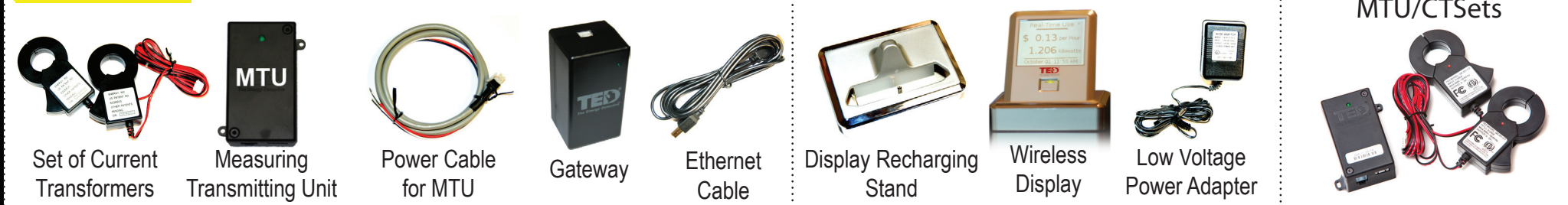


# TED 5000 SERIES INSTALLATION GUIDE

**NOTICE - IMPORTANT:** TED 5000 series is only suitable for use on 120/240V single-phase 60Hz services. TED is only suitable for services of 200 Amps or less, or 400 Amps with parallel 200A feeds. TED is only suitable for services with maximum 350 MCM conductors. If you have a 3-phase or 230V 50Hz electrical service, TED 5000 will not work. Visit [www.theenergydetective.com/support](http://www.theenergydetective.com/support) for more details.

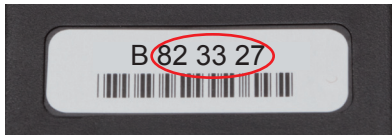
## STEP 1 Identify the components in your TED package:



## STEP 2 Prepare Breaker Panel

**WARNING: YOU MUST TURN OFF MAIN BREAKER OR SWITCH**

- Turn off power.
- Remove circuit breaker panel cover.
- Write the ID number of your MTU as shown on the label below. It will be in the form of: Axxxxx, where "x" is the ID number. You will need to know this number to set up the TED system.



MTU Code: \_\_\_\_\_

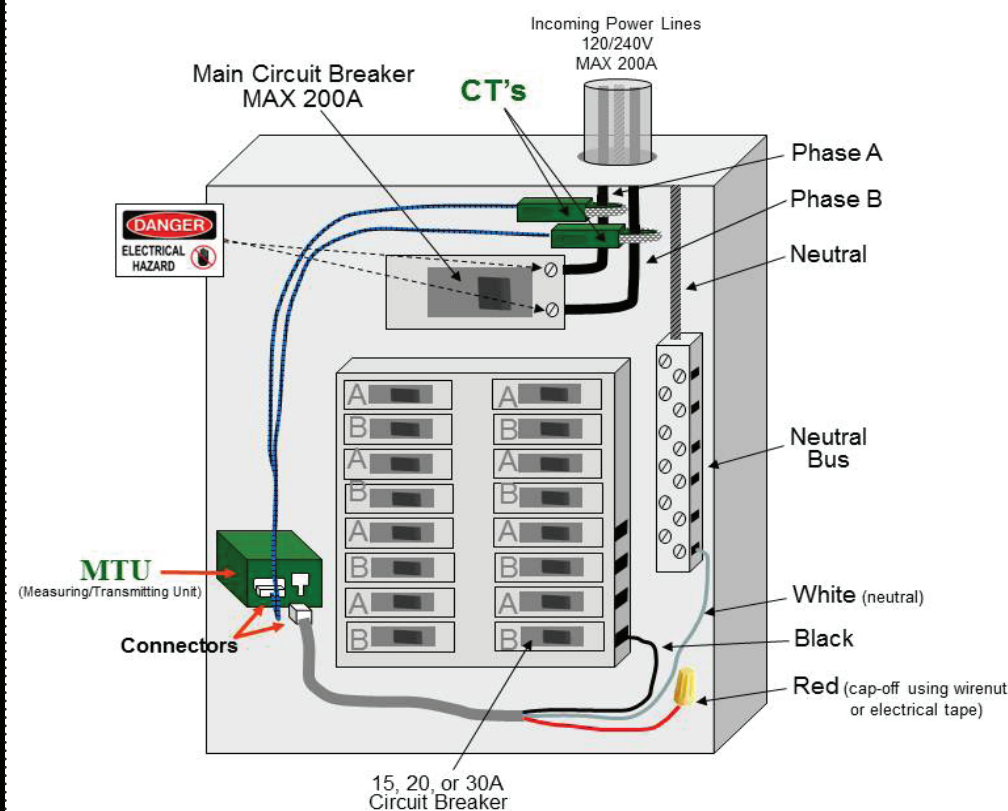
## STEP 3 Install the Measuring Transmitting Unit (MTU) to Circuit Breaker

- For increased signal-strength, connect only the black wire from the MTU power cord to a spare 15, 20, or 30 Amp circuit breaker.
- Cap-off or cover the red wire with electrical tape (you will not use the red wire).
- If there is no spare circuit breaker in the panel, the black wire can be attached to any 15, 20, or 30 Amp breaker in the panel. However, the circuit breaker must be approved for two conductors by the "authority having jurisdiction in the installation location."
- Connect the white wire to the neutral bus in the panel.

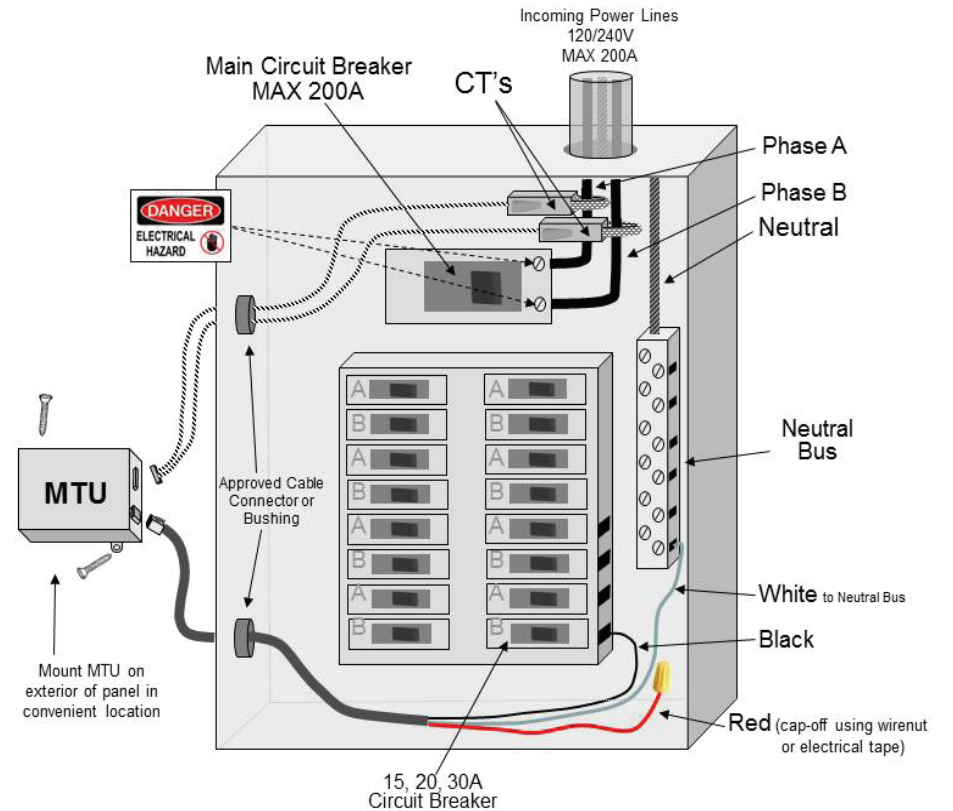


**REFER TO EXAMPLES 1 AND 2 BELOW TO VIEW MTU POWER CORD WIRE CONNECTIONS.**

## EXAMPLE 1 Installing MTU Inside Panel Typical Combination Breaker Panel



## EXAMPLE 2 Installing MTU Outside Panel Typical Combination Breaker Panel



## STEP 4 Installing and Connecting the Current Transformers (CTs)

- CAUTION - IF THIS IS A COMBINATION PANEL, THE LUGS ON THE PRIMARY SIDE OF THE MAIN BREAKER ARE PROBABLY STILL HOT.**
- The Current Transformers must be installed with the red polarity dots both facing the source of power. If both CTs are not installed in this manner, the reading will be wrong.  
**NOTE: Do NOT install the CT over the neutral (N) grounded conductor.**
- Install one CT over each incoming power conductor, by pressing on the handle to open the split core then clipping it over the power line.
- The CTs should be installed on the secondary side of the main switch or main circuit breaker, however, if this is not possible, such as in the case of a combination breaker panel, then install on the primary side of the main breaker.
- Ensure that the two sides of the split core CTs are mated tightly together over the incoming power line. **NOTE: The CTs should be loose-fitting around the wires.**
- Connect the CTs and Power Cable to the MTU by plugging the plastic mating connectors together.  
**NOTE: The connectors are polarized and can only be inserted in one way. Do not force.**

## STEP 5 Mounting the MTU

- Determine the best location to mount the MTU:
  - Choose a location where it will not interfere with existing equipment or wiring.
  - The MTU may be attached using double-sided tape (if allowed in your jurisdiction), or with sheet metal or machine screws.
- Arrange and tie-wrap all wiring in a neat and tidy manner.
- Turn the power back on.
- The MTU will blink approximately 10 times when power is first applied.
- After initial blinking, it will blink when transmitting or receiving data.
- Replace breaker panel cover only after installing Gateway and ensuring the entire TED system is operational.

## STEP 6 Plug in Gateway to Outlet

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[www.GlobalTestSupply.com](http://www.GlobalTestSupply.com)

**IMPORTANT**

[sales@GlobalTestSupply.com](mailto:sales@GlobalTestSupply.com)

outlet connected to any other electronic equipment with an external power supply (such as a laptop or printer.)

- If setting up in a home office, we highly recommend that you purchase a filter to remove noise from your office electronics. You may purchase a filter online at the TED Store under "Accessories."
- The green LED will flash about 5 times when power is first applied.



words, the data transmits over the existing wiring in your home. If, after you have installed your TED correctly and you find that there is no communication between the components, it is very likely a PLC-issue. To resolve this issue, please visit: [www.theenergydetective.com/PLC](http://www.theenergydetective.com/PLC)



# TED 5000 SERIES QUICK START GUIDE

## STEP 7 Display Set up. (Optional Display for "C" Models)

- Plug Display AC/DC power supply into a 120V outlet. For ease of set up, temporarily locate it where you can view both your computer and Display simultaneously.
- Plug power supply cable into the back of Stand.
- Carefully insert Display into Charging Stand.
- After 15 seconds, remove Display from Charging Stand and re-insert. This will engage the battery charging system. It will be fully charged in 24 hours.
- Note the Display ID Code located on the back of the display and write it below:

Display ID Code: \_\_\_\_\_

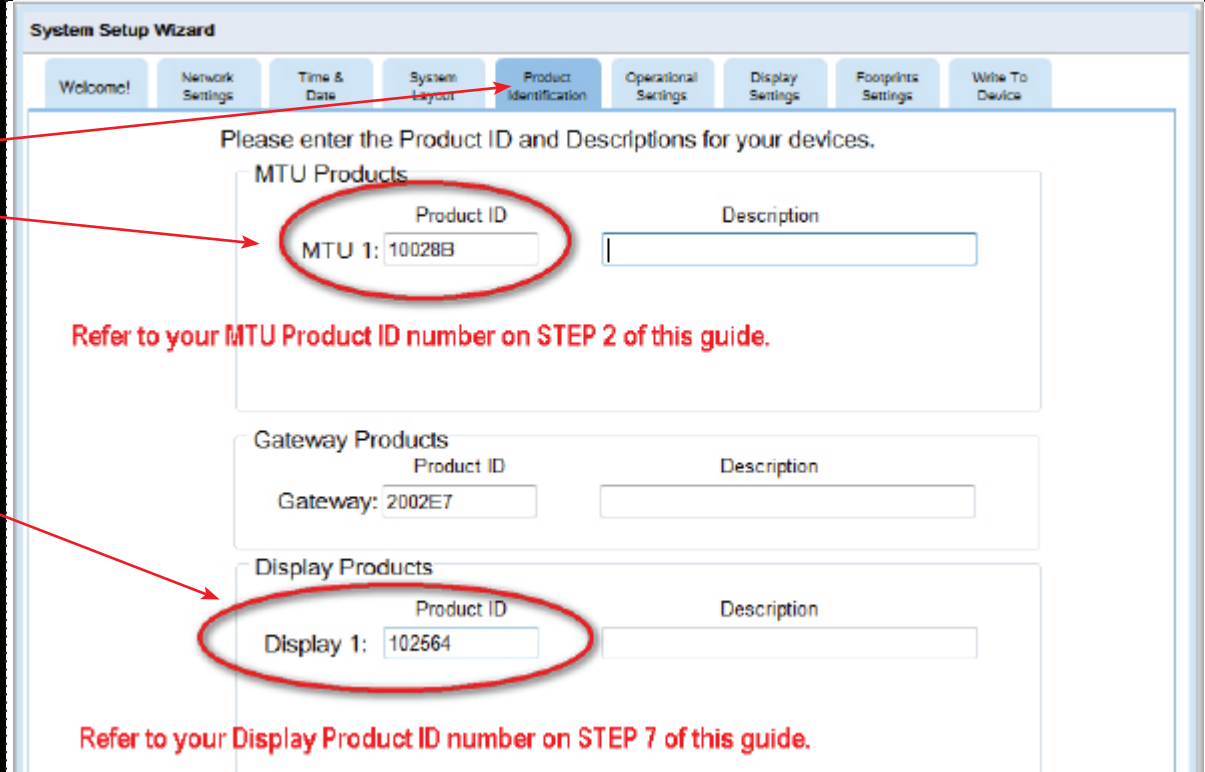
- Once you enter Display information in the Footprints software (Step 8), relocate the Display to desired location.
  - Display should be kept close to Gateway for best reception.
  - There should be no metal, block, brick, or concrete walls between Gateway and Display. Generally, wood and sheetrock do not cause interference.
- Under System Settings Wizard, click on "Display Settings" to change screen options.

## STEP 8 Footprints Software Setup

- Go to the following link to download the TED 5000 Installation Application: [www.theenergydetective.com/install-program](http://www.theenergydetective.com/install-program)
- Plug the Ethernet Cable into the Gateway.
- Plug other end of the Ethernet Cable into your Internet Router. If you don't have a router, it may be plugged directly into your computer. If you plug the Gateway into your computer, you may need to change the IP Address. We highly recommend that you plug the Gateway directly into your router.
- Open an Internet browser. (Internet Explorer, Firefox, Google Chrome)
- Type the following address in the browser address bar: <http://TED5000>
- This will open the Footprints Software program. You can view live dashboard data, modify system setup, modify/set utility rates, and update Gateway, MTU, or Display firmware.
- If you have problems connecting to the Gateway, contact your network service provider or IT professional.

## STEP 9 Configure Product IDs

- From EDIT Menu at top of Footprints Screen:
  - Choose System Settings Wizard.
  - Click on Product Identification Tab.
  - Type in your MTU ID(s) - as shown in image to right.
    - For multiple MTUs, select the "System Layout" tab first and select the correct number of MTUs.
    - You will then identify what each MTU is measuring. (i.e. Load, Generation, Adjusted-Load, Stand-Alone)
  - Your Gateway ID will auto-fill.
  - Type in your Display ID(s) (for "C" models).
- Click on "Write to Device" Tab.
- Click Update button and settings will be written to the Gateway. **Do not exit until progress bar is complete.**
- Click Finish. The screen will automatically refresh.
- Kilowatt readings should now be seen on the Footprints dashboard and (optional) Display.
- Rates can be customized by following the directions in Step 10.



## STEP 10 Utility Rate Wizard Setup

**NOTE: IT WILL BE VERY HELPFUL TO HAVE YOUR MOST RECENT ELECTRIC BILL HANDY**

- From Edit Menu at the top of Footprints screen:
  - Choose Utility Settings Wizard.
  - Click on Utility Rate Setup Tab.
- Enter Meter Read Date. The date may fluctuate from bill-to-bill by a couple of days. Do not change the date each month, as the next monthly bill will likely adjust for it.
- Enter in the number of energy rate seasons (Summer, Winter, etc.) that your utility uses. If none are used, enter "1."
- Click on Plan Type Tab.
  - Select your tariff rate structure: Flat, Tiered, Time-of-Use, or Tiered and Time-of-Use.
  - Click Next to enter Utility rates.
- Once Utility rates are entered, click on Additional Charges Tab.
- Select any additional charges that are applied to your monthly utility bill, including taxes and/or surcharges.
- Select Write to Device tab and then click the Update button.

## OPTIONAL Export Data

**NOTE: TED 5000 STORES AND EXPORTS SECONDS, MINUTES, HOURS, DAYS, AND MONTHLY DATA INDEPENDENTLY.**

- Select Export tab from top of dashboard.
- Select the data you wish to export.
- If you have multiple MTUs or a Solar/Wind Installation, the data for each MTU is separate.
- The exported file will be in CSV format (viewable on most all spreadsheets).
- Open the CSV file to view the selected data. (See image below)

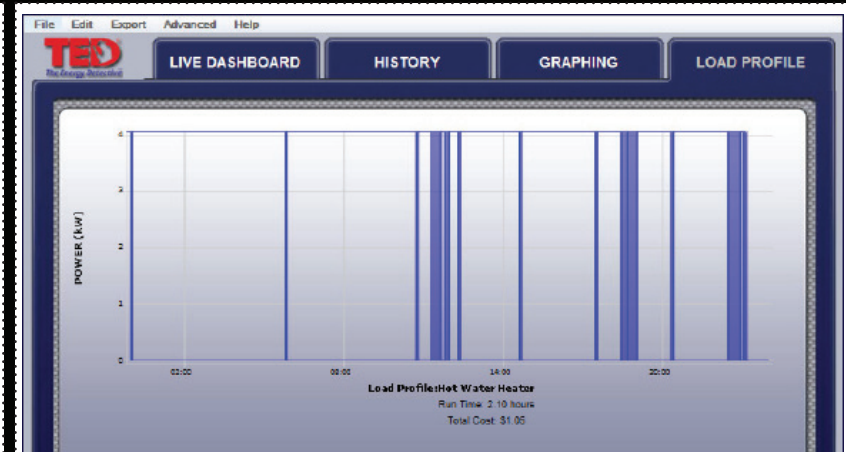
historyexport [Read-Only]

	A	B	C	D	E	F	G	H
1	mtu	date	power	cost	min pwr	min pwr time	peak pwr time	"min cost"
2	1	10/18/2010	-15.321	-1.73	-2.486	15:11	2:57	-0.28
3	1	10/19/2010	-15.687	-1.77	-2.901	12:44	7:10	-0.32
4	1	10/20/2010	-16.771	-1.89	-2.412	13:11	7:11	-0.27
5	1	10/21/2010	-16.099	-1.82	-2.373	13:02	5:30	-0.26
6	1	10/22/2010	-6.556	-0.74	-1.658	16:11	5:20	-0.18
7	1	10/23/2010	-12.576	-1.42	-3.058	13:42	5:20	-0.34
8	1	10/24/2010	-11.134	-1.26	-2.557	14:06	5:20	-0.28
9	1	10/25/2010	-14.948	-1.69	-2.425	14:00	0:12	-0.27
10	1	10/26/2010	-15.856	-1.79	-2.385	12:49	1:10	-0.26

## OPTIONAL Create Load Profile for a Specific Device in the Home

**NOTE: DEVICE SHOULD BE A LARGE APPLIANCE IN THE HOME**

- From Edit Menu at top of Footprints Screen:
  - Choose Load Profile Wizard.
  - You can track up for 5 devices. Select "Add" next to a blank device.
  - Name the device a unique name, such as "HVAC" or "Pool Pump".
  - If you have multiple MTUs, select the MTU that the device is measured under.
  - Most devices have only one Start/Stop stage, however, some devices, such as some HVAC systems, have multiple start-up stages. You may select up to three start/stop stages.
  - Adjust the Percent Error to avoid false-positive readings. The default percentage is 10%.
- For best results, turn off as many appliances as possible prior to setting up Load Profiles.



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- When Load Profile is complete, press the Save button to complete the process.
- You can now click on the Load Profile Tab from the main Dashboard to view Load data.
- You can view each device independently. (See image to the right)



Need Additional Help with Installation or Troubleshooting?

- View additional support documents and online support forum. [www.theenergydetective.com/support](http://www.theenergydetective.com/support)
- View Installation and Troubleshooting Videos. Installation: [www.theenergydetective.com/video](http://www.theenergydetective.com/video) Troubleshooting: <http://www.theenergydetective.com/troubleshooting>