PowerHawk Multi-Circuit Meters
Configuration Guide

930-140-01-B.02
02/2018

TRIACTA
SUBMETERING BEYOND MEASURE

Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, can result in death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, can result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Triacta for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Notices

FCC Part 15 Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

FCC Part 68 Notice

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachments (ACTA). On the side of this equipment is a label that contains, among other information, a product identifier in the format US: AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses the following Universal Service Order Codes (“USOC”) jacks: RJ11.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug or compliant modular jack is provided with this product.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. The REN for this product is part of the product identifier that has the format US: AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3).

If this equipment, Digital Power Meter with Internal Modem, causes harm to the telephone network, the telephone company will notify you in advance that service may be temporarily discontinued. When advance notice is not practical, the

telephone company will notify you as soon as possible. You will also be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If you experience trouble with this equipment, Digital Power Meter with Internal Modem, please contact Triacta Power Solutions. If this equipment is causing harm to the telephone network, the telephone company may request that you disconnect this equipment until the problem is resolved.

There are no user serviceable parts in this equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your premises has specially wired alarm equipment connected to the telephone line, ensure that the installation of this Digital Power Meter with Internal Modem does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Network Compatibility Notice for the Internal Modem

The internal modem in meters equipped with this option is compatible with the telephone systems of most countries in the world, with the exception of Australia and New Zealand. Use in some countries may require modification of the internal modem’s initialization strings. If problems using the modem on your phone system occur, please contact Triacta Technical Support.

Industry Canada Class B Emission Compliance Statement

This equipment does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian ICES-003.

Avis de conformité aux normes d'Industrie Canada. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

UL

UL (Underwriters Laboratories) are listed by the American Federal Occupational Safety and Health Administration (OSHA) under NRTL (Nationally Recognized Testing Laboratory) program. They are also accredited by Standards Council of Canada. This equipment complies with UL 61010-1 Second Edition and CSA C22.2 No. 61010-1-04.

Table of Contents

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PowerHawk configuration tool

This document describes how to configure the PowerHawk meters, using the PowerHawk configuration tool. It includes the following configuration tool information:

This documentation is intended for those responsible for configuring the PowerHawk meters.

System set-up and description

The configuration tool supports the following PowerHawk meters

- PowerHawk 3350 meter
- PowerHawk 6320 meter
- PowerHawk 6x12 and 6x03 meters
- PowerHawk 4x24 and 4x06 meters

Depending on how the meters are installed and configured, they can meter:

- 2, 3, or 6 individual meter points
- 8, 12, or 24 individual meter points

The PowerHawk meters are designed for residential, commercial, and industrial use and display the power and consumption readings for each measurement point.

Configuration and Programming

The configuration tool is used to set any of the programmable parameters of the PowerHawk meter. The combination of the configuration tool and the state of the meter programming switches determine which parameters can be set or changed.

As shown in Figure 1, the programming switches are two-position DIP switches labeled SW1, and are located inside the meter cover below the Display button. To enable meter configuration, both switches must be physically set to the ON (down) position (default).

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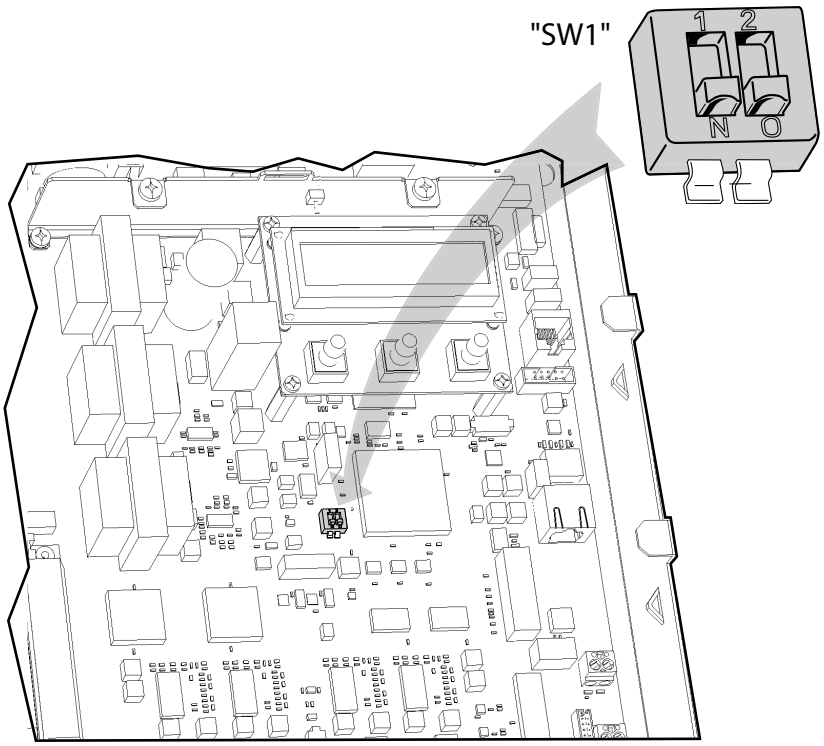
Figure 1: Programming Switch location



To prevent tampering with metering parameters after programming, both switches should be set to the OFF (up) position.

Table 1 lists the programming parameters and configuration functions that are locked (cannot be changed) when both switches are in the OFF position.

Table 1: Locked parameters and functions

Configuration tool window or section	Parameter or function
Main window → Unit Field Configuration tab	PT Ratio
Main window → Unit Field Configuration tab → Report section → Recording Interval tab	Recording Interval
Main window → Unit Field Configuration tab → Report section → Types tab	All parameter reporting enable (✓) and disable selections
Main window → Unit Field Configuration tab → Report section → Demand tab	Manual Demand Rest Enabled Demand Interval Setup: Block Demand Sliding Window Demand
	Demand Interval
Main window → Manufacturing tab	Model # pull-down

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Configuration tool window or section	Parameter or function
Main window → Meter Points (Circuits) tab	MPx - Meter x kWh/kVARh Delivered Dial Readings kWh/kVARh Received Dial Readings kVAh Dial Reading
	Probe x-x: Current Phase
	Rogowski Coil Integrator
	All Meter Settings Rogowski Coils → All On Rogowski Coils → All Off
	Badge Numbering
	Reset All Dial Readings
	Adjust All Dial Readings
	Set Locked Message

Installing the software

The PowerHawk configuration tool is available on the CD shipped with each unit. To install and run the configuration tool, your PC must be equipped with the following hardware and software:

- an Ethernet port
- Windows 7 or later operating system

NOTE: The configuration tool is not supported on Windows XP.

- Microsoft.Net Framework 4.5.1 or earlier is required to run the installer

Configure PC settings

NOTE: You must have Administrator access to configure these settings.

In Windows Control Panel:

— Disable any firewall software

— In Programs and Features, select “Turn Windows features on or off” and turn ON “telnet client” and “tftp client”

Install the software

NOTE: You must have Administrator access to the PC where you are installing the configuration tool.

1. Download the Metershop tool folder from http://triacta.com/support.
2. Select **Configuration Tools** and click on **PowerHawk Configuration Tool (zip)**. Follow the prompts to complete the download
3. Open the Metershop folder.
4. Run vx.xx_setup.exe and follow the installation tool instructions.

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Communications Connections

If you are configuring the meter at an installation site, see the applicable *PowerHawk Meter Installation Guide* for instructions on connecting the power. Power connections vary depending on whether the meter is configured for single-phase or three-phase operation.

If you are pre-configuring the meter in the shop, only Phase A, Neutral, and protective earth connections are required to power up the meter for configuring.

The PowerHawk Configuration Tool runs on a Windows PC and communicates with the PowerHawk meters through an Ethernet network connection. A network connection can be accomplished in one of two ways: either by direct Ethernet connection, or by connecting to a LAN (Local Area Network).

Direct Connection Ethernet Requirements

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- The meters must be connected to the sense voltage and control voltage through a properly rated disconnect.

Failure to follow these instructions will result in death or serious injury.

To connect a PC directly to the PowerHawk meter:

1. Disconnect power from the meter with the installed breaker or disconnecting device. Use a properly rated voltage sensing device to confirm power is off.
2. Remove the outer cover.
3. If you are changing parameters that require the programming switch to be on, remove the inner cover and ensure the programming switches are in the ON position.
4. Re-install the inner cover.
5. Remove the local LAN Ethernet cable if present and connect the CAT 5 Ethernet cable between the PC and the PowerHawk meter. If the PC does not have auto-crossover detection, an Ethernet crossover cable will be required.
6. Restore power to the meter.
7. Assign the PC a static IP address such that the first three segments are the same as the default IP address, and the last segment is different from the default IP address.
   For example, 192.168.0.xxx, where xxx differs from the last segment of the default IP address.

   Enter 255.255.255.0 into the subnet mask field.

   For Windows 7 users, you must enter the IP address of the meter into the Default Gateway field.

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8. Configure the meter. See “Configuring the meters” on page 6 for configuration instructions.
9. Remove power. Use a properly rated voltage sensing device to confirm power is off.
10. If you wish to lock the configuration parameters, remove the inner cover and move the programming switches (SW1) to the OFF (up) position (see “Configuration and Programming” on page 1). Re-install the inner cover.
11. Connect the LAN Ethernet cable if present.
12. Re-install the outer cover.
13. Restore power.

NOTE: All PowerHawk meters have a default IP address of 192.168.0.9 in the absence of a DHCP service.

Network Connection Ethernet Requirements

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- The meters must be connected to the sense voltage and control voltage through a properly rated disconnect.

Failure to follow these instructions will result in death or serious injury.

To connect the PowerHawk meter to the network:

1. Turn off power to the meter with the installed breaker or disconnecting device. Use a properly rated voltage sensing device to confirm power is off.
2. Remove the outer cover.
3. If you are changing parameters that require the programming switch to be on, remove the inner cover and ensure the programming switches are in the ON position (see “Configuration and Programming” on page 1). Re-install the inner cover.
4. Using a CAT 5 Ethernet patch cable, connect the meter and the PC to a local Ethernet switch.
5. Re-install the outer cover.
6. Restore power. When control power is restored, the meter will receive an IP address from a local DHCP server. This IP address can be viewed from the Diagnostics menu.

NOTE: To use a static IP address, have your local network administrator assign the desired IP address to the MAC address of the meter in the DHCP server configuration.

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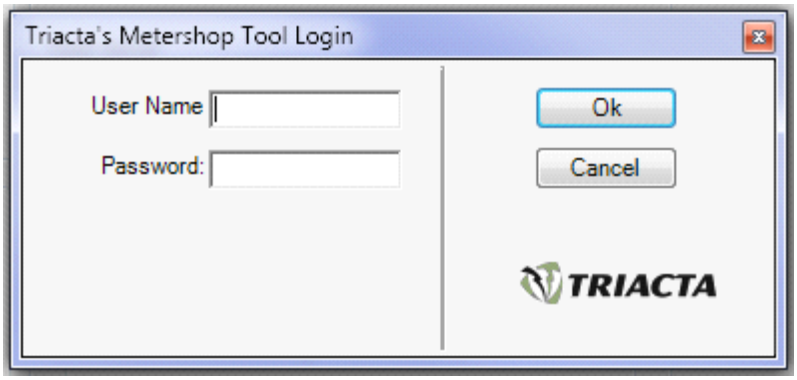
Configuring the meters

Use the following procedure to log in to theTriacta Metershop Tool, connect to a meter, and begin configuring the meter.

Login

1. Establish an Ethernet network connection with the meter using one of the methods described in “Communications Connections” on page 4.
2. Ensure the programming switches are in the ON position. The programming switches are two-position DIP switches labeled SW1, and are located inside the meter cover below the Display button. To enable meter configuration, both switches must be physically set to the ON position. When both switches are in the OFF position, meter configuration is disabled. For more information about the programming switches, see “Configuration and Programming” on page 1.
3. Start the configuration tool by entering “PowerHawk” as the **User Name**, and “user” as the **Password** (see Figure 2). Click **Ok**.

Figure 2: Login screen



4. The main window displays as shown in Figure 3.

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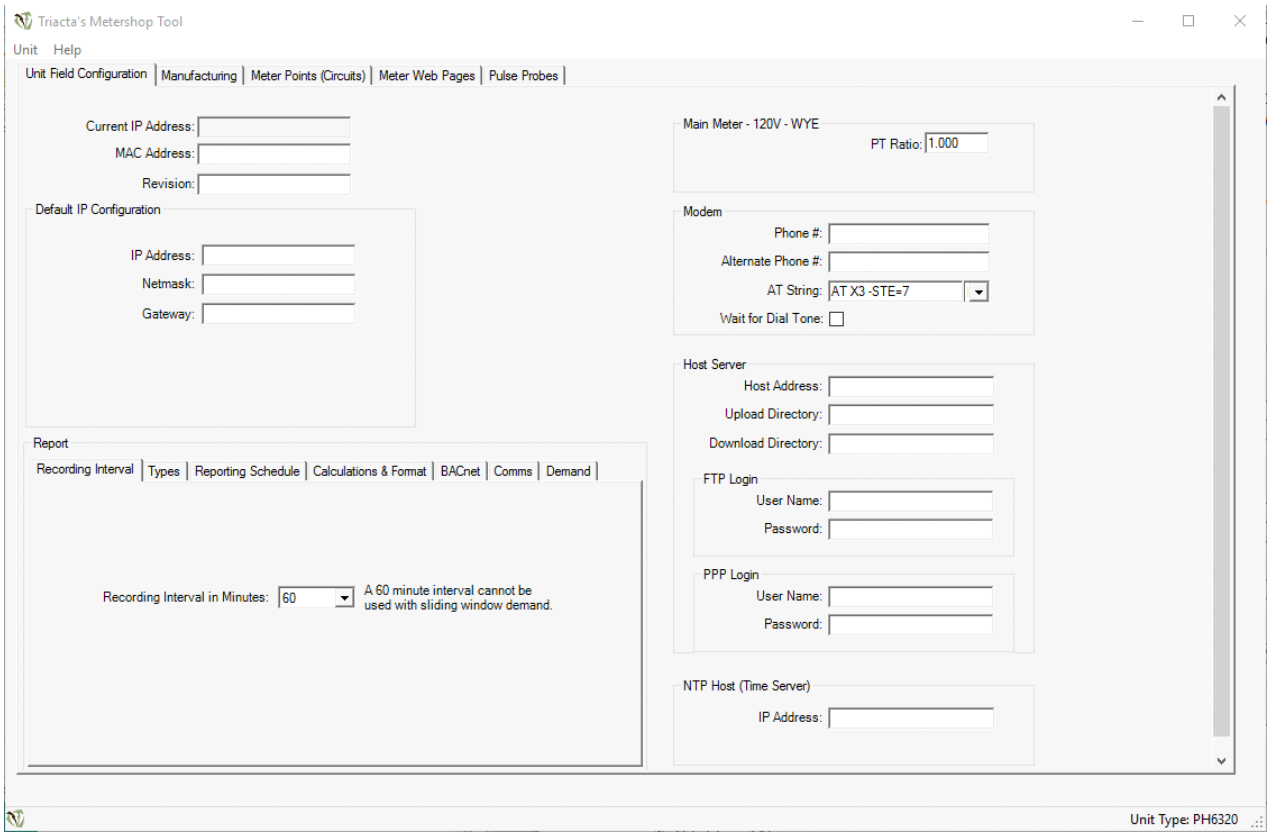
Figure 3: Configuration tool main window



Connecting to a Meter

The configuration tool automatically detects and lists the PowerHawk meters on the same network segment as the PC. The configuration tool can also be used with meters on a different network.

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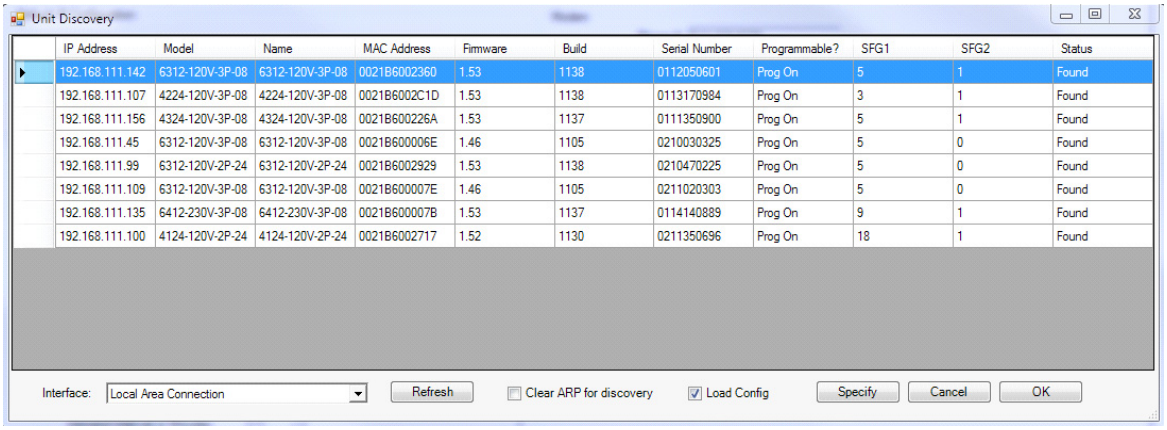
To connect to a meter on the same network:

1. Click **Unit** in the menu bar of the configuration tool main window (see Figure 3), then select **List** from the drop-down menu. The Discovered Units window appears, displaying a list of meters available for configuration. See Figure 4.

Figure 4: Discovered Units dialog box

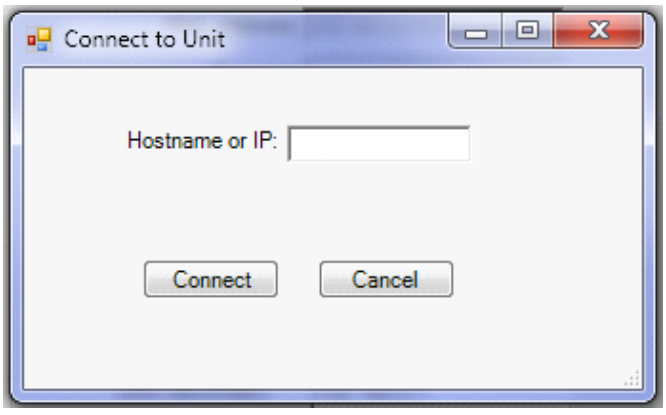


2. Select the desired meter form the list, then select (✓) **Load Config** check box and click **OK**. The main configuration tool window appears populated with the current programming information for the selected meter. See Figure 6.
3. Proceed to “Unit Field Configuration tab” on page 11.

To connect to a meter on a different network:

1. Click **Unit** in the menu bar of the configuration tool main window (see Figure 3), then select **Connect** from the drop-down menu. The Connect to Unit window appears. See Figure 5.

Figure 5: Connect function window



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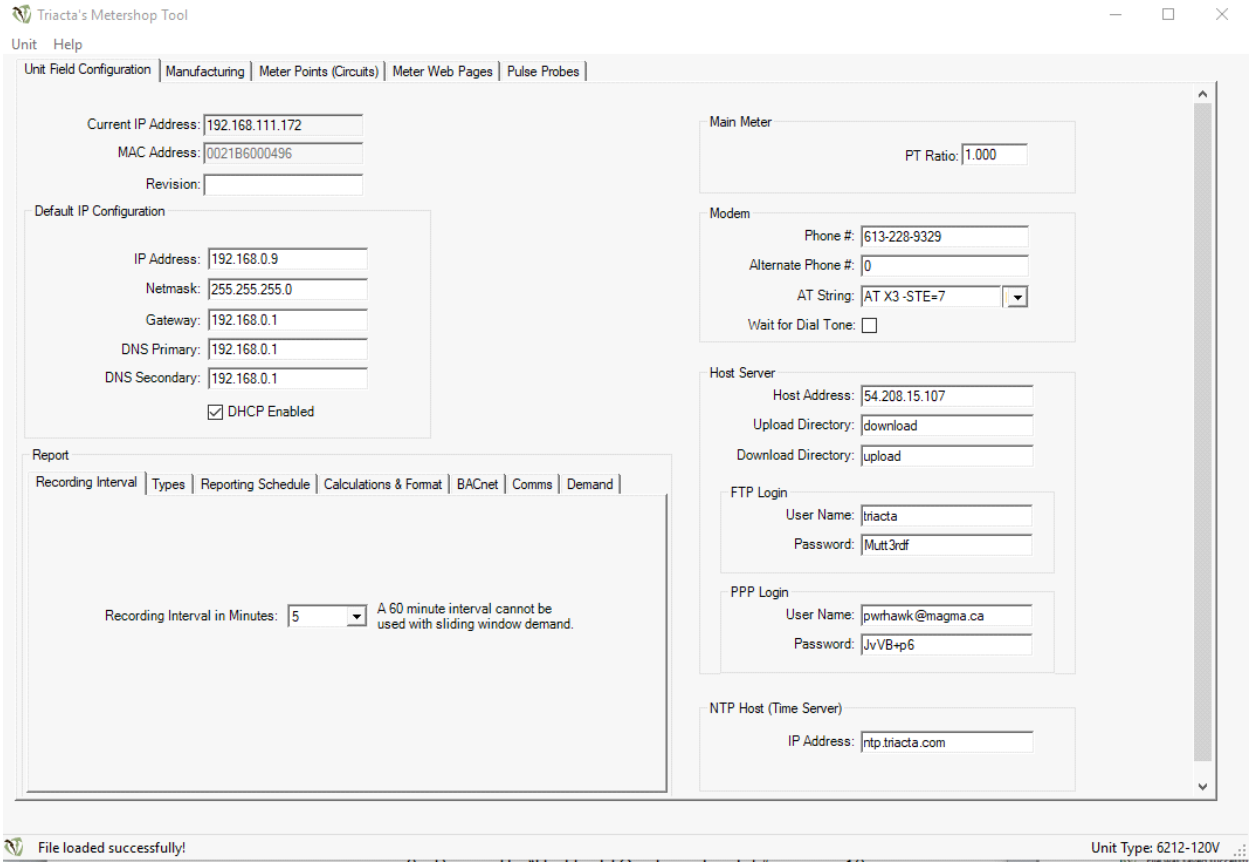
2. Enter the IP address of the meter to be configured, then click **Connect.** The configuration tool main window appears populated with the current programming information for the selected meter. See Figure 6.
3. Proceed to “Unit Field Configuration tab” on page 11.

NOTE: Not all meter configuration functions shown in this document are supported in all meter variants or firmware versions. If a function is not available, it will be greyed out or not shown at all.

Figure 6: Main configuration window with configured parameters



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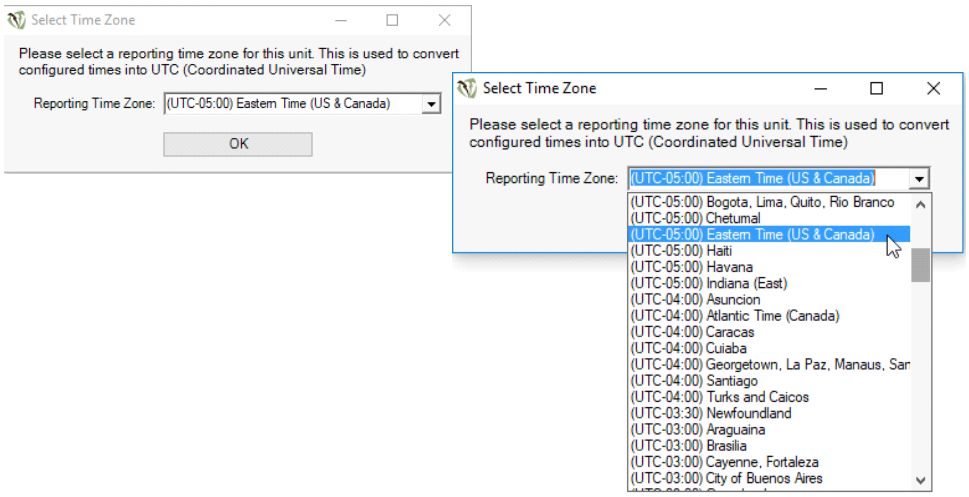
NOTE: New versions of the PowerHawk Configuration Tool will store a selected Time Zone in the meter memory. This Time Zone is only used by the Configuration Tool to calculate offset tags for reporting (see Reporting Time Zone parameter in Table 5 on page 15). If the configuration loaded from a meter does not contain a previously stored Time Zone, a Select Time Zone pop-up window with a drop-down menu will appear as shown below. Select the Time Zone in which the meter will be located from the drop-down menu, and press enter.

The PowerHawk 6320 meter does not store the Time Zone, so the Select Time Zone pop-up window will appear every time a 6320 meter configuration is loaded into the Configuration Tool.



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Unit Field Configuration tab

Use Table 2 to set meter configuration parameters in the Unit Field Configuration tab.

Table 2: Unit Field Configuration tab parameters

Field	Parameter	Description
Unit Field Configuration	Current IP Address	The current IP address for the unit .This parameter is read only and cannot be changed by the user.
	Mac Address	The current MAC address for the unit. This parameter is read only and cannot be changed by the user.
	Revision	The revision number of the unit.
Default IP Configuration	IP Address	The default IP address. This parameter is configured when DHCP has been disabled, or DHCP services are not available on the network.
	Netmask	The default subnet mask. This parameter is configured when DHCP has been disabled, or DHCP services are not available on the network.
	Gateway	The default gateway. This parameter is configured when DHCP has been disabled, or DHCP services are not available on the network.
	DNS Primary	The primary domain name server. This parameter is configured when DHCP has been disabled, or DHCP services are not available on the network.
	DNS Secondary	The secondary domain name server. This parameter is configured when DHCP has been disabled, or DHCP services are not available on the network.
	DHCP Enabled	If DHCP is not enabled, the meter uses the Default IP Configuration parameters. If DHCP is enabled, the meter uses the IP configuration parameters provided by the network DHCP service.
Report	See “Report section” on page 12	
Main Meter	PT Ratio	The main meter potential transformer ratio. This is an internal multiplier used by the meter for external potential transformers. External PTs can be used with a PT ratio of 1 if the billing system will apply the PT multiplier. Use a PT Ratio of 1 when there are no external PTs.
Modem	Phone #	The phone number of your internet service provider’s PPP service.
	Alternate Phone #	An alternate phone number of your internet service provider’s PPP service.
	AT String	AT command string to customize modem operation. Default string is ATX3.
	Wait for Dial Tone	Do not enable this parameter if the line has a broken dial tone due to a message waiting feature.
Host Server	Host Address	The IP address or domain name of the FTP server for data storage.
	Upload Directory	The sub-directory used for data reporting within the root directory. The root directory is determined by the FTP user name and the FTP server configuration. The FTP account must have write access to this directory.
	Download Directory	The sub-directory used by the meter to retrieve configuration updates. The FTP account must have read access to this directory..
FTP Login	User Name	The user name for the FTP account.
	Password	The password for the FTP account.
PPP Login	User Name	The user name for the PPP account. This is only required if using dial-up reporting.
	Password	The password for the PPP account. This is only required if using dial-up reporting.
NTP Host (Time Server)	IP Address	The IP address of the NTP server that provides timing to the meter. Disable NTP time checking by entering an IP address of 0.0.0.0.

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Report section

The **Report** section in the main configuration window has six tabs:

- **Recording Interval** tab allows the user to configure the recording interval at which meter data is collected. Figure 7 shows the Recording Interval tab, and Table 3 lists the configuration parameters within the tab.
- **Types** tab allows the user to define the metering data parameters that are to be logged on each recording interval, then reported per the Reporting Schedule. Figure 8 shows the Types tab, and Table 4 lists the interval data report parameters within the tab. The Events Reporting options are for Triacta support debugging purposes only.
- **Reporting Schedule** tab allows the user to configure how often the meter is to send recording interval data to an FTP server. Figure 9 shows the Reporting Schedule tab, and Table 5 lists the configuration parameters within the tab.
- **Calculations & Format** tab allows the user to configure the type of power factor calculation and the display format for leading vs. lagging power factor. Figure 10 shows the Calculations & Format tab, and Table 6 lists the configuration parameters within the tab.
- **BACnet** tab allows the user to configure the BACnet Device interface. Figure 11 shows the BACnet tab, and Table 7 lists the configuration parameters within the tab.
- **Comms** tab allows the user to configure the communications module and change the Meter Utility Password. Figure 12 shows the Comms tab, and Table 8 lists the configuration parameters within the tab.
- **Demand** tab allows the user to configure the demand interval for which demand readings are calculated, and to set the day and time when the demand reading is to be reset each month.

Figure 7: Recording Interval tab in the Report section

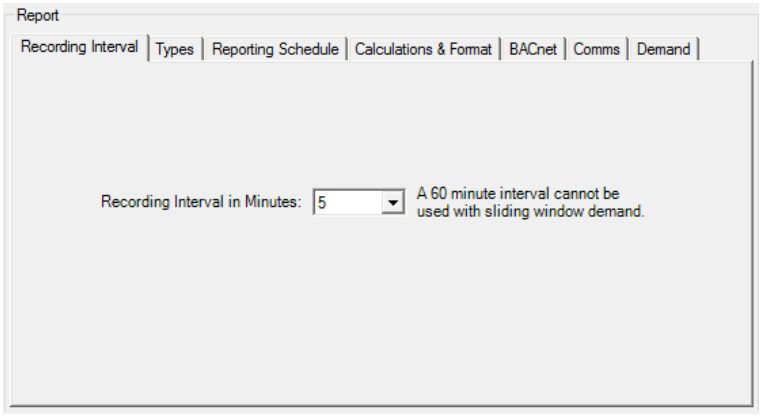

Table 3: Recording Interval tab configuration parameters

Parameter	Description
Recording Interval in Minutes	The interval at which meter data is collected.

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Figure 8: Types tab in the Report section

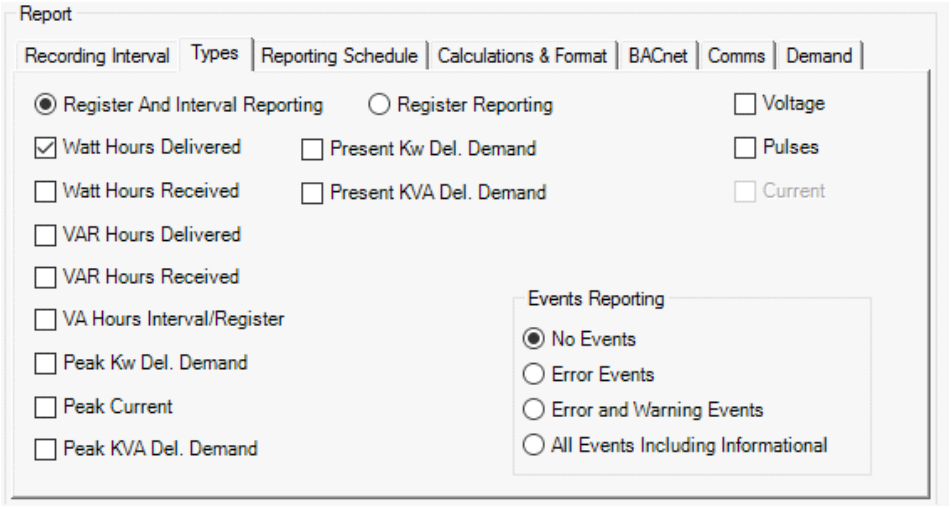

Table 4: Types tab configuration parameters

Parameter	Description of data reported in TR3 file	LCD and Web Register Display
Register and Interval Reporting	Enables reporting of both the Recording Interval data measurements and the Register data for each selected parameter. Recording Interval data is recorded once every Recording Interval. Register data is recorded at midnight UTC each day and each time the meter reports.	No effect on display.
Register Recording	Enables reporting of Register data only for each selected parameter. Register data is recorded once every Recording Interval, at midnight UTC each day and each time the meter reports.	No effect on display.
Data Types		
Watt Hours Delivered	Active (Real) Energy delivered to the load for each recording interval, and for the total register time measured since the meter was commissioned. This parameter is always enabled (✓).	Always displayed.
Watt Hours Received	Active (Real) Energy received from the load for each recording interval, and for the total register time measured since the meter was commissioned.	Disabled in both displays if this parameter is not selected and the meter is locked.
VAR Hours Delivered	Reactive (Inductive) Energy delivered to the load for each recording interval, and for the total register time measured since the meter was commissioned.	Disabled in both displays if this parameter is not selected and the meter is locked.
VAR Hours Received	Reactive (Capacitive) Energy received from the load for each recording interval, and for the total register time measured since the meter was commissioned.	Disabled in both displays if this parameter is not selected and the meter is locked.
VA Hours	Apparent Energy delivered to the load for each recording interval, and for the total register time measured since the meter was commissioned.	Disabled in both displays if this parameter is not selected and the meter is locked.
Peak Kw Del. Demand (1)	Highest demand measured over any Demand time interval and the timestamp it occurred since either the meter was commissioned or the most recent Peak Demand Reset.	Disabled in both displays if this parameter is not selected and the meter is locked.

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Parameter	Description of data reported in TR3 file	LCD and Web Register Display
Peak Current	Highest current measured for each recording interval. Reported for each meter element.	Instantaneous Current is always displayed for each meter element. Peak Current is not displayed.
Peak KVA Del. Demand (2)	KVA demand measured during the same time interval as the Peak Kw Del. Demand and the timestamp when the Peak Kw Del. Demand occurred,	Disabled in both displays if this parameter is not selected and the meter is locked.
Present Kw Del. Demand	Kw delivered demand calculated for the previous Demand time interval.	Not displayed on Web or LCD; TR3 file interval data only.
Present KVA Demand	KVA demand calculated for the previous Demand time interval.	Not displayed on Web or LCD; TR3 file interval data only.
Voltage	Average voltage measured for each recording interval. Reported for each meter element.	Instantaneous Voltage is always displayed for each meter element.
Pulses	Pulse count/s for each recording interval.	Pulse counting display is disabled if this parameter is not selected. (Web only; not displayed on LCD)
Current	Instantaneous Current per element (PowerHawk 3350 meter only).	Instantaneous Current is always displayed for each meter element.
Events Reporting	This section is to be used for Triacta support debugging purposes only.	

Note: The following data types have dependencies with other data types:

1. Peak Kw Del. Demand: requires Present Kw Del. Demand
2. Peak KVA Del. Demand: requires Present Kw Del. Demand, Peak Kw Del. Demand, and Present KVA Del. Demand

Turning ON a data type with dependencies will turn ON all of the related dependencies.

Turning OFF a data type with dependencies does NOT turn OFF any of the related dependencies.

Turning OFF a dependency will turn OFF all of the related dependent data types.

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Figure 9: Reporting Schedule tab in the Report section

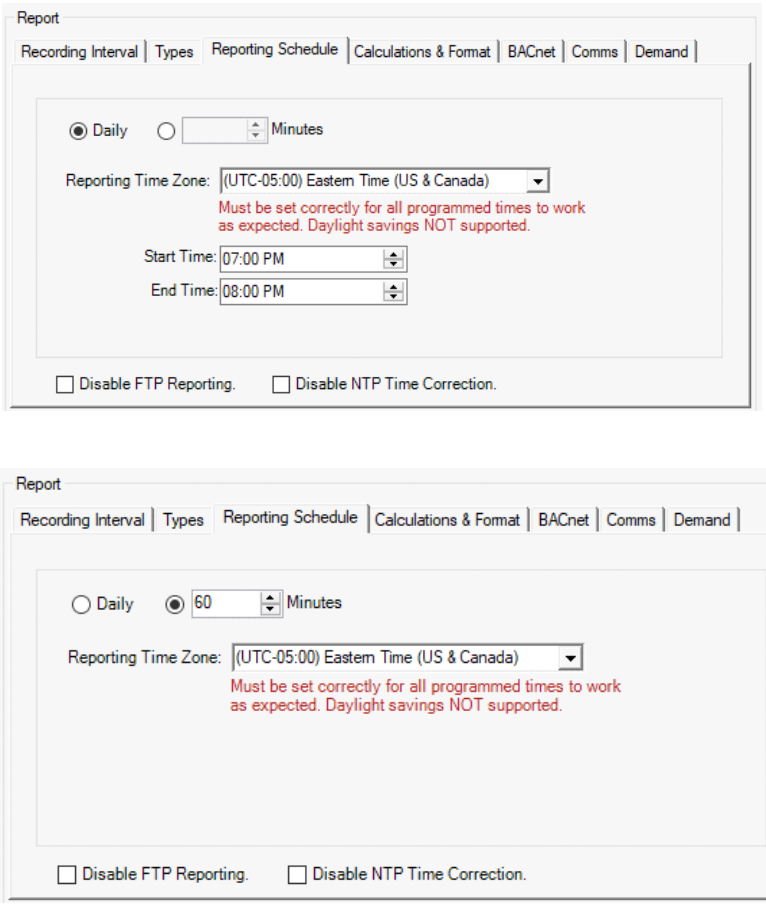

Table 5: Reporting Schedule tab configuration parameters

Parameter		Description
Daily (default)		Enables daily real time reporting. The unit will make up to 10 attempts to send the data file at randomly selected times within the report window specified by the start and end time.
	Start Time	When daily reporting is enabled, select the reporting period start time. Warning: When configuring a PowerHawk 6320, or a 6000/4000 meter with firmware older than v2, the Start Time must be later than 12:00am UTC and the End Time must be later than the Start Time.; otherwise, the meter will not report.
	End Time	When daily reporting is enabled, select the reporting period end time.
Minutes		Enables real time reporting every x number of minutes by selecting the radial button and entering the interval in minutes.
Reporting Time Zone		The selected time zone is used by the tool along with the times selected to calculate the offset time from 0:00 UTC for both the Daily reporting time and the Demand reset time. The time zone will initially default to the time zone of the computer on which the tool is running. All times reported and displayed by the meter unit are always in UTC time. Daylight savings times are not supported.

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Parameter	Description
Disable FTP Reporting	Selecting (✓) **Disable FTP Reporting** tells the meter not to initiate any connections to an FTP server. All selected data interval types and events will continue to be recorded and stored in memory for each Recording Interval. The interval data and events can be still read from the web interface (Info) and via Modbus.
Disable NTP Time Correction	Selecting (✓) **Disable NTP Time Correction** tells the meter not to initiate any connections to an NTP time server. When selected, the config tool will write a value of 0.0.0.0 into the NTP Host (Time Server) address. When NTP time correction is disabled, the meter time should be periodically set via either MODBUS or BACnet. When NTP time correction is enabled, ensure that there are no MODBUS and/or BACnet time corrections.

Figure 10: Calculations & Format tab in the Report section

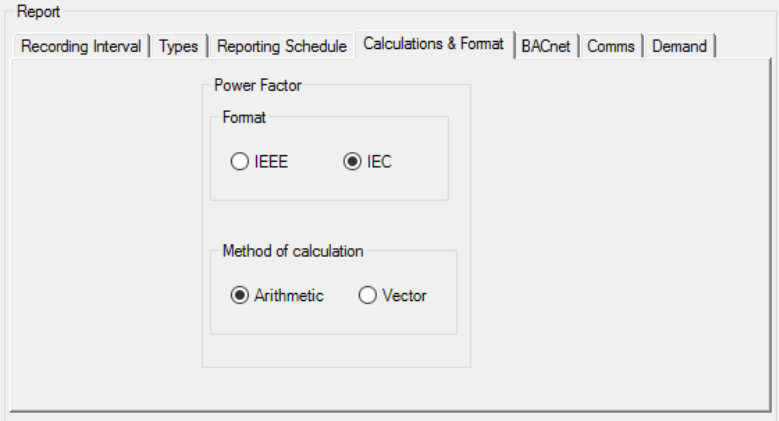

Table 6: Calculations & Format tab configuration parameters

Parameter			Description
Power Factor			
	Format	IEEE	In the front panel display, the sign (+ or -) indicates leading (+) or lagging (-) power. The direction of active power is not indicated.
		IEC (default)	In the front panel display, the sign (+ or -) indicates the direction of active power. Lead or lag indicates capacitive or inductive power.
	Method of Calculation	Arithmetic	Selects the arithmetic method for calculating Power Factor.
		Vector (default)	Selects the vector method for calculating Power Factor

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Figure 11: BACnet tab in the Report section

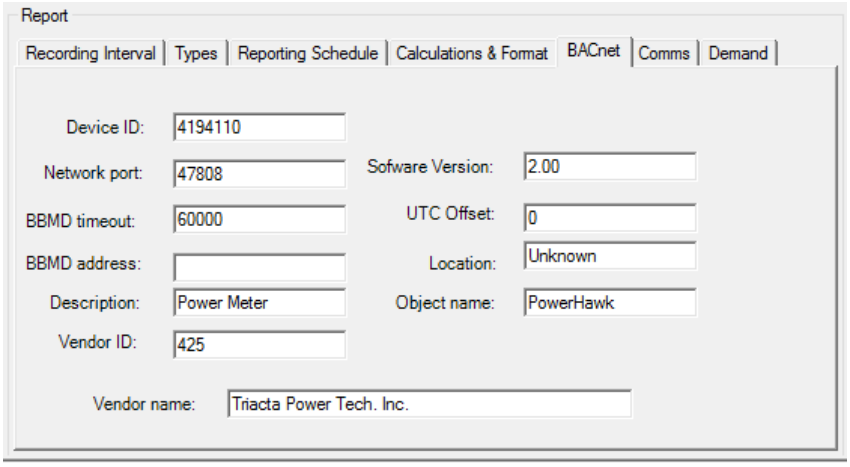

Table 7: BACnet tab configuration parameters

Parameter	Description
Device ID	Set the BACnet device ID by entering a a numeric ID between 0 and 4194303.
Network Port	The BACnet specific port number for this device (default is 47808).
BBMD Timeout	Enter the amount of time (seconds) required for connection to a BACnet network.
BBMD Address	Enter the address of the BBMD device that controls all devices in the BACnet network.
Description	A user selectable description of the device (default is Power Meter).
Vendor ID	BACnet Vendor Identification number (default is 425).
Vendor Name	Triacta Power Solutions, Inc. (default).
Software Version	The software version of the PowerHawk product (fixed).
UTC Offset	Fixed at 0.
Location	A user selectable description of the physical location of the unit (default is Unknown).
Object Name	PowerHawk Meter (default).

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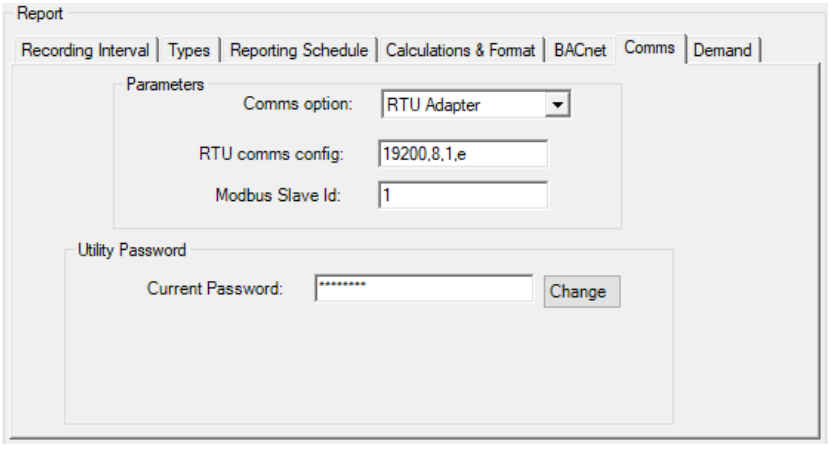
Figure 12: Comms tab in the Report section



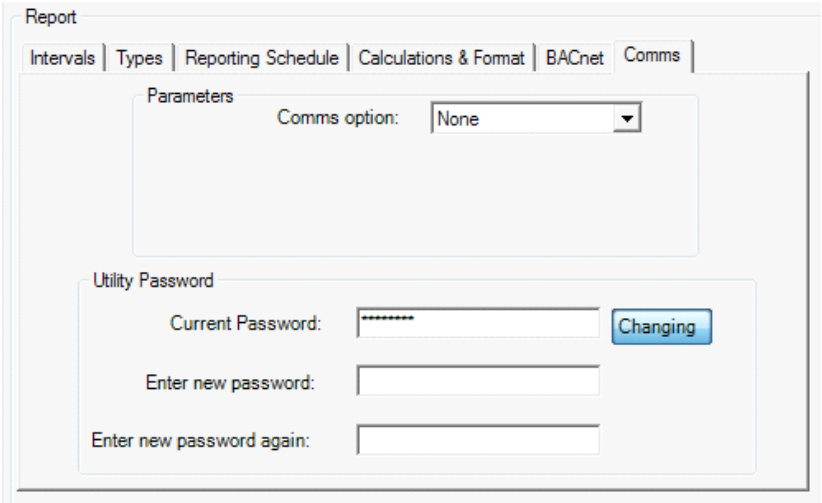


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Table 8: Comms tab configuration parameters

Parameter			Description
Parameters			
Comms Option	Modem		Selecting Modem configures the communications module as a dial-up modem for remote reporting via a phone line.
	None		Selecting None disables the communications module interface.
	RTU Adapter		Selecting RTU Adapter configures the communications module as a Modbus RS422/RS485 serial interface.
		RTU comms config	Enter the RTU serial port parameters as a string with the following selections: baud rate - 19200 (default) or 9600 number of bits - 8 (default) number of stop bits - 1 (default) parity type - e – even (default); n – none Example: 19200,8,1,e (default)
		Modbus Slave Id	Enter the Modbus RTU Slave ID for this device (1 to 255).
Utility Password			
	Current Password		The default meter Utility Password is listed here whenever the Configuration Tool is started, or when a configuration is uploaded from a meter. If the Utility Password for the meter is not the default password, enter the Current Password here to change metering specific parameters or to change the password again.
	Enter new password		To change the password, enter the new password.
	Enter new password again		To confirm, re-enter the new password.

NOTE: The Modbus and RTU Adapter Comms Option parameters are valid only when a Modem module or an RTU adapter module is present.
The RTU Adapter parameters apply only to Modbus RTU communications. There are no configuration options when Modbus over TCP/IP is used.

NOTE: The meter Utility Password is used to control access to changing the metering specific parameters in the PowerHawk meter. The following parameters and functions cannot be changed or activated unless the correct Utility Password is entered before sending the new config to the meter:

- PT Ratio
- CT Current and Phase
- Rogowski Coil settings
- Reset/Adjust Dial & Demand Readings
- Model Number
- Locked Message
- Change Password

All other parameters and functions can be changed or accessed without entering the correct Utility Password for the meter being configured.

NOTE: TO ENSURE THAT YOU DO NOT FORGET OR MISPLACE THE NEW PASSWORD, RECORD IT AND STORE IT IN A SAFE PLACE. RESETTING THE PASSWORD REQUIRES A FULL FACTORY RESET OF THE METER.

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Figure 13: Demand tab in the Report section

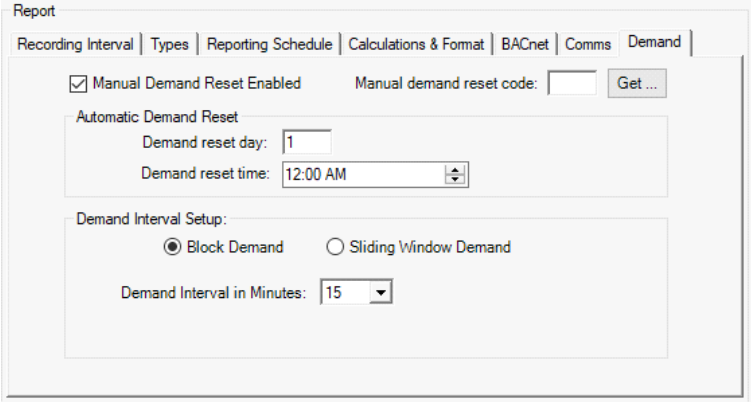

Table 9: Demand tab configuration parameters

Parameter		Description
Manual Demand Reset Setup		
	Manual Demand Reset Enabled	Selecting (✓) Manual Demand Reset Enable enables a manual procedure for resetting the Peak Demand and Peak VA demand registers on all meter points using the front panel display of the meter unit. Deselecting Manual Demand Reset Enable disables the manual demand reset option using the front panel display of the meter unit.
	Manual demand reset code	This field is a 4-digit PIN that is used to cause an immediate demand reset on all meter points using the front panel display buttons. A value of 0000 disables the Manual demand reset function.
	Get...	The Get... button immediately retrieves the currently programmed Manual demand reset code from the meter.
Automatic Demand Reset Setup		
	Demand reset day	Sets the day of the month on which the unit performs a demand reset for all meter points. A value greater than the correct last day of the current month will result in demand being reset to the beginning of the first day of the following month. A value of zero disables monthly demand reset.
	Demand reset time	Sets the time of day when the unit performs a demand reset for all meter points. The time shown is based on the Time Zone selected in the Reporting Schedule tab
Demand Interval Setup		
	Block Demand	Selects Block Demand calculation for demand data.
	Sliding Window Demand	Selects Sliding Window Demand calculation for demand data.
	Demand Interval in Minutes	Sets the size of the block demand window in minutes (select from the pull-down menu).
	Number of Sub-intervals	The number of recording sub-intervals that make up the sliding demand interval (select from the pull-down menu).

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Example: Selecting sliding window demand with a recording interval of 5 minutes and 3 sub-intervals, creates a demand calculation every 5 minutes based on the previous 15 minutes. This is the common demand measurement used by North American utilities when billing for Demand.

Manufacturing tab

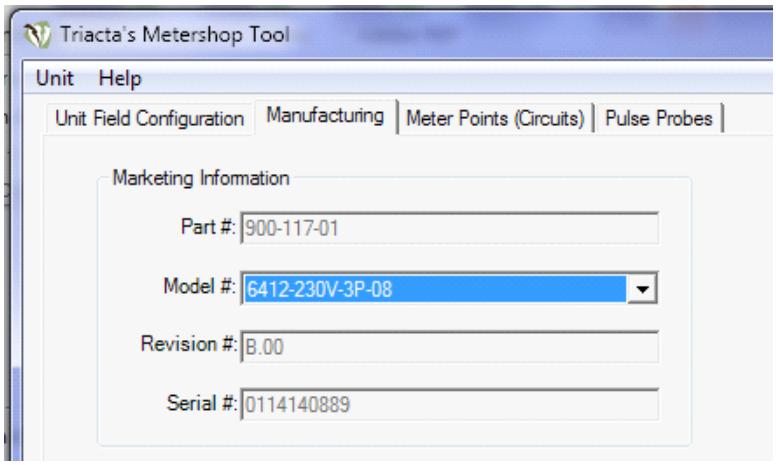
The **Manufacturing** tab allows the user to define the metering configuration for the PowerHawk meters. The meters support the configurations listed in Table 10.

Table 10: List of supported PowerHawk metering configurations

6212/6312/6412	6203/6303	4124/4224/4324	4106/4206/4306	6320
6x12-1P-12	6x03-1P-03	4x24-1P-12	4x06-1P-03	6320-1P-20
6x12-1P-24	6x03--1P-06	4x24-1P-24	4x06-1P-06	6320-2P-20
6x12-2P-12	6x03--2P-03	4x24-2P-12	4x06-2P-03	6320-3P-n (n = 01 to 10)
6x12-2P-24	6x03--2P-06	4x24-2P-24	4x06-2P-06	
6x12-3P-08	6x03-3P-02	4x24-3P-08	4x06-3P-02	

To view the manufacturing information for a specific meter, select a model number from the **Model #** pull-down list shown in Figure 14. The part number, revision number and serial number for the selected model will be shown in the respective fields.

Figure 14: Manufacturing tab



Meter Points (Circuits) tab

The **Meter Points (Circuits)** tab contains the configuration information for each of the metering points. It shows the number of elements used, the phase, the current ratings, and the user-defined identification string for each meter point. Default

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information is entered when the metering configuration is selected in the **Manufacturing** tab (see “Manufacturing tab” on page 21).

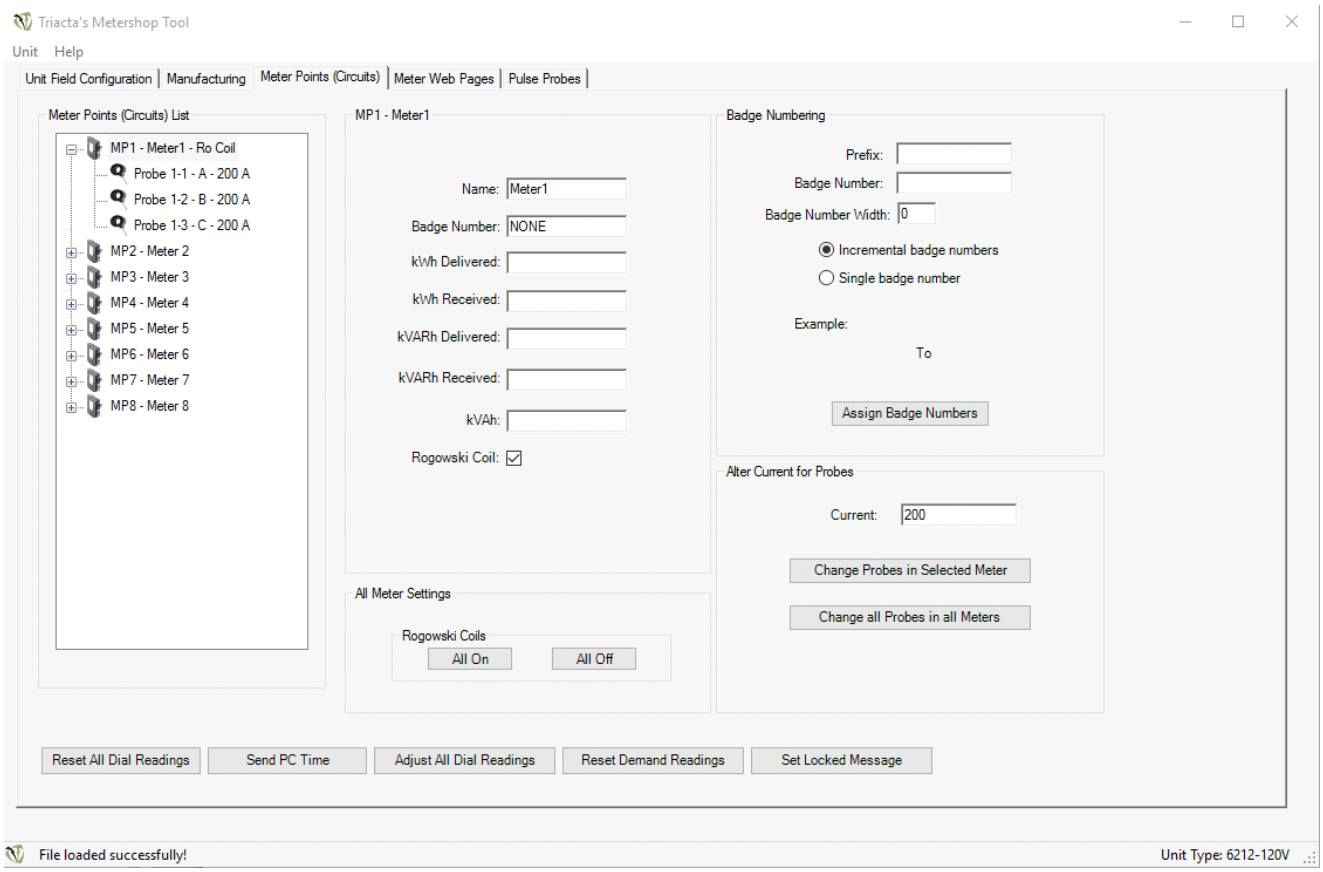
Meter Point Configuration

The current rating and phase assignment for each meter point can be configured individually, by meter, or all at once. The configuration in all three cases does not take effect until the new settings have been sent to the meter (see “Completing the Meter Configuration” on page 27).

To change the current rating and phase assignment for an individual meter point:

1. Select one probe at a time from the **Meter Points (Circuits) List.** The selected probe number will appear in the middle pane beside **Probe**, and its assigned **Current** and **Phase** are shown in the fields beneath it. See Figure 15.
2. To change the **Current**, enter the required number. To change the **Phase**, select the required phase type from the pull-down list.

Figure 15: Meter Points configuration screen



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To change the current rating for all probes assigned to a meter point:

1. Select a meter from the **Meter Points (Circuits) List.** The selected meter will appear in the **Name** field of the middle pane. See Figure 15.
2. In the **Alter Current for Probes** pane, enter the desired value referenced to the CT primary rating in the **Current** field, and click **Change Probes in Selected Meter**.

To change the current rating for all probes assigned to all meter points:

1. In the **Alter Current for Probes** pane, enter the desired value referenced to the CT primary rating in the **Current** field, and click **Change all Probes in all Meters**. See Figure 15.

Configure Delivered and Received Dial Readings

To enter the desired initial register values for the selected meter point:

1. In the **kWh Delivered** field, enter the desired register value in KWh.
2. In the **kWh Received** field, enter the desired value in KWh.
3. In the **kVARh Delivered** field, enter the desired value in KVARh.
4. In the **kVARh Received** field, enter the desired value in KVARh
5. In the **kVAh** field, enter the desired value in KVAh.

*NOTE: The PowerHawk 6320 meter does not have separate received and delivered KWh registers so only the **Delivered Dial Reading** KWh register is displayed.*

Configure Rogowski Coil Integrator

If the PowerHawk meter is a mVolt meter variant (62xx or 42xx), then each meter point can be configured to support Triacta Rogowski Coil CTs. This function eliminates the need for an external or built-in integrator that is required by other Rogowski Coil CTs.

To configure Rogowski Coil Integration for all probes assigned to a meter point:

1. Select a meter from the **Meter Points (Circuits) List.** The selected meter will appear in the **Name** field of the middle pane.
2. Select (✓) the **Rogowski Coil Integrator Used** check box. See Figure 14.

To configure the Rogowski Coil Integration setting for all probes assigned to all meter points:

1. In the **All Meter Settings** pane, under **Rogowski Coils** click **All On** or **All Off**. See Figure 15.

Each meter that has been configured for Rogowski Coil Integration will display **Ro Coil** after the meter name in the **Meter Points (Circuits) List**; for example, “MP1 - Meter 1 - Ro Coil” as shown in Figure 14.

NOTE: Use this function only with Triacta Rogowski Coil CTs that do not have a built-in integrator.

Table 11 lists the minimum number of meter points that will be turned on or off for each meter configuration.

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Table 11: List of minimum Rogowski Coil configurations

Meter configuration	Meter points
3P-08, 3P-02	1 (3 elements)
2P-12, 1P-12, 2P-03, 1P-03	3 (6 elements)
2P-24, 1P-24	3 (3 elements)

Badge Numbering

Each meter point can be configured with a name defined by the user. The meter point name, known as the badge number, can be up to 13 alphanumeric characters in length. The **Badge Numbering** pane allows the user to set two types of badge numbers:

- sequential, which assigns a badge number to each meter point after the prefix (for example CORP-00000001 to CORP-00000012)
- grouped by meter, which uses a base prefix to designate the meter, then assigns a sequential badge number suffix to each meter point assigned to that meter (for example CORP-00001-01 to CORP-00001-12)

The configuration tool provides examples before the badge number is assigned to the meter. In the **Badge Numbering** pane shown in Figure 16, the following fields and buttons are provided for assigning badge numbers:

- **Prefix** field - an alphanumeric field that prefixes the number field.
- **Badge Number** field - a numeric field that becomes part of the prefix for meter points assigned to that meter, or the first number in the sequence to be assigned to individual meter points.
- **Badge Number Width** field - a numeric field that defines the number of digits in the badge number field. Zeroes (0) are automatically entered at the beginning of the badge number field until the total number of digits in the badge number field equals the number of digits defined in the badge number width field.
- **Incremental badge numbers** button - selecting this button assigns a sequential badge number for each meter point.
- **Single badge number** button - selecting this button assigns one badge number prefix followed by a numeric suffix for each meter point assigned to that meter.
- **Assign Badge Numbers** button - selecting this button implements the badge numbering defined by the user in the previous fields.

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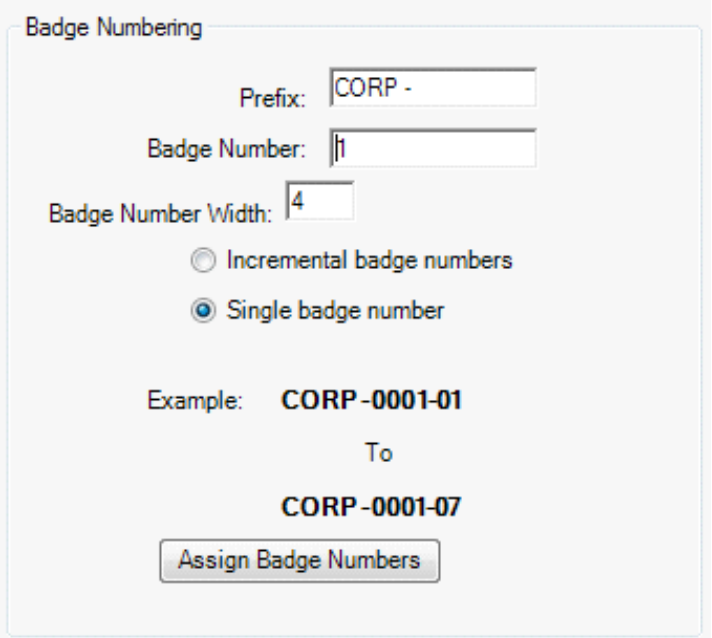
Figure 16: Badge Numbering pane



Reset Buttons

- **Reset All Dial Readings** button - selecting this button affects all Meter Points (Circuits) and resets all registers to zero for all energy types, demand readings, and pulse counts. This function takes effect immediately and does not require a send action. This button deletes all interval data records and event logs from memory.
- **Send PC Time** button - selecting this button configures the meter with the current PC in UTC time (not local time). This function can be used when access to the network time service is not available. This function takes effect immediately and does not require a send action.
- **Adjust All Dial Readings** button - selecting this button allows the operator to set each of the following energy type registers to a fixed initial value:
  - Delivered Watt Hours
  - Received Watt Hours
  - Delivered VAR Hours
  - Received VAR Hours
  - VA Hours

  This function changes the registers in all Meter Points (Circuits) to the same values at the same time. This function takes effect immediately and does not require a send action.

- **Reset Demand Reading** button - selecting this button resets the Peak kW Del.Demand and Peak kVA Demand registers for all Meter Points to zero. The Peak Demand timestamp will be set to 1970/01/01,00:00.This function takes effect immediately and does not require a send action.
- **Set Locked Message** button - selecting this button activates the Locked Message function of the PowerHawk meter. If this button is selected and the programming switches are not in the locked (Off) position (see “Configuration and Programming” on page 1), then an UNLOCKED message will appear on the

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first line of the front panel LCD display. If the meter is locked, no message is displayed.

This function is required by the California Drug and Food Administration (CFDA) to provide a visual indication that the meter is not locked and sealed.

Pulse Probes tab

The **Pulse Probes** tab contains the configuration information for each pulse input. It shows the measurement type in units for each input, and the scale factor applied to the collected pulse counts. Figure 17 shows the Pulse Probes tab of the main configuration tool window.

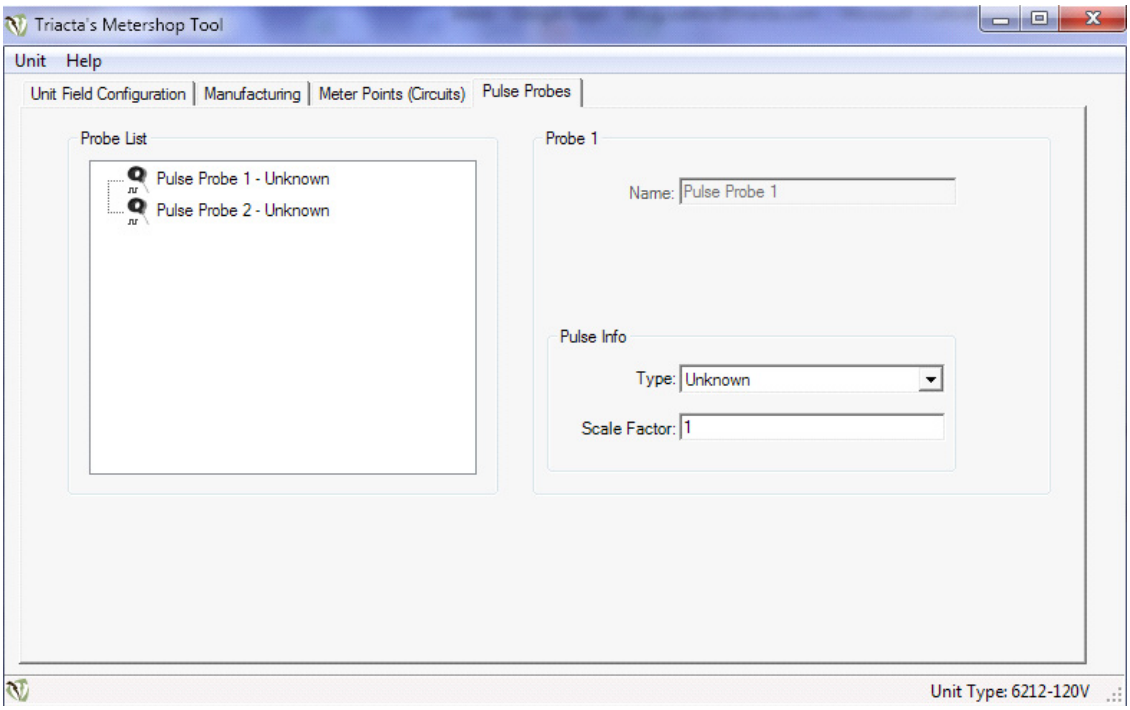
To configure a pulse probe:

1. Enable (✓) **Pulses** in the **Types** tab of the Report section in the Unit Field Configuration tab. See Figure 8 on page 13.

   *NOTE: The Pulse Probe settings are not active unless **Pulses** are enabled in the **Types** tab.*
2. Select a pulse probe from the **Probe List**.
3. Select a measurement type from the **Type** pull-down list.
4. Enter a value in the **Scale Factor** field.

   NOTE: This scale factor only changes the pulse values in the TR3 report. The pulse count in the device web page is not scaled.

Figure 17: Pulse Probes tab



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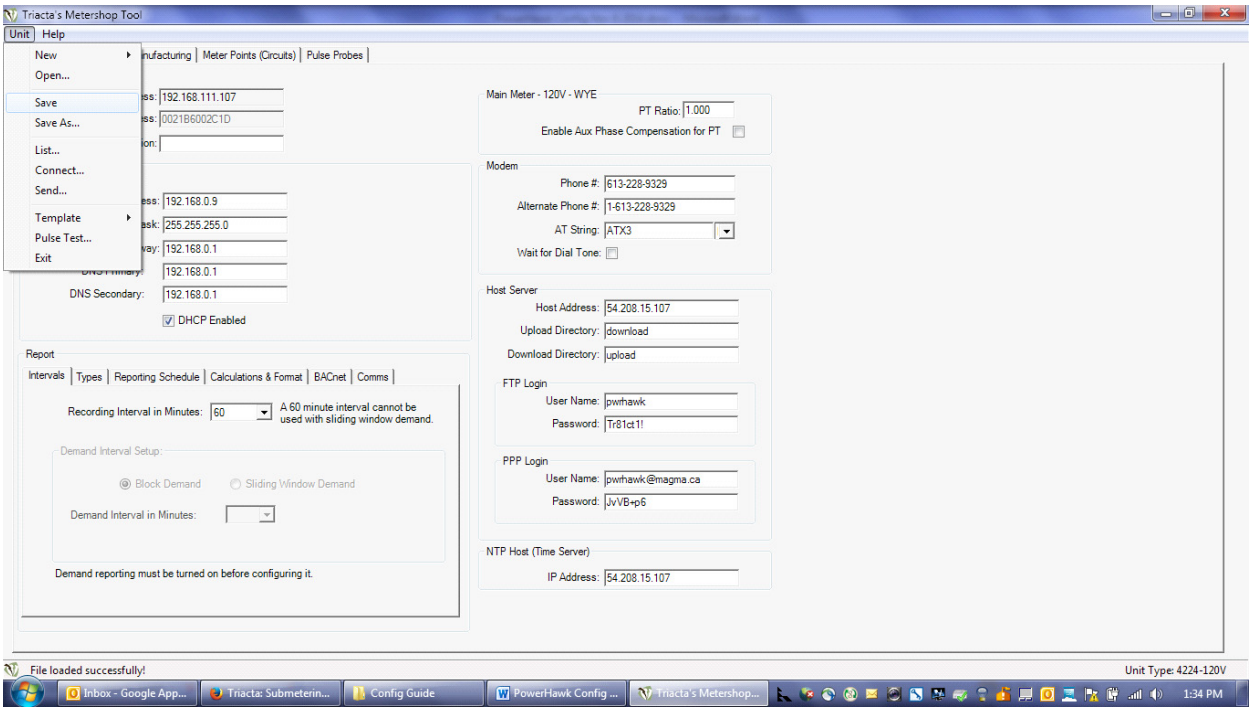
Completing the Meter Configuration

Once you have defined all of the configurable parameters, the PowerHawk meter is ready to be programmed.

To complete the meter configuration:

1. Click **Unit** in the menu bar, then select **Save** from the drop-down menu. See Figure 18.

Figure 18: Saving the configuration settings



2. Click **Unit** in the menu bar, then select **Send** from the drop-down menu to transmit the configuration settings from your PC to the selected PowerHawk meter. The confirmation message **File loaded successfully!** should appear in the bottom left corner of the window. See Figure 19.

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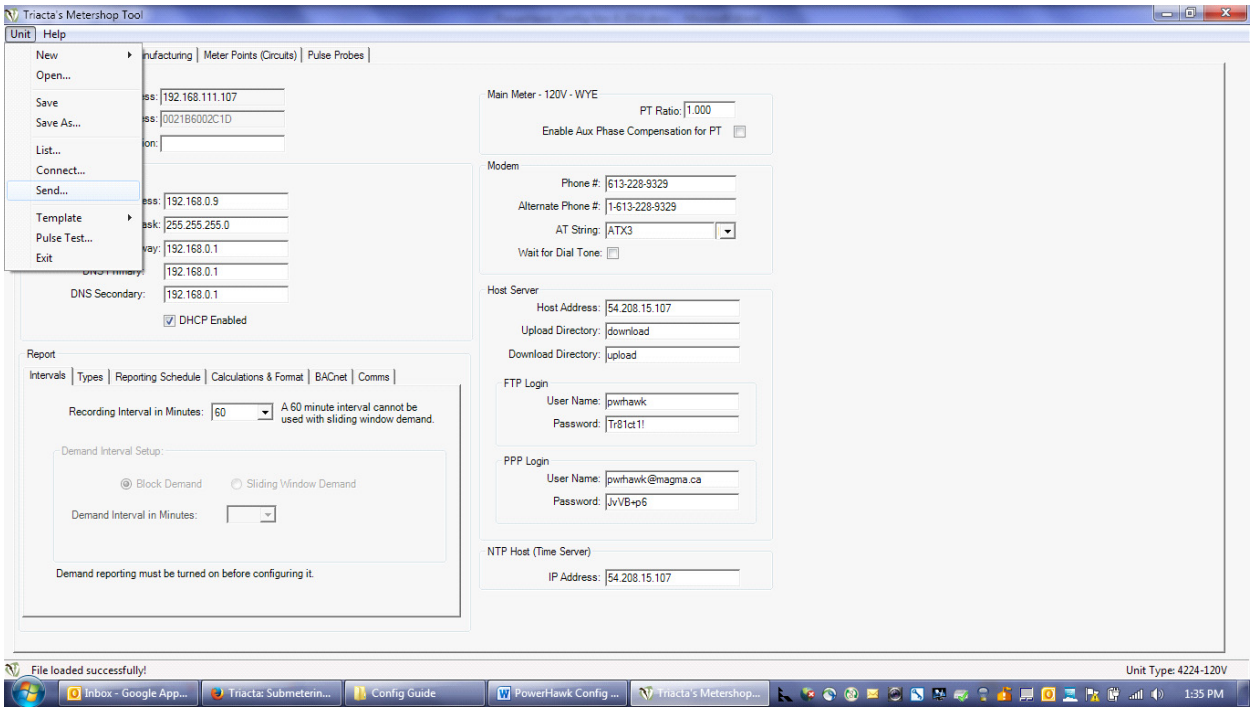
Figure 19: Sending the configured settings to the meter



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