A Badger Meter® Brand

Water Quality Monitor

FilterSmart Trend Data Utility



Badger Meter

ATI-UM-04698-EN-02 (August 2025)

User Manual

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FILTERSMART TREND DATA UTILITY

General Information

The FilterSmart Trend Data Utility provides an easy, on-site means for retrieving trend data from the FilterSmart backwash monitor. The most recent data—up to 24 hours— is available.

Requirements

The following software and components are required to use the FilterSmart Trend Download Utility from Badger Meter:

- Windows-based portable device with USB port and the FilterSmart Trend Download software installed (see *"Software and Cable Installation" on page 9* for program download and installation instructions).
- The Cable Kit for FilterSmart Data Download Utility (P/N 00-2001), which includes the following:
  - The DB9 Interface Cable installed in the controller enclosure (see *"Cable Connections" on page 10* for instructions on proper installation of this cable).
  - The FilterSmart USB-to-RS232 cable available to connect to the circular connector located on the outside of the controller enclosure.





Version History

Features, updates and limitations for each version of the software are outlined below.

- Version 1.0.0
  - Initial release
  - Download limited to the first listed sensor in the FilterSmart controller database
- Version 2.0.0
  - Data from any networked sensors can be downloaded from controller

Downloading Data from Controller

1. Satisfy all the requirements from *"Requirements"* above.
2. Connect the USB end of the USB-to-RS232 cable to the Windows-based portable device containing the software.
3. Connect the circular connector end of the cable to the matching port on the outside of the controller enclosure.
4. Open the *FilterSmart Trend Download* program. The window looks similar to *Figure 1*.

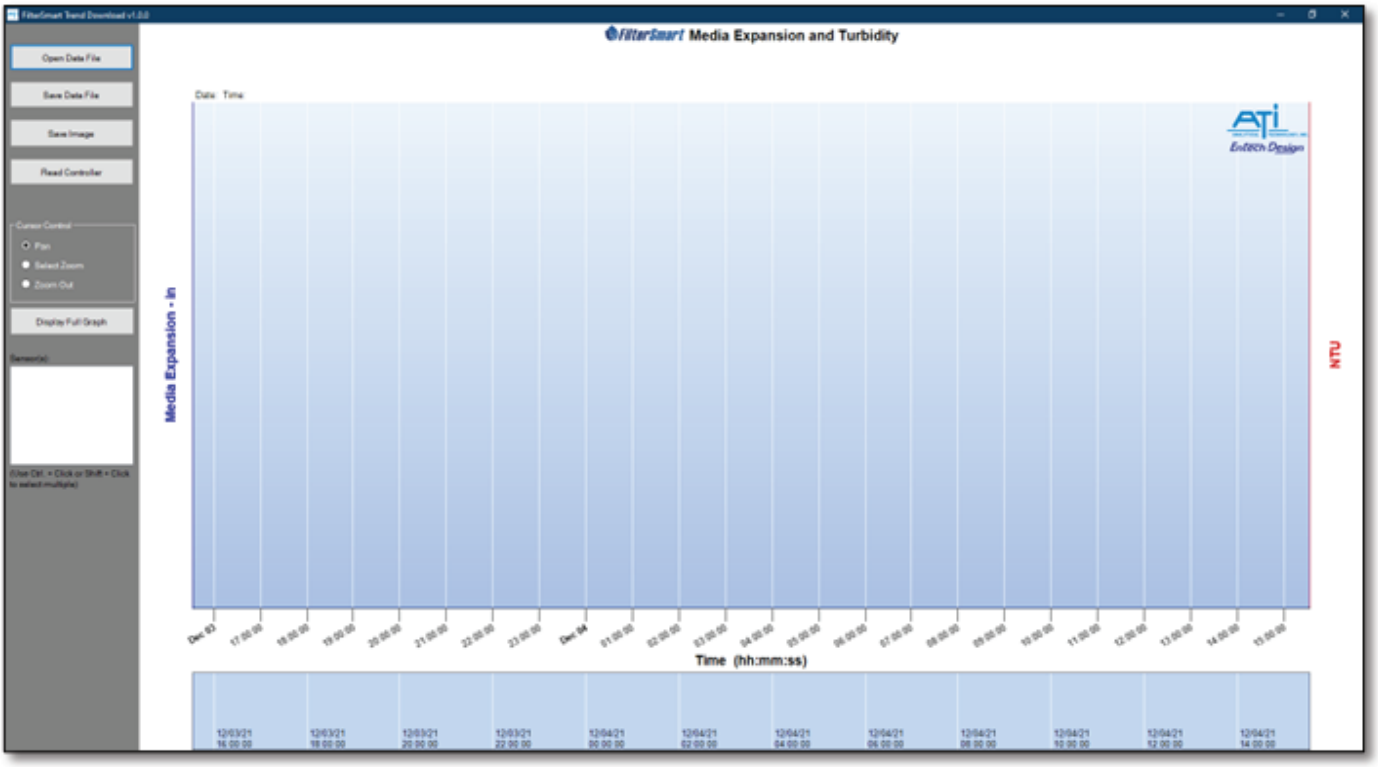


Figure 1: Trend utility main page

5. Select the **Read Controller** option. A window similar to *Figure 2* displays.

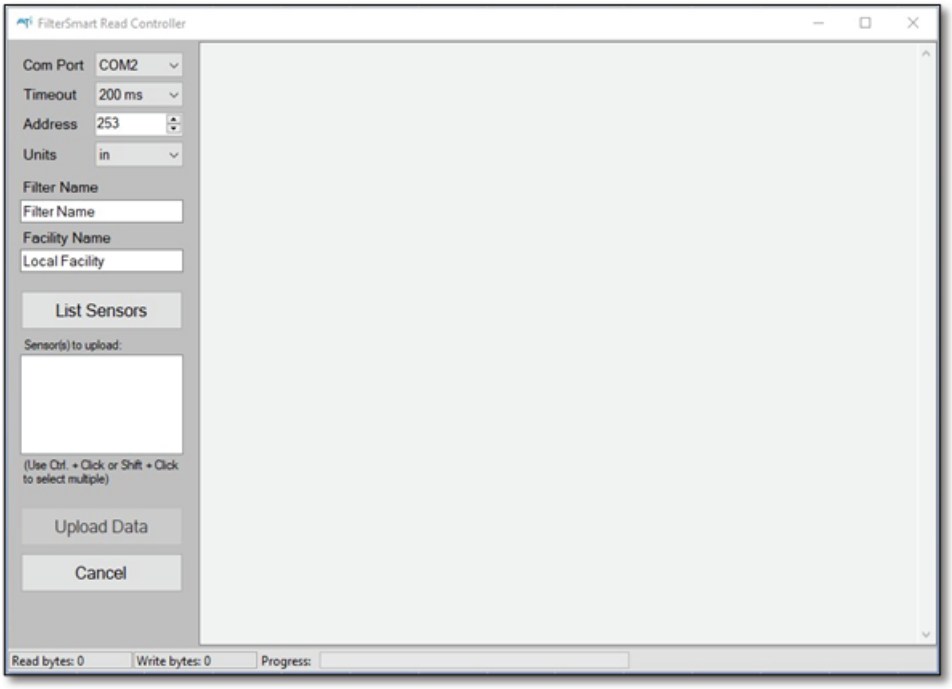


Figure 2: Read controller window

6. Configure the settings as follows:
   - **Com Port:** Select the port the computer assigned to the USB to RS232 cable.
     Go to the computer's *Device Manager*. The *Com Port* for the cable is listed under the *Ports* heading.
   - **Timeout:** You can leave the *Timeout* value at the default value of 200 ms.
   - **Address:** Match the address to the controller's address.
     The controller address defaults to 253. In most cases, you can leave this value at 253.
   - **Units:** Select the units the sensor is configured to report.
   - **Filter Name:** (Optional) Enter the *Filter Name* to display at the top of the generated graph.
   - **Facility Name:** (Optional) Enter the *Facility Name* to display at the top of the generated graph.
7. Select the **List Sensors** option to poll the controller for all connected sensors. All available sensors display in the "Sensor(s) to upload" window.
8. Select the sensor(s) to be downloaded from the *Sensor(s) to Upload* window. Use Ctrl + Click or Shift + Click if the data from multiple sensors is desired.
9. Select the **Upload Data** option to begin retrieving the trend data. The *Send* and *Receive* commands are reported on the right side of the window. The data displays on the graph on the main window. See an example in *Figure 3 on page 6*.

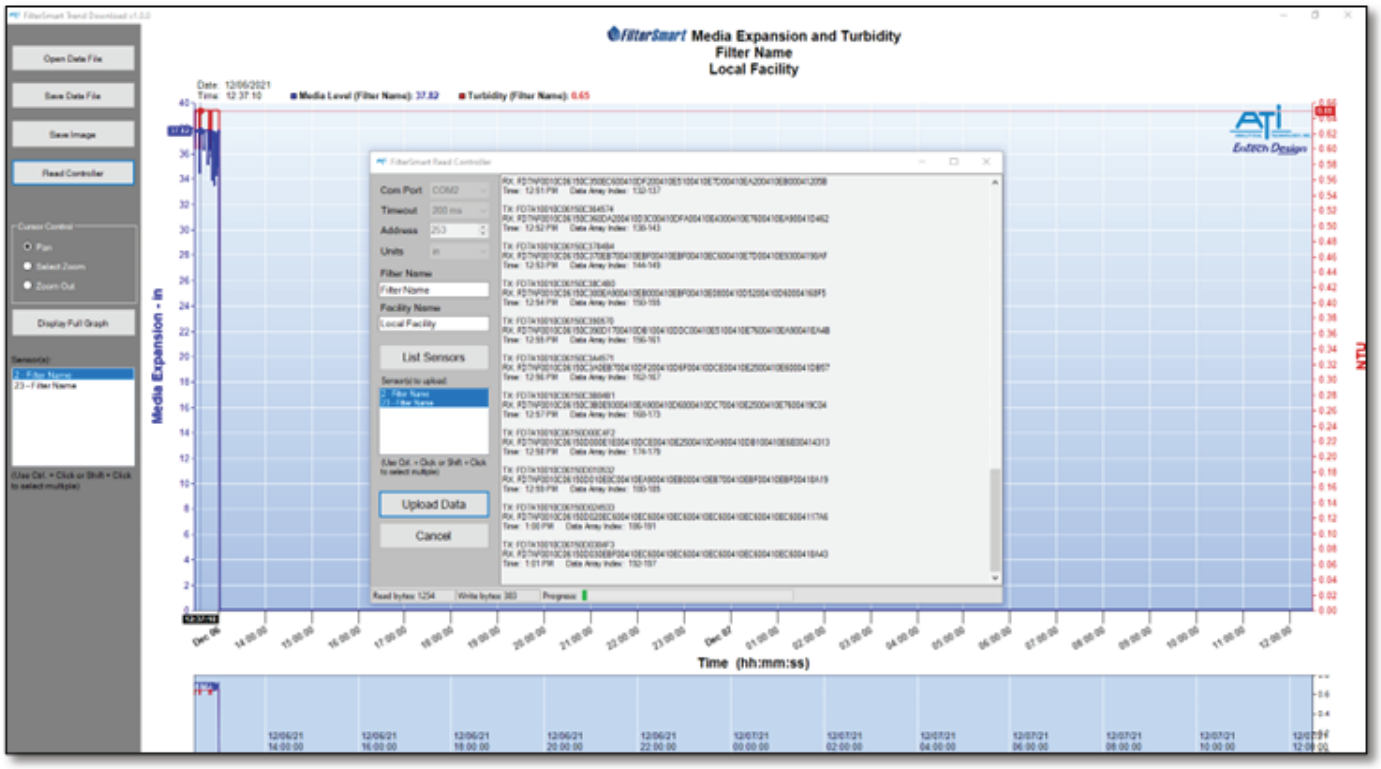


Figure 3: Data retrieval progress

10. When the data retrieval process completes, close the *Read Controller* window.

Exploring the Data

The graph displays up to 24 hours of data. An example set of data is shown in *Figure 4*.

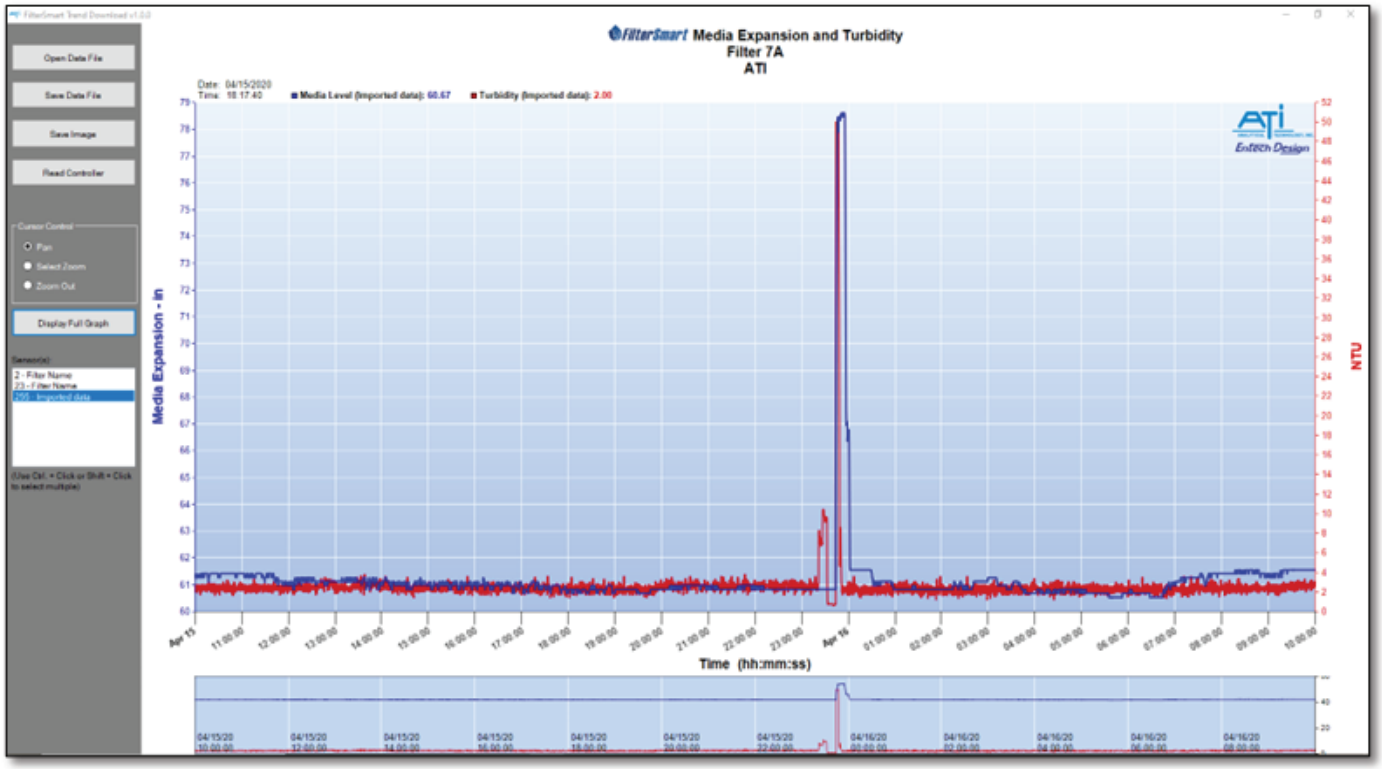


Figure 4: Example 24 hour data set

Cursor Control Options

Use the panning and zooming options to explore the data.

- **Pan**: This option lets you to explore the data left to right.
- **Select Zoom**: This option lets you select a smaller section of data. Use it to incrementally zoom by clicking on the area of focus or to select a section by clicking on the left side of the data and dragging to the right side of the data.
- **Zoom Out**: This option lets you zoom back out of the data.
- **Display Full Graph**: This option displays the full 24 hours of data.

Backwash Data

Backwash data is most easily recognized by locating where the *Turbidity* data (in red) reaches 50 NTU (in most cases). Zoom in on this area to get a detailed view of the backwash data. An example is shown in *Figure 5*.

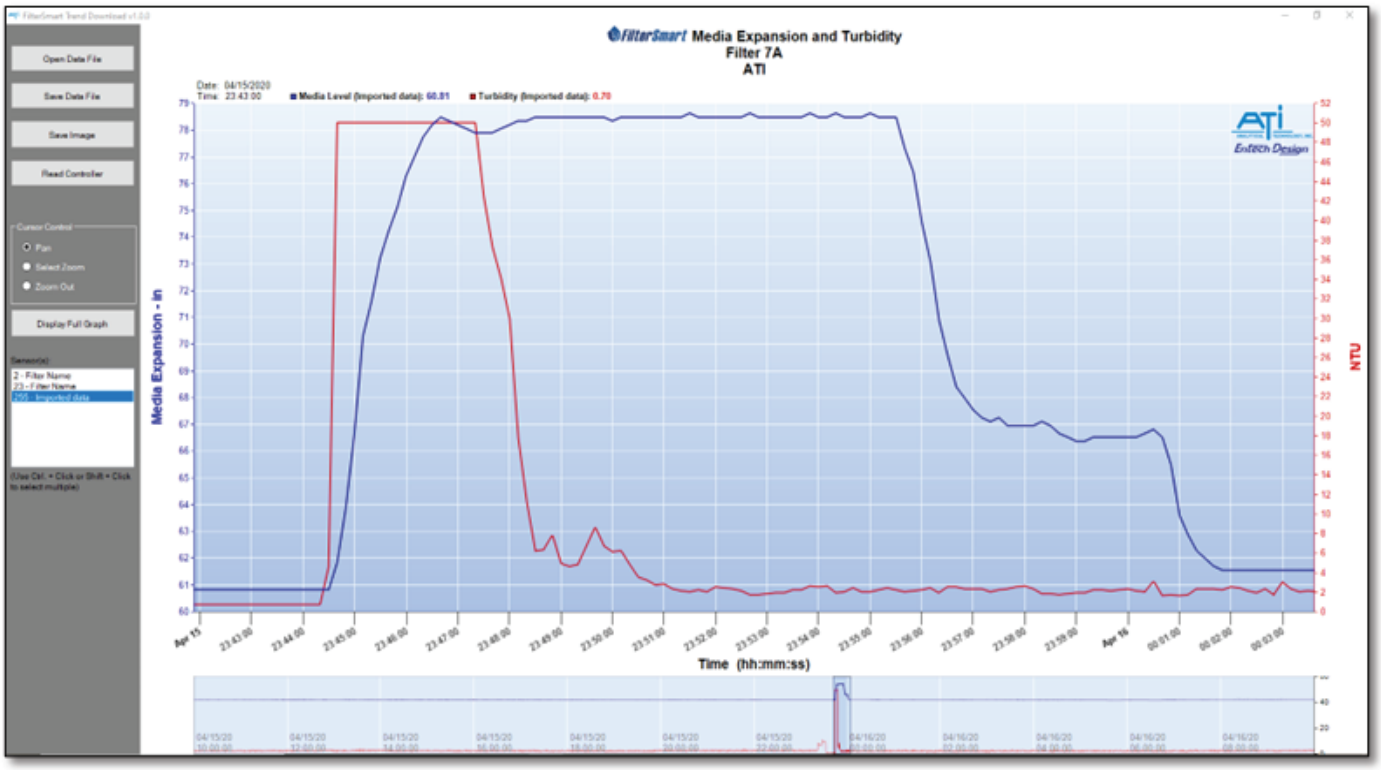


Figure 5: Example backwash data

Saved Data

The data file and the image can be saved for later reference.

Saving Data File

Select the **Save Data File** option to save the data to a comma delimited (CSV) file. Each sensor's data must be saved as a separate file. This file can be opened in the utility at a later time.

Saving Data Image

Select the **Save Image** option to save an image of the current graph.

Opening Data File

You can import a previously saved CSV data file into the utility by clicking the **Open Data File** option and selecting the file.

SOFTWARE AND CABLE INSTALLATION

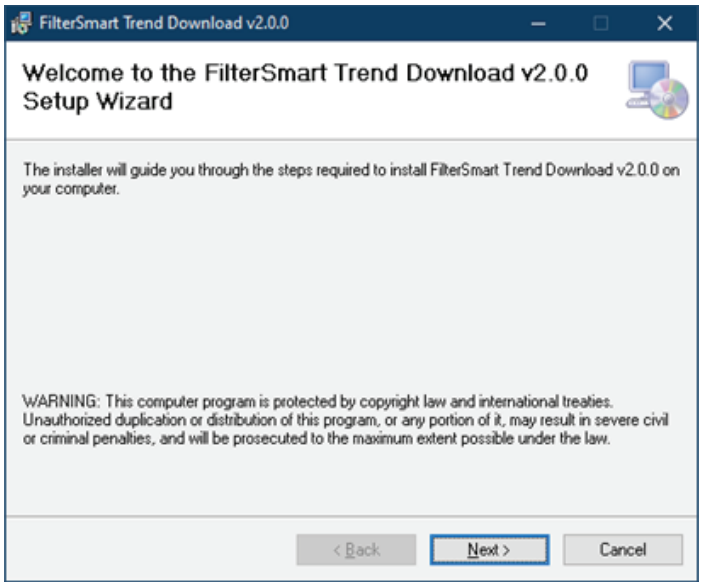
Software Download

You can download a zip file of the *FilterSmart Trend Download Utility* from this Badger Meter website:
https://www.badgermeter.com/software-firmware/

Once downloaded, extract the zip file to a temporary folder location. You can delete the file once the software is installed.

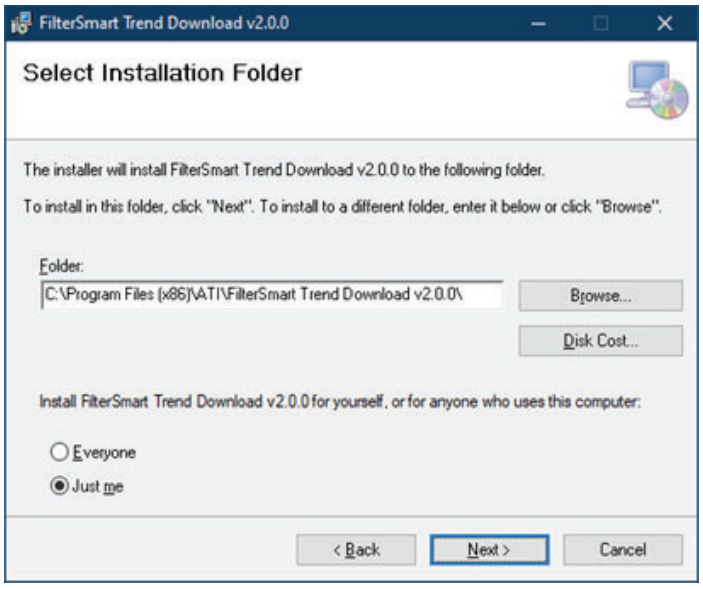
Installing Software

1. Open the executable file that you downloaded.
2. At the welcome screen, select **Next** to start the installation.



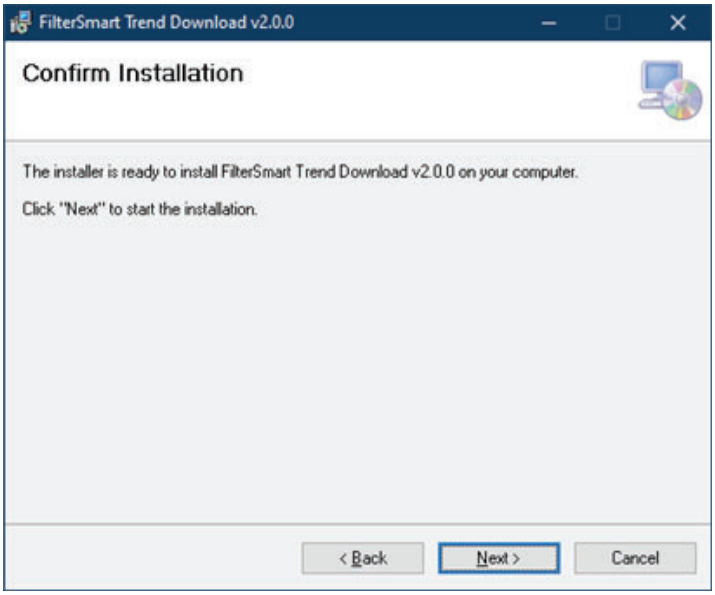
3. A default installation folder destination displays. To change the location for the software installation, click the **Browse…** option and navigate to the location for the software installation.

   If multiple users with separate login credentials use the device, you can install the software for all users to have access by selecting the **Everyone** option. Click **Next**.

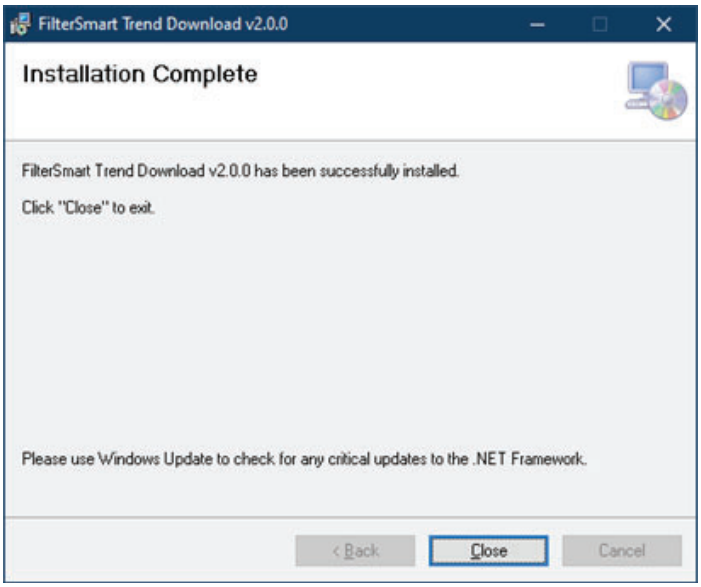


4. The *Confirm Installation* window displays. To continue with the installation, click **Next**.
5. If a message appears asking permission to allow the app to make changes to the computer, click **Yes**.

   Administration rights on the computer may be required. Consult your IT department for assistance as needed.



6. The software quickly installs. When the *Installation Complete* window appears, click **Close** to conclude the installation. An icon should appear on the desktop.



Cable Connections

Install the DB9 Interface Cable and the USB-to-RS232 cable to download the trend data.

Interface Cable Installation

1. Carefully remove the rightmost knockout on the under side of the controller enclosure. Be sure to not damage the circuit board in the process.



2. Feed the circular connector from the inside of the enclosure through the opening created in step 1. Orient the connector so the key is on top and the flat side is on the left.



3. Place the rubber washer on the circular connector.



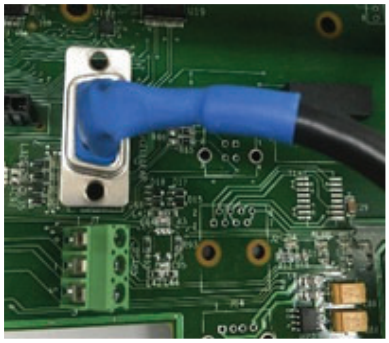
4. Place the dust cap on the circular connector with the flat side of the ring oriented on the left side of the connector.



5. Tighten the nut on the circular connector. Make sure the dust cap remains oriented as shown.



6. Insert the DB9 connector end of the cable into the mating socket on the controller board.



Connecting USB Cable

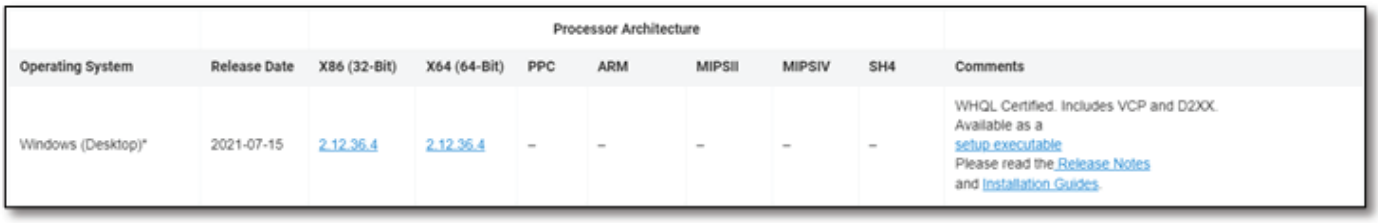
1. Orient the circular connector end of the USB-to-RS232 cable so the key is pointed upward as shown in the picture to the right. This allows the internal pins to align with the mating connector on the controller enclosure.
2. Push in the connector then twist the coupling ring to the right to lock the cable in place.
3. Plug the USB end of the cable into the PC that has the *Trend Data Utility Software* installed on it to access the trend data.



USB-to-RS232 Cable Driver

If the driver for the USB-to-RS232 cable is not automatically downloaded when it is first connected to the Windows-based device, perform the following steps.

1. Go to *https://ftdichip.com/drivers/vcp-drivers/*.
2. Locate the Windows operating system (see image below) in the list of supported VCP drivers.



		Processor Architecture							
Operating System	**Release Date**	**X86 (32-Bit)**	**X64 (64-Bit)**	**PPC**	**ARM**	**MIPSII**	**MIPSIV**	**SH4**	**Comments**
Windows (Desktop)*	2021-07-15	2.12.36.4	2.12.36.4	–	–	–	–	–	WHQL Certified. Includes VCP and D2XX. Available as a setup executable Please read the Release Notes and Installation Guides.

3. Select the **Setup Executable** option in the far-right column to download a zip file containing the executable file of the setup wizard for the driver OR select the option appropriate for the computer's operating system.
4. Open the downloaded file and extract the file.
5. Open the **.exe** file and follow the wizard's prompts.

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