

10-STEP CHECKLIST FOR POWER METER VERIFICATION



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INTRODUCTION

Before leaving the job site, it's critical to verify that the meter is installed properly and is recording as expected. After installation, take a few moments to follow the 10 Steps of Meter Verification.

1. Record important information about the installation for future reference.

Keep track of important installation information in one place. Use the list to the right to jot down important details about each meter that's installed. Be sure to provide this information to any other personnel who need to access the meter for data downloads.

PROJECT DETAILS	
Installation Date	_____
Installer's Name	_____
Site Location	_____
Meter Serial Number	_____
Gateway IP Address	_____
Meter IP Address	_____
Meter Port	_____
Description of Load	_____

2. Take photos.

Photos are an easy way to remember important details about the installation without having to go back to the project site. Take photos of:

1. Outside the electrical room to aid in locating the electrical panel for the next person
2. Inside the electrical room
3. Of the meter installed along with the CT installation and voltage connections

3. Using ELOG software, verify the logger's Setup Table is correct by retrieving the Logger Setup Table.

1. The correct data interval is selected (15 minutes is typical)
2. V-high and V-low match the voltage phases the CTs are installed on
3. CT type selection matches the CTs used
4. CT amp selection matches the CTs used
5. CT Phase Shift matches the CT from User Guide table
6. Recorded values are selected as needed for the project

4. Using ELOG software, verify the logger's internal clock is set right, either by viewing Real-Time Values, synchronizing time to the PC, or manually setting it.

When reading the logger clock or viewing data files, ELOG reads the Windows settings and converts the UTC time stamps in the logger to the local time zone of the PC. If two PCs in different time zones retrieve a data file from the logger or read the logger clock, they will see different times.



5. Check to make sure all the PhaseChek LEDs are green, which indicates all phase kW are positive and PF > 0.55.

1. If any LEDs are blue (ELITEpro XC only), the kW will be negative which is most likely caused by the CT being installed backwards
2. If any LEDs are red, the PF is less than 0.55, which is most likely caused by the CT being placed on the wrong phase or not matching the Setup Table. It could also be caused by the load's PF being less than 0.55
3. If the LED flashes red and blue, it indicates that the CT is on backwards and on the wrong voltage phase and not matching what's listed in the Setup Table.
4. NOTE: If using the optional Delta 2-CT connection, it is common for an LED to be red when the system PF is <0.87 and an LED to be blue when the PF <0.5



6. Using ELOG software, view Real-Time values. Do the numbers make sense?

1. Are the load current and watt measurements reasonable for the load?
 - a. Example: If the current reads are 12 Amps for a 100 HP motor, the readings are obviously too low.
 - b. Possible issues could be that the CTs are on the wrong wire, the CT value in the Setup Table is incorrect, or the CT type in the Setup Table is incorrect.
 - c. NOTE: It's best to choose a CT in which the load will be between 10% and 100% of the CT full scale rating.
2. Are the phase currents relatively close to each other (within about 20%) on a load that should be balanced?
 - a. Possible issues might include that the CTs are on the wrong wire, the CT value in the Setup Table is incorrect, or the CT type in the Setup Table is incorrect
3. For Wye loads, are the phase watts relatively close to each other (within about 20%)?
 - a. Check for possible problem in phase currents were balanced: The CTs might be placed on the wrong phase, not matching the Setup Table or the CT type in the Setup Table is incorrect.
4. Are the phase watts positive?
 - a. If not, it is likely that the CT is installed backwards or the wire connection at the meter is reversed. Check these conditions.
 - b. NOTE: It is possible when using the 2-CT method on a Delta load that one channel/phase can be negative on loads that have poor PF.
 - c. NOTE: Negative values could be correct for co-generation applications such as wind or solar during power generation.
5. For WYE loads, are the phase PF readings relatively close to each other when monitoring a balanced load?
 - a. If not, this can be caused by the CT being placed on the wrong phase or not matching the Setup Table
6. If available, compare to external references (within a percent or two - no two meters will read exactly the same).
 - a. See if the meter phase voltages match a Digital Volt Meter (DVM)
 - b. Check the meter phase currents with a clamp-on Amp Meter
 - c. Compare the meter phase watts with a clamp-on Power Meter

7. Is the “Logging On” LED flashing green?

If the LED is not flashing, the meter is not recording any data.

8. If a remote communication method is being used (like Wi-Fi or Bluetooth), is the meter communicating?

1. Wi-Fi troubleshooting:
 - a. Verify the Port Number in the Network Connection window in ELOG matches the meter setting
 - b. The laptop Wi-Fi adapter needs to be in DHCP for use in Access Point mode (DHCP is the default setting)
 - c. The ELITEpro XC IP address in Access Point mode is 192.168.1.1
 - d. If a password is being used in Access Point mode, ensure the correct password is entered. If unsure, re-enter the password using ELOG
 - e. If communication is lost, try:
 - i. Disconnecting the meter from ELOG and reconnecting
 - ii. Disconnecting the computer Wi-Fi from the meter’s Wi-Fi

9. Make sure all cabinet doors are closed and locked and all panel screws are tightened.

10. Ensure all trash is picked up and the site is left as clean as when you first arrived.