



GE VERNOVA

Multilin EPM 9700

High Performance Power Quality Metering System



Quick Start Guide

Software Revision: 1.0x

Manual P/N: 1601-0717-A4

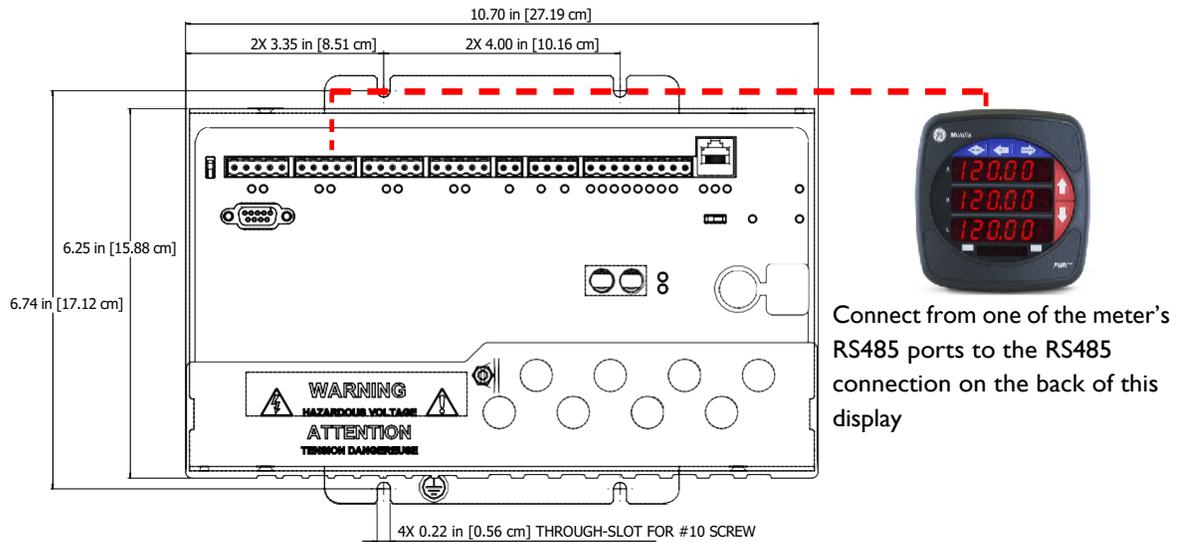
Manual Order Code: GEK-131028C

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Mechanical Installation

Mount the EPM 9700 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.



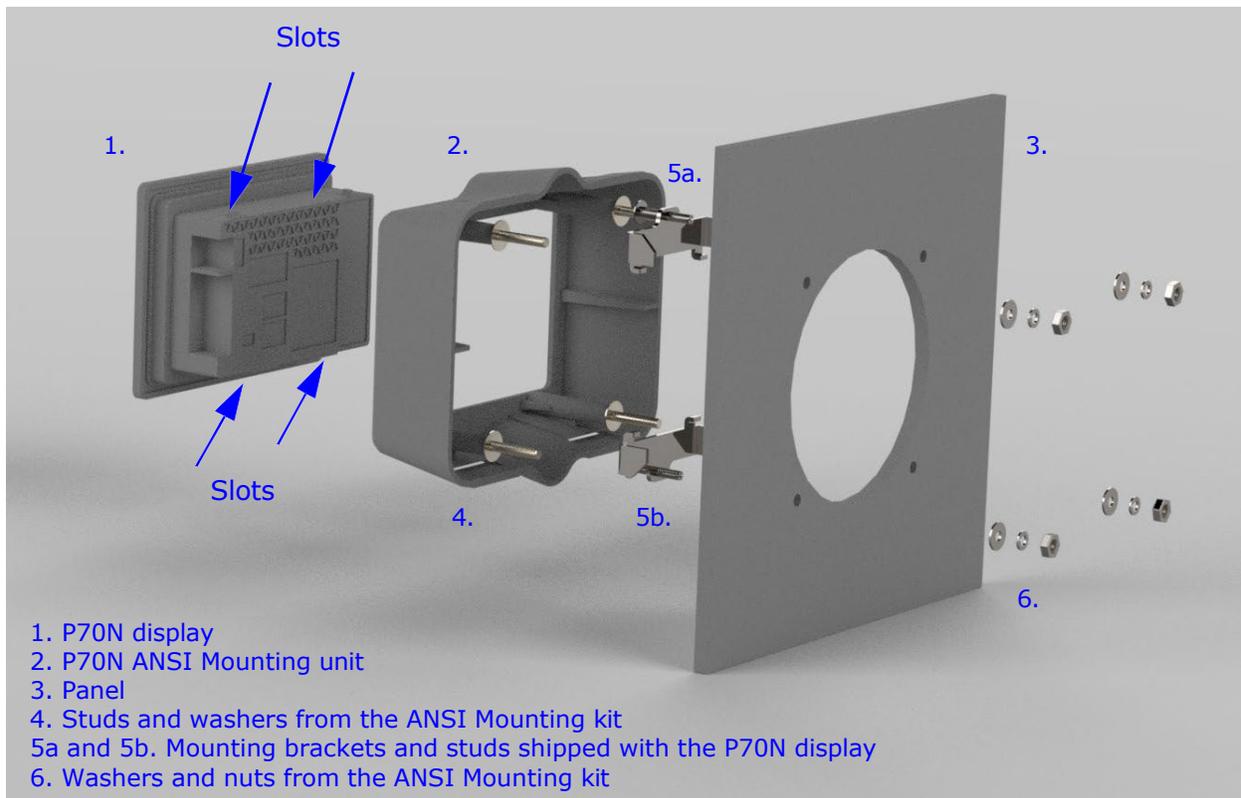
Installing an External Display

The optional LED P40N^{PLUS} display (shown above on the right) and the LCD touchscreen display P70N mount using a standard ANSI C39.1 drill plan.

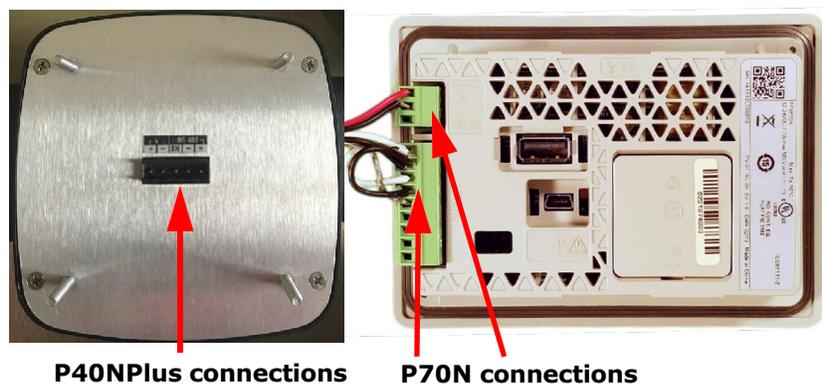
- I. For the P40N^{PLUS}, secure the four mounting studs to the back of the panel with the supplied nuts. For the P70N, use the SMK P70N ANSI Mounting kit.

The recommended order of assembly for the ANSI Mounting kit is as follows:

- a. Attach the top bracket (5a) with its stud to the top back of the P70N display (1) - the bracket has two hooks that fit into the slots on the top of the display.
- b. Slide the top of the display with attached bracket under the front lip of the ANSI Mounting unit (2) and tighten stud snugly - torque is to 3.1 in-lb.
- c. Attach the bottom bracket (5b) with its stud to the bottom back of the P70N display - the bracket has two hooks that fit into the slots on the bottom of the display; tighten stud snugly - torque is 3.1 in-lb.
- d. Once the display is secured inside the ANSI Mounting unit, attach the studs and washers from the ANSI Mounting kit (4) to the back of the unit.
- e. Use the washers and nuts from the ANSI Mounting kit (6) to attach the ANSI Mounting unit with P70N display to the panel (3) - torque is 3.5 in-lb.



2. Insert one end of the supplied RS485 cable into one of the meter's RS485 ports set to Modbus RTU, Slave, Address 1, and Baud Rate of 9600.
3. Insert the other end of the cable into the back of the P40N^{PLUS} or P70N display. See the instruction manual for alternate P70N mounting.



RS485 communication is viable for up to 4000 feet (1220 meters). If your cable length exceeds 200 feet you must use a remote Auxiliary Power Supply (PL9000PSIO00000).

Installing Optional Input/Output (I/O) Modules

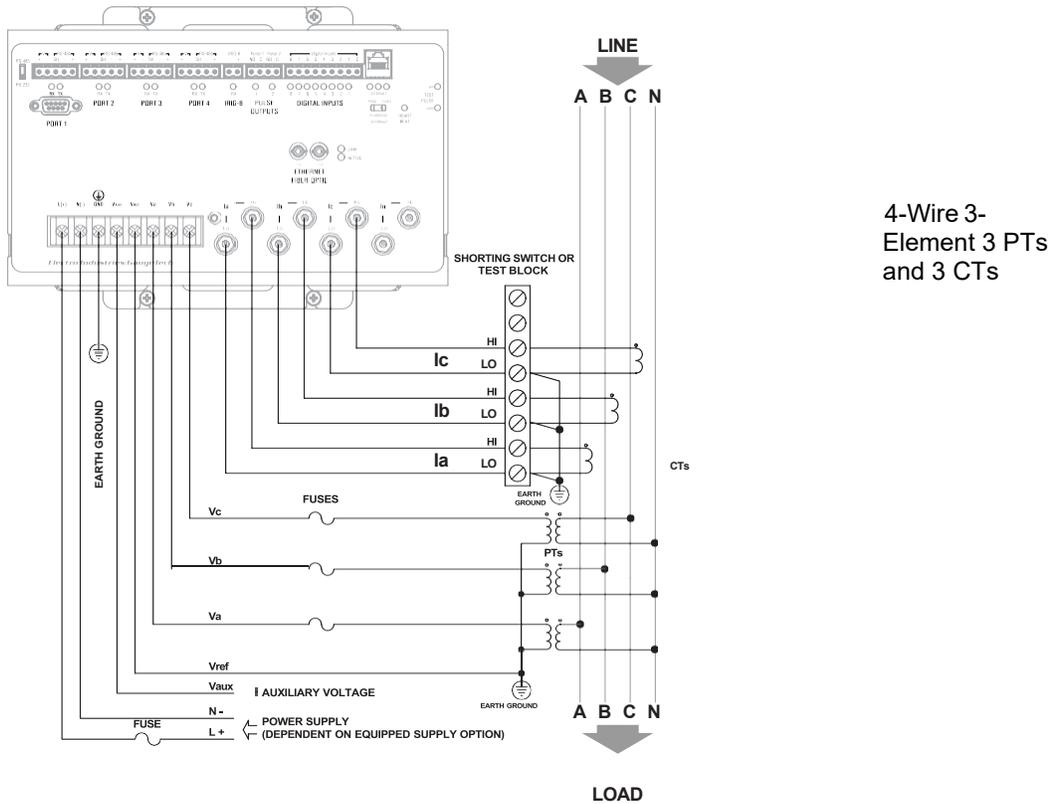
1. Secure the Auxiliary Mounting Brackets (Required for External I/O Modules) (PL9000MBIO00000) to the I/O module using the supplied screws (#440 pan-head screws).
2. Secure the brackets to a flat surface using a #8 screw with a lock washer.
 - Six feet of RS485 cable harness is supplied. Using the cable, connect the I/O module's male RS485 side port to the meter's Port 4.
 - If multiple output modules are connected together, secure a mounting bracket to both ends of the group. Connect multiple I/O modules by connecting the male RS485 port on one module to the female RS485 port on the next module.

See the *EPM 9700 Instruction Manual* for more information.

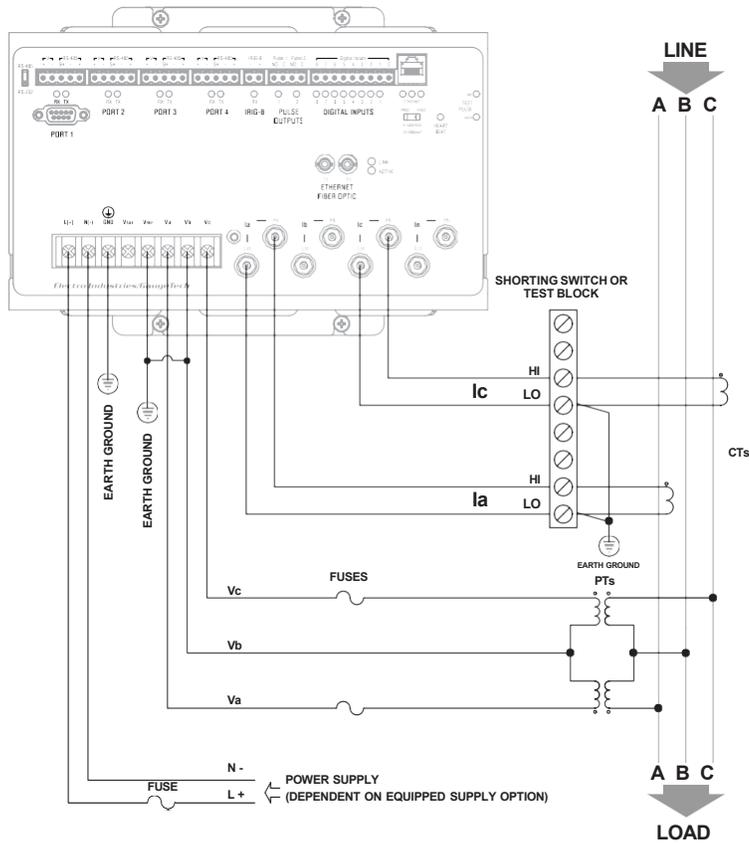
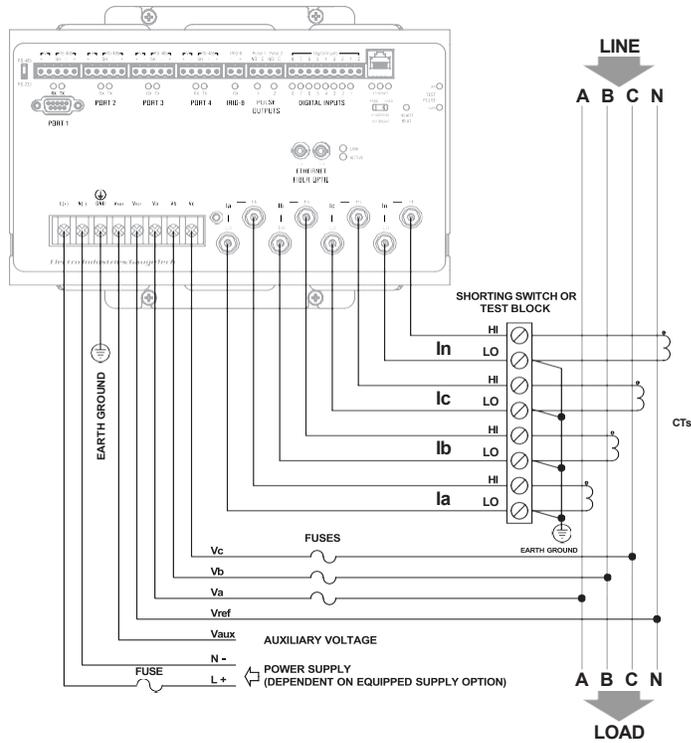
Wiring Diagrams

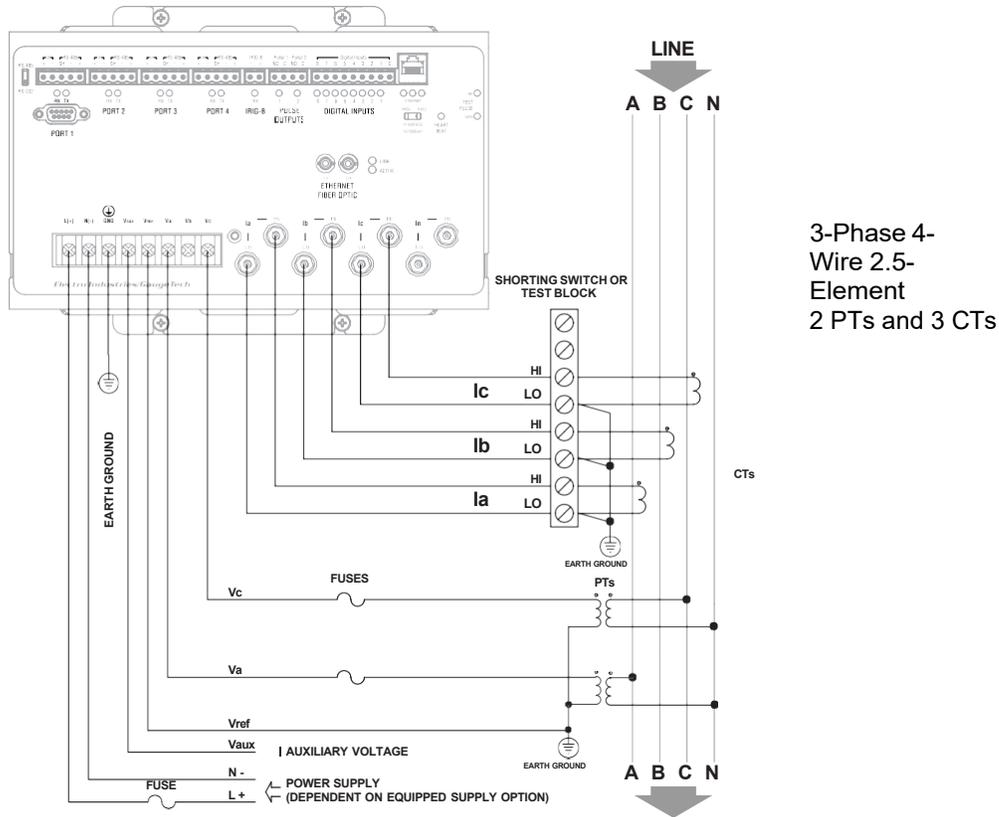


Other wiring configurations are available. Find the full manual and software online at: <https://www.governova.com/grid-solutions/automation/protection-control-metering/epm-9700>



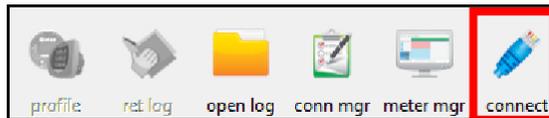
WIRING DIAGRAMS



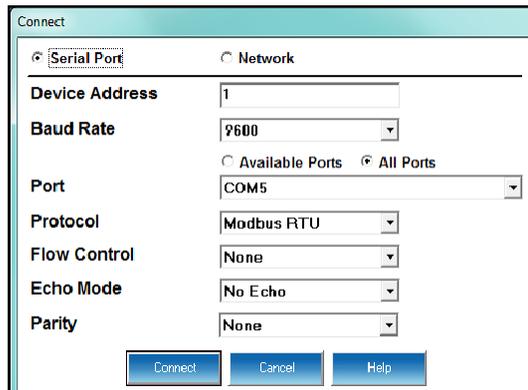


Programming the Meter through GE Vernova Communicator Software

1. Download, install, and open GE Vernova Communicator software. (Click **Software** on left side of EPM 9700 page <https://www.gevernova.com/grid-solutions/automation/protection-control-metering/epm-9700>.)
2. From the GE Vernova Communicator software Main screen, click the **Connect** icon in the Icon Bar.

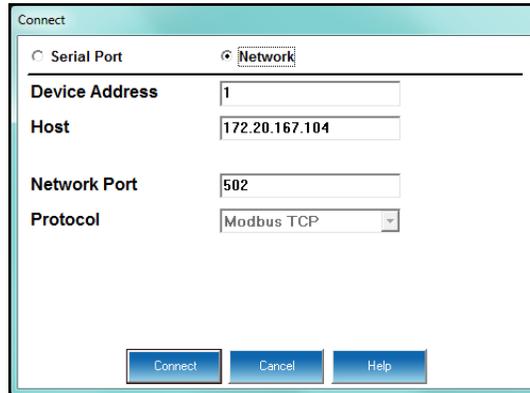


If you are connecting through a serial port (ports 1-4), use a cable to communicate from the meter to your PC and click the **Serial Port** radio button.



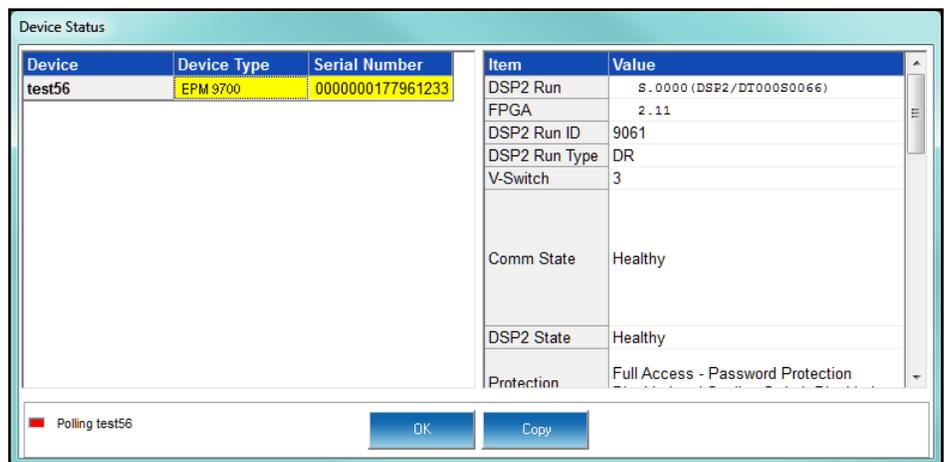
- Enter the device address.
- Select baud rate (default for both the RS485 and RS232 ports is 9600), communication port you are using, protocol (default for RS485 is Modbus RTU and for RS232 is Modbus ASCII), and parity (for RS485 - the default is None). You can leave the other fields as they are.
- Click **Connect**.

If you are connecting through an Ethernet port, click the **Network** radio button. Connect from the RJ45 port on the meter's face to your computer and make sure that the switch under the RJ45 the port is set to FIXED.

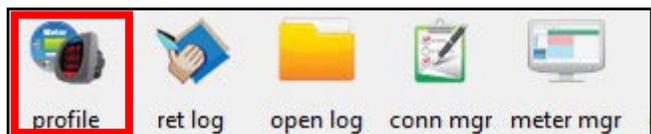


- Enter the device address.
- Enter the meter's IP address of 10.0.0.1.
- Enter the Network port (the default is 502).
- Network protocol is Modbus TCP.
- Click **Connect**.

3. The **Device Status** screen opens, displaying information about the meter.



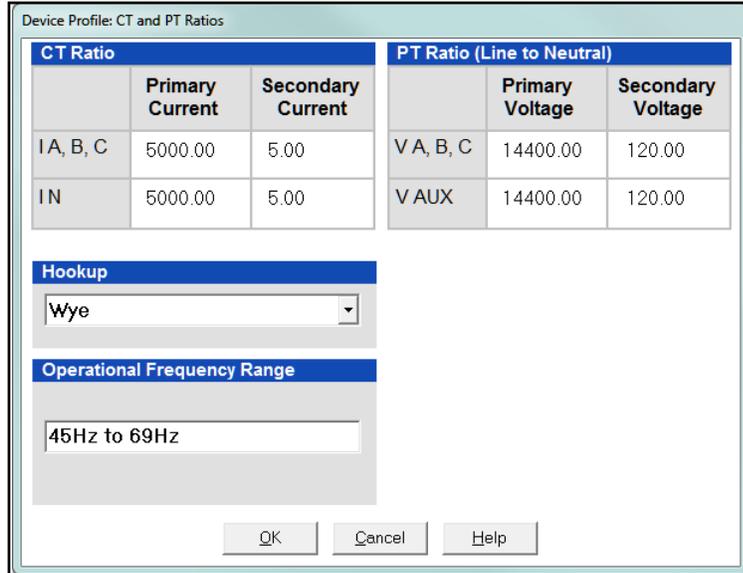
4. Click **OK** to close the **Device Status** screen, and then click the **Profile** icon in the Icon Bar.



- The **Device Profile** screen opens, giving you access to the programmable settings for the meter.

Program CT, PT Ratios

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



- Enter CT Ratios Primary: (1-65535). The Secondary is display only.
- 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.
Example PT Settings:
14400/120 Volts: set the Primary voltage value as 14400.00; set the Secondary voltage as 120.00.
- Select the Hookup (e.g., Wye).
(Operational Frequency Range is display only.)
- Click **OK**.

Program Communications Setting

- From the **Device Profile** screen, double-click **General Settings > Communications > one of the listed ports to configure.**

The screenshot shows a dialog box titled "Device Profile: Communications Settings". It is divided into several sections:

- Serial Port 1-4:** Each port has a grid of settings: Address (1-4), Baud Rate (57600), Data Bits (8), Parity (None), Stop Bits (1), Tx Delay (20ms), Protocol (Modbus RTU), and Mode (Slave).
- Port 5 RJ45 (MAC Address 00:01:58:01:01:B0):** Includes IP Address (10.0.0.1), Subnet Mask (255.255.255.0), and Default Gateway (10.0.1.11). A warning message states: "Warning: Misconfiguration of these settings could cause issues communicating with the meter."
- Port 6 Fiber (MAC Address 00:01:58:01:01:B1):** Includes IP Address (10.0.1.1), Subnet Mask (255.255.255.0), and Default Gateway (10.0.1.11). A warning message states: "Warning: Misconfiguration of these settings could cause issues communicating with the meter."
- Buttons:** OK, Cancel, and Help.
- Advanced Settings:** A button located to the right of the Port 6 section.

- The settings shown here for the four serial ports (ports 1-4), the Main Network card (port 5), and the Fiber Optic Network card (port 6) are the default settings. You can change the settings if necessary for your system.
- For the serial ports, the settings are Address, Baud Rate, Data Bits, Parity, Stop Bits, Tx Delay, Protocol, and Mode.
- For the Network card ports, the settings are IP Address, Subnet Mask, and Default Gateway. You can use this setting to change the default IP address to a new IP address.
- The **Advanced Settings** button lets you set up additional features for the Network cards. See the *GE Vernova Communicator Instruction Manual* for instructions on these settings.
- Click **OK**.



NOTE

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.



NOTE

For additional meter operation and programming information, refer to the *EPM 9700 Instruction Manual* and the *GE Vernova Communicator Instruction Manual*. You can also view the software manual by clicking the **Help** button on a settings screen, or by selecting **Help > Contents** from the top of the GE Vernova Communicator software Main screen.

For further assistance

For product support, contact the information and call center as follows:

GE Vernova Grid Solutions	Worldwide telephone: +1 905 927 7070
650 Markland Street	Europe/Middle East/Africa telephone: +34 94 485 88 54
Markham, Ontario	North America toll-free: 1 800 547 8629
Canada L6C 0M1	Fax: +1 905 927 5098

Worldwide e-mail: multilin.tech@gevernova.com

Europe e-mail: multilin.tech.euro@gevernova.com

Website: <https://www.gevernova.com/grid-solutions/automation/protection-control-metering>

Manuals and software: <https://www.gevernova.com/grid-solutions/automation/protection-control-metering>

EU Declaration of Conformity

EN

Declaration number	EPM9700-MRK-DOC-C-05012K18
Name of the manufacturer	GE Vernova MULTILIN INC.
Address of the manufacturer	650 Markland Street, Markham , Ontario, L6C 0M1, Canada
Address of authorised representative	GE Vernova POWER MANAGEMENT S.L. , Avenida Pinoa 10, 48170 Zamudio, Spain

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Product / model EPM9700

Object of the declaration Power Meter

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/30/EU	EMC Directive	February 26, 2014
2014/35/EU	Low voltage Directive	February 26, 2014
2011/65/EU	ROHS Directive	June 8, 2011

References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:

Document Name	Issue
EN/IEC 61010-1 Safety Requirements for Electrical equipment for measurement control and laboratory use.	2013
EN61000-6-4 EMC -Generic Standards-Emission Standard for Industrial Environments	2007
EN61000-6-2 EMC-Generic standards-Immunity Standard for Industrial Environments	2005

Signed for and on behalf of: **Place and Date:** Markham Ont , 5/15/2018

Name: Roy Mao

Name: Boris Kacmar

Function: Consulting Engineer, Engineering Manager, GE Vernova Multilin

Function: Grid Solutions, Regulatory Compliance Manager

Signature: Inc

Signature:



Declaration number

EPM9700-MRK-DOC-C-05012K18

Additional Information

Table 1-1: EPM 9700 Order Codes

	PL9900P	K														Description
Bose Unit	PL9700															EPM 9700 Multi-function metering system
		X														Reserved for future use
Frequency			0													50 Hz AC frequency system
			1													60 Hz AC frequency system
Control Power				0												Universal [100--240] VAC @50/60 Hz or [100-240] VDC
				1												18to 60VDC
Software					A											standard: 5 2MB Memory, 512 Samples/Cycle
					B											Advmced: 1.2GB Memory, 1024 Samples/Cycle
							X	X	X							Reserved for future use