

Shark® 250T Transducer Quickstart Guide



CAUTION! Installation of the Shark® 250 meter must be performed only by qualified personnel who follow standard safety precautions during all procedures. Those personnel should have appropriate training and experience with high voltage devices. Appropriate safety gloves, safety glasses and protective clothing are recommended.

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

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

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

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

User Manual:

<https://www.electroind.com/products/shark-250-power-and-energy-meter-for-utility-and-critical-industrial-sub-stations/>

From the webpage, click Technical Documents>User Manual.

Software Manual:

<https://www.electroind.com/products/communicatorpqa-software-application-5/>

From the webpage, click Technical Documents>User Manual.

CommunicatorPQA™ Setup Software:

<https://www.electroind.com/products/communicatorpqa-software-application-5/>

From the webpage, click Download ComPQA Pro. To get a Professional license for the software, email sales@electroind.com or call 516-334-0870.

All EIG's metering and software products' literature can be accessed from:

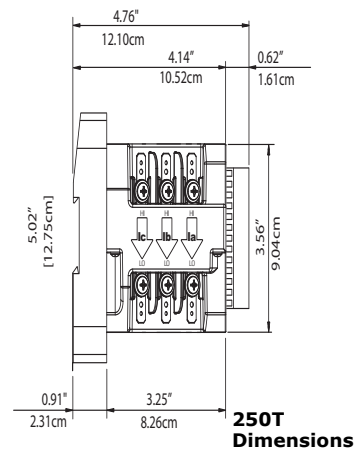
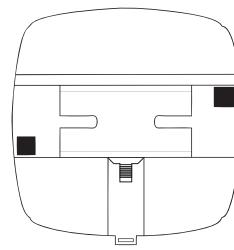
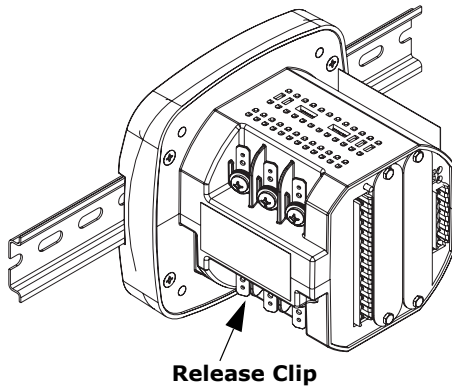
<https://www.electroind.com/all-products/>

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

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

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

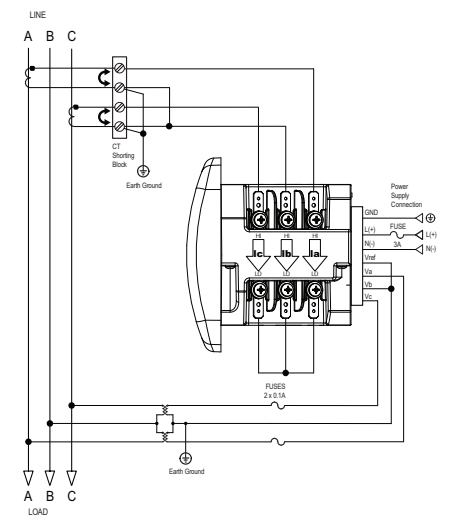
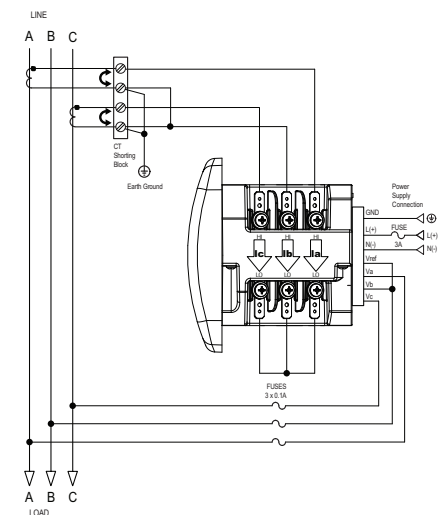
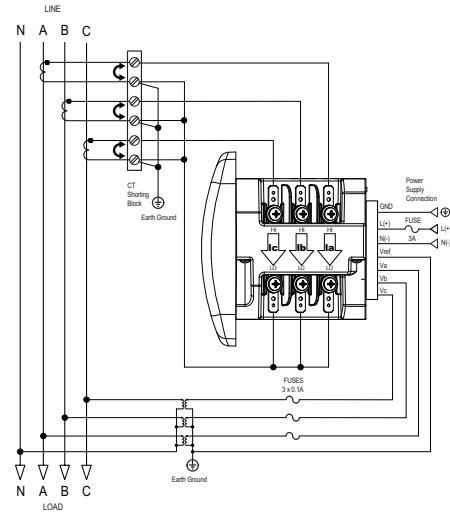
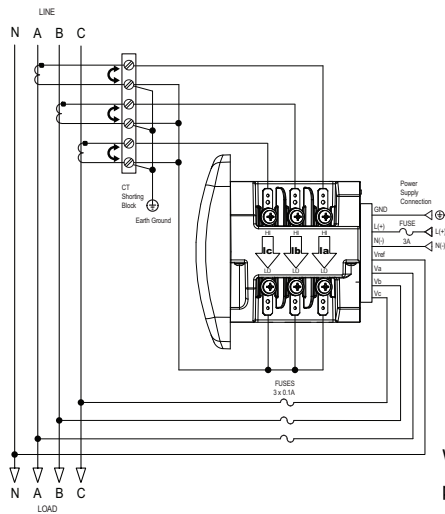
Mechanical Installation:



DIN Installation

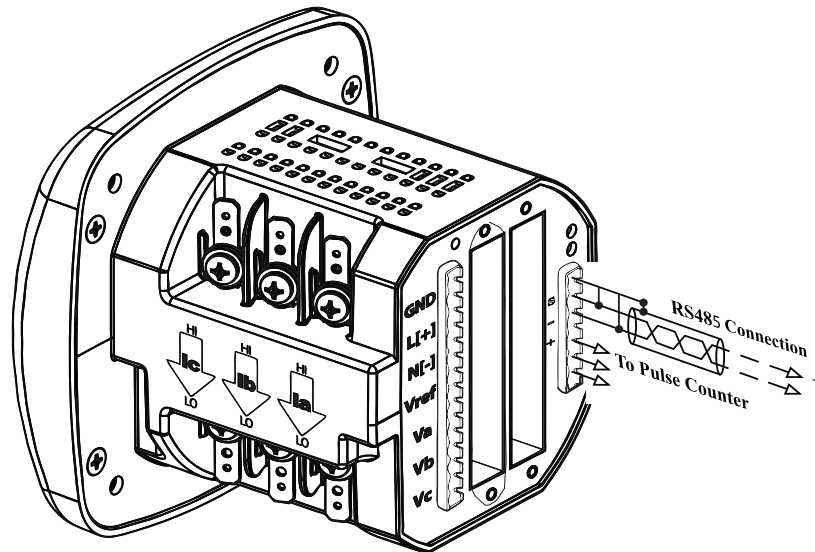
Installation Steps: Slide top groove of meter onto DIN Rail. Press gently until the meter clicks into place. If mounting with DIN Rail provided, use Black Rubber Stoppers (also provided) shown above. To remove meter, pull down on Release clip.

Electrical Installation: Select diagram for your application.



NOTE: Other wiring configurations are available. See the Shark 250 meter User Manual (see page QS-1 for the download link).

Communication Wiring: The Shark® 250T meter's RS485 port uses standard 2-wire, half duplex architecture.



Factory Initial Default Settings: When the Shark® 250T is powered up, for 10 seconds you can connect to the meter using the Factory Default Settings (even if the Device Profile has been changed). After 10 seconds the Device Profile reverts to the actual Device Profile in use. This is one way you can always connect to the meter. The Factory Initial Default Settings are:

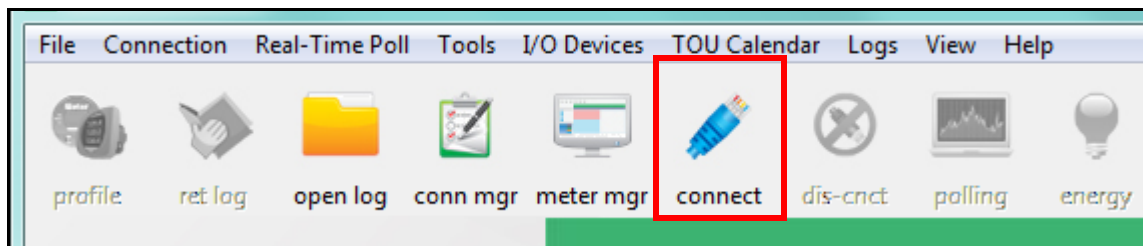
Device Address:1

Baud Rate:57600

Protocol:Modbus RTU

Connection Steps:

1. Open CommunicatorPQA™ software (see page QS-1 for the download link).
2. Click **Connect** on the Icon Bar.



3. You will see the Connect screen.
Make sure your settings match the ones shown on the right (use pull-down menus).

Connect

Serial Port Network

Device Address 1

Baud Rate 57600

Port Available Ports All Ports
COM1

Protocol Modbus RTU

Flow Control None

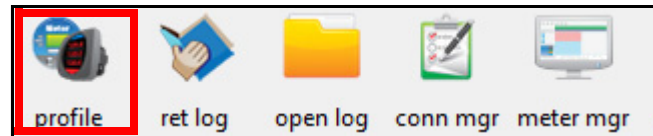
Echo Mode No Echo

Parity None

Disable DTR

Connect Cancel Help

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

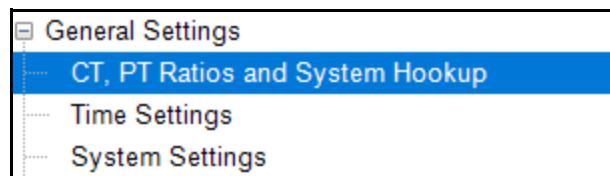


6. The meter's Device Profile screen opens, giving you access to the programmable settings for the meter.

NOTE: A few basic settings are explained here. Refer to the *Shark® 250 Meter Installation and Operation Manual* and the *CommunicatorPQA™, MeterManagerPQA™, and EnergyPQA.com™ Software User Manual* (see page QS-1 for the download link). 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 CommunicatorPQA™ software's Main screen.

Program CT, PT Ratios:

1. The first Device Profile screen is the CT, PT Ratios and System Hookup. If you were on another setting screen, double-click General Settings>CT, PT Ratios and System Hookup to redisplay this screen.



2. These are the screen settings:

a. CT Ratio, enter:

- Primary (CT Numerator): (1 - 9999)
- Secondary (CT Denominator): 5 or 1
A

b. PT Ratio, enter:

- Primary (PT Numerator): (1 - 9999)
- Secondary (PT Denominator): (1 - 9999)

Example Settings:

For a CT of 2000/5 A, set the following CT Ratios in the entry fields:

CT Numerator (Primary) 2000

CT Denominator (Secondary) 5

The Current Full Scale field will read 2000.

For a system that has 14400 V primary with a 120 V secondary line to neutral (PT Ratio of 120:1), set the following PT Ratios in the entry fields:

PT Numerator (Primary) 1440

PT Denominator (Secondary) 120

The Voltage Full Scale field will read 1440.

c. System Wiring, select from pull-down menu:

- 3 Element Wye; 2.5 Element Wye; 2 CT Delta

This value must be set properly for the meter to calculate readings correctly.

d. Use the Minimum Voltage Threshold box to enter the minimum voltage threshold, which is a percentage of the voltage full scale. This setting adjusts the pick up threshold for the voltage. You set a percentage of the PT primary (PT numerator X PT multiplier) up to 12.7 in the entry field, to configure when the meter will start reading values above 0 voltage.

e. Total Demand Distortion (TDD Setting): This setting of the Device Profile allows you to set the maximum value for current, which is used for the TDD (Total Demand Distortion) calculation. TDD is an index used to measure harmonics. In this field enter the maximum load current for TDD. To disable TDD, enter 0 in the field.

f. CT Reversal Phase Enables: Use this setting to enable CT reversal for any phase. This feature is useful if a CT is wired the wrong way and you do not want to (or cannot) change the wiring. This setting is only available for a three element WYE hookup. For any other hookup, this setting will be ignored.

CT, PT Ratios and System Hookup

	Primary	Secondary
CT Ratio	1	1
PT Ratio	120	120

CT Ratio: Select 5 Amp secondary for a Class 10 meter and 1 Amp secondary for a Class 2 meter.

System Wiring		Full Scales	
3 Element Wye		Voltage	120
		Current	1
		Power	120
		Power Total	360

Minimum Voltage Threshold	
Minimum Primary Voltage	4.92

Total Demand Distortion (TDD) (Setting the value to zero will disable TDD)	
Maximum Load Current	5

CT Phase Reversal (Configure phases which are reversed)		
A	Not Reversed	B
	Not Reversed	C
	Not Reversed	Not Reversed

Program Communications Setting:

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

Communications

COM2 (RS-485)

Address: 1

Protocol: Modbus RTU

Baud Rate: 57600

Response Delay: 0 milliseconds

Parity: None

2. The settings shown are the default settings, Change them, if necessary, for your application.

Program Meter Time:

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

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

Set Device On-Board Clock

Date: Month: 06, Day: 19, Year: 2020

Time: Hour: 16, Minute: 20, Second: 18

Use PC Time

Send Cancel

NOTE: The meter offers multiple Time Synchronization methods.

See Chapter 28, Section 28.1.3 in the software manual (see page QS-1; alternatively, you can click Help>Contents from the Main screen to open the manual) for instructions on setting up Time Sync for the meter.

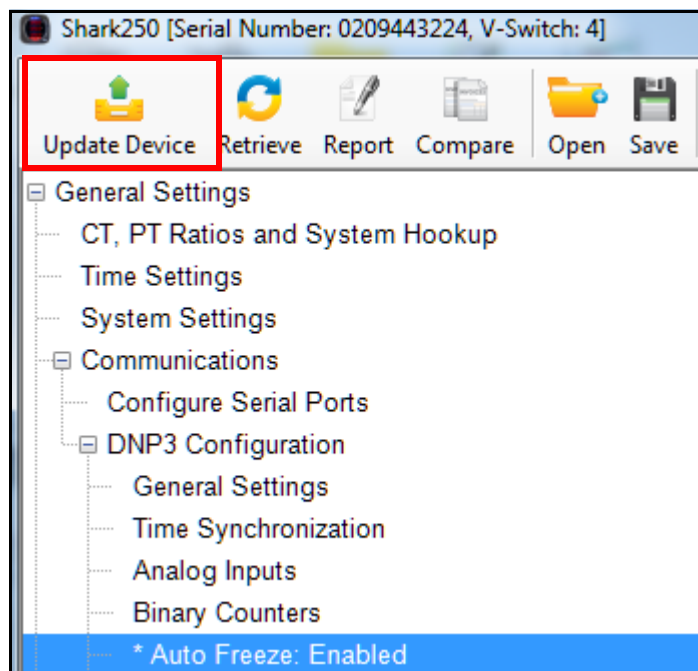
Program Meter Name:

To enter an name/ID for the meter:

1. From the Device Profile screen, double-click General Settings>System Settings.

2. Input a new meter designation into the field. Note that it is important to name each meter individually, since the meter name is used to name the log databases when logs are downloaded. See Chapter 28 in the software manual for an explanation of the other settings in this screen.

IMPORTANT! When you have made changes to the meter's Device Profile, click Update Device at the top left of the Device Profile screen's Icon Bar, to send the new settings to the meter. The meter will reboot and then you can reconnect to it.



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