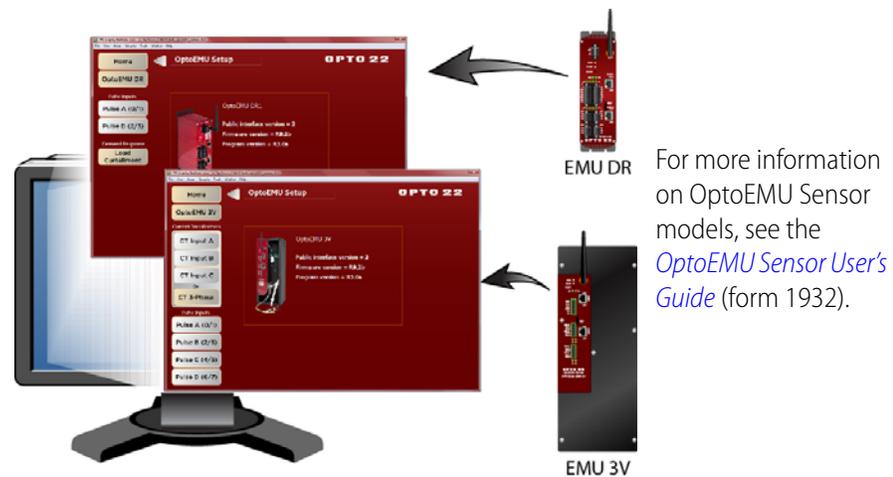


Quick Start: Energy Monitoring HMI for OptoEMU Sensor

Introduction

The Energy Monitoring HMI (human-machine interface) for OptoEMU Sensor gives you a simple way to see the energy your facility is using, so you can analyze this detailed data and take steps to reduce energy costs.

The Energy Monitoring HMI displays data from one OptoEMU Sensor (any model).



For more information on OptoEMU Sensor models, see the [OptoEMU Sensor User's Guide](#) (form 1932).

This Quick Start shows you how to set up and use the Energy Monitoring HMI in order to see your energy usage data.

What You Will Need

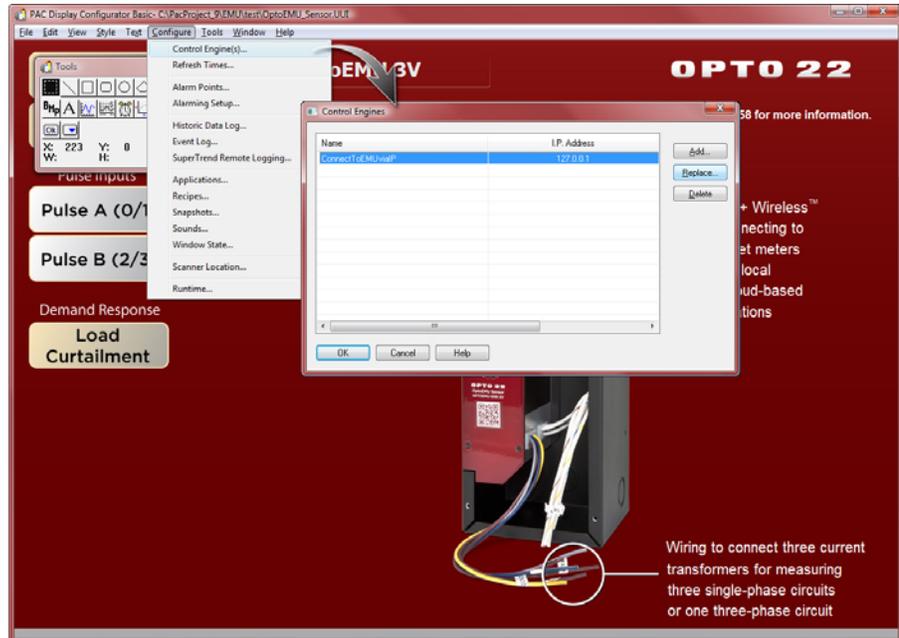
- **OptoEMU Sensor™ energy monitoring unit**, already installed and configured for the meters, electrical panels, or equipment you are monitoring (See the [OptoEMU Sensor User's Guide](#) for installation and configuration steps.)
- **A Microsoft® Windows® computer** on the same Ethernet network as the OptoEMU Sensor. Computer requirements:
 - Windows 7 Professional (32-bit or 64-bit), Windows Vista® Business (32-bit), or Windows XP Professional (32-bit, with SP2 or higher).
 - Available hard disk space: 124 MB
- **Energy Monitoring HMI for OptoEMU Sensor** from the Opto 22 website. This HMI includes all the software you need.

Setting Up the Energy Monitoring HMI

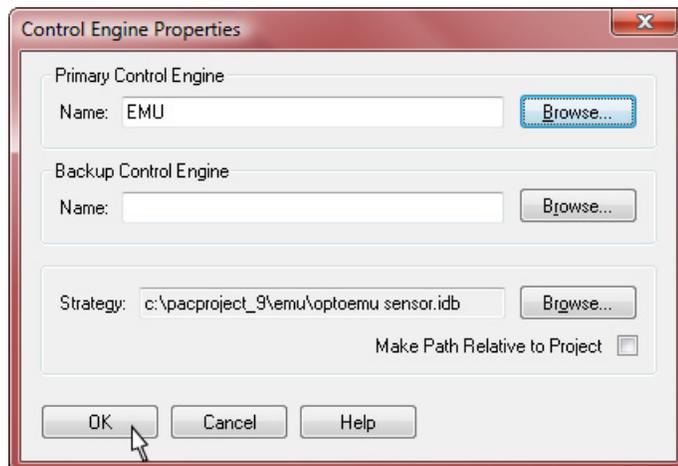
1. If you haven't already downloaded the Energy Monitoring HMI for OptoEMU Sensor, go to opto22.com, search for Energy Monitoring HMI, and download the file. Save it to your desktop. Double-click the Setup file to open it.

The program installs PAC Display software and the HMI project.

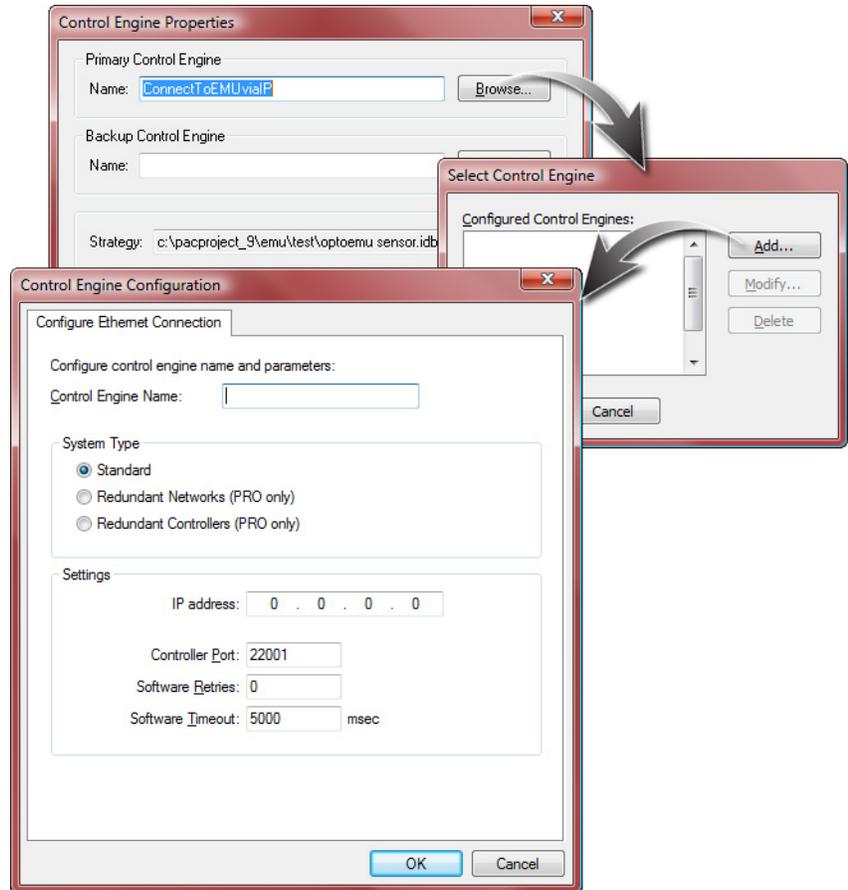
- From the Start menu, choose Programs > Opto 22 > Energy Monitoring HMI. PAC Display Configurator opens, showing the HMI development project. This is not the HMI itself; this is where you set up the information required to start sending data to the HMI.
- From the Configure menu, choose Control Engines.



- Select the `ConnectToEMUviaIP` control engine and choose Replace. The Control Engine Properties dialog box opens:

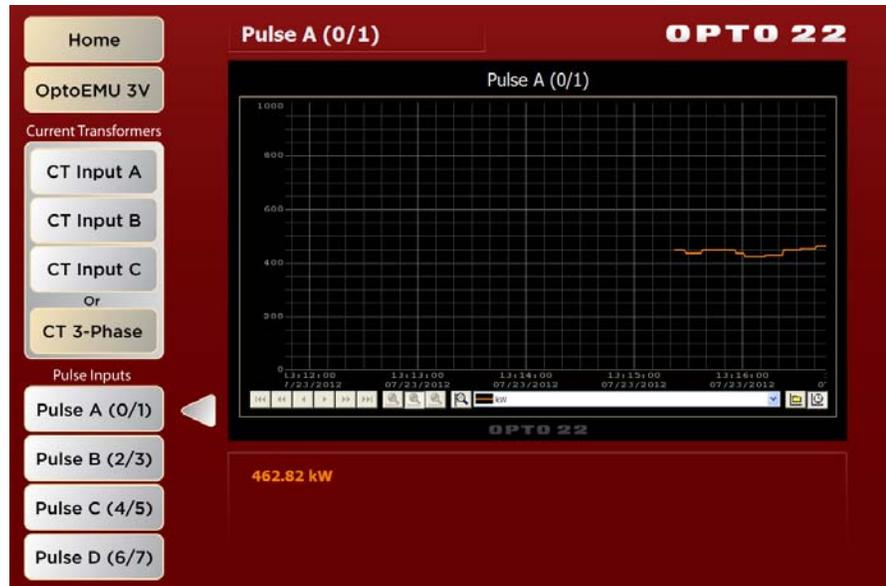


5. Click the Browse button next to Primary Control Engine. In the Select Control Engine dialog box, click Add.



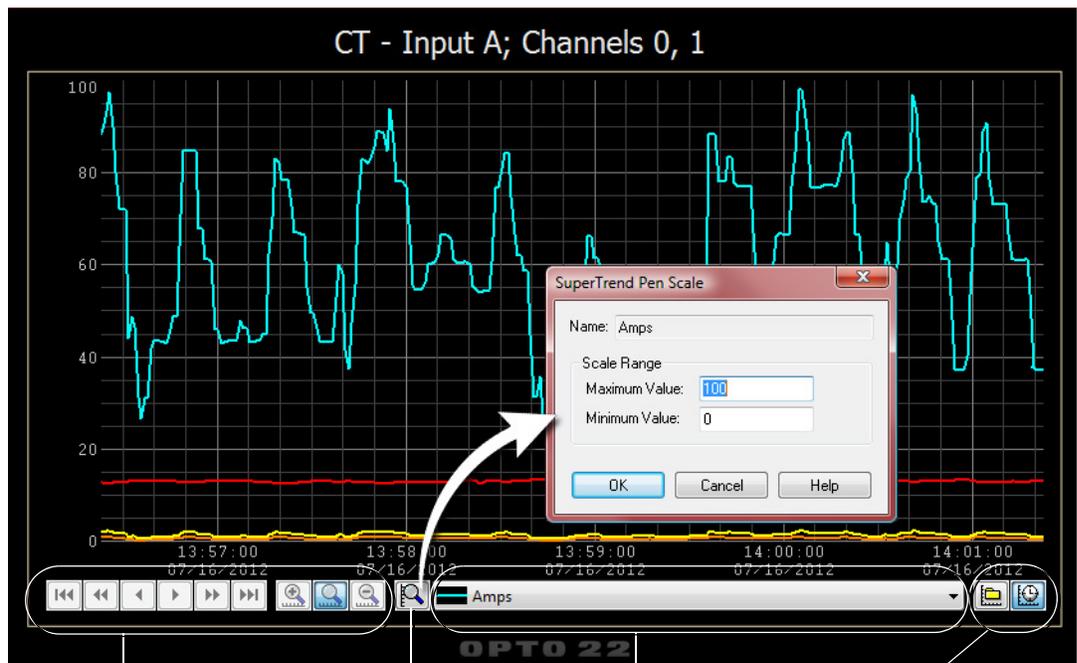
6. In the Control Engine Name field, type a name for the OptoEMU Sensor. Leave System Type as Standard.
7. Under Settings, type the Sensor's IP address. Leave other settings as they are. The IP address should be written on a label on the bottom or side of the Sensor's box. For more information, see the [OptoEMU Sensor User's Guide](#).
8. Click OK.
The OptoEMU Sensor's name now appears in the Control Engines dialog box:

For example, to see energy data for Pulse Input A, click the Pulse A button:



Data is plotted on the graph in real time, and current values are noted beneath the graph. Data is also recorded in historical logs that you can view.

You can change the data display in several ways, as you can see in this example:



For historical logs, scroll or zoom to examine data.

Change y-axis scale.

Select the active pen.

Select real-time or historical trends.

Tips for Viewing Data

If you can't see data on an input that you know is connected, or if data is cut off at the top, check the y-axis scale. To see more (or less) detail, you can adjust the y-axis scale of a specific trend line.

1. Select the pen (line) to be adjusted.
2. Click the Scale icon .
3. Type a new scale range and click OK.

OptoEMU 3V—Remember that a Sensor 3V can be directly wired to *either* one three-phase *or* up to three single-phase panels or equipment. All buttons are shown, but you'll only see data on the inputs that are actually wired.

To see historical logs, click the historical trends icon  at the lower right.

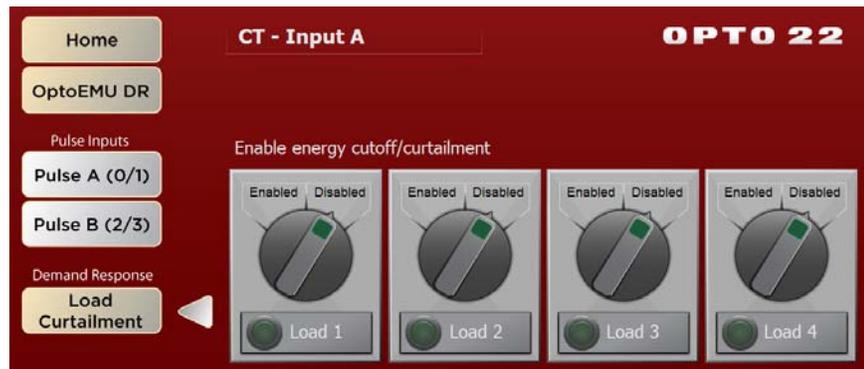
- Use the scrolling controls  to move back and forth in a chart of historical data.
- Use the zoom controls  to change the time interval on the x-axis.

Using Sensor DR Outputs

OptoEMU Sensor DRs have four signal relay outputs that can be used to signal equipment to turn on or off for load curtailment. You can control the outputs from the HMI.

NOTE: The output must already be configured through OptoEMU Sensor Manager. Relay Control Mode must be set to "Public Interface - Strategy Tags."

1. Click the Load Curtailment button.



2. To change an output, click Enabled or Disabled.

CAUTION: Remember that you are enabling or disabling whatever the output is configured to do. Since outputs can be wired either normally open or normally closed, make sure you know what the result of your change will be.

What's Next?

You can use the Energy Monitoring HMI as is or adjust it for your needs, and you can also use energy data in other ways.

To change the HMI or add more OptoEMU Sensors—You can change the HMI to suit your needs (for example, to add Modbus data inputs) or add more OptoEMU Sensors. PAC Display Configurator, which came in the Energy Monitoring HMI download, is the development tool you use to make any changes you want. See “[More About PAC Display](#),” below.

Complete instructions for using PAC Display Configurator are in the [PAC Display User's Guide](#) (form 1702). To open the guide when you're in the HMI, from the Help menu choose Manuals > PAC Display User's Guide.

To use energy data in other ways—PAC Display is just one of several ways to view and use the data from an OptoEMU Sensor. You can send energy data to an online software service, to building or control systems, and to company databases.

All communication methods are described in form 1958, the [OptoEMU Sensor Communication Guide](#). Follow the link or go to our website, opto22.com, and search on the form number.

More About PAC Display

PAC Display is part of Opto 22's PAC Project software suite, a free program used to design control logic and build human machine interfaces to that control system. Typically, PAC Display is used to construct a custom user interface for devices like Opto 22's SNAP PAC controllers and OptoEMU Sensors. A graphical user interface created in PAC Display is called a *project*.

PAC Display software has two parts: a project editing part called PAC Display Configurator and a data viewing part called PAC Display Runtime. The Configurator is used to create or modify the project, and Runtime is the actual user interface as it is running.

More About OptoEMU Sensors

OptoEMU Sensors help you reduce your energy costs by providing detailed energy usage data. When you can see spikes and trends in usage as they occur, you can tie them to your facility's equipment and processes and understand where your energy goes.

With OptoEMU Sensor, you have the tools you need to reduce peaks, decide whether to replace or repair equipment, determine when to run high-energy-use processes, and much more. For more information, see optoemu.opto22.com.

More About Opto 22

Commercial and industrial businesses, OEMs, and system designers have used Opto 22 products for more than 35 years to monitor, control, and get data from all kinds of machines and devices.

- Opto 22 solid-state relays and I/O modules are famous for their reliability. Most are guaranteed for life.
- Opto 22 controllers communicate over standard networks using open protocols.
- Opto 22 systems exchange data with company databases, Allen-Bradley PLC systems, Modbus systems, OPC clients.
- Opto 22 products are manufactured and supported in the U.S.A. Product support is free.

For more information, please visit our website at opto22.com.

For Help

If you find you have difficulty using the Energy Monitoring HMI for OptoEMU Sensor and you can't find the information you need in this guide or in the OptoEMU Sensor User's Guide, please contact Opto 22 Product Support. Product support is free.

Phone:	800-TEK-OPTO (835-6786) 951-695-3080 (Hours are Monday through Friday, 7 a.m. to 5 p.m. Pacific Time)	<i>NOTE: Email messages and phone calls to Opto 22 Product Support are grouped together and answered in the order received.</i>
Fax:	951-695-3017	
Email:	support@opto22.com	
Opto 22 website:	www.opto22.com	