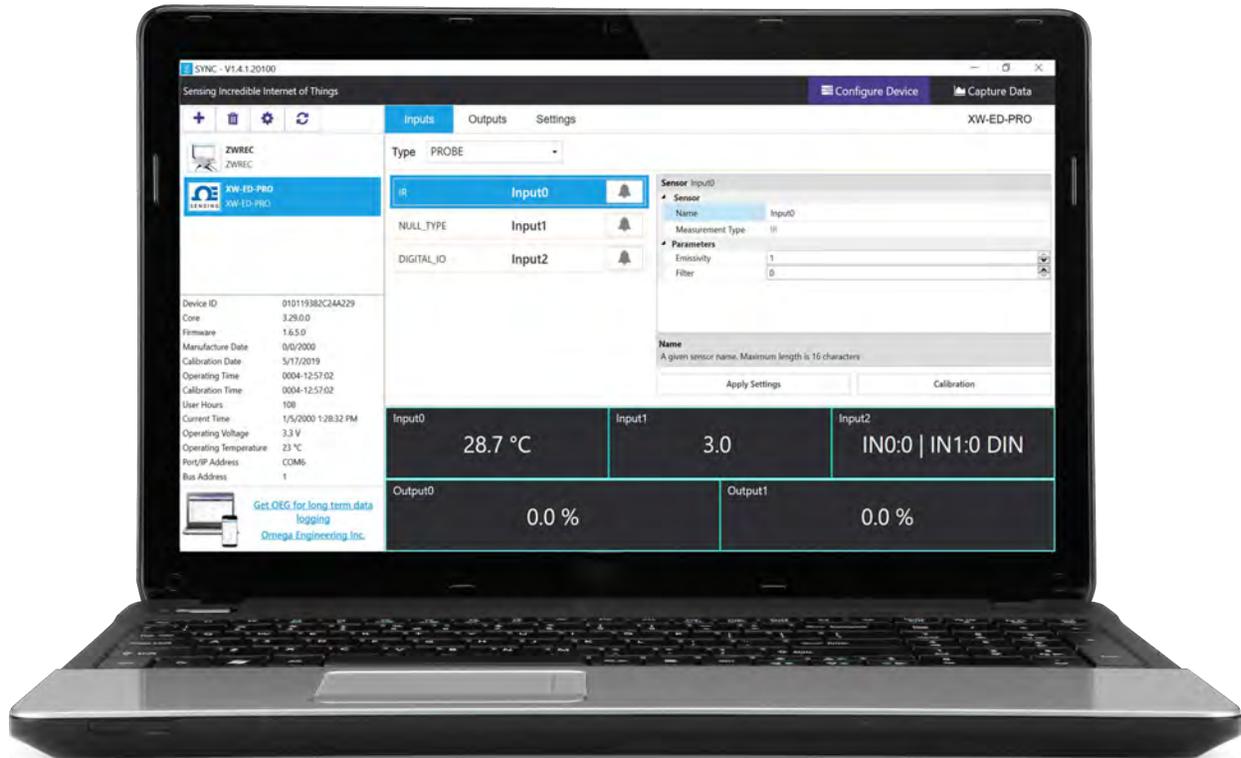


# SYNC - Omega Device Configuration Software



## User's Manual



### U.S.A. Headquarters:

#### Servicing North America:

Omega Engineering, Inc.  
Toll-Free: 1-800-826-6342 (USA & Canada only)  
Customer Service: 1-800-622-2378 (USA & Canada only)  
Engineering Service: 1-800-872-9436 (USA & Canada only)  
Tel: (203) 359-1660 Fax: (203) 359-7700  
e-mail: info@omega.com

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# 1. Introduction

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.

SYNC can be installed on Windows® 10. The minimum hardware requirements for server installation are: Dual core: CPU 2.4 GHz or up; Memory: 4 GB or up; Hard drive: 250 GB or up.

## 1.1 Licensing

SYNC is free to all customers who use Omega devices. The software is governed by Omega's EULA and is also subject to open source licensing. Please see **Appendix A: EULA** for more information.

## 1.2 Use Scenarios

SYNC is the premier device configurator for Omega Smart products. The use scenarios for the software are outlined below:

### 1.2.1 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.

### 1.2.2 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 Installation

The SYNC zip file contains the installer package for the software. Follow these steps to complete the installation process:

**Step 1:** Unzip and open the SYNC file downloaded from the Omega website.

**Note** Included in the installer package are the SYNC Application Files, .msi installer file, User's Manual, Release Notes, License and Copyright Notice, and End User License Agreement.

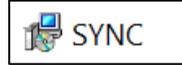


Figure 1

**Step 2:** Click the **SYNC.msi** file (**Figure 1**) and proceed through the setup (**Figure 2**) to launch SYNC for the first time.

**Note** A desktop shortcut icon of SYNC (**Figure 3**) is created after the installation. This shortcut will launch the software after the initial installation.

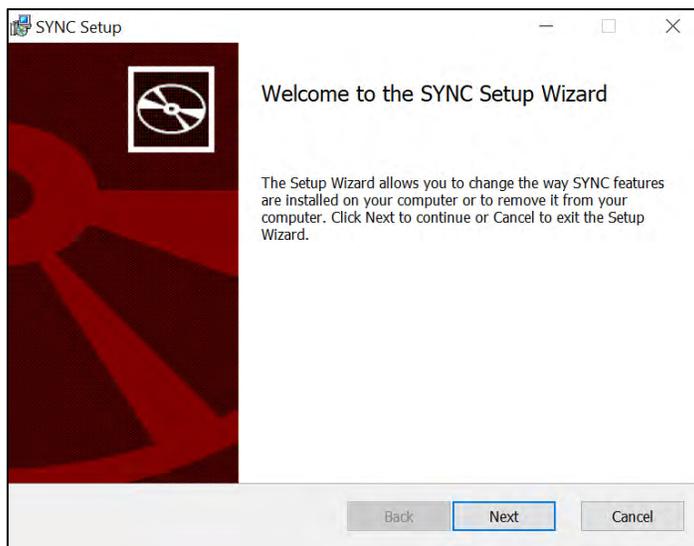


Figure 2



Figure 3

### 2.1 Windows 7 and USB Interface Installer

For Windows 7 users who will be connecting an IF-001 USB Smart Interface cable or a Platinum USB Interface to SYNC, an **OmegaVCP.inf** text file needs to be installed by copying the text file into your **C:/Windows/inf/** folder. The OmegaVCP.inf file is included in your installer package.

**Important:** It is **required** for Windows 7 users to install the OmegaVCP.inf file to properly connect a USB interface to SYNC configuration software. Administrator access is required to install this file to your computer.

## 3 Configure Device Interface

### 3.1 Menu Tabs

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 4**.

### 3.2 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.

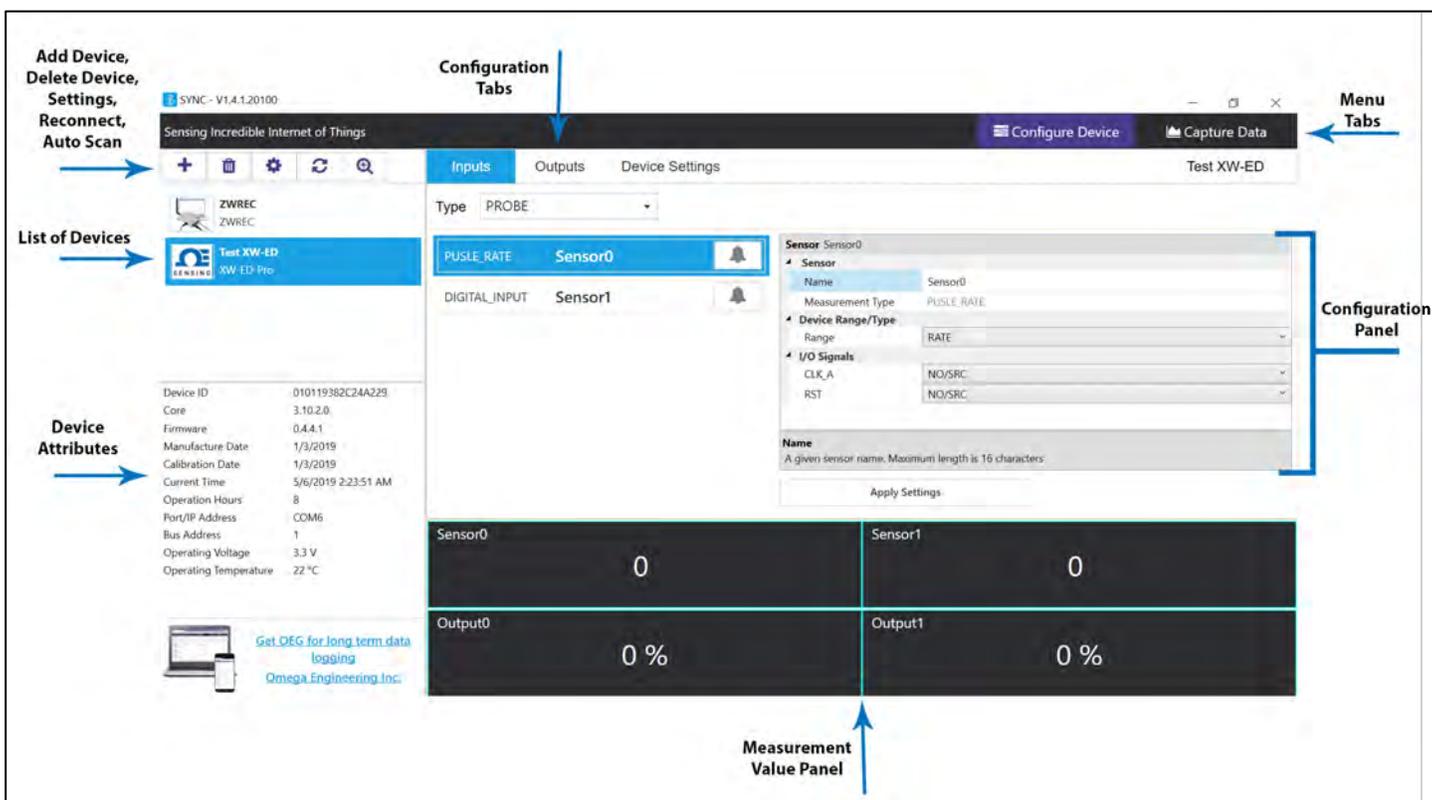


Figure 4

**Note:** The **Configure Device** interface may look differently than the one displayed in **Figure 4** depending on the product that is connected.

### 3.3 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.

You 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.

### 3.4 Device Attributes

The **Device Attributes** list will appear when you click on a device from the Device List section (**Figure 4**).

### 3.5 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.

### 3.6 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**.

### 3.7 Add or Delete Device Button

Clicking the Add Device icon  (**Figure 4**) will lead to a wizard that guides you through the process of adding a device to SYNC.

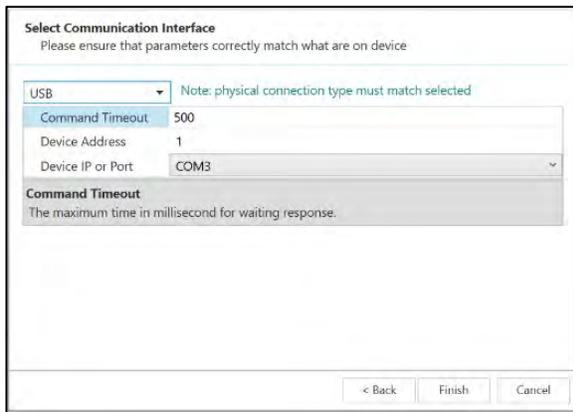


Figure 5a

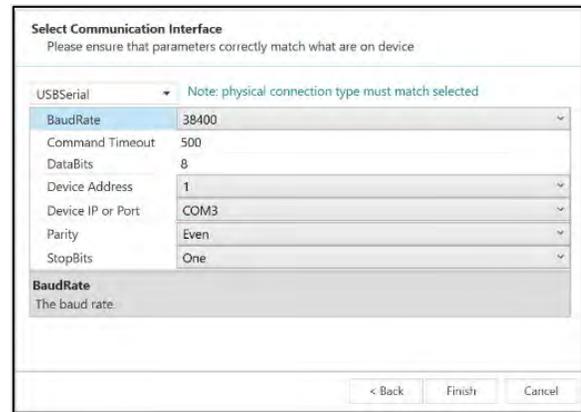


Figure 5b

Default interface settings are provided in the wizard for USB (**Figure 5a**) and USB Serial Communication Interface (**Figure 5b**). 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 4**).

### 3.8 System Settings

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

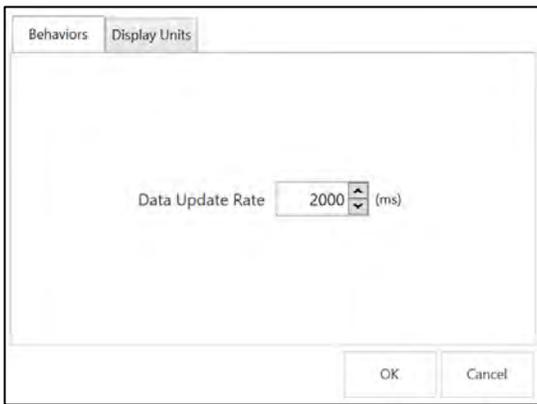


Figure 6a

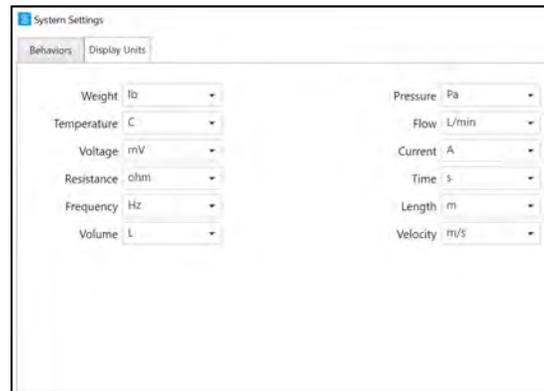


Figure 6b

The **Behaviors** tab (Figure 6a) manages the **Data Update Rate**: the frequency at which the system pulls information from the device in milliseconds. The **Display Units** tab (Figure 6b) allows the user to globally customize the units of measure displayed for various values.

**Note** ESP: 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.

### 3.9 Reconnect

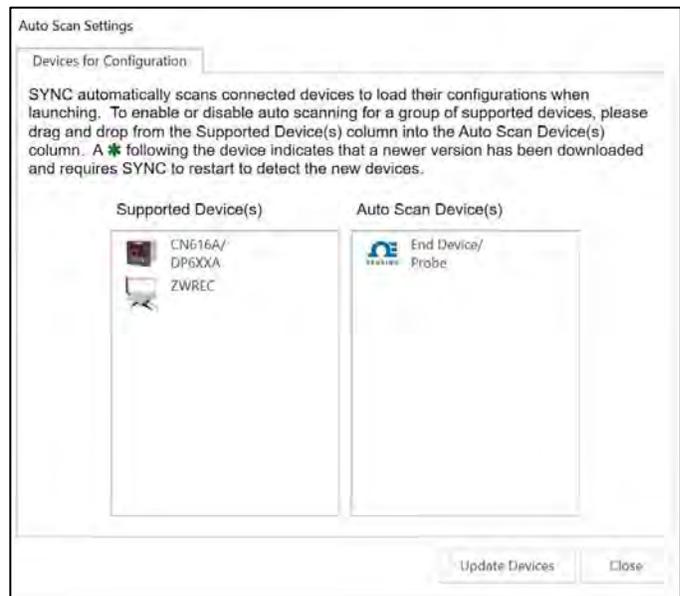
The **Reconnect** button  attempts to connect devices that may not have been auto-detected.

### 3.10 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**.

### 3.11 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.



## 4 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.

- **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.

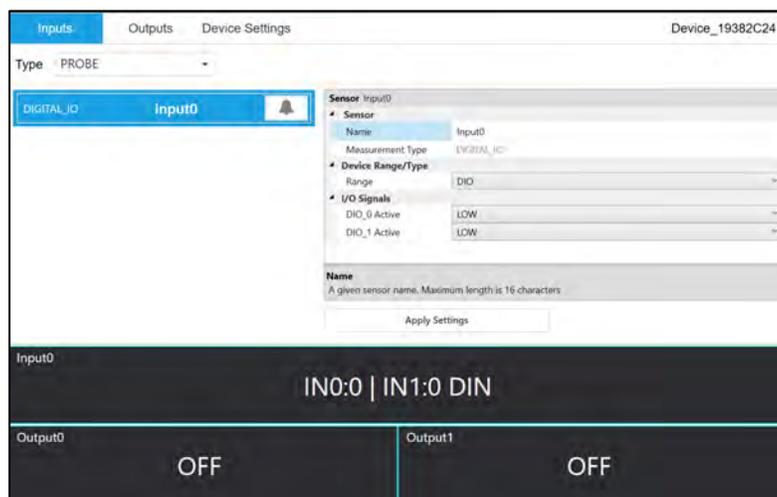


Figure 7

### 4.1 Inputs

To configure the inputs of your Wireless Device or Smart Probe, begin by navigating to the Inputs **Configuration Tab** and select your Input **Type** from the dropdown. Settings are adjusted on an interface that allows for full configuration of the device as seen in **Figure 7**.

#### 4.1.1 Setting Alarms

SYNC allows users to set alarm conditions that notify the user when said conditions are met. The alarm feature is only available on qualifying products. The alarm icon  is located to the right of the input name in the configuration interface. Clicking the alarm icon will take you to the Define Alarm dialog box as seen in **Figure 8**.

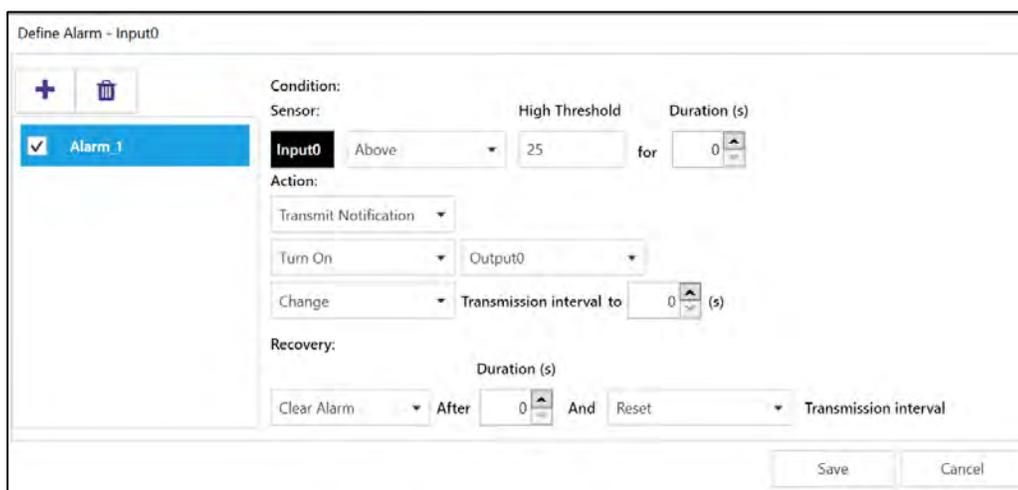


Figure 8

Once the conditions for your alarm have been set, click the Plus icon  to add the alarm to your list of active alarms, and click **Save** to finalize.

## 4.3 Outputs

To configure the outputs of your Wireless Device or Smart Probe, begin by navigating to the **Outputs Configuration Tab**. Settings are adjusted on an interface that allows for full configuration of the device.

### 4.3.1 Configuring ON/OFF Control

**Note** **Note:** Only devices that specifically offer digital outputs may configure ON/OFF Control or PWM.

To configure ON/OFF Control on a device, navigate to the **Output** configuration tab and 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 in **Figure 9**. Choose the Input with the active alarm that you would like to control and set your preferred parameters.

Once the ON/OFF Control parameters have been set, click **Save** to finalize the settings.

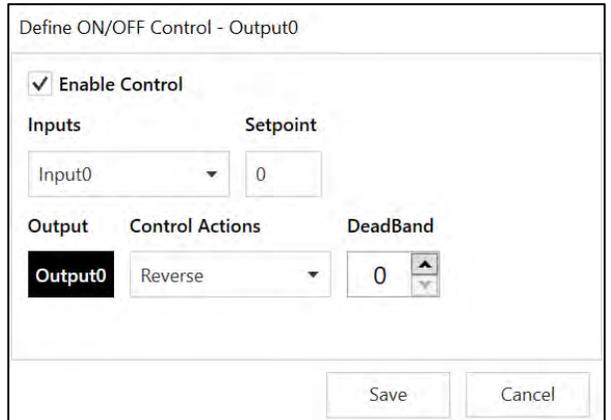


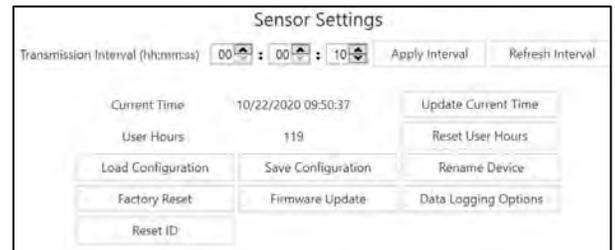
Figure 9

**Warning:** ON/OFF Control configurations will be erased if the **Input Type** is changed. If the Input Type is changed, ON/OFF Control parameters must be redefined.

## 4.4 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.
- **Firmware Update:** Allows the user to upload and update the firmware<sup>1</sup> 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** **Note:** Some additional functions not listed here may be device exclusive. For more information on these functions, refer to your device User's Manual.

<sup>1</sup> The user must already have the updated firmware file saved to their computer.

## 5 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 10**.

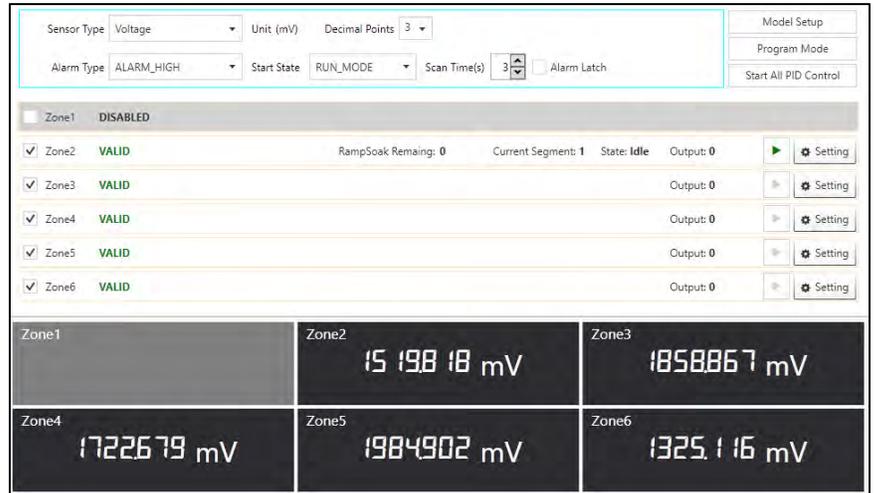


Figure 10

### 5.1 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.

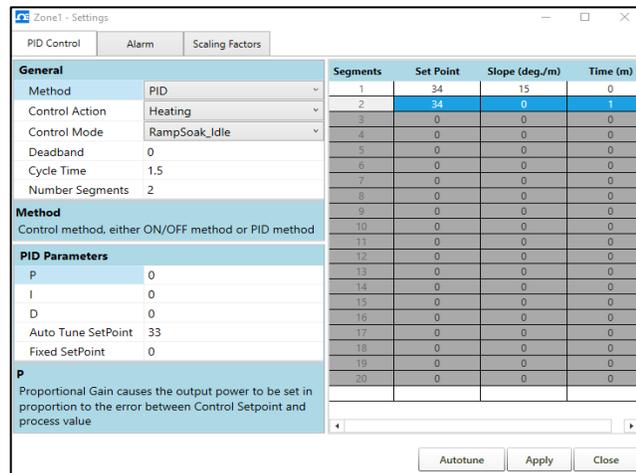


Figure 11

### 5.2 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.

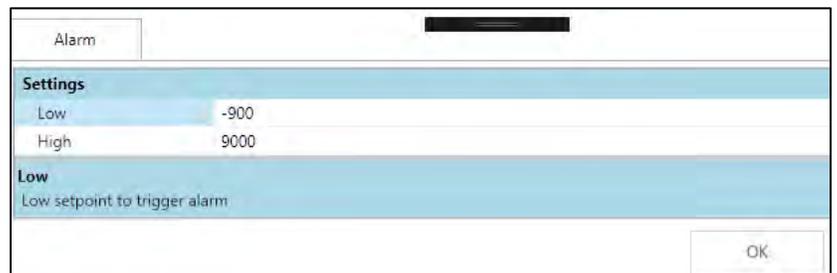


Figure 12

## 6 Layer N Smart Device Password

**Note** It is *not required* to set a password for your Layer N Devices.

Some Layer N 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 Layer N cloud when integrated into a Layer N ecosystem.

**Caution:** Both passwords (Interface and Probe) must match to successfully connect to the Layer N 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 Layer N 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.



The screenshot shows the 'Interface Settings' panel. At the top, it says 'Interface Type Omega Sub GHz 915 MHz'. Below that, 'User Hours' is set to '0'. There are three buttons: 'Set Password', 'Factory Reset', and 'Firmware Update'. To the right, there are two more buttons: 'Additional Settings' and 'Reset User Hours'.

**Step 2:** Create a password and click Save Password.



The screenshot shows the 'Configuration Password' dialog box. It has a 'New Password:' field and a 'Confirm Password:' field. Below the fields are two buttons: 'Save Password' and 'Clear Password'. At the bottom, there is a note: 'If your sensor is password protected, enter the password here to enable communication to the Cloud'.

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



The screenshot shows an 'Info' dialog box with a close button (X) in the top right corner. The text inside says: 'Do you want to Update the Interface Password as well??' and 'If the Interface Password does not match the Sensor Password data will not be sent to the Cloud.' At the bottom, there are two buttons: 'Yes' and 'No'.

## 7 Capture Data Interface

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.

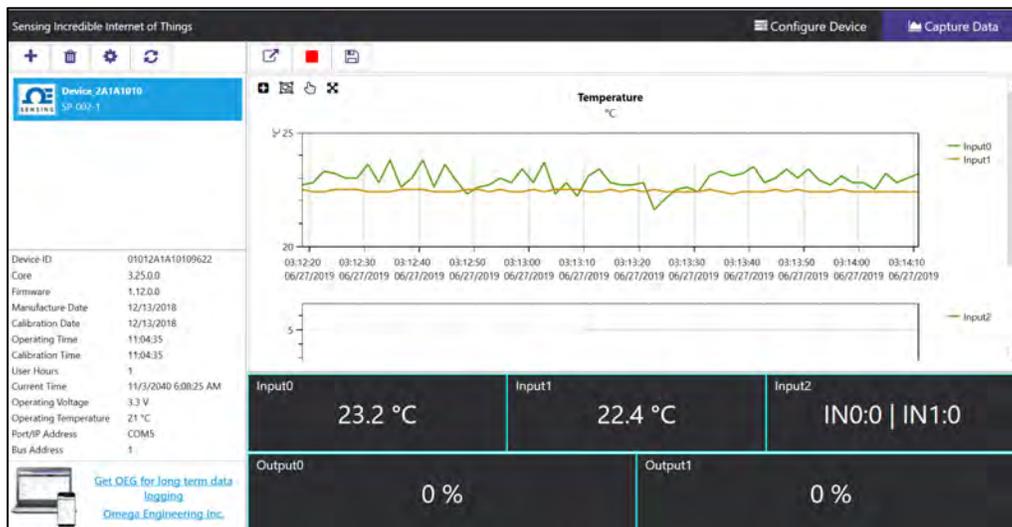


Figure 13

**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.

## 8 Appendix A - EULA

### OMEGA ENGINEERING, INC. LICENSE AGREEMENT

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