Data acquisition with Torqsense devices

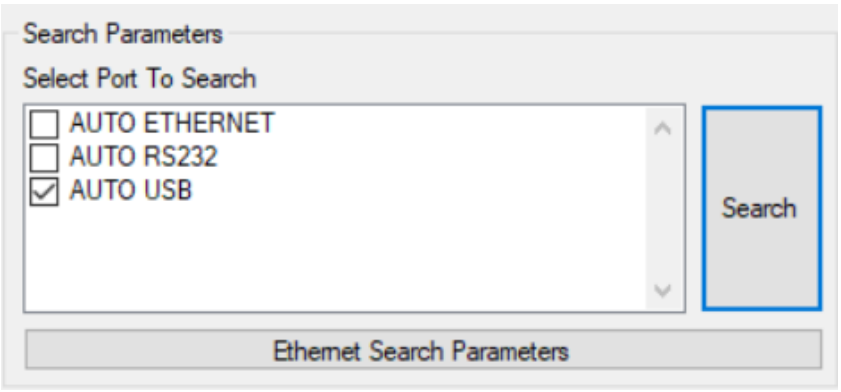
João Loureiro, 21 December 2021

1. Plug the sensor's USB cable to your computer's USB port.

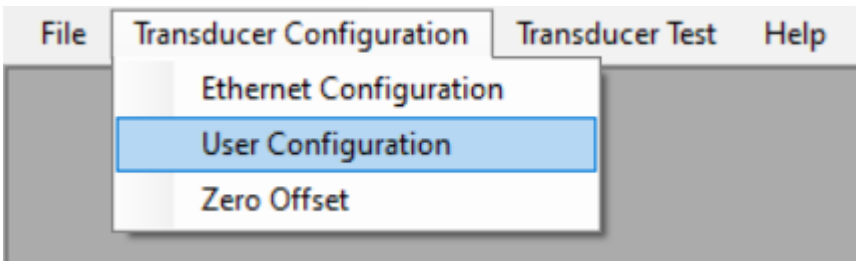
2. Download Torqview 5.6 and Transducer Control 5 software.

- **TorqSense SGR52x, SGR54x, RWT42x, RWT44x, RWT32x, RWT34x and ORT24x Series (Serial No's 12200 and above)**
  - **TorqView version 5.6**
    TorqView will run in demo mode for 10 hours after which a license key will be required to activate the software.
    System Requirements: Windows 10, Windows 8.1, Windows 8, Windows 7 (32bit and 64bit) with a minimum of 512 MB of RAM; a minimum screen resolution of 1024 x 768 pixels; an Intel/AMD 1GHz or equivalent processor; and a minimum of 600MB free disk space.
  - **Transducer Control**
    System requirements:
    Windows 10, Windows 8.1, Windows 8, Windows 7 (32bit and 64bit) with a minimum of 128MB RAM; a minimum screen resolution of 1024 x 768 pixels; an Intel/AMD 1GHz or equivalent processor and a minimum of 4MB + 2GB for Microsoft .NET Framework runtime.
  - **USB Drivers**

3. After you download them, open Transducer Control 5, select "AUTO USB" and search.

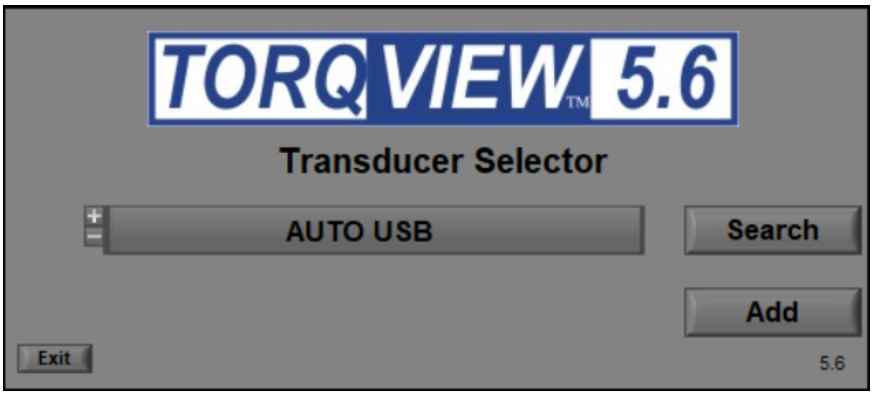


4. Under "Transducer Configuration", select "User Configuration".

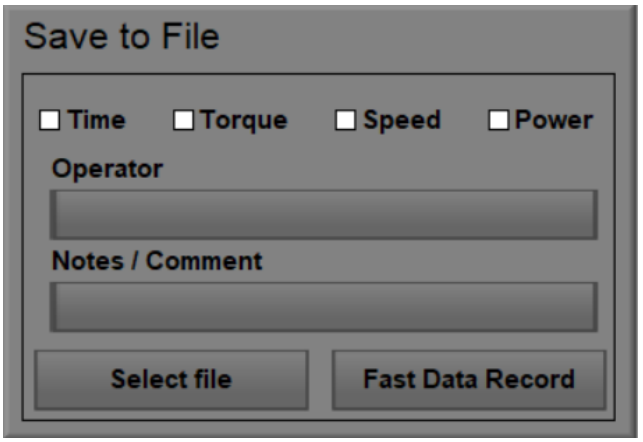


5. Go to “Digital Setup”, then under “Filters” set both Torque and Speed values to 256. Upload the configuration.

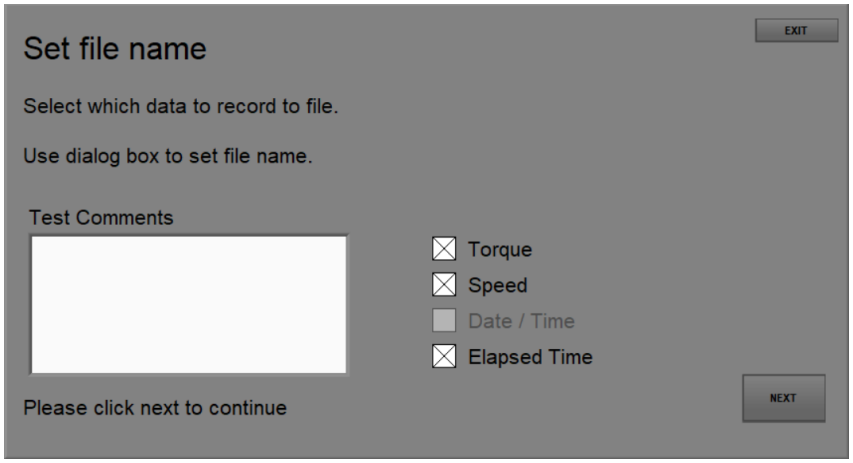
6. Open TorqView 5.6, pick “AUTO USB” in the Transducer Selector and then select the transducer.



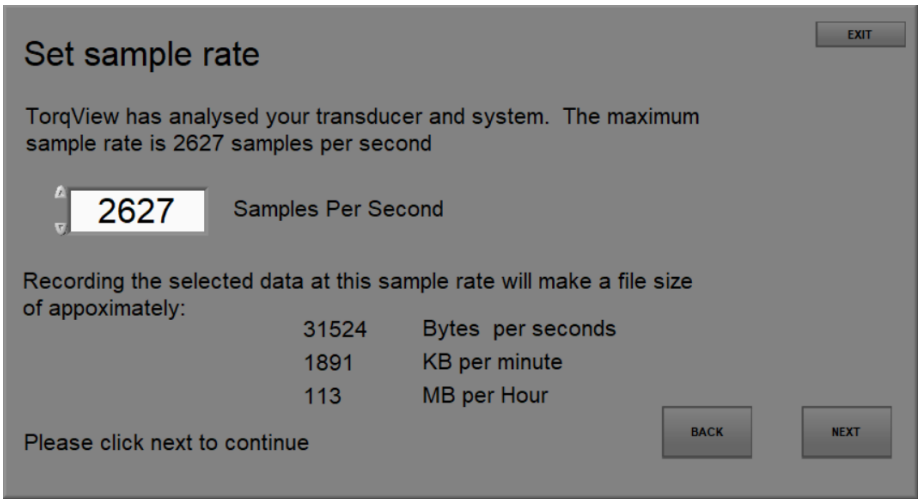
7. Go to under Setup and then click on “Fast Data Record”.



8. Check the boxes “Torque, “Speed” and “Elapsed Time”. Choose the name of your file.



9. Pick the sample rate you wish to work with. Note that this value varies with your computer’s processor frequency and other factors, for more information read the following documentation.



10. Choose the starting method and start the data acquisition. The results will be written in a .txt file and will need processing before being imported into MATLAB or any other software.

11. After you finish acquiring the data, exit TorqView 5.6 and run your .txt file through the “papavirgulasinator” C program.
    This program will replace the commas that the program placed as decimal separators, for dots. This is mandatory since commas are already used as column delimiters and you can’t have the same symbol serving both roles.
    Note that the c program will save your new processed file as “r1.txt”, if you want to give a different name you will need to change the source code or do it afterwards.

12. After you are done with this, open “torqsensedatav00.m” in MATLAB, go to “import data” and pick the column delimiter as “,” and decimal delimiters as “.” , proceed to import the data from the txt file.

13. Make sure your table in MATLAB is named “r1” and run the MATLAB program to plot the results, enjoy! :)