Q.uick Start Guide
How to configure a Q.station Data Logger

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Purpose

This document is used to provide a thorough understanding of how to configure and utilize the logging capabilities of a Q.station (DIN rail mount or Q.brixx version).
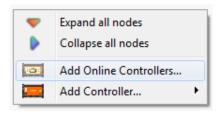
Items Required

- Q.station with adequate power supply (Q.brixx-station is supplied with an AC to DC power adapter)
- PC with a licensed version of test.commander installed
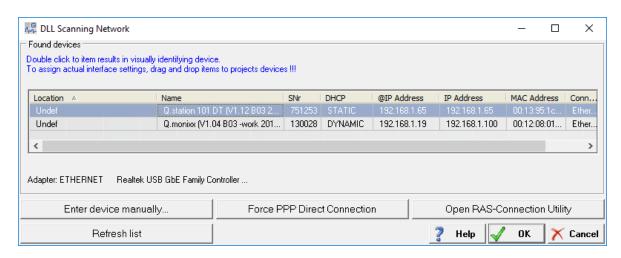- Ethernet cable

Procedure

1. Assemble hardware together (Q.station + measurement modules).

2. Power on hardware and connect Ethernet cable between PC and Q.station.

3. Start test.commander. Create a new project.

4. In the empty project, right-click on the mouse and select **Add Online Controllers**.
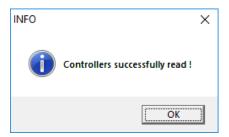

5. All controllers on the same network will be displayed, highlight the controller to connect to and click OK.
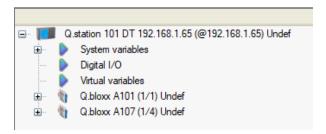

6. When the controller is successfully added to the project, the following window will appear:
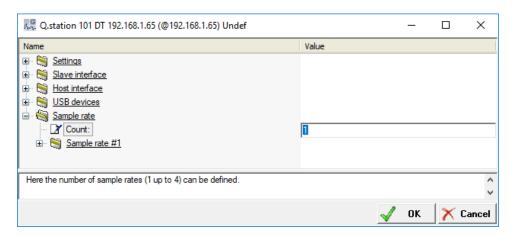
7. The Q.station and attached measurement modules will be displayed in the project work space:

8. Configure the channels (type, scaling, etc): real and virtual channels.

9. Adjust the number of desired buffers/sample rates: Double-click on the Q.station, Sample Rate > Count. By default, there is 1 x buffer used (maximum: 4).
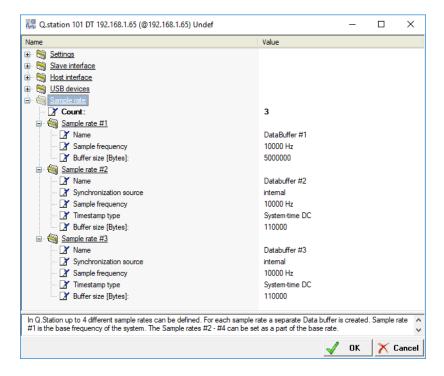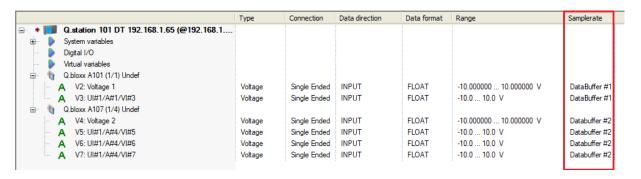

10. Modify each buffer:

   - Customize the name of each buffer.
   - Modify the sample frequency (buffer #1 must have the highest sample frequency).
   - Modify the buffer size (the combined buffer size for all buffers can be a max of 200 MB).
   - Buffers 2-4 can be synchronized internally (use internal clock) or external (digital input on Q.station).

- Click OK to apply settings.

11. In the main project space, assign which channels (real and virtual) belong to a certain buffer. You should only use one buffer rate per UART (it is always possible to have multiple logging rates use a single buffer). This is performed using the Sample Rate column:
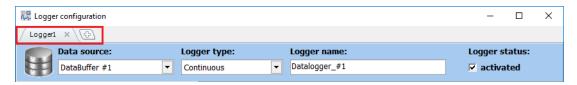

	Type	Connection	Data direction	Data format	Range	Samplerate
Q.station 101 DT 192.168.1.65 (@192.168.1....)						
System variables						
Digital I/O						
Virtual variables						
Q.bloxx A101 (1/1) Undef						
A V2: Voltage 1	Voltage	Single Ended	INPUT	FLOAT	-10.000000 ... 10.000000 V	DataBuffer #1
A V3: UI#1/A#1/VI#3	Voltage	Single Ended	INPUT	FLOAT	-10.0 ... 10.0 V	DataBuffer #1
Q.bloxx A107 (1/4) Undef						
A V4: Voltage 2	Voltage	Single Ended	INPUT	FLOAT	-10.000000 ... 10.000000 V	Databuffer #2
A V5: UI#1/A#4/VI#5	Voltage	Single Ended	INPUT	FLOAT	-10.0 ... 10.0 V	Databuffer #2
A V6: UI#1/A#4/VI#6	Voltage	Single Ended	INPUT	FLOAT	-10.0 ... 10.0 V	Databuffer #2
A V7: UI#1/A#4/VI#7	Voltage	Single Ended	INPUT	FLOAT	-10.0 ... 10.0 V	Databuffer #2

12. Highlight the Q.station and click on the Logger Configuration button.

13. The Logger Configuration window will appear.
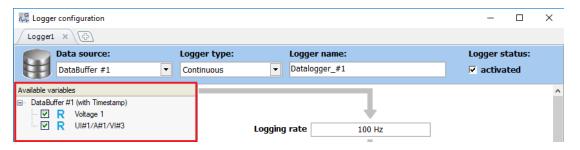14. It is possible to add or delete a logger:

A maximum of (20) loggers can be created in a single Q.station.

15. For each logger, select the data source, logger type, logger name, and logger status:
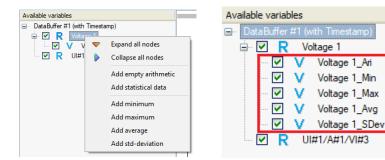

- Data Source: select the buffer in which the channels to save are located. Select one of the configured buffers.
- Logger Type: select between continuous, triggered, or event-based.
- Logger Name: provide a name for each logger. The data files will include this name in the file.
- Logger Status: activated or deactivated.

16. Select the channels to save within the logger. Only channels within the selected buffer can be saved within that logger.

17. Other arithmetic channels can be added to any of the available variables. Right-click on the variable and select the type of arithmetic channel to add.
- Empty arithmetic
- Statistical data
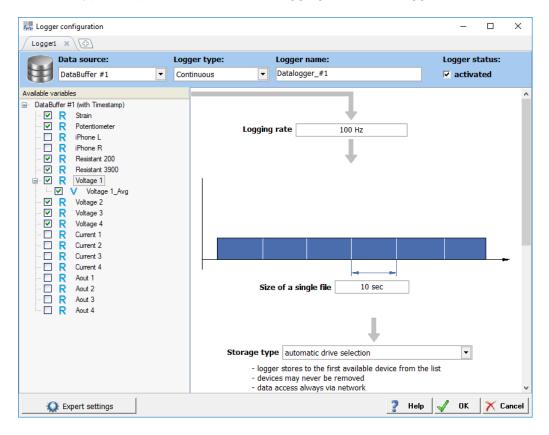- Minimum, maximum, average, and standard deviation

18. Double-click on the new virtual variable to modify its equation.

19. The logger type will determine the available triggering options.
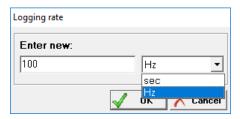
Logger Type: Continuous

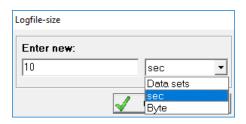With this type it is possible to select the logging rate of the logger and the size of a single file.

The logging rate can be set in seconds or Hz:

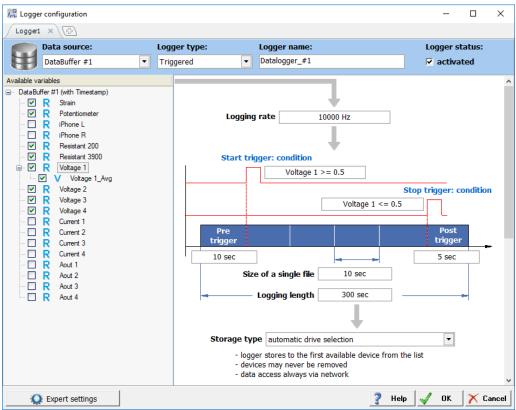The size of a single file can be set in seconds, data sets, or bytes:

Logger Type: Triggered

With this type it is possible to select the logging rate. It is also possible to assign start and stop trigger conditions; the channel(s) must be selected from within the same buffer. Pre and/or post trigger data can also be added.

The logging rate can be set in seconds or Hz. The size of a single file can be set in seconds, data sets, or bytes; additionally the pre and/or post trigger data can be set in either seconds or data sets.

The possible condition arguments:

- < : less than
- <= : less than or equal to
- \> : greater than
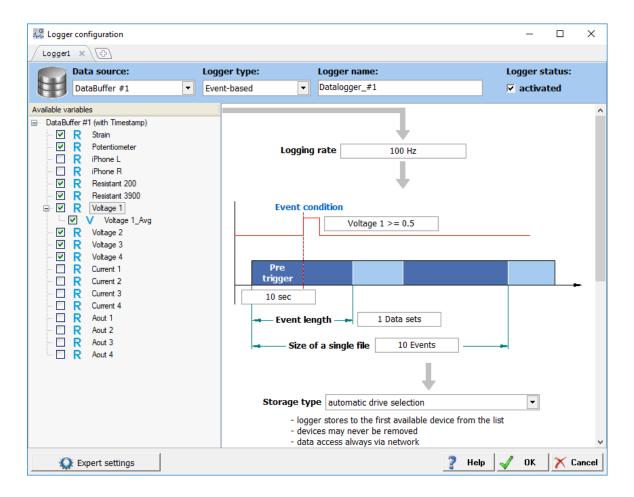- \>= : greater than or equal to
- == : equal
- != : not equal

Logger Type: Event-based

With this logging type it is possible to start logging based on an event. A pre-trigger is optional, while the event length can be specified in seconds, data sets, and bytes. The size of a single file is specified by number of events.
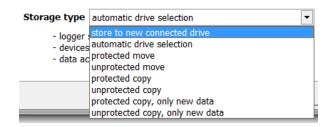
Data Storage

For all 3 logger types, the storage type can be chosen:

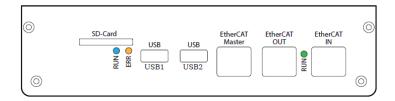Default: automatic drive selection.

For more information regarding the other options, see section 7.3.3.5 in the Q.station manual. This option determines how and in what sequence writing occurs to the destinations.

1. The destination for each logger can be chosen next. Either internal memory of the Q.station, SD card, or USB port. The internal memory has a 100Hz logging rate limit.
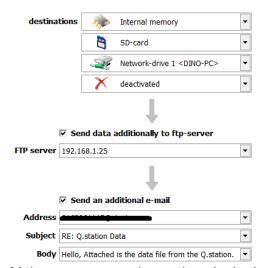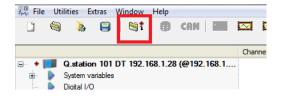
2. It is possible to also send data to the following destinations: a network drive, FTP server, or via E-mail. How to configure these destinations are explained in separate guides that can be found on the Gantner Instruments website:
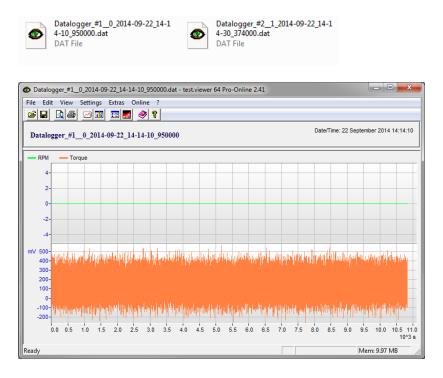https://www.gantner-instruments.com/us/support/support-tools/library-of-tools/

3. Make sure to save the settings in the Logger Configuration window by clicking the OK button.

4. Since a lot of changes have been made to the project settings and logging settings, these need to be updated to the controller. Notice a red star appears next to the Q.station. Click on the Write Project (Update) button to perform the update.
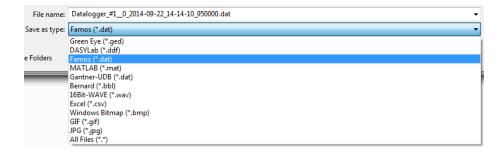

5. After the update is performed the Q.station starts logging immediately (if continuous is selected) or waits for the trigger conditions to occur. Files in the storage destination (i.e. USB drive, SD card, etc.) are saved as .dat files and can be opened using test.viewer.

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6. Multiple data files can be appended together using test.viewer: File > Append File

7. Single or appended files can be saved into other formats: File > Save As