Nexus® 1252 Meter Quickstart Guide

CAUTION! Installation of the Nexus® 1252 meter must be performed only by qualified personnel who follow standard safety precautions during all procedures. Those personnel should have appropriate training and experience with high voltage devices. Appropriate safety gloves, safety glasses and protective clothing are recommended.

During normal operation of the Nexus® meter, dangerous voltages flow through many parts of the unit, including: Terminals and any connected CTs (Current Transformers) and PTs (Potential Transformers), all I/O Modules and their circuits. All Primary and Secondary circuits can, at times, produce lethal voltages and currents. Avoid contact with any current-carrying surfaces.

Do not use the meter or any I/O device for primary protection or in an energy-limiting capacity. The meter can only be used as secondary protection.

IMPORTANT! Refer to your meter's Installation and Operation Manual for additional safety warnings before performing installation, wiring, or maintenance of your meter. See the link to the manual, below.

NOTE: This Quickstart Guide gives basic installation, wiring, and programming instructions.For additional meter operation and programming information, refer to your meter's *Installation and Operation Manual* and the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* on EIG's website:

User Manual:
https://www.electroind.com/products/nexus-1252-energy-and-power-quality-meter/
From the webpage, click Technical Documents>User Manual.

Software Manual:

https://www.electroind.com/products/communicatorpqa-software-application-5/
From the webpage, click Technical Documents>User Manual.

CommunicatorPQA™ Setup Software:

https://www.electroind.com/products/communicatorpqa-software-application-5/
From the webpage, click Download ComPQA Pro. To get a Professional license for the software, email sales@electroind.com or call 516-334-0870.

All EIG's metering and software products' literature can be accessed from:
https://www.electroind.com/all-products/

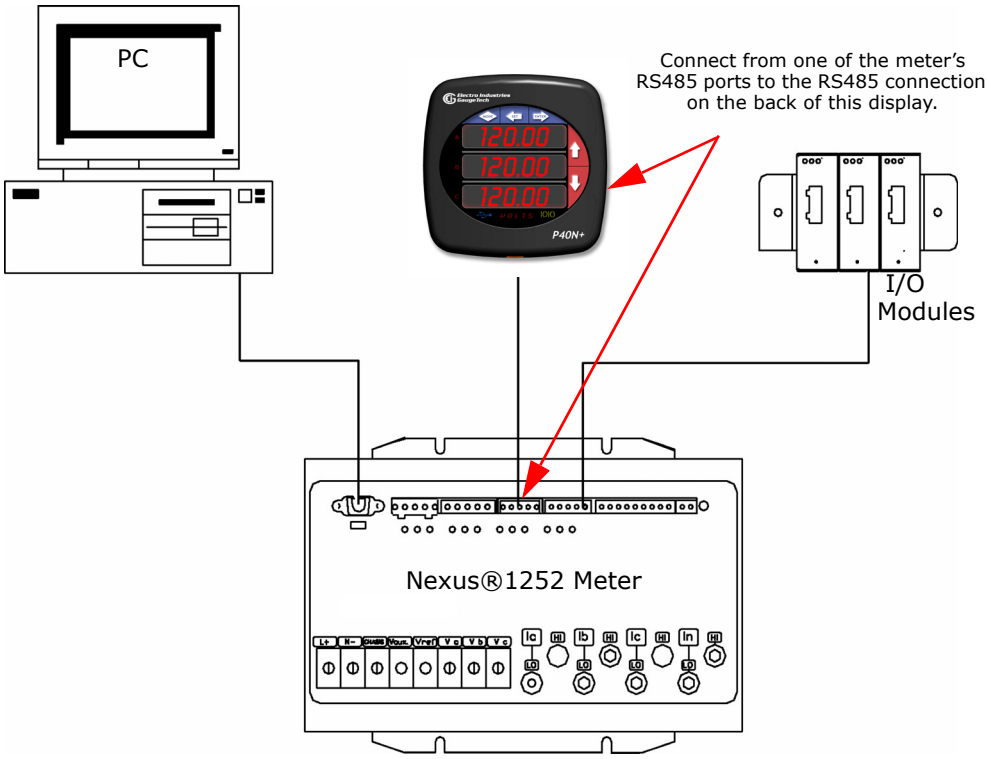
For software and metering integration, EIG's Technical Support Engineers are available on an hourly or daily basis to help with typical commissioning assistance, which includes:

- Verifying meter installation and wiring.
- Verifying proper system integration.
- Working with 3rd parties to ensure cross compatibility.
- Advising users on best practices for optimal implementation.

You can reach Technical Support from 8 a.m. to 8 p.m. EST, Monday-Friday, at 516-334-0870.

Mechanical Installation:

Mount the Nexus® 1252 Meter against any firm, flat surface. Use a #10 screw in each of the four slots on the flange to ensure that the unit is installed securely. For safety reasons, mount the meter in an enclosed and protected environment, such as in a switchgear cabinet. Install a switch or circuit breaker nearby; label it clearly as the meter's disconnecting mechanism.



Installing an External Display:

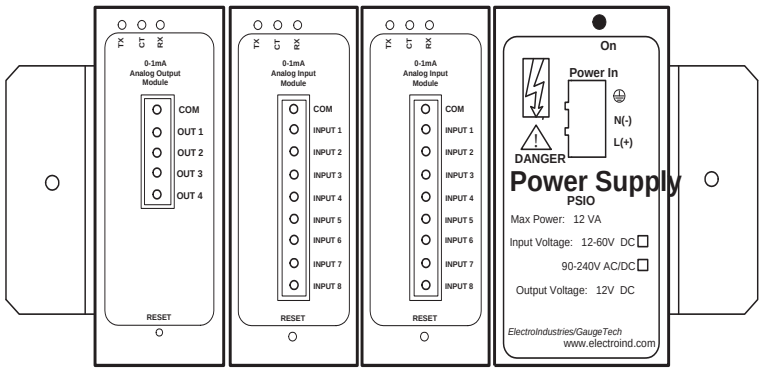
The LED display P40N+ (shown above) mounts using a standard ANSI C39.1 drill plan.

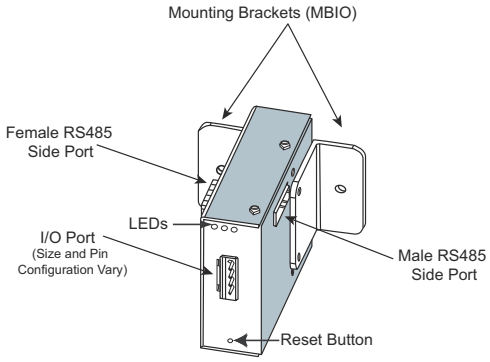
1. Secure the four mounting studs to the back of the panel with the supplied nuts.
2. Insert one end of the supplied RS485 cable into Port 3 of the Nexus® meter (or to another Port set to a Baud Rate of 9600 - see page QS-5 for instructions).
3. Insert the other end of the cable into the back of the Nexus® P40N+ Display.

NOTE: RS485 communication is viable for up to 4000 feet (1219 meters). If your cable length exceeds 200 feet you must use a remote power supply, such as EIG's PSIO.

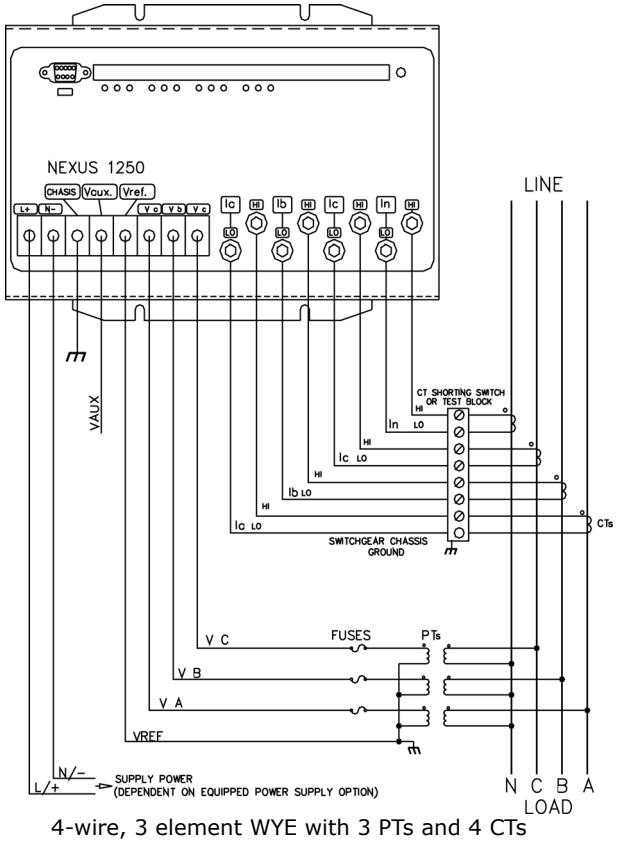
Installing Optional Output Modules:

1. Secure the mounting brackets to the Output module using the supplied screws (#440 pan-head screws).
2. Secure the brackets to a flat surface using a #8 screw with a lock washer.
   - Six feet of RS485 cable harness is supplied. Connect the Output module's Male RS485 Side Port to connect to the meter's Port 4 or to another module's Male RS485 side port.
   - If multiple Output modules are connected together, secure a mounting bracket to both ends of the group. (See figure below.) Connect multiple Output modules by connecting the Male RS485 port on one module to the Female RS485 port on the next module. See the meter's Installation and Operation Manual for additional information (see page QS-1 for the download link).

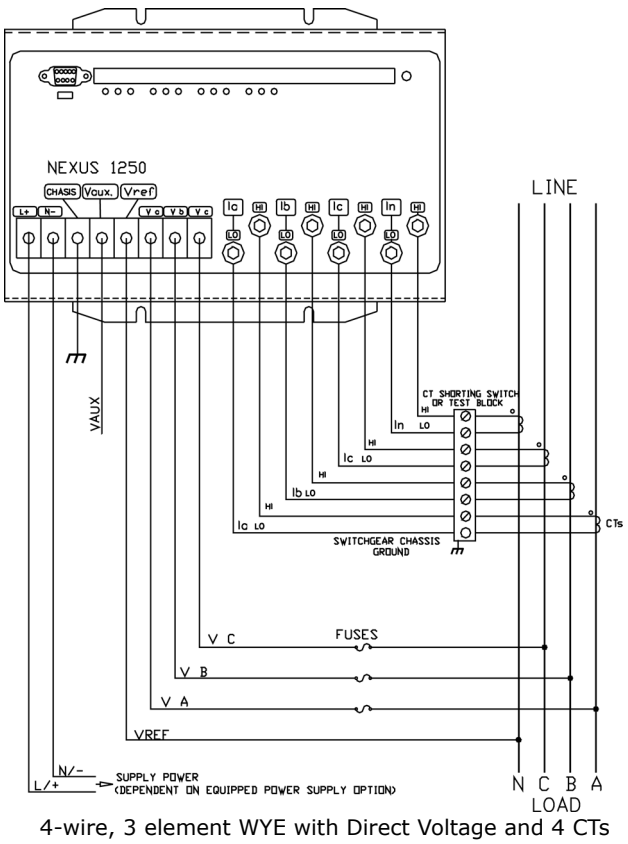




Electrical Installation: Following are some of the possible wiring configurations. See the *Nexus® 1250/1252 Meter Installation and Operation Manual* for additional configurations (see page QS-1).



4-wire, 3 element WYE with 3 PTs and 4 CTs



4-wire, 3 element WYE with Direct Voltage and 4 CTs

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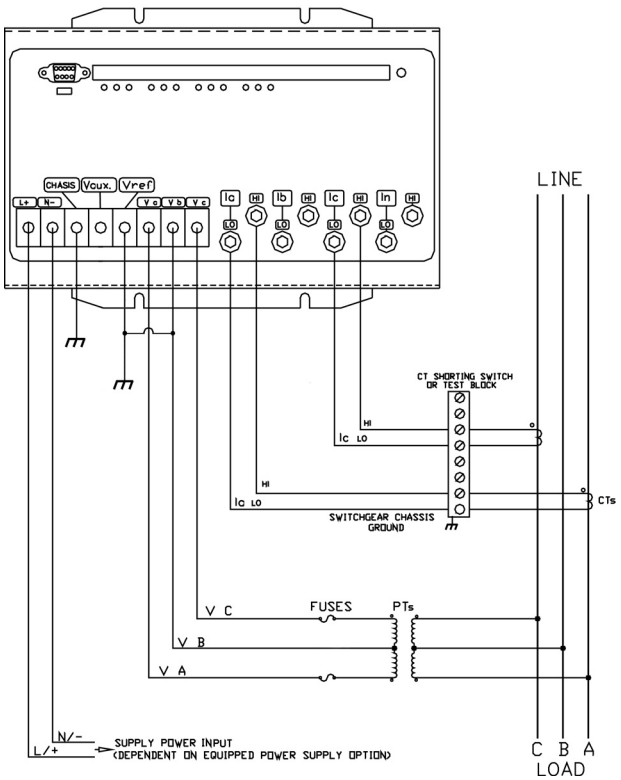
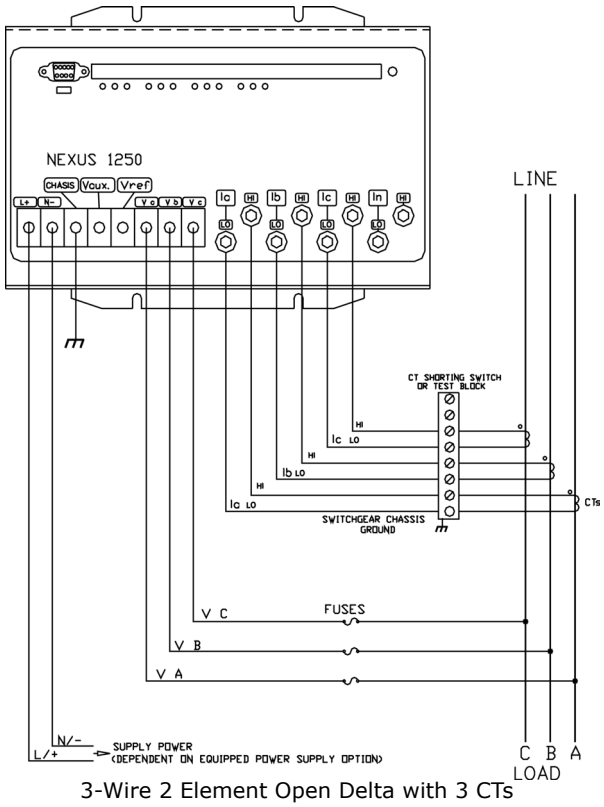


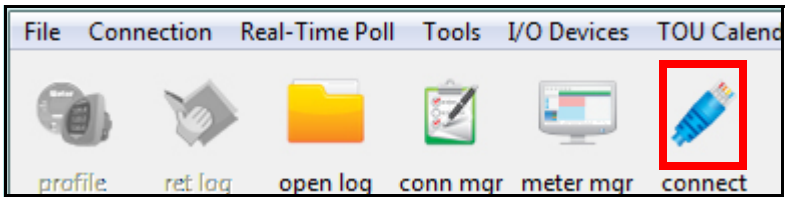
3-Wire 2 Elements Delta with 2 PTS and 2 CTs



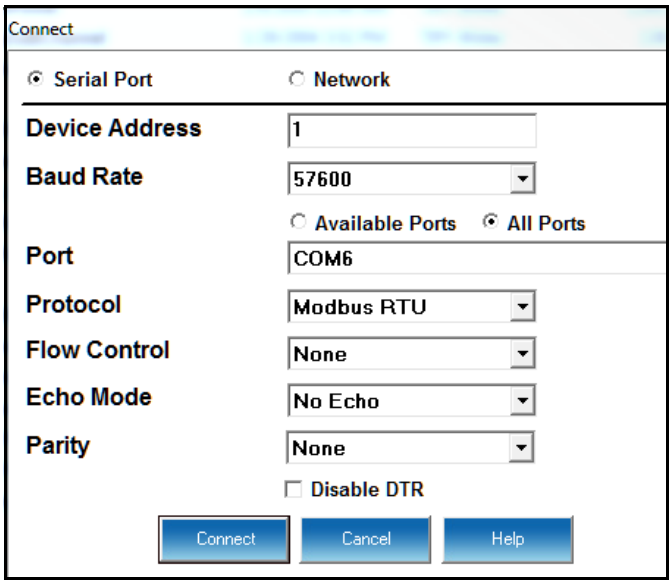
3-Wire 2 Element Open Delta with 3 CTs

Programming the Meter through CommunicatorPQA™ Software (see page QS-1 for download link):

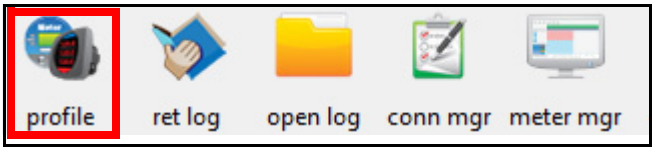
1. From the CommunicatorPQA™ software's Main screen, click the Connect icon in the Icon Bar.



- The Connect screen is shown on the right. The settings shown here are for a Serial connection using RS485, See the Software User Manual for instructions on configuring a Network connection.
  a. Click the Serial Port button.
  b. Enter the Device Address.
  c. Select Baud Rate (default for both RS485 and RS232 ports is 9600).
  d. Select communication port you are using.
  e. Select protocol (default for RS485 is Modbus RTU and for RS232 is Modbus ASCII).
  f. Select parity (for RS485 - the default is None). You can leave the other fields as they are.
  g. Click Connnect.



2. The Device Status screen opens, displaying information about the meter.
3. Click OK to close the Device Status screen, and then click the Profile icon in the Icon Bar.

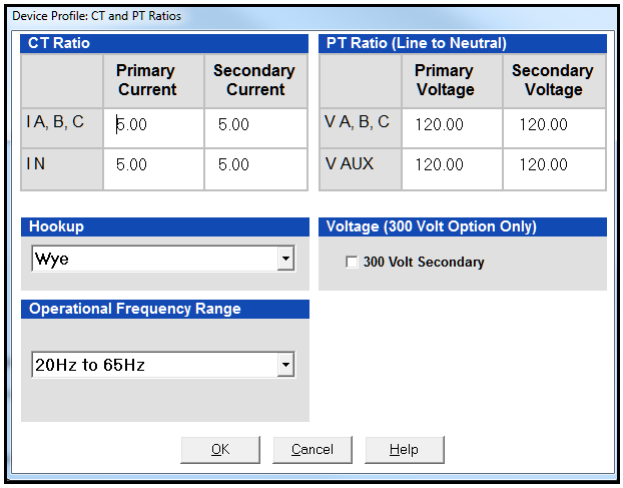


4. The meter's Device Profile screen opens, giving you access to the programmable settings for the meter.

NOTE: A few basic settings are explained here. Refer to the *Nexus® 1250/1252 Meter Installation and Operation Manual* and the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* for expanded instructions. The manuals are on the EIG website (see page QS-1 for the download link) and the software manual is available from the CommunicatorPQA™ application: click Help>Contents from the Main screen to open the manual.

Program CT, PT Ratios:

1. From the Device Profile screen, double-click General Settings>CT, PT Ratios and System Hookup>one of the items in the list.



   a. Enter CT Ratios: Primary (1-65535) and Secondary (1-65536) current.

   b. Enter PT Ratios: Primary (1-99999999) and Secondary (1-65535) voltage.

   Example CT Setting:

   200/5 Amps: set the Primary current value as 200.00 and the Secondary current value as 5.

   Example PT Settings:

   14400/120 Volts: set the Primary voltage value as 14400.00 and the Secondary voltage as 120.00.

   c. Select the Hookup (Wye, Delta 3 CTs, Delta 2 CTs, 2.5 Element Wye, or 4 Wire Delta).

   d. Operational Frequency Range (20 Hz to 65 Hz, 350 Hz to 500 Hz, or 20 Hz to 500 Hz).

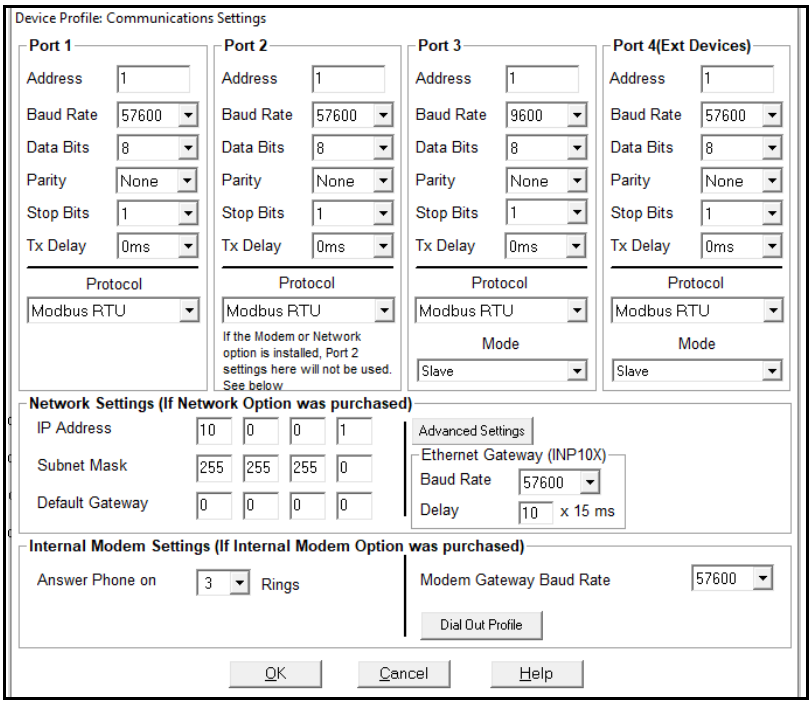
   e. 300 Volt Secondary - note that you will only see this field if your meter has the G option. Check the box to use the 300 V Secondary.

   f. Click OK.

Program Communications Setting:

1. From the Device Profile screen,double-click General Settings>Communications>a listed port.

2. The settings shown here are the default settings for the four serial ports (ports 1-4), the Network Option and the Internal Modem Option. You can change the settings, if necessary, for your system. You can use one of the Nexus® External Displays to learn the current baud rate, address and communication protocol of each meter port - see Section 6.5 in the meter's User Manual for instructions.



IMPORTANT! In order to prevent communication problems, be careful when making changes in the Communications Settings screen. For example, if you change the baud rate of the port connected to a computer, be sure to make the same change to the computer port's baud rate. If you change a port's address, be sure to update the address settings of any device that communicates with the port.

a. For the serial ports, the settings are:
- Address (must be unique to the device)
- Baud Rate (must match that of any device connected to this port)
- Data Bits (for Modbus RTU and ASCII, leave as the default - 8)
- Parity (for Modbus RTU and ASCII, leave as the default - None)
- Stop Bits (for Modbus RTU and ASCII, leave as the default - 1)
- Tx Delay (leave at the default - 0, unless you are using equipment that requires a delay in the response time, such as a radio modem)
- Protocol (Modbus ASCII, Modbus RTU, or DNP3)

and for ports 3 and 4
- Mode (Slave or I/O Master - see note, below)

b. For the Network Option (INP200), the settings are:
- IP Address
- Subnet Mask
- Default Gateway.

The Advanced Settings button lets you set up additional features for the Network Option. See Chapter 21 in the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* for instructions on these settings.

c. Ethernet Gateway settings let you set the Baud Rate and Delay when the meter is being used as an Ethernet Gateway - see Chapter 21 in the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* for additional information on the Ethernet Gateway.

d. The Internal Modem (INP2) settings let you specify the number of rings before the modem picks up and the Modem gateway's Baud Rate. You can also configure the Dial Out settings for the Modem Option (conditions on which the modem will dial out, etc) by clicking Dial Out Profile. Detailed instructions are in Chapter 24 of the Software user manual.

e. Click OK.

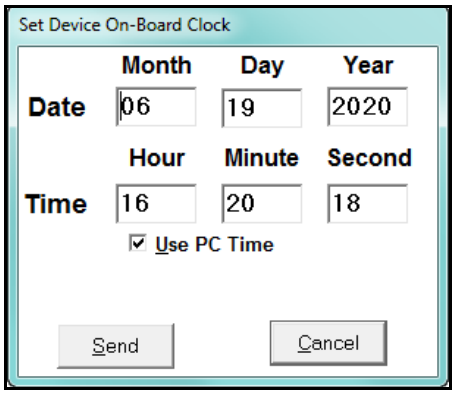
NOTES on Communications Settings:

- When the Network Option is installed, Port 2 is unavailable.
- When the Internal Modem Option is installed and set to Address 1, Port 2 settings are ignored. The modem Baud rate is 9500.
- Ports 3 and 4 can be set as I/O Masters. If you are setting a port as an I/O Master, use Modbus RTU as its protocol.
- The port an external display is assigned to must have an Address of 1 and a Baud Rate of 9600.

Program Meter Time:.

The meter is preset to Eastern time. To change the meter time:

1. From the Main screen's Title bar, click Tools>Set Device Time.
2. You can either enter the time in the Time fields, or click Use PC Time to set the time using your PC's time.
3. Click Send.

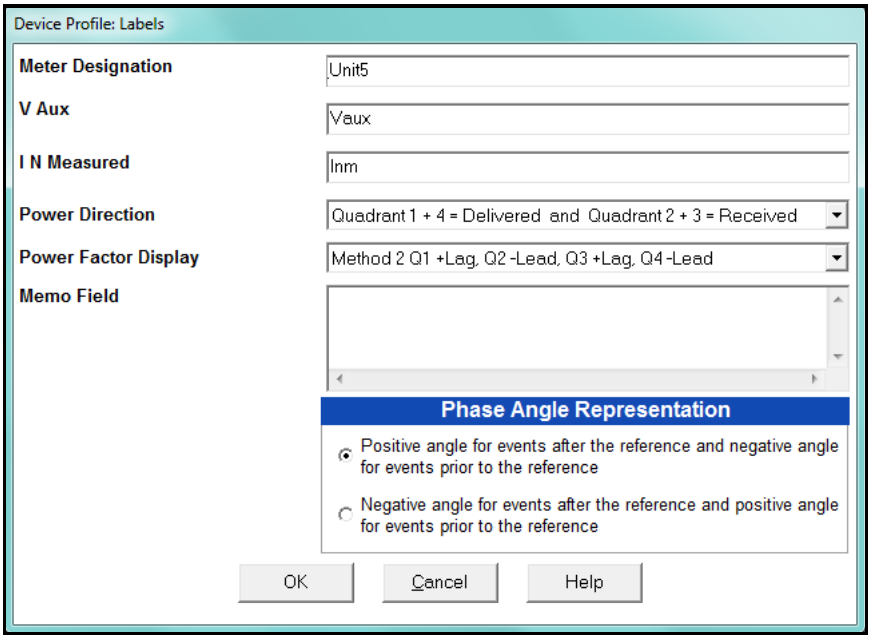


NOTE: The meter offers multiple Time Synchronization methods. See Chapter 13, Section 13.1.3 in the software manual (you can click Help>Contents from the Main screen to open the manual) for instructions on setting up Time Sync for the meter.

Program Meter Name:

The meter's name is used in database files and report titles. To enter a unique name for the meter:

1. From the Device Profile screen, double-click General Settings>Labels.
2. Enter a name for the meter in the Meter Designation field.
3. Click OK.



IMPORTANT! When you have made changes to the meter's Device Profile, click Update Device at the bottom of the Device Profile screen, to send the new settings to the meter. The meter will reboot and then you can reconnect to it. If you changed the IP address, make sure to use the new address in the Network Connect screen.