DAQ10K Acquisition Software Installation and Operation

866-670-9-A

BINSFELD ENGINEERING INC.

Contents

1 Overview

The DAQ10K program is acquisition software developed for the TorqueTrak 10K system. It provides a means for observing, recording, and analyzing the digital output of the TT10K receiver via USB connection to a computer.

2 USB Connection to a PC

The RS-232 digital output of the TT10K receiver (RX10K) connects to a USB port of the computer via any conventional USB to RS-232 converter.

3 System Requirements

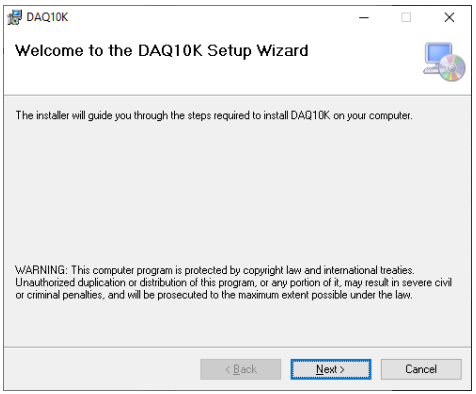
The DAQ10K software is optimized for Microsoft Windows 10 and 11 operating systems.

Do not perform background operations while logging data such as browsing the internet or running other heavy resource operations or data corruption can occur.

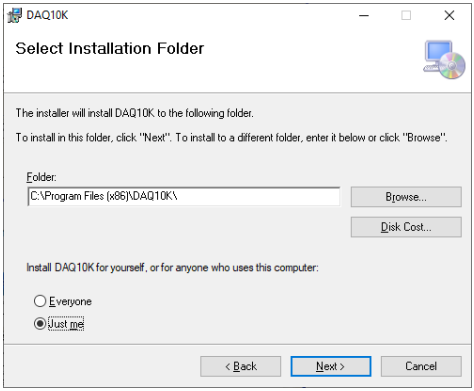
4 DAQ10K Program Installation

Insert the USB drive into the computer and unzip the contents of the `DAQ10K.ZIP` file into a temporary folder. Open the XXXXX folder and run the DAQ10K.msi file to start the installation and the following window will open.

Click “Next” to begin the installation.



Press "Cancel" at any time to stop the installation.



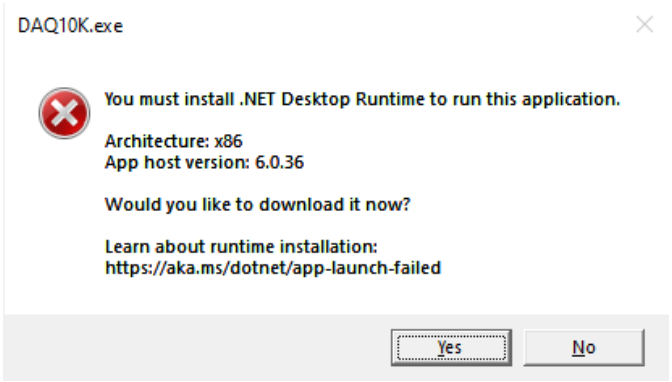
Select where you want to install the software and click “Next” to continue and follow the prompts to complete the installation.

5 Running the Software

After installation, there will be a DAQ10K icon on the desktop. Simply click the icon to start the program.

DAQ10K

If you see the following error, you can either download the file or run the `windowsdesktop-runtime-6.0.36-win-x86.exe` installation file from the unzipped installation folder.



5.1 License Key

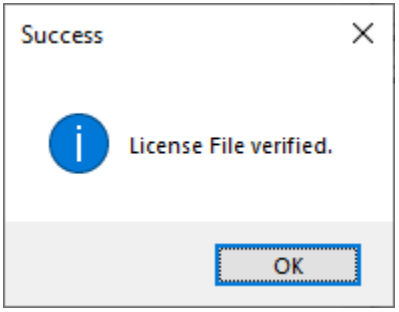
When the program is first run you will be prompted to enter a license key to run the software. Enter your email address and click the “Save Request” button.

A dialog box will open prompting you to choose where to save the request file. Once it is saved, email it to Support@Binsfeld.com. Upon receipt of the request, Binsfeld will provide an appropriate license key for your software.

5.2 Enter License Key

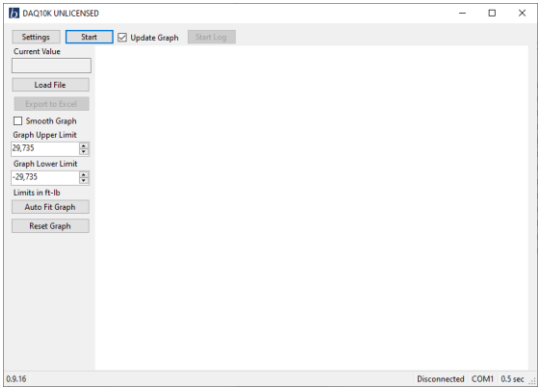
When you receive the license key from Binsfeld, re-open the software and the license dialog box will open again.

Enter your email address if it is not already entered and click the “Load License” button. A dialog box will appear where you can navigate to the license key. Upon successful verification you will be prompted with a window indicating you are now licensed.



6 Main Screen

When the program is executed, the main screen will open.



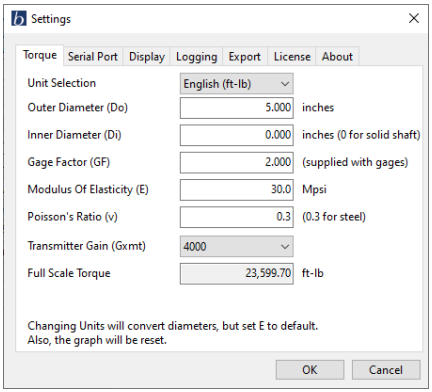
6.1 Status Display

The lower right of the main program window displays the current connection status of the COM port and if necessary, will display any COM port errors. Additionally, the length of time of the graph is displayed based on the Display Tab settings.

7 Configuration

The Settings button opens the Settings screen which allows configuration of the torque, serial port, display, logging, and export features.

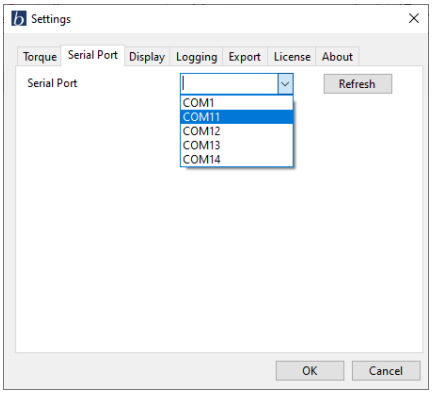
7.1 Torque Tab



The Torque tab is used to configure the shaft properties and gain setting. The default units are English ft-lb, but English in-lb, and Metric units can be selected from the drop-down Unit Selection menu at the top.

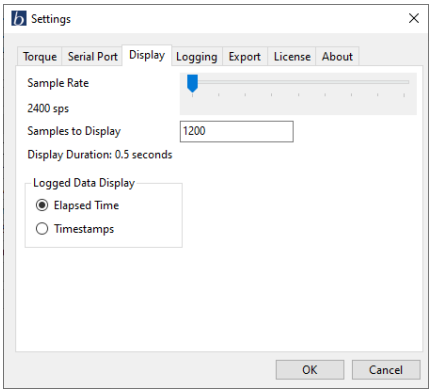
The Full-Scale Torque is calculated automatically from the input shaft and gain parameters. This value is then used to create the default scale for the display graph. The overall torque display is approximately 20 percent larger than the full-scale torque to allow viewing of signal dropouts and errors.

7.2 Serial Port Tab



Use the Serial Port tab to select the serial port corresponding to the port your USB to RS-232 adapter is connected. If you do not see your serial port listed, use the Refresh button. It may be necessary to restart the program if you are still unable to see the correct port listed.

7.3 Display Tab

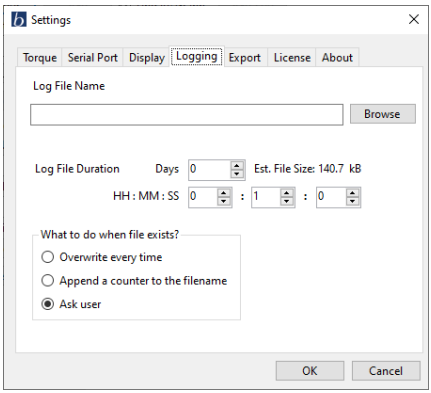


The display tab lets you choose 9 separate incoming Sample Rates from 2400 to 9.375 samples per second.

The Samples to Display input allows you to choose how many samples you would like to display on the graph.

The Logged Data Display button allows you to choose the horizontal time base of imported data as an elapsed time from the beginning of the test or as a timestamp starting from the moment the sample was taken.

7.4 Logging Tab



The logging tab provides a means for you to log the data for later retrieval.

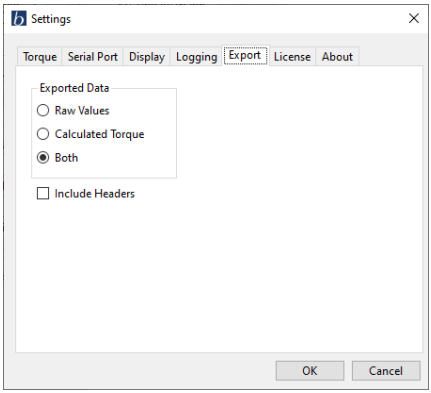
You can choose how long you want to log from one second up to thirty days.

Enter the name you want for the log file and browse to the folder you desire. The “Documents” folder is the default. If there is an existing file by the same name as you have entered, you have the option to overwrite the file or append a numerical digit to the end of the file name. You will receive an error message if there is not enough storage space for the file size you specify.

If the specified log time exceeds the max number of data points, the log file will be broken into multiple files (about 2MB in size with not quite 1 million samples) with filenames:

<base filename> plus an incrementing dash suffix (-1, -2, ...).

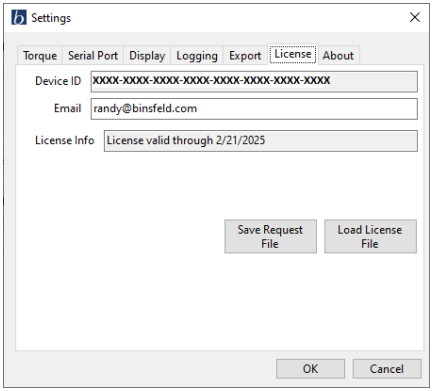
7.5 Export Tab



The export tab sets up the parameters for the Excel .csv file. It allows you to choose whether you want to export Raw Values from the RX10K, the Calculated Torque from the shaft parameters, or both. You also have the choice to have column headers appended to the data.

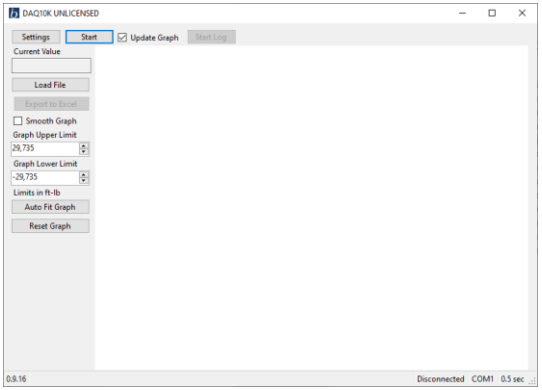
7.6 License Tab

When the license has been successfully entered the License Tab shows the unique device ID, and email account the program is licensed to as well as the duration of the license. It also allows you to install a new license.



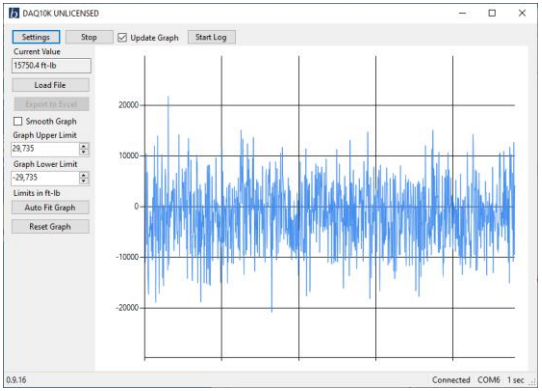
8 Operation

When all the parameters are configured, press the OK button to return to the main window.



8.1 Start Graph

Be sure to check the Update Graph button if it is not already checked and then press the Start button to start viewing the incoming torque data.



8.2 Start Log

This button will start logging data with the options and file name specified on the logging tab.

8.3 Stop

The Stop button will stop displaying the graph data.

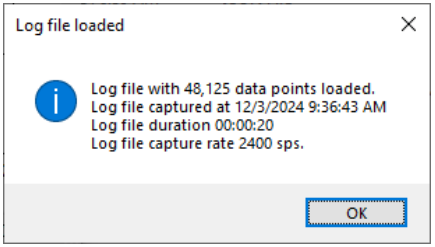
8.4 Current Value

This window shows the current data sample as torque calculated according to the inputs on the Torque tab of the settings screen.

8.5 Load File

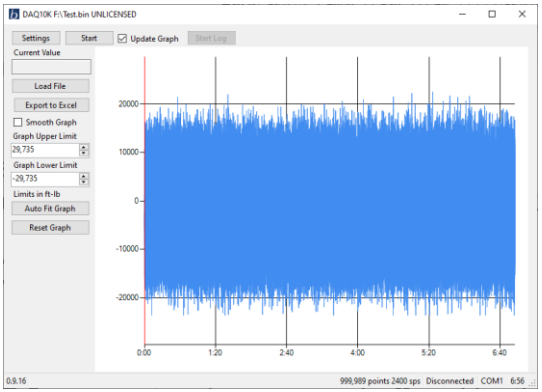
To view a previously saved log file, press the Load File button. Once activated it will open a standard Windows file explorer window that allows you to navigate to your previously saved log files. Once the log file is selected, a notification window will open with details of the file.

Please note that large, saved files will take longer to open. Disrupting the loading of the file will increase this time.



8.5.1 Zooming Captured Data

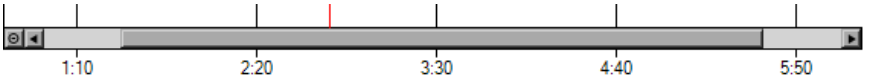
Once the file loaded screen is closed you will see the entire saved log file on the screen.



The mouse center wheel can be used to zoom into the captured data, or you can left click and drag any area of the data to zoom in. Each consecutive zoom action will minimize the number of samples displayed.

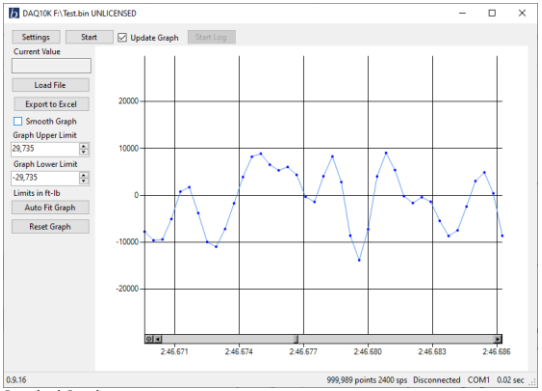
8.5.2 Navigating the Graph

Once you have zoomed into the graph, a navigation panel will be added to the graph as shown below. The left and right arrow keys will scroll the graph in descending and ascending time. The far-left button beside the left arrow key will make the graph zoom out to the point that the entire data will be displayed. It will do so in reverse increments of which it was zoomed.

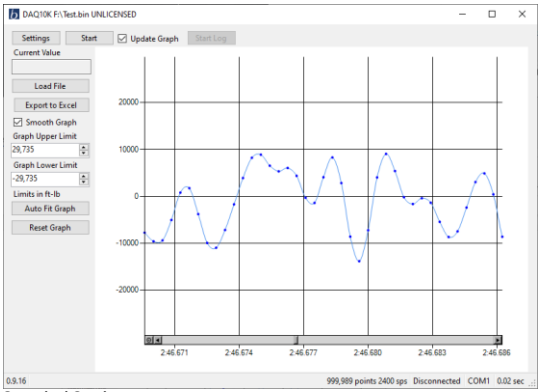


8.6 Smooth Graph

This box is used to interpolate data between actual data points to make a more sinusoidal display. See below example.



Standard Graph



Smoothed Graph

8.7 Graph Upper and Lower Limit

These boxes allow you to set the upper and lower limits of the torque displayed on the graph. The default is 20% higher than the full-scale torque calculated from the Torque tab.

8.8 Auto Fit Graph

This button will resize the graph to provide the best vertical resolution.

8.9 Reset Graph

This Reset Graph button will return the graph to the default vertical state.

8.10 Export to Excel

This will open an explorer window for you to navigate to where you would like to save the current data on the graph display to a comma separated value file format.