

Power Xpert Meter 2000 Series



Contents

Description	Page
Mechanical Installation	1
Electrical Wiring	2
Network Planning	4
Locating the Gateway Card	5
Configuring the Meter's Gateway Card for Network Accessibility	6
Configuring a Fixed IP Address for the Gateway Card using a local PC	6
Verify the IP address	9
Network Access	9
Restarting and Factory Defaults	9
Restart the Gateway Card	9
Additional Information	10



Powering Business Worldwide

Copyright © 2011 by Eaton Corporation. All rights reserved.

Specifications contained herein are subject to change without notice.

Power Xpert is a registered trademarks of Eaton Corporation.

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION

THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREON, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS MERELY ON LOAN AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY TAKING POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER ADVERSE TO THE INTERESTS OF EATON, AND THAT NO PORTION OF THIS DOCUMENT MAY BE COPIED OR OTHERWISE REPRODUCED WITHOUT THE PRIOR WRITTEN CONSENT OF EATON. IN THE CASE OF CONFLICTING CONTRACTUAL PROVISIONS, THIS NOTICE SHALL GOVERN THE STATUS OF THIS DOCUMENT.

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

The information, recommendations, descriptions and safety notations in this document are based on Eaton Electrical Inc. and/or Eaton Corporation's ("Eaton") experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted.

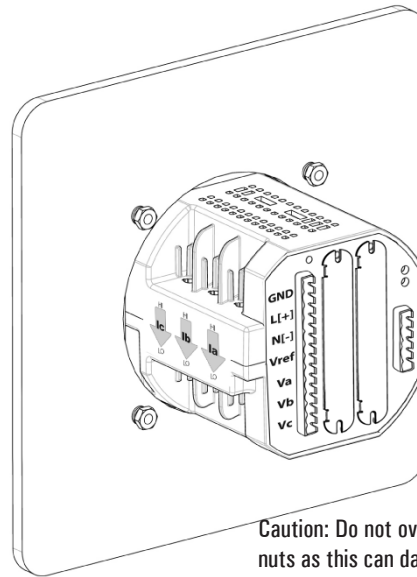
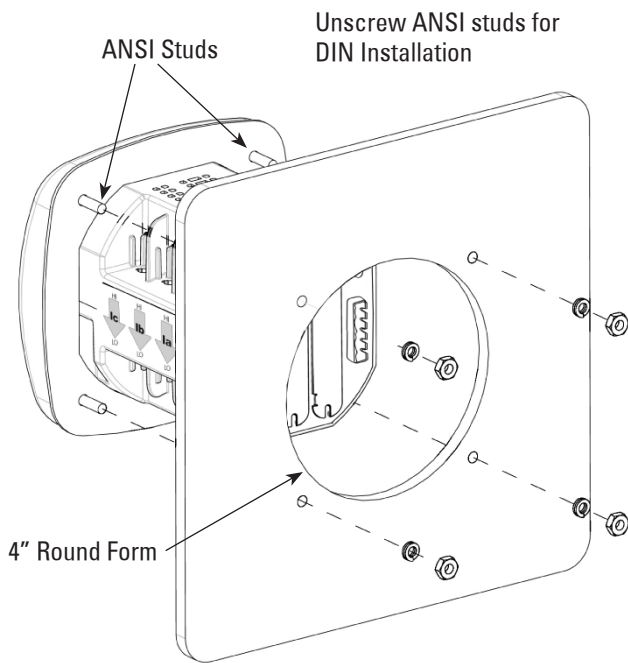
Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability or otherwise for any special, indirect, incidental or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations and descriptions contained herein.

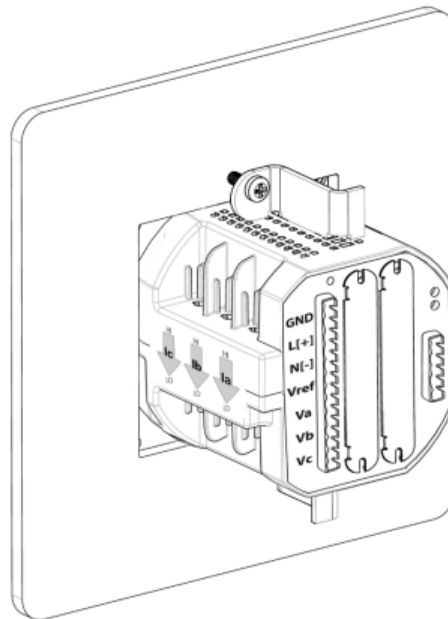
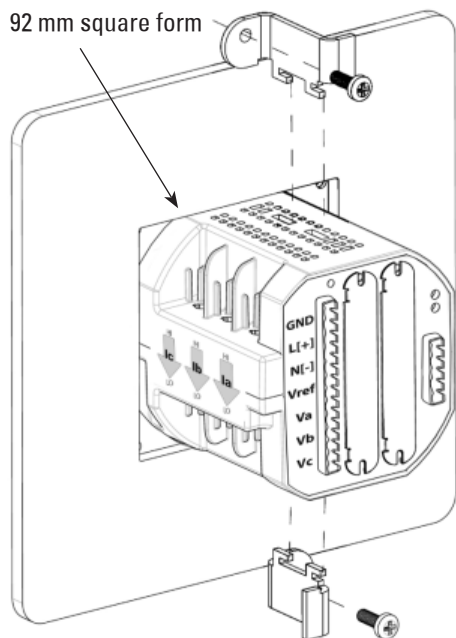
Mechanical Installation

4" Diameter round mounting



Caution: Do not overtighten nuts as this can damage the meter. The maximum installation torque is 0.4 Newton-Meter.

92 mm Square Form



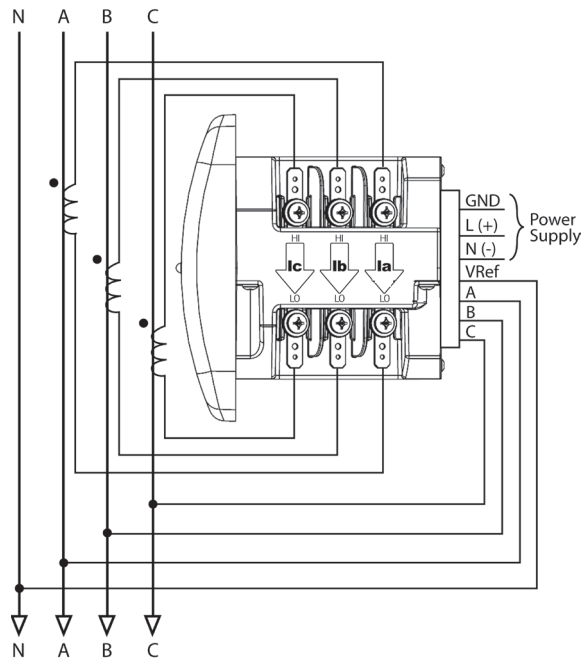
PXM 2000 Quick Start Guide

Electrical Wiring

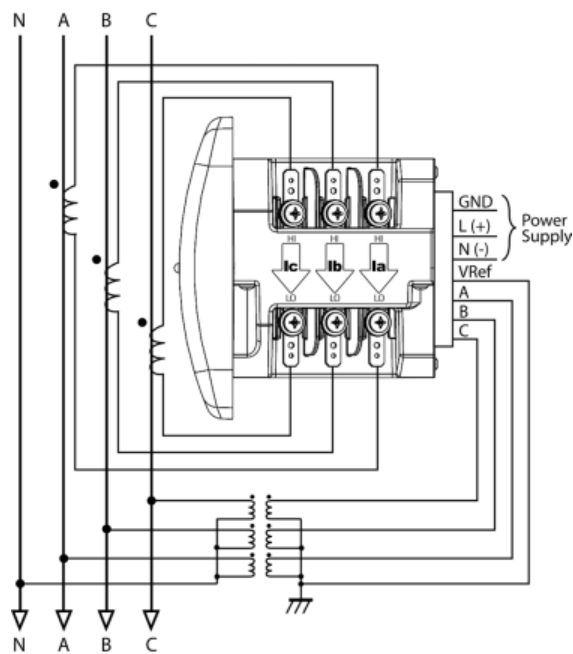
Electrical Wiring

Note: Other wiring configurations are available. See the *Power Expert Meter 2000 User and Installation Guide* for additional information

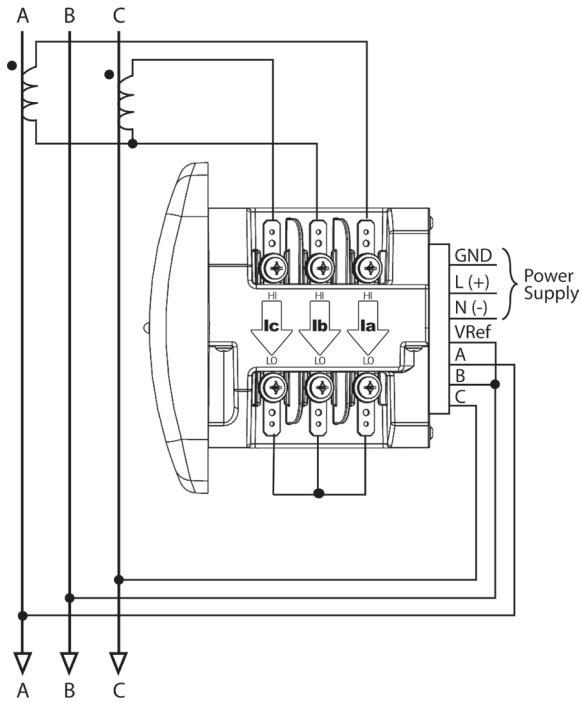
WYE Direct 3 Phase, 4-wire



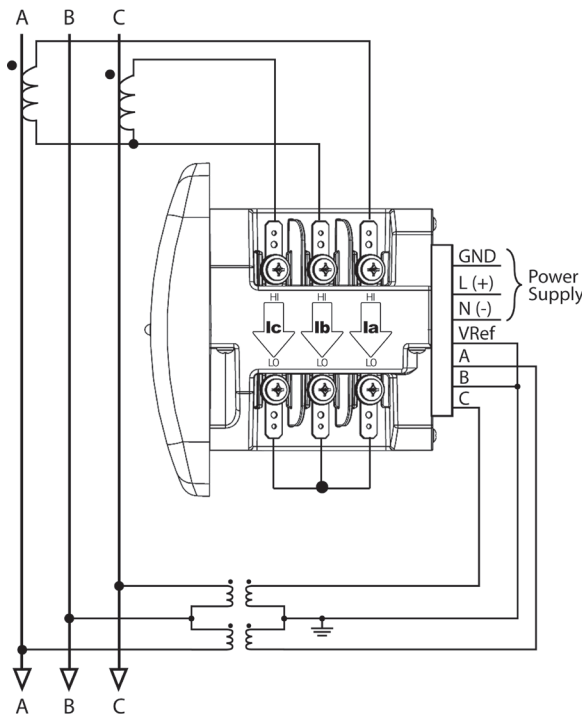
WYE with PTs 3 Phase, 4-wire



DELTA Direct 3 Phase, 3-wire



DELTA with PTs 3 Phase, 3-wire



Network Planning

The hardware for the Power Xpert Meter 2000 family is similar to other EATON IQ 250 and 260 meters except that these meters include an integrated, multi-function Ethernet network gateway card. The Power Xpert Meter 2000 Gateway Card provides many of the features found in the rest of the Power Xpert line of meters, including:

- Local web server
- Modbus/TCP communications
- SNMP communications
- Power Xpert Software (PXS) communications
- BACnet/IP communications

The Network PC requires a web browser (Internet Explorer versions 7 or 8 are supported) and an installed version 6 or later of the JAVA J2SE JRE (Java Runtime Environment). If Java is not already installed, you or the network administrator may download it from www.java.com and install it per Sun's instructions. See the *Power Expert Meter 2000 User and Installation Guide* for additional information.

An Ethernet connection is used for configuring the meter's gateway card communication settings via a web browser. You may need to contact your network administrator for some network and configuration information. In preparation, you will need to decide if the meter will be manually assigned a fixed (static) IP address or will be automatically assigned a fixed IP address by a DHCP server somewhere on the network. With either method the assigned network address must not change once the meter has been deployed. Changing the IP address will cause loss of communication until the associated client PCs change the corresponding meter's IP addresses.

Discuss with your network administrator whether you should manually configure the meter with an assigned IP address or whether the DHCP server will assign one. For the DHCP server to provide a fixed IP address, your network administrator will need to know the MAC address assigned to the meter.

Caution

Eaton strongly recommends using a fixed IP address if an Eaton PXS system will be accessing the meter. Otherwise, should the IP address change (after a power outage, for example), PXS will no longer be able to access data from the meter.

The MAC address is found on a small label that consists of 14 letters and numbers. It looks something like:

002080850047EF

Locate the MAC address on your meter and record it here.

MAC Address: _____

Is DHCP going to be used to assign the IP address to your meter? ___ Yes ___ No

If Yes:

Provide the MAC address to the network administrator and record the fixed IP address the network administrator will assign to your meter in the DHCP server here:

IP Address: _____

The card will be configured remotely. Skip to the section entitled *Verify the IP address*

If **No**:

Record the following information provided by the network administrator here:

IP Address: _____

Subnet Mask: _____

Default Gateway: _____

Primary DNS Server IP Address _____

Secondary DNS Server IP Address _____

Locating the Gateway Card

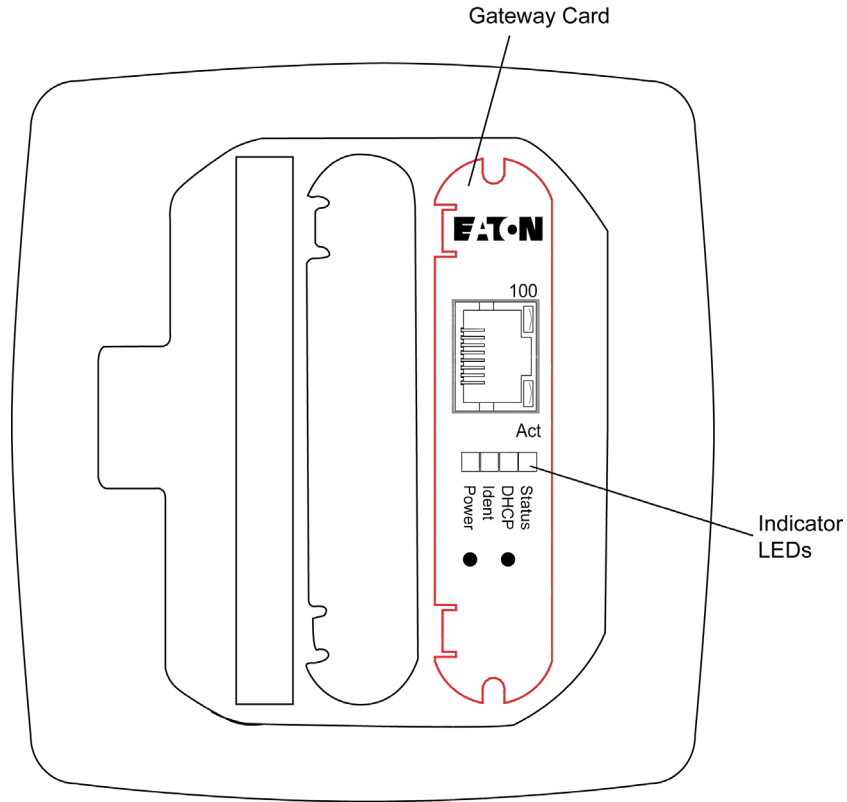
First, ensure power is applied to the meter.

The Power Expert Meter 2000 Gateway Card is the blue card installed in the right-most option slot (slot 2) on the rear of the meter. The card is labeled: **Power Xpert Gateway PXM Series 2000**.

PXM 2000 Quick Start Guide

Configuring the Meter's Gateway Card for Network Accessibility

Location of Gateway Card



There are four indicator LEDs on the Gateway Card labeled: **Status**, **DHCP**, **Ident**, and **Power**. When power is first applied all the lights should be off for a few seconds and then the **Power** light will illuminate. This indicates the card has power and is running.

Configuring the Meter's Gateway Card for Network Accessibility

Configuring a Fixed IP Address for the Gateway Card using a local PC

Your network administrator provided an IP address, a subnet mask, and a default gateway (which you entered in the previous section). This information must be entered into the Gateway Card using a local PC, such as a laptop.

This method requires a PC with the following:

- an Ethernet port
- an Ethernet cable (either straight-through or cross-over)
- A web browser such as Internet Explorer 7 or 8
- an installed version 6 or later JAVA J2SE JRE (Java Runtime Environment). If not already installed you may download it from www.java.com and install it. (If Java isn't installed, you'll be prompted to install it.)

To configure the Gateway Card:

1. On the PC, launch the **Java Control Panel** screen (available through the Windows

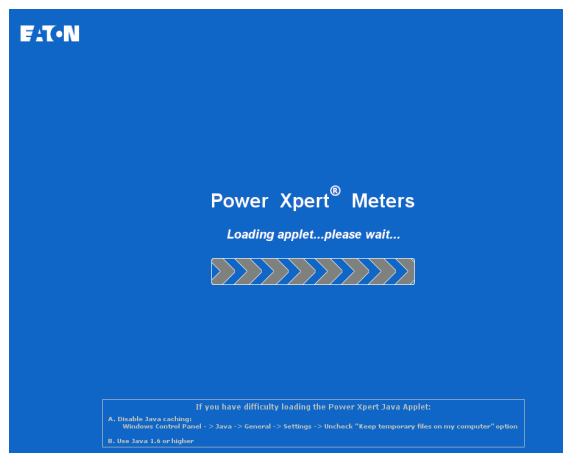
Control Panel).

2. On the **General** tab, click the **Settings** button under **Temporary Internet Files**.
3. Ensure the **Keep Temporary Files on My Computer** check box is cleared.
4. Connect the PC to the Gateway Card through an Ethernet cable (either a straight though or cross-over CAT 5 cable).

There are two green lights (LEDs) located on the gateway card's Ethernet port. If the Ethernet cable is connected to an active Ethernet port on the PC both lights should be illuminated (the light labeled **Act** may be flickering reflecting network activity).

5. The card's default Ethernet IP address is 192.168.1.1. Set the PC's address to an address on the same subnet, such as 192.168.1.100. To do this, use the following steps:
 - a. Click Window's **Start**.
 - b. Choose either **Settings > Control Panel** (Windows 2000) or **Control Panel** (Windows XP).
 - c. In the **Control Panel**, click **Network Connections** and right-click **Local Area Connection**. Select **Properties** from the shortcut menu.
 - d. Click the **Properties** button.
 - e. In the **Properties** dialog box, select **Internet Protocol (TCP/IP)** and click the **Properties** button.
 - f. In the **Internet Protocol (TCP/IP) Properties** dialog box, select **Use the following IP address** and enter the following in the **IP address** field: **192 . 168 . 1 . 100**
 - g. Click **OK** throughout the various dialog boxes.
6. Launch a web browser and navigate to the following IP address: **192 . 168 . 1 . 1**
If an information screen appears stating the certificate cannot be verified and asking if you want to run anyway, select **run**.

Loading Page

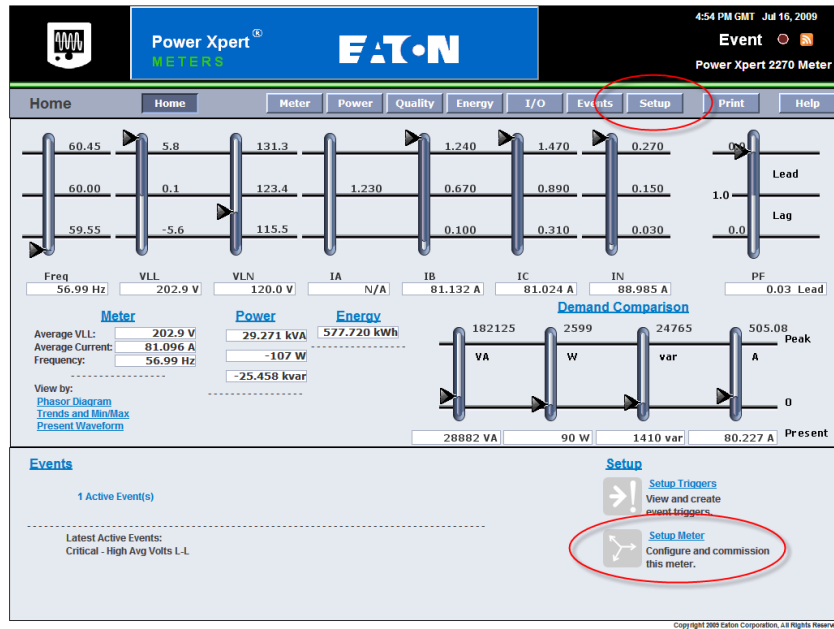


Java will load and then the meter's **Home** page will appear.

PXM 2000 Quick Start Guide

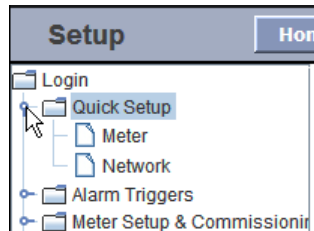
Configuring the Meter's Gateway Card for Network Accessibility

Meter Home Page



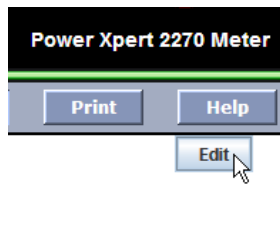
7. Click the **Setup** button. The **Setup** page will appear. (You can also click the **Setup Meter** link at the bottom of the page to go directly to the **Quick Setup** folder.)
8. Locate and click the open icon to the left of the **Quick Setup** folder. The folder opens to show two subfolders: **Meter** and **Network**.

Opening the Quick Setup Folder



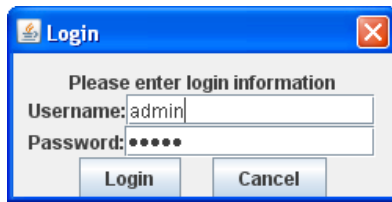
9. Click the **Network** folder.
10. Click the **Edit** button.

Edit Button (on the right of the page)



A **Login** dialog box appears.

11. The default **Username** is **admin** and the default **Password** is **admin**. Log in using these credentials.

Login dialog

12. If you successfully logged in as **admin** you may now configure the card for the settings specified by your network administrator. Refer to the previously recorded network settings. You can also enter such optional information as the meter's location, who to contact in case of problems, etc.

13. When you've completed configuration, click the **OK** button.

The new IP address will take effect shortly after clicking **OK**. The Gateway Card will redirect you to the new IP address and reload the Java applet. You can continue to configure the meter after it is connected to your LAN.

Refer to the *PXM 2000 Meter User's Guide (IM02601001E)* for additional configuration details.

14. Disconnect the Ethernet cable to the PC and connect the meter to the LAN.

Note: Remember to reconfigure the PC's network settings for your LAN.

This concludes network configuration. You can now proceed to verify the IP address.

Verify the IP address**To check the IP address from the meter's front panel:**

1. If the meter has power, the display should be showing normal data, such as voltage, current, etc.
2. Push the **MENU** button on the face of the meter. The main menu screen appears.
3. Push **DOWN** repeatedly until **IP** blinks.
4. Push **ENTER** and the meter's IP address appears, which should appear something like the following:

```
010.2
22.05
1.066
```

In this example the IP address is **010.222.051.066**. This should match the address the network administrator provided for this meter.

5. Push **MENU** to return to the main menu.

Network Access

Once the network IP address is known, most meter functions and configuration can be done via the network. Use a networked client PC running version 6 or later of the **JAVA J2SE JRE** and a web browser such as Internet Explorer 7 or 8 to navigate to the meter's IP address. See the meter's complete user's manual for additional information.

PXM 2000 Quick Start Guide

Restarting and Factory Defaults

Restarting and Factory Defaults

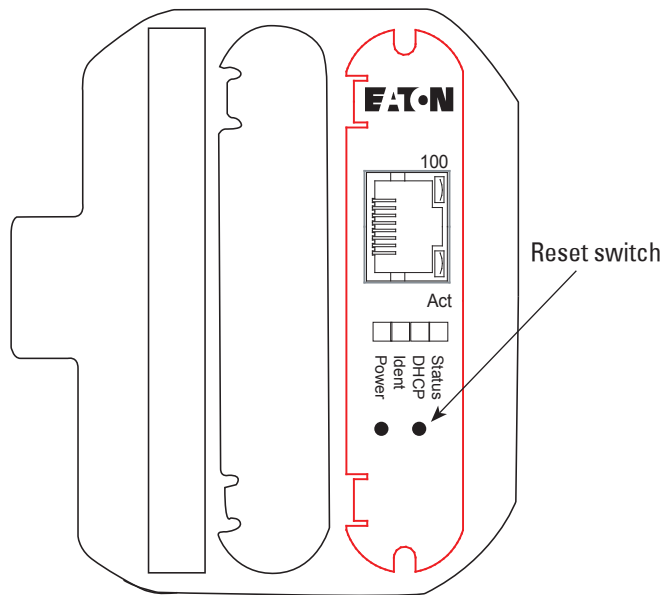
The gateway card provides the ability to restart and to reset itself to the factory defaults. There is a momentary push-button switch accessed through a small hole in the face plate of the gateway card. Although it is not used in normal operations, this switch allows you to restart the gateway card in the meter.

Restart the Gateway Card

The gateway card restart push-button switch is located behind the hole in the card face plate closest to the LED labelled **DHCP**. This switch is used to restart just the gateway card (not the meter) should it be necessary to recover from some abnormal condition. Momentarily press the switch by pushing a small device into the hole to activate the switch.

Note: It may take around five minutes before the meter pages begin to display values.

Gateway Card Reset Switch



Additional Information

Detailed information on applications and options can be found in the *PXM 2000 Meter User's Guide (IM02601001E)* on the CD shipped with the meter. The guide can also be found at <http://www.eaton.com/powerxpert>.



Eaton Corporation
Electrical Group
1000 Cherrington Parkway
Moon Township, PA 15108
United States
877-ETN-CARE (877-386-2273)
Eaton.com

© 2011 Eaton Corporation
All Rights Reserved
Printed in USA
Publication No. IM02601002E
October 2011



PowerChain Management is a registered trademark of Eaton Corporation.

All other trademarks are property of their respective owners.