

TENSITRON®



STX-PLUS METER OPERATING MANUAL



Disclaimer

This manual is provided as a guide for the safe and proper operation of Tensitron STX-Plus series tension meters. While every effort has been made to ensure accuracy, Tensitron assumes no responsibility for errors or omissions. The information is subject to change without notice.

The meter must be used only for its intended applications and in accordance with the instructions provided herein. Misuse, modification, or operation outside the stated specifications may result in equipment damage, inaccurate readings, personal injury, or voiding of the warranty.

Tensitron expressly disclaims any liability for incidental, consequential, or indirect damages arising from the use or inability to use the meter, even if advised of the possibility of such damages. Users are responsible for ensuring the meter is properly maintained, calibrated, and operated under appropriate environmental conditions.

By using this equipment, the customer acknowledges and accepts all responsibility for its safe and proper use, consistent with the guidelines contained in this manual and any applicable safety regulations.



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1. WARRANTY POLICY

Tensitron warrants that all Tensitron-manufactured equipment will be free from defects in materials and workmanship for one (1) year from the date of shipment.

Terms of Coverage

- The warranty begins on the date of shipment from a Tensitron facility.
 - Coverage applies to all Tensitron-manufactured equipment that is purchased, installed, and used for its originally intended purpose.
 - The warranty covers defects arising under normal use only.
-

Exclusions

This warranty does not cover malfunctions or failures resulting from:

- Misuse, abuse, neglect, or alteration.
 - Problems related to electrical power.
 - Usage not in accordance with product instructions.
 - Acts of nature.
 - Improper installation or repairs performed by anyone other than Tensitron.
-

Shipping

- Shipping costs to and from Tensitron are the responsibility of the customer and are not included in the warranty coverage.



2. SPECIFICATIONS

Accuracy

See the Table in Section 4 for further details on the accuracy of each STX-Plus and STXM-Plus unit.

STX-Plus series meters are explicitly calibrated to your strapping type(s) and size(s) to ensure the remarkable accuracy possible. When ordering, specify: - the material, width, and thickness of the strap.

STXM-Plus series meters include multiple selections for different strapping. Models STXM-250-Plus through STXM-1000-Plus include various selections for Poly and PET strappings. The STXM-2000-Plus includes selections for Steel, Poly, and PET strappings.

Power Requirements

Power Adapter:	5V, 5W, 1A includes a universal USB-C charger.
Battery:	Lithium battery 800mAh
Power Supply:	Input voltages from 100 –240V

Battery Life

Approximately 10 hours, depending upon backlighting intensity and use.

Storage Temperature

20° F to 158° F (Meter and Charger)

Ambient Humidity

10% to 90% non-condensing

Dimensions

STX-250-Plus:	5.00" x 9.55" x 2.23"
STX-500-Plus:	7.00" x 9.55" x 2.23"
STX-1000-Plus:	8.48" x 10.30" x 2.23"
STX-2000-Plus:	7.00" x 10.30" x 2.23"
STXM-1000-Plus:	7.00" x 10.30" x 2.23"
STXM-1000-SC-Plus:	7.00" x 10.30" x 2.23"

Weight

2.3 lb.

Environment

Indoor or outdoor use, dust-free environment.



3. SAFETY



WARNING: When using cordless, digital meters, always follow basic safety precautions to reduce the risk of fire, electric shock, or personal injury.

USE ONLY A TENSITRON POWER SUPPLY to prevent damage to the meter.



READ AND SAVE ALL INSTRUCTIONS. Before operating the meter, ensure all users have read and understood this manual and any labels provided with the instrument.

General Safety Guidelines

- Know your meter. Read this manual thoroughly to understand your tension meter's applications, limitations, and potential hazards.
- Avoid hazardous environments. Do not operate the meter in explosive atmospheres (e.g., gaseous fumes, dust, or flammable materials). Do not submerge the meter in liquids.
- Use as intended. Only use this meter for applications recommended by Tensitron.
- Inspect before use. Check for damage or wear, including binding parts, improper mounting, or broken components. Do not use a damaged meter. Clearly tag such meters as "DO NOT USE" and return them to Tensitron for repair.
- Guard against electric shock. Follow all electrical safety precautions when charging or using the device.
- Handle with care. Keep handles dry, clean, and free of oil or grease. Do not lubricate the meter. All roller bearings are factory-sealed.
- Avoid impact damage. Do not use the meter if it has been dropped, struck, or otherwise damaged. Do not attempt to disassemble the unit—incorrect reassembly may cause damage or increase the risk of shock or fire. Always return damaged meters to Tensitron for repair.

General Safety Guidelines

- Use approved batteries only. Operate the meter only with the battery supplied by Tensitron. Use of other batteries may cause explosion, injury, or damage.
- Charging precautions. Disconnect the charger when not in use.



4. METER MODELS

STANDARD METERS - USING CUSTOMER MATERIAL

STX-Plus series meters are calibrated to your **specific strapping type(s) and size(s)** to ensure the highest possible accuracy.

When ordering, please specify:

- Material type
- Strap width
- Strap thickness

Model	Range (pounds)	Resolution (pounds)	+/- Accuracy
STX-250-Plus	50-250	0.2	2%
STX-500-Plus	100-500	1.0	2%
STX-1000-Plus	200-1000	5.0	2%
STX-2000-Plus	400-2000	10.0	2%

STXM-PLUS - USING MULTIPLE MATERIALS

STXM-Plus series meters are designed for multiple strapping materials.

- Models STXM-250-Plus through STXM-1000-Plus include selections for Poly and PET strapping.
- Models STXM-1000-SC-Plus and STXM-2000-Plus include selections for Steel, Poly, and PET strapping.

Model	Range (pounds)	Resolution (pounds)	+/- Accuracy
STXM-250-Plus	50-250	0.2	2%
STXM-500-Plus	100-500	1.0	2%
STXM-1000-Plus	200-1000	5.0	2%
STXM-1000-SC-Plus	200-1000	5.0	2%
STXM-2000-Plus	100-2000	10.0	2%



5. STX-PLUS FEATURES

Display and User Interface

- **Color graphic display:** large, easy-to-read screen with adjustable backlighting.
- Displays **tension, battery charge level, strap material, and size selected.**
- User-specified **tension set points** with visual alerts.
- **User-specified results range** with color-coded indicators (under-range, in-range, over-range).
- **Selectable tension units:** kg, daN, or lb.
- Adjustable **refresh rate** for stable digital readings.

Data Management

- **Data logging** includes material, result, date, and time.
- **Data export** via USB-C or Wi-Fi.
- Storage capacity of **up to 60,000 readings.**

Calibration and Accuracy

- **Automatic calibration reminders.**
- Up to **ten calibrations programmable** into the meter (password-protected to prevent unauthorized changes).
- All calibration values are **traceable to national standards.**
- **Calibration certificate included.**
- All models are **factory-calibrated and ready for use.**
- Optional **verification functions** are available.

Power and Battery

- **Smart battery charging system.**
- **Extended battery life** for long-lasting performance.
- **Adjustable auto shut-off** (1, 5, or 10 minutes).
- Continuous operation while connected to a power supply, with up to **10 hours of use on battery.**

Accessories

- **Durable, lightweight carrying case** with protective foam inserts



Figure #1: Carrying case with the Meter, Calibration Certificate, Charger, and Operating Instructions.



6. BASIC OPERATION

Follow these steps to begin using your meter:

1. Charge the meter fully.

Connect the meter to the supplied power adapter and allow it to charge completely before first use.

2. Power on/off the meter.

- Press the On/Off (Esc) pad on the front panel.
- The meter powers on and displays the Home Screen.
- To turn the meter off, press On/Off (Esc) pad for two (2) seconds.

3. Startup display (Figure #2)

- The Home Screen shows:
 - meter model
 - serial number
 - software version
- If a calibration is overdue, a reminder will appear.
- To dismiss the calibration reminder, press ENTER.

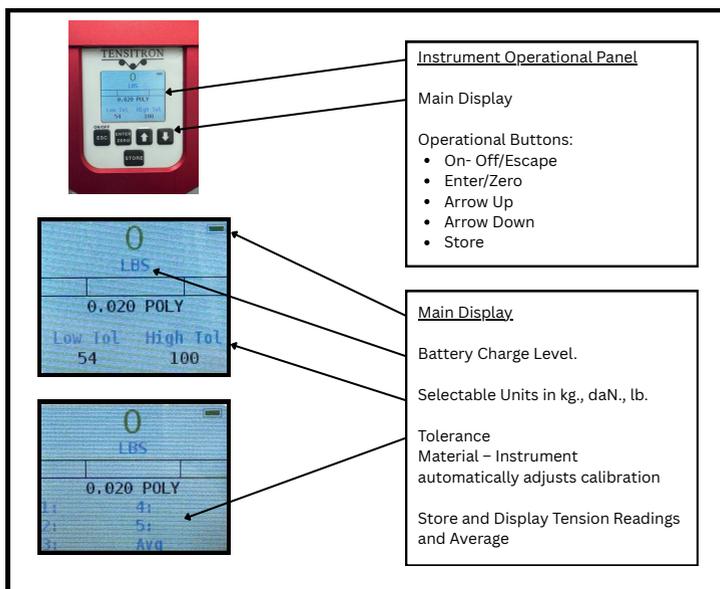


Figure #2: Main Menu Display

4. Select your material (Figure #3, page 10)

- Use the navigation keys to highlight the correct material type.
- Press ENTER to confirm.

The screen will show:

- Zero pounds (before loading material).
- Selected material type.
- Current date and time.

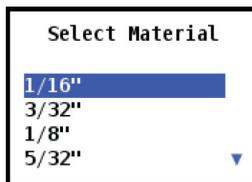


Figure #3: Select Material

If your specific material is not listed, the device will need to be calibrated with that material. Please contact Tensitron's support for assistance. The device and a 10' sample of the material will be needed for calibration in Tensitron's office.

5. Verify the Main Screen

If the meter has no load but does not display Zero Tension, then: Hold the Meter in the attitude your reading will be taken before you engage it to the tensioned strap. Then hold the Enter Button.

Note if you select a not-defined material, the meter will not provide a reading.

6. Take a reading (Figure #4)

Position the meter on your material:

Place the two outside prongs above the material and position the center load-sensing column below the material.

The display will update to show the tension reading.

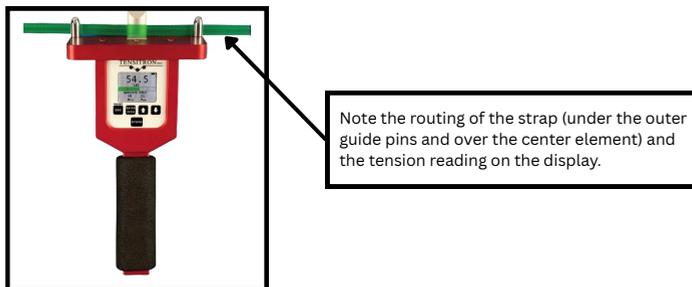


Figure #4: Take a reading

7. Store your reading

- Capture your reading in the meter's memory by pressing the "Store" key on the pad.

8. Review your readings

- Press the Esc key, and it will take you to the main screen #2, showing a history of your readings.
- Pressing the Esc key again will take you to main screen #3, which includes the tolerance.
- Pressing the Esc key again will take you to main screen #4, which shows the minimum/maximum of your readings.
- Pressing the Esc key again will take you back to the main screen #1



7. DISPLAY SCREENS

Home Screen

- Appears at startup.
- Displays meter model/number.
- Shows calibration reminder if overdue (press ENTER to dismiss).
 - Figure #5 illustrates the navigation of the menus on the display

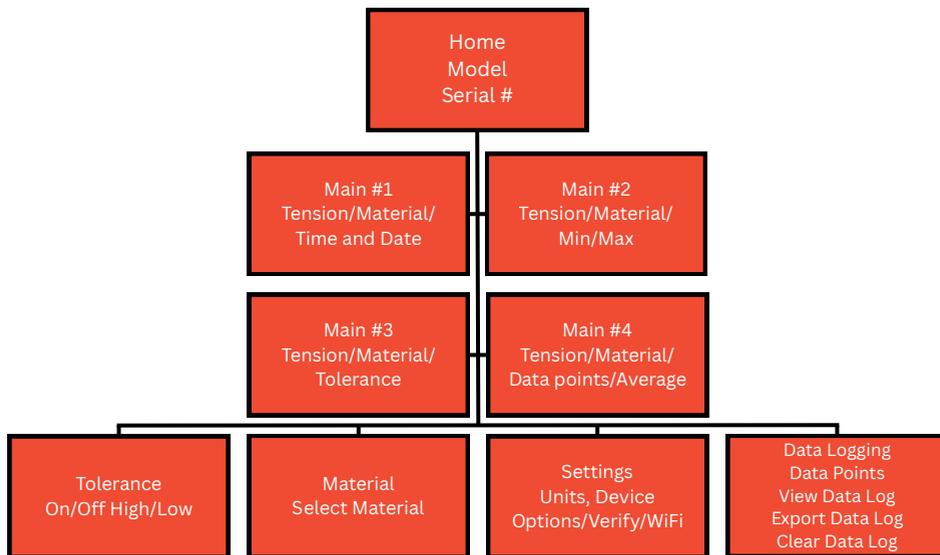


Figure #5: Menu Navigation

Main Screens

- Main Screen #1: Displays current reading, material, time, and date.
- Main Screen #2: Displays current reading, material, and history of readings, including the average.
- Main Screen #3: Displays current reading, material, and tolerance values (high and low).
- Main Screen #4: Displays current reading, material, and minimum/maximum readings recorded.

Tolerance

This feature displays tension as a colored bar on the main display. The colored bar advances as tension increases and retracts as tension decreases. You can define a safe operating tension range. For tension measurements within this range, the bar is green. Below and above the range, the bar is Red. (Figure #6, Page 12)

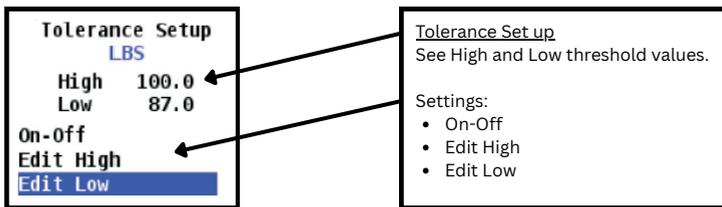


Figure #6: Tolerance Setup

To adjust the Tolerance:

- Scroll to Tolerance and press ENTER.
- Select On-Off to activate and deactivate the feature.
- Select Edit High to modify the upper limit or select Edit Low to update the lower limit and press enter. Use Up and Down arrows to adjust to the desired tension. Short press to move in 0.1 digit increments and long press to move in 1 digit increments.

Material

- Select the material type to be measured. (See Figure #3, Page 10)

Settings

- Choose the units of measurement (lb, kg, daN).
- Configure device options.
- Run device verification.
- Connect to Wi-Fi for data export

Data Logging

- Data Points: select how many data points to display and average on the meter screen. NOTE: Data Points refers only to the data points shown on the meter display and not to those stored in memory.
- View the complete data log of recorded readings.
- Export the data log.
- Clear the data log (warning: this deletes all stored readings).
- To clear only the displayed set of data points:
 - From Main Screen #2, press and hold the Escape key for ~2 seconds.
 - Note: Holding the Escape key longer will power off the meter.

Additional Reference

A detailed discussion of each menu option is provided in Chapter 8, (SETTINGS) of this manual.



8. SETTINGS

Units

- Set the tension units to pounds (LBS), kilograms (kg), or decanewtons (daN).
- Use the Up/Down arrows to select the desired unit, then press ENTER.

Device Options

Audio (Beep On/Off)

- Scroll to SETUP and press ENTER.
- Scroll to AUDIO and press ENTER.
- Select Beep ON or Beep OFF, then press ENTER.

Backlight

- Adjust the brightness of the LCD screen.
- Scroll to SETUP and press ENTER.
- Scroll to BACKLIGHT and press ENTER.
- Adjust as desired.

Update Rate

- Adjust the sensitivity of tension readings.
- Options: Slow (default), Medium, Fast.
- Scroll to UPDATE RATE and press ENTER.
- Select the desired option.

Power Off / Sleep Mode

- Set the automatic power-off time.
- Options: Disabled, 1 minute, 5 minutes, 10 minutes.
- Scroll to POWER OFF and press ENTER.
- Select the desired option and press ENTER.

Clock

- Set the internal clock for date and time stamps.
- Scroll to CLOCK and press ENTER.
- Use the Up/Down arrows to adjust date and time.
- Press ENTER to confirm.

About

- Displays the model, serial number, software version, and next calibration due date.



Verify Device

Use this function to confirm that the meter is reading within tolerance:

- Prepare a sample with a known tension value.
- Scroll to VERIFY and press ENTER.
- Use the Up/Down arrows to select the tension load to verify.
- Press STORE to measure.
- If successful, the reading appears green.
- If unsuccessful, the reading appears red.
- Verification results are stored in the Data Log and included in the exported CSV file.

Wi-Fi

Use this function to connect the meter to a Wi-Fi network:

- Scroll to WI-FI and press ENTER.
- Select the desired network.
- Enter the password using the on-screen keyboard:
- Up/Down arrows: scroll vertically through characters.
- ESC/ENTER: move left or right across the keyboard.
- STORE: select a character.
- ←: backspace.
- SP: enter a space.
- Use keyboard options to switch to lowercase letters or symbols.

9. EXPORT DATA LOG

The STX-Plus meter allows you to export stored measurement data for further analysis, recordkeeping, or integration with other systems. Data can be exported either wirelessly via Wi-Fi or through a direct USB connection.

Exported files are generated in CSV format (comma-separated values), which can be opened directly in Microsoft Excel or imported into other data analysis or quality control application.

The Tensitron Data Transfer Application (TDTA) is required for both Wi-Fi and USB export. This application manages data transfers from the meter and provides an interface for viewing and opening exported files.

1. Tensitron Data Transfer Application (TDTA)

The Tensitron Data Transfer Application (TDTA) is required for exporting data from your meter. TDTA is available under license from Tensitron and is shipped with all new PLUS SERIES meters purchased directly from Tensitron.

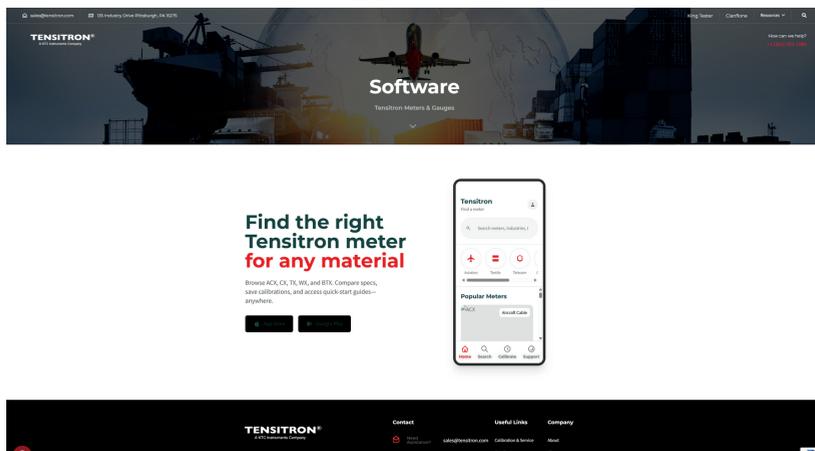
You may download TDTA from the Tensitron website at:
<https://tensitron.com/software/>

For further information, please contact sales@tensitron.com.

Download and Installation

1.1 Go to the Tensitron Website

- Navigate to www.tensitron.com/software/

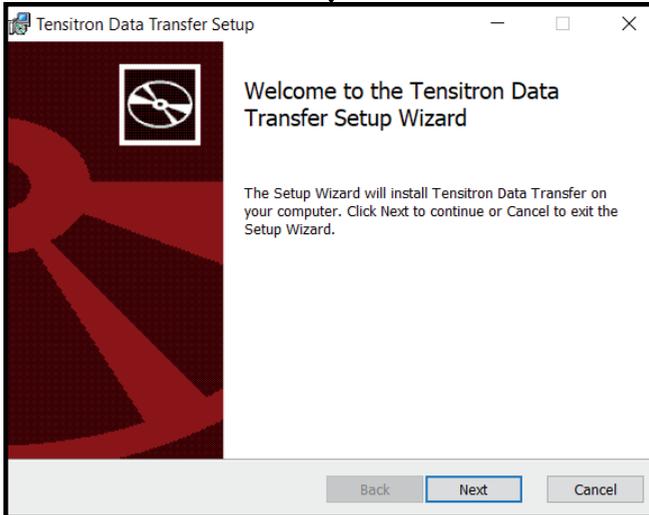
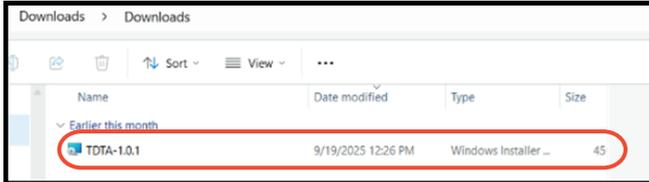


1.2 Download the Installer

- Click on the Tensitron Data Transfer Application (TDTA) link.

1.3 Launch the Installer

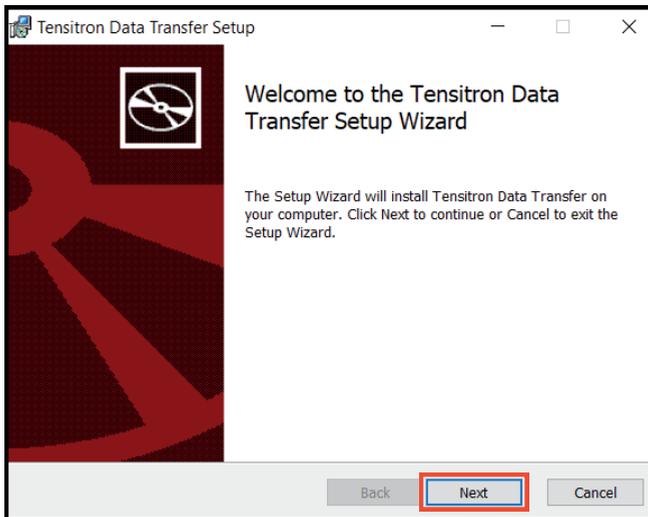
- Double-click the downloaded installer file. The Setup Wizard will open.





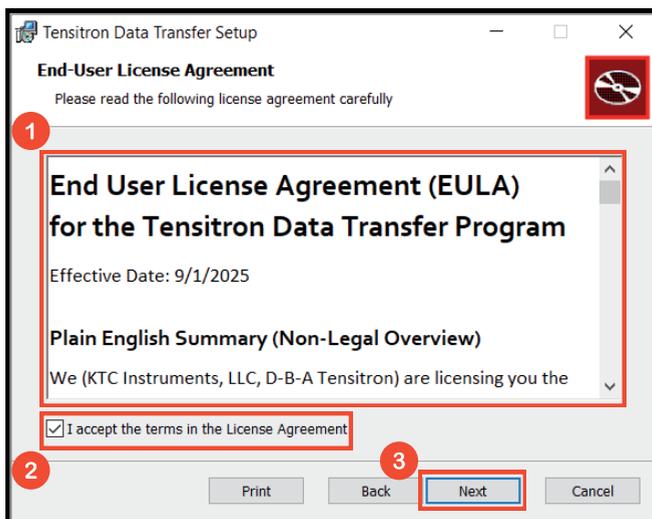
1.4 Close Other Applications

- If prompted, close all other running applications before continuing. Begin Setup – Click Next in the Setup Wizard.



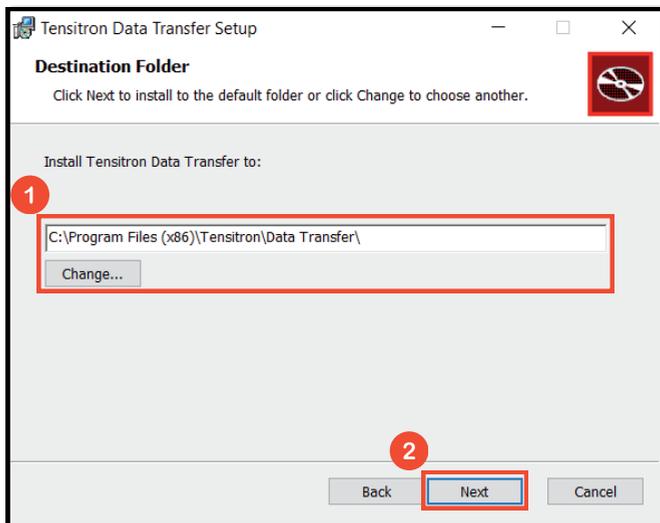
1.5 Accept the License Agreement

- Review the EULA. Select 'I accept the agreement', then click Next.



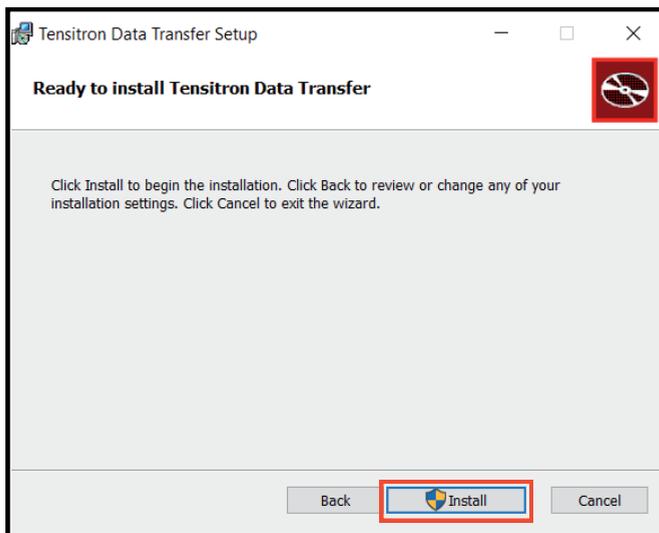
1.6 Select Installation Location

- Default: C:\Program Files\Tensitron\Data Transfer. Click Next.



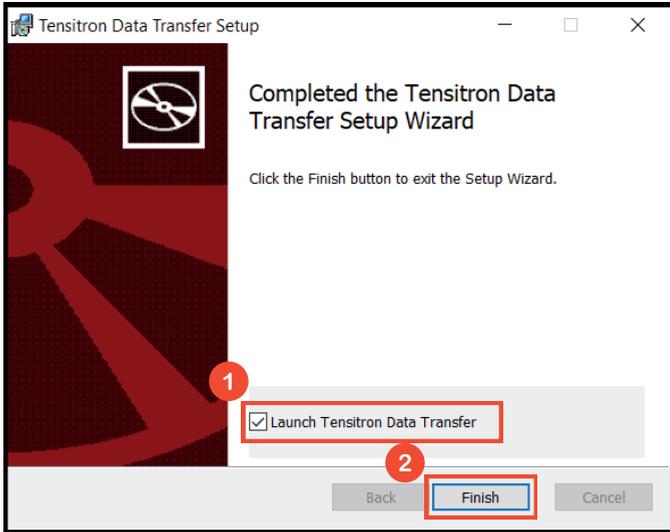
1.7 Install the Application

- Click Install to begin.



1.8 Complete Installation

- When complete, check 'Launch Tensitron Data Transfer' and click Finish.



1.9 System Tray Icon

- TDTA will now run in your system tray (lower right of your desktop).





2. Wi-Fi Export

When exporting via Wi-Fi, the meter must be connected to a network that also has the Tensitron TDTA installed and running on a PC.

2.1 Prepare Connection

- Ensure the meter has already been connected to a Wi-Fi network under Settings > Wi-Fi. Verify that the PC running TDTA is on the same network.

2.2 Select Wi-Fi Export

- On the meter, go to Data Export > Wi-Fi Export.

2.3 Status Messages

- The display will show your network name and cycle through:
 - Connecting...
 - Export sending...
 - Disconnecting...
 - Export complete

2.4 Confirm Transfer on PC

- The TDTA will confirm receipt of the file. Files are logged with date and time stamps.

Time and Date	Serial Number	Filename	Size
10/1/2025 7:48:41 PM	00000004	251001-194840.csv	4528 bytes
10/1/2025 7:47:18 PM	00000004	251001-194718.csv	4528 bytes
10/1/2025 7:46:54 PM	00000004	251001-194653.csv	4528 bytes
10/1/2025 7:38:01 PM	00000004	251001-193801.csv	4528 bytes
10/1/2025 7:33:48 PM	00000004	251001-193347.csv	4528 bytes
9/22/2025 12:12:56 PM	00000004	250922-121256.csv	4528 bytes



3. USB Export

When exporting via USB, the meter must be connected directly to a PC with a USB-C cable. The PC must have TDTA installed and running before initiating export.

3.1 Prepare Connection

- Connect the meter to the PC using the supplied USB-C cable. Ensure TDTA is open and active on the PC

3.2 Select USB Export

- On the meter, go to Data Export > USB Export.

3.3 Status Messages

- The meter will display: 'Sending...' then 'Export complete'.
-

4. Viewing and Accessing Exported Files

4.1 Confirm Transfer on PC

- The TDTA will display the new file in its list of transferred files. Each file includes the time, date, and name in CSV format.

4.2 Open the File

- Double-click the file name in TDTA to open it in Excel.
 - Exported files can also be viewed on your PC and accessed with the **Tensitron Data Transfer Application**. Open the application, and it will display a list of exported files. Clicking on any of these files will open them in Excel, or you can choose to transfer them for use in another application.
-

5. Troubleshooting Data Export

If you encounter issues exporting data, check the following:

- Ensure TDTA is installed, licensed, and actively running.
- Verify the meter is connected to the correct Wi-Fi network (for Wi-Fi export).
- Check that the USB-C cable is securely connected (for USB export).
- Confirm that the receiving PC is powered on and connected to the same network (for Wi-Fi export).
- Ensure that your license for TDTA is current. If your license has expired, contact sales@tensitron.com.
- Restart both the meter and the PC if problems persist.



10. CALIBRATION

- Tensitron recommends factory calibration at one-year intervals or sooner if the meter is damaged, worn, or giving inaccurate readings.
- Final responsibility for calibration intervals rests with the user.
- Consider:
 - Required measurement accuracy.
 - Contractual or regulatory obligations.
 - Environmental conditions (frequency and severity of use).

Information on calibration and service, and how to return your meter to Tensitron can be found at <https://tensitron.com/calibration-service/>

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