# Omega Enterprise Gateway 2.4 **CE OMEGA** User's Manual



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#### **1** Introduction

OMEGA Enterprise Gateway 2.4 (OEG 2.4) is replacement software for the OMEGA OPC Server, iCONNECT, iLOG HTTPGet, iPort, Mail Notifier, Virtual Coordinator, and OMEGA Dashboard. Users currently using the aforementioned software, are encouraged to install OEG. OEG supports the following OMEGA products:

- Legacy OMGEA Probes/Sensors
- Wireless Transmitters
- Smart Probes
- Smart Interfaces

The OEG 2.4 server can be installed on the following OS/Platforms: Windows 7, 8, 9, 10, & 11. Windows Server 2008, 2012, & 2016. All OS are 64-bit. OMEGA does not recommend operating OEG on 32-bit OS. The OEG web client is platform-independent. The minimum hardware requirements for server installation are: Dual Core: CPU 2.4 GHz or higher; Memory: 500 GB or higher.

**Disclaimer:** Functions described in this document are subject to the features outlined in the license tier the user has purchased.

#### 1.1 Use Scenarios

Note 🔊

OMEGA Enterprise Gateway 2.4 is 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:

#### 1.1.1 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.

#### 1.1.2 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.

## 2 Installation

The OEG 2.4 zip file contains the installer package for the software. Follow these steps to complete the installation process:

Step 1: Unzip and open the Omega Enterprise Gateway file downloaded from the Omega website.

- Note: Included in the installer package are the OEG Application Files, .msi installer file, User's Manual, Release Notes, License, Copyright Notice, and End User License Agreement.
  - Step 2: Click the OEGOneClickInstall.msi file and proceed through the setup to launch Omega Enterprise Gateway for the first time.
- Note Note: A desktop shortcut icon of Omega Enterprise Gateway is created after the installation. This shortcut will launch OEG after the initial installation.
  - **Step 3:** During the Omega Enterprise Gateway Setup process, the user will be prompted to complete the OPC UA Local Discovery installation wizard.



Figure 1: OPC UA Local Discovery Server installation

Step 4: Once the installation process is complete, OEG will launch automatically.

## 3 Logging In

#### 3.1 First Time Log-In

When logging into OEG for the first time, click **Need Help?** to be presented with a one-time Username and Password.

Username: admin Password: Omega

Users will be prompted to create a new password upon a successful first-time login. The Username can be changed by navigating to the **System Settings**.

If first-time login is not possible, the Omega Enterprise Gateway may need to be power cycled. To power cycle the OEG software, navigate to the **Windows OS Services** application on the computer, locate **Omega Enterprise Gateway** in the list of items, right-click Omega Enterprise Gateway, click **Stop,** and then click **Start** to complete the power cycle. Users may then attempt first-time login again.

#### 4 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 2: 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.

#### 4.1 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.

#### 4.2 Delete Device

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

#### 4.3 Rename Device

Clicking the 🔅 icon allows users to rename the device.

#### 4.4 Refresh

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

#### 4.5 View

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

#### 4.5.1 Tile View

Provides a standard tile view of the interface.

#### 4.5.2 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.

#### 4.6 Device Settings

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

#### 4.6.1 Measurements



Figure 3: 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.



#### 4.6.2 Historic Alarms and Events

ſŒ OMEGA" 🜞	🖨 DEVICES 🖓 DASHBOARD 🛢 HIS	itorian 🔟 INSIGHTS 🏾 3rd PARTY DEVICE 🛸 SYSTEM 🗭
Home	Measurements Alarm & Ev	rents Settings
Alarm Event Today This Week La	st 24 Hours Last 7 Days	
10:05:40 10:06:00 10:06:20 10:06:40 10:07:00 10:07:20 10:07:40 WA AM AM AM AM AM AM AM AM	10-08-00 10-08-20 10-08-40 10-09-00 10-09-20 10-09-40 10-10-00 10-10-20 10- AM AM AM AM AM AM AM AM AM AM	10-40 10:11:00 10:11:20 10:11:40 10:12:00 10:12:20 10:12:40 10:13:00 AM AM AM AM AM AM AM AM
Time	Message	Туре
11/10/2022, 10:06:47 AM	Temperature 76.1°F is above threshold 76°F	Alarm
11/10/2022, 10:09:07 AM	Temperature is back to normal at 75.92°F.	Disalarm
11/10/2022, 10:12:08 AM	Temperature 76.1°F is above threshold 76°F	Alarm
0 selected / 3 total		

Figure 4: 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: Historic Alarms and Events are only available on OEG Pro, OEG Business, and OEG Business Pro.



#### 4.6.3 General Settings

Æ OMEGA" 🍀		🖨 DEVICES 🚳	DASHBOARD 이용 HISTORIAN 네 INSIG	HTS 🛛 3rd PARTY DEVICE 🐗 SYSTEM 🕩
# Home	Meas	urements	Alarm & Events	Settings
General Settings	Update Interval(s)	Delay Alarm (s)	Disconnect After Read	
Test Lab #1	5	0		
Update 🔮 📓				
Alarm Settings i				
Test 1 (Test Lab #1) Test 2 (Test	st Lab #1) Test 3 (Test Lab #1)			
Disabled ~ Disabled	d ~ Disabled ~			
Update				
Value Scaling 讠				
Test 1 (Test Lab #1): Not Set 📝	Test 2 (Test Lab #1): Not Set 📝	Test 3 (Test Lab #1): Not Set	Ø	

Figure 5: 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.

#### 4.6.4 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.



Figure 6: Device Tile as it appears in the OEG UI

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 7: 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 8: OEG Map View



## 5 Dashboard

Note Note: Dashboard features are only available on OEG Pro, OEG Business, and OEG Business Pro.

#### 5.1 Creating a Monitoring Page

OEG offers a fully customizable Dashboard to monitor live device data.



Figure 9: OEG Dashboard interface

Click the ticon to create a new dashboard. Once users have named their dashboard, they can begin to add widget displays that will display their transmitted data as a meter, a graph, or as text. A device must be assigned to the widget so that it will begin to display readings from that device. Any combination of widgets and devices can be added and customized to create unique dashboards.

Step 1: Create and name the dashboard

**Step 2:** Choose the preferred widget to display device data.

Step 3: Assign a device to the widget.

## 6 Historian

The Historian creates a report of past readings within a range of time and presents them as a graph. Through the Historian tab, OEG allows users to export their chart data as a .csv file. To view past readings, start by clicking **Select Data Points**.



Figure 10: OEG Historian interface

**Note:** Note: The Historian is only available on OEG Pro, OEG Business, and OEG Business Pro.

#### 6.1 Select Data Points

The Select Data Points tab allows users to specify what device(s) will be displayed in the historian. The data will then be displayed in a graph.

#### 6.2 Graph Types

OEG currently offers three standard graph views when displaying data. Of the three, only the *redict* graph style can predict future values. To utilize the **Predict Future Value** feature, enter the date and time of the value that will be predicted and click the **Predict Future Values** button to display the data.

## 7 Insights

The Insights interface provides analytics on the health and activity of the device ecosystem. Analytics include operation activities, measurement alarms, communication errors, battery history, and signal history.



Figure 11: OEG Insights interface

Note: Note: The Insights interface is available on all versions of OEG 2.4.



#### 8 Third-Party Devices

Omega Enterprise Gateway allows for 3<sup>rd</sup> Party Device integration through MODBUS or ASCII. To add a 3<sup>rd</sup> party device, follow these steps:

CE OMEGA" 🐥				ES 🚳 DASHBOARD	●HISTORIAN 교 INSIGHTS	3rd PARTY DEVICE SYSTEM
User Registe	red Devices 🕜	)	Default Registers			
Family	Model	Туре	Name	Register	Туре	Unit
DAQ	OM240	Modbus	Channel 1	16	Process	
			Channel 2	32	Process	
			Channel 3	64	Process	

Figure 12: Third-Party Device interface

**Step 1:** Click the **t** icon under **User Registered Devices** and register the device.

Step 2: Click the 🛨 icon under Default Registers to create and define registers for the device.

To delete a 3<sup>rd</sup> party device or register from OEG, click the device or register to highlight it, and click the **second** icon

under User Registered Devices to delete a device or click the 🔲 icon under Default Registers to delete a register.

Note: 3<sup>rd</sup> Party Device integration is only available on **OEG Business Pro**.



#### 9 System Settings

The System Settings for OEG allow users to customize their profile, the units displayed, other users who can access and view the Dashboard, data update rate, license status, and firmware management.

#### 9.1 Profile

CE OMEGA" 🍀			a	DEVICES 🚳 DASHBOARD	SHISTORIAN 🔟 INSIGHTS	🖉 3rd PARTY DEVICE 🛯 📽 SYSTEM 🕞
Profile	<b>₿</b> Units	<b>U</b> sers		Ö Data & Alarm	License	Support
	Set Notification Email Multiple email addresses should admin	be seperated by ";"				
	Notification					
	Measurement Alarm Change Password	Device Event/Alarm				
	Old Password Old Password					
	New Password (at least 8 chara characters)	cters including lower, upper case,	special			

Figure 13: OEG System Profile settings

From the Profile tab, users can create a list of email addresses that will receive notifications when alarms or events are triggered and change their password.

#### 9.1.1 Change Email Server

Users can change the default email server to their preferred service by clicking **Change Email Server**.

Important: Administrator access is required. OEG must be run as an administrator when using an alternative email server. It is recommended that users seek troubleshooting solutions for email notifications from the alternative email service provider being used.

	EGA Email Service		
Server Name	e or IP		
smtp.office			
Port	Login	Password	
587	O356Account@yourdoman.com	••••••	
Secure c	onnection		
			Cancel Ok

Figure 14: Change Email Server configuration



#### 9.2 Units

€ <u>Units</u>			Users	Da	🏟 ta & Al		Licens	
Set Display U	Jnits							
AverageSize		Concentration	Counter	Current		Density	DewPoint	
cm		ug/m3	CNT	mA		#cm3	С	
DigitalInput		DutyCycle	Flow	Frequency		Gas	HeatFlux	
DIN		%	L/min	Hz		ppm	W/m2	
Humidity		Inclination	Length	Light		Magnetometer	Output	
%RH		degree	m	lx		gauss	%	
PH		Pressure	Process	PulseDelay		PulseWidth	Resistance	
рH		mbar		ms		ms	ohm	
Temperature		Time	Unknown	UpDownCounte	er	Velocity	Voltage	
			Unknown	CNT		m/s	mV	
Volume		Weight						
	~	ka						

The Units tab allows users to change the units of measurement that are displayed on OEG.

Note: Changing the units of measurement only affects the readings displayed on Omega Enterprise Gateway. Smart Sensors interpret data in SI.

#### 9.3 Users

ĴŒ OMEGA" 🐥				5 🙆 DASHBOARD	SHISTORIAN 🔟 INSIGHTS	≫ 3rd PARTY DEVICE	бузтем 🕩
<b>a</b> Profile	) Units	i <u>U</u>	Ners Ners	🔅 Data & Alan	m License	€ Supj	<b>)</b> port
Add Us	er						
User Em	il			Existing Users			
		Can Change		Email	Rights		
Note: Can ( only allows	hange option allows user to user to view assigned Device	update settings for assigned devices.	es. Can View option				
Assign	Devices						
Available	Devices			Assigned Devices			
192.16	.1.10_1			Device ID			

Figure 16: OEG System Users settings

User access to the OEG account can be managed by typing the email address of the users who will have access to either change, or view, the readings of the devices connected to the account. Users who are added here will only have access to devices that have been added in the **Assigned Devices** section. Additionally, they can restrict access to **View Only** or **Can Change**.

Note: Multi-Level Access is only available on **OEG Business Pro**. Additional user access is only possible when the admin OEG account is still actively running. If the admin OEG account is not actively running, additional users may not have access to the account.

#### 9.3.1 Add a User

To add a user, type the email address in the **User Email** textbox, then determine whether the user should have access to change or only

view the assigned devices. Click the icon to send an invitation link to the provided email address. The email will come with a URL associated with the OEG account along with a one-time, temporary password. Once the new user has logged in for the first time, they will be prompted to enter a new password and will be able to access the same data as the admin of the OEG account.

<b>CE OMEGA</b>							
Please change your password, the password must have at least 8 characters including lower, upper case, special characters							
New Password							
Confirm Password							
Change							

#### 9.3.2 Remove a User

To remove a user, simply highlight the email address of the user and click the

Figure 17: OEG additional user new

icon.



#### 9.4 Data & Alarm

CE OMEGA"	*		& DASHBOARD € HISTORIAN	i 🔟 INSIGHTS 🏼 🖉 3rd PAR	ty device 📽 system 🕩
Profi	le Units	<b>ters</b>	Data & Alarm	License	<b>D</b> Support
	Data Update Settings				
	Data display refresh rate in seconds	windows duration for real-time data in mi	nutes Default alarm/event perio	bd	
	5	10	Today	-	
	Alarm Schedules - If no sched	ule set, the alarm will be enabled a	III the time.		
	Day: Monday ~ Start:	08:15 PM 🕥 End: 10:17 PM 🔿			
	Day	Start	End		
	Monday	20:15	22:17		
	0 selected / 1 total				

Figure 18: OEG System Data settings

The Data Tab allows users to configure the frequency at which data is updated within the OEG interface.

#### 9.5 License

CE OMEGA"				🚳 DASHBOARD 🛢	HISTORIAN 🔟 INSIGHTS	🖉 3rd PARTY DEVICE 🛯 SYSTEM 🕩
Profi		₿ Units	eee Users	🔅 Data & Alarm	License	D Support
	Current License:	Business Pro, Thank you f	or choosing OEG			
	Activate License					
	I have Activation Code					
	or Get Yours Here					
	Want to Access Yo	our Data from Cloud? Sub	scribe Here			

Figure 19: OEG System License settings

The License tab displays information regarding the user's current OEG license. From this section, an activation code can be entered to activate a license. Users may also subscribe to Omega Link Cloud from this section to have access to their data anywhere.

## 10 Remote Access

Note: Remote Access is available on all versions of OEG 2.4.

OEG allows users to access their data from any device connected to the same local network with web browser access. To access data remotely, click on the automatically generated URL at the bottom of the OEG interface. The URL will begin with <u>HTTP://</u> and will be based on the local network settings. By navigating to the URL on a separate device that is connected to the same local network, data can be access remotely.

Note: Only devices with web browsers on the same network as the one hosting the OEG data will be able to access the data remotely. OEG data cannot be accessed if the web browser is on a different network.

Alternatively, parameters for **Remote Access** can be accessed by closing the OEG software application, right-clicking the desktop shortcut for OEG, and clicking **Run as Administrator**. Two parameters can be set for web server access at the bottom of the screen:

- 1. The web server port number. The default HTTP port for OMEGA Enterprise Gateway is 8080. Users can change it to any port.
- 2. The option to turn on/off the HTTPS connection.

Note Note: A server has multiple usages, therefore the default HTTP port 80 might be occupied.

🚳 Omega Enterprise Gateway Setup	—		×		
OEG Web Server Settings Ingest Sensing Data Settings			_		
OEG Web Port 8080 Enable HTTPS Connection	Use E	xisting Cert			
HTTPS option requires server certificate. Once it is enabled, you must use https:// to access the Web UI	Create	- Certificate			
Apply Changes         Stop         Start         Exit					
Note: You must be administrator (or run this utility as administrator) to start or stop OEG. Alt to services control panel to start/stop Omega Enterprise Gateway service	emativel	y, you can g	<b>jo</b>		

Figure 20: OEG Remote Access setup

If users want to use a secure connection for web browsing or calling APIs, they can turn on the HTTPS connection by selecting the checkbox **Enable HTTPS Connection**. To secure the connection, a certificate must be provided. The default self-signed certificate can be used by clicking **Create Certificate** or users can select an existing certificate. When users select an existing certificate, ensure that the certificate can be used for remote machine authentication. Users who will create a certificate on their own must be aware that they will need to use the correct IP address to access the Gateway web page.



**Note:** If the utility detects a user-created certificate on a local machine, the **Create Certificate** button will be grayed out to prevent duplicated creation.

## 11 Connecting to Omega Link Cloud

Note: The following section will outline how to connect Omega Enterprise Gateway to Omega Link Cloud. An active, registered Omega Link Cloud account is necessary to connect the two accounts. Although OEG does not require Internet connection to operate, if the account is added to the Omega Link Cloud as a gateway, an Internet connection will be required.

To connect an OEG account to an Omega Link Cloud account, follow these steps:

**Step 1:** Click the **(i)** icon at the top right of the OEG interface.

Step 2: Take note of the unique ID and the Secure Code for Cloud Registration that appears in the pop-up.

Omega Enterprise Gateway			
Version 2.0.0	ID XXXXXXXXXXXXXXXXX		
Secure Code for Cloud Registration XXXXXXXXXXXXXXXXXX			
License Basic	Trial Remaining 16 days		
Note: You can u	upgrade your license via system page	ŧ.	
		Cancel	

Figure 21: OEG Unique ID and Secure Code for Cloud Registration

**Step 3:** Open a web browser and navigate to **cloud.omega.com**.

Step 4: Sign in to the Omega Link Cloud account.

Note Note: Users who don't have an account can create one by clicking Sign Up.

Step 5: After signing in, click Add Gateway.



Figure 22: Omega Link Cloud Add Gateway button



Step 6: Enter the ID and Secure Code for Cloud Registration that from the OEG account (Gateway) and assign a name to the new Gateway.

Register Gateway	
Gateway ID	
Secure Code	
Gateway Name	
Default name is gateway id	
	Cancel Register

Figure 23: Omega Link Cloud Gateway Registration

Important: Once users have registered their OEG ID to their Omega Link Cloud account, they must power cycle the OEG software. To power cycle the OEG Software, navigate to the Windows OS Services application on the computer, locate Omega Enterprise Gateway in the list of items, right-click Omega Enterprise Gateway, and click Restart.

Services					- 0	×
File Action View	Help					
<b>* * </b>	G 🕞 🖬 🗊 🕨 🖩 H 🕨					
Services (Local)	Services (Local)					- 5
	OMEGA Enterprise Gateway Service Stop the service Restart the service Description: OMEGA Enterprise Gateway for Data Acquisition and Integration	Name Name Network Connections Network Connectivity Assist Network List Service Network List Service Network Store Interface Serv Offline Files OMEGA Enterprise Gateway OpcEnum OpcEnum OpcEnum OpenSSH Authentication Ag Optimize drives Optimiz	Description Manages ob Provides Dir Identifies th Collects and The Network This service The Network The Service OMEGA Ent Agent to hol Helps the co Enforces par Manages pa Enables serv Enables mul Provides ide	Status Running Running Running Running	Startup Type Manual Manual (Trigg Manual (Trigg Automatic Manual (Trigg Automatic Manual (Trigg Automatic Manual Disabled Manual Manual Manual Manual Manual Manual	Los Los Los Los Los Los Los Los Los Los
		Performance Counter DLL H_ Performance Logs & Alerts Phone Service Phon	Enables rem_ Performance_ Manages th_ Enables a co	Puesiaa	Manual Manual Manual (Trigg_ Manual	Loc Loc Loc
	Extended / Standard /	(	LINDICS & COL	nunning		>

Figure 24: Windows OS Services menu

Once these steps are complete, the user will have successfully connected their Omega Enterprise Gateway to Omega Link Cloud.

#### 11.1 Limitations

When an OEG account is added to the Omega Link Cloud, some devices connected to OEG may not be displayed properly on the Omega Link Cloud user interface. Omega Engineering is constantly working on bringing its extensive catalogue of devices to the Omega Link Cloud.

## 12 Adding an Omega Link Gateway to OEG (Enterprise Mode)

Omega Enterprise Gateway 2.4 software (OEG) supports Omega Link GW-001 models in local-area network environments with the addition of the Enterprise Mode feature in Omega Link GW-001 models with firmware version 1.10 or higher. The Enterprise Mode feature provides a local-area solution to sensing and data logging by bringing the advanced sensing suite of Omega Link Smart devices to the following paid tiers of OEG 2.4:

- Omega Enterprise Gateway Pro
- Omega Enterprise Gateway Business
- Omega Enterprise Gateway Business Pro

#### 12.1 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.

#### 12.2 What is Needed?

The following materials are required to download OEG, upgrade the GW-001 firmware, and to add the Gateway to OEG.

- A Windows 7, 8, 9, 10, or 11 OS PC to purchase, download, and run OEG. The PC will also be used check for the latest GW-001 firmware and will provide access to the internal Gateway UI to upgrade the firmware and enable Enterprise Mode.
- A DHCP-enabled router with Internet access and an open RJ45 Ethernet port to upgrade the firmware of the GW-001 for first time setup; also needed if the GW-001 firmware version is outdated.
- One RJ45 Ethernet cable to connect the Gateway to the DHCP-enabled router and to connect to the local area network PC or router after the Enterprise Mode process is complete.

#### • An assembled GW-001 device

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

#### 12.3 Download a Qualifying OEG license Tier

A qualifying OEG 2.4 license tier can be purchased and downloaded from the OMEGA Engineering website at the following URL:

https://www.omega.com/en-us/oeg

Note: Omega Link compatibility is only available for OEG Pro, OEG Business, and OEG Business Pro license tiers.

Once a qualifying license tier has been purchased and downloaded on a Windows PC, users may proceed by installing the software on the PC that will run OEG 2.4. Exit the software once the download process is complete.

#### 12.4 Navigate to the GW-001 User Interface

A successful connection between a GW-001 and OEG requires the GW-001 to run on **firmware version 1.10 or higher**. Users can check for the latest firmware by navigating to the **GW-001 User Interface (UI)** on a PC with a web browser.



Figure 25: GW-001 First-Time UI access setup

To access the GW-001 UI for the first time, use an **RJ45 Ethernet Cable** to plug the GW-001 device to a **DHCP-enabled router with Internet access** and follow the steps below:

**Step 1:** Using a Windows PC on the same network as the connected GW-001, type the following URL:

http://omegaiotgatewayXXXX.local

(**XXXX** should be replaced with the last 4 digits of the GW-001 **MAC address** printed on the label located on the underside of the GW-001 device).



Figure 26: GW-001 Underside Label with Mac Address

**Step 2:** From the GW-001 UI login screen, enter the password for the GW-001 (if this is a first-time login, enter the password located on the underside label of the GW-001 device.) When entered successfully, the user will be granted access to the GW-001 UI.

Important: If the user is unable to access the GW-001 UI using the DHCP-enabled router method, the Bonjour service may need to be installed on the PC. The service can be downloaded from the following URL:

http://omegaupdates.azurewebsites.net/software/bonjour



#### 12.5 Download and Install the Latest GW-001 Firmware

From the main page of the GW-001 UI, click the **Settings** tab then click the **System** tab.



Figure 27: GW-001 UI System Settings Tab

When presented with the System Settings menu, users may click the Check Online button to check for the latest GW-001 firmware version available.

System Settings				
	Firmware			
Current Firmware Version:100.0.75, Release Date:15, Oct, 2021				
Upload Firmware:	Choose a file Q Upload			
	Check Online			
	System			
	Factory Reset Reboot			

Figure 28: GW-001 UI System Settings menu

The user may then download the latest version and upload it to the GW-001 device by clicking the **Upload Firmware** search bar and selecting the firmware file from the **File Explorer**. A red LED will appear on the GW-001 indicating the upgrade is in progress.

Once the update process is complete, the LED on the GW-001 will blink green. The GW-001 will reboot and the user will need to log back into the GW-001 UI. The new firmware version will appear on the main page of the GW-001 UI once logged back in.



#### 12.6 Enable Enterprise Mode

When the GW-001 has been upgraded to the latest firmware version, Enterprise Mode will be made available in the **Security Settings**. Click the **Settings** tab in the upper right corner of the screen and clicking **Security** from the dropdown.



Figure 29: GW-001 UI Security Settings Tab

From the **Security Settings** menu, users will be able to disable the cloud registration requirement thus enabling Enterprise Mode. Click the **Turn Off Cloud Registration** checkbox to disable the feature and to set the GW-001 to Enterprise Mode. Click the **Update** button to save the change. The GW-001 LED will repeatedly blink **amber/orange** to indicate the device is in **Enterprise Mode**.

🔒 Secur	ity Settings
Change Adm	in Password
Existing Password:	
New Password:	
Confirm Password:	
Use Secure Web: Turn off Cloud Registration:	⊖ on ⊛ off ☑
Upd	late

Figure 30: GW-001 UI Security Settings Menu



#### 12.7 Add the GW-001 to OEG as a Device

If the GW-001 will be moved and connected to a local area network, it should be moved at this point and connected directly to a DHCP-enabled, local-area network router or directly to the local-area network Windows PC that has OEG 2.4 installed. Both methods require a connection via RJ45 Ethernet cable.

# Local-Area Network DHCP Router Setup

Figure 31: Local-Area-Network DHCP-Router Setup Overview

#### Local-Area Network Direct-to-PC Setup



#### Figure 32: Local-Area Network Direct-to-PC Setup Overview



Once the GW-001 has been connected to a local-area network router or local-area network PC, launch OEG 2.4 and log in to the OEG account. Follow the steps below to add a GW-001 to OEG as a device:



Figure 33: OEG Login Page

**Step 1:** After logging in to the OEG account, from the homepage, click the **+** icon or the **Add Devices** button. Then select **GW-001-Series Gateway** from the **Product Family** dropdown and **GW-XXX-X** from the **Product Model** dropdown.

1. Specify Product			
Product Family	Product Model	Name	
GW-001-Series Gateway ~	GW-XXX-X ~	Name	

Figure 34: OEG interface Add Device menu – Omega Link GW-XXX-X

#### Step 2: Input the IP Address of the connected GW-001 as it appears in the local-area network.

2. Specify Connection Parameters				
Interface	IP Address	TCP Port		
TCP ~	192.168.1.200	8888		
Device ID ( For Modbus or RS485 Daisy Chain, please ensure ID matches device address)				

Figure 35: OEG interface Add Device menu – Connection Parameters

Important: If the 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 device has been assigned under new the local-area network.



Step 3: 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.

Advanced		
4. Specify credential. It is not requi	red for most omega products.	
User Name	Password	
admin	••••••	Secure Connection
		Add Cancel

*Figure 36: OEG Interface Add Device menu – Gateway Username and Password input* 

**Step 4:** Click **Add** to finalize your configuration.

All devices connected to the GW-001 will appear, including those that are offline. The readings from offline units will display as NaN.

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.



## 13 Adding an iServer 2 to Omega Enterprise Gateway (OEG)

iServer 2 devices can be added to Omega Enterprise Gateway 2.4 (OEG) in a non-internet environment by adding the iServer 2 to OEG as a device. There are two methods to connect the iServer 2 to OEG:

- The first method requires the iServer 2 to be set to the default DHCP network setting and requires access to a DHCP-enabled router with an open port and an RJ45 Ethernet cable.
- The second method requires Administrator access to the Windows OS PC running OEG and requires the iServer 2 to be set to the Static IP network setting and the iServer 2 unit to be plugged in directly to the Windows PC.

#### 13.1 Method 1: DHCP Router Method

To add an iServer 2 to OEG using the DHCP router method, begin by ensuring the iServer 2 is set to the default DHCP network settings and follow the steps below.

Step 1: Connect the iServer 2 unit to a DHCP-enabled router using an RJ45 Ethernet cable.

Step 2: Ensure the Windows PC that will run OEG is on the same network as the connected iServer 2.

**Step 3:** Launch and log in to your OEG account.

Step 4: Click the ticon or Add Devices. Then select iServer 2 from the Product Family dropdown and click TC or Probe from the Product Model dropdown, depending on the model of iServer 2 being connected.

Product Family     Product Model     Name       iServer2     V     TC     V	1. Specify Product		
iServer2 ~ TC ~ Name	Product Family	Product Model	Name
	iServer2 ~	TC ~	Name

Figure 37: OEG Add Devices menu – iServer 2 Model

Step 5: Input the IP Address of the connected iServer 2 as it appears in your local-area network.

2. Specify Connection Parameters				
Interface	IP Address	TCP Port		
TCP ~	192.168.1.158	502		
Device ID ( For Modbus or RS485 Daisy Chain, please ensure ID matches device address)				

Figure 38: OEG Add Devices menu – Connection Parameters

Important: If the DHCP-enabled iServer 2 unit has been disconnected and moved to a separate DHCP-enabled, local-area network router or PC, the user must identify the new IP Address that the unit has been assigned under the local-area network. For models with a display, the new IP Address will appear on the unit display. For models without a display, users can access the iServer 2 web UI to check the new IP Address. **Step 6:** Click **Add** to finalize your configuration.

All sensing devices connected to the iServer 2 will appear on OEG after the pairing is successful. The readings from offline units will display NaN. For more information on how to navigate OEG, refer to the OEG Software User's Manual.

#### 13.2 Method 2: Static IP (Direct to PC) Method

To add an iServer 2 to OEG using the Static IP (direct to PC) method, begin by ensuring the iServer 2 is set to the Static IP network settings and confirm the Static IP address is set to the preferred address. The Windows PC network settings will need to be configured to properly pair the iServer 2 and OEG. Follow the steps below:

Important: Administrator access to the Windows PC is required to configure the Network settings of the PC.

Step 1: Navigate to the iServer 2 web UI and assign a Static IP address to the iServer 2 unit. Then exit the web UI.

**Step 2:** Connect the iServer 2 unit directly to the Windows PC with OEG using an RJ45 Ethernet cable.

Step 3: Navigate to the Windows Control Panel and click Network and Sharing Center.



Figure 39: Windows Network and Sharing Center

Step 4: Click the Unidentified Network Connection.

Unidentified network	Access type: No network access
Public network	Connections: 🛷 Ethernet 3

Figure 40: Network and Sharing Center – Unidentified Network

🕌 Ethernet 3 Status	×
General	
Connection	
IPv4 Connectivity: No netwo	rk access
IPv6 Connectivity: No netwo	rk access
Media State:	Enabled
Duration:	00:00:49
Speed: 42	5.9 Mbps
Details	
Activity	
Sent — 💵 —	Received
Packets: 24	0
Properties Disable Diagnose	
	Close

Figure 41: Unidentified Network Status

Step 5: Click Properties.

	Ethernet 3 Properties
	Networking Sharing
	Connect using:
	Remote NDIS Compatible Device
	Configure
	This connection uses the following items:
ernet Protocol Version 4 (TCP/IPv4) ght the selection and then click es.	Image: Client for Microsoft Networks         Image: Client for Microsoft Network         Adapting for Microsoft Net
	Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. OK Cancel

Figure 42: Unidentified Network Properties

Internet Protocol Version 4 (TCP/IPv4)	Properties	$\times$	
General			
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.			
Obtain an IP address automatical	À		
IP address:	192.168.3.240		
Subnet mask:	255.255.255.0		
Default gateway:			

Figure 43: TCP/IPv4 and subnet mask properties for micro-USB 2.0 connection

Step 6: Click Inte to highlig Propertie

Step 7: Click Use the following IP address and enter an IP address that uses the same network part (the first nine digits of the IP address) but with a unique host part (the last three digits of the IP address) as the static IP Address assigned to the iServer 2 in Step 1.

> For example, if the Static IP assigned to the iServer 2 is: 192.168.3.200, then the IP address entered in the text box should be: 192.168.3.XXX (the XXX should be any value that is **NOT** 200)

#### Step 8: Click OK to finalize

Step 9: Launch and log in to your OEG account.

# Step 10: Click the **\*** icon or Add Devices. Then select iServer 2 from the Product Family dropdown and click TC or Probe from the Product Model dropdown, depending on the model of iServer 2 being connected.

1. Specify Product			
Product Family	Product Model	Name	
iServer2	~ тс	~ Name	

Figure 44: OEG Add Devices menu – iServer 2 Model

#### **Step 11:** Input the static IP Address of the connected iServer 2.

2. Specify Connection Parameters				
Interface	IP Address	TCP Port		
TCP ~	192.168.3.200	502		
Device ID ( For Modbus or RS485 Daisy Chain, please ensure ID matches device address)				

Step 12: Click Add to finalize your configuration.

All sensing devices connected to the iServer 2 will appear on OEG after the pairing is successful. The readings from offline units will display NaN.

#### 13.3 Configuring Sensing Devices after Pairing with OEG

If the device name, sensor name, meta data, or sensor units of the iServer 2 are modified or configured after the device has been paired to OEG, it may take up to 5 minutes for the changes to be reflected correctly in the OEG user interface. It is highly recommended that users reboot OEG or delete and re-add the iServer 2 device to OEG if the user has made changes to the iServer 2 sensor units after the device has been paired to OEG to ensure the collected sensor data remains consistent.

## 14 Integrating to Another Enterprise Software

Note Note: OPC UA/DA integration is only available on OEG Business and OEG Business Pro.

Omega Enterprise Gateway provides two ways to integrate sensing data into other enterprise applications.

- 1. OPC UA Server (requires license)
- 2. OPC DA Server (requires license)

#### 14.1 OPC UA Server

Omega Enterprise Gateway comes with an embedded OPC UA server. This OPC UA server allows the OPC UA compliant enterprise application to connect to OEG and retrieve sensing data. Once OEG is running, the OPC UA server will also run and become exposed through the following URL:

#### opc.tcp://hostname:51210/OMEGA/OPCServer

**Note:** The hostname will either be the DNS name or IP Address of the machine that the Gateway is installed on.

For example, using OPC UA Foundation's sample client tool, users may browse supported protocols in the server configuration dialog and select one to connect to. Click **OK** and use an anonymous login.

K Server Configuration			
opc.tcp [ussalt.xsu:51210] - None - None - Binary	Protocol	opc.tcp [ussalt-xsu:51210]	
http WS-* [ussalt-xsu:51211] - None - None - Binary/Xml https [ussalt-xsu:51212] - None - None - Binary	Security Mode	None	
https [ussalt-xsu:51212] - None - None - Xml	Security Policy	None	
	Message Encoding	Binary	
	Application Name	Omega OPC Server	
	Application Type	Server	
	Application URI	um:localhost:Omega:OPCServer	
	Product URI	http://www.omega.com/	
	Transport Profile URI	http://opcfoundation.org/UA-Profile/Tran	nsport/uatcp-uasc-uat
	Gateway Server URI		
	Discovery Profile URI	-	
	User Security Policies	Anonymous	
Configuration options on up to date. I Warring: Selected Endepiet has an	SecuntyLevel	U	
Contriguration options are up to date. I warning: Selected Endpoint has no	Security.		
UK	Hefresh		Cancel

Figure 46: OPC UA Server Configuration



Session Name	MySession 1
Authentication Mode	Anonymous
User Name	
Password	

Figure 47: OPC UA Server Session Login

Once signed in, users can browse the measurements in the tree structure.

K UA Sample Client	has be any [ transporter.	
File         Task         Discovery         Help           OPC UA Tec           Www.opcfoundat           F         0         N         A         T         0         N           Unified Architecture demonstration app         OPC         Unified Architecture demonstration app         OPC         OPC	hnology Sample ion.org UA Sample Client	Leam more
opc.tcp://localhost:51210/Omega/OPCServer - [None:Nor	ne:Binary]	▼ Connect
→ → MySession 1	Image: Construction of the second	
Create a subscription to see notifications		
opercept/focalhosest210/Omega/OPCServer (None)	Okomary Server Status: Running 2017-02-21 11:50:55 0/0	.::

Figure 48: OPC UA Sample Client tree structure

Each measurement is presented as a tree node and has three attributes: Name, Value, and Unit. To display the most current readings, right-click the measurement node and click Browse in the pop-up menu.



Rowse Address Space				
< > 108.178.128.2	201_0.Temperature			•
ReferenceType	Node	Туре	Value	
ComponentOf HasProperty HasProperty HasTypeDefinition OrganizedBy	108.178.128.201_0 Name Unit Value SensingValueType 108.178.128.201_0	SensingEndDeviceType PropertyType PropertyType BaseObjectType SensingEndDeviceType	Temperature Celsius 20.7	

Figure 49: OPC UA Server Address Space Browser

Different OPC client applications, such as Enterprise application, have a different UI to access the OPC server. Please refer to the user manual of the software you are using.

#### 14.2 OPC DA Server

Omega Enterprise Gateway exposes the OPC DA 2.0 and 3.0 compatible server that allows the OPC DA client to connect. Below is an example of using Matrikon's free OPC DA Explorer to test the OPC Server. You can download the OPC Explorer here:

#### https://www.matrikonopc.com/downloads/176/software/index.aspx

Once the software is started, you can navigate to OMEGA Enterprise Gateway DA OPC Server and click the **Connect** button to connect to the OPC server.





Figure 50: Matrikon OPC DA Explorer

Once the server is connected, you can browse the items from the available items list box. Items are automatically populated once you have added a device to the Omega Enterprise Gateway.

MatrikonOPC Explorer ({08BDCE97-2791-46C0-B4D8-A724AEE35F	72})
File Edit View Browse	
🦋 🦉 🗶 🔳 🔥 🖻 🥌	
Tag Entry         Item ID:       192_168_1_200_0.110.0         Data Type:       Empty/Default         Access Path:       🔅	Tags to be added:
Eilter:       Data Type Filter:       Empty/Default       ▼         ✓       Write Access       ✓       Branches       ☐       Items         Available Items in Server 'OmegaEnterpriseGateway.DAOPCServer':       ✓       ✓       ✓	
Image: 192_106_1_200_0     Image: 100       Image: 110     Image: 110       Image: 111     Image: 112       Image: 112     Image: 113       Image: 112     Image: 113	X
Image: Contract of the second seco	KAncel

Figure 51: Matrikon OPC DA Explorer available items list



#### 15 Exporting Data with the OEG Data Tool

The Omega Enterprise Gateway (OEG) Data Tool allows users to backup, restore, clean, and export OEG data. The OEG Data Tool can be utilized to accomplish the following tasks:

- **Backup Data** The *Backup Data* function provides an efficient way to back up critical OEG user data collections. This feature is a critical step when migrating OEG from one computer to another computer.
- Restore Data The Restore Data function allows users to restore all previously backed up OEG data collections. When coupled with the Backup Data function, users can migrate OEG from one computer to another.
- Clean Data The Clean Data function provides users with a tool to clean abnormal data by removing collections that have 0 data points due to misconfiguration. Some devices may occasionally read abnormal data due to environmental electromagnetic interference or other factors.
- Export Data The Export Data function exports each sensor channel into a single .csv file. Users can utilize the OEG Data Tool to combine all selected measurements into a single .csv file.

Note 🖙

Note: Omega Engineering is not responsible for data lost due to user error. The Data Tool is only available for users with **Pro, Business**, or **Business Pro** OEG license tiers.

#### 15.1 Launching the OEG Data Tool

After downloading and installing OEG, navigate to the Windows OS search bar and type **OEG Data Tool** to find and open the OEG Data Tool application.

Important: When connecting to the OEG Database, users must enter the OEG URL and the Admin Password. The OEG URL is the same URL used to access the user's OEG web UI. The Admin Password is same as the OEG admin password.

All Apps Documents Web More 🔻	R		CEG Data Tool - This	tool is provided as is	without warranty OME/	A is not remonsible fo	r data loca caused bu h		
Best match CEG Data Tool App			Connect to OEG Progress	Backup Data	Restore Data	Clean Data	Export CSV	iman. – L X	
Documents - This PC  OEG Data Tool Manual.docx > Search the web	OEG Data Tool App	N	Failed to connect to OEC	6 database.	nnect to OEG Database	-	• ×		
	C Open Run as administrator Open file location Pin to Start Pin to taskbar Uninstall			Admin	Accalhost.8080	Conner	t Eut		
🔎 oeg data Tool									

Figure 52: Launching the OEG Data Tool



#### 15.2 Backup Data

Upon successful login, all function buttons are enabled. To begin the Backup Data process, follow these instructions:

Step 1: Click on the Backup Data button.

Step 2: Select a backup folder and specify time range, click Ok to start the backup process.

OFC Data Tool - Thi	tool is provided as is	without usersate OME	74 is not seening this fo	as data laca ca	used by by		Connect to OEG	s tool is provided as is Backup Data	without warranty, OME	GA is not responsible fo	er data lose caused by hun Export CSV
Connect to OEG	Backup Data	Restore Data	Clean Data	Export	CSV	nan	Progress Backup 192.168.1.211_J Backup 192.168.1.211_ Backup 192.168.1.211_ Backup 192.168.1.213_ Backup 192.168.1.213	0_Temperature_0_Mea 0_DewPoint_0_Measur 0_DewPoint_0_Measur 1_56_1_Measurements 1_56_1_Measurements	surements is done. ements. ements is done. k. L. Lis done.		
Connected to OEG dat	abase.  Data Backup Please select ba	Options ckup folder		-	0 ×	٦	Backup 192.168.1213 Backup 192.168.1213 Backup 192.168.1213 Backup 192.168.1213 Backup 192.168.1213 Backup 192.168.1213 Backup 192.168.1213	1_15_0_Measurements 1_15_0_Measurements 1_2_1_Measurements. 1_2_1_Measurements. 1_2_2_Measurements. 1_2_2_Measurements. 0_Temperature1_0_Me	i, i is done. is done. is done. asurements.		
	C\temp\New folder Select ○ All ④ Select Time Range Start End Thursday, June 18, 2020 9:33:00 AM ♥♥ Ok Cancel							Backup 192.168.1212_0_Temperature1_0_Measurements is done. Backup DeviceAlarms. Backup COM3_1_Channel0_0_Measurements. Backup COM3_1_Channel0_0_Measurements. Backup DeviceProperties. Backup DeviceProperties is done. Backup DeviceAlias is done. Backup DeviceAlias is done. Backup 192.168.1212_0_Humidity1_0_Measurements. Backup 192.168.1212_0_Humidity1_0_Measurements is done. Backup DeviceAlias is done. Backup 192.168.1212_0_Humidity1_0_Measurements is done. Backup DeviceAlias is done.			

Figure 53: Data Backup Options interface

The backup progress will be displayed in the Data Tool textbox.

#### 15.3 Restore Data

To restore data from previously backed up data, click on the **Restore Data** button. Clicking Restore Data will open the file folder and allow users to select one or more backup files. After selecting the backup file, click **Open** to start the restoration process. Progress will be displayed in the Data Tool textbox. Depending on the number of files selected, the Data Tool may need time to complete the restoration process.

						_						
	This PC > OS (C) > temp > New folder		~ 0	Search New folder		P						
ganize • New fol	older			12	• 💷	0						
System32	^ Name	Date modified	Type	Size		^	^					
🧵 temp	192.168.1.211_0_DewPoint_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,150 KB								
OneDrive	192.168.1.211_0_Humidity_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	1,427 KB								
Cincoline .	192.168.1.211_0 Pressure_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,134 KB			varranty, OMEGA is not responsible for data lose caused					
This PC	192.168.1.211_0_Temperature_0_Measurements.oeg	6/25/2020 9:50 AM OEG File		2,159 KB								
3D Objects	192.168.1.212_0_DewPoint_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	961 KB			ore Data Clean Data Export CSV					
Desktop	192.168.1.212_0_DewPoint1_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,045 KB								
Documents	192.168.1.212_0_Humidity_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	960 KB								
Downloads	192.168.1.212_0_Humidity1_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,043 KB								
Music	192.168.1.212_0_Temperature_0_Measurements.oeg	6/25/2020 9:50 AM OEG File 6/25/2020 9:50 AM OEG File		960 K8			rature 0 Measurements.oeg. Please wait					
Pictures	192.168.1.212_0_Temperature1_0_Measurements.oeg			2,043 KB			rature 0 Measurements.oeg is done.					
Vidana	192.168.1.213_1_2_0_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,162 KB								
NIGEOS	192.168.1.213_1_2_1_Measurements.oeg	6/25/2020 9:50 AM	OEG File	2,162 KB			vint_0_Measurements.oeg. Please wait					
e osas						_	int_0_Measurements.oeg is done.					
File n	name: [*192.168.1.212_0_Humidity_0_Measurements.oeg* *192.168.	1.212_0_Humidity1_0_Meas	surements.oeg" "192.1	168.1.212_0_DewPoint_0	0_Measuren	m ~						
				Open	Cancel		int1_0_Measurements.oeg. Please wait					
						- · ·	int1_0_Measurements.oeg is done.					
		total	records 61904 in	nported.	1 212 0 1	Li con la	idite & Managements and Diagona unit					
		impo	orting C:\temp\/ve	w folder 192.168.	1.212_0_1	Humic	idity_0_Measurements.oeg. Please wart					
		impo	orung C:\temp\ive	ew tolder (192.108.	1.212_0_1	Humic	idity_0_measurements.oeg is done.					
		total	1600103 29222 111	iporteo.								

*Figure 54: The user selects the backup data files that will be restored* 

#### 15.4 Cleaning Data

**Caution:** Once data has been cleaned or deleted, it cannot be recovered.

OEG can capture abnormal readings from devices due to environmental electromagnetic interference and/or other unknown factors. Users can utilize the **Cleaning Data** function to remove abnormal readings. To delete data points, simply click the data points to highlight them and click the **Delete** button.

The data cleaning dialog will display all available data points. Users can apply filters to quickly identify points of interest. To start the cleaning process, follow the instructions below:

**Step 1:** Click on the **Clean Data** button to bring up the data cleaning dialog box and select data points and a date range to load the data in the chart.

Device	Source	Channel	Name	Tupe	LastTimeStamp	Unit	l actilindate	TotalData
102.160.1.212.0	Tamanaratura	Channer	Tamparatura	Тапалата	cazanzooocooctooct	la	C/25/2020 12:10:05 DM	167622
192.168.1.212_0	lemperature I	0	Temperature T	lemperature	637287090059021135	C	6/25/2020 12:10:05 PM	15/632
192.168.1.212_0	Humidity I	0	Humidity	Humidity	637287090059031139	%RH	6/25/2020 12:10:05 PM	15/646
192.168.1.212_0	DewPoint1	0	DewPoint1	DewPoint	63/28/09005904116/	C	6/25/2020 12:10:05 PM	15/966
192.168.1.211_0	Humidity	0	Humidity	Humidity	637287090055961185	%RH	6/25/2020 12:10:05 PM	143487
192.168.1.211_0	Temperature	0	Temperature	Temperature	637287090055491154	C	6/25/2020 12:10:05 PM	190385
192.168.1.211_0	Test	0	Test	Temperature	637266443739233518	C	6/1/2020 2:39:33 PM	0
192.168.1.211_0	test	0	test	Temperature	637266467745572355	C	6/1/2020 3:19:34 PM	0
192.168.1.211_0	MyTest	0	Specify Val	lue Range	- 🗆 X	С	6/1/2020 10:59:59 PM	0
192.168.1.212_0	Temperature	0			100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100	С	6/24/2020 11:45:47 AM	62278
192.168.1.212_0	Humidity	0	Remove Value	s Below	~	%RH	6/24/2020 11:45:47 AM	62270
192.168.1.212_0	DewPoint	0		ow Value:	1(	C	6/24/2020 11:45:47 AM	62363
192.168.1.211_0	Pressure	0		ow value.		Pa	6/25/2020 12:10:05 PM	189131
192.168.1.211_0	DewPoint	0	Hi	igh Value:	(	C	6/25/2020 12:10:05 PM	189038
192.168.1.217_0	ProcessValue	0				*	6/1/2020 11:03:56 PM	0
<				L	OK Cancel		v.	>
From: Wedne	esday, June 24,	2020 12:	🗘 👻 To: Thurs	sday, June 25,	2020 12:10: 🗘 👻 Rei	oad Da	ta Auto Clean Manu	al Clean S
					- 192.	68.1.21	2_0_Temperature1_0_Me	asurements
					- 192.	68.1.21	2_0_Humidity1_0_Measu	rements
-					- 192.	68.1.21	2_0_DewPoint1_0_Measu	irements

Figure 55: Users will select a range of data points to be cleaned

There are two methods to complete the data cleaning process. The **Auto Clean** function will try to detect abnormal data using running standard deviation check. The **Manual Clean** function allows users to specify outlier value ranges to remove the outliers.

Step 2: Choose Auto Clean or Manual Clean depending on your preference.

**Step 3:** After the data cleaning process is complete, click **Save** to save the cleaned data.

#### 15.5 Export Data

The Export Data function allows users to combine multiple data points into a single .csv file. To utilize the Export Data function, follow these instructions:

Filter:			Apply Fi	rom: Wednesd	lay, June 24, 2020 2:3	*	To: Thursday, June 25, 2	020 2:30:1
Device	Source	Channel	Name	Туре	LastTimeStamp	Unit	LastUpdate	TotalData
192.168.1.212_0	Temperature1	0	Temperature1	Temperature	637287090059021135	С	6/25/2020 2:30:10 PM	42281
192.168.1.212_0	Humidity1	0	Humidity1	Humidity	637287090059031139	%RH	6/25/2020 2:30:10 PM	42273
192.168.1.212_0	DewPoint1	0	DewPoint1	DewPoint	637287090059041167	С	6/25/2020 2:30:10 PM	4137
192.168.1.211_0	Humidity	0	Humidity	Humidity	637287090055961185	%RH	6/25/2020 2:30:10 PM	15544
192.168.1.211_0	Temperature	0	Temperature	Temperature	637287090055491154	С	6/25/2020 2:30:10 PM	16958
192.168.1.211_0	Pressure	0	Pressure	Pressure	637287090055981216	Pa	6/25/2020 2:30:10 PM	16925
192.168.1.211_0	DewPoint	0	DewPoint	DewPoint	637287090055991143	С	6/25/2020 2:30:10 PM	16921
192.168.1.213_1	2	0	Temperature0	Temperature	637287090066891429	С	6/25/2020 2:30:11 PM	17051
192.168.1.213_1	2	1	Humidity1	Humidity	637287090066911139	%RH	6/25/2020 2:30:11 PM	17051
192.168.1.213_1	2	2	Pressure2	Pressure	637287090066911139	Pa	6/25/2020 2:30:11 PM	17051
192.168.1.213_1	56	0	Temperature0	Temperature	637287090066921135	С	6/25/2020 2:30:11 PM	17051
192.168.1.213_1	56	1	Humidity1	Humidity	637287090066931160	%RH	6/25/2020 2:30:11 PM	17051
COM3_1	Channel0	0	Channel0	Temperature	637287090070841159	С	6/25/2020 2:30:11 PM	7255
COM4_1	Channel0	0	Channel0	Temperature	637287090072761174	С	6/25/2020 2:30:12 PM	17052
COM4 1	Channel1	0	Channel1	Humidity	637287090072791198	%RH	6/25/2020 2:30:12 PM	17052

Step 1: Click Export CSV and select the desired data, time range and file to export.

Figure 56: Users must define a range before exporting data

Step 2: Click the Export button to export the data.

🔳 OEG Data Tool - Th	_	×				
Connect to OEG	Backup Data	Restore Data	Clean Data	Export CSV		
Progress						
Connected to OEG da Retrieving data, pleas Retrieving data comp Prepareing data to w Writing data to file Data exported sucess	tabase. e wait leted. ite fully to C:\temp\New fol	der\test.csv .				

*Figure 57: A successful export will be displayed in the Data Tool textbox.* 

This process will take time depending on how many data to be exported. The exportation progress will be displayed in the Data Tool textbox.

# WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

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# **RETURN REQUESTS/INQUIRIES**

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

# FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

- 1. Purchase Order number under which the product was PURCHASED,
- 2. Model and serial number of the product under warranty, and
- 3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

- 1. Purchase Order number to cover the COST of the repair,
- 2. Model and serial number of the product, and
- 3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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