair an SS-001-RUG sensor to an Omega Link Gateway, follow the instructions below:

Step 1: Locate the small pinhole on the underside of the SS-001-RUG unit and insert a paperclip to press the button once. The LED Status Indicator at the top of the unit will blink green once when successfully completed.

Step 2: Quickly push the pairing button on the Omega Link Gateway. The LED on the Gateway will blink green indicating the Gateway is in Pairing Mode.

When the SS-001-RUG has successfully been paired to the Gateway, the LED status indicator will briefly flash orange before flashing green one more time.

Note: Holding the pinhole button on the underside of the unit for longer than 5 seconds will reset the sensor to its factory default settings.

2.3.2 Wired Pairing

Wired Smart Probes connected directly to an Omega Link Gateway with an IF-001 cable or IF-002 will need to add the device to the Gateway Internal User Interface.

The **Connected Devices** tab is the default page set once you are signed in to the internal gateway UI. From here, you can add devices to your gateway to have them appear in your Omega Link Cloud account.

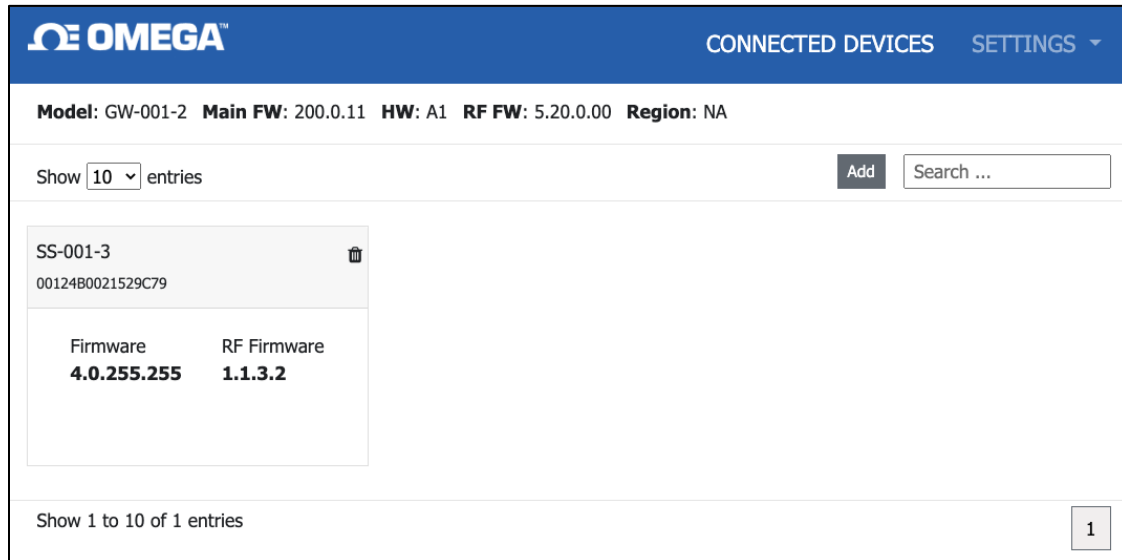




Figure 38: Gateway Internal User Interface

To add a device to your gateway from the internal gateway web UI, begin by clicking the  button at the top right of the web page. Refer to section **3.1 Connected Devices – Main Interface** for more information.

2.4 Removing a Paired Smart Sensor from a Gateway

To remove a paired Smart Sensor (such as the SS-001) from a Gateway, follow the steps below:

Step 1: Log in to the Omega Link Cloud account associated with the paired devices.

Step 2: From the Omega Link Cloud device readings page, identify the Smart Sensor that will be removed, and click the Trash Can icon .

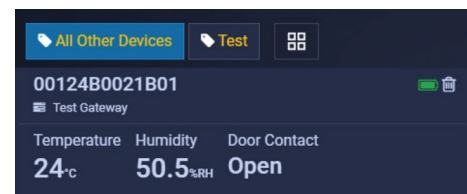



Figure 39: Omega Link Cloud UI Smart Sensor


2.4.1 How to Move a Paired Smart Sensor to a Different Gateway

To move a paired Smart Sensor (such as the SS-001) to a different Gateway, follow the steps below:

 **Note:** When moving a paired Smart Sensor to a different Gateway, alarm and event thresholds may be triggered and notifications based on user preference may be delivered. Notifications sent as a result of the re-pairing process may be disregarded.

Step 1: Navigate to the Omega Link Cloud Portal that is associated with the Smart Sensor and remove the Smart Sensor from the account.

Step 2: Ensure the unit is being powered with either a USB connection or batteries. Press and hold the Pairing Button on their Smart Sensor for 8 seconds so that the LED Status Indicator blinks red to factory reset the device, then release the pairing button.

 **Note:** The Pairing Button for the SS-001-RUG is in a pinhole on the underside of the device. Use a paperclip to press and hold the pairing button for 8 seconds so that the LED Status Indicator blinks red to factory reset the device, then release the pairing button.

After the factory reset, the LED Status Indicator on the Smart Sensor will turn Amber/Orange indicating the device is in pairing mode and is ready to be paired to a new Gateway.

2.5 Configure your Smart Sensing Device with SYNC

2.5.1 Smart Sensor

Users who will be configuring a Smart Sensor may connect their Smart Sensor directly to a PC running SYNC configuration software using a micro-USB 2.0 cable. SYNC will then auto-detect the connected device and display the configuration options available. Once the configuration process is complete, the device may be disconnected. Refer to section **6.2 Configuring Smart Probes and Wireless Devices** for more information.

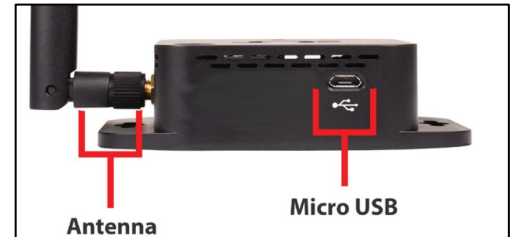


Figure 40: Smart Sensor USB port

2.5.2 Smart Probe and Smart Interface

Step 1: Connect the Smart Probe to the Smart Interface.

Note: Locate the position of the keyway as a guide on the smart probe prior to making the connection.

Step 2: Connect the Smart Interface to the PC running SYNC configuration software.

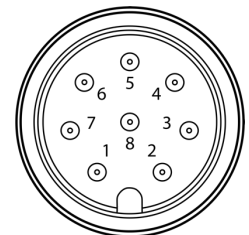


Figure 41: M12 8-Pin Smart Probe connector front view

SYNC will then auto-detect the connected device and display the configuration options available. Once the configuration process is complete, the device may be disconnected. Refer to section **6.2 Configuring Smart Probes and Wireless Devices** for more information.

3 Navigating the Omega Link Gateway UI

3.1 Connected Devices – Main Interface

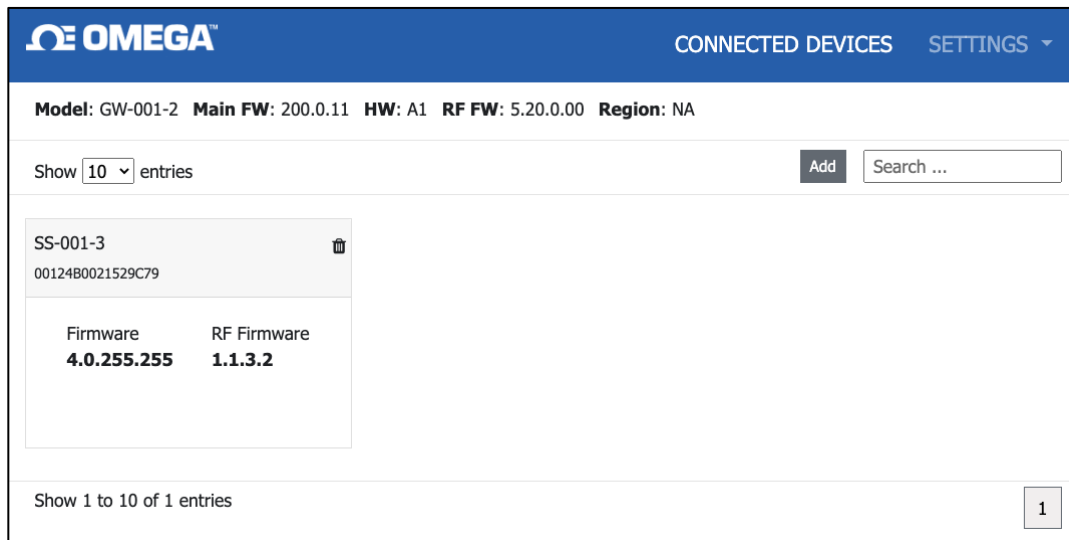



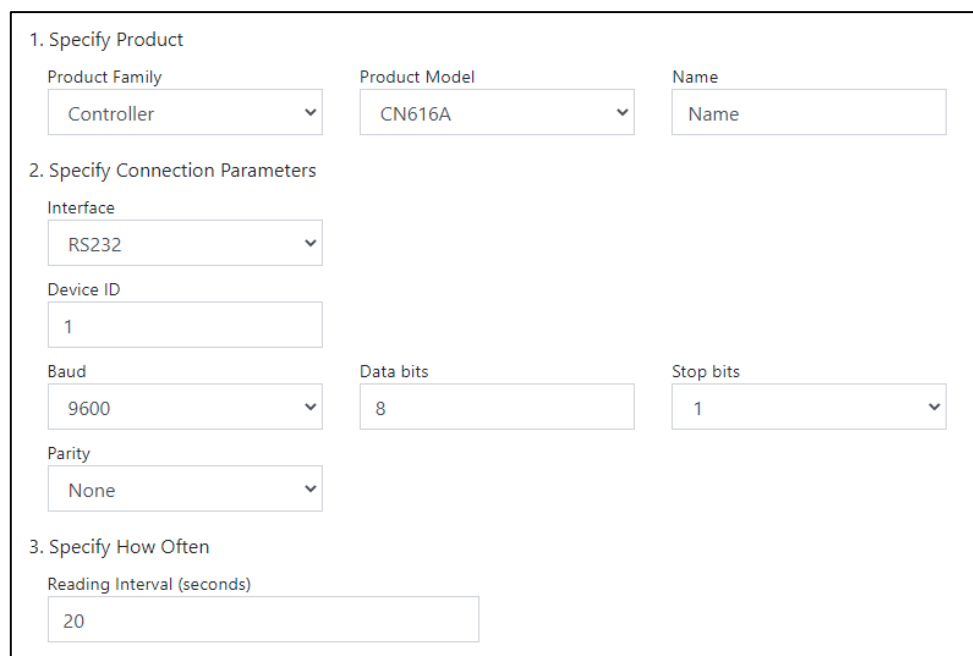
Figure 42: Gateway web UI main page - Connected Devices

The **Connected Devices** tab is the default page that appears when a user has successfully signed in to the internal gateway UI. From here, users can add wired devices to the gateway to have them appear in your Omega Link Cloud or OEG account. Wirelessly paired devices will appear here as well. To pair a wired device to your gateway from the internal gateway web UI, begin by clicking

the  button at the top right of the web page. For more information on how to pair a wireless sensing device such as an Omega Link Smart Probe or Smart Sensor, refer to section: **2.3 How to Pair a Sensing Device to an Omega Link Gateway**.

3.1.1 Controller

When adding a controller, ensure the **Product Family** dropdown is set to **Controller**, and choose your controller type from the **Product Model** dropdown. You can then set the communication parameters for your device including the interface type, baud rate, data bits, stop bits, parity, device ID, and reading interval.



1. Specify Product

Product Family: Controller
Product Model: CN616A
Name: Name

2. Specify Connection Parameters

Interface: RS232
Device ID: 1
Baud: 9600
Data bits: 8
Stop bits: 1
Parity: None

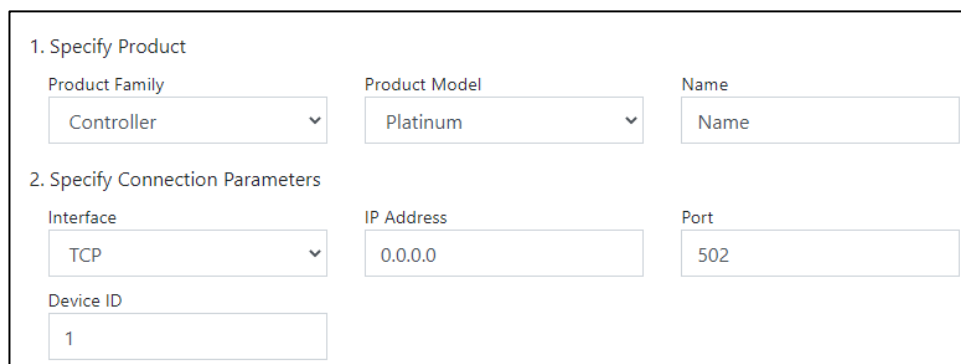
3. Specify How Often

Reading Interval (seconds): 20

Figure 43: Add Device – Controller Setup

3.1.1.1 Omega Platinum

Omega Platinum controllers being added to the GW-001 require users to identify the IP address and Port number of the Controller device.



1. Specify Product

Product Family: Controller
Product Model: Platinum
Name: Name

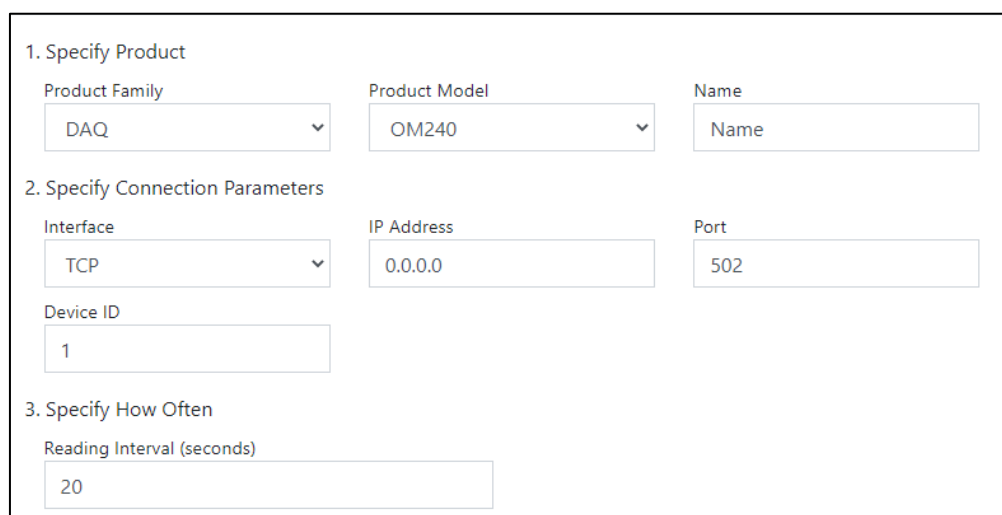
2. Specify Connection Parameters

Interface: TCP
IP Address: 0.0.0.0
Port: 502
Device ID: 1

Figure 44: Platinum series controller Add Device interface

3.1.2 DAQ

To add a DAQ device, select it from the **Product Family** dropdown and select your **Product Model** from the dropdown. You can then set the communication parameters for your device including interface type, IP address, port number, device ID, and reading interval.



The interface for adding a DAQ device is divided into three sections:

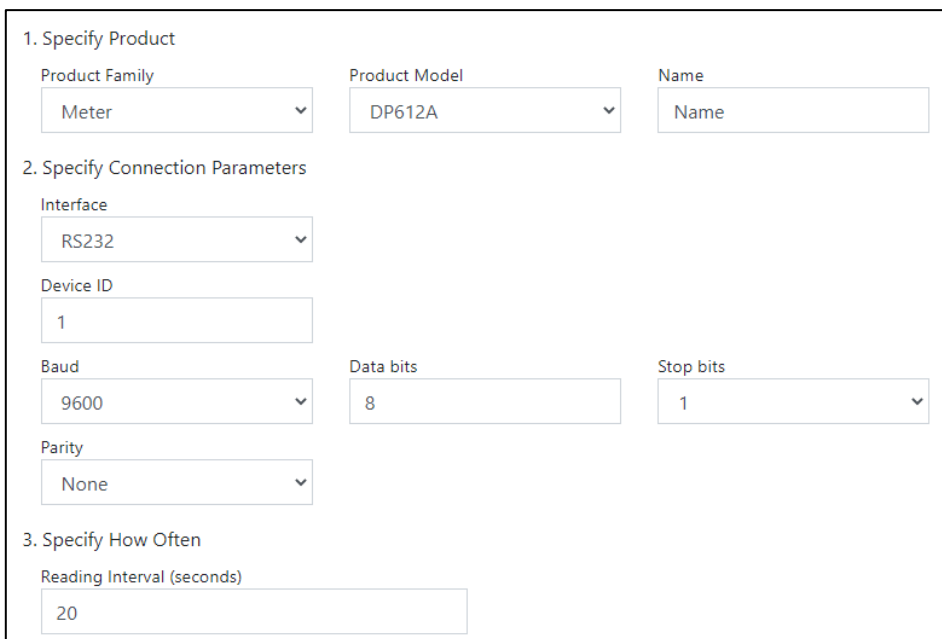
- 1. Specify Product**
 - Product Family:** A dropdown menu with 'DAQ' selected.
 - Product Model:** A dropdown menu with 'OM240' selected.
 - Name:** A text input field with the placeholder text 'Name'.
- 2. Specify Connection Parameters**
 - Interface:** A dropdown menu with 'TCP' selected.
 - IP Address:** A text input field with '0.0.0.0' entered.
 - Port:** A text input field with '502' entered.
 - Device ID:** A text input field with '1' entered.
- 3. Specify How Often**
 - Reading Interval (seconds):** A text input field with '20' entered.

Figure 45: DAQ series Add Device interface

Omega DAQ devices require users to know the IP address of their controller device. An IP scanner software can be used to identify the DAQ IP address.

3.1.3 Meter

To add a Meter device, select it from the **Product Family** dropdown and select your **Product Model** from the dropdown. You can then set the communication parameters for your device including the interface type, baud rate, data bits, stop bits, parity, device ID, and reading interval.



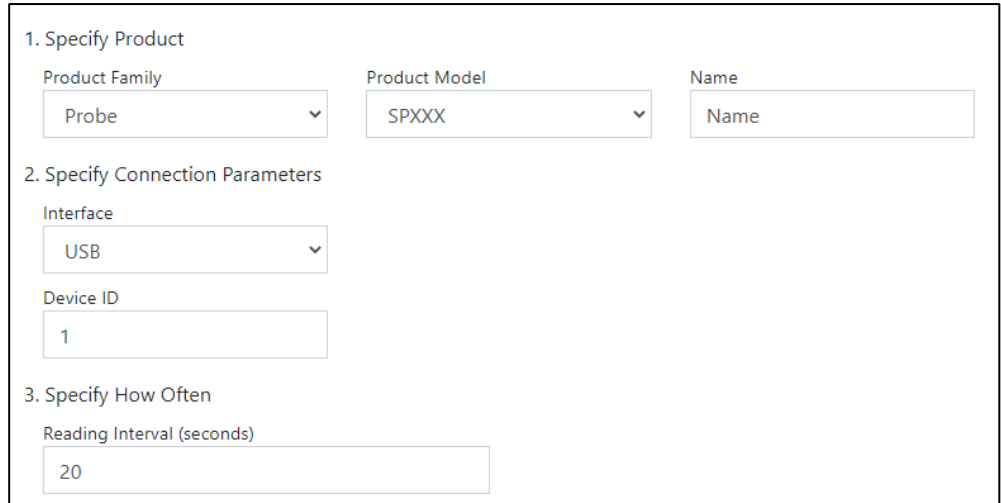
The interface for adding a Meter device is divided into three sections:

- 1. Specify Product**
 - Product Family:** A dropdown menu with 'Meter' selected.
 - Product Model:** A dropdown menu with 'DP612A' selected.
 - Name:** A text input field with the placeholder text 'Name'.
- 2. Specify Connection Parameters**
 - Interface:** A dropdown menu with 'RS232' selected.
 - Device ID:** A text input field with '1' entered.
 - Baud:** A dropdown menu with '9600' selected.
 - Data bits:** A text input field with '8' entered.
 - Stop bits:** A dropdown menu with '1' selected.
 - Parity:** A dropdown menu with 'None' selected.
- 3. Specify How Often**
 - Reading Interval (seconds):** A text input field with '20' entered.

Figure 46: Meter Add Device interface

3.1.4 Probe

To add a Smart Probe, select it from the **Product Family** dropdown and select your **Product Model** from the dropdown. You can then set the communication parameters for your device including the interface type, device ID, and reading interval.



The screenshot shows a web form for adding a Smart Probe. It is divided into three sections:

- 1. Specify Product**: Contains two dropdown menus. The first is labeled "Product Family" and has "Probe" selected. The second is labeled "Product Model" and has "SPXXX" selected. To the right of these is a text input field labeled "Name" with the placeholder text "Name".
- 2. Specify Connection Parameters**: Contains two dropdown menus. The first is labeled "Interface" and has "USB" selected. Below it is a text input field labeled "Device ID" with the value "1" entered.
- 3. Specify How Often**: Contains a text input field labeled "Reading Interval (seconds)" with the value "20" entered.

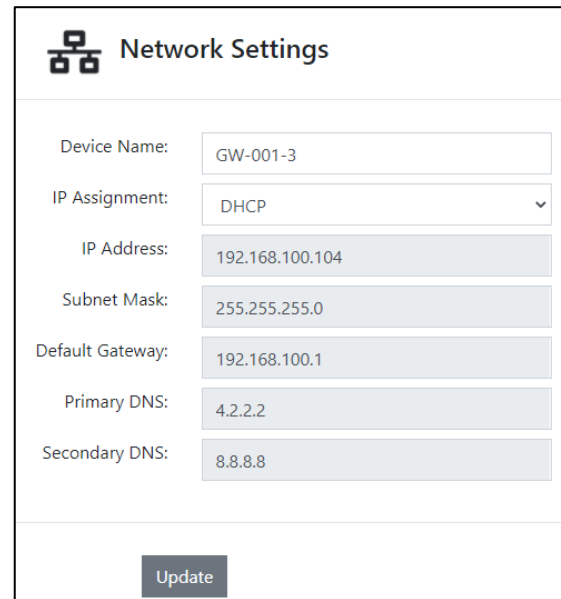
Figure 47: Omega Link Smart Probe Add Device interface

3.2 Omega Link Gateway Settings

Click the settings tab to view log data, update gateway firmware versions, change security passwords, and view current network settings.

3.2.1 Network Settings

To view and change the Network settings, select it from the **Settings** dropdown at the top right of the webpage UI. From here, you can change your gateway device name and change your **IP Assignment** between DHCP and Static IP.



The screenshot shows the "Network Settings" page of the Gateway UI. It features a header with a network icon and the title "Network Settings". Below the header, there are several configuration fields:

- Device Name:** A text input field containing "GW-001-3".
- IP Assignment:** A dropdown menu with "DHCP" selected.
- IP Address:** A text input field containing "192.168.100.104".
- Subnet Mask:** A text input field containing "255.255.255.0".
- Default Gateway:** A text input field containing "192.168.100.1".
- Primary DNS:** A text input field containing "4.2.2.2".
- Secondary DNS:** A text input field containing "8.8.8.8".

At the bottom of the form is a dark grey button labeled "Update".

Figure 48: Gateway UI Network Settings

3.2.2 Security Settings

To manage the password required to access your gateway web UI, select the **Security** option from the **Settings** dropdown at the top right of the webpage UI. From here, users can turn off the cloud registration to enable Enterprise Mode on GW-001 models.

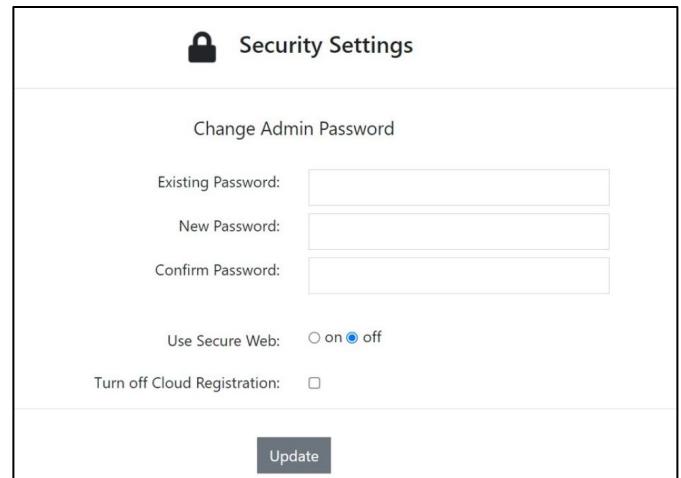



Figure 49: Gateway UI Password and Security Settings

3.2.3 System Settings

To update your gateway firmware version, factory reset your device, or soft reboot your device, select **System** from the **Settings** dropdown at the top right of the webpage UI. When updating the firmware version, click **Check Online** to download the latest firmware version available for your gateway. Then, click the  icon to find the file on your computer. Finally, click **Upload** to get the latest firmware on your gateway.

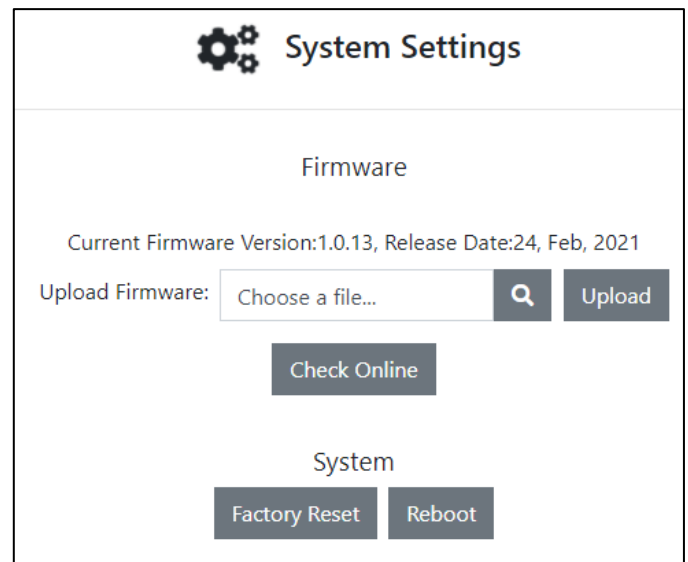


Figure 50: Gateway UI System Setting, Firmware update, and Factory Reset interface



Warning: Clicking the **Factory Reset** button erases all saved data and configurations. Your gateway will be changed back to the default, out-of-the-box settings.

3.2.3.1 How to Update the Firmware on an Omega Link Gateway

Once in the **System Settings**, the user may click the magnifying glass icon accompanying the **Upload Firmware** box to open the **File Explorer**. Select the new firmware file and click **Open**. Click **Upload** to confirm the firmware upgrade. A red LED on the gateway will indicate that the upgrade is in process.

Once the update process is complete, log out and log back in. The new firmware version will appear on the main page of the internal gateway interface.

3.2.4 Log

Select **Log** from the **System** dropdown to view a time-stamped report of the events that have occurred with your gateway.


 Log		
Page 1 / 1		
Time	Level	Log
4/12/2021, 11:36:32 PM	Info	connected to iotHub
4/12/2021, 11:36:32 PM	Info	connected to the cloud
4/12/2021, 11:36:28 PM	Info	provisioned gateway successfully
4/12/2021, 11:36:12 PM	Info	connected to the Internet
4/12/2021, 11:35:46 PM	Info	started radio manager

Figure 51: Gateway UI Log table

4 Navigating the Omega Link Cloud User Interface

The primary user interface tabs (**Devices**, **Historian**, and **System**) and their functionality are described in the sections that follow.

4.1 Devices

After signing in, the **Devices** tab immediately presents the readings of all registered Omega Link Gateways and their connected sensing devices. From here, users may access connected gateway details, add additional gateways to the cloud account, monitor device health, and access specific sensor analytics.

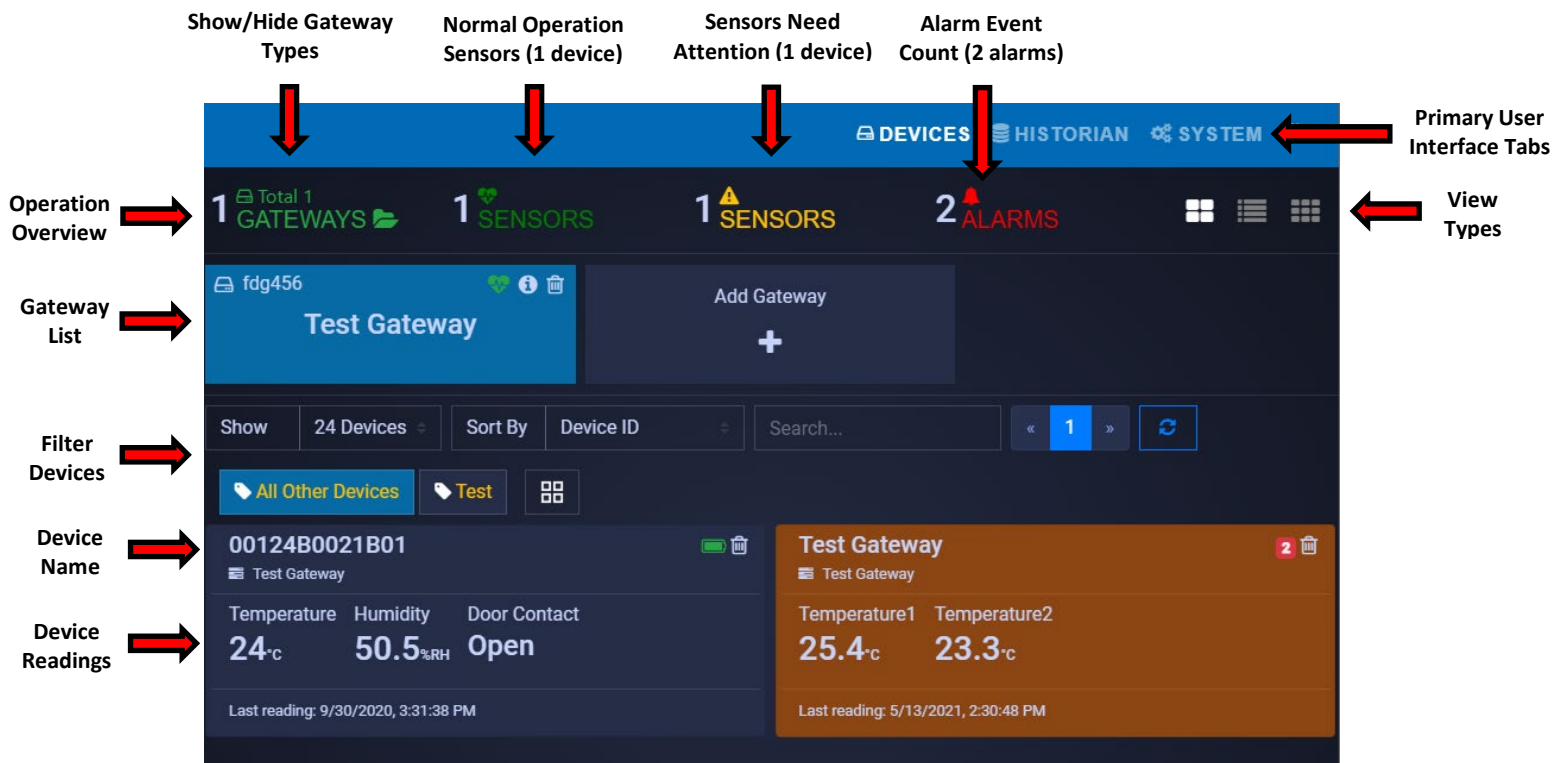


Figure 52: Omega Link Cloud Devices tab

4.1.1 Registering an Omega Link Gateway to Omega Link Cloud

After logging in, follow the steps below to connect an Omega Link Gateway to the Omega Link Cloud.

Step 1: From the Omega Link Cloud Devices homepage, click **Add Gateway**.

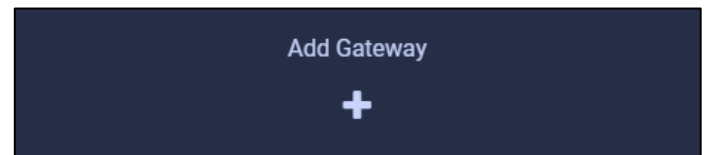


Figure 53: Omega Link Cloud Add Gateway button

Step 2: Type in the **Gateway ID (GID)** from the label on your gateway.

Step 3: Type in the **Registration ID (RID)** from the label on your gateway and click **Register**.



Important: The label containing your Gateway ID and Register ID is located at the bottom of the gateway unit.

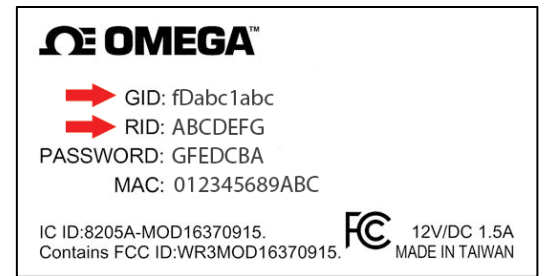




Figure 54: Sample Omega Link Gateway label


Step 4: Once you have successfully registered your gateway, an  icon will appear next to your registered device.



Note: The  icon indicates the gateway may require a firmware update or power cycle. Generally, this icon will disappear once the gateway registration is complete and the device is fully powered on.

Once you have access to your account and have completed your initial device pairing, you will be presented with your connected devices on the Omega Link Cloud interface.

4.1.1.1 Gateway Details

To view your gateway details or change the name of your device, click the  icon associated with the gateway you wish to view. From here, you will be able to change your gateway name and view your gateway ID, firmware version, model number, initial boot-up date and time, hardware type, manufacturer, and last recorded device heartbeat.

Gateway ID: fdg4560d1be

Gateway Name

Test Gateway


Firmware	Hardware
1.0.13	A1
Model	Manufacturer
GW-001-3	Omega Engineering Inc.
Boot Up	Last Heart Beat
4/12/2021, 11:35:25 PM	4/15/2021, 5:31:37 PM

Cancel

Ok

Figure 55: Omega Link Cloud registered gateway

4.1.2 Management

Clicking the management  icon allows you to create customizable groups of gateways, assign gateways to admins, and assign alarm notifications to other users.

4.1.2.1 Creating a Device Group and Adding Devices

To create a **Device Group** and add sensing devices to that group, follow these instructions:

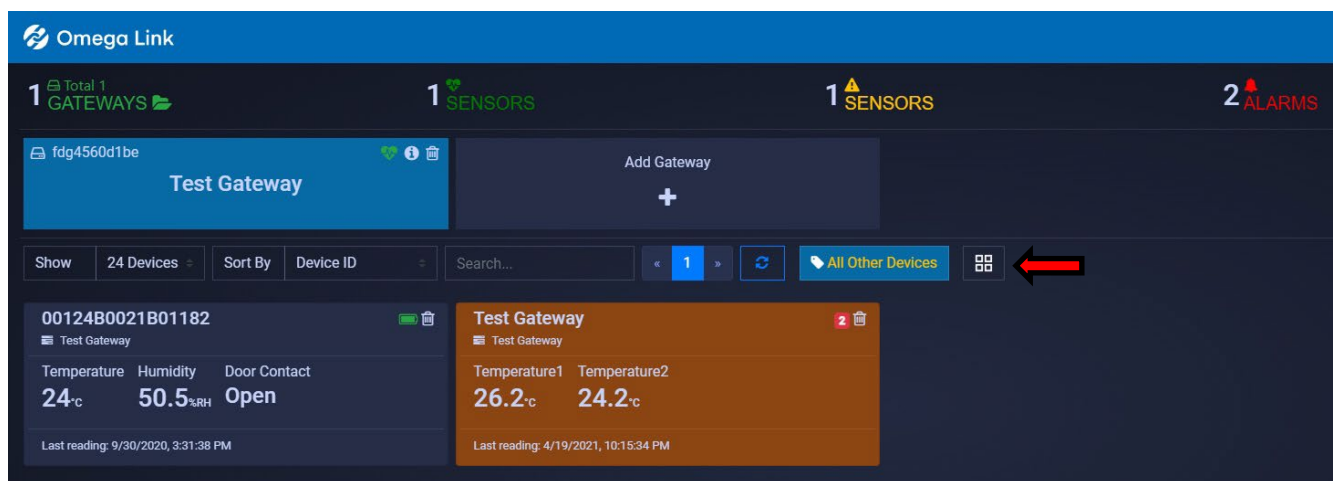


Figure 56: Omega Link Cloud devices homepage

Step 1: On the Omega Link Cloud homepage, click on the management icon .

Step 2: Click **Groups**, then click **Add Group** and create a name for your group. Click **Create** to finalize.

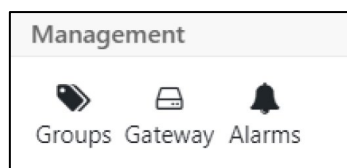



Figure 57: Device Management options

Figure 58: New Group Interface

Note: The dropdown for **Nest Group Under** can be disregarded.

Step 3: Once your group is created, a pop-up window will appear with the title **Manage Device Groups**. Click the  icon to add a user's email address and grant them access to the group. Click **OK** to finalize the changes.

Note: Before adding a user to a group, the user must be granted access to the Omega Link Cloud account by completing the steps outlined in section 4.3.3.1 How to Add Non-Admin Users.

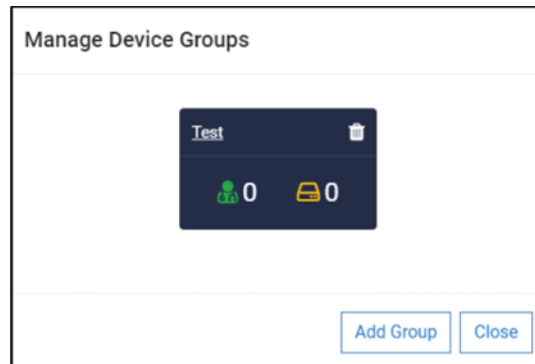


Figure 59: Device group management interface

Step 4: Once back on the **Manage Device Groups** window, click the icon to add sensing devices to your newly created group. Click **OK** to finalize the changes.

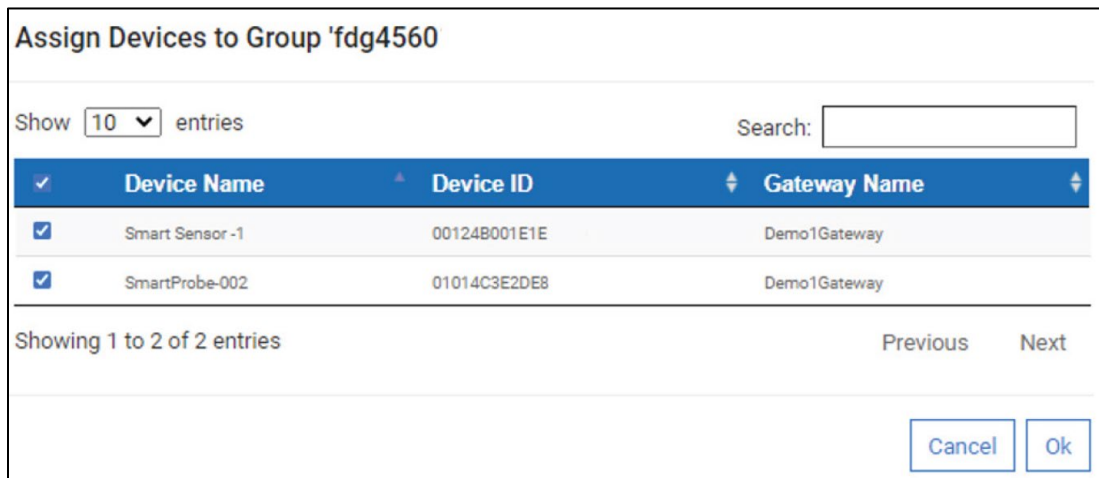


Figure 60: Assigning a device to a specific group

4.1.2.2 User and Device Assignment

To assign users to devices, click the Groups icon, and click **Add Group**. After naming your group, you can click on these icons to add users and devices to your group.

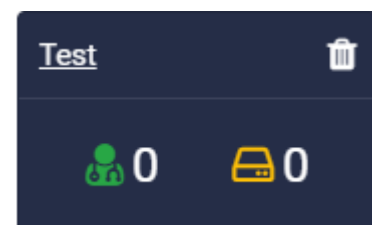


Figure 61: Omega Link Cloud Users and Groups

4.1.2.3 Assign Gateway to Admin (Admin Only)



To assign a gateway to an admin, click the Gateway icon. Enter the admin's email address and select the gateway that will be assigned to them. Click **Assign Gateway** to finalize.



Important: If multiple Administrator users will be registered under the same company name, it is important that the company name be typed the same way for each admin registration to ensure proper operation when assigning devices.

4.1.2.4 Assign Alarm Notifications



To assign gateway alarms to other users, click the Alarms icon. Select your gateway, select the users to be assigned the alarm notifications, and click **Confirm Assign** to finalize.

4.1.3 Sensor Analytics

To access the analytics of a specific sensor, click on the measurements of the sensor you wish to view.

4.1.3.1 Measurements

The measurements tab displays graphs of the readings recorded by your sensor. It allows users to change between live readings and specified ranges of time. All data points, except for **Real Time**, are downsampled to 10 minutes when plotted on the Omega Link Cloud interface regardless of the Cloud subscription level. All Real Time data fully remain in the Historian. See section **4.2 Historian** for more information.



Figure 62: Omega Link Cloud sensor measurements – Graph View

4.1.3.2 Alarms and Events

The Alarms and Events tab displays all alarms and events that were triggered by this device. Each alarm and event include a short message describing the nature of the alarm or event.



Figure 63: Omega Link Cloud Alarms and Events interface

4.1.3.3 Settings (Define Alarms and Events)

The Settings tab allows users to change all settings relevant to how the device interacts with the Omega Link Cloud. Users can customize the device name, alarm/event thresholds, and sensor reporting properties.

To set a local alarm output once you are in the **Settings** tab, define the parameters of the alarm by defining the threshold. Your alarm can be configured to trigger when readings go **Above**, **Below**, or **Out of Range** of your defined threshold. Once you have defined your alarm parameters, click **Update** to finalize your changes.

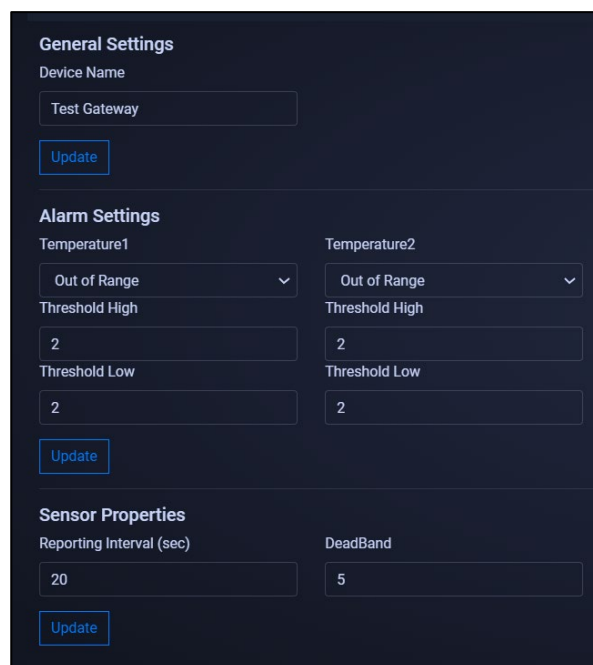


Figure 64: Omega Link Cloud Settings

4.1.3.4 What is Deadband in Settings?

It is standard to establish the desired threshold or setpoint to trigger an alarm when a condition is met. Triggering an alarm repeatedly in a short period, however, can produce unwanted results, such as having the alarm flip between inactive and active several times and triggering unwanted actions tied to that alarm as a result. Additionally, the constant alarm email notifications may result in an email service shutdown.

To solve the alarm chattering issue, Omega has implemented a Deadband feature into the Omega Link Cloud. Also known as hysteresis, the deadband establishes a range, or threshold, of values from the setpoint that the Omega Link Cloud will accept before the alarm is triggered. The deadband threshold can either be defined as an absolute value or as a percentage of the setpoint value.

In the Omega Link Cloud, the deadband feature in the alarm settings is expressed as a percentage. For example, if a user enters a value of 5 in the deadband text box, a range of +5% to -5% from the threshold has been established and the alarm will not be triggered within that region.

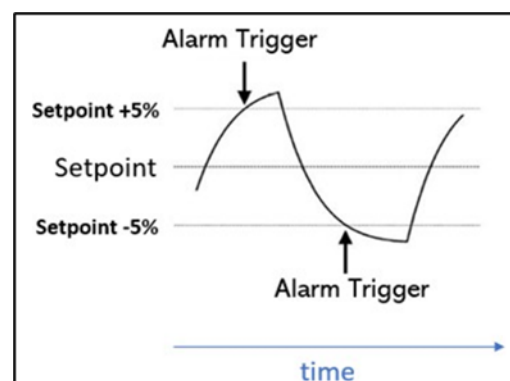


Figure 65: Setpoint as a percentage

4.2 Historian

The Historian tab allows users to create reports of past readings within a range of time and presents them as a graph. Through the Historian tab, users can export their chart data as a .csv file. Begin by clicking **Select Devices** and making your selection. Select the range of time your wish to view and choose a graph type from the selection. Your data will then be displayed and ready for export.



Figure 66: Omega Link Cloud Historian interface

4.2.1 How to Generate a Historical Data Report

The Historian tab allows users to create reports of past readings within a range of time and presents them as a graph. Through the Historian tab, users can export their chart data as a .csv file. Begin by clicking **Select Devices** and making your selection. Select the range of time your wish to view and choose a graph type from the selection. Your data will then be displayed and ready for export.

Users can begin to generate a Historical Data Report by clicking the **Select Devices** button.

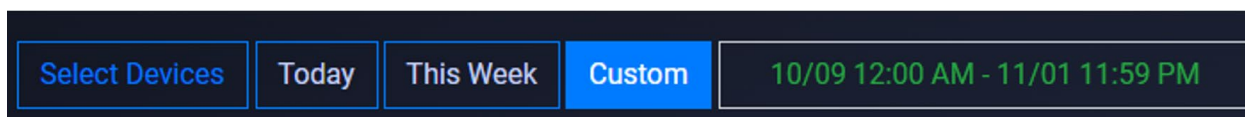


Figure 67: Historical Data Report parameters

Users can then select the desired device(s) to add to the report by clicking the associated checkboxes. Click **OK** to finalize the selection.

Select Devices

Show 10 entries

Search:

<input checked="" type="checkbox"/>	Gateway Name	Device Name	Device ID	Gateway ID
<input checked="" type="checkbox"/>	omgw7ycqjq	00124B001E1E92CA	00124B001E1E92CA	omgw7ycqjq
<input checked="" type="checkbox"/>	omgw7ycqjq	010115302FD10034	010115302FD10034	omgw7ycqjq
<input checked="" type="checkbox"/>	omgw7ycqjq	010143312DE86F22	010143312DE86F22	omgw7ycqjq


Figure 68: Historical Data Report Select Devices interface

Select a Period or a Range of Dates

To specify the range of time the report will cover, users can select **Today**, **This Week**, or **Custom** date and time. Click **Apply** to finalize the changes.

Custom

11/01 12:00 AM - 11/08 11:59 PM



Time

<

Feb 2022

>

Su

Mo

Tu

We

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Fr

Sa

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31

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4

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9

10

11

12

12

:

00

AM

11/04/05:29

11/05/05:29

11/06/05:29

11/06/19:45

27

28

1

2

3

4

5

6

7

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27

28

29

30

31

1

2

3

4

5

6

7

8

9

11

:

59

PM


11/01 12:00 AM - 11/08 11:59 PM

Cancel

Apply

Figure 69: Custom date range calendar interface

Save the Result/Export Chart Data

Users can save and export the generated data by clicking the save icon . A .csv file of the data will be generated and the user will be prompted to download the file.

Graph Data Presentation

The Historian interface provides three methods of presenting graphed data: **Plot Time Series**, **Plot Histogram**, and **Plot Prediction**.

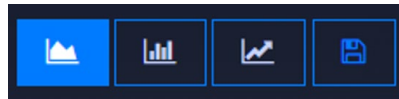


Figure 71: Graph data viewing options

Plot Time Series

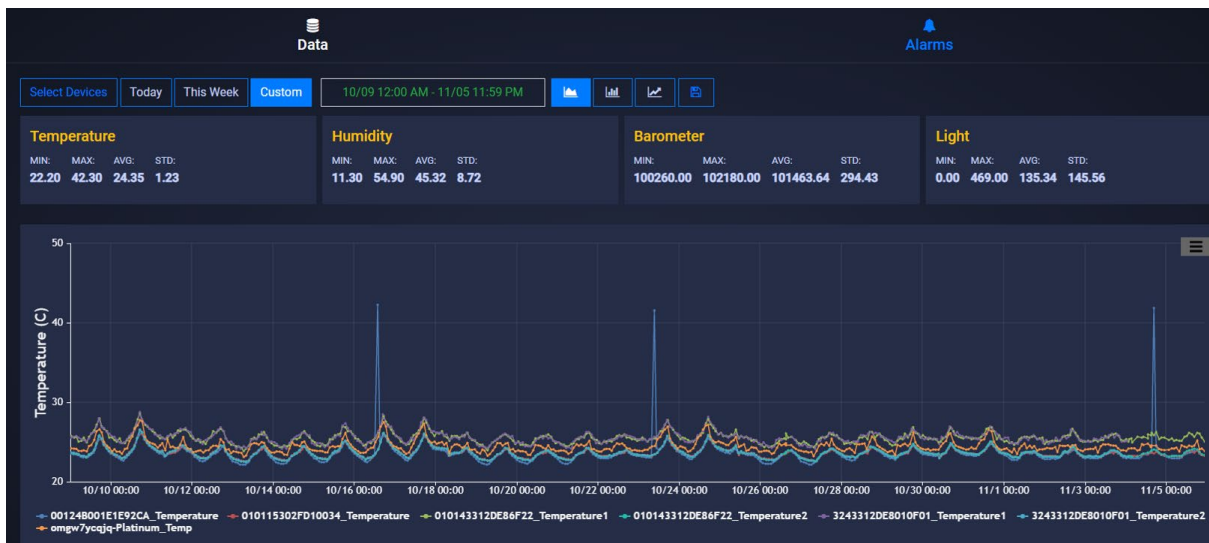


Figure 72: Plot time series graph view

Plot Histogram

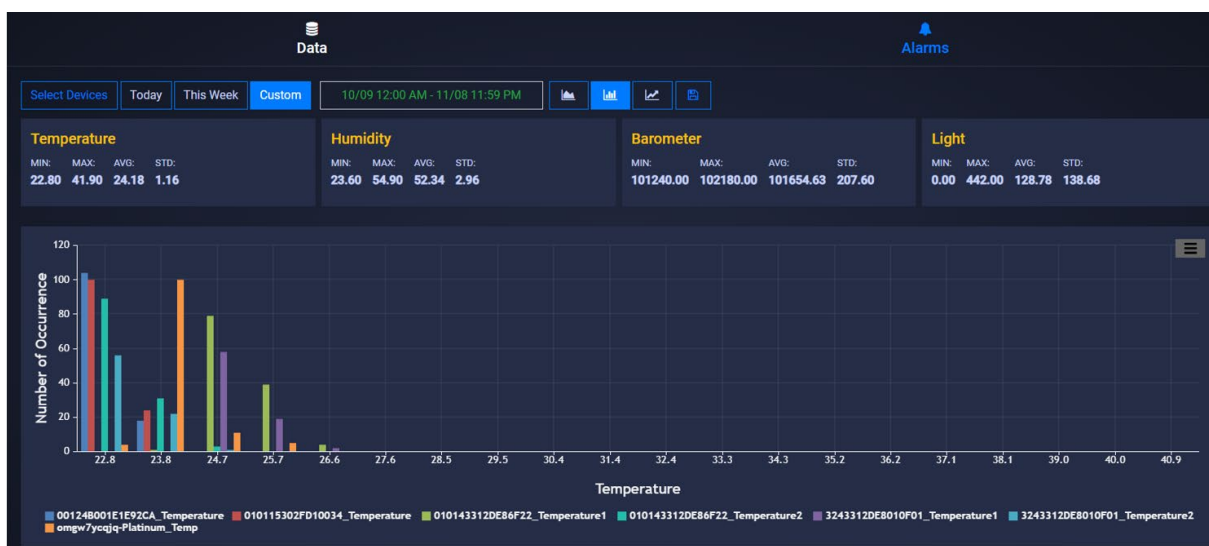


Figure 73: Plot Histogram graph view

Plot Prediction

To utilize the **Plot Prediction** feature, enter the date and time of the value you would like to predict and click the **Predict Future Values** button to display the data.



Figure 74: Plot Prediction graph view

4.3 System Settings

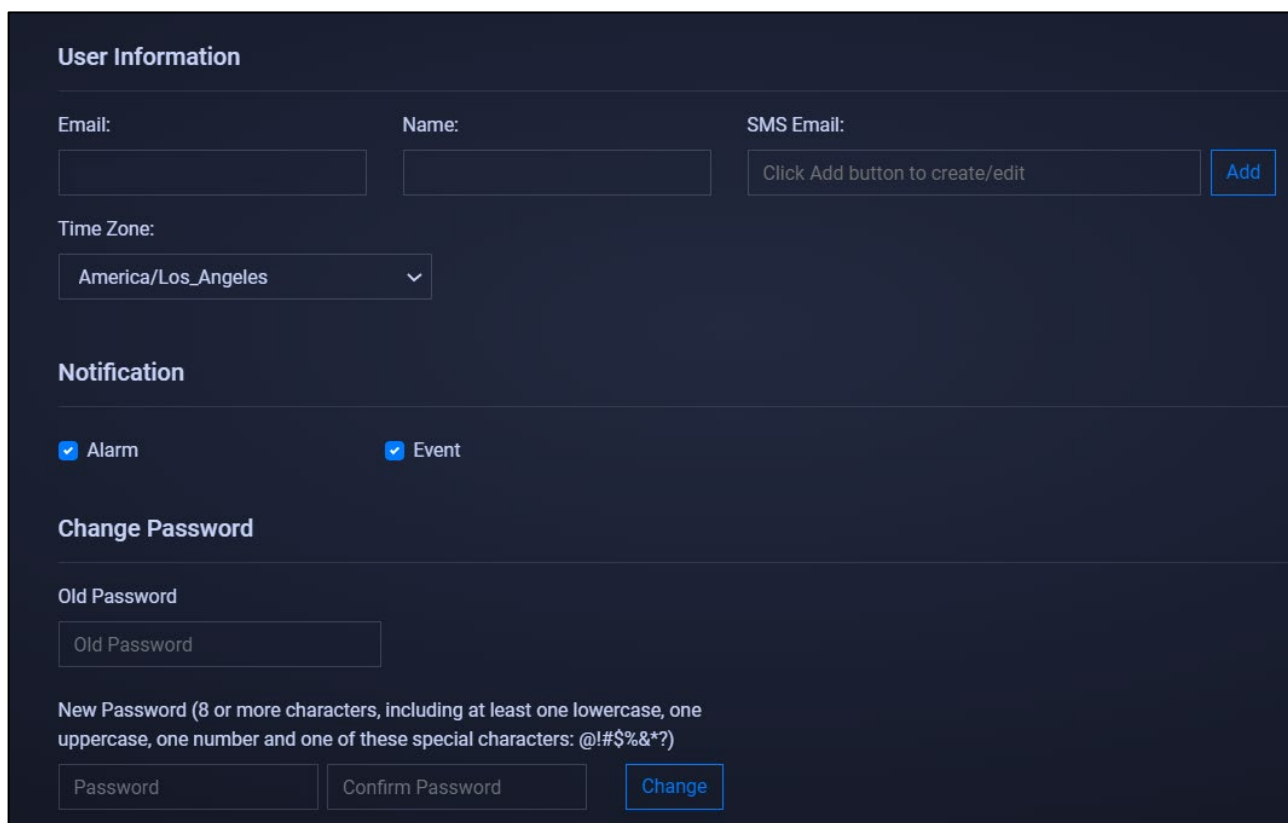
The System settings for the Omega Link Cloud allow you to customize your profile information, the units of measure displayed, user access permission, subscription management, and include contact information for technical support and feedback.

4.3.1 Profile

The Profile tab allows users to configure settings such as associated email addresses, passwords, security questions, and notifications.

Using the email address associated with the account or by providing an SMS email address, users can receive notifications directly whenever an alarm or event is triggered.

Passwords can be updated by entering the old password in the text box and then entering and confirming the new password as directed on the webpage. Security questions can be configured at the bottom of the Profile webpage.



User Information

Email: Name: SMS Email:

Time Zone:

Notification

☒ Alarm ☒ Event

Change Password

Old Password

New Password (8 or more characters, including at least one lowercase, one uppercase, one number and one of these special characters: @!#\$%&*?)

Confirm Password

Figure 75: Omega Link Cloud Profile settings

4.3.2 Units

The units tab allows users to set their preferred units of measure as they appear on the Omega Link Cloud. Changing the units here does not change the units of your sensing devices. It only changes the unit of measure as it appears on the Omega Link Cloud.

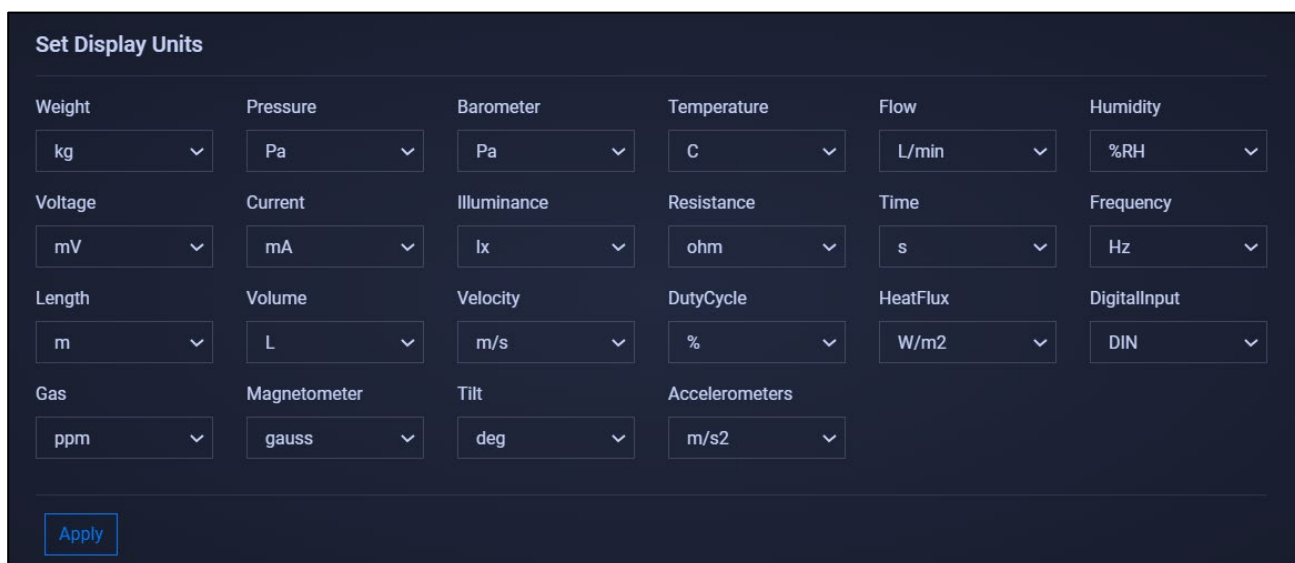


Figure 76: Omega Link Cloud local display units



Note: Changing the units of measurement only affects the readings displayed on the Omega Link Cloud. Omega Link sensing devices interpret data in SI.

4.3.3 Users

The Users tab allows you to give others access to view the data for your gateway on their Omega Link Cloud accounts. To add a user, enter their email address in the text box and choose **Can Change** or **Can View** to grant full access or restrict access.

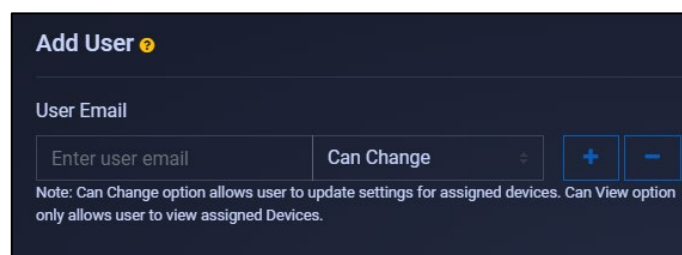


Figure 77: Omega Link Cloud Add or Remove user access

4.3.3.1 How to Add Non-Admin Users

To add users to your Omega Link Cloud account, follow these steps:

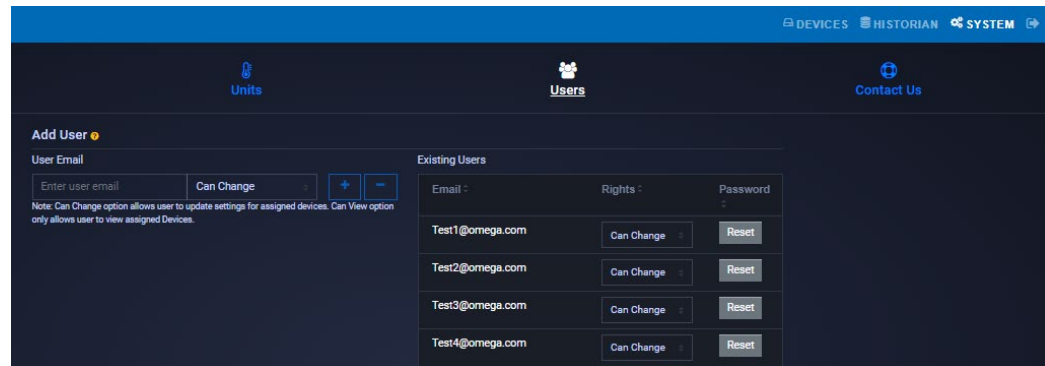


Figure 78: Omega Link Cloud Users tab

- Step 1:** On the Omega Link Cloud homepage, click on the **SYSTEM** tab, and click on **Users**. Enter the email address of the user you want to add.
- Step 2:** Click the dropdown next to the email address text box and select the level of access the new user will have: **Can Change** or **Can View**.
- Step 3:** Click the **+** icon to add the user. The email address of the new user will appear on the **Existing Users** table.
- Step 4:** Once the previous steps are complete, the new user will receive an email prompting them to register an Omega Link Cloud account. If no email is received within 10 minutes, the email may be in the user's spam folder.

4.3.4 Subscription

The Subscription tab shows your current subscription tier and provides a link to the Omega website should you choose to upgrade your subscription plan. If you purchased the subscription with a billing email different than your Omega Link Cloud account email, you may link the two here.

4.3.5 Contact Us

The Contact Us tab provides an email address link for direct engineering technical support. It also provides a text field for user feedback and comments.

5 Navigating the Omega Enterprise Gateway User Interface

5.1 Device Management

Once logged in, users will be directed to the **Devices** tab of OEG. From this interface, users will be able to manage the devices connected to OEG.

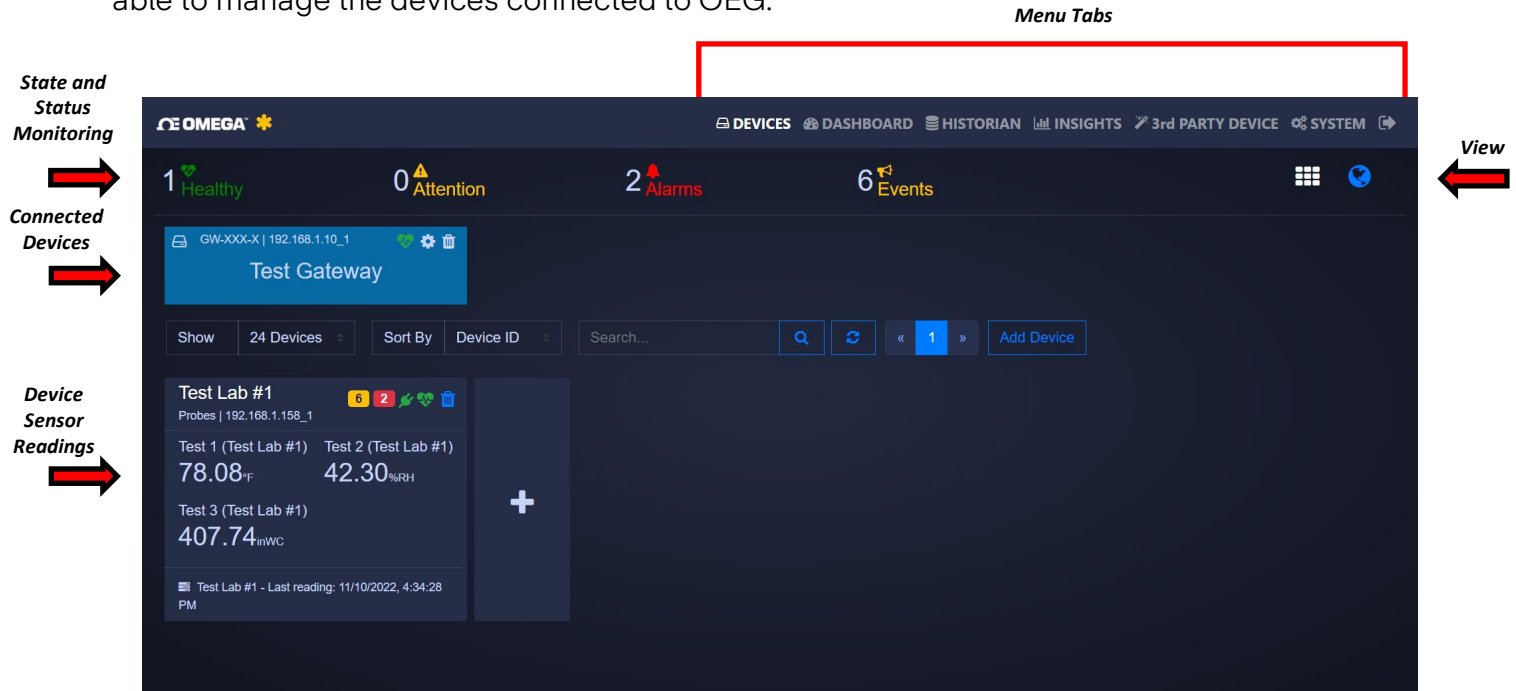



Figure 79: OEG home interface




Important: Devices connected directly to OEG through a USB, Serial, or TCP connection must be removed from OEG if they will be used with another application such as SYNC configuration software.

5.1.1 Add Device

To add a device, click the  icon to the right of the device readings or click the **Add Device** and fill out the product details, connection parameters, and reading interval of the device that will be added.

5.1.2 Delete Device

To delete a device, locate the  icon located next to the **Connected Device** that will be deleted.

5.1.3 Rename Device

Clicking the  icon allows users to rename the device.

5.1.4 Refresh

To refresh the list of devices, click the  icon located near the device search bar.

5.1.5 View

The View tab offers options regarding how data will be displayed.

5.1.5.1 Tile View

Provides a standard tile view of the interface.

5.1.5.2 Map View

Provides a map view of the connected devices by displaying their location.

Note: Map View is only available on OEG Pro, OEG Business, and OEG Business Pro.

5.1.6 Device Settings

By clicking on the **Device Readings**, OEG will display live readings, alarms and events, and settings for that device.

5.1.6.1 Measurements



Figure 80: Device Readings and Measurements

The Measurements tab displays live readings for the device. It allows users to change from live readings to a specified range of time.

5.1.6.2 Historic Alarms and Events

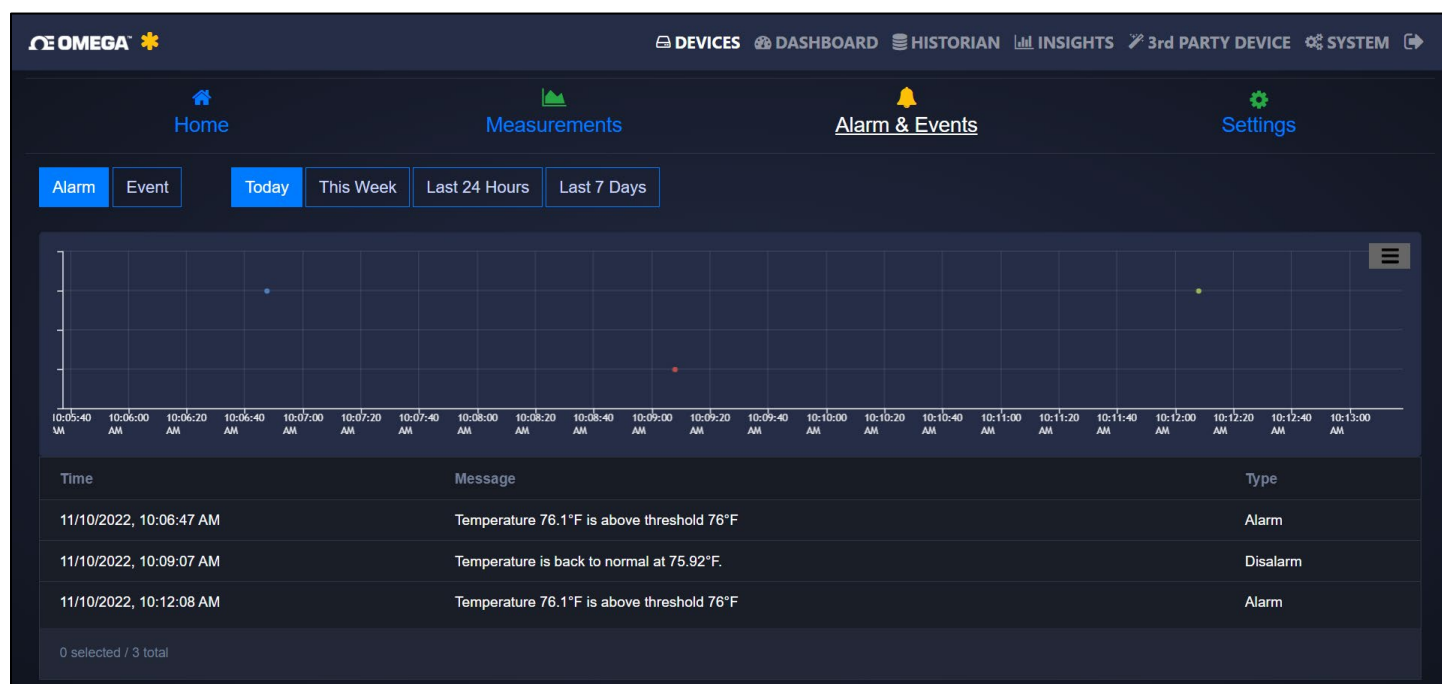


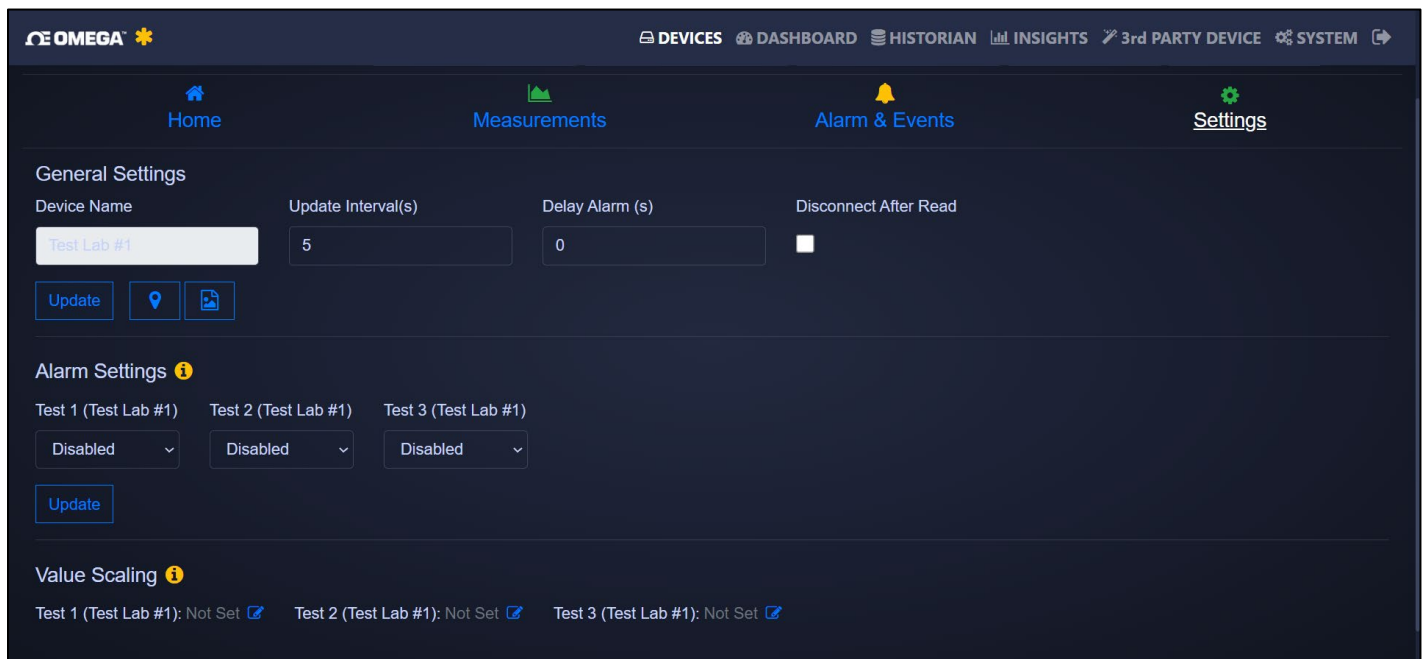
Figure 81: Historic Alarms and Events interface

The Alarms and Events tab displays all alarms and events that were triggered by this device. It includes a short message describing the nature of the alarm/event.

Note

Note: Historic Alarms and Events are only available on OEG Pro, OEG Business, and OEG Business Pro.

5.1.6.3 General Settings




The screenshot shows the OMEGA Settings interface. At the top, there's a navigation bar with 'DEVICES', 'DASHBOARD', 'HISTORIAN', 'INSIGHTS', '3rd PARTY DEVICE', and 'SYSTEM'. Below this, there are four tabs: 'Home', 'Measurements', 'Alarm & Events', and 'Settings' (which is active). The 'Settings' tab is divided into three sections: 'General Settings', 'Alarm Settings', and 'Value Scaling'.
General Settings: Includes fields for 'Device Name' (set to 'Test Lab #1'), 'Update Interval(s)' (set to 5), 'Delay Alarm (s)' (set to 0), and a 'Disconnect After Read' checkbox (unchecked). There are 'Update', 'Location' (location pin icon), and 'Image' (image icon) buttons.
Alarm Settings: Includes three test settings: 'Test 1 (Test Lab #1)', 'Test 2 (Test Lab #1)', and 'Test 3 (Test Lab #1)', each with a 'Disabled' dropdown menu. There is an 'Update' button.
Value Scaling: Includes three test settings: 'Test 1 (Test Lab #1): Not Set', 'Test 2 (Test Lab #1): Not Set', and 'Test 3 (Test Lab #1): Not Set', each with a 'Not Set' dropdown menu.

Figure 82: Device Settings (General, Alarm, and Value Scaling)


The **Settings** tab allows users to change all settings relevant to how the device interacts with OEG. Users can customize device name, device location, and all settings relevant to alarm and event thresholds.

Note: Value Scaling is only available on OEG Pro, OEG Business, and OEG Business Pro.

5.1.6.4 Setting a Device Location

OEG allows users to assign a **Location** to any device connected to OEG. Device locations can be viewed by switching from the default **Tile View** to the **Map View**  in the **Devices** menu tab. To set a device location, follow these steps:

Step 1: Click the **Device Tile** of the device that will have its location changed.

Step 2: Click on the device **Settings** tab and click the **Location**  icon. A **Set Device Location** pop-up will appear.

Step 3: The user can either drag-and-drop the blue pin to the desired location or click on the **Move to your location** button to use the current location associated with the PC. Using the Move to your location button requires permission to share the location of the PC. Click **Ok** when finished.

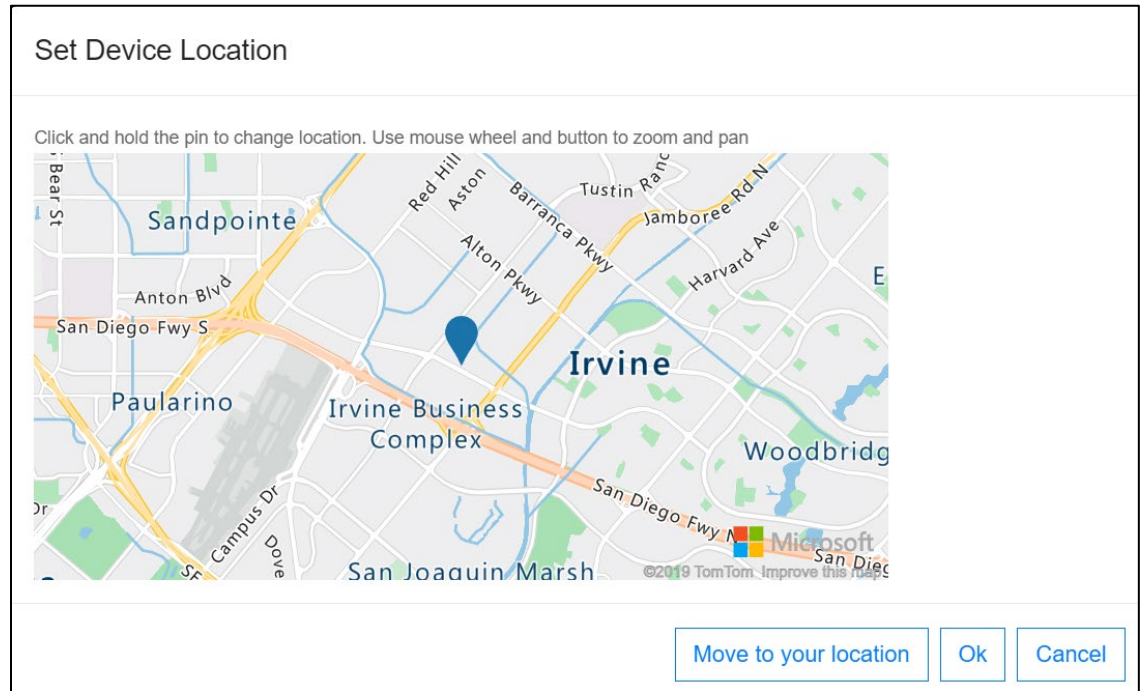


Figure 83: Set Device Location pop-up window

Step 4: Navigate to the **Map View** from the **Devices** main menu tab and the device will appear at the updated location.

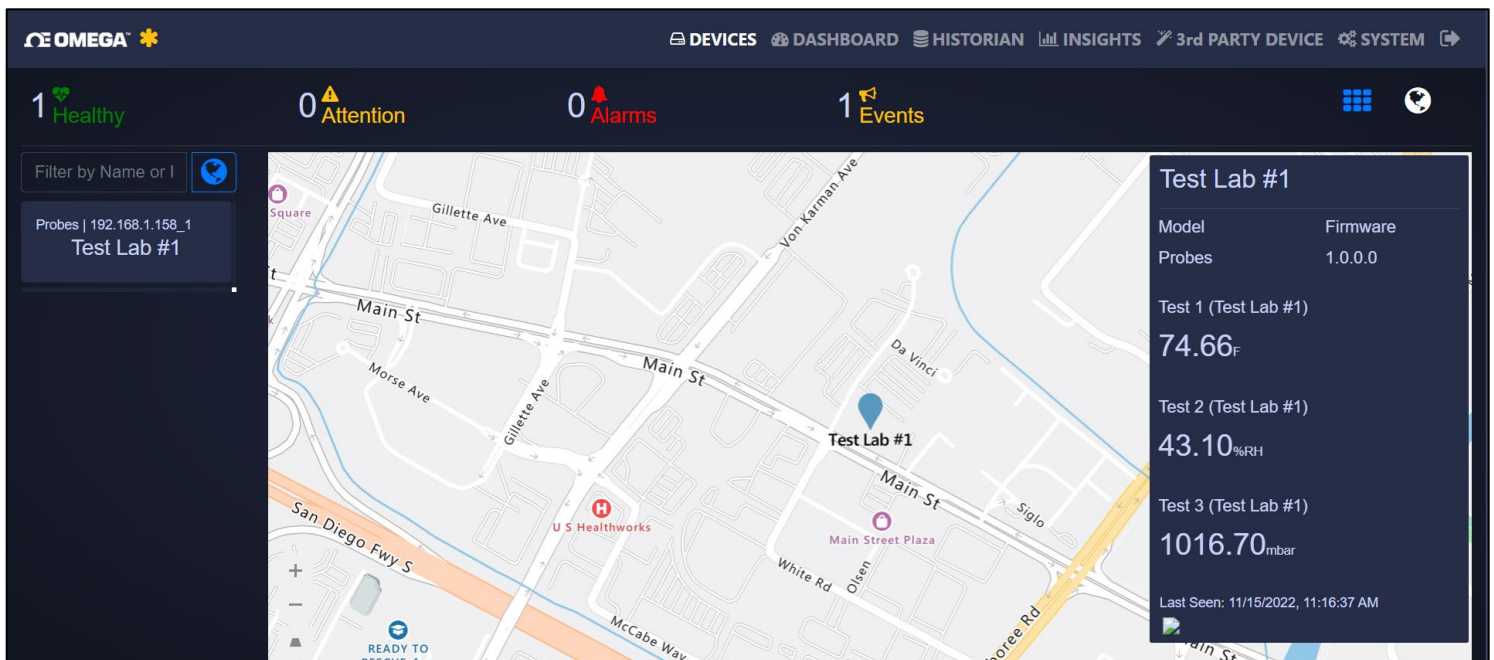


Figure 84: OEG Map View

6 Navigating the SYNC User Interface

6.1 Configure Device Menu Tab

SYNC has two menu interfaces:

- **Configure Device:** Allows you to configure your software-adjustable devices.
- **Capture Data:** Provides short-term data logging features.

The blank Configure Device interface is the first view you see after SYNC is launched. Once a device is connected, you will see an interface like the one displayed in **Figure 85**.

6.1.1 Device Auto Detection

Omega Smart devices will be automatically detected once they are plugged in to the computer running the SYNC software. For instructions on how to connect a specific device to SYNC, please refer to the user documentation associated with that device.

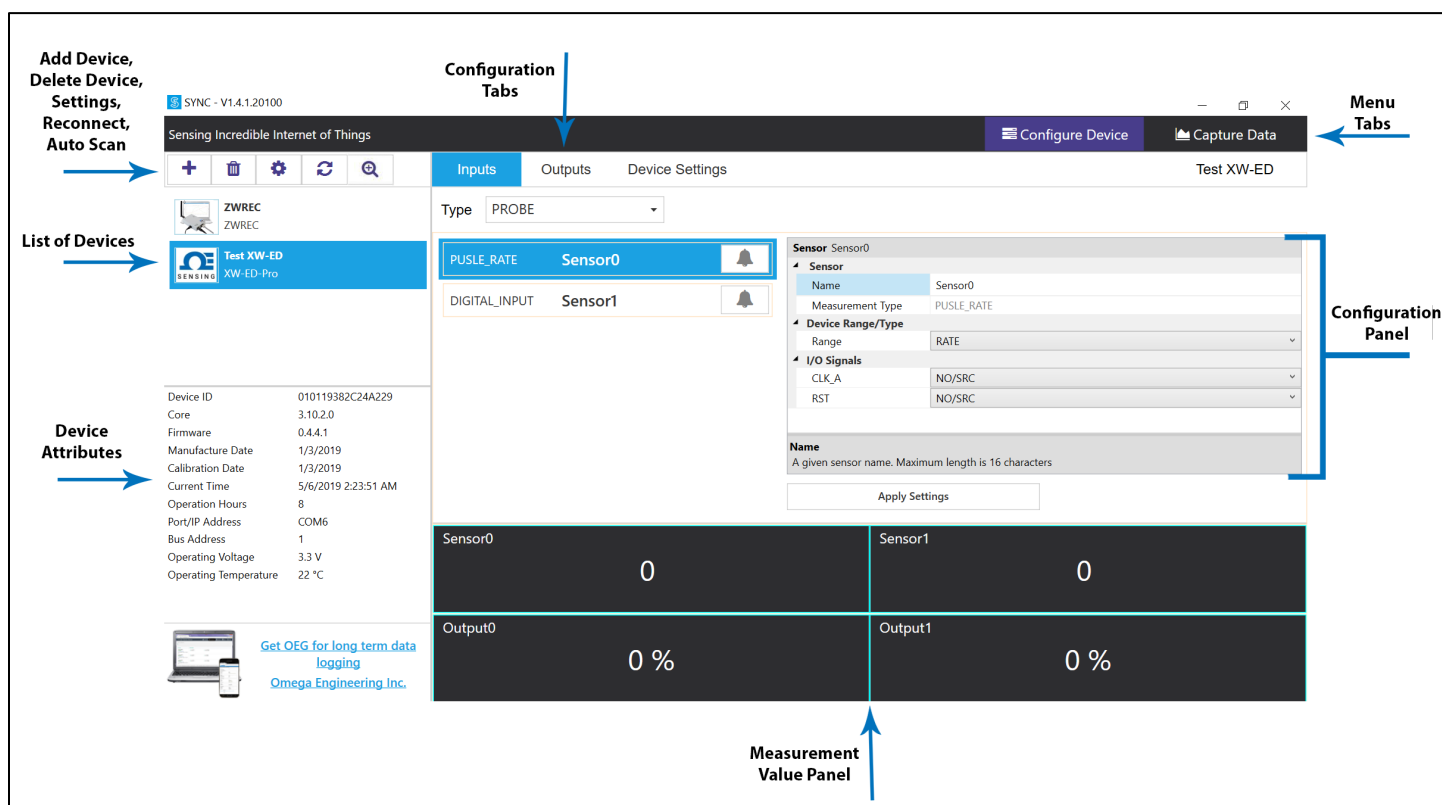


Figure 85: SYNC UI overview

Note: The **Configure Device** interface may look different than the one displayed in **Figure 85** depending on the product that is connected.

6.1.2 List of Devices

This section of the interface lists all the devices connected to SYNC. For each connected device, the assigned name and the product name will be displayed. The device name consists of COM port, device address, and model. Users can switch between devices in the list to configure or capture data.

Users may right click the device to **Rename** and **Refresh** your device. Users may choose to refresh the device this way should a quick device reboot be necessary.

6.1.3 Device Attributes

The **Device Attributes** list will appear when you click on a device from the Device List section (Figure 85).

6.1.4 Configuration Panel

The configuration of connected devices takes place in the **Configuration Panel**. The Configuration Panel settings and parameters will vary depending on the product that is connected. The configuration panel displays the software adjustable parameters of the Omega device.

6.1.5 Measurement Value Panel


The **Measurement Value Panel** displays the value that the device has been configured to measure. Alarm status and active zone status are indicated in colors:

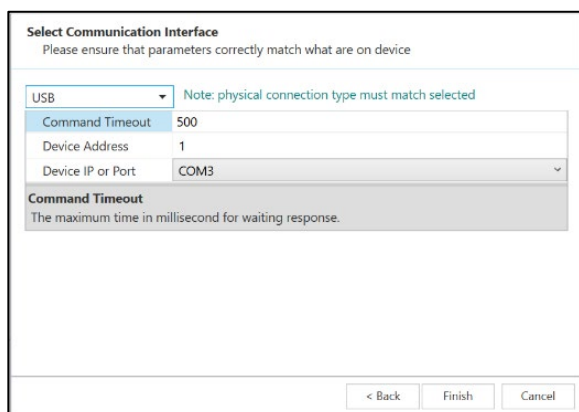
- **Black:** A normal reading is being displayed.
- **Red:** An alarm condition has been triggered.
- **Gray:** The reading zone has been disabled.



Note: For more information on how to set alarms on your device, see the section titled **Setting Alarms**.

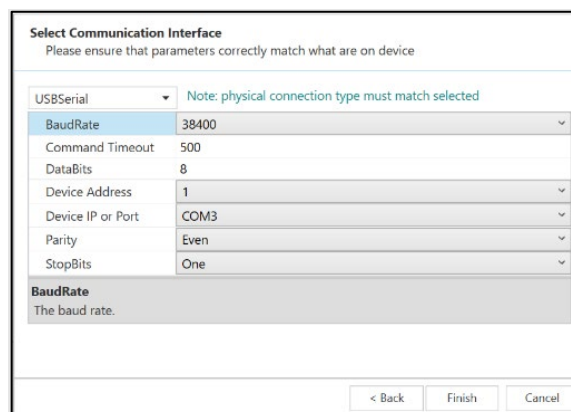
6.1.6 Add or Delete Device Button

Clicking the Add Device icon  (Figure 85) will lead to a wizard that guides you through the process of adding a device to SYNC.



The screenshot shows the 'Select Communication Interface' dialog box. It has a title bar and a subtitle 'Please ensure that parameters correctly match what are on device'. The 'USB' option is selected in the 'Select Communication Interface' dropdown. A note says 'Note: physical connection type must match selected'. Below this, there are fields for 'Command Timeout' (500), 'Device Address' (1), and 'Device IP or Port' (COM3). A 'Command Timeout' section is expanded, showing the text 'The maximum time in millisecond for waiting response.' At the bottom are buttons for '< Back', 'Finish', and 'Cancel'.

Figure 86: USB communication interface




The screenshot shows the 'Select Communication Interface' dialog box. It has a title bar and a subtitle 'Please ensure that parameters correctly match what are on device'. The 'USBSerial' option is selected in the 'Select Communication Interface' dropdown. A note says 'Note: physical connection type must match selected'. Below this, there are fields for 'BaudRate' (38400), 'Command Timeout' (500), 'DataBits' (8), 'Device Address' (1), 'Device IP or Port' (COM3), 'Parity' (Even), and 'StopBits' (One). A 'BaudRate' section is expanded, showing the text 'The baud rate.' At the bottom are buttons for '< Back', 'Finish', and 'Cancel'.

Figure 87: USB Serial communication interface

Default interface settings are provided in the wizard for USB (**Figure 86**) and USB Serial Communication Interface (**Figure 87**). Please refer to your device User's Manual for other communication interface setting options if default settings are not applicable.

The device can be deleted by clicking the Delete icon  (**Figure 85**).

6.1.7 System Settings

The System Settings icon  allows the user to customize the **Behaviors** and **Display Units** of SYNC.

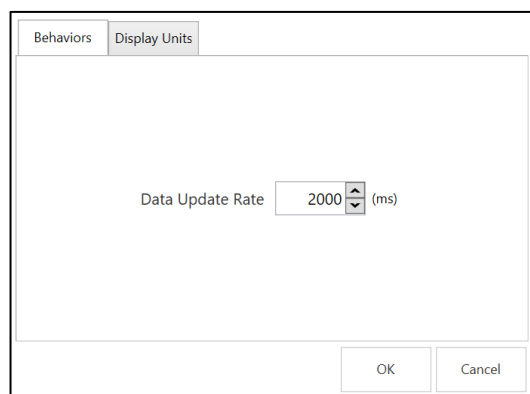


Figure 88: Data update rate (Behaviors)

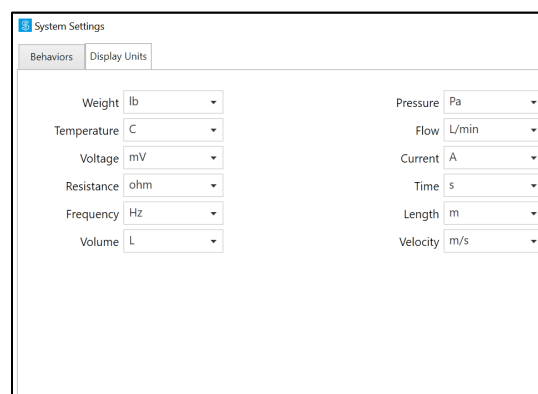



Figure 89: Display units


The **Behaviors** tab (**Figure 88**) manages the **Data Update Rate**: the frequency at which the system pulls information from the device in milliseconds. The **Display Units** tab (**Figure 89**) allows the user to globally customize the units of measure displayed for various values.

Note: The sensors are permanently set to measure SI units. By changing the **Display Units** on SYNC, you are only changing the units displayed on SYNC, not in the sensor itself. Not all configurable global settings that are available for Smart Probes will be available for PID Controllers and Process Meters.

6.1.8 Reconnect

The **Reconnect** button  attempts to connect devices that may not have been auto-detected.

6.1.9 Auto Scan Settings

The **Auto Scan Settings** button  allow the user to choose what devices are detected when SYNC auto scans for connected devices or when the **Reconnect** button is clicked. To add a device to the auto scan list, drag the device category from the Supported Devices Column to the Auto Scan column. To remove a device from the auto scan list, drag the device category from the Auto Scan Devices column to the Supported Devices column. Once you have finished customizing your settings, click **Close**.

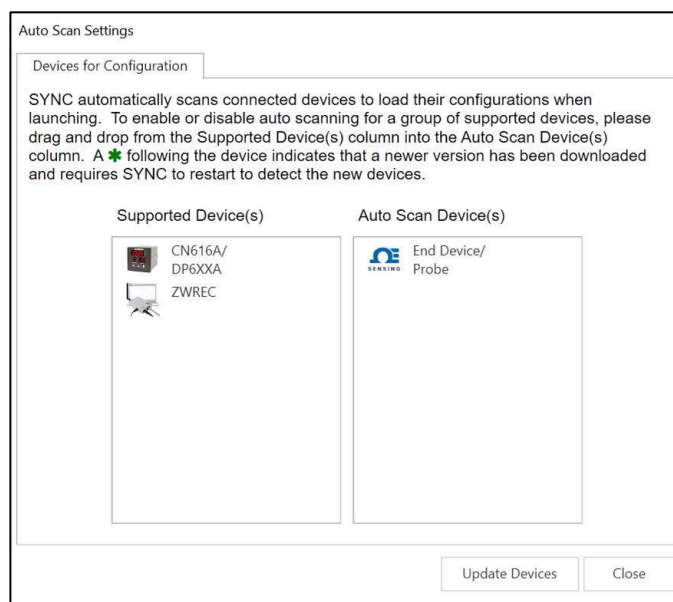


Figure 90: Auto scan settings

6.1.10 Update Devices

The **Update Devices** button updates the device library for the listed device categories. The update requires an internet connection and requires SYNC to restart to detect the new devices.

6.2 Configuring Smart Probes and Wireless Devices

SYNC allows users to configure qualifying Smart Probes and Wireless Devices. To configure these settings, you must have a Smart Probe or Wireless Device connected to SYNC. Click on the Smart Probe or Wireless Device you would like to customize from your **List of Devices**.

The **Configuration Tabs** allow the user to switch between the device Inputs, Outputs, and Settings interface. Refer to the device-specific User's Manual for the software adjustable inputs, outputs, and settings available on your device.

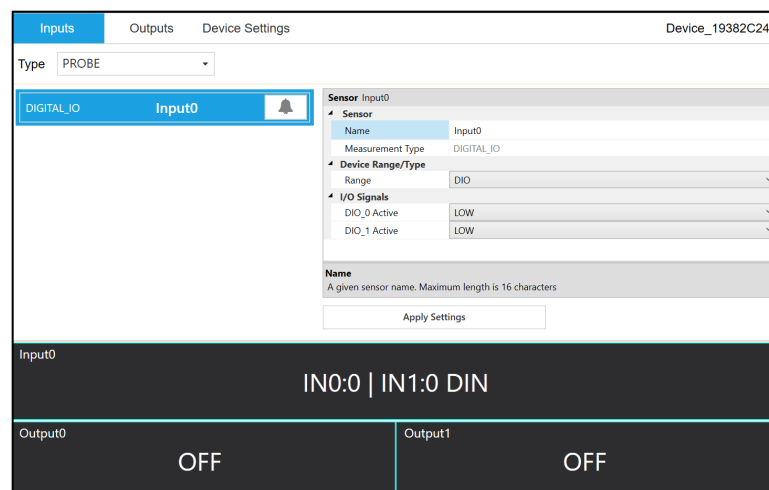


Figure 91: SYNC Inputs configuration UI

- **Inputs:** Displays configuration options for device inputs.
- **Outputs:** Displays configuration options for device outputs.
- **Settings:** Displays configuration options for the device settings and system functions.

Smart Sensor

Users who will be configuring a Smart Sensor may connect their Smart Sensor directly to a PC running SYNC configuration software using a micro-USB 2.0 cable. SYNC will then auto-detect the connected device and display the configuration options available.



Figure 92: Smart Sensor USB port

Smart Probe and Smart Interface

Step 1: Connect the Smart Probe to the Smart Interface.

Note: Locate the position of the keyway as a guide on the smart probe prior to making the connection.

Step 2: Connect the Smart Interface to the PC running SYNC configuration software.

SYNC will then auto-detect the connected device and display the configuration options available.

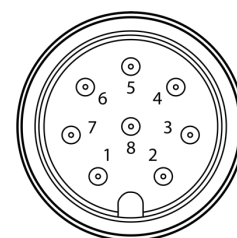


Figure 93: M12 8-Pin Smart Probe connector front view

6.2.1 Discrete Input/Output (DIO) for Smart Probes

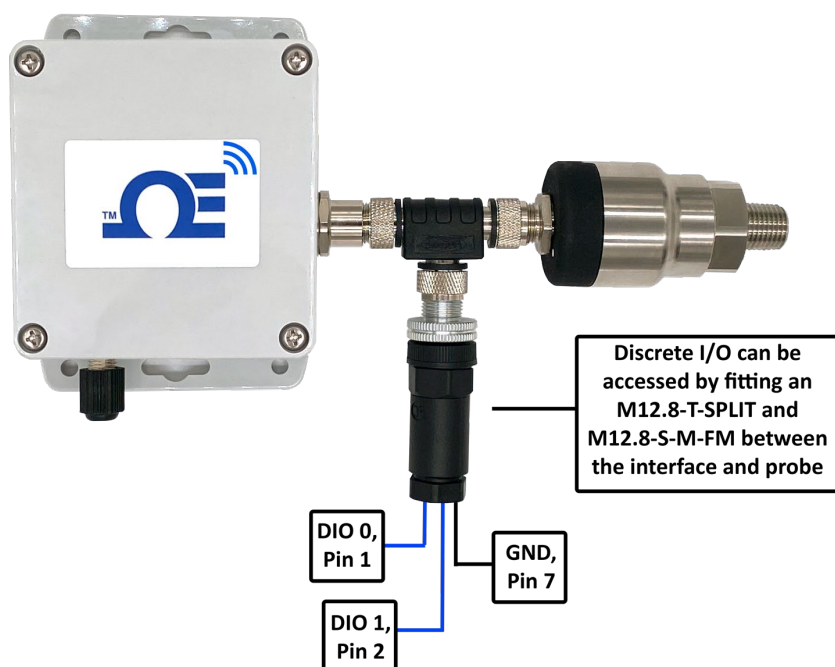


Figure 94: Optional configuration to access discrete I/O

Omega Link Smart Probes feature 2 configurable discrete I/O pins. These can be used for a myriad of applications. The user may configure the polarity of the inputs (active **HIGH** or active **LOW**) or **Disable** the DIO to utilize the outputs (ON/OFF, PWM, SERVO).

Sensor Digital_IO	
<div> <div> <div> <div> <div>Sensor</div> <div> <div>Name</div> <div>Digital_IO</div> </div> <div> <div>Measurement Type</div> <div>DIGITAL_IO</div> </div> <div> <div>Advanced Scaling</div> <div><input type="checkbox"/></div> </div> </div> </div> <div> <div>Device Range/Type</div> <div> <div>Type</div> <div>DIO</div> </div> </div> </div> </div> <div> <div>Sensor Settings</div> <div> <div>DIO_0 Active</div> <div>LOW</div> </div> <div> <div>DIO_1 Active</div> <div>HIGH</div> </div> </div>	

Name

A given sensor name. Maximum length is 16 characters

Figure 95: SYNC interface discrete I/O input configuration

The Discrete I/O input shares the output circuitry. The internal process drives the output control signal to turn on the output driver which will force the output low. When the state of the DIO input signal is to be read the processor applies 3.3 V_{DC} to the Input Bias signal and reads the level detected at the Input Sense. If the output is inactive an external signal may

be used to force the input level low. A diode protects external positive voltages, allowing the output driver to activate loads greater than the internal 3.3 V_{DC}.

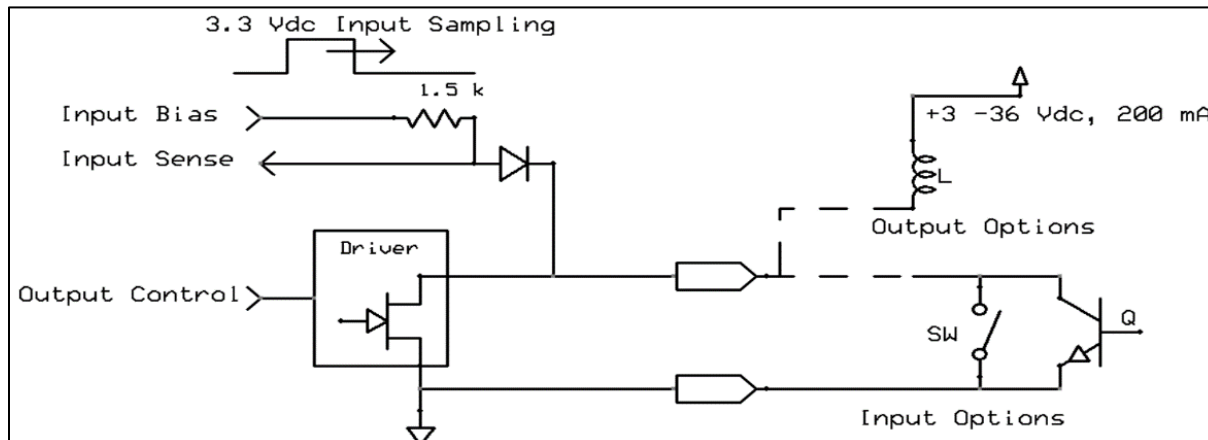


Figure 96: Digital/Discrete I/O circuitry

6.2.1.1 Setting DIO as an Input

To use a DIO pin as an input, make sure it is set to **Active Low** (default) in the **Output Tab** in SYNC.

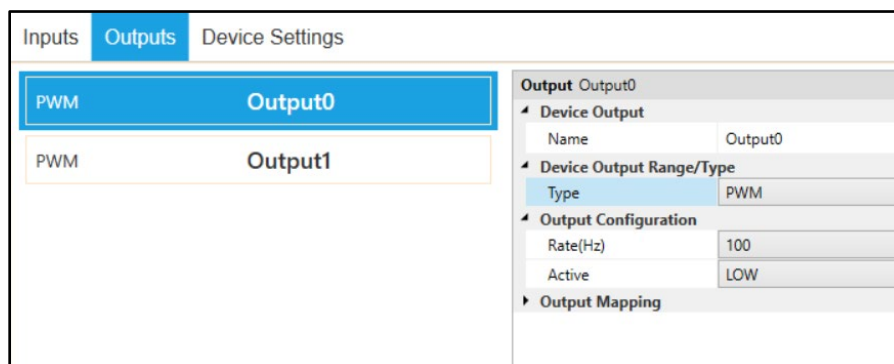


Figure 97: SYNC interface outputs tab

Then, in the **Input Tab**, select a **Type** from the drop-down which includes DIO. Each DIO pin has an internal pull-up, but to save power, the internal pull-up is only active when the unit takes a reading.

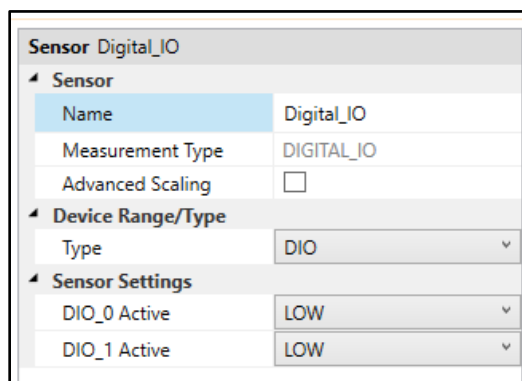


Figure 98: SYNC interface Digital_IO

6.2.2 Advanced Scaling Options

Qualifying Omega Link Smart Probes allow for advanced scaling options on process and pulse inputs only. The **Advanced Scaling** checkbox can be selected to expand additional configuration options. A gain and/or offset can be applied to the input reading and the displayed unit can be changed.

To apply a gain or offset to the input, expand the **Scaling** menu and ensure that **Apply Scaling** is checked. There, the gain and offset values can be adjusted. Both positive and negative values may be entered as well as decimal numbers. The equation for the scaled input value is given below.

$$Input_{Scaled} = (Input_{Raw} \times Gain) + Offset$$

The displayed units can be changed by entering a new value in the **Unit** field and clicking **Apply Settings**. This field is limited to a maximum of 4 characters. Note that changing the Unit field does not change the base unit type, only the display name. The **Lock** checkbox must be selected to use the user-defined Unit field. Unchecking the Lock checkbox and clicking **Apply Settings** will revert the unit display back to the default setting.

6.2.3 Output Configuration

Omega Link Smart Probes offer two discrete outputs that share circuitry with the discrete inputs. If an output is to be used then the corresponding input pin must be set to **Disable**. See section 6.2.1 Discrete Input/Output (DIO) for Smart Probes for more information.

There are three types of output options – On/Off, Pulse-Width Modulation (PWM), or Servo. See section 6.2.3.1 Device Output Range/Types for more information on each type.

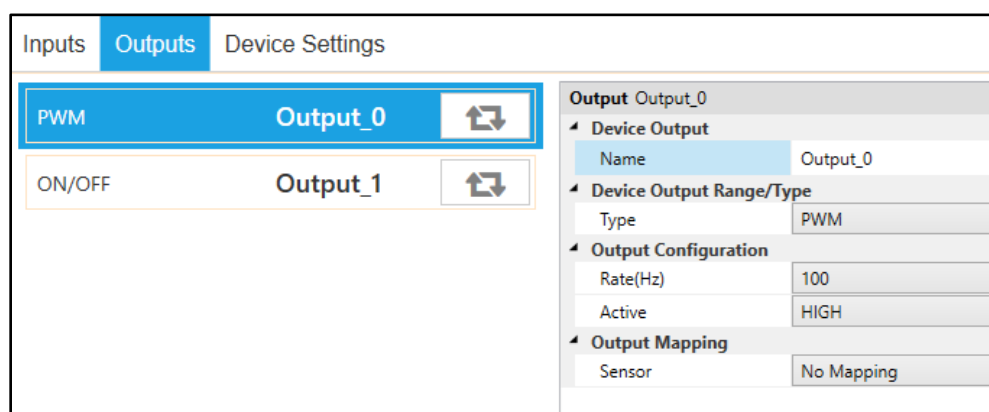


Figure 99: SYNC interface Output Configuration

Outputs may be configured as either *Active High* or *Active Low*. When configured as Active High the output conducts normally and becomes high impedance when activated. When configured as Active Low the Open-Drain output is high impedance normally and will conduct when activated.

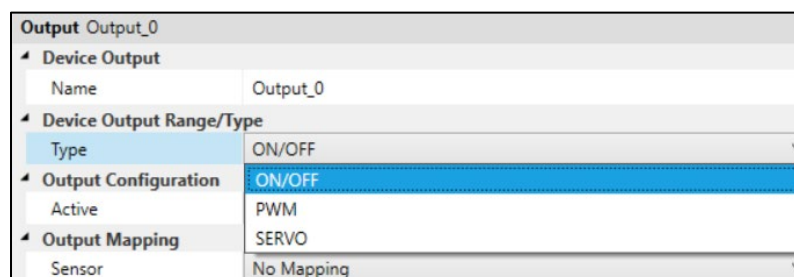
Option	Value	Description
Active	LOW	When the output is inactive, it is in a high impedance state.
	HIGH	When the output is active, it is in a high impedance state.

An output

may be controlled in one of three ways – a scaled mapping to an input, an on/off control from an input setpoint, or as an input alarm. Sections **6.2.4 ON/OFF Control Module** through **6.2.5 Setting an Alarm** describe these output control methods.

6.2.3.1 Device Output Range/Types

There are three types of output options – On/Off, Pulse-Width Modulation (PWM), or Servo. This section describes these output options.



Output Output_0	
Device Output	Name: Output_0
Device Output Range/Type	Type: ON/OFF
Output Configuration	Active: PWM
Output Mapping	Sensor: No Mapping

Figure 100: SYNC interface output type selection

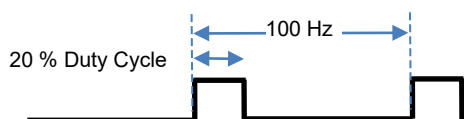
6.2.3.1.1 ON/OFF Output Type

The ON/OFF output mode switches the output to be a binary ON or OFF. Depending on if the output is configured as Active Low or Active High, the ON/OFF mode can correspond to different polarities.

6.2.3.1.2 Pulse-Width Modulation (PWM) Output Type

Pulse-Width Modulation (PWM) controls the amount of power given to a device by cycling the on/off phases of a digital signal. PWM consists of a duty cycle and frequency. The Duty Cycle measures the amount of time a signal is in the ON state as a percentage. The frequency controls how fast the PWM cycle is repeated. Users can select between the following settings:

Option	Value	Description
Rate	100 Hz	Signal has a constant 100 Hz frequency with 0-100% Duty Cycle
	10 Hz	Signal has a constant 10 Hz frequency with 0-100% Duty Cycle
	1 Hz	Signal has a constant 1 Hz frequency with 0-100% Duty Cycle
	0.1 Hz	Signal has a constant 0.1 Hz frequency with a 0-100% Duty Cycle
Signal Type	Active LOW	When the output is active, it is pulled to ground (LOW)
	Active HIGH	When the output is active, it is in a high impedance state



Example shows a PWM output signal configured with a 100 Hz frequency and active HIGH outputs. The duty cycle has been set to 20%.

Figure 99: PWM function diagram

6.2.3.1.3 SERVO Output Type

The SERVO output allows driving servo motors that control position. A Servo output is a special case of the PWM output, where the ON time varies between 1.0 msec and 2.0 msec or between 0.5 msec and 2.5 msec, with the lower bound representing 0 degrees and the upper bound representing 180 degrees of angular travel. The typical non-critical frequency is 50 or 100 Hz. Servo outputs are always active high.

Option	Value	Description
Rate	100 Hz	Signal has a constant 100 Hz frequency
	50 Hz	Signal has a constant 50 Hz frequency
Pulse Width Range	1.0-2.0 msec	On time varies between 1 and 2 msec
	0.5-2.5 msec	On time varies between 0.5 and 2.5 msec

Example: For the percent of angular travel, if the pulse width range is set to a range of 1.0-2.0 msec, then selecting 50% of angular travel represents 1.5 msec or 90 degrees of travel.

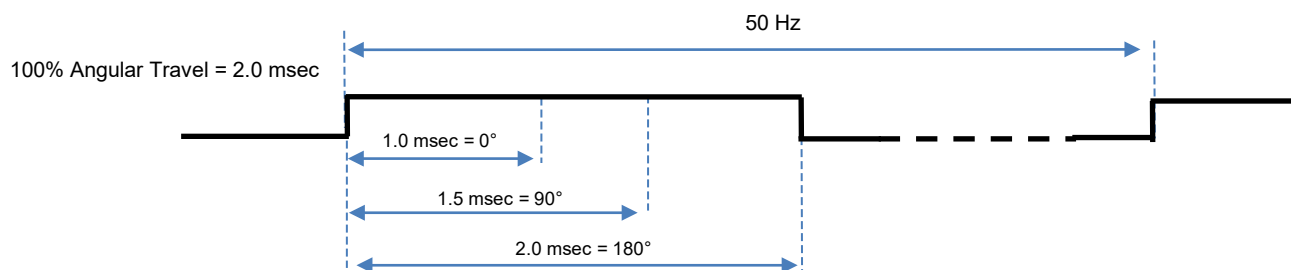
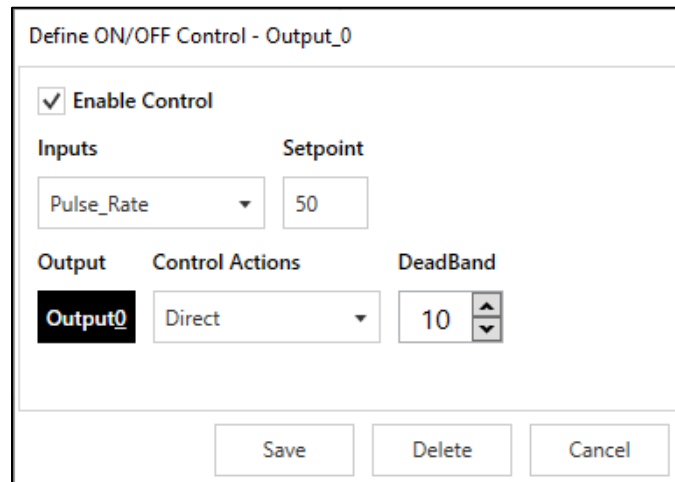


Figure 100: SERVO output example

6.2.4 ON/OFF Control Module

To configure an ON/OFF control module on a device, first ensure that the desired output pin is not associated with any input alarms and that it is set as **No Mapping** in the Output Mapping menu in the **Outputs** tab. The ON/OFF control module can be used with any selected output type including ON/OFF, PWM, and SERVO. When enabled in PWM mode, ON corresponds to 100% duty cycle. When enabled in SERVO mode, ON corresponds to 100% angular travel.

In the **Outputs Tab** in SYNC click on the  icon located to the right of the available outputs. Clicking the icon will open the **Define ON/OFF Control** dialog box as seen below.



The dialog box titled "Define ON/OFF Control - Output_0" contains the following fields:

- Enable Control:** A checked checkbox.
- Inputs:** A dropdown menu showing "Pulse_Rate".
- Setpoint:** A text input field containing the value "50".
- Output:** A dropdown menu showing "Output0".
- Control Actions:** A dropdown menu showing "Direct".
- DeadBand:** A spin box showing the value "10".

At the bottom of the dialog are three buttons: "Save", "Delete", and "Cancel".

Figure 101: SYNC interface ON/OFF control module

The **Enable Control** checkbox enables the ON/OFF control module. If this box is unchecked, the output will be disabled but the module with all its settings will remain available to be enabled at a later time.

The **Inputs** dropdown lists the available input sources and will depend on how the device is configured in the Inputs tab.

The **Setpoint** field sets the threshold for activating the ON/OFF control module. The unit of the Setpoint field will be the same as the unit of the chosen Input.

The **Control Actions** dropdown has options for direct or reverse control. In direct mode, once the Setpoint value is reached then the output will be set to ON. In reverse mode, once the Setpoint value is reached then the output will be set to OFF.


The **DeadBand** field together with the direct or reverse control action configures a deadband range around the Setpoint where the ON/OFF control does not toggle. The unit of the DeadBand field will be the same as the unit of the chosen Input.

- Example 1: the setpoint is configured for a 50 Hz rate input with a deadband of 10 Hz with direct control action. The output will activate if the input rises above 60 Hz. Conversely, the output will become inactive if the input falls below 50 Hz.

- Example 2: the setpoint is configured for a 50 Hz rate input with a deadband of 10 Hz with reverse control action. The output will activate if the input falls below 40 Hz. Conversely, the output will become inactive if the input rises above 50 Hz.

The **Save** button saves and applies the configurations settings to the ON/OFF control module. The **Delete** button only appears for a previously saved ON/OFF control module and it removes the module and allows other output types to be configured such as an alarm or mapping.

6.2.5 Setting an Alarm

Alarms are set by clicking the  icon in SYNC on the desired input signal found in the **Input Tab**.

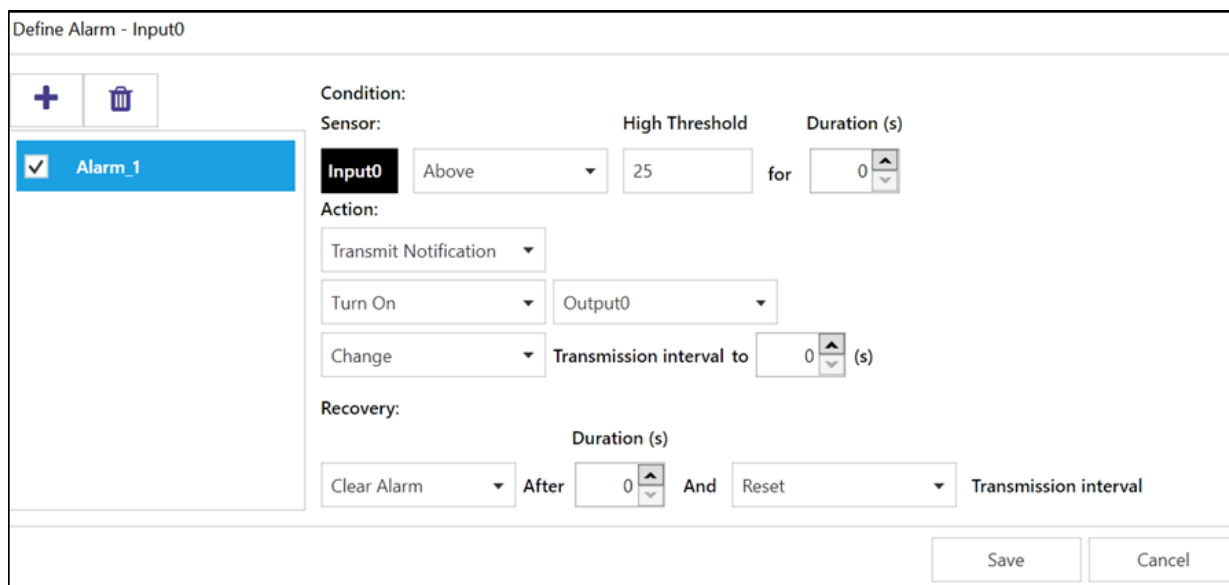




Figure 102: SYNC alarm configuration interface

Configure the **Condition** that triggers the alarm by selecting an option from the dropdown such as Above or Below. The **Threshold** field(s) will change to display whatever is appropriate for the option chosen such as a High Threshold for an Above condition or a Low Threshold for a Below condition. A **Duration** can be set for the trigger as well where the condition must be met for a certain amount of time before the alarm flags. Under the **Action** menu, the option to transmit or not transmit a notification can be set. The option to enable an output can also be set. The output chosen must not be currently used in a sensor mapping or ON/OFF control module. The data transmission interval may also be changed upon triggering an alarm, e.g. increase the rate of transmission if an excessive value is detected. The **Recovery** menu allows the option to clear the alarm after a certain **Duration** once the trigger condition is no longer met. The transmission interval can also be reset to the normal system setting once the alarm is cleared.

To create a new alarm, click the plus icon  and a new alarm will be added. To remove an alarm once it is created, select the alarm in question on the left side of the alarm panel and click the delete icon .

6.2.6 Device Settings

The system functions may vary depending on the device connected.

- **Sensor Setting:** Controls the transmission interval of the device.
- **Reset User Hours:** Resets the user hours to zero as displayed in the Device Attributes.
- **Load Configuration:** Allows the user to load a previously configured .json file to your device via Omega Sync.

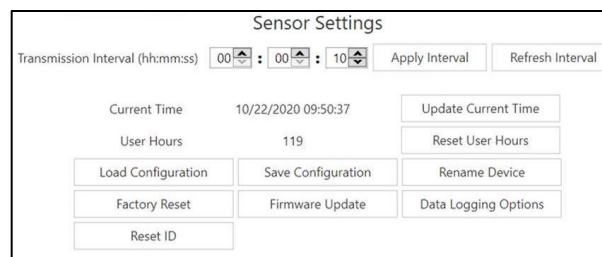


Figure 103: SYNC UI device settings

- **Firmware Update:** Allows the user to upload and update the firmware¹ of the device.
- **Update Current Time:** Syncs the sensor time with the current time displayed on your computer.
- **Save Configuration:** Allows the user to save the current configuration on Omega Sync as a .json file.
- **Rename Device:** Allows the user to rename the device.
- **Factory Reset:** Resets the device to its factory settings.
- **Set Passwords:** Protects the SYNC configuration of your device behind a password. Once a password has been set, unplug the device and plug it back in to implement the password protection.
- **Data Logging Options:** When the device data log is full, the user may choose to overwrite the oldest data and continue logging new data or stop logging new data once the data log memory is full.
- **Apply Interval:** Sets the transmission interval of your sensing device.
- **Refresh Interval:** Reads and displays the current transmission interval that may have been changed by sensor alarms.



Note: Some additional functions not listed here may be device exclusive. For more information on these functions, refer to your device User's Manual.

¹ The user must already have the updated firmware file saved to their computer.

6.3 Configuring PID Controllers and Process Meters



Important: The following information only applies when connecting qualifying PID Controllers and Process Meters. Not all configurable global settings that are available for Smart Probes will be available for PID Controllers and Process Meters.

SYNC allows users to configure qualifying PID Controllers and Process Meters (CN6xx, DP6xx, etc.) To configure these settings, you must have a PID controller or Process Meter connected to SYNC. Click on the PID Controller or Process Meter you would like to customize from your **List of Devices**.

PID Controller / Process Meter settings are adjusted on an interface that allows for full configuration as seen in **Figure 104**.

Figure 104: PID and Process Controller SYNC UI

6.3.1 CN616

The Omega CN616 PID Controller allows for the customization of PID Control, Alarms, and Scaling Factor. To access these features, click on **Settings** for the **Zone** that you wish to adjust. Click **Apply** to finalize your changes.

Figure 105: PID Controller customization

6.3.2 DP612


The Omega DP612 PID Controller allows for the customization of Alarms. To access these features, click on **Settings** for the **Zone** that you wish to adjust. Click **Apply** to finalize your changes.

Figure 106: PID Controller alarm setup

6.4 Omega Link Smart Device Password

Note  **Note:** It is **not required** to set a password for your Omega Link Devices.

Some Omega Link Smart devices, such as Smart Probes and Wireless Smart Interfaces (such as the IF-006), allow users to lock the SYNC configuration features behind a password. When a Smart Probe is attached to an IF-006 with a matching password, the IF-006 will allow the probe data to be sent to the Omega Link cloud when integrated into an Omega Link ecosystem.

Caution:  Both passwords (Interface and Probe) must match to successfully connect to the Omega Link Cloud. Devices with mismatched passwords will not have cloud access. After 3 failed login attempts, the device will power cycle before you can retry.

When setting a password, if both passwords do not match, users will have the option to automatically update both passwords to match. Once a password is set, users will be required to log in to that device before they are able to make changes to the configuration. To set a password for your Omega Link Wireless Smart Interface, navigate to the **Device Settings** tab of the SYNC interface.

Step 1: From the Device Settings Tab, click Set Password under Interface Settings or Sensor Settings, depending on which you wish to configure first.

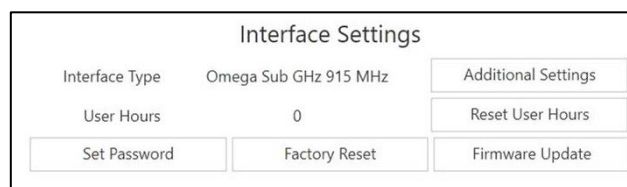


Figure 107: Interface/Device Settings SYNC UI

Step 2: Create a password and click Save Password.

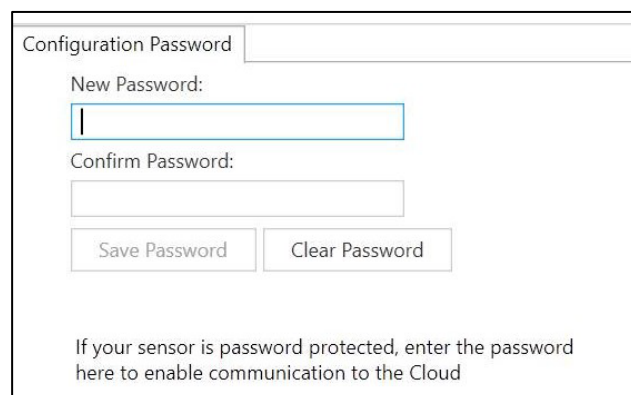


Figure 108: Device Password configuration

Step 3: If your passwords do not match, you will be able to sync them now.



Figure 109: Password synchronization between Interface and device

6.5 Capture Data Menu Tab

The Capture Data interface provides a chart that displays real-time data from connected devices. Additionally, the **Capture Data** interface contains the following features:

Extract Data		Extracts data from the device data logger.
Start/Stop Recording		Toggles the real-time data display to on/off.
Export Data to CSV File		Gathers the data that has been recorded or extracted and saves it in a CSV file.

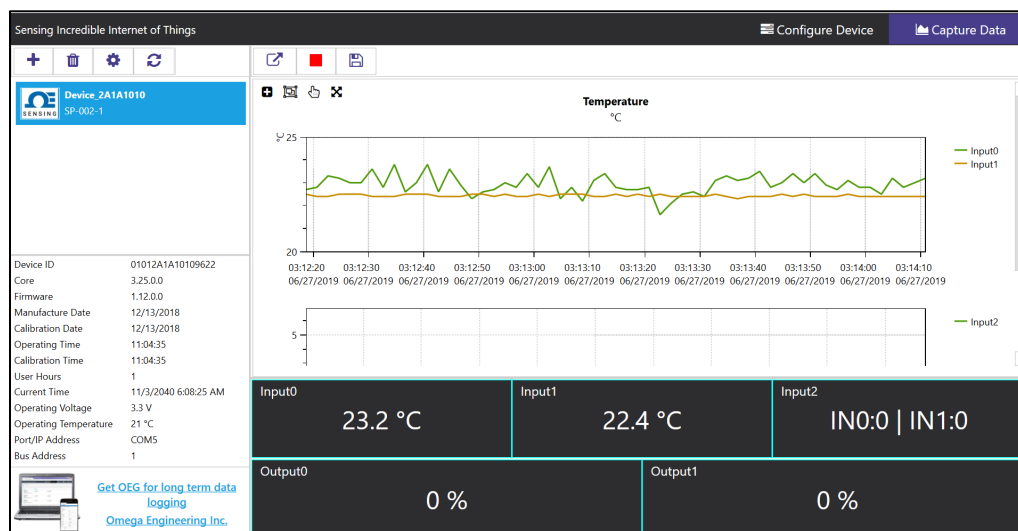


Figure 110: Capture Data SYNC UI

Note: Data will be reset if the user switches to the Configure Device interface. SYNC's **Data Capture** feature is for short-term data logging. For long-term data logging, we recommend Omega Enterprise Gateway software.

SYNC provides four ways to navigate the Capture Data Interface:

Zoom by Rectangle		Allows the user to left click and drag the mouse across the graphed data to create a rectangle that will be zoomed in on.
Zoom by Middle Mouse Wheel		Allows the user to zoom in and out of the graphed data using the middle mouse wheel. This only applies to users have a mouse with the necessary mouse wheel feature.
Pan by Left Mouse Button		Allows the user to left click and drag on the graphed data to navigate in the direction of the mouse.
Reset		Resets the graphed data to the original position.

7 LED Status Indicator Tables

For Smart Sensors

Smart Sensor LED Color	Status
Amber/Orange (solid)	Smart Sensor is powered on; not connected to the Gateway
Green (blinking repeatedly)	Smart Sensor is in Pairing Mode
Amber/Orange (blinking repeatedly)	Smart Sensor is paired and is reconnecting to the paired Gateway
Green (flash periodically)	Smart Sensor is communicating to the Gateway
Green (solid)	Smart Sensor is performing a radio firmware update
Red (solid)	Reset button has been held for Gateway radio factory reset
Red and Green (blinking)	A password error has occurred
No light	Smart Sensor is in sleep mode, or the battery is drained

For Gateways

Gateway LED Color	Status Description
Amber/Orange (solid)	Gateway is powered on; no network connection
Green (blinking repeatedly)	Gateway is in Pairing Mode or Firmware Upgrade was successful
Amber/Orange (blinking + reboot)	Gateway firmware automatic update
Red (blinking)	Gateway is powering on or Firmware Upgrade in progress
Green (solid)	IP Address successfully obtained or network connection successful
No Light	Gateway is in sleep mode, or there is no power

For IF-001 and IF-002

IF-001 & IF-002 LED Color	Status
Off	No Activity (no VBus present), waiting for next command
Amber/Orange	Waiting for USB enumeration, Pending Bootstrap mode
Red (blinking)	A short condition has been detected on the sensor power circuitry. Disconnect the device.
Red (flashing rapidly)	A message to the device was not acknowledged.
Green (solid)	After power-up and USB enumeration, the GREEN LED remains on until the first transaction with the smart sensor device
GREEN (blinking)	The GREEN LED is turned on at the beginning of each transaction with the Smart Sensor and turned off at the end.

For IF-006

IF-006 LED Color	Status
Amber/Orange (solid)	Smart Interface is powered on; not connected to the Gateway
Green (blinking repeatedly)	Smart Interface is in Pairing Mode
Amber/Orange (blinking repeatedly)	Smart Interface is paired and is reconnecting to the paired Gateway
Green (flash periodically)	Smart Interface is communicating to the Gateway
Green (solid)	Smart Interface is performing a radio firmware update
Red and Green (blinking)	A password error has occurred
No light	Smart Interface is in sleep mode, or the batter is drained

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2. Model and serial number of the product, and
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