TESCO METERING

INSTALLATION/USERS GUIDE

TESCO DEVICE MANAGER

TDM

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Revision: 2.1A

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1. INTRODUCTION

Welcome to TESCO Device Manager (TDM), your complete data management solution.

TDM is designed to streamline data management for your TESCO devices, making it easier than ever to extract, organize, and analyze essential metering information. Whether you're handling meter data, performing remote device operations, or generating reports, TDM ensures a seamless and efficient experience.

What Can TDM Do for You?

With TDM, you can:

✓ Manage Data with Ease – Extract data from multiple TESCO devices simultaneously.
✓ Import and Organize – Quickly import meter, site, and charger information from CSV files.
✓ Export Test Results
- Generate PDF reports with custom branding, unit conversions, and chart/graph color adjustments.
- Export results in CSV format for easy data analysis.
- Create custom exports using SQL queries and regular expressions.

✓ Update Multiple Devices at Once - save time by updating multiple TESCO units simultaneously.
✓ Remote Control Meter Test Boards – manage test boards through secure network communication.

For over a century, TESCO has been a trusted name in metering, delivering accuracy and reliability. With TDM, managing your devices has never been easier.

2. CONTACTING TESCO

For Technical Support or Calibration/Repair, please call 215.228.0500.

You can also send an email to **support@tescometering.com** with any questions.

To view, print, or download the latest manual supplement, visit tescometering.com.

3. INSTALLATION

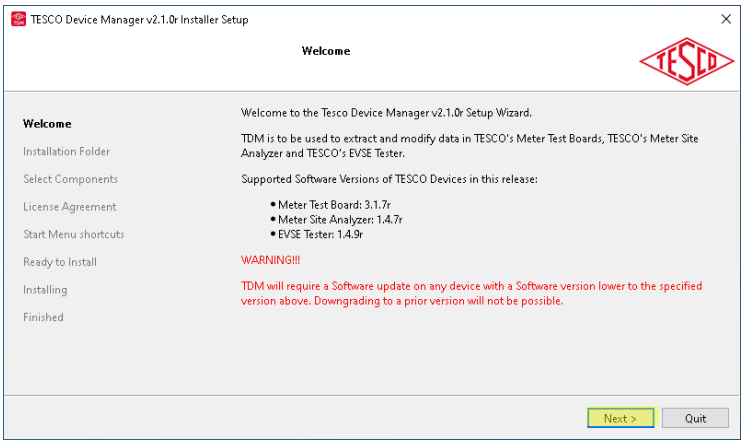
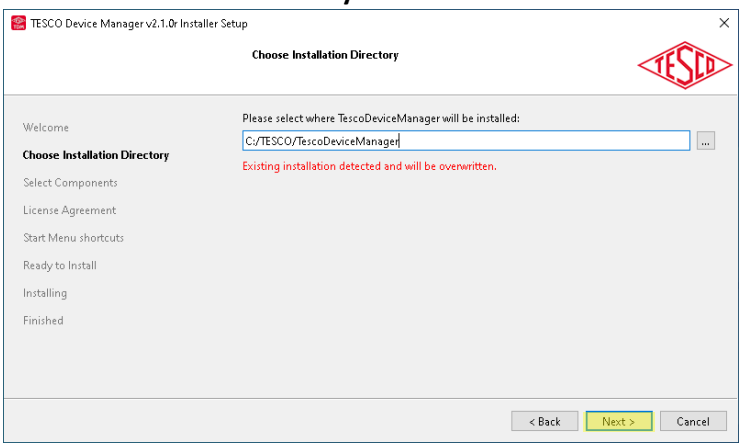
To download Tesco Device Manager (TDM) click here: https://www.tescometering.com/software/tdm/ or go to: tescometering.com, click resources, download TDM, scroll to the bottom and click on Download TDM Here.

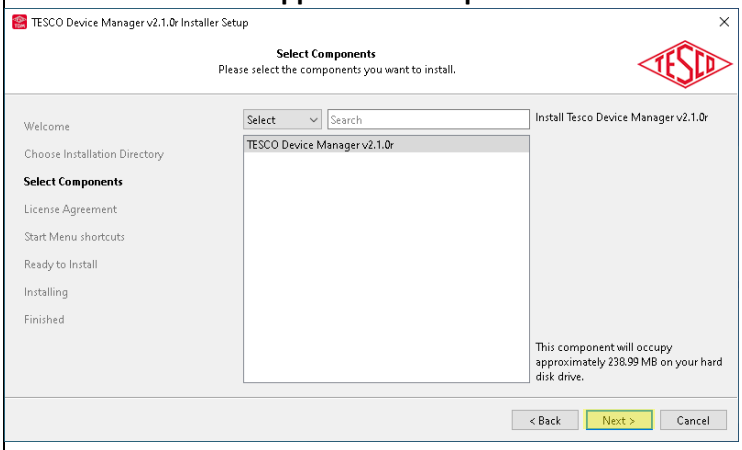
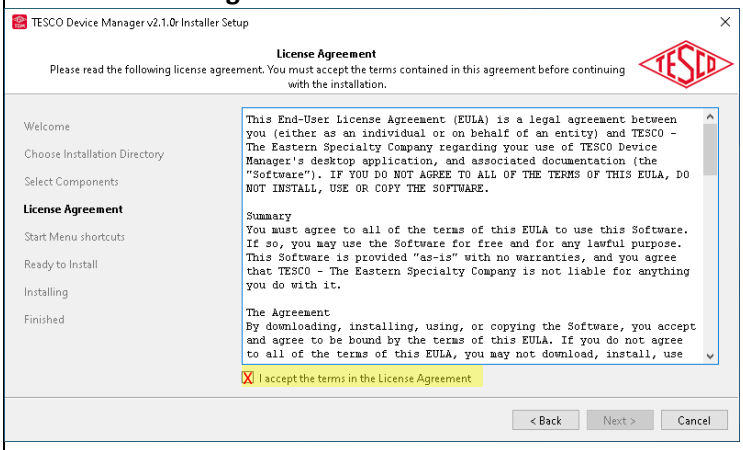
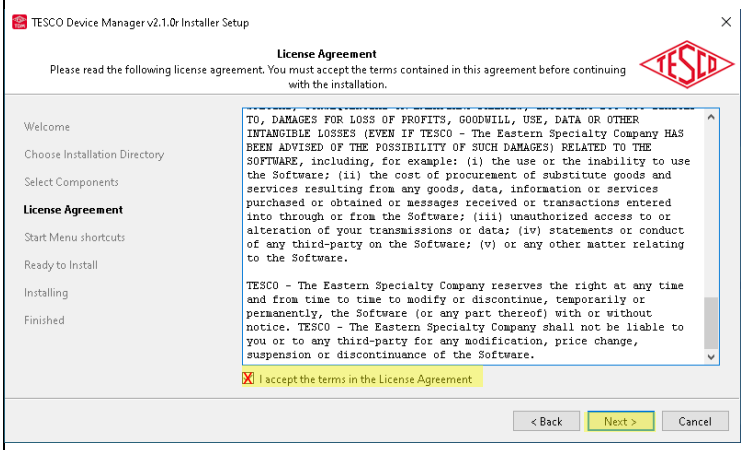
After downloading you can start installing, by running TescoDeviceManager_Setup.exe.
An installation wizard will pop up to guide you in the installation process.

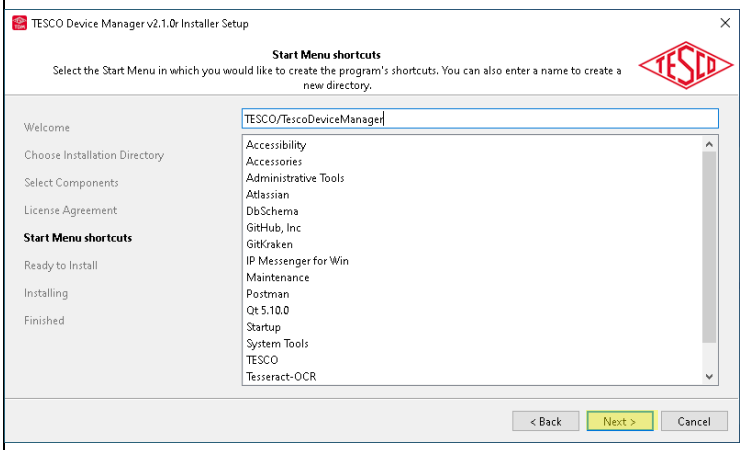
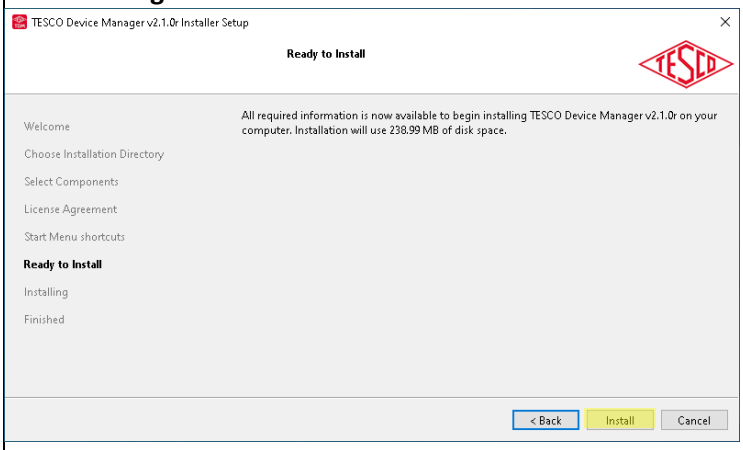
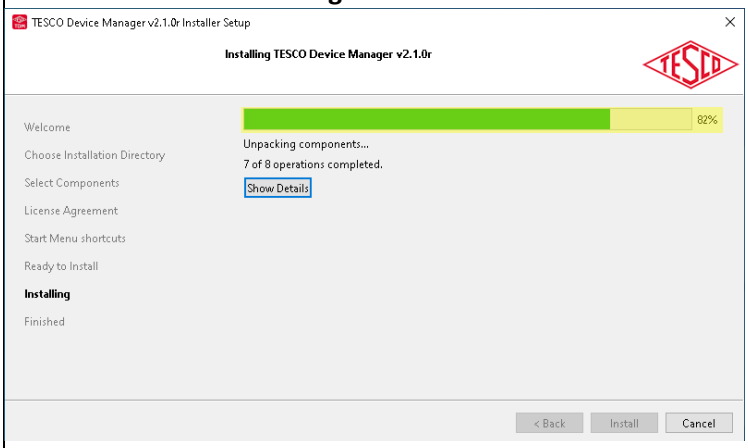
Note:

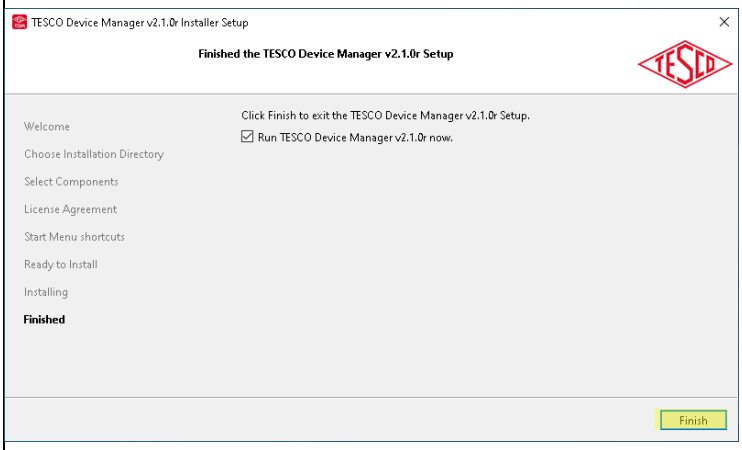
- **The installer will only run on Windows 8, 10 & 11.**
- **Administrative rights are not required to install the application.**

3.1 Installation Steps

SCREEN	DESCRIPTION
STEP 1: Welcome screen 	The software version of the TESCO Device Manager application that is about to be installed is indicated on this screen, along with the software versions of the TESCO Devices that this version TDM supports. Press "Next >" to proceed with the installation. **Choices Are: Extract All/Run/Cancel** Select: **EXTRACT ALL**
STEP 2: Installation Directory 	The default installation directory of the application is: **C:\TESCO\TescoDeviceManager** The user can change the installation folder by clicking the ellipsis button and browsing the desired directory. Press **Note:** When installing a new version, be sure it uses the same path as the current one to ensure that it will overwrite it. "Next >" to continue with the installation.

SCREEN	DESCRIPTION
STEP 3: Selection of Application Components 	The information on the required disk space to install the application is provided. Press "Next >" to continue with the installation.
STEP 4: License Agreement  	This screen contains the license agreement in using TESCO Device Manager. By **accepting the terms**, the installation process can continue. Press "Next >" to proceed to the next step.

SCREEN	DESCRIPTION
STEP 5: Start Menu Shortcut 	In this screen, you may change the Start Menu shortcut location for TDM.
STEP 6: Begin Installation 	Press "Install" to confirm and start the actual installation process.
STEP 7: Installation in Progress 	This screen shows the progress of the installation process.

SCREEN	DESCRIPTION
STEP 8: Successful Installation 	If no errors are encountered during the installation process, this step will show up and indicate that the installation is successful. Press "Finish" to successfully end the installation. Note: The application is now ready to be used and does not require a computer restart.

Once the installation is complete, launch the software by double clicking the TDM icon to access the login screen.

Simply press 'Enter' to log in.

4. USER INTERFACE

The main user interface includes:

- Toolbar at the top
- Side navigation menu for easy access to features,
- Workspace area where you can efficiently perform tasks

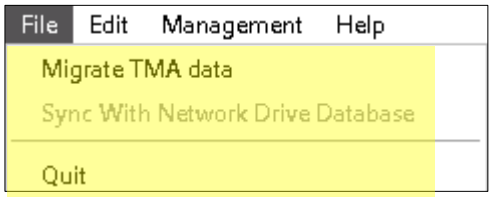
The Toolbar is broken down into four sections:

1. File:
    a. Migrate TMA
    b. Sync with Network Database
    c. Quit
2. Edit
3. Management
4. Help

For those currently using TESCO's TMA software, please start here. Other users skip to 4.1.2/EDIT.

4.1 Menu Bar

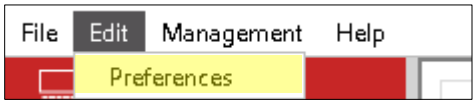
4.1.1 File



Under File menu, we have 3 items:

1. Migrate TMA data
    - This is a one-way operation which copies the data from older database versions (i.e., Test Management Application) to TDM.
2. Sync with Network database
    - This is a two-way operation which will make both TDM and Network databases up to date with each other. All new records in TDM will be copied over to the Network database and all new records in the Network database will be copied over to TDM. “New records” also include records that have been marked as “dirty”.
3. Quit
    - Close the application.

4.1.2 Edit



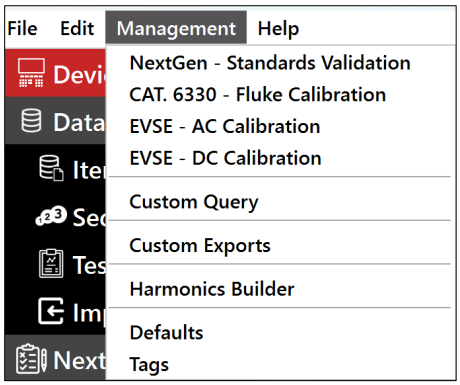
Edit has one item under it titled Preferences. Under Preferences there are five different tabs (General, Database, Report, User Interface and Others) that will enable the end user to customize TDM so it is exactly the way they want it to be.

Section 5, Setting Up Preferences will walk you through that process.

4.1.3 Management

Under the **Management** tab, end-users can customize settings and configurations, giving them advanced control and customization options to optimize their experience and enhance system functionality.

The Management section displays a list of supported equipment. However, the devices shown may not all apply to your setup. You will only need to configure and manage the equipment specific to your installation. If a device is listed that you do not own, you can simply disregard it.

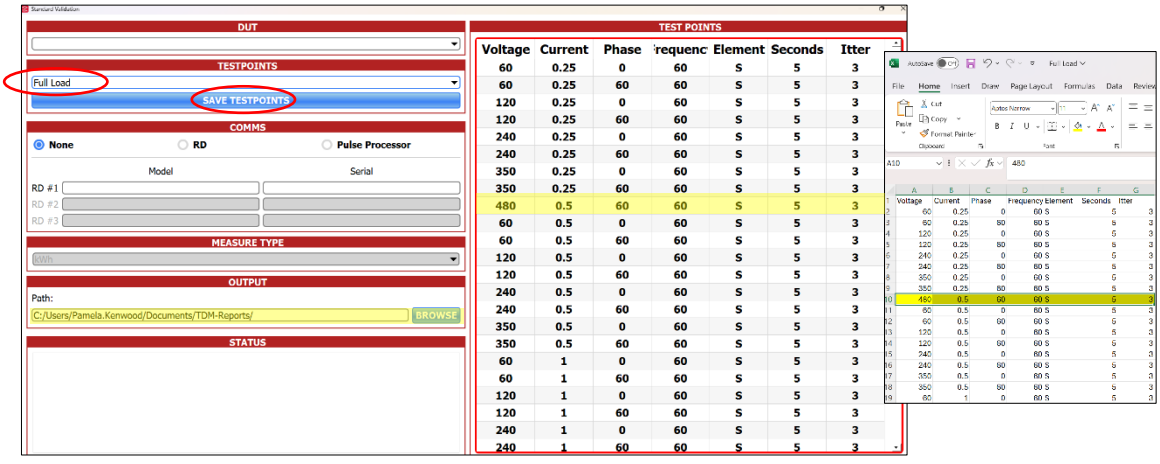


NextGen – Standards Validation

This is where you can compare measurements from a Meter Test Board based on RD-2x/RD-3x, or a Pulse Processor setup with 3 RD-2x.

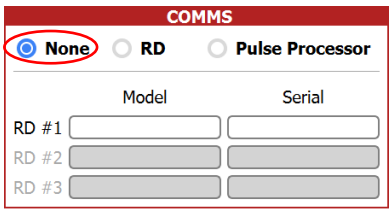
Device Under Test (DUT). The device in which you are testing.

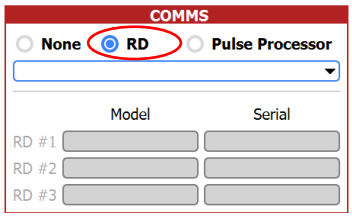
Test points: Test points can be added on the fly in the matrix; right click to add or delete rows. By clicking save test points, the system will automatically save an excel spreadsheet to the folder that is defined in OUTPUT path. If you prefer working or editing in excel you are able to do so; once the document is saved, the system will automatically pull that information into TDM.

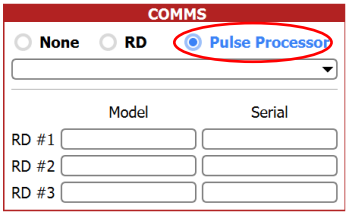


Communications (COMMS). Select the device you will be communicating with.

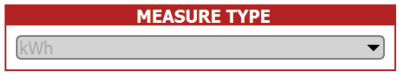
Communications (Comms) refers to how the test system receives data from the meter. Users can select from three options: **None**, **RD (Radian)** for standard reference communication, or **Pulse Processor** when using a dedicated pulse counting device.



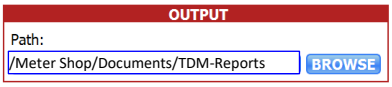




Measurement Type. Choose from kWh, kVARh or kVAh



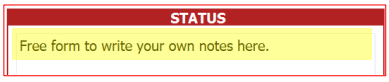
Output. Path in which reports will be exported.



Status. Status is a free-form text field that allows users to enter notes or context related to the test session. This field is optional and can be used to document conditions, observations, or internal tracking details.

Examples of how the Status field might be used:

- Noting environmental conditions (e.g., *"High humidity in test area"*)
- Indicating meter condition (e.g., *"Meter requires re-inspection"*)
- Logging operator initials or shift details (e.g., *"Checked by PM – Night Shift"*)
- Adding a reminder or flag for future review (e.g., *"Review kVARh drift"*)



CAT. 6330 – Fluke Calibration

Calibrating the TESCO 6330 Meter Site Analyzer with a Fluke 6105A.

Device Under Test (DUT).

DUT Serial #. Drop down menu will populate based on device attached.

Software Revision: Version will populate based on device.

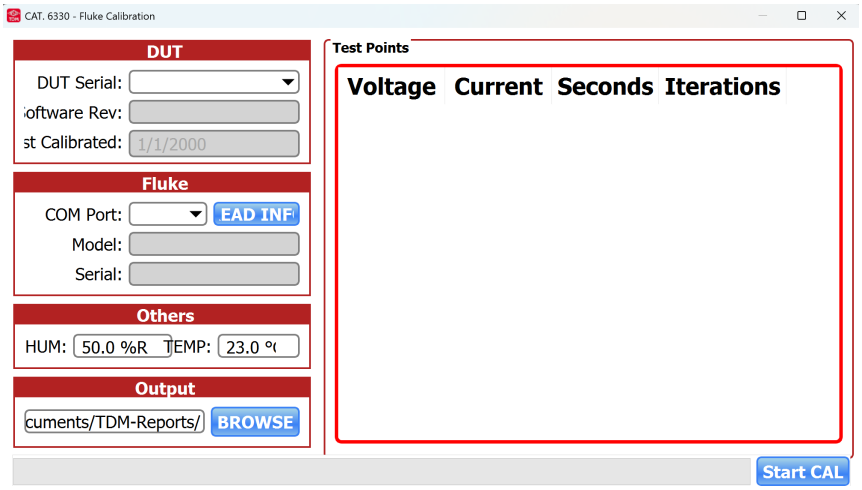
Last Calibrated: Date will populate based on device.

Fluke. Information pertaining to the fluke device.

Communication Port: Use Drop down to select, Model and Serial # will populate based on device attached. Click READ INFO

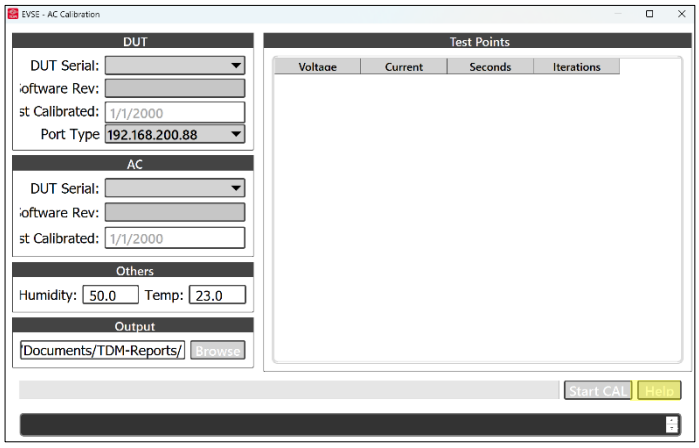
Others. Enter the room humidity and temperature.

Output. Path in which reports will be saved.



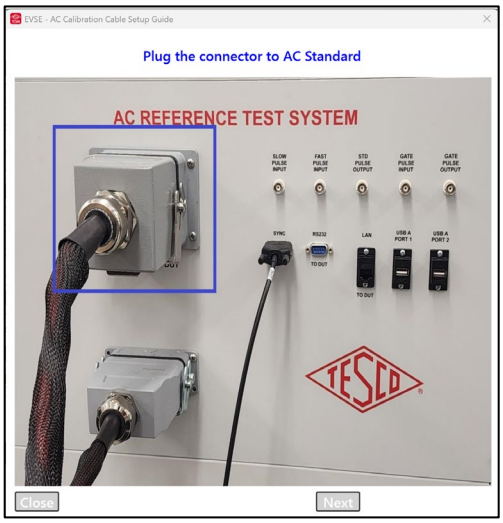
EVSE – AC Calibration

Conduct AC calibration on an EVSE Tester with TESCO ACTM.

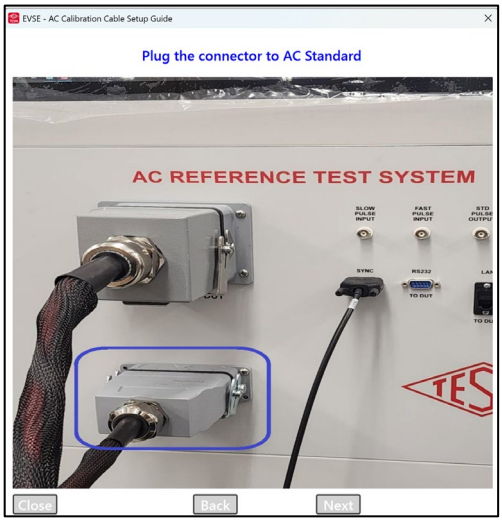


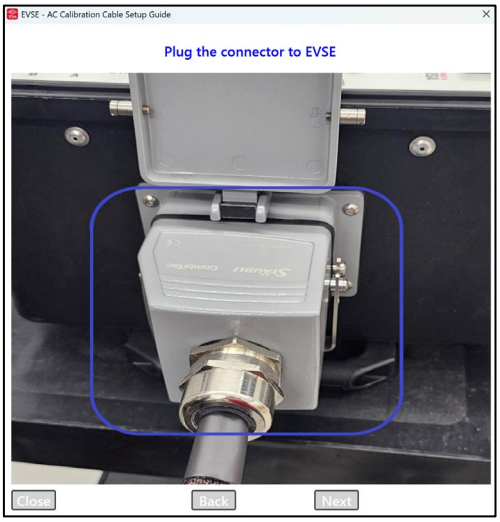
Not sure how to do it?

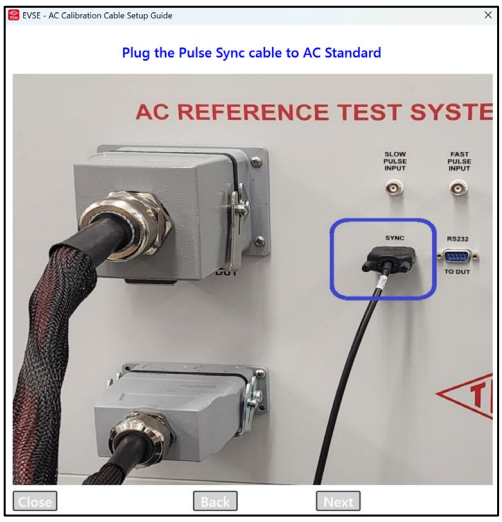
Click Help to access AC Calibration Cable Setup Guide.

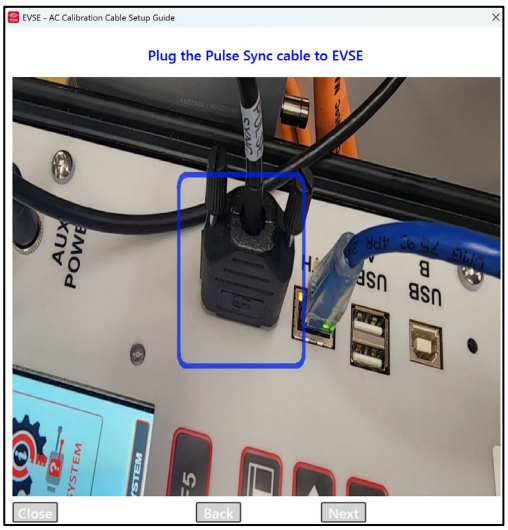

EVSE - AC Calibration Cable Setup Guide
Plug the connector to AC Standard
AC REFERENCE TEST SYSTEM
Close
Next

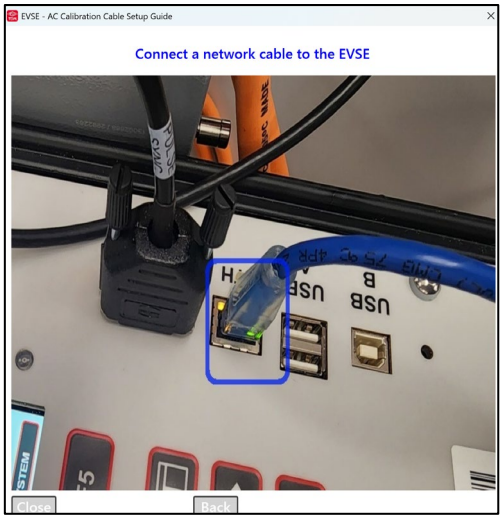

EVSE - AC Calibration Cable Setup Guide
Plug the connector to EVSE
Close
Back
Next


EVSE - AC Calibration Cable Setup Guide
Plug the connector to AC Standard
AC REFERENCE TEST SYSTEM
Close
Back
Next


EVSE - AC Calibration Cable Setup Guide
Plug the connector to EVSE
Close
Back
Next

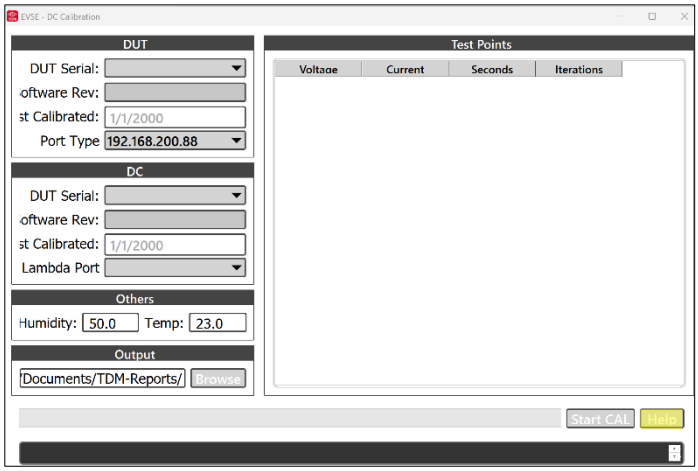

EVSE - AC Calibration Cable Setup Guide
Plug the Pulse Sync cable to AC Standard
AC REFERENCE TEST SYSTE
SYNC
RS232
Close
Back
Next


EVSE - AC Calibration Cable Setup Guide
Plug the Pulse Sync cable to EVSE
Close
Back
Next

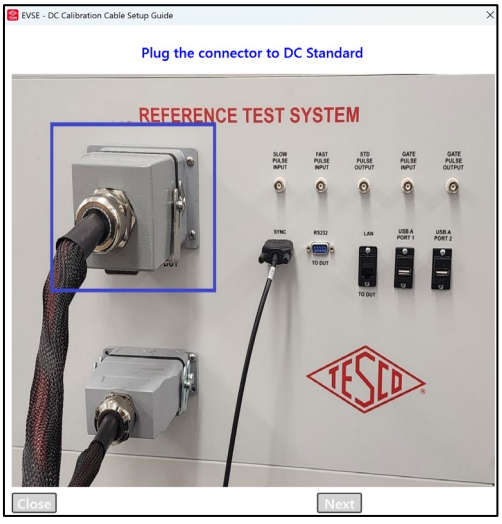


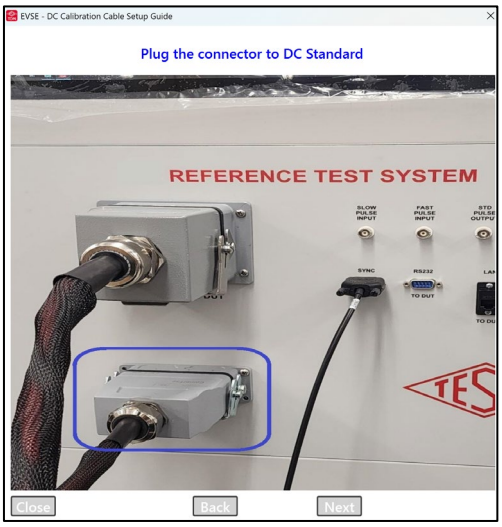
1. EVSE – DC Calibration

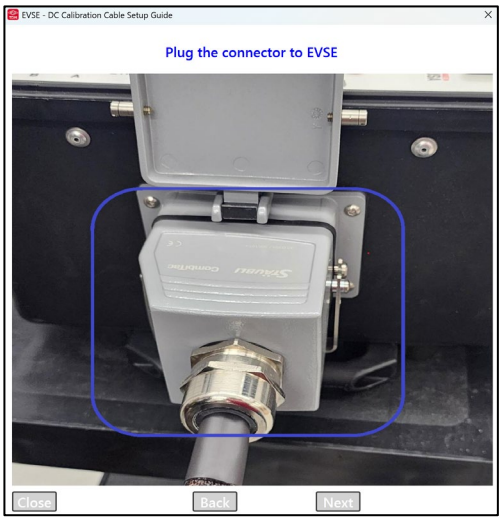
Conduct DC calibration on an EVSE Tester with a TESCO DCTM.

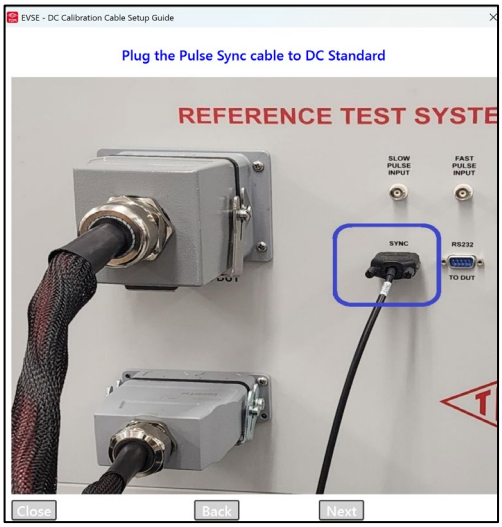


Not sure how to do it? **Click Help to access AC Calibration Cable Setup Guide.**

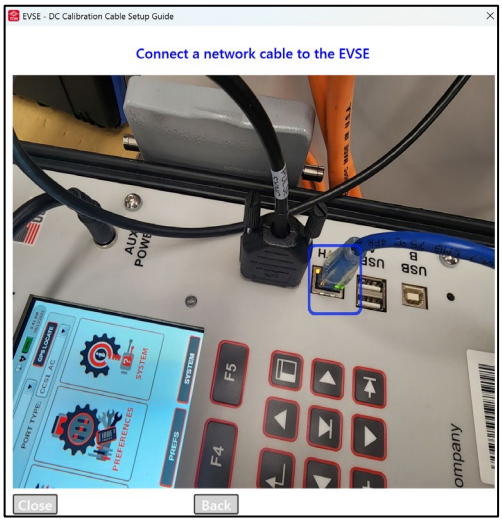



EVSE - DC Calibration Cable Setup Guide
Plug the connector to DC Standard
REFERENCE TEST SYSTEM
Close
Back
Next


EVSE - DC Calibration Cable Setup Guide
Plug the connector to EVSE
Close
Back
Next


EVSE - DC Calibration Cable Setup Guide
Plug the Pulse Sync cable to DC Standard
REFERENCE TEST SYSTE
SLOW PULSE INPUT
FAST PULSE INPUT
SYNC
RS232
TO DUT
Close
Back
Next


EVSE - DC Calibration Cable Setup Guide
Plug the Pulse Sync cable to EVSE
F5
F4
Close
Back
Next


EVSE - DC Calibration Cable Setup Guide
Connect a network cable to the EVSE
F5
F4
Close
Back

Custom Query

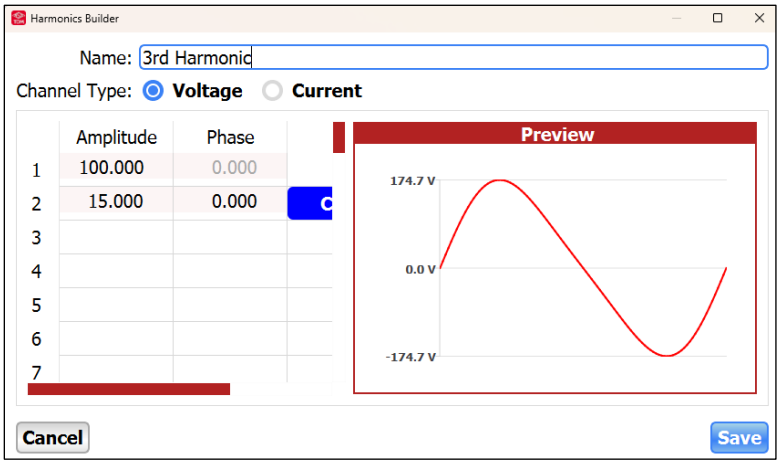
End-users can create and run custom SQL queries within the TDM database offering meter shops enhanced data management, reporting and efficiency.

Custom Exports

Custom exports in TDM allow users to create custom export scripts by leveraging a combination of SQL queries and Regular Expressions (RegEx) to extract, filter, and format data in a highly tailored way.

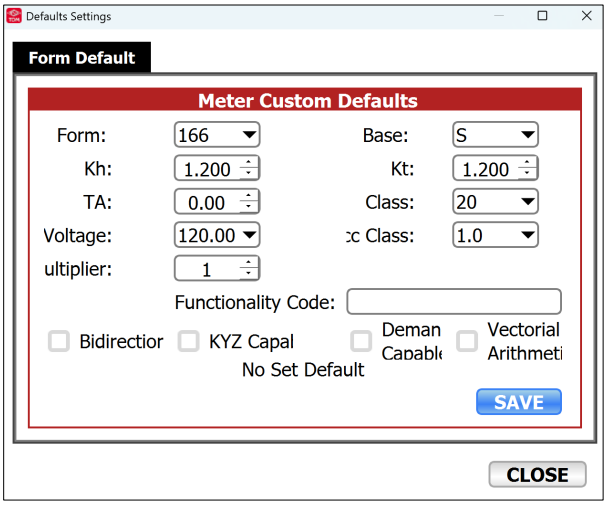
Harmonics

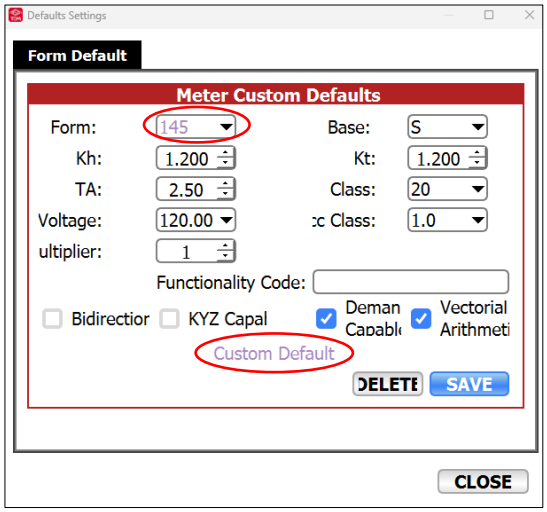
Create custom waveform based on harmonics. Build your own library of voltage and current harmonics based on amplitude and phase.



Defaults

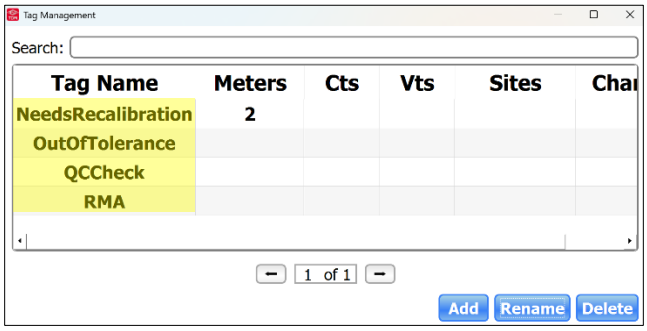
The system gives you the ability to set custom default settings for a meter if you choose. Custom defaults are easy to identify – the font color is light purple. Assigning default values for a Meter form helps streamline workflows, reduce errors and improve efficiency.



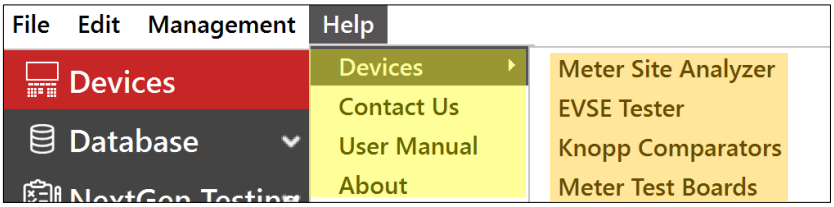


Tags (refer to section 15 - Tags for complete setup).

Create, edit and delete tags. Tag management in a meter shop serves as a tracking and organizational tool, helping technicians and managers efficiently categorize, locate, and manage meters, test equipment and related assets.



4.1.4 Help



Under Help menu are four items:

1. **Devices**

   Under devices, you will find a submenu listing TESCO's device types. By clicking on one, you will be directed to the product page on TESCO's website.

2. **Contact Us**

   Not sure how to contact TESCO? Click here to get the details.

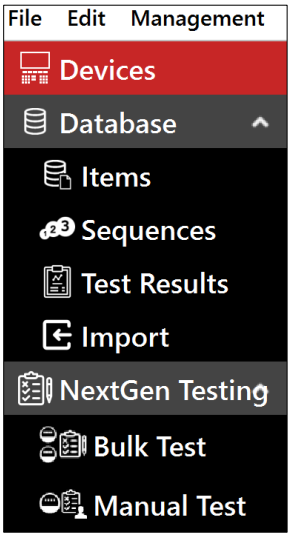
3. **User Manual**

   Access the TDM user manual for the most current version.

4. **About**

   Selecting this menu item opens a popup with details on TESCO device software versions supported by TDM, along with a button to view the license agreement accepted during installation.

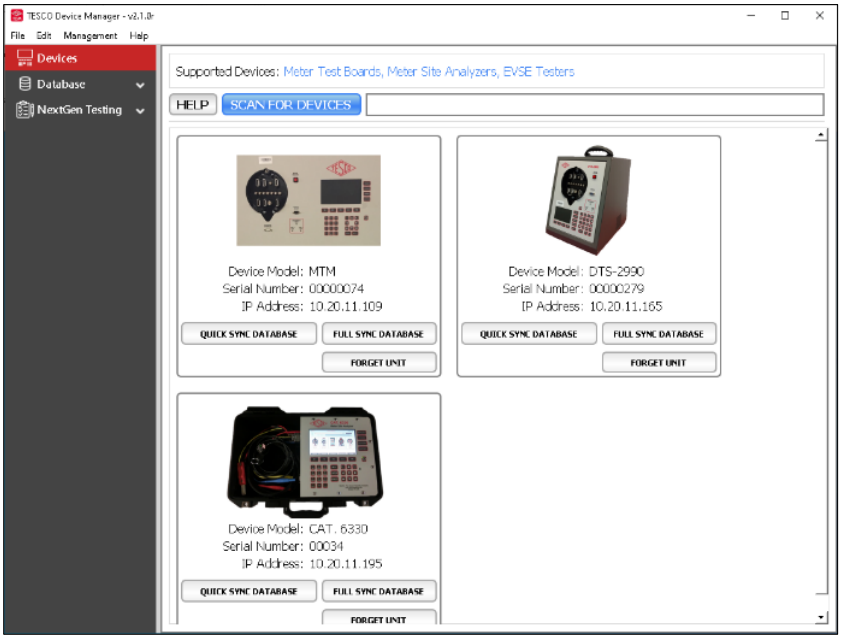
4.2 Side Navigation Bar



TDM's side navigation bar has three main items, "**Devices**", "**Database**" and "**NextGen Testing**". "NextGen Testing" can be shown/hidden depending on the supported device types that were selected under Edit/Preferences/Supported Devices from the toolbar.

4.2.1 Devices

All supported devices that TDM was able to detect/scan on the list of subnets/IP addresses set by the user will be found here. Your desktop might look like this:

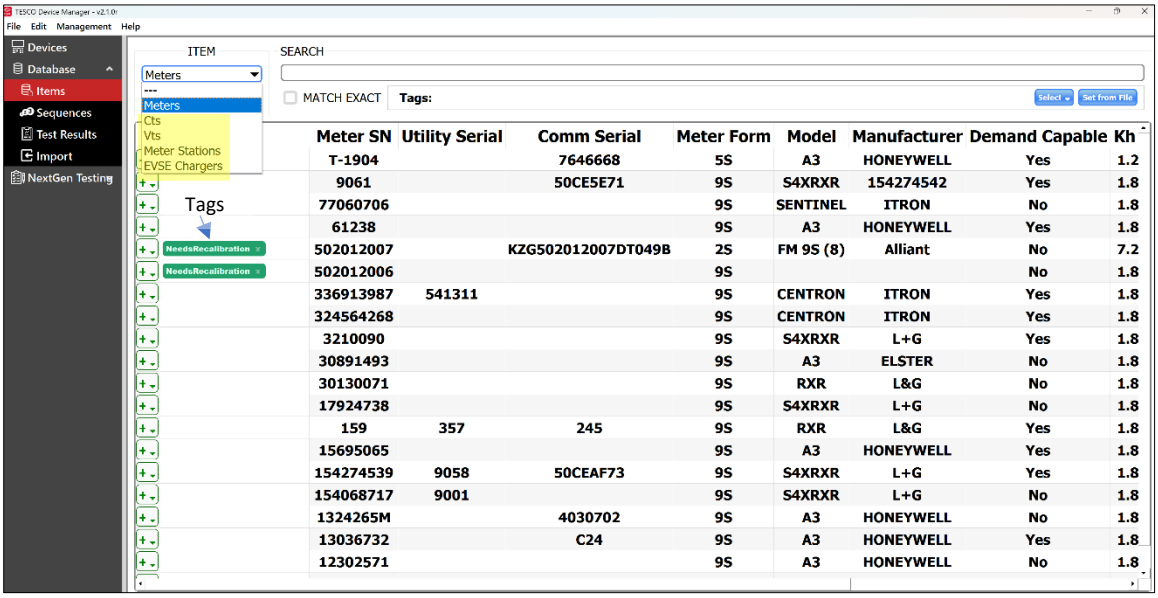


4.2.2 Database

Database has four submenus: **Items, Sequences, Test Results** and **Import**

1. Items

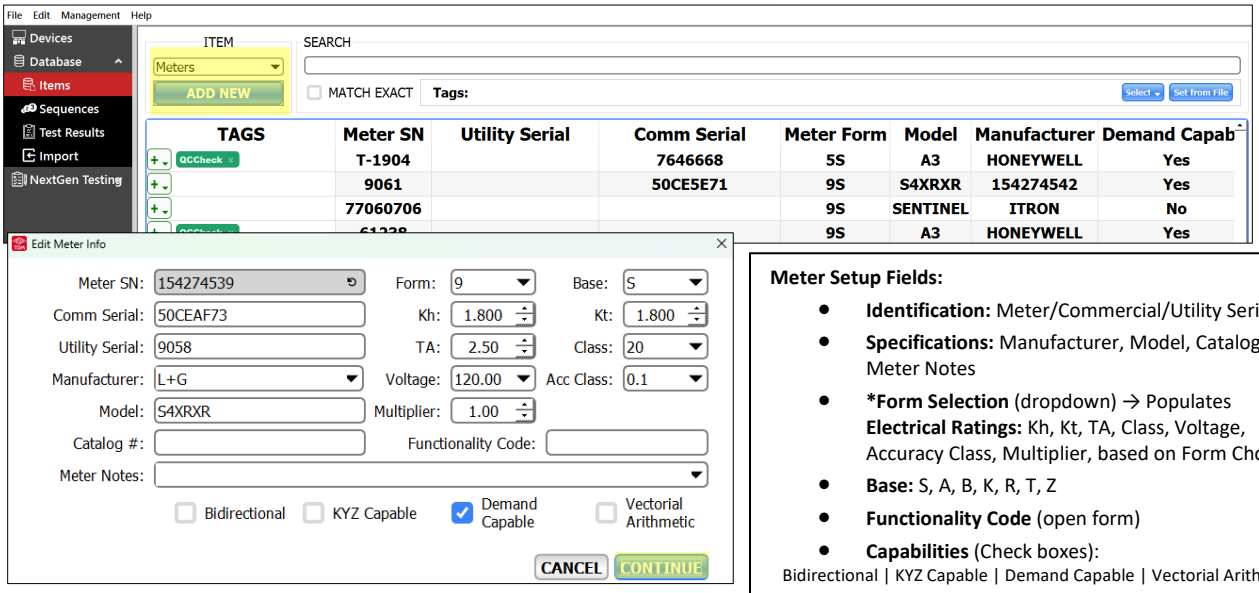
End users will manage the Item records. Item record types are "**Meters**", "**Cts**", "**Vts**", "**Meter Stations**", and "**EVSE Chargers**".



From this screen items can be:

- Added on the fly
- Imported from a CSV file
- Edited
- Searched by a specific word or a "tag"
- Edited, deleted, viewed (test results), or exported. Right click to edit, delete, view results (which brings you to test results for the item that is selected) and custom export. Please note a custom export needs to be set up under Management/Custom Exports on the toolbar before you can perform this task.

To Add a Meter: From Item drop down select **Meters**. Click **ADD NEW**. A new record will pop up for you to input your meter information.



Meter Setup Fields:

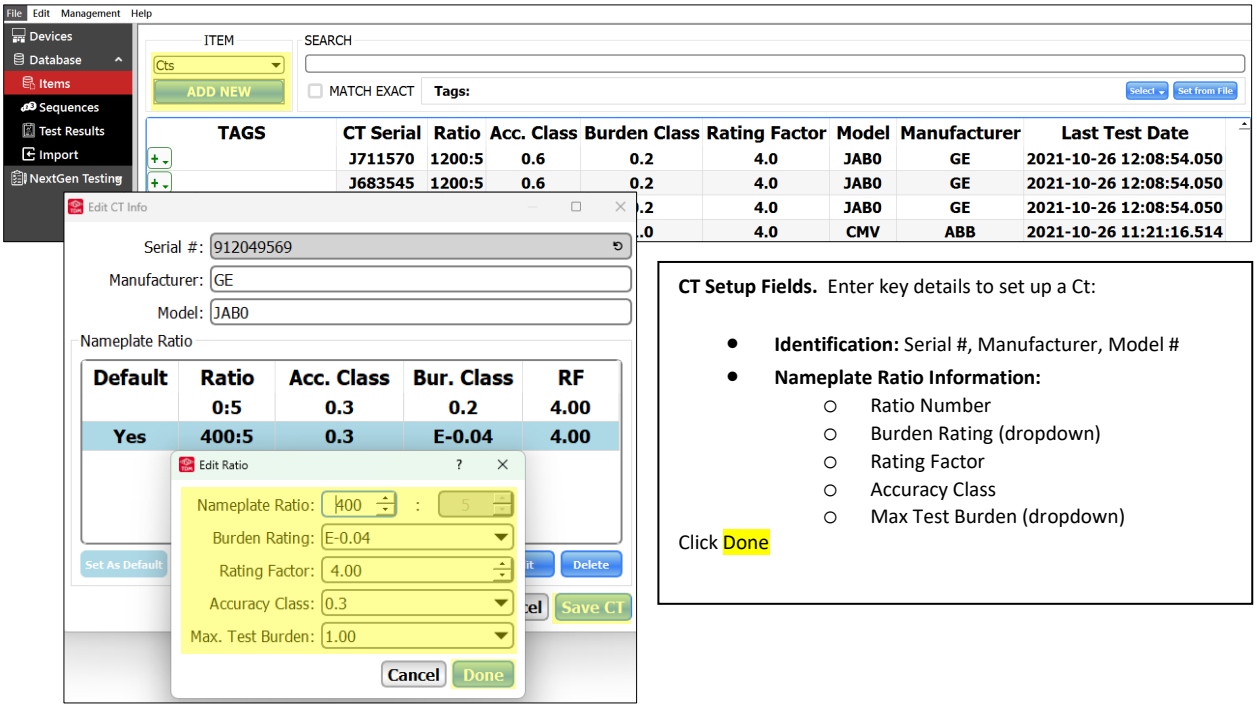
- **Identification:** Meter/Commercial/Utility Serial #
- **Specifications:** Manufacturer, Model, Catalog #, Meter Notes
- ***Form Selection** (dropdown) → Populates **Electrical Ratings:** Kh, Kt, TA, Class, Voltage, Accuracy Class, Multiplier, based on Form Chosen
- **Base:** S, A, B, K, R, T, Z
- **Functionality Code** (open form)
- **Capabilities** (Check boxes):

Bidirectional | KYZ Capable | Demand Capable | Vectorial Arithmetic

*Selections for **Form defaults** update dynamically based on the chosen **Form**.

Click **CONTINUE** to save record.

To add a CT: From Item drop down select **Cts**. Click **ADD NEW**. A new record will pop up for you to input your CT information.



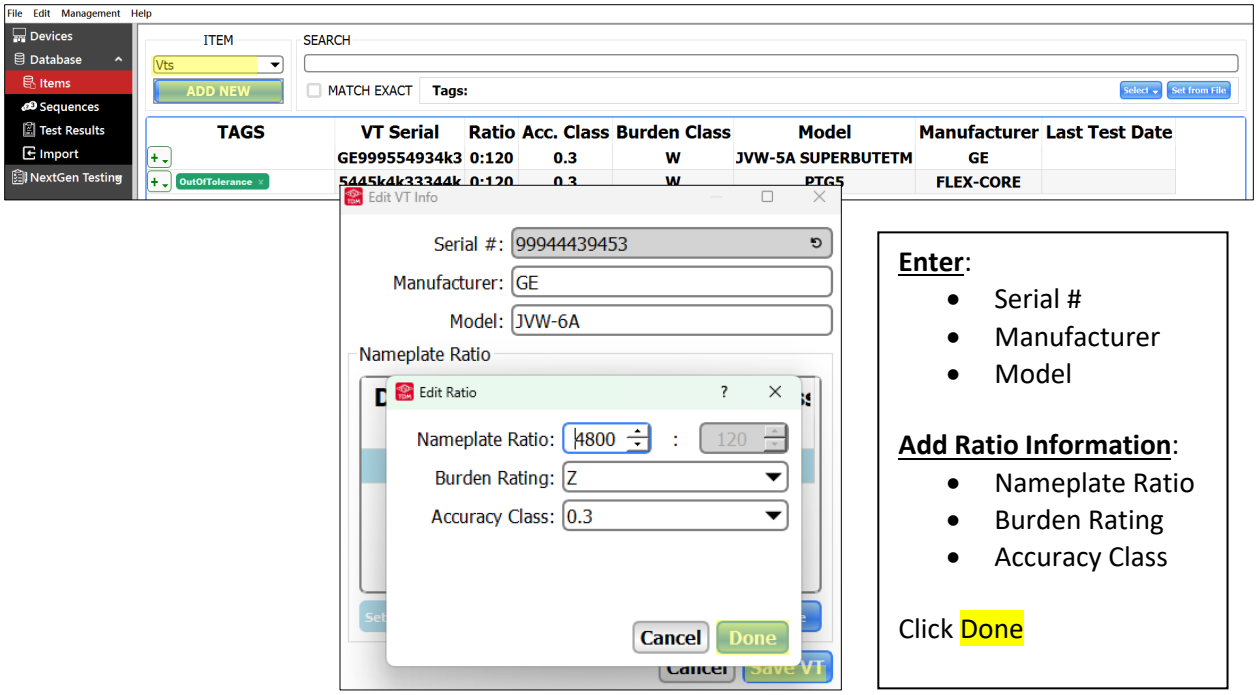
CT Setup Fields. Enter key details to set up a Ct:

- **Identification:** Serial #, Manufacturer, Model #
- **Nameplate Ratio Information:**
  - Ratio Number
  - Burden Rating (dropdown)
  - Rating Factor
  - Accuracy Class
  - Max Test Burden (dropdown)

Click Done

Click Save CT

To add a VT: From Item drop down select **Vts**. Click **ADD NEW**. A new record will pop up for you to **input your VT information.**



Enter:

- Serial #
- Manufacturer
- Model

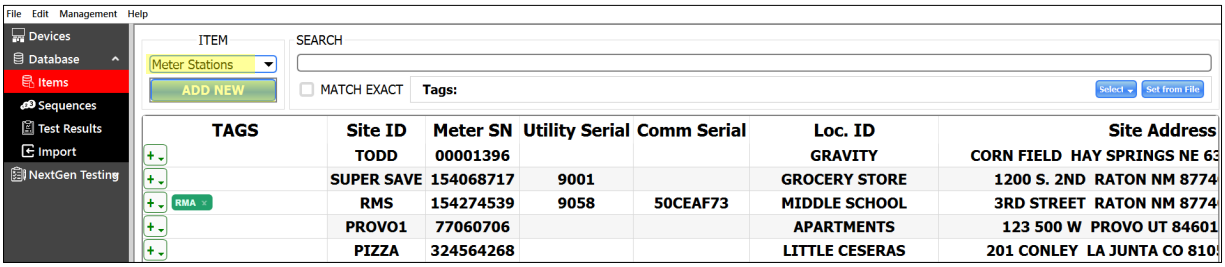
Add Ratio Information:

- Nameplate Ratio
- Burden Rating
- Accuracy Class

Click Done

Click Save VT

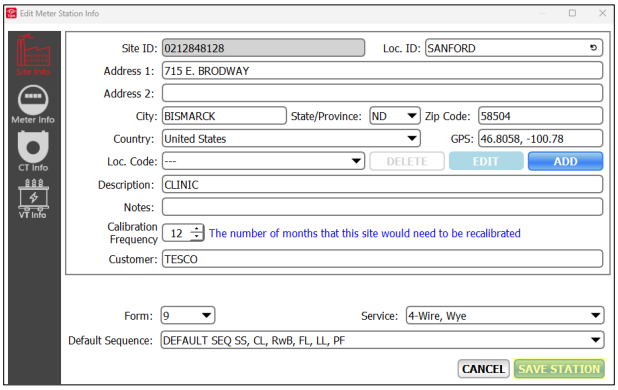
To add a Meter Station: From Item drop down select **Meter Stations**. Click **ADD NEW**. A new record will pop up for you to input the appropriate information.



Setting Up a Meter Station. When setting up a meter station, there are four main components, each represented by a corresponding screen in the system:

- **Site Information**
- **Meter Information**
- **CT Information**
- **VT Information**

While not all stations will require data for every category, the system is designed to accommodate a complete setup when needed. Simply enter the information relevant to the specific station you are configuring.

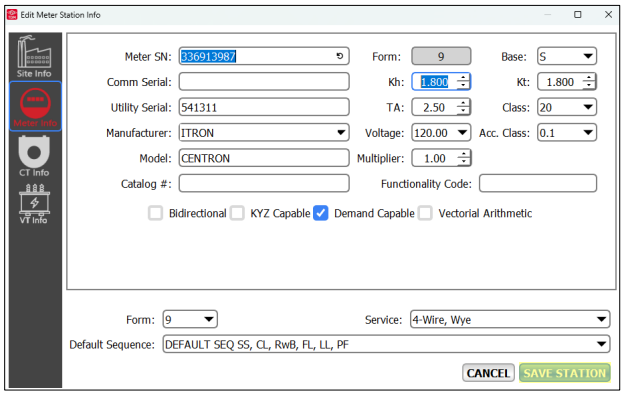


Site Setup Fields. Enter key details to define a site:

- **Identifiers**: Site ID, Location ID, Location Code (unique & user-defined, can add on-the-fly)
- **Address**: Address 1 & 2, City, State, ZIP, Country, GPS Coordinates
- **Additional Details**: Description, Notes (if applicable)
- **Settings**: Calibration Frequency, Customer, Form (dropdown), Service (dropdown), Default Sequence (dropdown)

Only relevant fields need to be filled based on your setup.

SAVE STAION

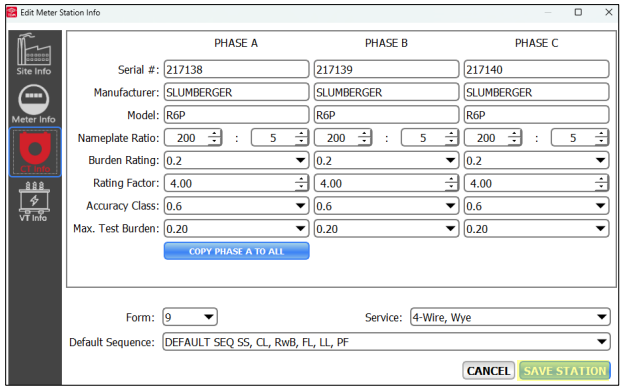


Meter Setup Fields. Enter key meter details:

- **Identification**: Meter Serial, Utility Serial, Comm Serial, Manufacturer, Model, Catalog #
- **Configuration**: Form (dropdown) → Populates **Service Type & Default Sequence***
- **Electrical Specs**: Base, Kh, Kt, TA, Class, Voltage, Accuracy Class, Multiplier
- **Functionality**: Functionality Code
- **Capabilities** (Check boxes): Bidirectional, KYZ Capable, Demand Capable, Vectorial Arithmetic

*Selections for **Service Type & Default Sequence** update dynamically based on the **Form** chosen.

SAVE STATION

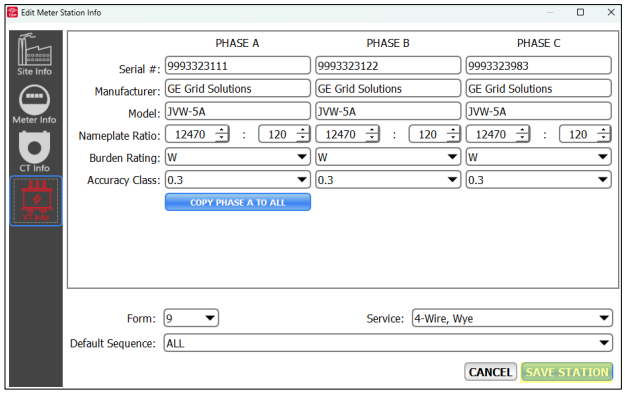


CT Setup Fields. Enter CT details:

- **Form Selection** (dropdown) → Populates ***Service Type & Default Sequence**
- **Phases (A, B, C)** → Visible based on form selection
  For Each Phase (A, B, C):
  Serial # | Manufacturer | Model | Nameplate Ratio
  Burden Rating | Rating Factor | Accuracy Class |
  Max Test Burden

*Selections for **Service Type, Default Sequence, and Phases** update dynamically based on the **Form** chosen.

SAVE STATION



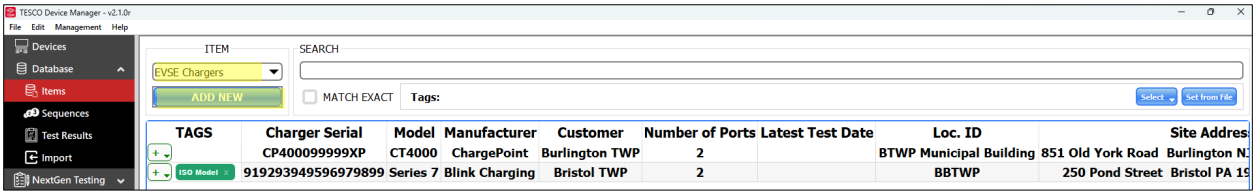
VT Setup Fields. Enter VT Details:

- **Form Selection** (dropdown) → Populates ***Service Type & Default Sequence**
- **Phases (A, B, C)** → Visible based on form selection
  For Each Phase (A, B, C):
  Serial # | Manufacturer | Model | Nameplate Ratio
  Burden Rating | Accuracy Class
- Click **Copy Phase A to All**→ Streamlines data entry

*Selections for **Service Type, Default Sequence, and Phases** update dynamically based on the **Form** chosen.

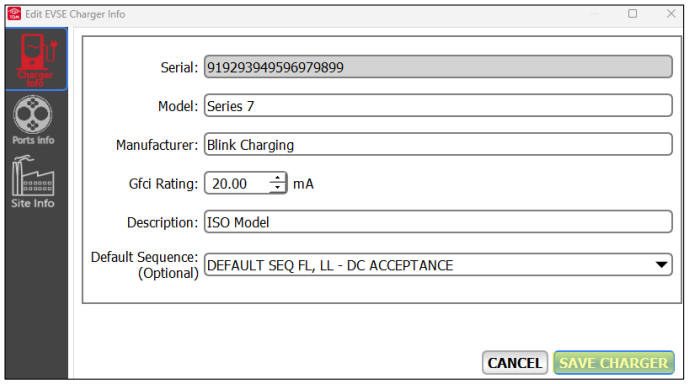
SAVE STATION

To add an EVSE Charger: From Item drop down select **EVSE Chargers**. Click **ADD NEW**. A new record will pop up for you to **input your EVSE Charger information.**



Setting Up EVSE Chargers. When setting up a charger, there are three main components, each represented by a corresponding screen in the system:

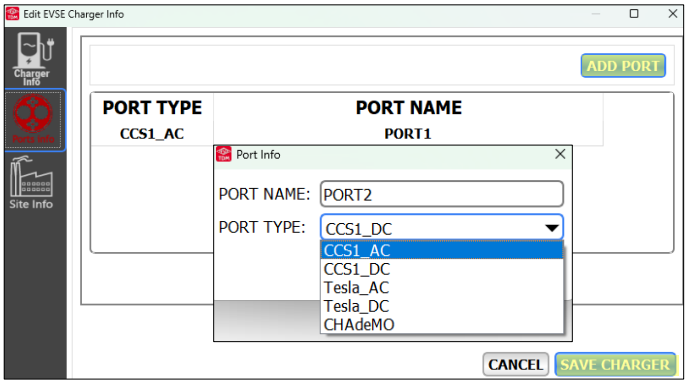
- **Charger Information**
- **Ports Information**
- **Site Information**



Charger Info Setup:

- **Identification:** Serial Number, Model Number, Manufacturer
- **Specifications:** Gfci Rating (mA)
- **Description:** Open text field
- **Default Sequence (optional). Choose from:**
  - Default SEQ FL, LL - AC Acceptance
  - Default SEQ FL, LL - AC Maintenance
  - Default SEQ FL, LL - DC Acceptance
  - Default SEQ FL, LL - DC Maintenance

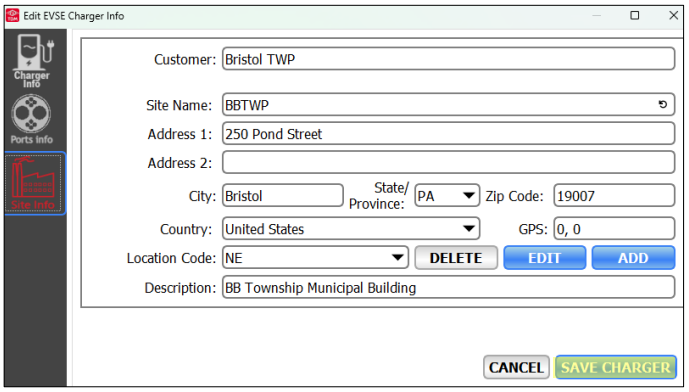
SAVE CHARGER



Port(s) Info Setup: Click Add Port

- **Port Name:** Can be user defined, or system default will name Port 1, Port 2, etc.
- **Port Type:**
  - CCS1_AC
  - CCS1_DC
  - Tesla_AC
  - Tesla_DC
  - CHAdeMO

SAVE CHARGER



Site Info Setup:

- **Customer Name**
- **Site Name**
- **Address/City/State/Zip/Country**
- **GPS:** Coordinates
- **Location Code:** User defined; can add on the fly
- **Description:** Open Form

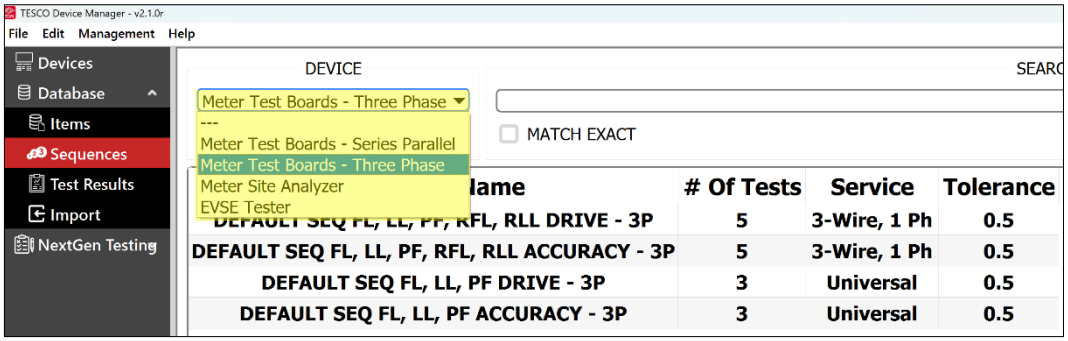
SAVE CHARGER

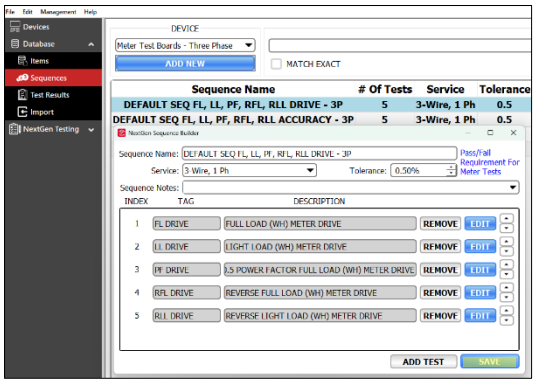
2. **Sequences:** The **Sequence Section** allows users to manage test sequences for different equipment types. These sequences define structured test procedures to ensure accurate and reliable metering results.

Devices/Equipment Using Sequences:

- **Meter Test Boards – Series Parallel**
- **Meter Test Boards – Three Phase**
- **Meter Site Analyzer**
- **EVSE Tester**

Users can create, edit, and manage sequence records to match testing requirements for various metering and EVSE applications.





Sequence Builder:

- **Sequence Name.**
- **Service.** Choose from:

Universal | 2-Wire 1 Ph | 3-Wire 1 Ph | 3-Wire Delta CG
3-Wire Network | 4-Wire Wye (2V2I) | 4-Wire (2V3I)
4-Wire Wye | 4-Wire Delta (3V2I) | 4-Wire Delta

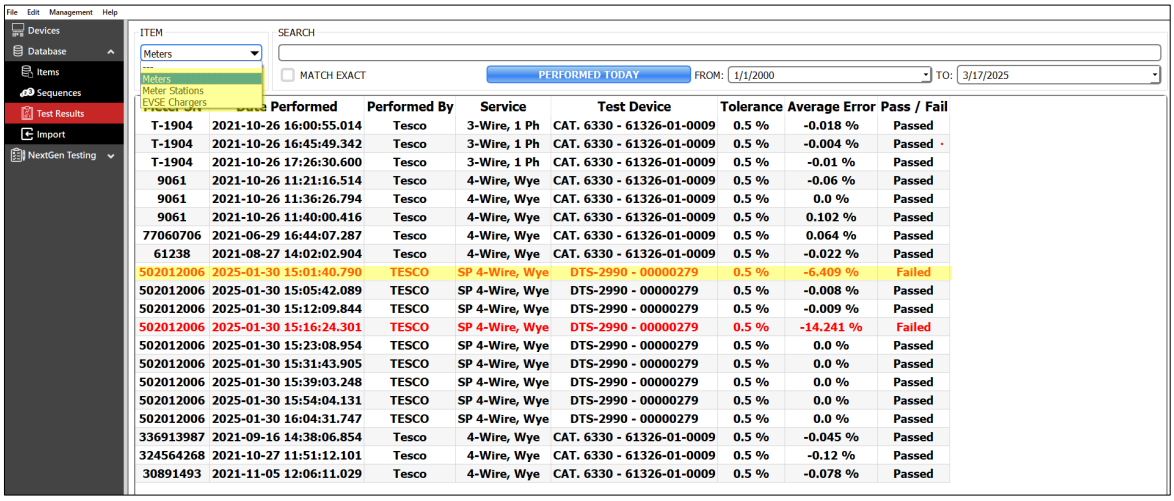
- **Tolerance %.** Pass/Fail Requirements
- **Sequence Notes.** Free form entry
- **INDEX Tag |Description**
  - TAG – Name/Type
  - Description – Brief explanation of what it is.

SAVE

3. Test Results

Users can view and export test results for:

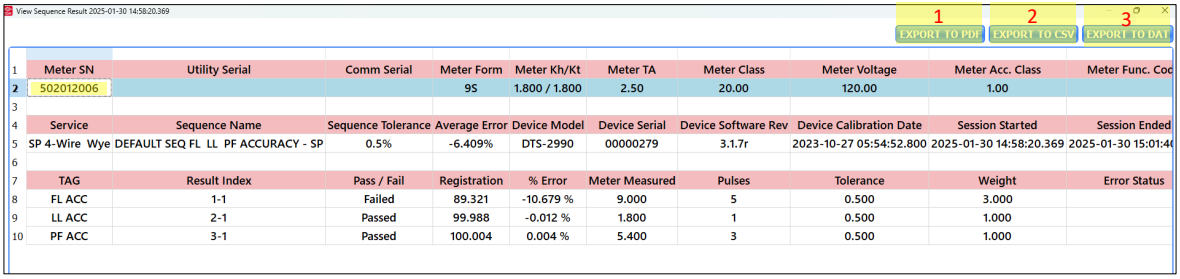
- Meters
- Meter Stations
- EVSE Chargers



	Performed	Performed By	Service	Test Device	Tolerance	Average Error	Pass / Fail
T-1904	2021-10-26 16:00:55.014	Tesco	3-Wire, 1 Ph	CAT. 6330 - 61326-01-0009	0.5 %	-0.018 %	Passed
T-1904	2021-10-26 16:45:49.342	Tesco	3-Wire, 1 Ph	CAT. 6330 - 61326-01-0009	0.5 %	-0.004 %	Passed
T-1904	2021-10-26 17:26:30.600	Tesco	3-Wire, 1 Ph	CAT. 6330 - 61326-01-0009	0.5 %	-0.01 %	Passed
9061	2021-10-26 11:21:16.514	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	-0.06 %	Passed
9061	2021-10-26 11:36:26.794	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	0.0 %	Passed
9061	2021-10-26 11:40:00.416	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	0.102 %	Passed
77060706	2021-06-29 16:44:07.287	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	0.064 %	Passed
61238	2021-08-27 14:02:02.904	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	-0.022 %	Passed
502012006	2025-01-30 15:01:40.790	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	-6.409 %	Failed
502012006	2025-01-30 15:05:42.089	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	-0.008 %	Passed
502012006	2025-01-30 15:12:09.844	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	-0.009 %	Passed
502012006	2025-01-30 15:16:24.301	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	-14.241 %	Failed
502012006	2025-01-30 15:23:08.954	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	0.0 %	Passed
502012006	2025-01-30 15:31:43.905	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	0.0 %	Passed
502012006	2025-01-30 15:39:03.248	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	0.0 %	Passed
502012006	2025-01-30 15:54:04.131	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	0.0 %	Passed
502012006	2025-01-30 16:04:31.747	TESCO	SP 4-Wire, Wye	DTS-2990 - 00000279	0.5 %	0.0 %	Passed
336913987	2021-09-16 14:38:06.854	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	-0.045 %	Passed
324564268	2021-10-27 11:51:12.101	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	-0.12 %	Passed
30891493	2021-11-05 12:06:11.029	Tesco	4-Wire, Wye	CAT. 6330 - 61326-01-0009	0.5 %	-0.078 %	Passed

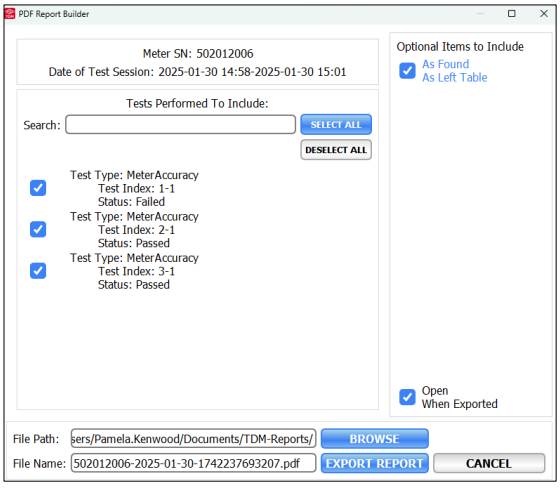
Easily Identify test failures by the red font; double click on the device you would like more information on and a new pop-up screen will open and show all the details for that record.

From here you have three choices: **EXPORT TO PDF, EXPORT TO CSV, EXPORT TO DAT** (data file) – will be saved automatically in the default path that is set in the system **(refer to section 11 for complete export instructions).**

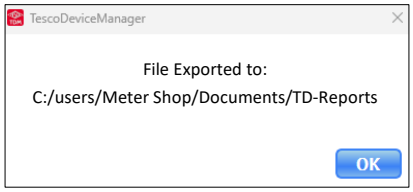


	Meter SN	Utility Serial	Comm Serial	Meter Form	Meter Kh/Kt	Meter TA	Meter Class	Meter Voltage	Meter Acc. Class	Meter Func. Coc
2	502012006			9S	1.800 / 1.800	2.50	20.00	120.00	1.00	
3										
4	Service	Sequence Name	Sequence Tolerance	Average Error	Device Model	Device Serial	Device Software Rev	Device Calibration Date	Session Started	Session Ended
5	SP 4-Wire Wye	DEFAULT SEQ FL LL PF ACCURACY - SP	0.5%	-6.409%	DTS-2990	00000279	3.1.7r	2023-10-27 05:54:52.800	2025-01-30 14:58:20.369	2025-01-30 15:01:4
6										
7	TAG	Result Index	Pass / Fail	Registration	% Error	Meter Measured	Pulses	Tolerance	Weight	Error Status
8	FL ACC	1-1	Failed	89.321	-10.679 %	9.000	5	0.500	3.000	
9	LL ACC	2-1	Passed	99.988	-0.012 %	1.800	1	0.500	1.000	
10	PF ACC	3-1	Passed	100.004	0.004 %	5.400	3	0.500	1.000	

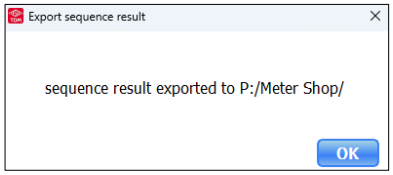
EXPORT TO PDF



EXPORT TO CSV



EXPORT TO DAT



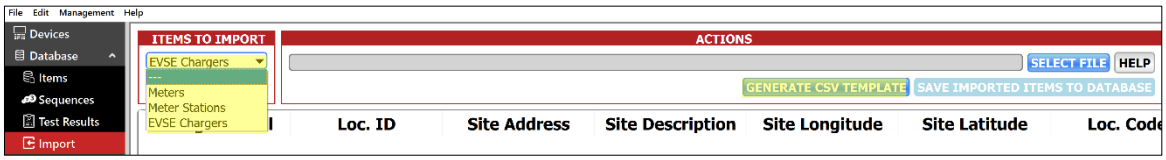
4. Import (Refer to Section 12 for complete import instructions).

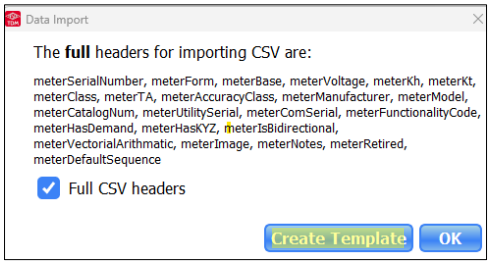
End users can import a CSV file to create **item records** for:

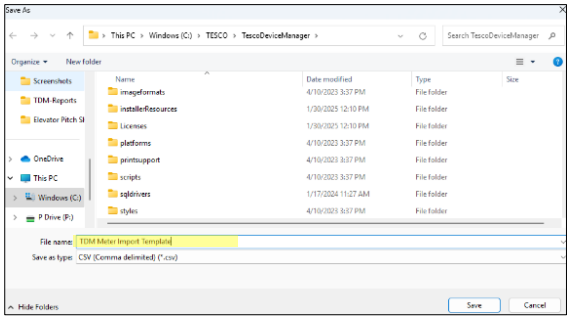
- Meters
- Meter Stations
- EVSE Chargers

To ensure accurate data mapping, the system can generate a CSV template to use, or you can choose to select a file. *Be sure that the template headers in your file match those of the CSV Template.

Use drop-down menu to pick item types to import, **click GENERATE CSV TEMPLATE** – a pop up will appear identifying headers for import. **Click Create Template**. Another popup will appear for end-user to choose path for file to be saved.





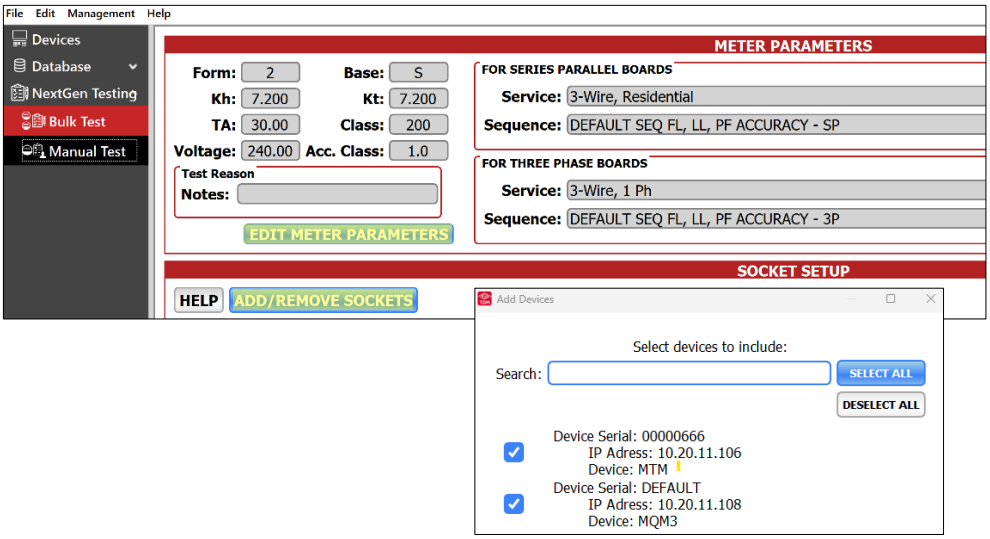


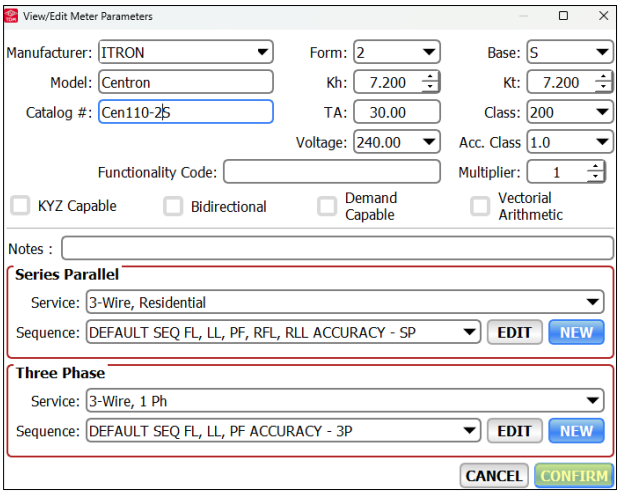
4.2.3 NextGen Testing

NextGen Testing allows users to control their meter test board(s) remotely. Meter shops can remotely trigger meter diagnostics, verify meter accuracy, check demand and KYZ pulse functionality and detect errors or tampering. Test choices include **Bulk Test** and **Manual Test**.

Bulk test allows you to test multiple devices/test boards simultaneously if they are connected to the network. The **Manual testing** is for just one device**.**

In the **Bulk Test** section, the end-user can set/edit meter parameters as well as add/remove sockets (devices to be tested).





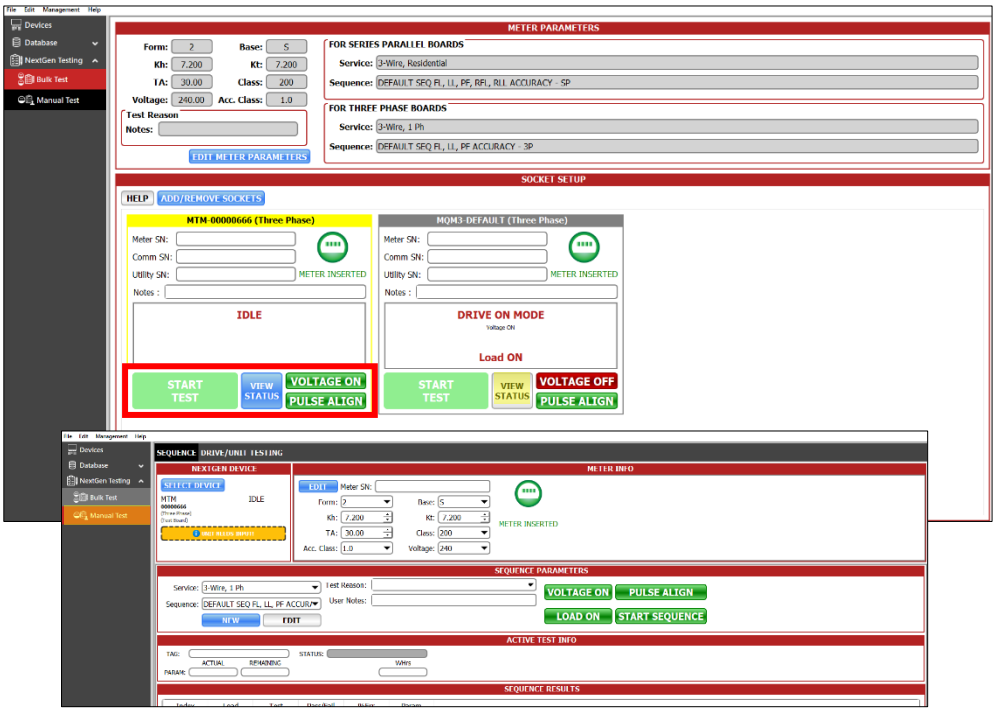
View/Edit Meter Parameters

- **Unit Details:** Manufacturer, Model, Cat#
- **Form | Base**
- **Kh | Kt | TA | Class | Voltage |Acc. Class**
- **Functionality Code**. Open Form
- **Multiplier**. Use up down arrow to select.
- **Meter Function:**
  KYZ Capable | Bidirectional
  Demand Capable | Vertical Arithmetic
- **Notes.** Free form entry
- **Series Parallel**. Service/Sequence
- **Three Phase**. Service/Sequence

CONFIRM

Bulk Testing. During the **bulk testing** process, end-users can:

- Start Test
- View Status
- Click Voltage On/Off
- Click Pulse Align/Stop P.A**.**



Note: Click "VIEW STATUS" will provide information specific to that meter. You will notice that manual test is highlighted – that is a result of viewing **one meters'** information. You are still in **Bulk Testing**. Click on **Bulk Test** once again and it will bring you back to your Bulk Testing Screen.

Manual Testing. During manual testing select the device you wish to test.

With a **Manual test** you will find two different tabs:

- Sequence: certify meters to precise specifications.
- Drive/Unit Testing: simulate field conditions.

1. **Sequence: This** tab is used for **manual test step control**—essentially walking through a test plan one step at a time, typically with the help of a reference standard.

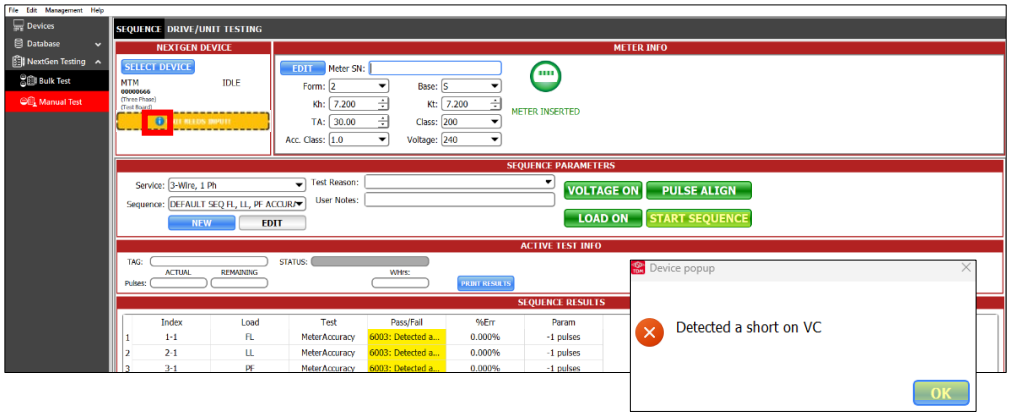
   Use Case in a Meter Shop:

   - When a technician wants to **manually validate each element** of the meter test process (e.g., different loads, power factors, or service types).
   - Ideal for **custom tests**, **troubleshooting**, or when **fine control** is needed over the test environment.
   - Each step in the sequence might change things like current/voltage levels or timing, and the operator can choose to advance or repeat steps.

   Why It Matters:

   - Gives full control for **diagnostic** or **non-standard tests**.
   - Helpful for training new technicians, so they can see the result of each test step.
   - Useful when testing complex meters that might not fit into a default auto test plan.

   End-users select a device; attributes associated with that meter are populated automatically. Click **EDIT** if any of the information needs to change because of configuration differences, test procedure adjustments, field conditions or regulatory/compliance updates. Once sequence is selected click **START SEQUENCE** to test.



Protocols have been set in place to notify end-users of any issues that need to be addressed. In this example you will see a flashing message "**unit needs input**" notifying you that attention is required and that there is a possible issue detected. Click on the **i** to find out what the issue is. In this case the system **Detected a short on VC,** informing you that perhaps you will need to verify the wiring, check for damage, and troubleshoot as needed. Click **OK** to close the window.

NOTE: Once the issue is recognized by clicking **OK**, the flashing message will disappear.

2. Drive/Unit Testing

Drive/Unit testing is central to **manual control testing** in a meter shop and gives technicians real-time control over the power applied to the meter.

Let's break the screen down into five sections (see image below – section 5 GRAPHS):

Section 1: NEXTGEN DEVICE

Select **Device** (this list displays all devices/test boards that are connected to network).

Note:
The **Meter Information** section is dynamic and will automatically adjust based on the type of device or test board selected. For example, selecting a Three Phase Test Board, Three Phase Qualification Board, or Series Parallel Qualification Board will display different configuration fields specific to the capabilities and requirements of that hardware. Ensure that the correct test board is selected prior to entering meter data, as this directly affects the available input options and test parameters.

Section 2: METER INFORMATION

If applicable, Click **EDIT** if you need to change any of the following parameters:

Meter SN (Serial Number): Internal tracking of the specific meter being tested.

Comm Serial / Utility Serial: Optional fields for **communication module serial number** or a **utility-assigned identifie**r.

Manufacturer: Dropdown to select the manufacturer (e.g., Landis+Gyr, Itron, etc.).

Model: Specific model number of the meter.

Catalog #: Internal reference or part number for utility inventory tracking.

Meter Notes: Free text field for special conditions, known issues, or testing context.

Form: Indicates the meter wiring configuration (e.g., 9S for 3-phase, 4-wire).

Base: Typically either *S* (socket-based) or *A* (bottom-connected).

Kh: Watt-hour constant; the energy represented by one pulse.

Kt: Test constant; used by the test system to calculate expected pulses.

TA: Test Amps; usually matches CT rating or nominal current for test setup.

Class: Meter class, representing load capacity (e.g., Class 20 = 20 amps).

Voltage: Nominal service voltage the meter is rated for.

Acc. Class: Accuracy class, such as 0.5 or 1.0 – defines the maximum allowable error under test.

Multiplier: External multiplier applied when actual load exceeds meter capacity (common in CT-rated meters).

Functionality Code: Optional entry to capture special features or firmware revisions.

☐ Check box for:

Bidirectional: Indicates the meter can measure both import and export energy (used for net metering or solar applications).

KYZ Capable: The meter has KYZ outputs—dry contact pulse outputs for load profiling or SCADA integration.

Demand Capable: Meter supports demand measurements (e.g., kW demand tracking).

Vectorial Arithmetic: Meter uses vector math (phasors) instead of arithmetic summation—important for polyphase power accuracy.

Click **continue** to save changes.

Section 3: Drive Section

RMS / PHASE / WAVEFORM Settings:

- **VA / VB / VC**: Voltage each phase
- **IA / IB / IC**: Current
- **Phase Angles**: Represents the timing offset of each phase.
- **Waveform**: The availability of specific waveform options depends on the selected device/test board and the configured service type (e.g., 4-Wire Wye, Delta, Series-Parallel, etc.). Not all waveforms are available for every configuration.

Waveform	Description
SINUSOIDAL	Standard clean sine wave; used in most accuracy tests
Quad_V.ansi/Quad_I.ansi	Quadrature waveforms (90° phase shift) to simulate leading/lagging loads
Pulse_V.ansi/Pulse_I.ansi	Pulsed waveform to simulate rapidly switching or bursty loads
Peaked_V.ansi/Peaked_I.ansi	Peaked or high crest factor waveform; used for testing non-linear load effects
MZCV / MZCC (V/I)	Custom waveforms used for meter qualification or standard compliance testing
90_deg_V.ansi / 90_deg_I.ansi	Extreme 90-degree phase shift to test reactive power scenarios
3rd Harmonic	Voltage waveform with injected 3rd harmonic distortion

Section 4: TEST PARAMETERS

The Test Parameters section is dynamically configured based on the selected device or test board. Not all test boards support the same range of test types, and available fields may change accordingly. For example, a three-phase Qualification Board may only allow one test type and duration while a three-phase Test Board will have a choice of test type, pulses, warm up, tolerance, iterations and measurement type.

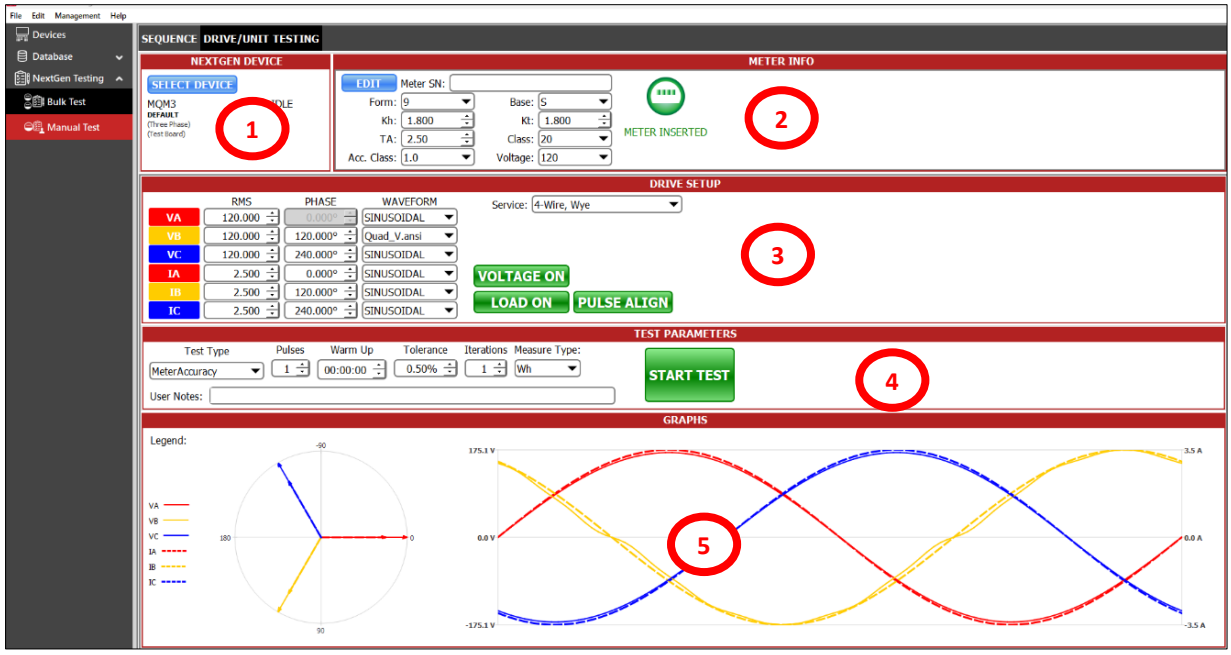
Select: **Test Type**. (Some) Test Types Available

Test Type	Purpose
Meter Accuracy	Verifies meter accuracy against a reference standard by comparing pulses to expected values.
Meter Drive	Tests the mechanical drive of the meter (used for electro-mechanical units).
Meter Time Run	Measures the time it takes for a specific number of pulses—used in legacy methods.
Meter Timed Register	Times the register's operation over a known load condition.
Meter Energy Delivery	Confirms the meter is recording energy flow correctly (especially in bi-directional meters).
Meter Demand	Evaluates the meter's ability to calculate and report demand over time.

Click: **Start Test**

Section 5: GRAPHS

The graphs section provides a real-time visual representation of the voltage and current waveforms applied to the meter under test.



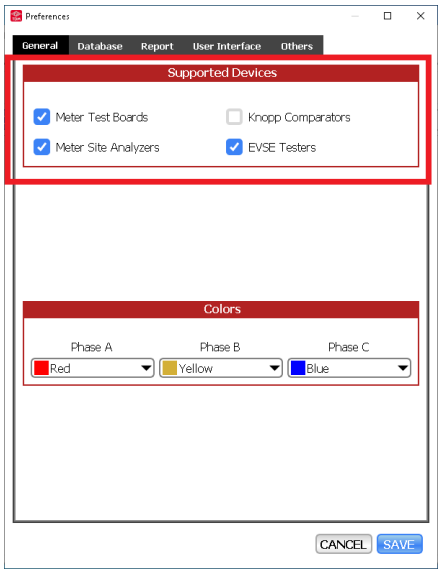
5 SETTING UP PREFERENCES IN TDM

The *Preferences* section of TDM allows users to tailor the software environment to meet their specific needs and workflow requirements. From selecting the devices you'll be working with—such as test boards, site analyzers, or EVSE testers—to customize the visual elements of charts, diagrams, and graphs, this area provides flexibility to align TDM with your operational standards.

Here, users can define critical settings such as backup locations for the TDM database, default directories for saving reports, and even the structure and nomenclature of reporting fields. Customization options also extend to reporting capabilities, ensuring that the data output from TDM matches the format and style preferred by your organization.

By configuring these preferences, users can enhance efficiency, maintain consistency, and create a more intuitive and user-friendly experience within the TDM platform.

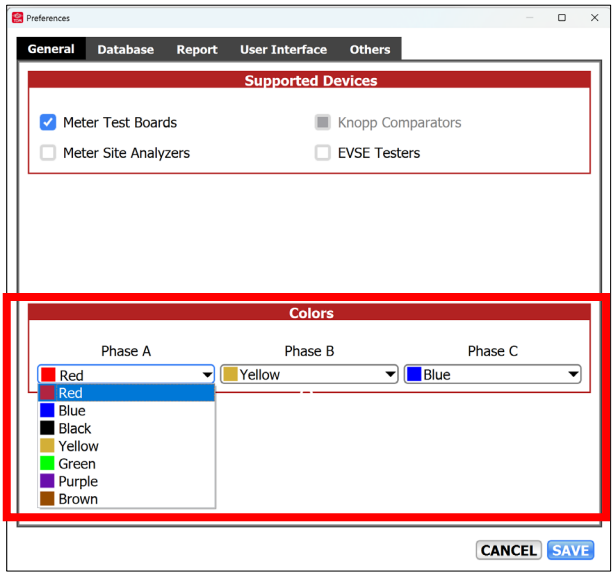
5.1 Setting Supported Devices



On the **General Tab** you choose two settings: supported devices & color scheme for reporting purposes.

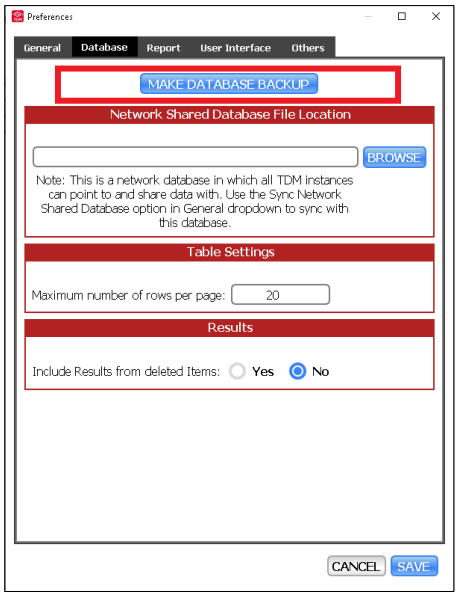
The first setting allows users to select the supported device types they plan to use within TDM—such as Meter Test Boards, Meter Site Analyzers, or Knopp Comparators. Enabling a device type prompts the system to recognize and communicate with that equipment, unlocking all relevant features for testing and data collection. Disabling a device type will hide and deactivate any associated tools or functions to streamline the interface.

5.2 Setting Colors for Charts/Diagrams/Graphs



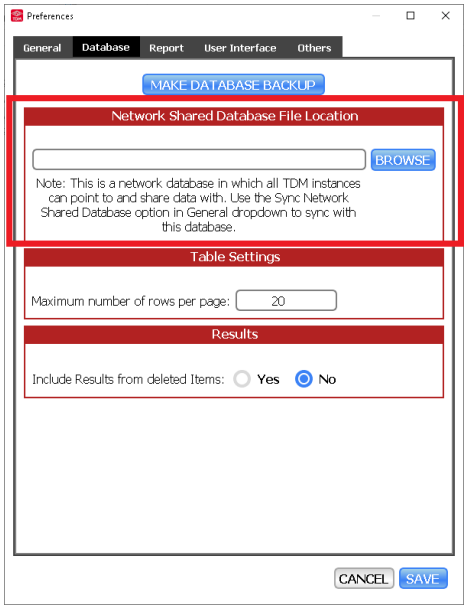
The second setting customizes the colors used in charts and diagrams, including Phasor diagrams and waveform setup previews. This allows you to create visually distinct and easy-to-read representations of your data, helping you quickly analyze patterns and insights.

5.3 Backing up TDM's Database



This option allows users to create a secure backup copy of TDM's database, helping to preserve data integrity and prevent loss in the event of system failure or unexpected issues.

5.4 Creating and Syncing with a database on a Network folder



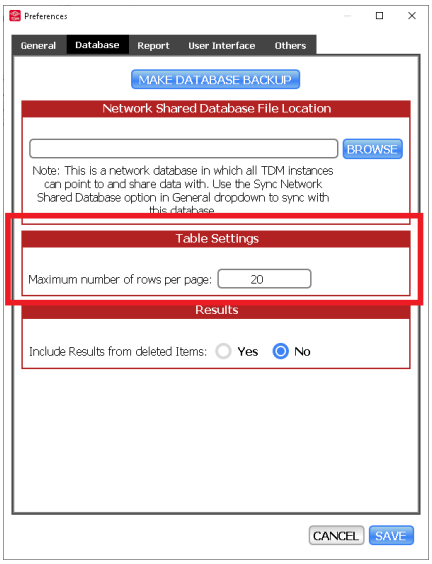
Network Shared Database File Location allows users to specify the path to a shared folder on a network drive, enabling TDM to access and store its database in a centralized location. If a database does not already exist at the specified path, TDM will automatically create one.

This feature is designed to support collaboration by allowing multiple TDM users to connect to the same network database. When all instances of TDM are pointed to this shared location, users can maintain a consistent and up-to-date dataset across systems.

To enable this functionality, the selected path must be located on a shared network drive accessible to all intended users. Once configured, the option to **Sync with Network Drive Database** becomes available under the *File* menu on the toolbar. This allows users to share their local data by pushing it to the shared network database—ideal for updating the centralized repository with new data pulled from field devices.

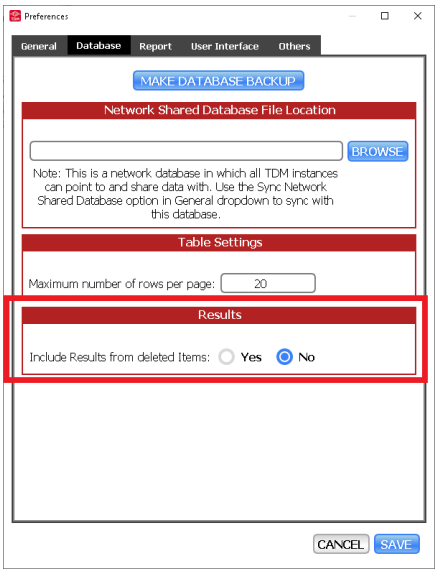
Note: Use the *Sync Network Shared Database* option in the *General* dropdown to ensure your local TDM instance stays in sync with the shared network database.

5.5 Changing the number of rows shown at a time on the tables in TDM



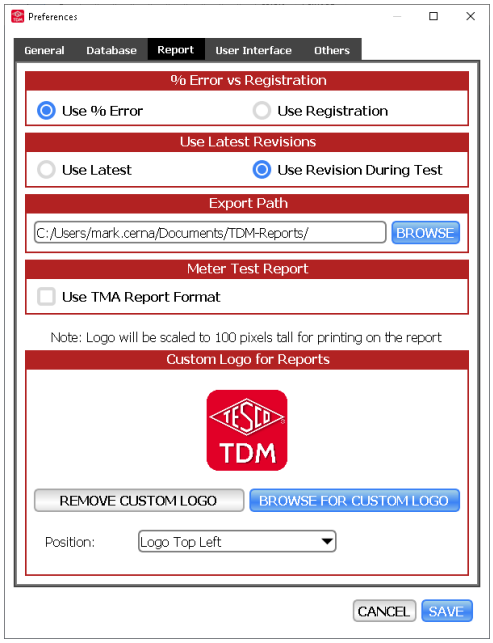
This setting allows users to define the number of rows displayed in TDM tables, primarily affecting tables on the Database page and sync popup tables.

5.6 Showing results from deleted Items



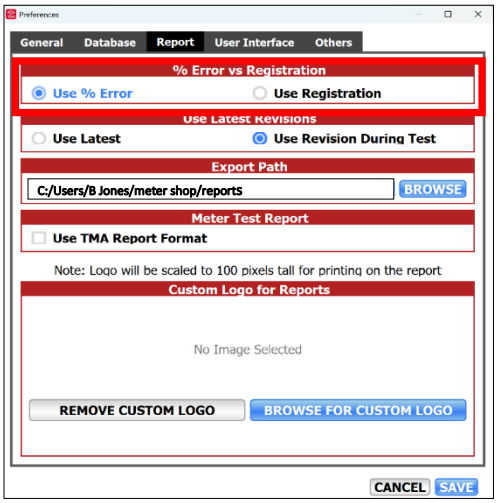
This setting allows users to include or exclude test results associated with deleted items—such as Meters, Meter Stations, or EVSE Chargers—from the database results table. When set to **Yes**, results from previously deleted items (including Meter Sequence Results, Meter Station Sequence Results, and EVSE Sequence Results) will continue to appear in the results display. When set to **No**, these results will be hidden from view.

5.7 Setting Report preferences



The **Report** tab allows users to tailor the appearance and content of test reports generated by TDM. These settings control formatting, data references, export preferences, and branding. **Please note changes made in this tab will only apply to reports generated after the changes are saved.**

5.7.1 % Error vs Registration

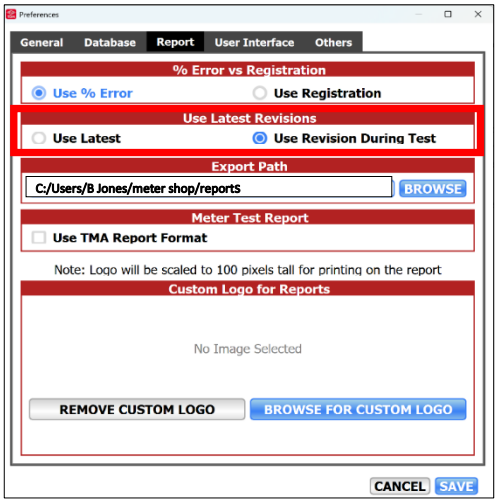


This setting determines how measurement results are displayed in the final calibration report. Users can choose between two display formats:

- **Use % Error**: This is the default and most commonly used format. It displays the measurement result as a percentage error, calculated using the difference between the reference value and the DUT (Device Under Test) value. This format is recommended for most testing scenarios and aligns with standard accuracy reporting methods used in compliance testing.
- **Use Registration**: This option displays the DUT's actual registered value (such as pulse count or energy reading) instead of calculating a percentage error. It is typically used when comparing energy registration or pulse-based devices and may be required in specific testing protocols.

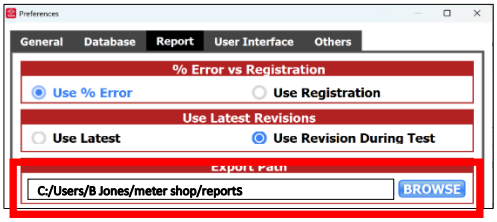
Recommendation: Unless your calibration process specifically requires registration values, it is recommended to use **% Error** for consistency, traceability, and reporting clarity.

5.7.2 Use Latest Revisions



By default, TDM will use the Revision during test. However, users may discover that they must make some corrections on the item records, i.e. Meter's manufacturer is incorrect. By selecting "Use Latest" after making the changes, TDM will use the updated information in exporting the reports.

5.7.3 Export Path

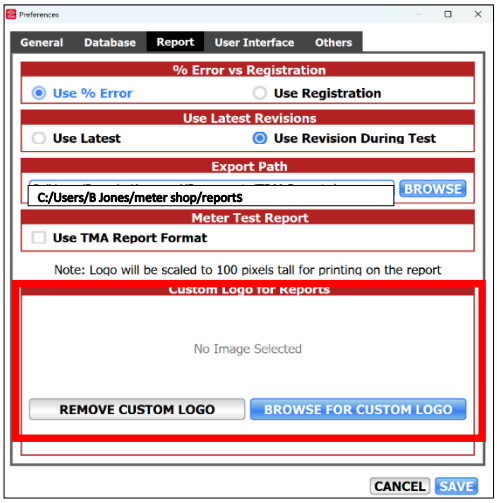


The Export Path field specifies the folder location where all calibration reports will be saved. Users can modify this path by clicking the "Browse" button and selecting a preferred directory.

5.7.4 Meter Test Report

By default, TDM generates calibration reports using its own standardized format. If preferred, users can select the **"Use TMA Report Format"** option to generate reports in the legacy style used by TESCO's previous software, TMA. This option may be helpful for end users who are familiar with that format or who require consistency with historical documentation.
Note: The TMA format is optional and primarily provided for backward compatibility.

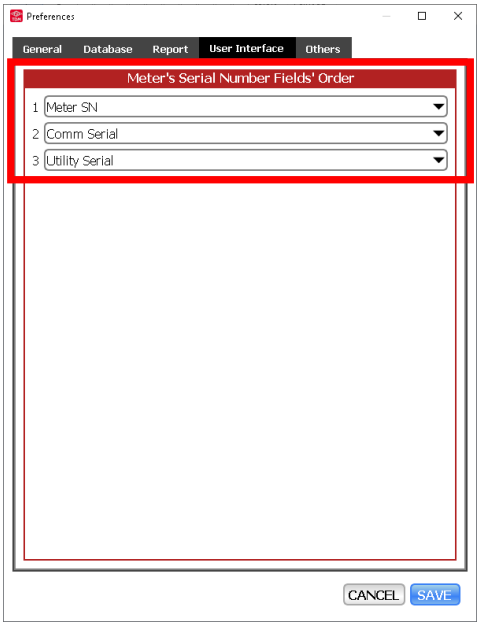
5.7.5 Custom Logo for Reports



TDM allows users to personalize their calibration reports by adding a company logo. To upload a logo, click **"Browse for Custom Logo"** and select an image file in one of the supported formats: .jpg, .jpeg, .bmp, or .png. The selected image will be scaled to a height of 100 pixels for optimal placement on the report.

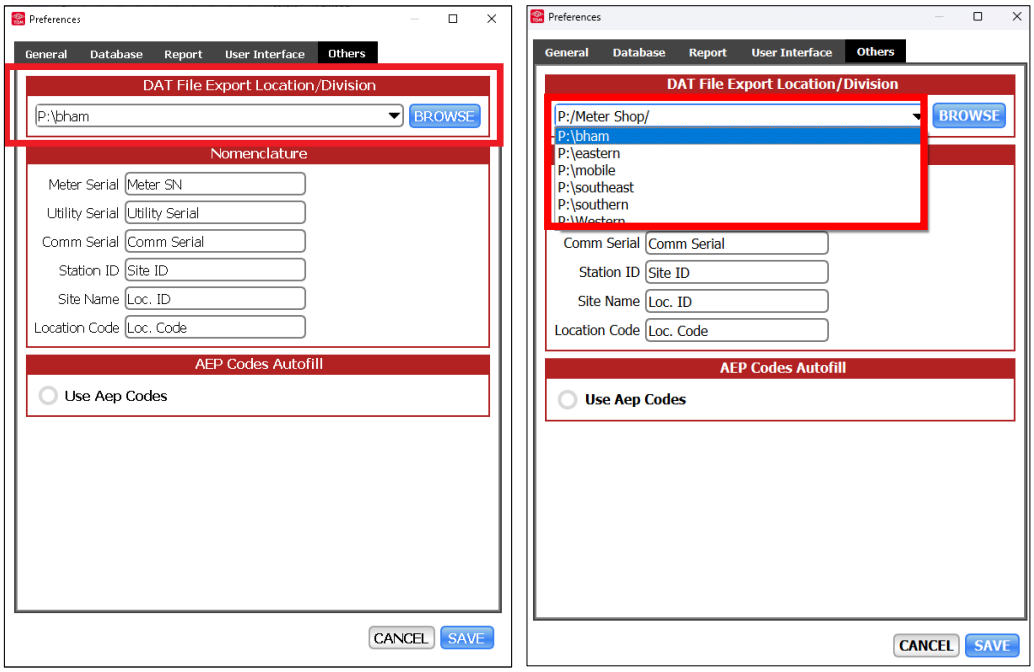
Note: You can remove or update the logo at any time using the **"Remove Custom Logo"** or **"Browse for Custom Logo"** options.

5.8 Changing the placement order of Meter Serial fields



By default, the meter serial fields are arranged in the following order: **Meter Serial Number**, **Comm Serial**, and then **Utility Serial**. Users may modify this sequence as needed to align with their organizational preferences or reporting standards.

5.9 Setting the default DAT file export location



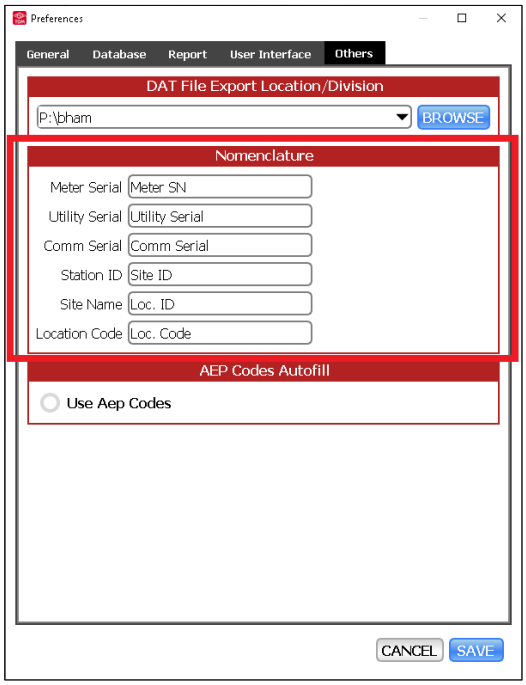
When TDM exports DAT files, it references a predefined export path. The following preset locations are currently available:

1. P:/bham
2. P:/eastern
3. P:/mobile
4. P:/southeast
5. P:/southern
6. P:/Western

Alternatively, users may define a custom export path by clicking **"Browse"** and selecting a preferred directory.

Note: Ensure the selected path is accessible to all users who will need to retrieve or upload DAT files.

5.10 Changing the displayed text for certain labels

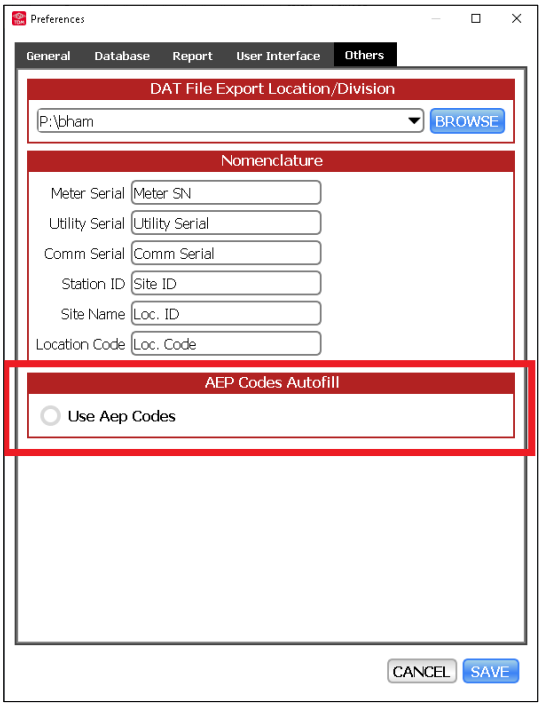


TDM allows users to customize the displayed text for specific labels to better match internal naming conventions. The following labels can be renamed:

1. Meter SN
2. Utility Serial
3. Comm Serial
4. Site ID
5. Loc. ID
6. Loc. Code

Note: Updating label text affects only how the fields are displayed within the application and reports. It does not alter the underlying database fields or stored data.

5.11 Autofill based on AEP Codes



TDM offers an optional experimental feature that can automatically populate meter information when entering a meter's serial number. As the serial number is typed, the system attempts to match the initial characters with a known **AEP code**, then fills in the corresponding meter details.

This feature uses the AEP Code–Meter Information mapping provided by:
https://www.aep.com/b2b/meterbarcodes/

Note: This feature is experimental and may not be compatible with all serial number formats or meter types.

6 SETTING TESCO DEVICES UP WITH TDM

6.1 Setting up a device's network connection

TESCO Device Manager (TDM) communicates with TESCO devices over a network connection. Depending on your organization's IT environment and security requirements, there are two supported methods for establishing this connection:

1. **Through a Router, Switch, or Ethernet Wall Jack**
   Connect the TESCO device to your network using a standard Ethernet cable. This allows the device to operate within your organization's network infrastructure, making it accessible to TDM from any authorized workstation on the same network.

2. **Peer-to-Peer (Ad-Hoc) Connection**
   For standalone setups or restricted network environments, you can connect the TESCO device

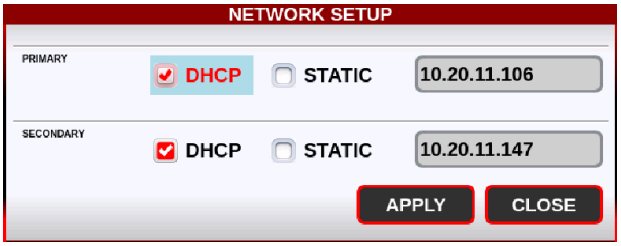
directly to a laptop or PC using an Ethernet cable. This creates a direct point-to-point connection without requiring additional networking equipment.

Note: Configuration steps for each method, including IP address setup and scanning options, are detailed below

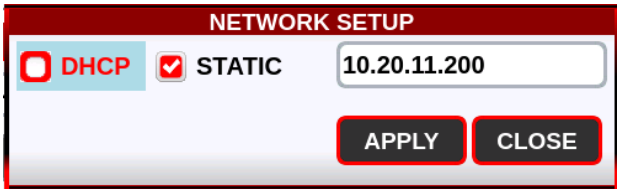
6.1.1 Through a router/switch/ethernet wall jack

To connect a TESCO device to TDM over your organization's network:

1. Use an Ethernet cable to connect the TESCO device (such as a meter test board, meter site analyzer, or EVSE tester) to an available router, network switch, or Ethernet wall jack.
2. On the TESCO device, navigate to its **Network Settings** to locate the current IP address:
    a. For **Meter Test Boards**:
    Navigate to SETTINGS → PREFS → GENERAL → NETWORK
    Some models may display two IP addresses; if so, note the **primary address**.



    b. For **Meter Site Analyzers and EVSE Testers**:
    Navigate to PREFS → GENERAL → NETWORK.



Optional: You may choose to assign a **static IP address** to the TESCO device. To do so, check the **"STATIC"** option and enter the desired IP address manually.

⚠️ ***Important*: If using a static IP, consult with your IT team to ensure the address does not conflict with other devices on the network.**

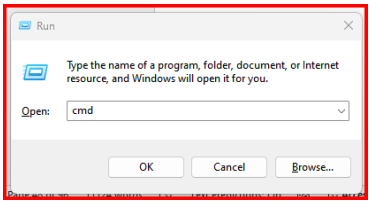
6.1.2 Peer-to-Peer/Ad-Hoc

A peer-to-peer (or "ad-hoc") connection allows you to connect a TESCO device directly to a PC or laptop using an Ethernet cable, without requiring a router or switch. This method is ideal for standalone setups or when working outside of a corporate network.

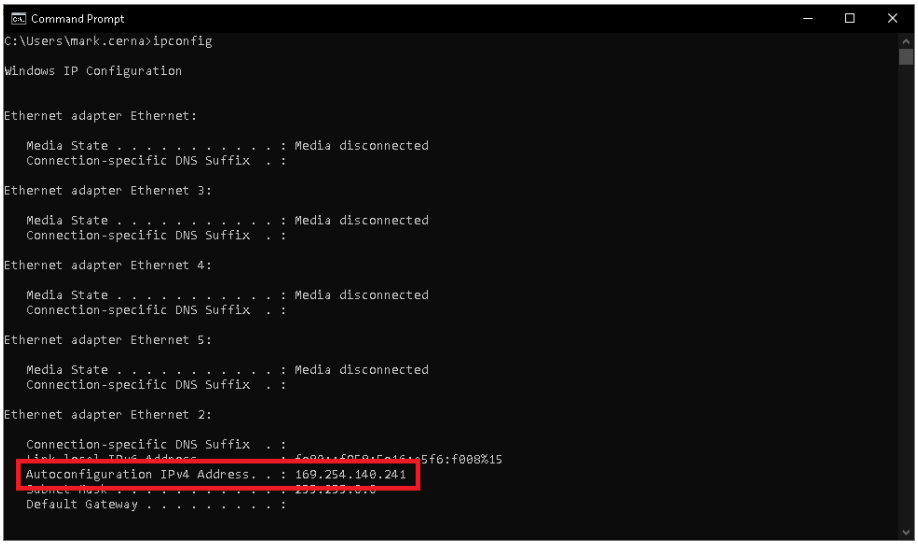
Step-By-Step Instructions:

1. **Connect the Devices**
   Using an Ethernet cable, connect the **TESCO device** (e.g., **Meter Test Board**, **Meter Site Analyzer**, or **EVSE Tester**) directly to a Windows laptop or PC.
2. **Check the Computer's Auto-IP Address**
   On your PC:
   a. Press **Windows + R** to open the **Run** dialog.

   b. Type cmd and press **Enter** to launch the Command Prompt.



   c. In the Command Prompt, type ipconfig and press **Enter**.
   d. Locate the **Autoconfiguration IPv4 Address** (typically starts with 169.254.x.x).
   Example: *169.254.140.241* — this is your PC's address on the ad-hoc network.



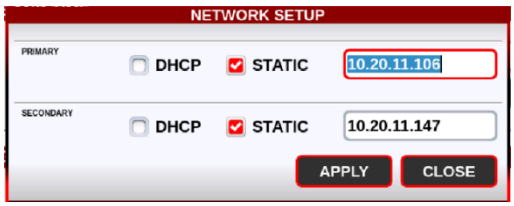
3. **Configure the TESCO Device's Network Settings**
   On the **TESCO device**, you will assign a compatible static IP address that is in the same range but not identical to the PC's.

- If your PC address is 169.254.140.241, set the TESCO device to 169.254.140.242.

⚠️ Do not use the same IP address as your PC. Acceptable range: 169.254.140.0 – 169.254.140.255 (excluding the PC's IP).

Accessing Network Settings on TESCO Devices:

- **For Meter Test Boards**:
  Navigate to SETTINGS → PREFS → GENERAL → NETWORK

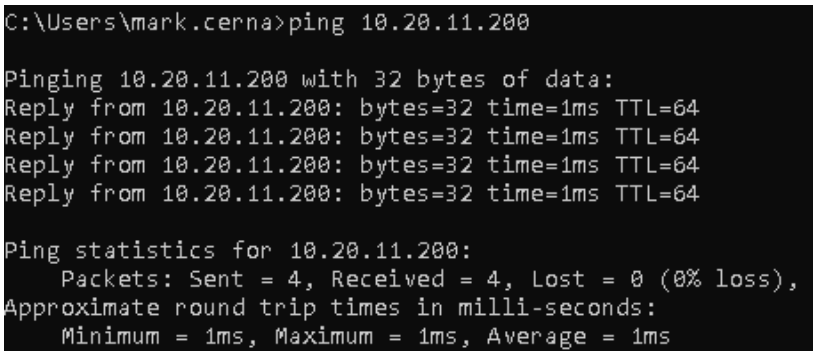


- **For Meter Site Analyzers and EVSE Testers**: Navigate to
  PREFS → GENERAL → NETWORK

- Set the mode to **STATIC**
- Enter the selected IP address
- Click **APPLY**, then **CLOSE**

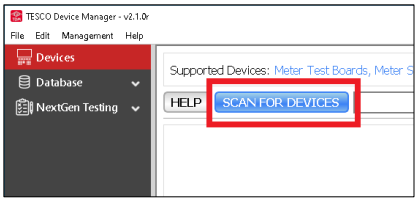
4. **Optional: Confirm the Connection**
   Back on your PC, you can confirm the devices are communicating:

- Open the Command Prompt.
- Type ping followed by the IP address you assigned to the TESCO device (e.g., ping 169.254.140.242) and press **Enter**.
- If the setup is correct, you should receive a reply, indicating that the connection is active.

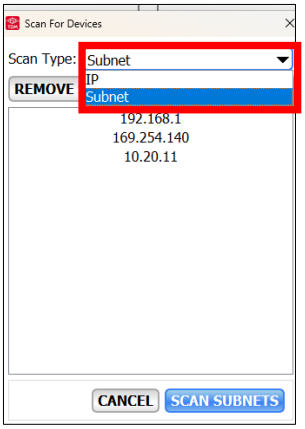


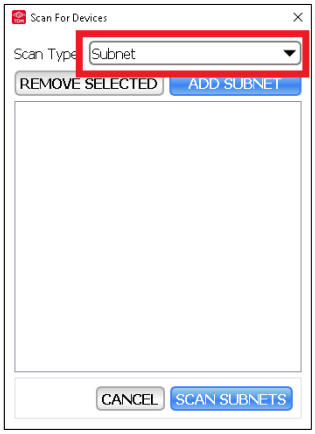
6.2 Adding a subnet to the scan list and performing a network scan

1. In TDM, click **“Devices”** from the side menu, then select **“Scan for Devices”** to open the device scan window.

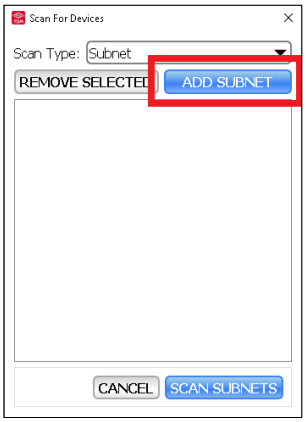


2. In the **Scan for Devices** popup window, select **“Subnet”** from the scan type dropdown menu.

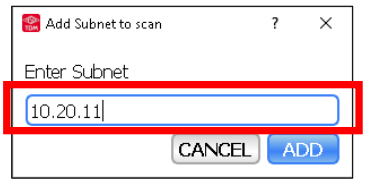




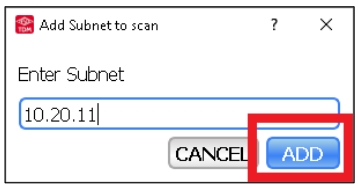
3. Click “**ADD SUBNET**” button.



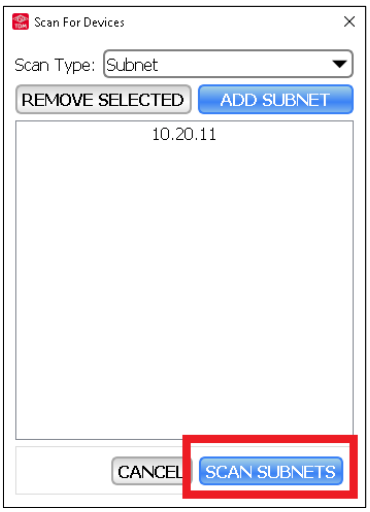
4. In the **Add Subnet** popup, enter the first three groups of numbers from the TESCO device’s IP address (left to right). For example, if the TESCO device has an IP address of “10.20.11.242”, you will need to enter “10.20.11”.



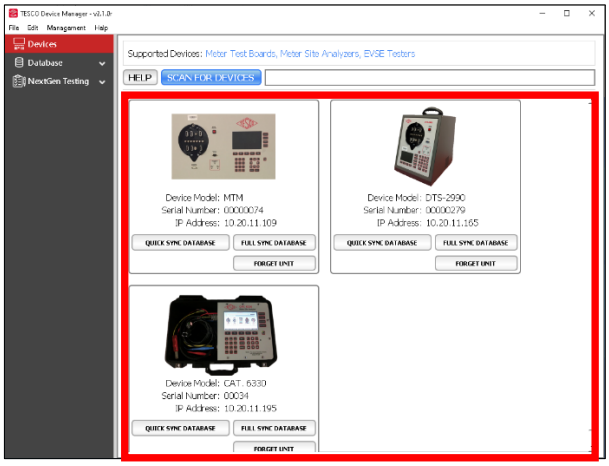
5. Click **“Add”** to save the subnet to the list.



6. Click “**SCAN SUBNETS**” to begin scanning the specified network range.



7. Any detected TESCO devices will be listed on the **Devices** page.



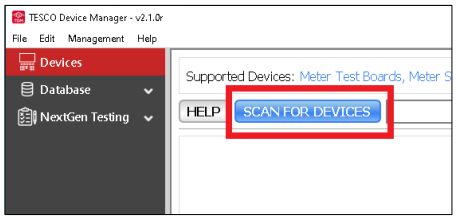
Tip: Scanning by subnet is ideal for finding multiple devices on a shared network without needing to know individual IP addresses.

6.3 Adding an IP address to the scan list and performing a network scan

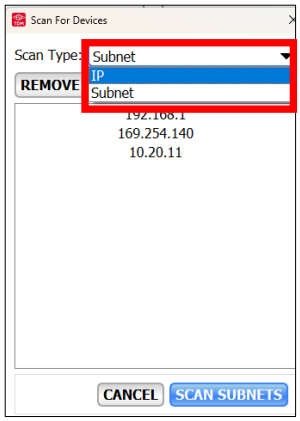
This option allows you to scan for a specific TESCO device when you know its exact IP address. It's useful when working with static IP assignments or when scanning a broad subnet is not necessary.

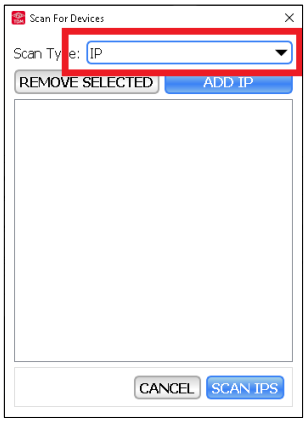
Step-by-Step Instructions:

1. In TDM, click **"Devices"** from the side menu, then select **"Scan for Devices"** to open the scan window.



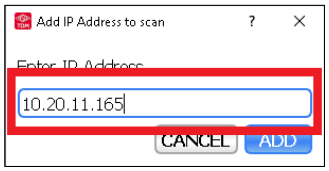
2. In the **Scan for Devices** popup, choose **"IP"** from the scan type dropdown menu.



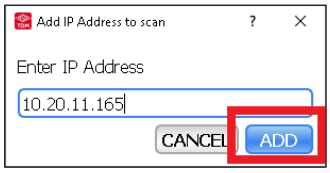


3. Click the **“Add IP”** button.

4. In the **Add IP Address to Scan** popup, enter the full IP address of the TESCO device.

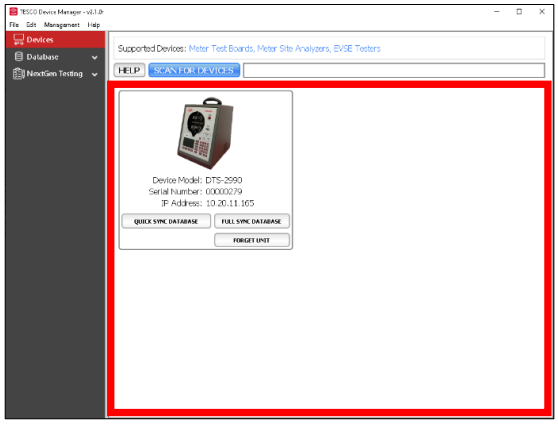


5. Click **“Add”** to close the popup and save the IP address to the scan list.



6. Click **“Scan IPs”** to begin scanning the specified address.

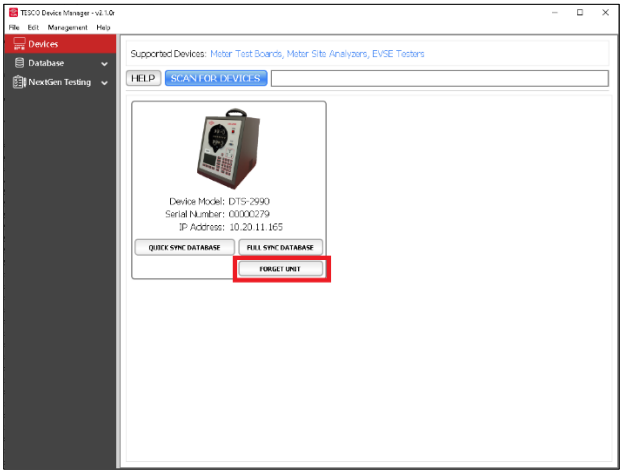
7. Any discovered TESCO devices will appear on the **Devices** page.



Scanning by IP *is* ideal when you're connecting to a **single known device** — especially when you already know the exact IP address.

6.4 Removing/Forgetting a device

If a device is no longer in use or needs to be removed from the TDM device list, you can manually delete it using the **Forget Unit** option.



Step-by-Step Instructions:

1. Navigate to the **Devices** page in TDM.
2. Locate the device you wish to remove.
3. Click the **"FORGET UNIT"** button on that device's cell.

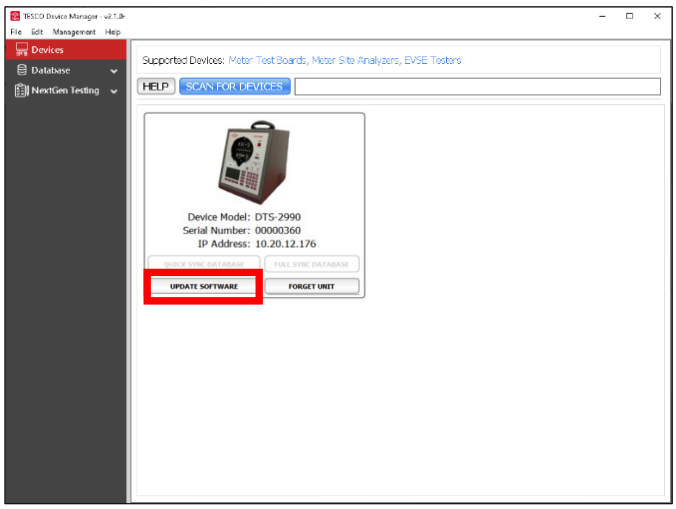
Once selected, the device will be removed from the visible list and will no longer appear in future scans unless re-added.

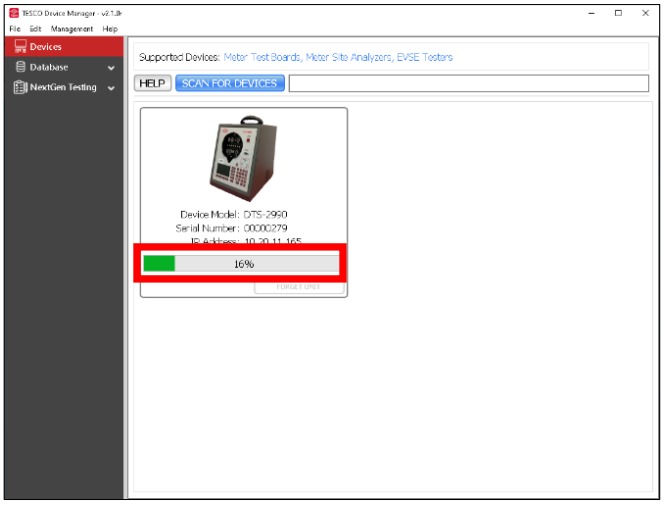
Note: This action only removes the device from the current view in TDM. It does not affect the device itself or its network settings.

6.5 Performing Software update on a device

⚠️ **WARNING**: Ensure the device's network connection is stable before starting a software update. Interruptions during the update process may result in incomplete installation or device communication issues.

TDM allows users to update the software on supported TESCO devices when a newer version is available. **This option is only visible if the device is running outdated software**.





Step-by-Step Instructions:

1. On the **Devices** page, locate the TESCO device you wish to update.
2. If the device is eligible for an update, an **"UPDATE SOFTWARE"** button will appear on its device cell.
3. Click **"UPDATE SOFTWARE"** to begin the update process.

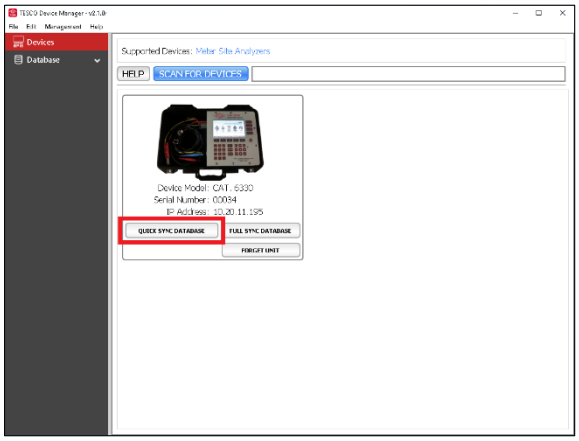
During the update, the device's screen may go blank (white or black) and restart automatically. This is normal behavior.

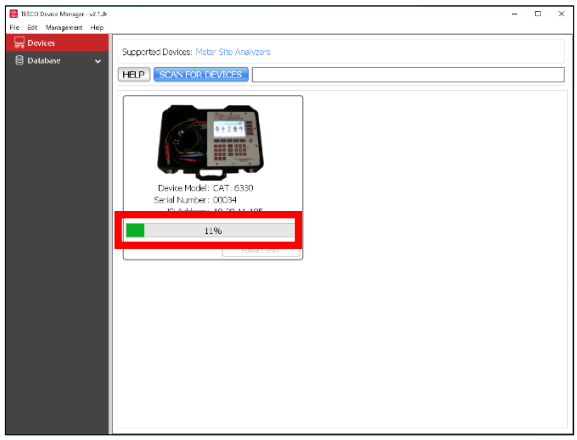
4. A progress bar will appear on the device cell in TDM, showing the update status in real time.
5. Once the update is complete, the device will automatically reboot and return to its normal operating state.

Note: Do not disconnect power or network cables while the update is in progress.

7. PULLING RECORDS FROM A DEVICE TO TDM (Quick Sync)

Clicking the **"Quick Sync Database"** button on the device cell initiates a one-way transfer of data from the connected device to your local TDM installation. This process updates the local database stored on your computer with the latest records from the device.





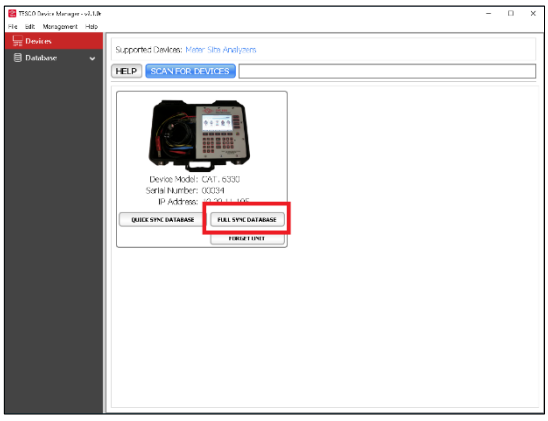
Step-by-Step Instructions:

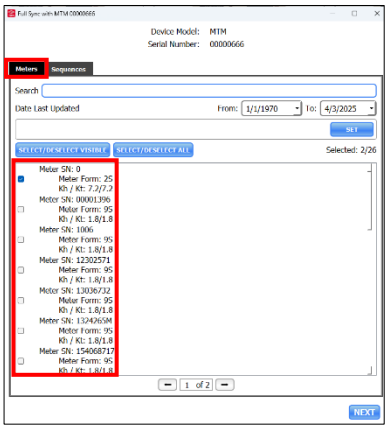
1. On the **Devices** page, locate the device from which you want to pull records.
2. Click the **"QUICK SYNC DATABASE"** button on the device cell.

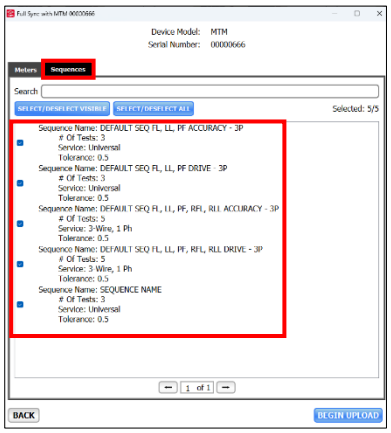
A progress bar will appear, indicating the status of the synchronization process. Once complete, the retrieved records will be available in the local TDM database for review or export.

Note: This action does not remove or alter records on the device itself. It simply ensures that your local copy of the database reflects the most current data available.

8. MANAGING RECORDS ON A DEVICE (Full Sync)







To manage meter and sequence records stored on a TESCO device, click the **"Full Sync Database"** button located on the device cell.

This will open the **Full Sync** window for the selected device.

Unlike Quick Sync, which only pulls data from the device into TDM, **Full Sync is bidirectional** — meaning it updates and synchronizes records **between the device and your local TDM database**.

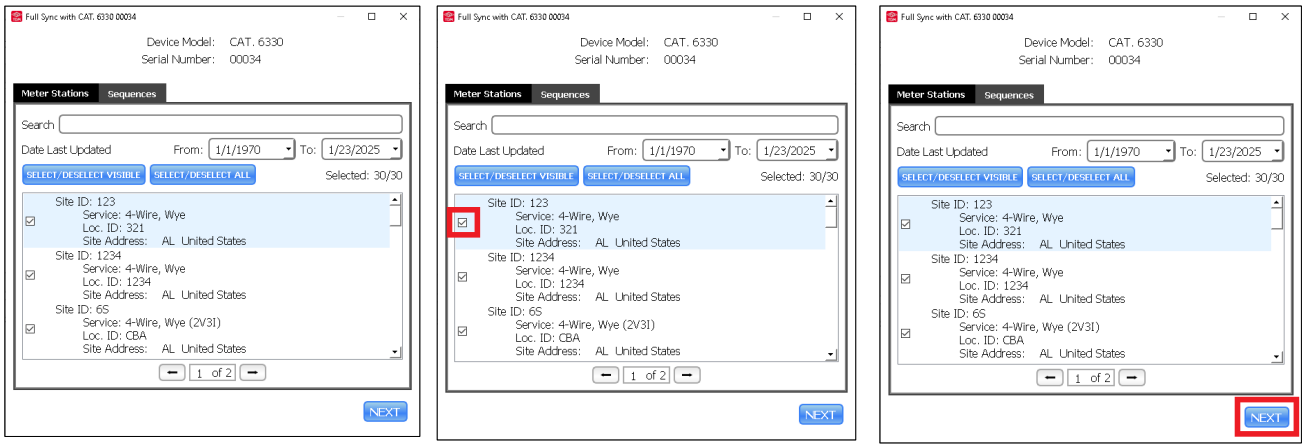
Once the Full Sync window is open, you can review and select which items should be retained or removed on the device. The interface is organized into two tabs:

- **Meters** – Displays all meter records available for syncing. Please refer to section **8.1** for more information/instructions.
- **Sequences** – Displays all test sequences available for syncing. Please refer to section **8.2** for more information/instructions.

After selecting the desired records, click **"Next"** to proceed through the tabs, then select **"Begin Upload"** to finalize the sync.

8.1 Selecting which items to keep on the device

The items displayed in this section will vary depending on the connected device type. Items that are **checked** indicate records currently stored on the device, while **unchecked** items are not present on the device but still exist in TDM.



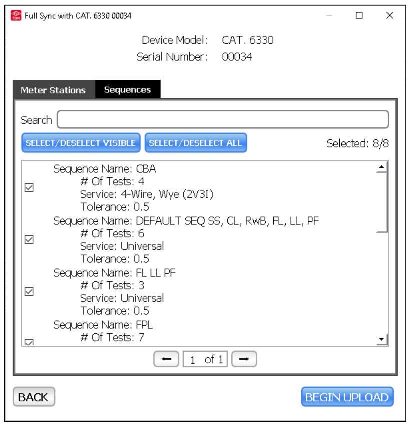
- To **add** an item to the device, check the box next to it.
- To **remove** an item from the device, uncheck the box.

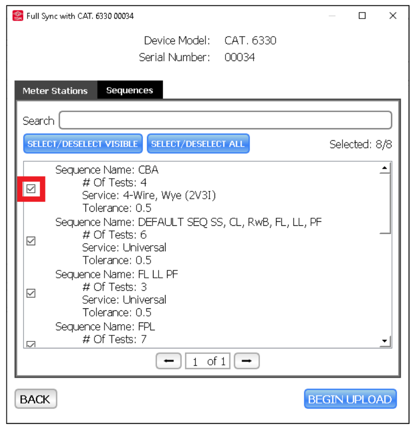
Note: Unchecked items are removed from the device but remain stored in TDM and can be re-added at any time.

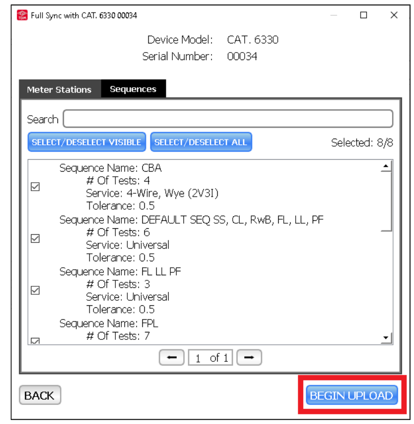
- Once your selections are made, click **NEXT** to continue to the **Sequences** tab.

8.2 Selecting which sequences to keep on the device

The sequences displayed in this tab will vary depending on the connected device type. **Checked** sequences are currently stored on the device, while **unchecked** sequences are not present on the device but remain available in TDM.







- To **add** a sequence to the device, check the box next to it.
- To **remove** a sequence from the device, uncheck the box.

Note: Unchecked sequences are removed from the device but remain stored in TDM and can be re-synced at any time.

Once your selections are finalized, click **BEGIN UPLOAD** to apply the changes and complete the sync.

9. MANAGING ITEMS IN TDM

TDM allows users to create, edit, and delete items within the local database. Once changes are made, they can be synced to a connected device, making the updated items immediately available for use—without the need to manually re-enter details on the device.

To begin managing items in TDM:

1. From the **TDM side menu**, click **Database** to expand the submenu.
2. Select **Items** to access the item management screen.

From this view, you can perform the tasks outlined in Sections **9.1** through **9.4.**

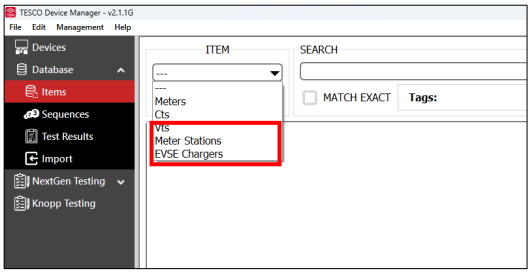
NOTE: Please refer to section 4.2.2 for a full overview of all the steps associated setting up:

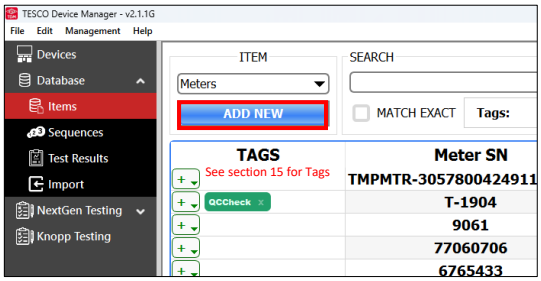
Meters, CTs, VTs, Meter Stations and EVSE Chargers.

9.1 Creating Items

To create a new item in TDM, follow these steps:

1. Select the type of item you wish to create (e.g., Meter, Meter Station, or EVSE Charger).
2. Click the **"Add New"** button.

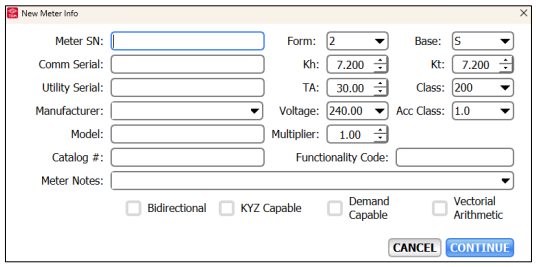




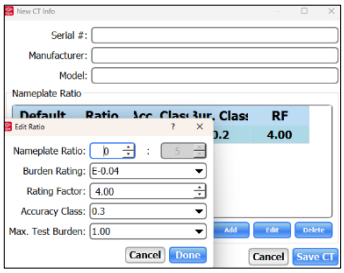
In the item editing popup, fill in the required details for the selected item type.

- **Note**: The fields presented in the editing window will vary depending on the selected item type. For example, the information required for Meters, CTs, VTs, Meter Stations, and EVSE Chargers is specific to each category.

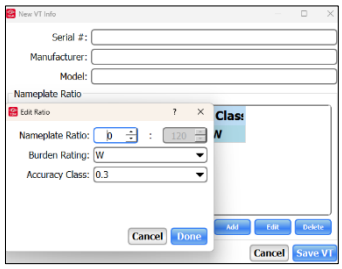
Meter



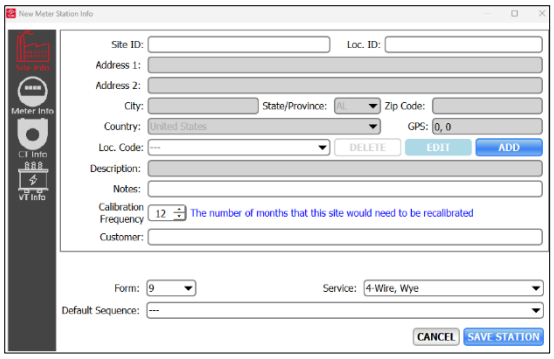
CTs



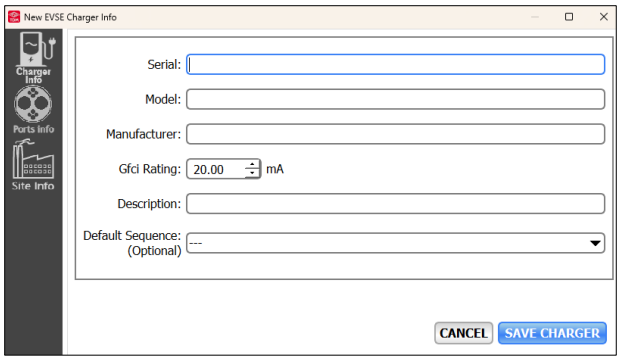
VTs



Meter Stations



EVSE Chargers



2. Click **"Continue"** or **"Save"** to confirm. A confirmation popup will appear once the item has been successfully saved to the database.

Important Note:

- Each item must have a unique ID. Duplicate IDs are not allowed.

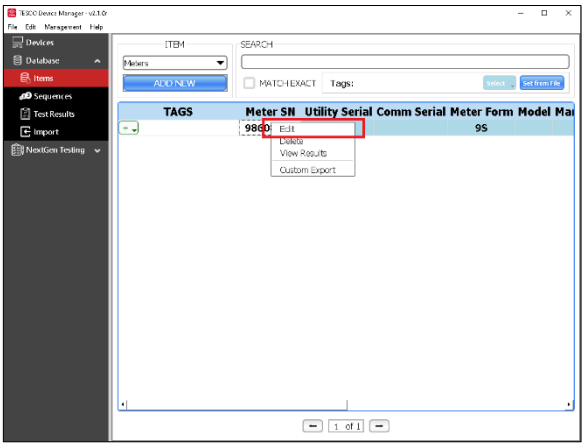
- **Meter**: Identified by **Meter SN**
- **Meter Station**: Identified by **Site ID**
- **EVSE Charger**: Identified by **Charger Serial**

9.2 Editing Items

To edit an existing item:

- Either **double-click** the item, or
- **Right-click** the item and select **"Edit"** from the context menu.

This will open the editing popup, where you can modify item details and save your changes.

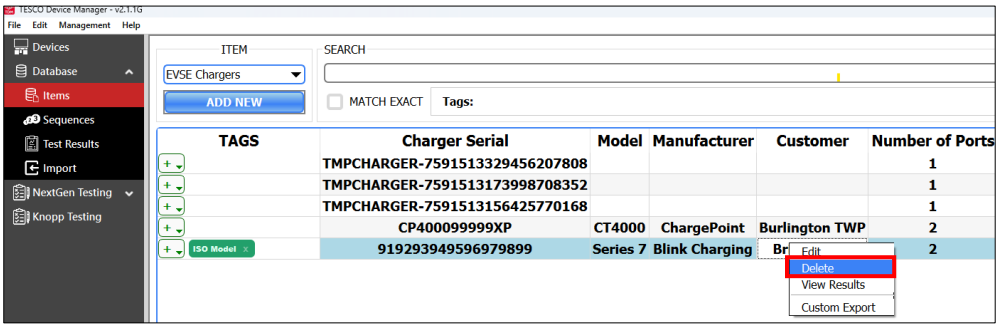


9.3 Deleting Items

To delete an Item.

- **Right-click** the item and select **"Delete"** from the context menu.

⚠ **Note**: Deleted items cannot be recovered. Ensure accuracy before confirming deletion.

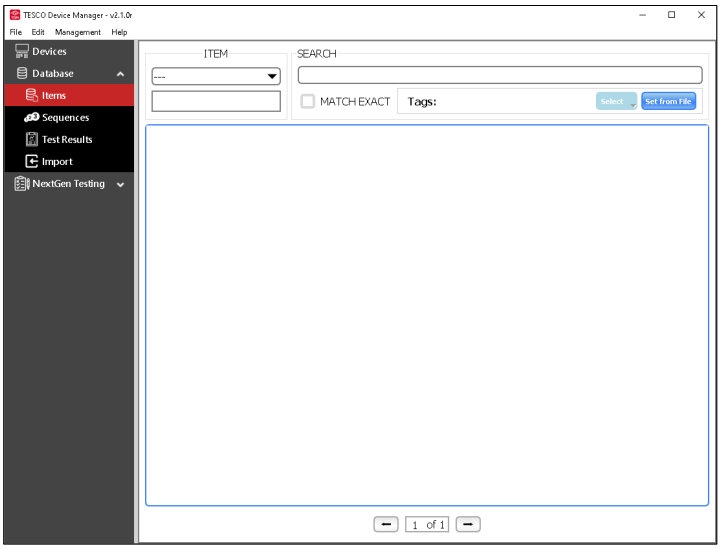


9.4 View Results

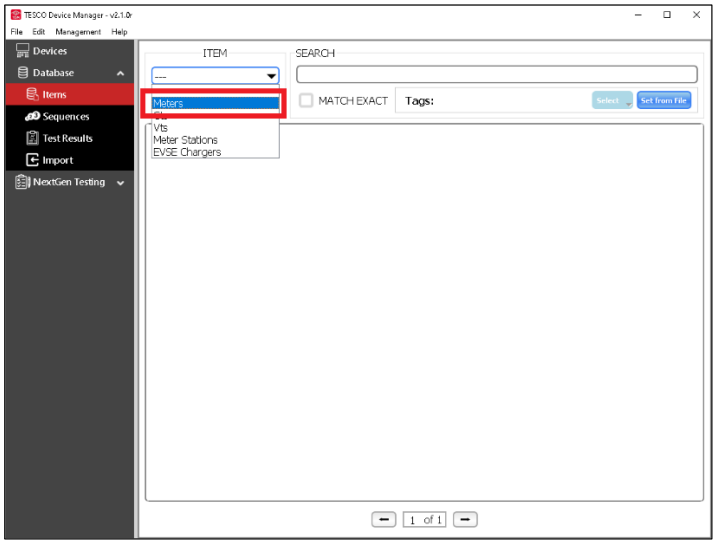
To make sure that TDM has all the latest records from a device, do a **Quick Sync** (refer to **section 7** for details/instructions) first on the Devices page with the test device.

To view a test result for a specific item:

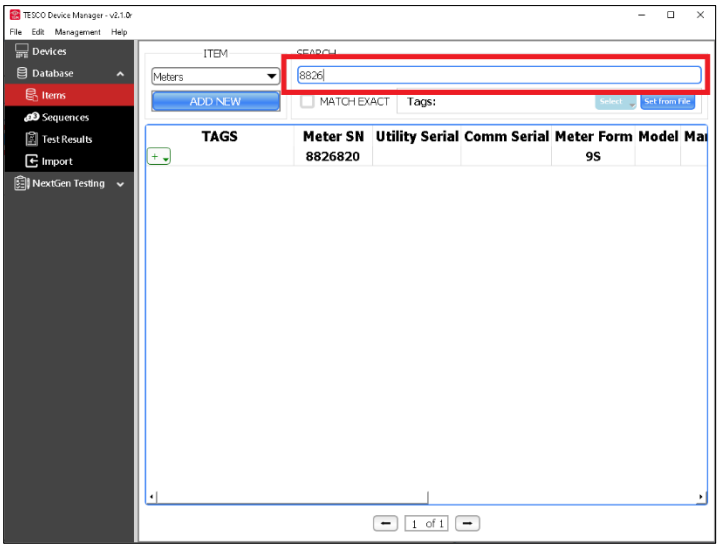
1. Navigate to Database -> Items page.



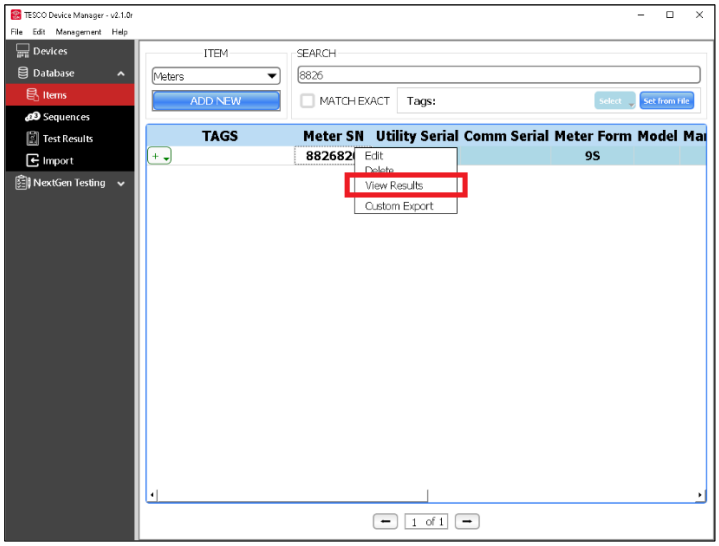
2. Select the item's record type (Meter/Meter Station/EVSE Charger) on the dropdown at the upper left corner of the page. In this example, we are going to view a Meter's test result.



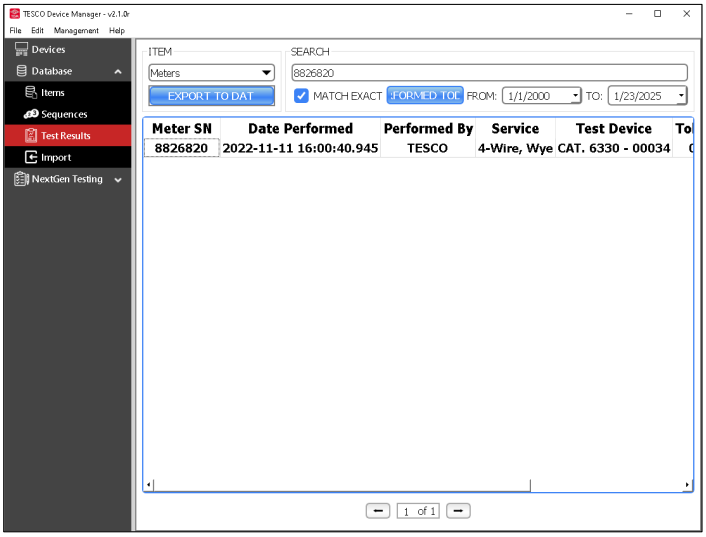
3. Look for the item associated with the results that you want to view. You may filter the item by entering a text on the search bar or by applying tags.



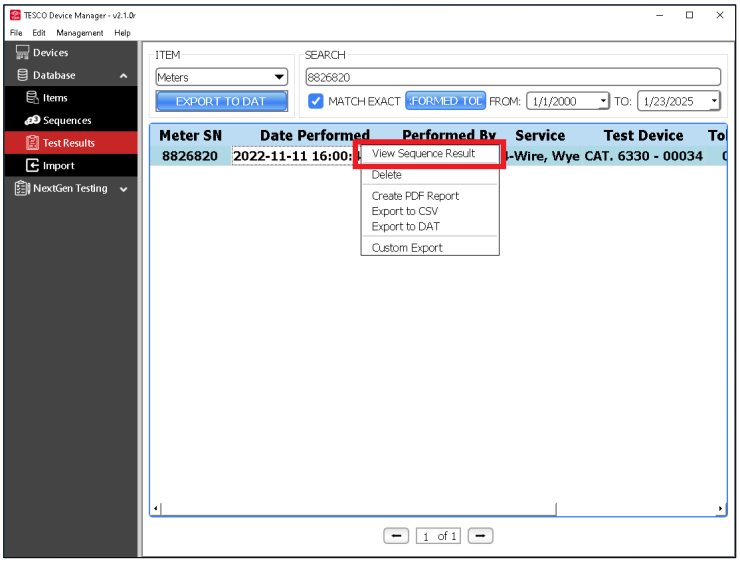
4. Right click on the item then click “View Results” on the context menu.



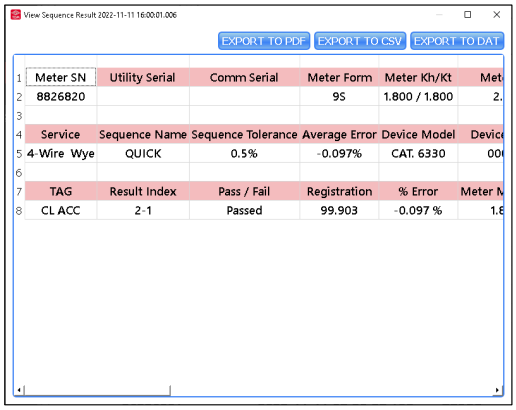
5. TDM will switch the page to Test Results and display the test results of that item.



6. Right click on a result you wish to view then click “View Sequence Result” on the context menu to open the View Test Result popup. This can also be done by double clicking on a result on the table.

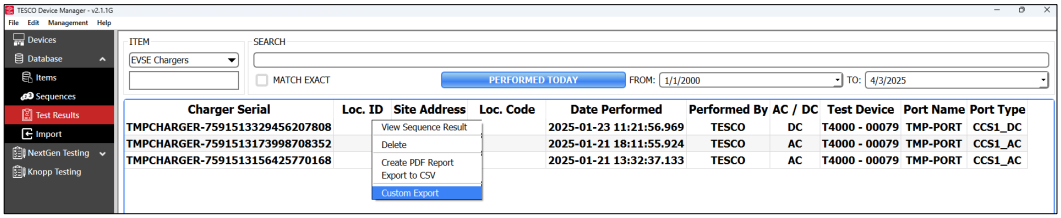


7. Test Result details will be shown on the View Test result popup



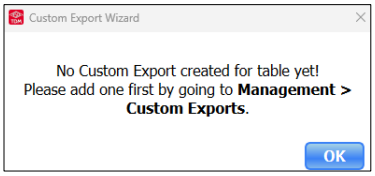
9.5 Custom Export

To run a custom export on the selected items, right click on one of the selected/highlighted items and then click “Custom Export” on the context menu.



NOTE: Custom export scripts are categorized on which item/result type the script would be run. An error would be shown if a custom export script is run against an unsupported category.

IMPORTANT NOTE: If no custom export script has been created for the selected table, TDM will display the message: **“No Custom Export created for table yet! Please add one first by going to Management > Custom Reports.”**



To resolve this, navigate to **Management > Custom Reports** and create or assign an export script for the relevant item or result type.

10. EXPORTING RESULTS

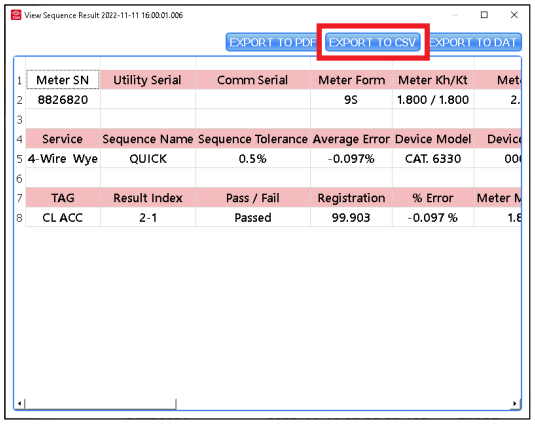
TDM supports exporting test results from connected TESCO devices in a variety of formats, including **CSV**, **PDF**, and **Custom Export** formats. These exports can be used for reporting, archiving, or integrating with other systems.

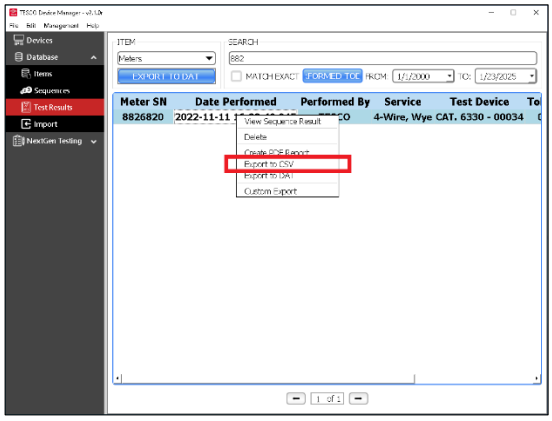
10.1 Exporting to CSV

TDM allows users to export test results in a **CSV format** that is designed for readability and ease of use. Unlike a standard flat-file CSV with a single header row, TDM's CSV format mirrors the layout of the **View Test Result** popup for consistency.

There are two ways to perform a CSV export:

- From the **View Test Result** popup, click the **"Export to CSV"** button.
- From the **Test Results** page, right-click one or more test results and select **"Export to CSV"** from the context menu.



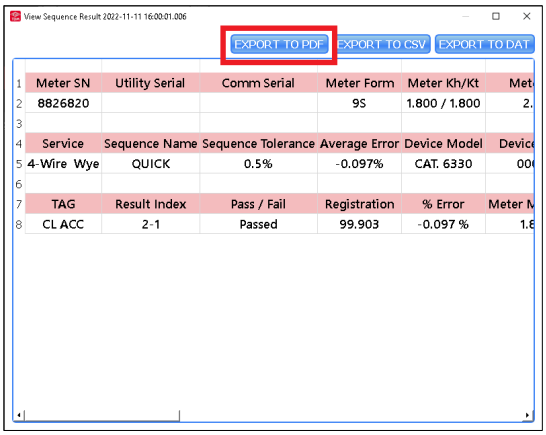


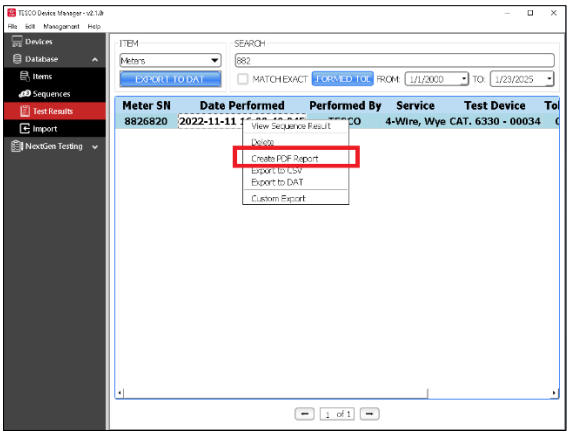
When exporting multiple test results at once, the files will be saved to the directory specified in the **Export Path** under the **Report** tab in the **Preferences** popup. To access this setting, go to **Edit > Preferences**.

10.2 Exporting to PDF

PDF exports can also be generated in two ways:

- From the **View Test Result** popup by clicking the **"Export to PDF"** button.
- From the **Test Results** page by right-clicking one or more test results and selecting **"Create PDF Report"**.





If only one test result is selected, the **PDF Report Builder** will appear, allowing you to:

- Choose which test results from the session to include.
- Specify the file name.
- Select the save location for the PDF report.

To customize the appearance and layout of PDF reports, go to the **Report** tab in the **Preferences** popup (found under **Edit > Preferences**).

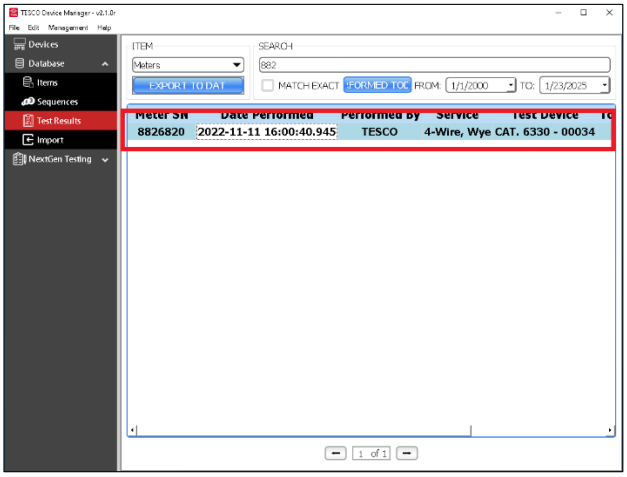
When exporting multiple test results, the files will be saved to the path defined in the **Export Path** setting in **Preferences**.

10.3 Custom Export

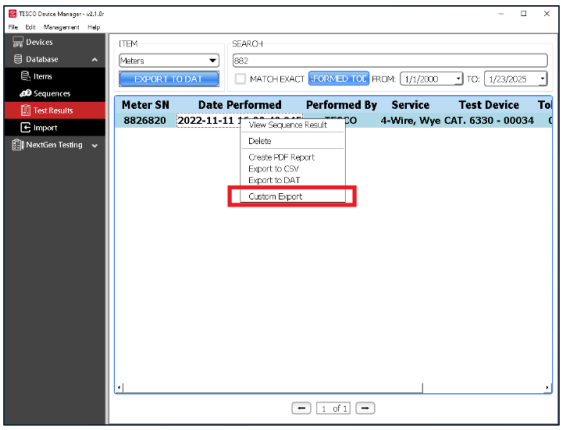
TDM also supports Custom Export scripts, which can be used to format data according to specific internal or third-party requirements.

To perform a custom export:

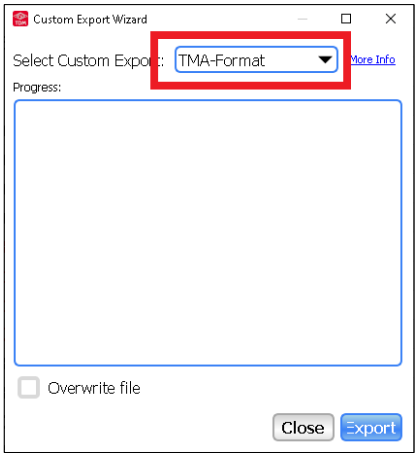
1. Select or highlight the test results to be exported.



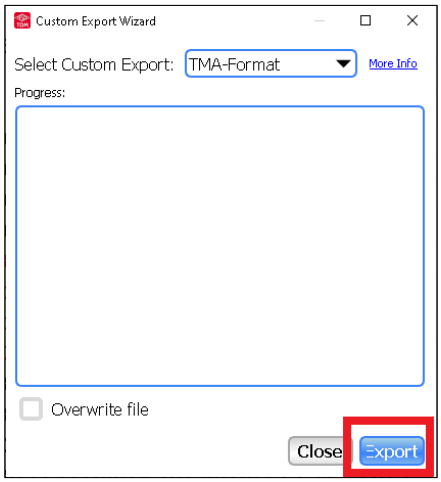
2. Right-click and choose **"Custom Export"** from the context menu. This opens the **Custom Export Wizard**.

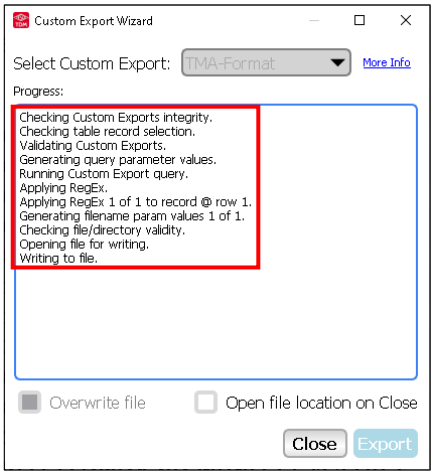


3. In the wizard, select the desired script from the dropdown list.

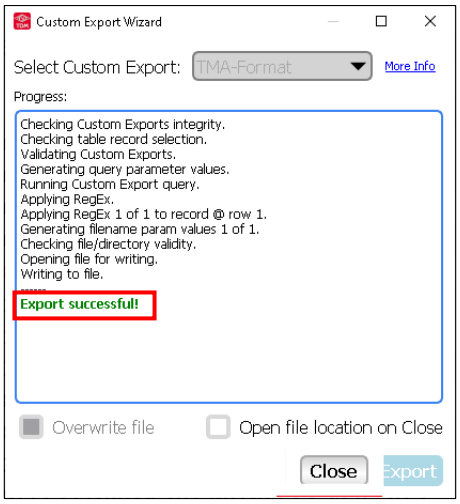


4. Click **Export** to run the script.



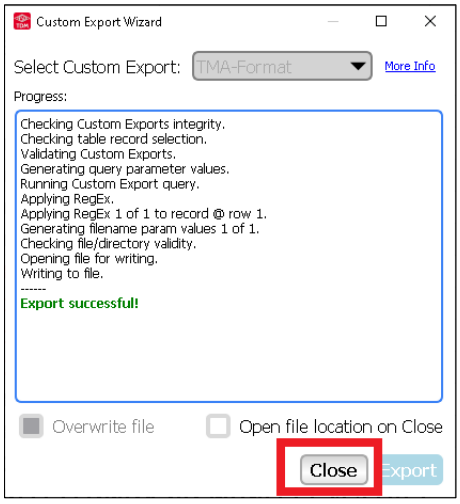


5. Once complete, a green confirmation message will appear stating “Export Successful” along with an option to open the export folder will be shown.



6. The resulting file will be saved to the path defined in the **Export Path** under **Preferences**.

7. Click **Close** to exit the wizard.



Note: Custom export scripts are grouped by item or result type. If a script is applied to an unsupported item, an error message will be displayed.

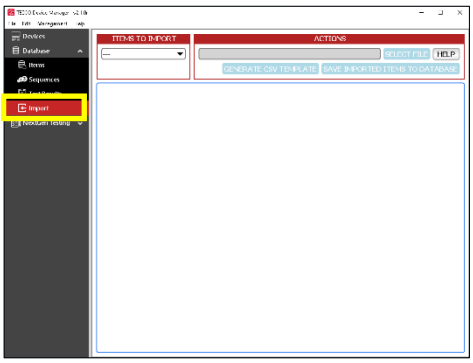
11. IMPORTING ITEMS INTO TDM

TDM allows users to create item records by importing data from a formatted CSV file. This process is useful for loading multiple records at once, such as Meters, Meter Stations, or EVSE Chargers.

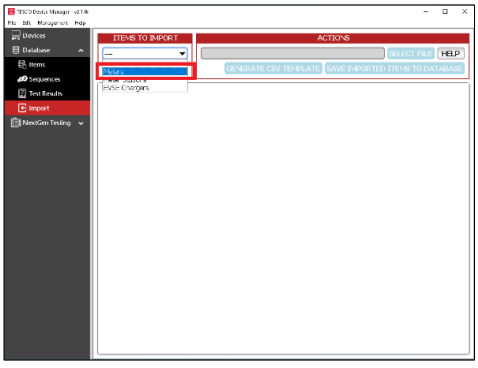
Follow the steps below to complete the import:

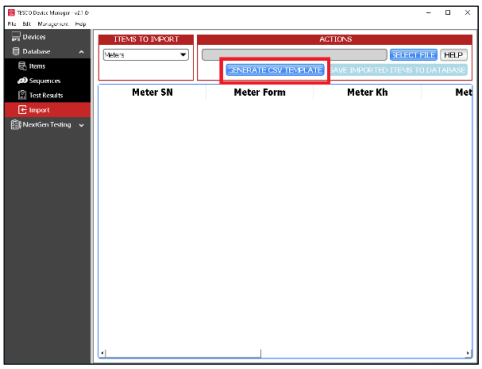
6 Step-by-Step Instructions:

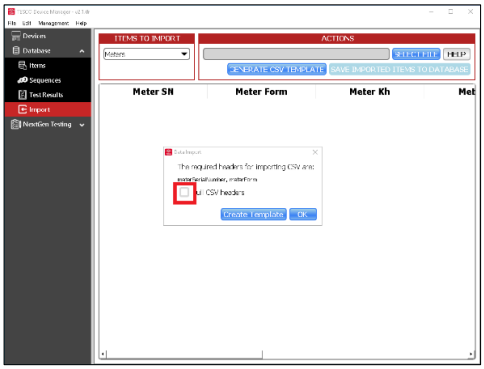
1. From the **Database** menu, select **Import** to open the import screen.

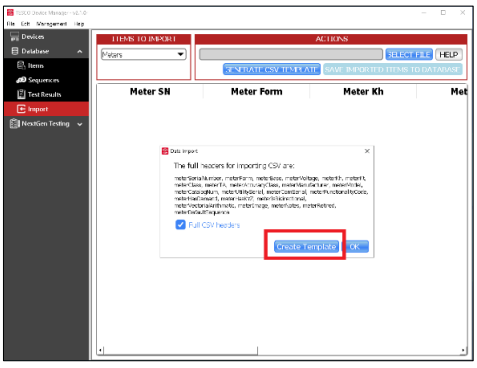


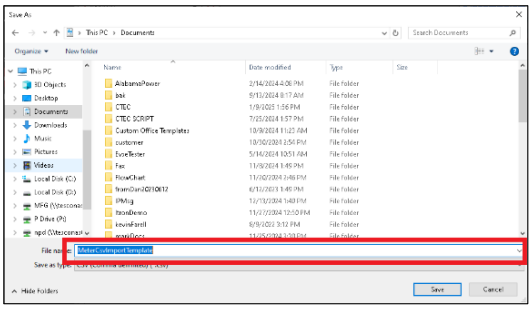
2. Select the type of items to import. The available items to import as Meters, Meter Stations, and EVSE Chargers. After an item type has been set, the “GENERATE CSV TEMPLATE” button will be enabled. Users may now use this feature to create a csv file template as basis or fill this file with item data. For this example, we are going to import meters.

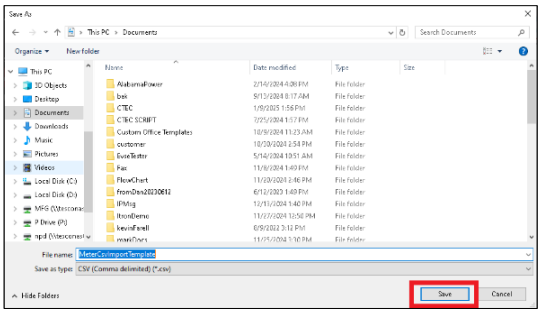




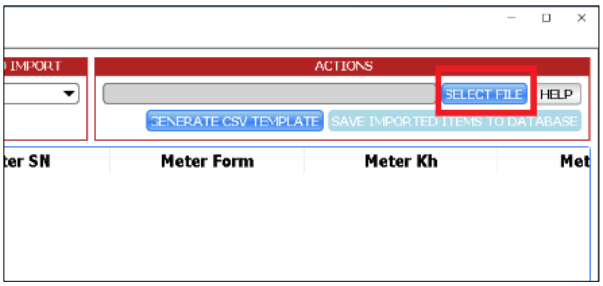


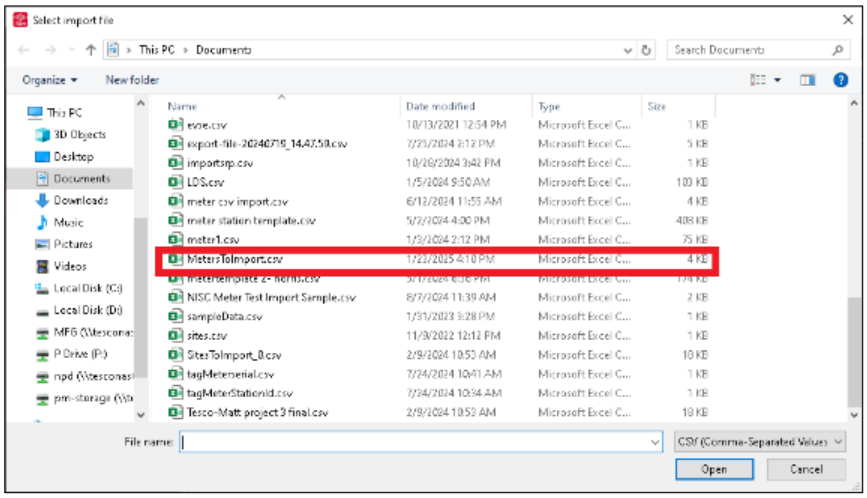


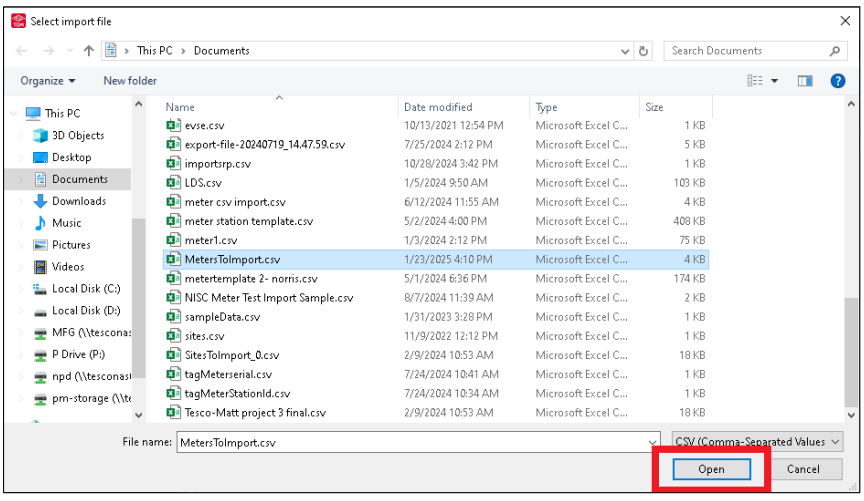




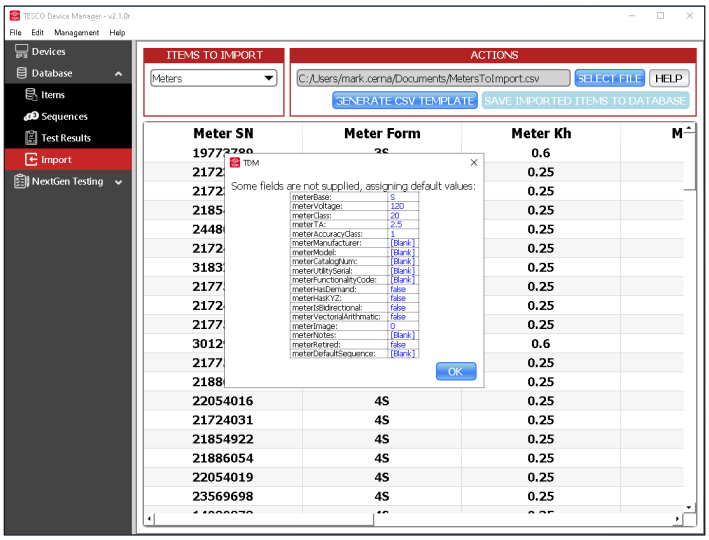
3. Click “SELECT FILE” to browse and locate the csv file to be imported.

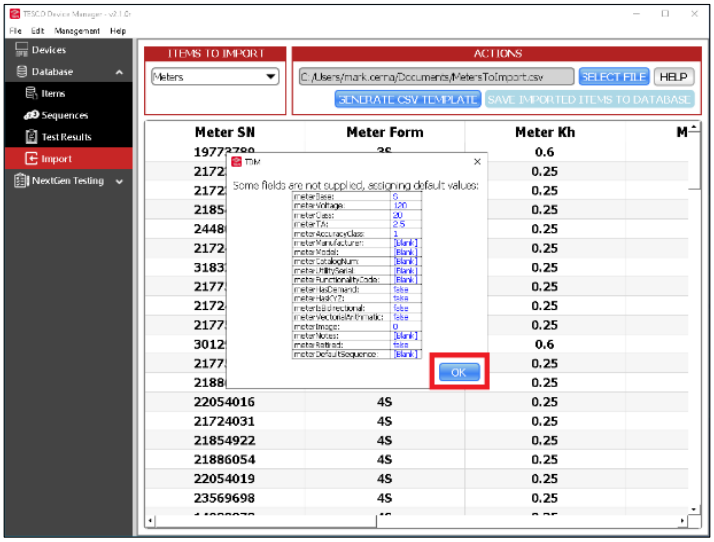




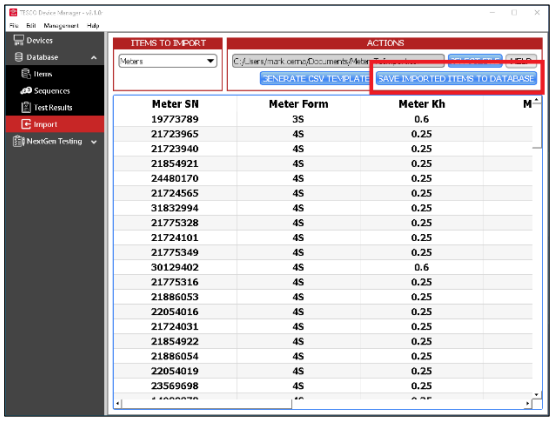


4. Once TDM finishes parsing the CSV file, a preview of the records to be imported will be displayed. A popup may appear with a warning if any fields are missing or left blank. TDM will automatically assign default values such as blanks, zeros, or “false” to those fields. Click “OK” to close the popup.

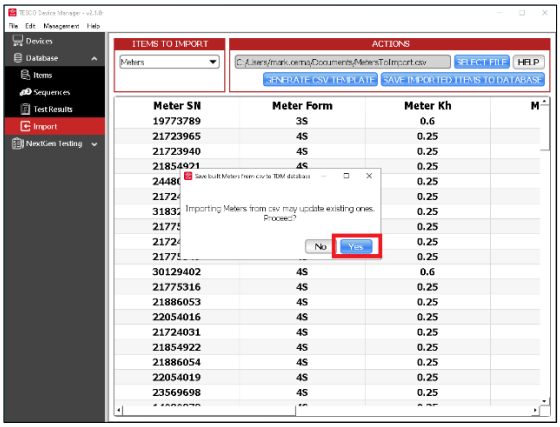




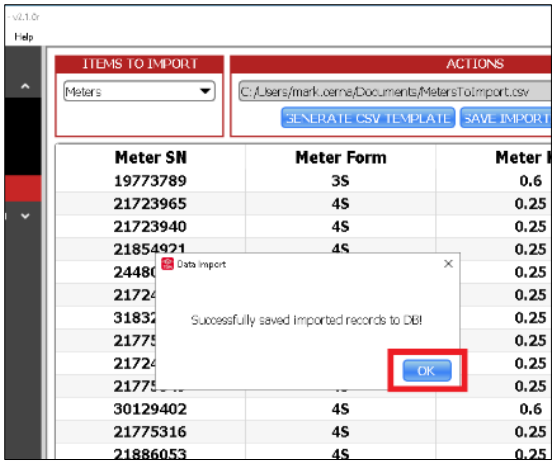
5. To proceed with saving these data into the database, click “SAVE IMPORTED ITEMS TO DATABASE”



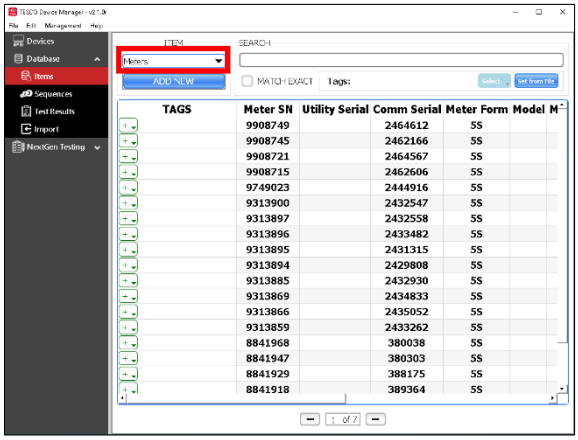
6. TDM will prompt you to confirm if any existing items with matching IDs should be overwritten with the new data.
   Click **Yes** to confirm and continue.



7. Once the import is complete, TDM will notify the end user that the import was successful. Click **OK** to close the popup.



8. Navigate to **Database** in the TDM side menu and click to expand the submenu. Then select **Items**. Locate and select the item type you imported (e.g., **Meters**).
   The imported records will now be visible in the list.

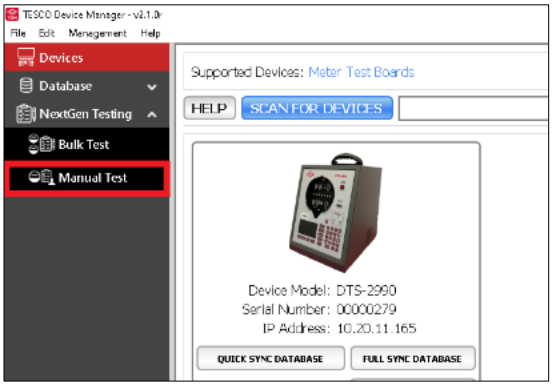


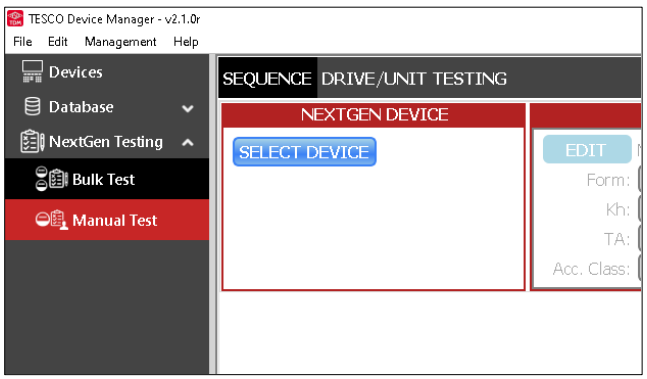
12. CONTROLLING A METER TEST BOARD REMOTELY

TDM provides the ability to control and run tests on supported **Meter Test Boards** over the network. This functionality is available through the **NextGen Testing** interface.

To begin, click "**NextGen Testing**" from the sidebar, then click "**Manual Test**".

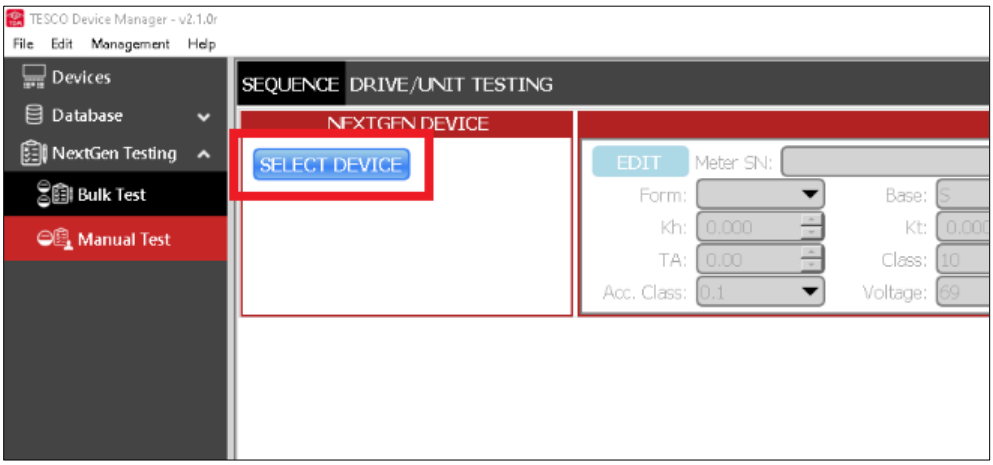
IMPORTANT NOTE: This option will only be available if **"Meter Test Boards"** is/was selected under **Supported Devices** in the **Preferences** popup. If you don't see it, Refer to section **5.1**, Setting Up Supported Devices.





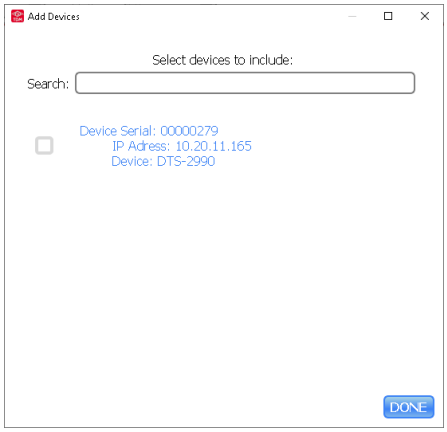
12.1 Selecting a Meter Test Board to control

On the Manual Test screen, click **Select Device** to open the device selector.

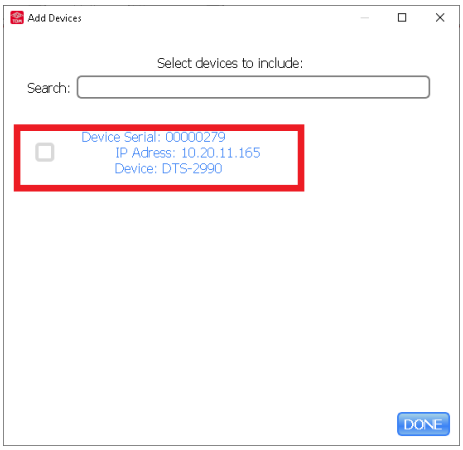


The popup will display any Meter Test Boards currently discovered on the network.

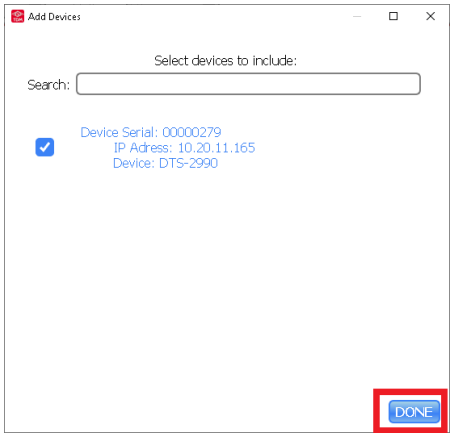
- If the device does not appear, return to the **Devices** page and perform a network scan.



Select the desired device.

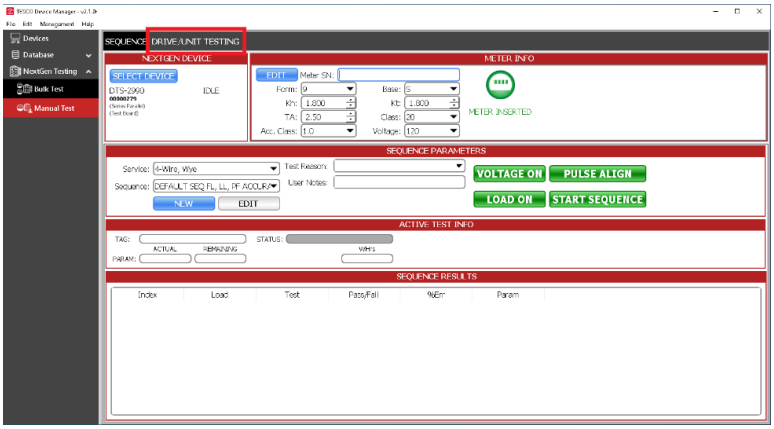


Click **Done** to close the popup.

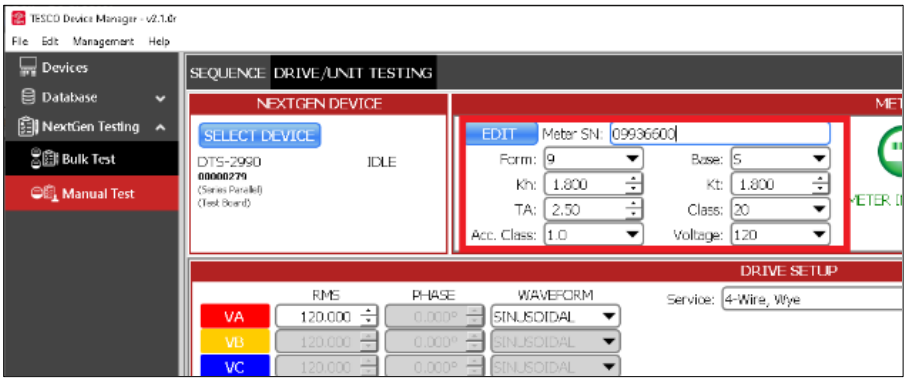


12.2 Setting Meter information & Service

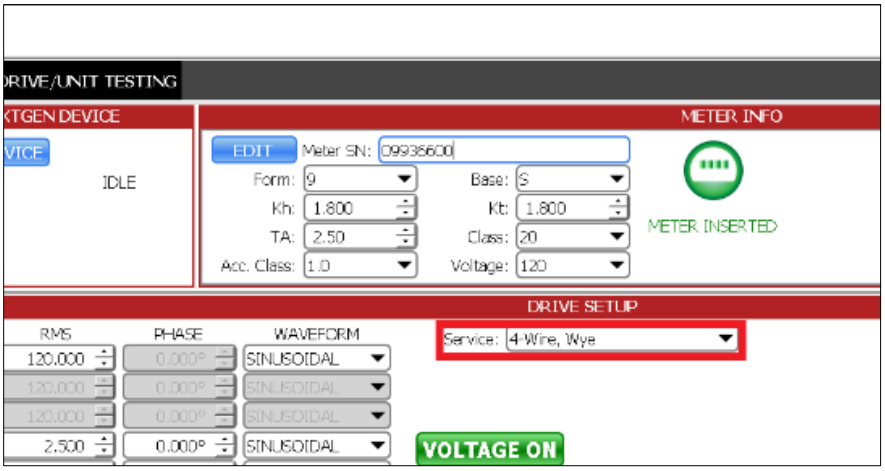
On the Manual Test screen, click **Drive/Unit Testing** above the **NextGen Device** ribbon.



Under the **Meter Info** ribbon, set the **Meter Form** based on the meter currently installed in the socket on the Meter Test Board.

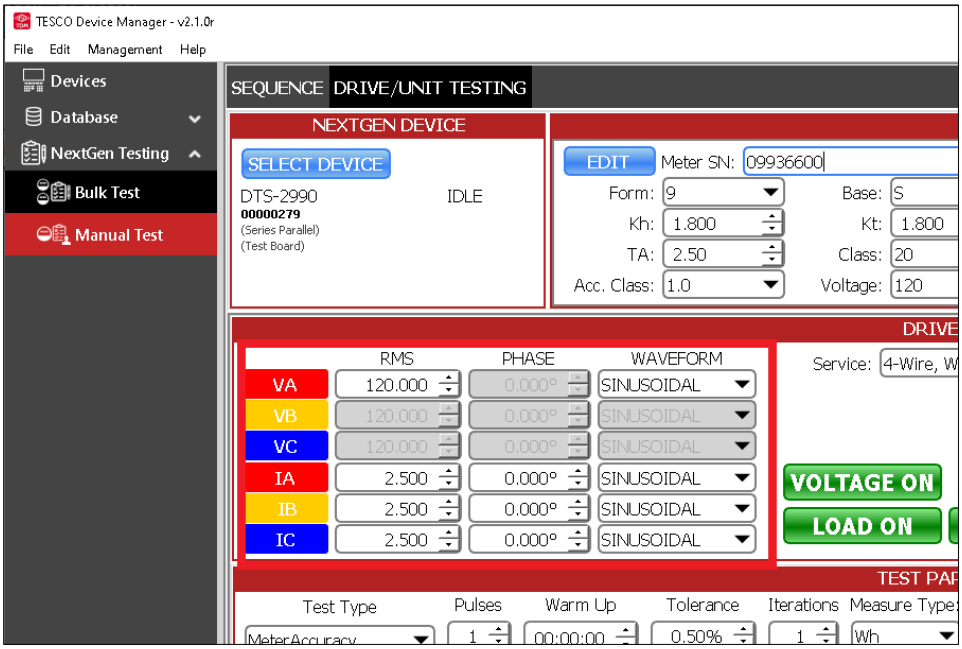


In the **Drive Setup** ribbon, use the **Service** dropdown to select the appropriate service for the test.

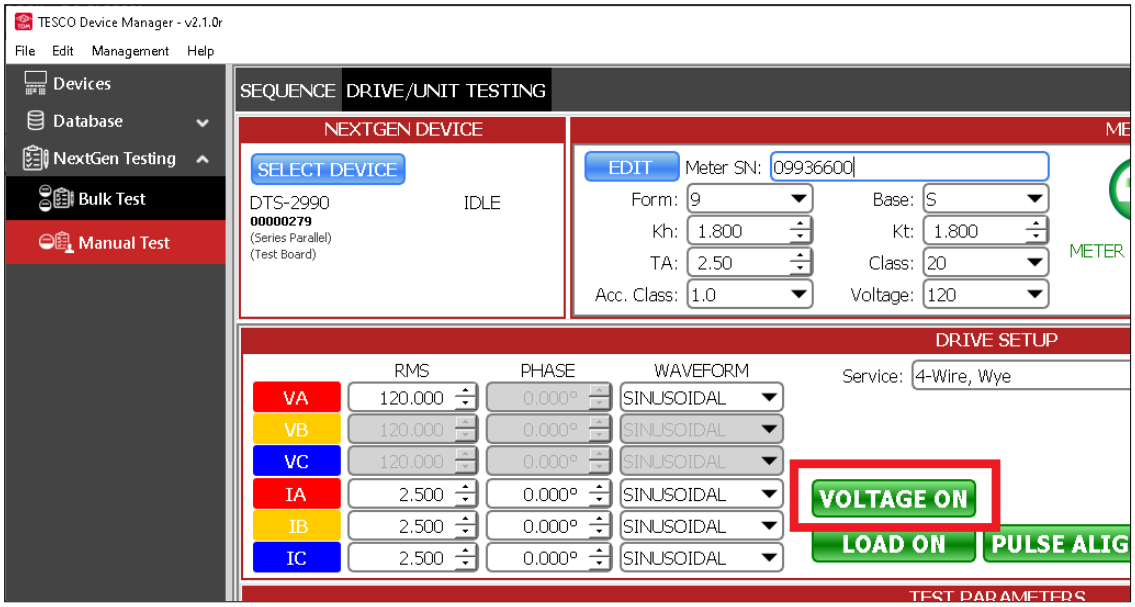


12.3 Turning the Voltage and/or Current ON/OFF

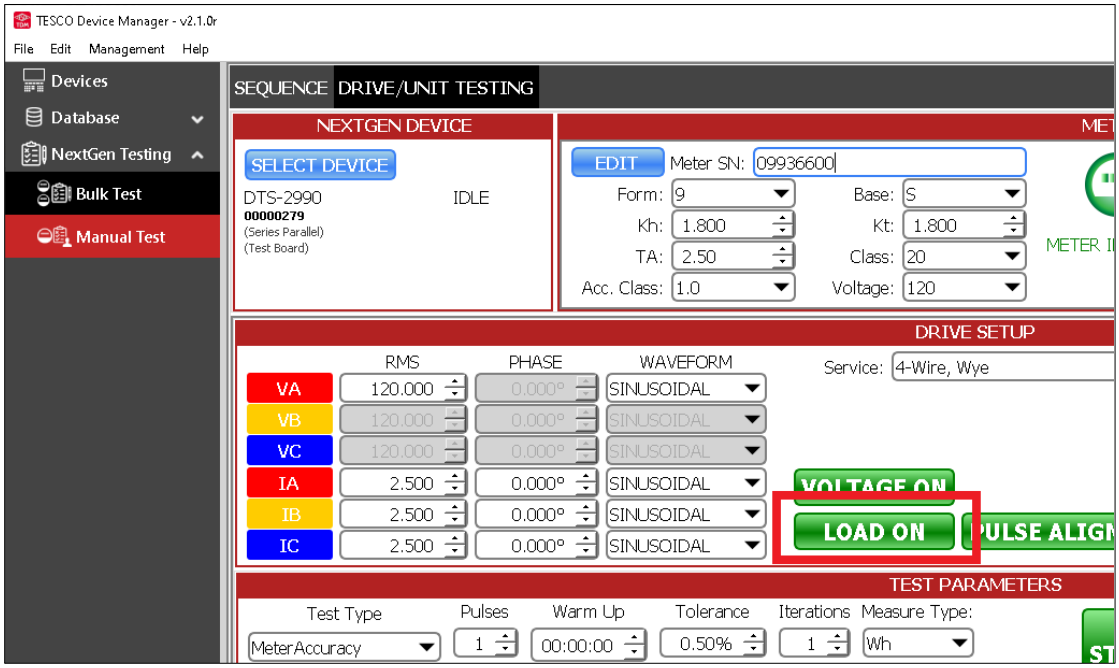
The **Drive/Unit** tab in Manual Test displays waveform setup fields for voltage, current, and phase. These fields may be edited to generate custom waveforms as needed.



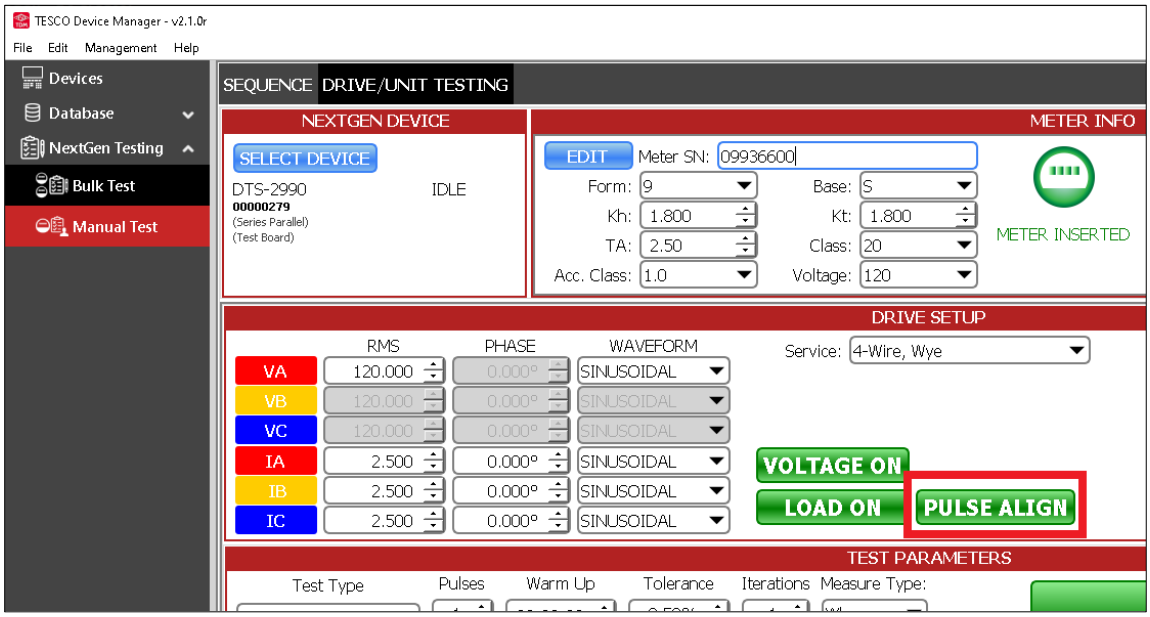
Click **Voltage On** to activate the voltage channels. Once turned on, the button will change to **Voltage Off**, which can be clicked to turn voltage off.



Click **Load On** to activate the current channels. Once active, the button will change to **Load Off**, which can be clicked to disable the current output.



Click **Pulse Align (P.A.)** to begin detecting pulses from the connected meter. The button text will change to **Stop P.A.**, which can be clicked to stop pulse detection and turn off the current channels.



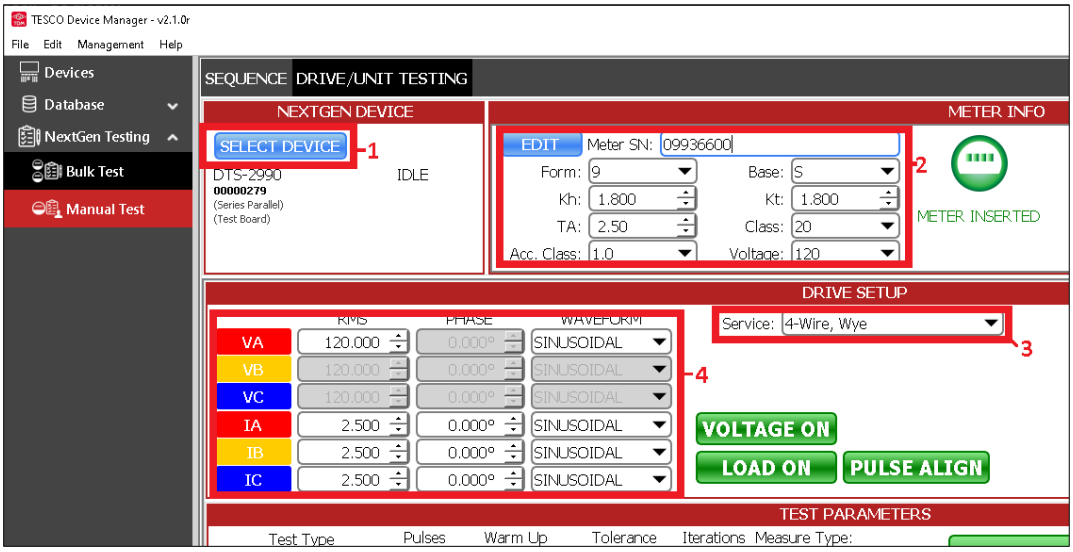
Tip: Use these controls to simulate test conditions in real time without running a full test sequence.

13. RUNNING A SINGLE TEST ON A METER TEST BOARD

To perform a single test using a Meter Test Board, begin by navigating to the **Manual Test** page in TDM.

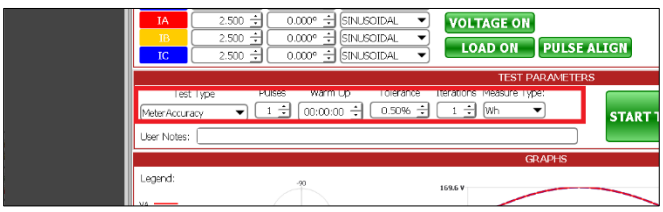
Step-by-Step Instructions:

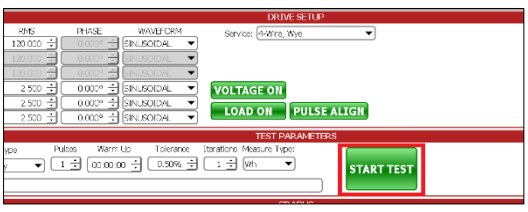
1. Click the **Drive/Unit Testing** tab.
2. Select the Meter Test Board that will run the test.
3. Enter the appropriate **meter information** and select the **service**.
4. Define the **target waveform** using the available voltage, current, and phase settings.



Test Setup:

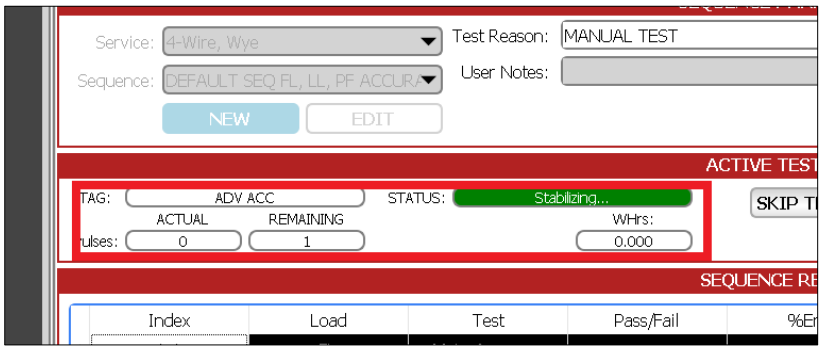
- In the **Test Parameters** section, select the desired test type and update its parameters as needed.
- Click **Start Test** to begin the test.



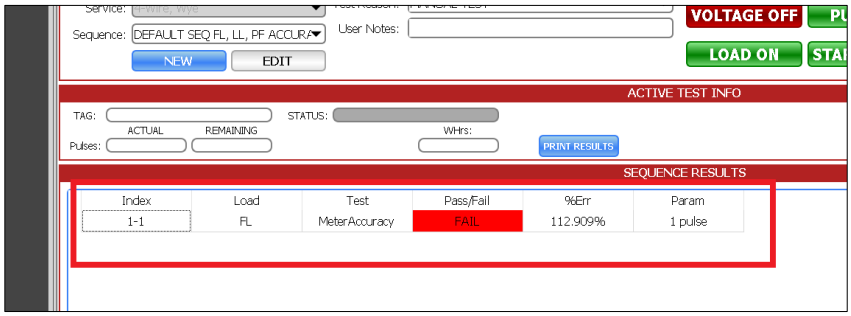


Monitoring and Results:

- While the test is in progress, real-time information will be displayed in the **Active Test Info** section.



Upon completion, a summary of the results will appear in the **Sequence Results** section.



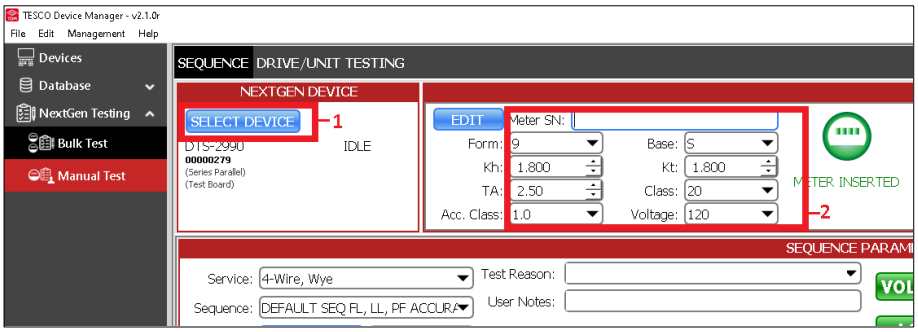
Recommendation: After completing the full test session, perform a **Quick Sync** to retrieve the test results from the device.
To view the results, refer to the **Viewing Results** section **(9.4)** of this manual.

14. RUNNING A SEQUENCE ON A METER TEST BOARD

To run a predefined test sequence on a Meter Test Board, navigate to the **Manual Test** page in TDM.

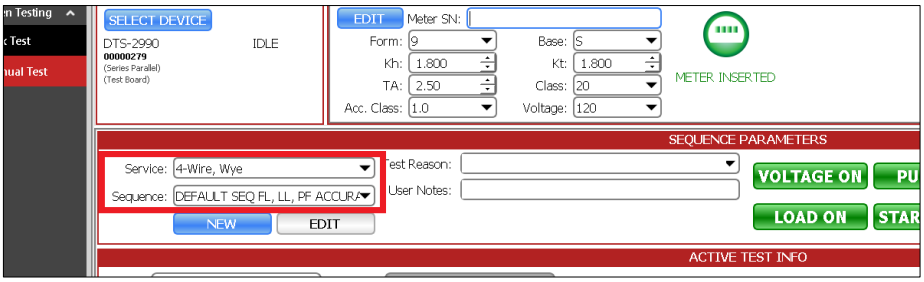
Step-by-Step Instructions:

1. Click the **Sequence** tab.
2. Select the Meter Test Board that will execute the sequence.
3. Enter the required **meter information** for the test setup.



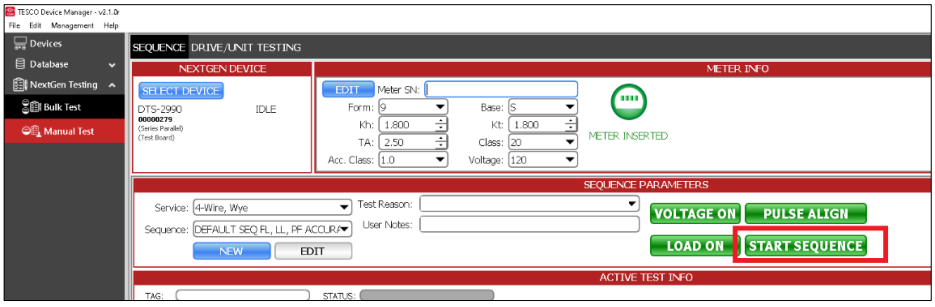
Sequence Configuration:

- In the **Sequence Parameters** section, choose the appropriate **service** and **sequence** to be run on the selected device.



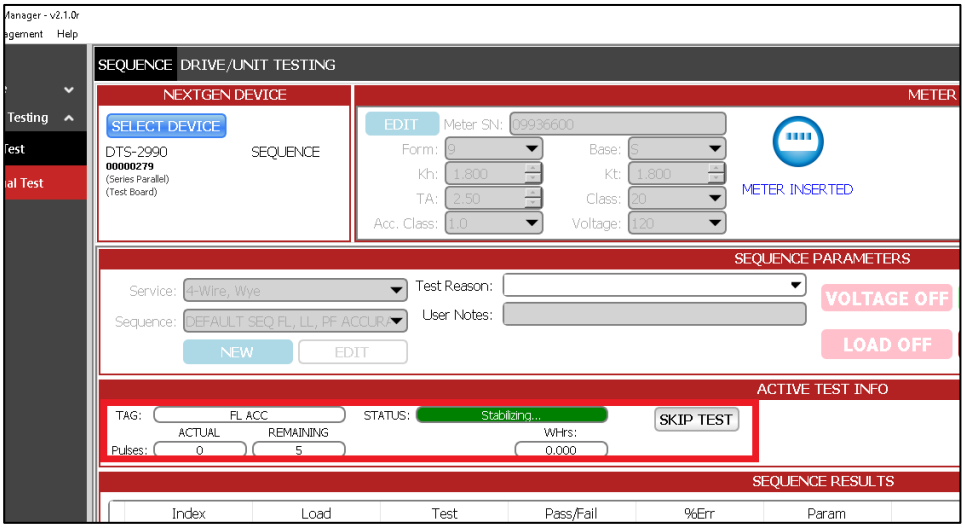
Running the Sequence:

- Click **Start Sequence** to begin executing the test sequence on the Meter Test Board.

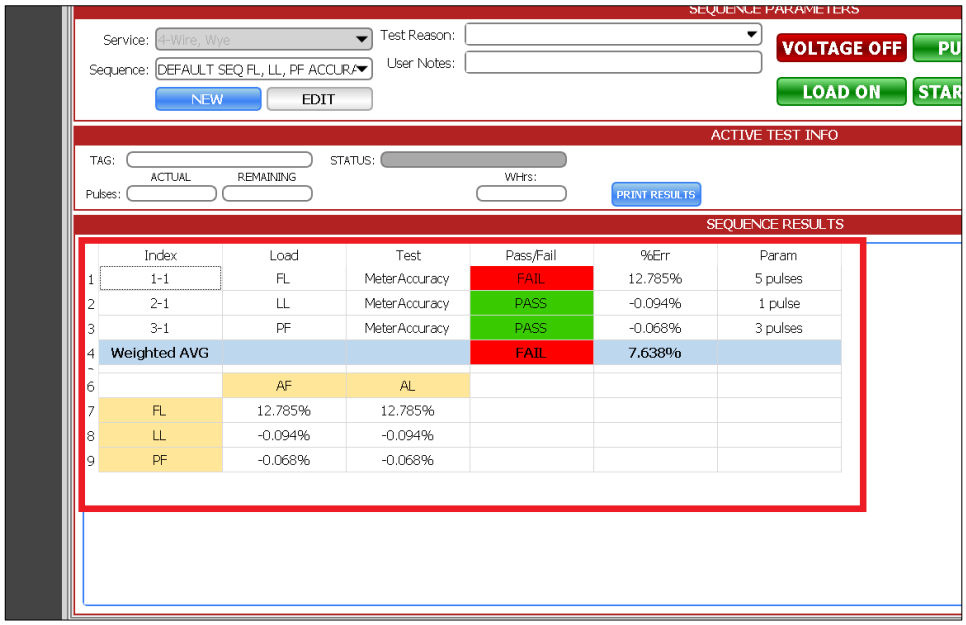


Monitoring and Results:

- Real-time details of the active test will be shown in the **Active Test Info** section.



- Once completed, a summary of the sequence will appear in the **Sequence Results** section.



Recommendation: After the sequence has finished, perform a **Quick Sync** to retrieve test results from the device.

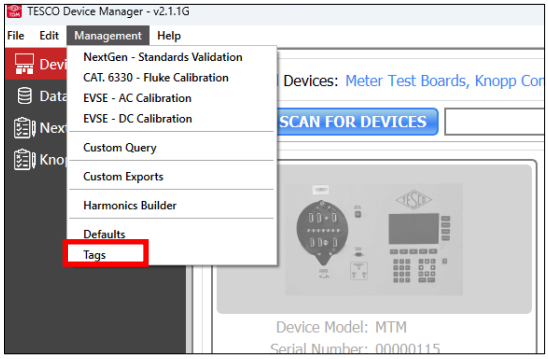
For instructions on how to view test results, refer to the **Viewing Results** section **(9.4)** of this manual.

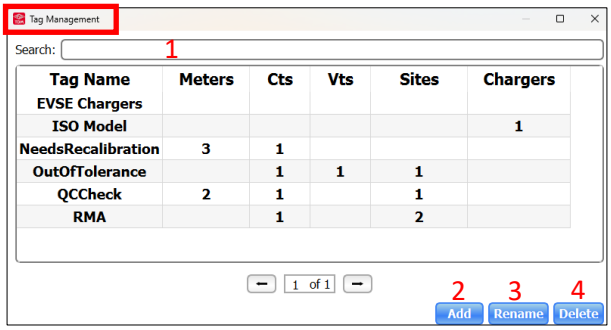
15.TAGS

Tags provide a flexible way to organize and categorize records in TDM, such as Meters, CTs, VTs, Sites, and Chargers. Tags can be managed centrally and applied to items for sorting, filtering, and reference.

15.1 Managing tags

To manage tags, click **Tags** under the **Management** menu from the toolbar. This will open the Tag Management popup, displaying all available tags for supported item types.





Available options include:

1. **Search**: Use the search bar to filter tags by keyword.
2. **Add a Tag**: Click the **Add** button in the lower-right corner to create a new tag.
3. **Rename a Tag**: Select a tag and click **Rename** to update its name.
4. **Delete a Tag**: Select a tag and click **Delete** to remove it from the system.

Note: Tag names must be unique and cannot be reused after deletion.

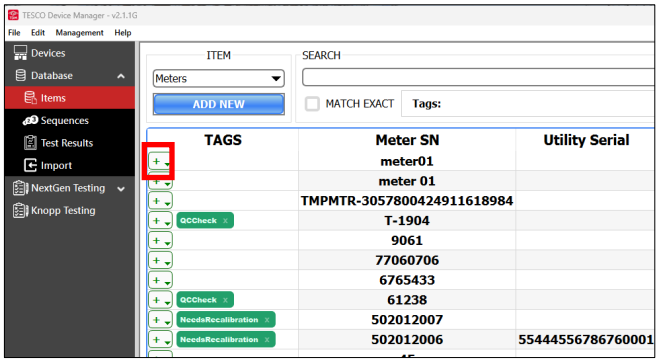
15.2 Using tags

Currently, tags can be applied and managed on the **Database > Items** page found on the sidebar menu.

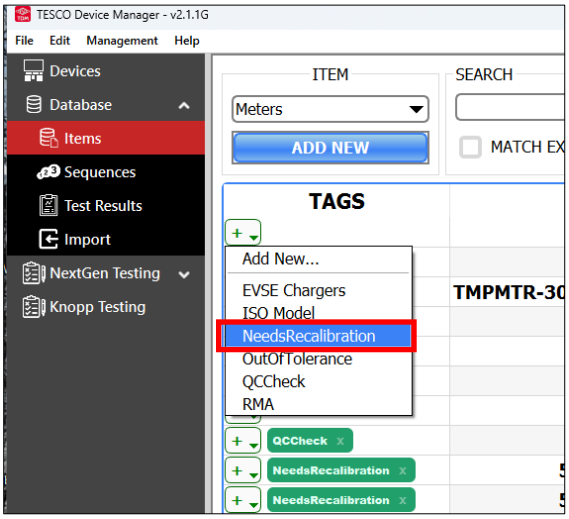
15.2.1 Assigning a tag to an item

To assign an existing tag to an item:

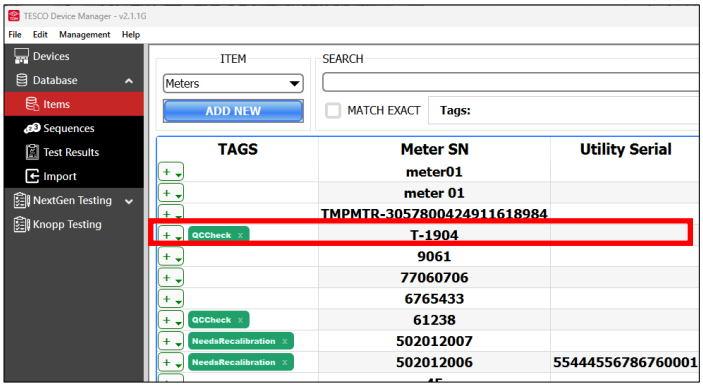
- Click the **"+"** button on the leftmost side of the item's row.



- Select a tag from the list.



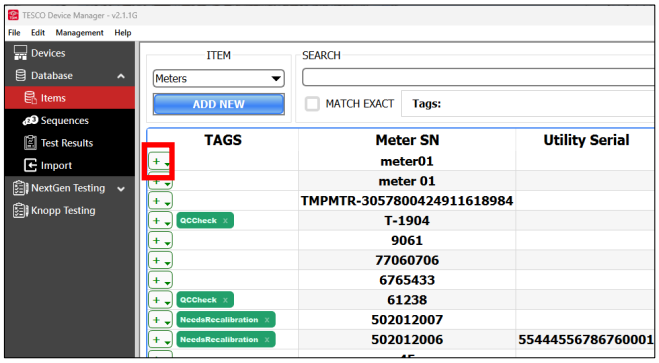
- A green tag widget will appear in the **Tags** column for that item.



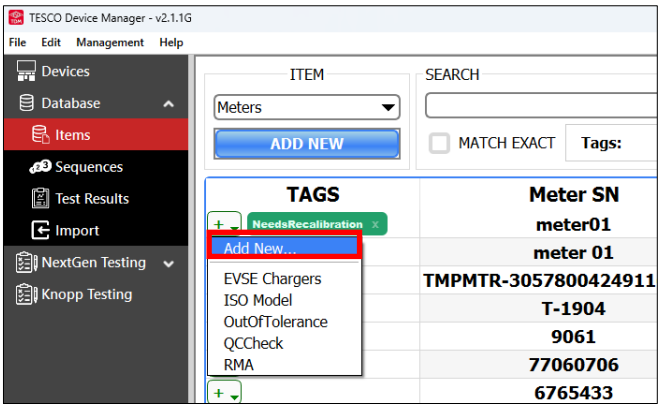
15.2.2 Creating a tag and assigning it to an item

To create and assign a new tag in one step:

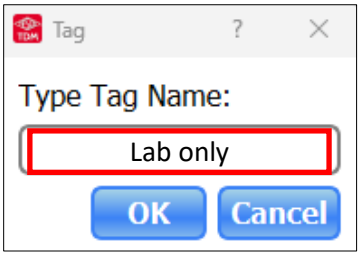
- Click the **"+"** button on the leftmost side of the item's row.



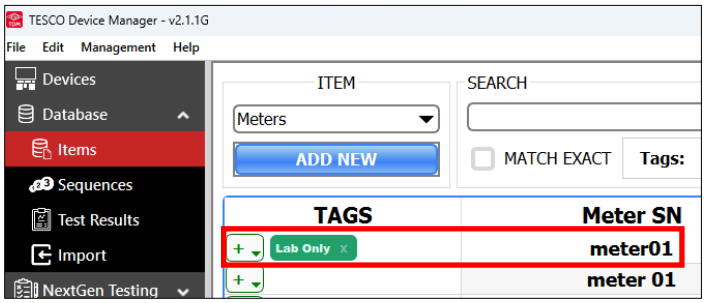
- Select **Add New**.



- Enter the tag name and click **OK**.



- A green tag widget will be added to the **Tags** column for that item.

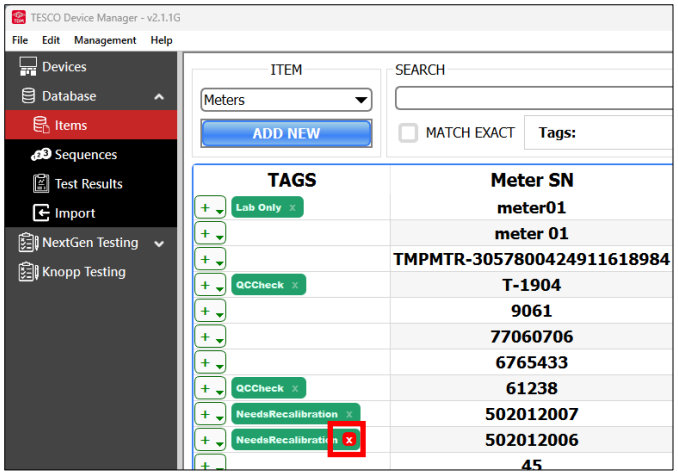


15.2.3 Removing a tag from an item

To remove a tag from an item:

- Click the **"×"** icon next to the tag in the **Tags** column.

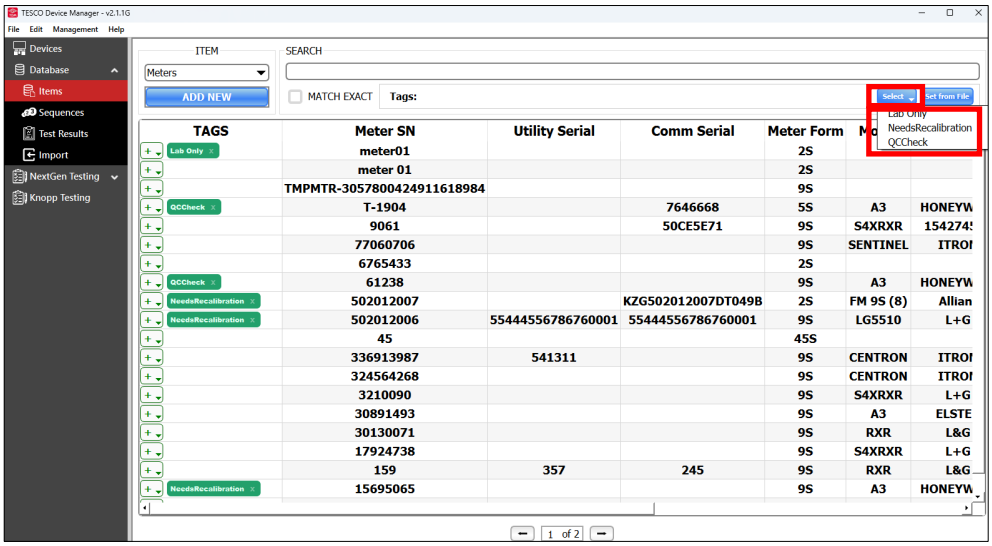
- The tag will be removed from that specific item.

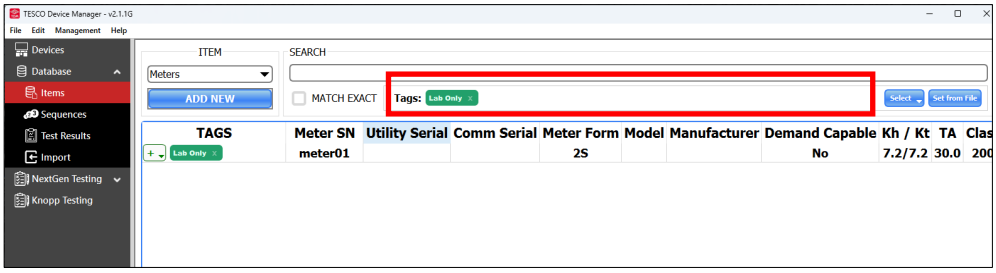


15.2.4 Filter items using tags

To filter the item list using tags:

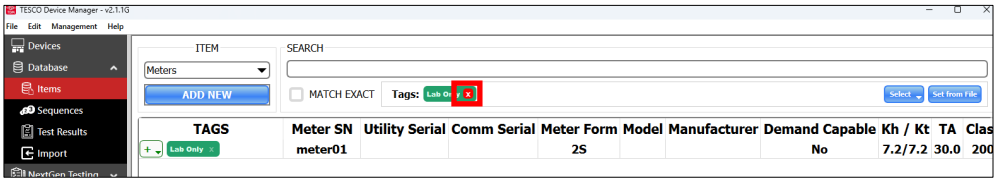
- Click **Select** under the **Search** section and choose a tag.
- A green tag widget will appear in the tag filter list, and the table will refresh based on the selected filters.





To remove a tag filter:

- Click the **"×"** icon next to the tag in the **Search** section.



- The table will refresh automatically based on the remaining filters.

16. CREATING/EDITING CUSTOM EXPORT SCRIPTS

TDM allows users to build **Custom Export Scripts** to generate report files in formats that meet specific organizational or third-party requirements from selected records in either the **Database Items** or **Database Test Results page**.

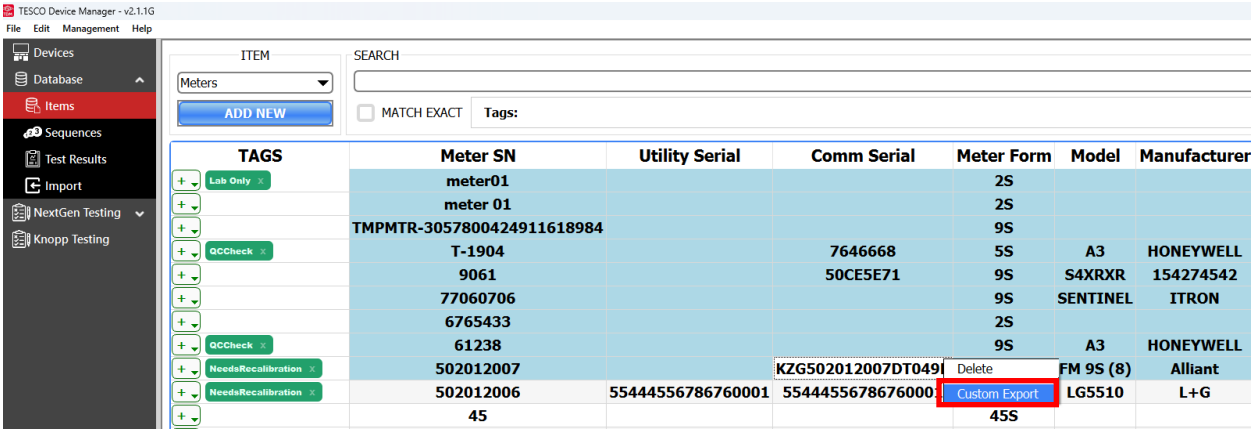


*Figure 1. Performing **Custom Export** via Database Items table record selection*

These scripts are made up of two main components: a **SQL query**, which defines the data to be retrieved, and a **Regular Expression**, which formats the output.

In most cases, users will only need to define the **SQL** portion, as the regular expression can be kept simple for standard formats.

To create a new custom export script:

- Click **Custom Export** under the **Management** menu.
- Click **Add** to create a new script.
- Enter a **name** for the script and proceed to define its components.

16.1 SQL query

- From the **Select Target Data** dropdown, choose the database table where the *Custom Export* will be usable. Click **DB Schema** to open a reference diagram showing the structure and relationships of available tables.
- The **Input parameter** represents the type of data that can be extracted from the **Target Data**. It can either be **`${serials}`**, representing the comma-separated list of *serial numbers* of the selected rows (*see Figure 1*) or **`${resultKeys}`**, representing the comma-separated list of result keys for test results. NOTE: The **Input parameter** should be used in the SQL query.

- Input your **SQL query** with the applicable **Input parameter**. As an example, below is a query with *Meter* table as the **Target Data** using the **`${serials}` Input parameter**:

  ```
  SELECT meterSerial, meterForm FROM Meter WHERE meterSerial IN
  (${serials})
  ```

  Upon query execution, the **`${serials}`** parameter will be substituted by the selected serial numbers. As an example, using *Figure 1* selections, the *final query* will be

  ```
  SELECT meterSerial, meterForm FROM Meter WHERE meterSerial IN
  ('meter02', 'meter01', 'meter02', 'meter01', '6789', '43t aef')
  ```

- For easy representation, the query result is converted into a comma-separated value (CSV format). This is important to keep in mind when extracting and formatting the final output using **Regular Expressions**.

Note: Ensure your SQL query returns data in a format compatible with your export needs. Advanced users may incorporate JOINs, filters, and aliases as required.

Note: Only SELECT (read-only) queries are allowed

16.2 Regular Expression

Regular Expression can be used to extract (*capture*) data from the CSV data of the SQL query, and to rearrange them freely.

Suggested Steps:

1. After entering your SQL query, click Next button.
2. You may tick **Include Headers from CSV Results** checkbox if you want to include query columns from the CSV data.
3. Click **Add RegEx** button to add as many *regular expression* definitions as necessary.

   RegEx field: This is the actual *regular expression*. At least one *capture* should be included in the expression.

   Format field: This is the format of the exported data using the *regular expression* captures. *Captures* are represented by **`${1}`** for *capture 1*, **`${2}`** for *capture 2*, so on and so forth.

   Description field: This is the description of the *regular expression,* the *format*, or anything that relates to the *regular expression* definition. This field is *optional*.

   As an example, below is *regular expression* definition that includes the CSV Header from the example query above and the resulting export output:

   SQL Result (CSV-formatted):

   ```
   meterSerial,meterForm
   ```

```
meter02,2
meter01,2
:
43t aef,9
```

Regular Expression Definition:

RegEx: `^(.*),(.*)$`

Format: `${2}:${1}`

Description: `Extract 2 data between commas, reverse order and join them with a colon`

Export Output:

```
meterForm:meterSerial
2:meter02
2:meter01
:
9:43t aef
```

NOTE: For Custom Exports with more than one *regular expression* definitions, the output of the first will be fed to the next one and so on and so forth until the last definition is performed.

NOTE: All Regular Expression should follow the *Perl-compatible* format.

16.3 File name and file format

This section determines how the exported file will be named and what format it will use when saved.

Suggested Steps:

1. In the **Filename Format** text field, type the desired file name format which can include *fixed* and *generated* sections. To include a *generated* data like date/timestamp in the filename, the **<DateTimeStamp>** placeholder can be used. See *Filename Format Parameters* section for a list of available *generated* data with their corresponding descriptions.
2. In the **File Extension** text field, type the desired file extension (without the dot). This can be any known extension like **csv**, **json** or a custom one like **dat**.

As an example, the following **Filename Format** value of

Exportedby_<username>_on_<DateTimeStamp>

with a **File Extension** of

`frt`

will yield a file

Exportedby_TESCO_on_20250407_160817.frt

assuming that the logged in username is *TESCO* and the export was generated on *April 7th, 2025,* at *04:08:17 pm*.

16.4 Output Directory

This section sets the location where the Custom Export file will be saved. By default, it will use the **Export Path** in the Preferences if left unchanged.

17. CUSTOM SQL QUERIES

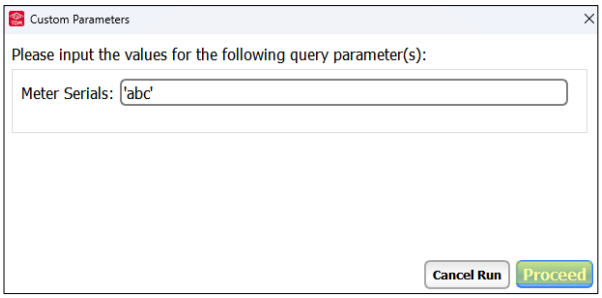
17.1 Creating Custom SQL queries

This feature allows users to define ad-hoc SQL queries to extract data from the TDM database for analysis, validation, or custom reporting.

Suggested Steps:

1. Navigate to **Management > Custom SQL**.
2. Click **Add Query** and enter a name for your custom query.
3. Enter your SQL query in the editor field.

   Query Parameters can be inserted anywhere in the SQL query to allow input of query details through a popup. This is useful to make the query more flexible.
   As an example, below is a query that searches for specific records from the **Meter** table based off a meter serial list using the query parameter `${Meter Serials}` to get that list from the user.
   ```
   SELECT * from Meter where meterSerial IN (${Meter Serials})
   ```

   The query parameter value is then substituted to the original query making it
   SELECT * from Meter where meterSerial IN (**'abc'**)
4. Click **PROCEED** to store the query for future use.

Note: Use the **DB Schema** button to view available fields and relationships between tables.

17.2 Running Custom SQL queries

To execute a previously created custom query:

1. Navigate to **Management > Custom SQL**.
2. Select the desired query from the list.
3. Click **Run** to execute the SQL command.
4. Results will be displayed in a table format within the interface.

Optional: Export the query results using the **Export to CSV** button.

18. CHANGELOG

This section provides a detailed record of manual revisions, including software updates, procedural adjustments, and any other relevant information you may want to track.

Date	Author	Log
1/17/2025	MD	Updated to keep up with TDM version 2.1.0r

19. TECHNICAL SUPPORT

Technical Support Contact Information:
For any technical issues, questions about TDM, you can reach TESCO through the following:

- **Phone (Technical Support):** +1 (215) 228-0500

This is TESCO's main support line.

Hours of operation are Monday – Friday, 7:00 AM – 6:00 PM (Eastern Standard Time).

- **Email:** support@tescometering.com

Email is great for non-urgent inquiries or to send a detailed description of an issue (even screenshots). TESCO's support team monitors this address and typically responds within one business day.

When contacting support, always provide the following information to ensure efficient assistance:

- The current firmware or software version, if known
- A concise description of the issue, including any error codes and/or system behavior.

Thank you for your patronage, we look forward to working with you!

-The TESCO Team