

Unified Physical Infrastructure



Panduit

PViQ Networked POU

Series 1

User Manual

PANDUIT®

MN023 Version 1.0

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Specifications

Overview

The POU's are designed to be powered by either a single phase or a three phase AC input circuit. Three phase units are available for either a Delta or WYE input connection.

Environmental

Temperature

Operating:	10°C (50°F) min	45°C (113°F) max
Storage:	-25°C (-13°F) min	65°C (149°F) max

Humidity

Operating:	5% min	95% max	(non-condensing)
Storage:	5% min	95% max	(non-condensing)

Elevation

Operating:	0 m (0 ft) min	2000 m (6561 ft) max
Storage:	0 m (0 ft) min	15240 m (50000 ft) max

Electrical

See nameplate for unit ratings.

Receptacle Ratings

NEMA 5-15R or L5-15R	125 Volts, 15 Amp
NEMA 5-20R or L5-20R	125 Volts, 20 Amp
NEMA 6-20R or L6-20R	250 Volts, 20 Amp
IEC-320 C13	125/250 Volt, 15 Amp (per Receptacle Bank)
IEC-320 C19	125/250 Volt, 20 Amp

Networking

Protocols

HTTP, ICMP, DHCP, TCP/IP, FTP

Ethernet Link Speed

10 Mbit; half-duplex

Data Formats

HTML, SNMP, XML

EMC Verification

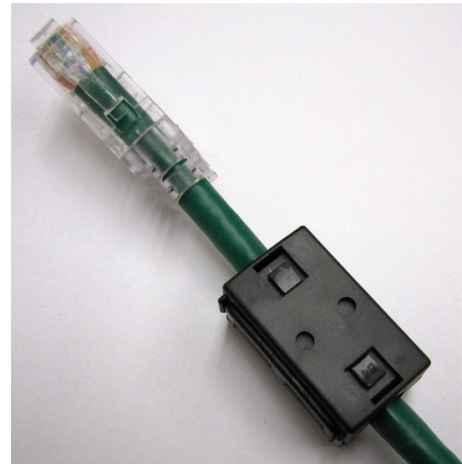
This Class A device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

 **Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.**

FCC and Canadian ICES-003 requirements for units with Current Monitoring (EM) Meter: The ferrite core shipped with the unit must be placed around the Ethernet cable close to the POU.



Installation

Instructions

1. Using appropriate hardware, mount POU to rack.
2. Plug POU into de-energized receptacle¹.
3. Connect devices into POU's output receptacles. Panduit recommends that the devices are turned off until all devices are connected to POU.
4. Turn on branch circuit to energize POU.
5. Power on devices. Sequential power up is recommended to avoid high inrush current.

Guidelines

- If the POU is installed in a cabinet the ambient temperature of the rack should be no greater than 45°C.
- Install the POU such that the amount of airflow required for safe operation of equipment is not compromised.
- Mount the POU so that a hazardous condition is not achieved due to uneven mechanical loading.
- Follow nameplate ratings when connecting equipment to the branch circuit. Take into consideration the effect that overloading of the circuits might have on over-current protection and supply wiring.
- The POU relies on the building installation for protection from over-current conditions. A certified overcurrent protection device is required in the building installation. The overcurrent protection device should be sized according to the POU's nameplate ratings and local/national electrical codes.
- Reliable earthing of rack-mount equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit. The POU must be connected to an earthed socket-outlet.
- The POU is intended for Restricted Access Locations only and only qualified service personnel should install and access the POU.
- For pluggable equipment, install the POU so that the input plug or appliance coupler may be disconnected for service.
- Sequential power-up of devices powered by the POU is recommended to avoid high inrush current.
- **Caution:** Disconnect all power cords before servicing.
- The POU is intended for use with TN, TT, or IT power supply systems

¹ Branch Circuit should be sized based on the POU's nameplate electrical rating. For example a 24 Amp rated PDU is intended for use on a 30 Amp Branch Circuit. For Global Units a 32 Amp rated PDU is intended for use on a 32 Amp Branch Circuit.

Mounting

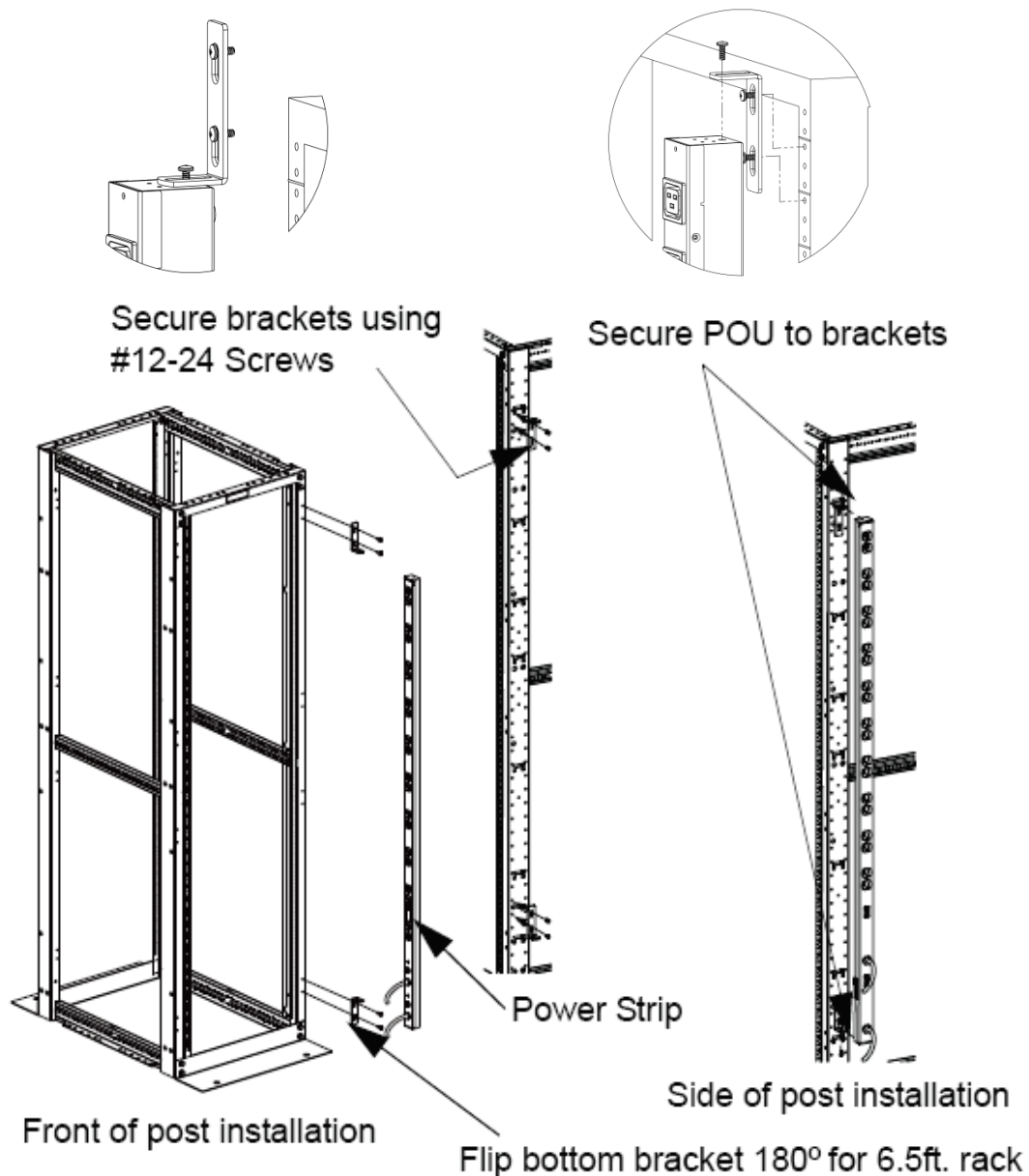
"L" Bracket

Affix Power Strip Mounting mounting brackets using #12-24 screws provided into tapped holes in the front or the sides of the post. Power Strip Mounting Brackets can also be mounted to the rear equipment rails.

To center the 66.25" vertical power strips:

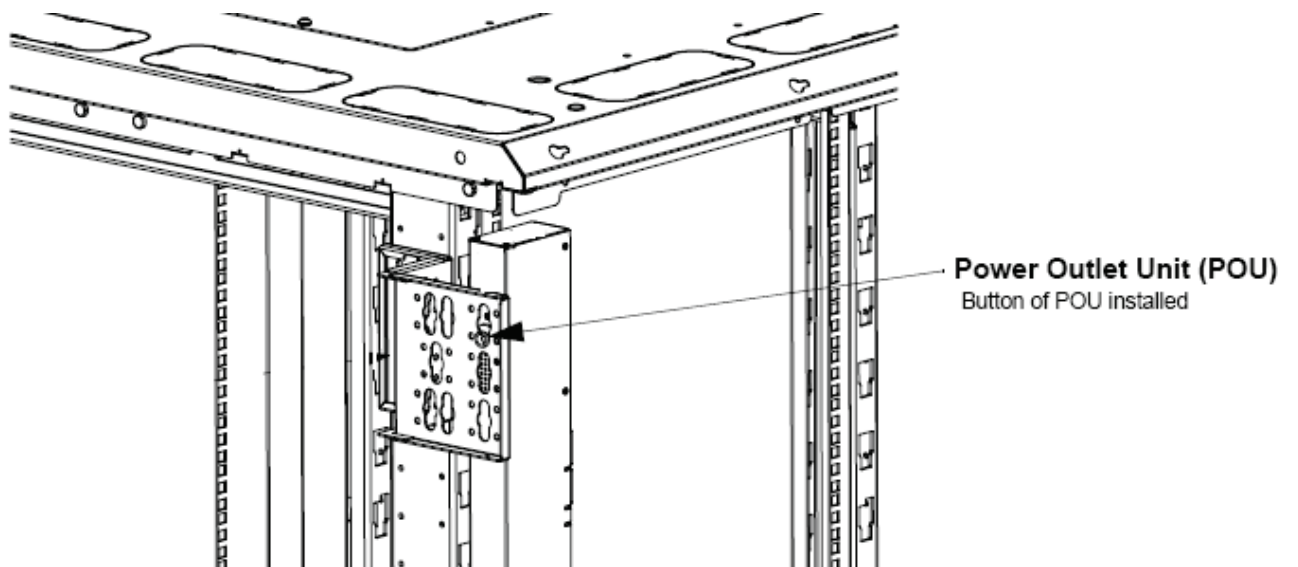
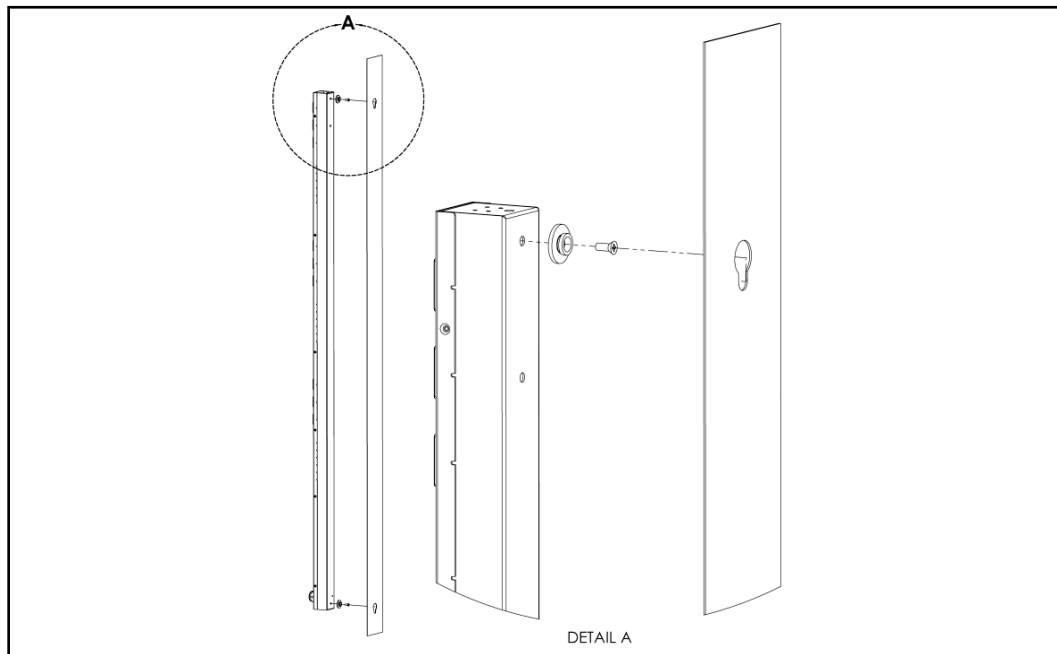
- For 7 foot post racks - mount L-Bracket at RU spaces 03 and 43
- For 8 foot 4 post racks, mount L-Bracket at RU spaces 06 and 46 or spaces 07 and 47
- For 6.5 foot 4 post racks, flip bottom bracket 180° and mount L-bracket at RU spaces 02 and 40

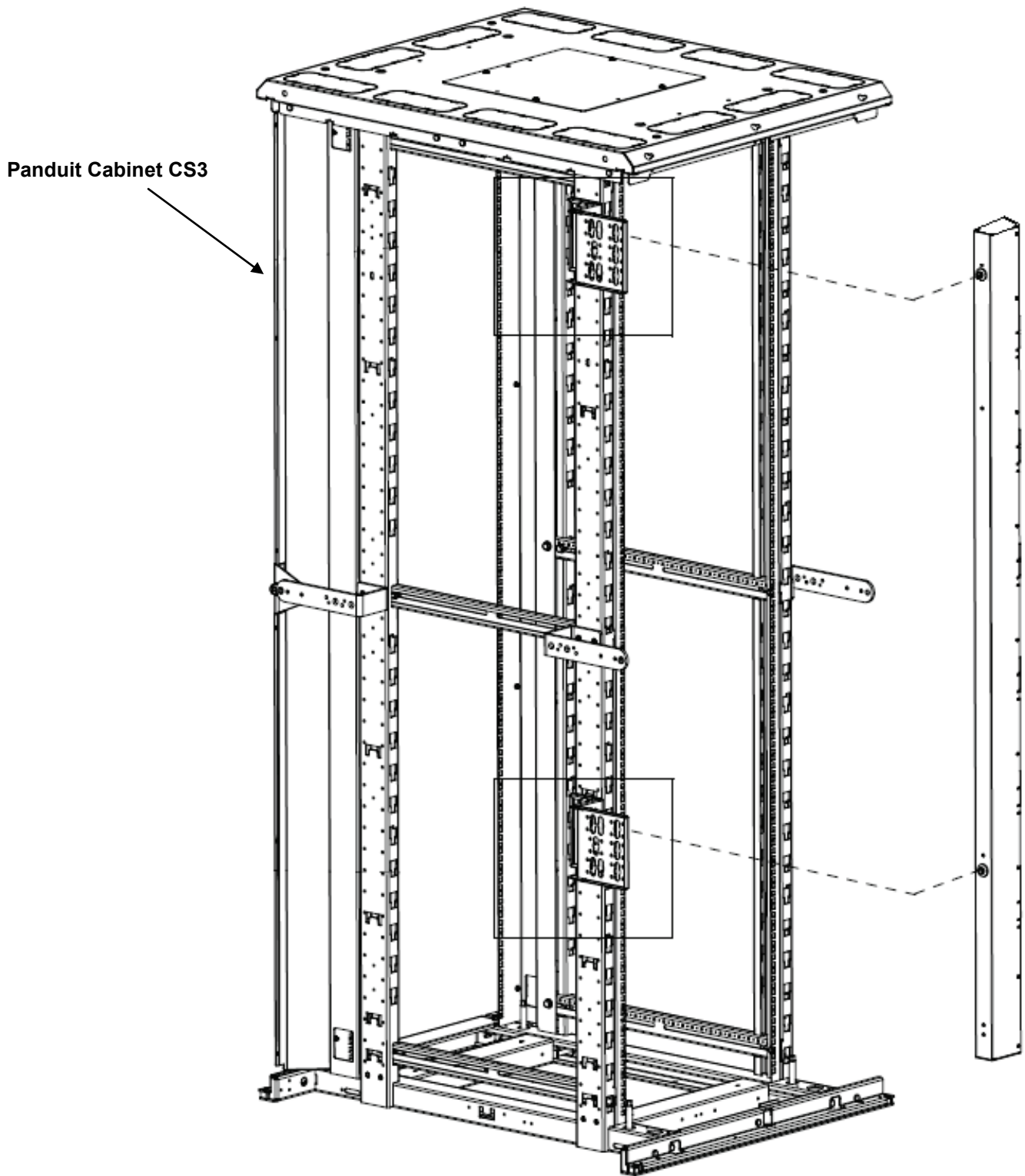
Mount power strip between brackets.



Toolless Mounting Hardware

Use toolless buttons with key-holed slots built into cabinet or with optional key-holed brackets.

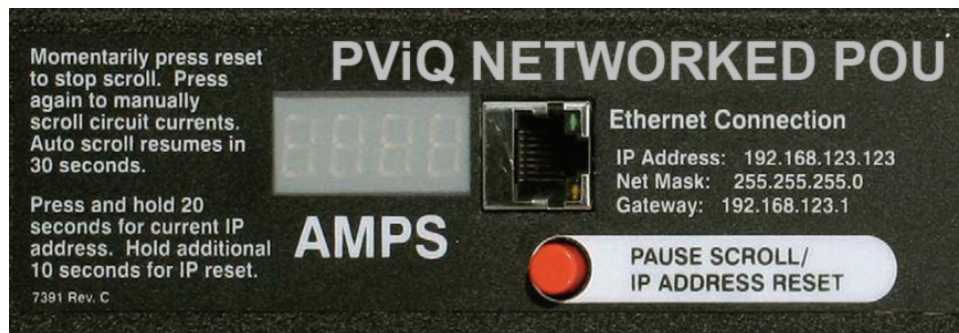




Networked Monitoring

PViQ Local Meter Overview

The PViQ Local Meter is a high precision meter capable of measuring true RMS current. The value of line current per input phase and output circuit current is shown on an easy to read, 4-digit LED Display.² The display continuously scrolls through the different measured values. The Monitor also provides access to measurement data and control values through a web page, SNMP, or XML. The PViQ *Networked Monitoring Instructions* section of this document will give more detailed information on the network operation and functionality of the unit.



PViQ Monitoring Meter

PViQ Networked Monitoring Instructions

Setting an IP Address

The POU comes preset with an IP address for initial setup and access to the unit. The 'Configuration' page contains the network properties. Access to the unit requires the IP address to be known, the IP address may be manually reset should the user-configured address be forgotten. The default address is:

IP Address: 192.168.123.123
 Subnet Mask: 255.255.255.0
 Gateway: 192.168.123.1

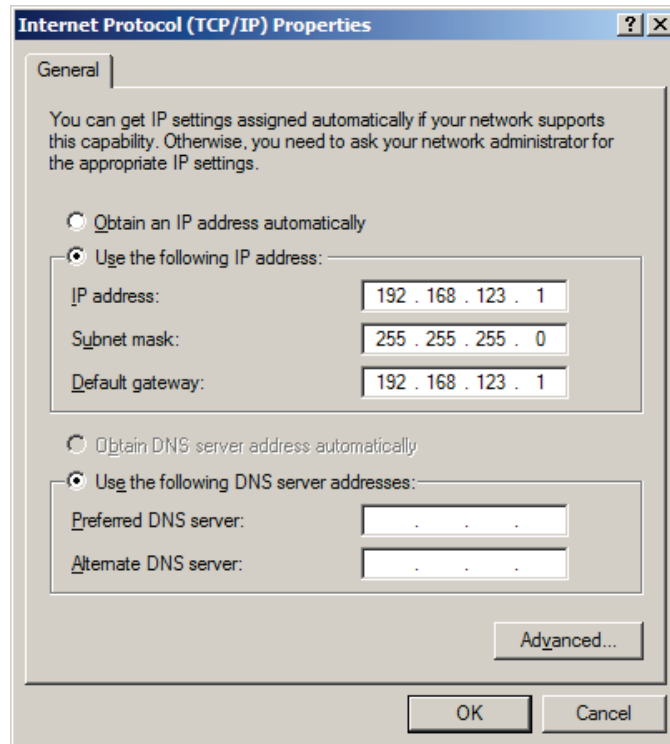
First time setup:

1. Connect POU to your computer using a crossover cable.
2. On your computer, go to "Start > Settings > Control Panel > Network and Dial Up Connections."
3. Right Click on "Local Area Connection" and select "Properties."

² Actual configuration of circuits measured by the PViQ Monitor is POU model specific. Please contact Panduit Technical Support with questions on measurement configuration of PViQ Monitoring Meters.

4. Select the option to “Use the following IP address” and enter:
IP address: 192.168.123.1
Subnet mask: 255.255.255.0
Default gateway: 192.168.123.1³
Click “OK” twice.

You can now access the unit using your web browser at the permanent IP address of 192.168.123.1.



*Typical Network Card Settings for PC
or Laptop to connect to default IP address*

³ In some configurations, leaving the gateway field blank may resolve connectivity issues.

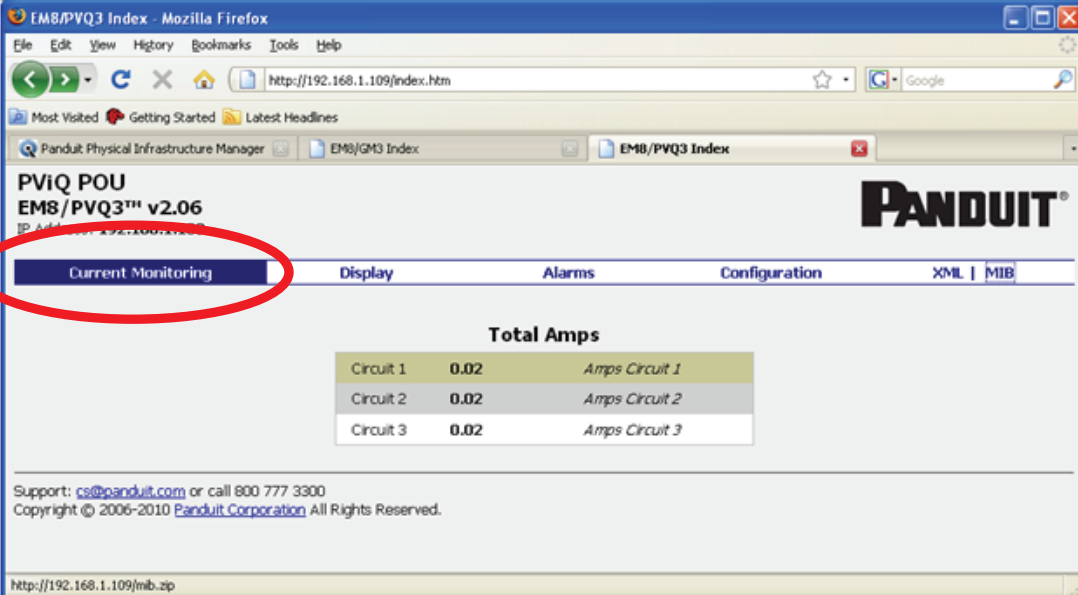
Accessing the POU Web GUI

Once you have properly set the IP Address for a unit, you can connect to the unit through a Web GUI. The Panduit POU Web GUI consists of five tabs:

- Current Monitoring
- Display
- Alarms
- Configuration
- XML | MIB

Current Monitoring tab

The Current Monitoring tab is the default tab. It displays the Total Amps usage for each circuit. A sample of the Current Monitoring tab is shown below.



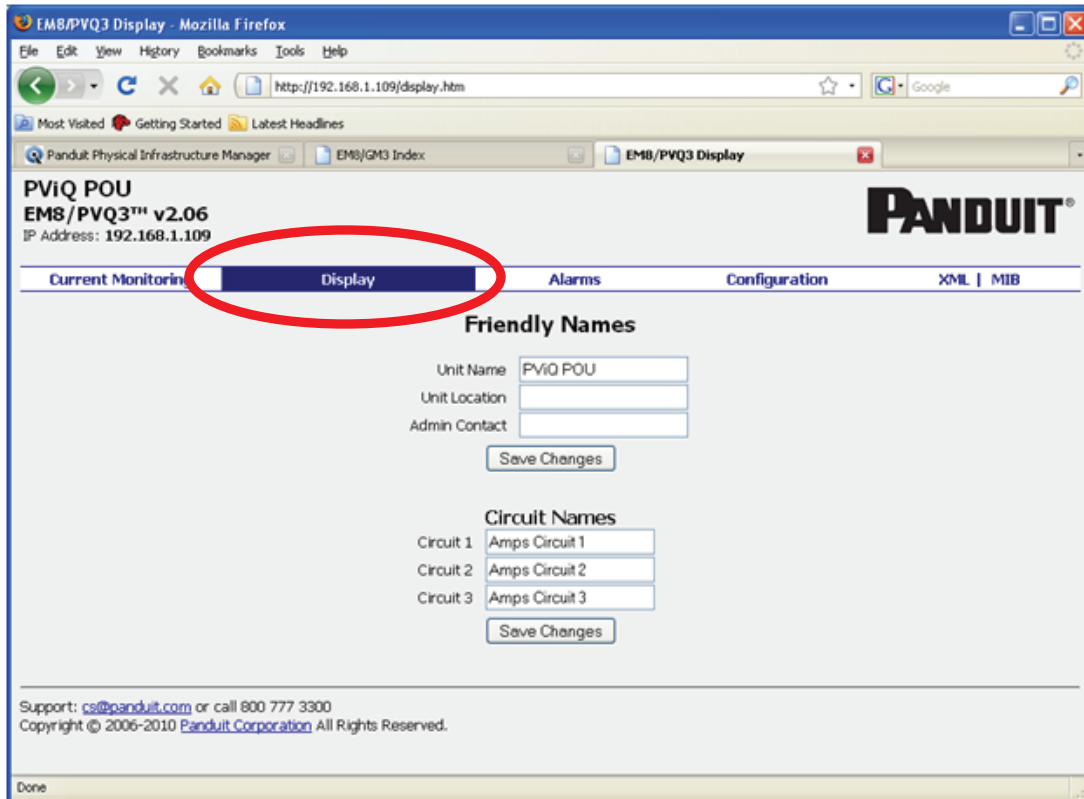
Total Amps		
Circuit 1	0.02	Amps Circuit 1
Circuit 2	0.02	Amps Circuit 2
Circuit 3	0.02	Amps Circuit 3

Current Monitoring tab using the Web GUI

Display tab

The Display tab allows you to enter user friendly names for the POU, the Unit Location, and an Admin Contact. You can also enter individual names for each circuit.

A sample of the Display tab screen is shown below.

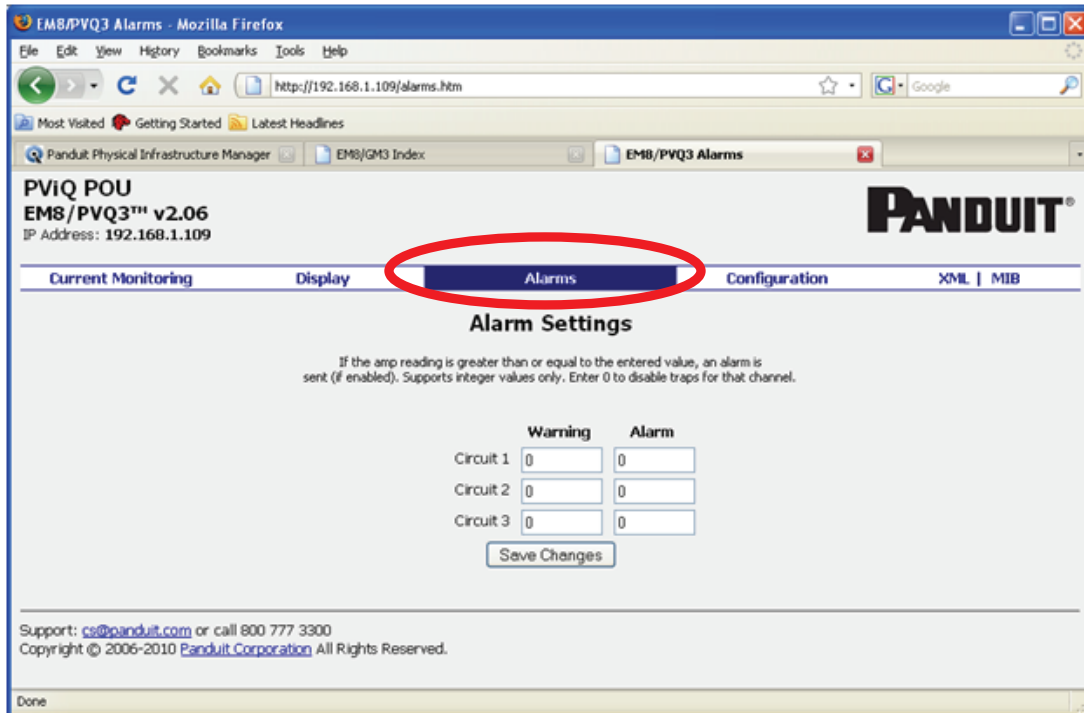


Display tab using the Web GUI

Alarms tab

The Alarms tab provides a current count of the number of warnings and alarms generated for the unit. Individual warning and alarm counts are displayed for each circuit.

A sample of the Alarms tab screen is shown below.

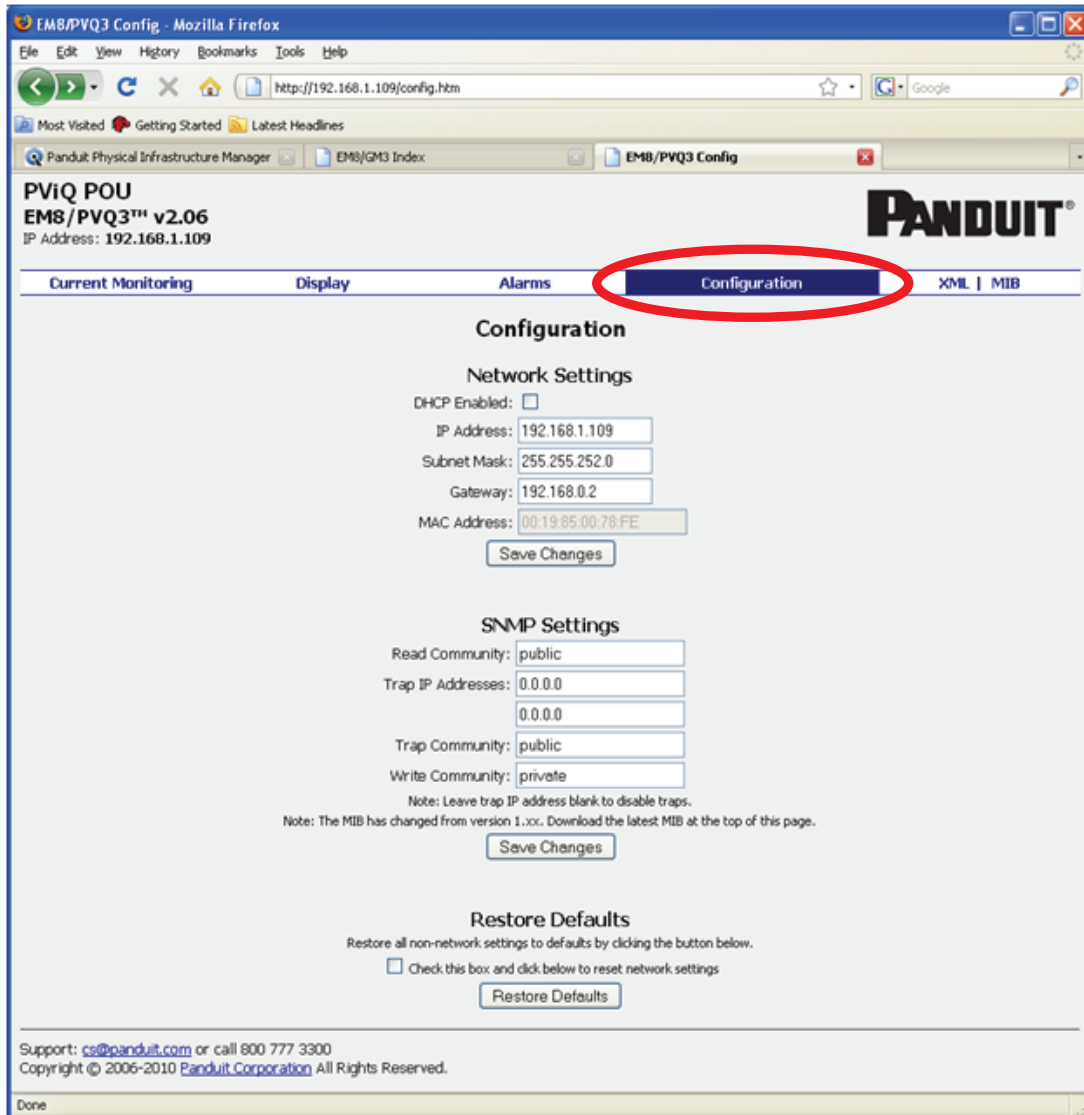


Alarms tab using the Web GUI

Configuration tab

The Configuration tab provides access to various Network and SNMP settings for the unit.

A sample of the Configuration tab is shown below.



Configuration tab using a web browser

LED Display

Each POU has a built-in 4-digit LED display mounted midway down the chassis. The display scrolls through the most recent current measurement (in amps) for each circuit, one at a time. It displays a circuit name, pauses, and then displays the measurement. Momentarily press the “Pause Scroll/IP Address Reset” button on the front of the POU to pause the display on the current measurement. While paused, the display will cycle back and forth between circuit name and current reading every three seconds. Momentarily pressing the “Pause Scroll/IP Address Reset” button again will skip ahead to the next circuit. The display will begin to scroll again thirty seconds after the last button push.

✓ During the first cycle after the display has been paused, the display may take up to six seconds to display a measurement.

✓ Due to the time required to measure current accurately, the same reading may be shown twice while the display is paused.

For reference:

Cr-1 = Circuit 1	Ph-A = Phase A
Cr-2 = Circuit 2	Ph-b = Phase B
Cr-3 = Circuit 3	Ph-C = Phase C
Cr-4 = Circuit 4	nEUt = Neutral
Cr-5 = Circuit 5	Fd-A = Feed A
Cr-6 = Circuit 6	Fd-B = Feed B


Viewing the IP Address/Resetting to Default IP

In the event that the IP address of the POU is lost, it is possible to view the currently configured IP address on the unit’s built-in LED display or reset the IP address to the default.

To view the IP address, press and hold the “Pause Scroll/IP Address Reset” button on the front of the POU for 20 seconds. The screen will stop displaying scrolling power data in order to display the currently configured IP address. The display will show the IP address using the following format:

c-IP →aaa →. →bbb →. →ccc →. →ddd

The ‘→’ indicates a pause and the aaa/bbb/ccc/ddd indicate a portion of the currently configured IP address. The IP address will be displayed twice before normal scrolling continues.

 **CAUTION:** If the “Pause Scroll/IP Address Reset” button is being held while the second segment (bbb above) of the IP address is being displayed, the unit’s IP address will be reset. To prevent this, release the button as soon as “c-IP” shows up on the display.

To reset the IP address to the backup IP address, press and hold the “Pause Scroll/IP Address Reset” button on the front of the POU for 20 seconds, at which point the display will show the current IP address. Continue to hold the “Pause Scroll/IP Address Reset” button for 10 more seconds and the display will switch to scrolling d-IP→192→.→168→.→123→.→123. The IP address is then reset to 192.168.123.123. The display will resume its normal function after the display shows the IP address twice and the “Pause

Scroll/IP Address Reset” has been released. Once the IP address has been reset, the *Setting an IP Address* instructions should be followed to access the unit.

Rebooting the Meter

Should an Current Monitoring Meter with firmware version 1.36 or higher installed stop responding to network traffic, it is possible to restore functionality by rebooting the meter without removing power from the POU it is enclosed in.

To reboot the meter, press and hold the “Pause Scroll/IP Address Reset” button on the front on the POU for 20 seconds. The screen will stop displaying scrolling power data in order to display the currently configured IP address. The display will show the IP address using the following format:

c-IP→aaa→.→bbb→.→ccc→.→ddd

The ‘→’ indicates a pause and the aaa/bbb/ccc/ddd indicate a portion of the currently configured IP address. As soon as “c-IP” is displayed, release the “Pause Scroll/IP Address Reset” button. Press and release the “Pause Scroll/IP Address Reset” button twice while the IP address is being displayed. The screen will read “8.8.8.8.” for a few seconds and then resume scrolling normally, indicating a successful reboot.

Web Page

The main interface to the POU is its web page, accessible by typing the unit’s IP address into a web browser. The web page is the source for the most up to date measurement of each circuit. All measurements are in Amps.

SNMP/XML

In addition to HTML based web pages, the POU presents its data via SNMP and an XML page.

To use the POU with SNMP Client software, download the MIB from the link on the unit’s web page and import it into the SNMP software. Contact the client software manufacturer for instructions specific to their software. The POU’s SNMP community comes preset to ‘public’. To change this, go to the ‘Configuration’ page, enter a new name in the SNMP Community box and hit “Save Changes.” In addition SNMP traps can be utilized to monitor a user set threshold for each circuit, alarm settings and SNMP server settings are located on the ‘Configuration’ page.

The XML page provides terse output that is easily parsed by both humans and computers and is useful for creating scripts to download and process information off the unit automatically. The XML page is available at <http://<IP address of meter>/data.xml>.

Sample uses of XML and SNMP data are provided in the *Sample Usage* section of this document.

Sample Usage

The simplest way to get data from a Current Monitoring Meter into a script is via the XML page. Simply performing an HTTP GET (as a web browser does) on `http://<IP address of meter>/data.xml` will download the XML file. The following examples assume that the meter's IP address is 192.168.123.123.

Perl Example:

```
using LWP::UserAgent;
my $ip = "192.168.123.123";
my $browser = LWP::UserAgent->new;
$browser->timeout(5);
my $xmlFile = $browser->get("http://" . $ip . "/data.xml" )->content;
```

At this point, `$xmlFile` will contain the text of `data.xml`, ready to be parsed however necessary.

Unix/Linux Command Line Example:

```
wget http://192.168.123.123/data.xml
```

This command will download `data.xml` into the current directory. At this point, the file is ready to be used by any local application or script.

Service and Technical Support

Service

No service or maintenance is required. Do not attempt to open the POU or you may void the warranty. No serviceable parts inside. Panduit recommends that power be removed from the unit before installing or removing any equipment.

Technical Support

For Technical Support on the PViQ POU please contact Panduit Technical Support using one of the following methods:

- 1-800-777-3300 (toll-free)
- cs@panduit.com