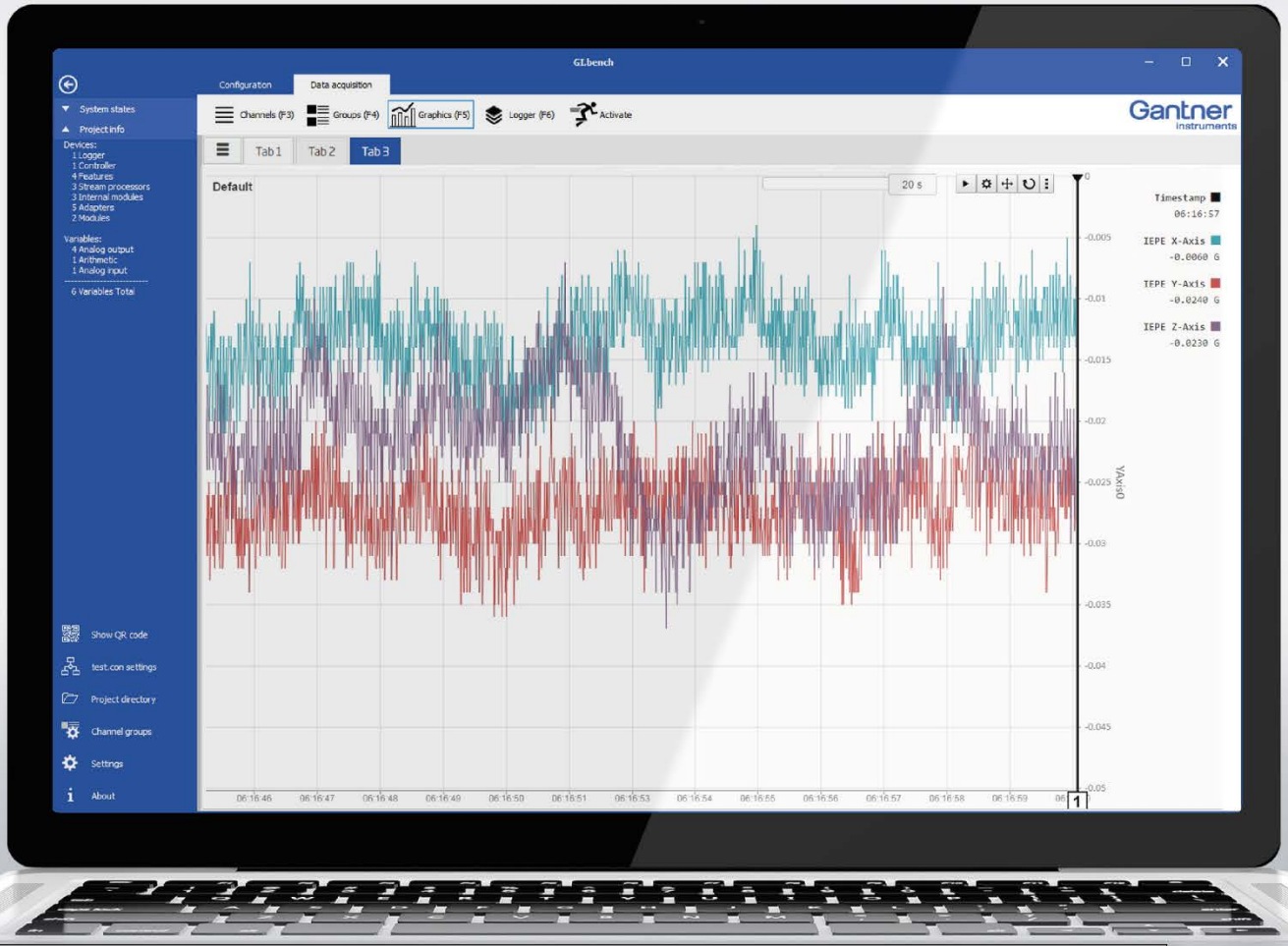
Gantner instruments

Data Acquisition and Control Systems



GI.bench Software Guide

The complete 'how to' guide for setting up a Q.series Test and Measurement system using the GI.bench configuration tool.

GI

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1. INTRODUCTION

This quick start guide will discuss how to install, setup, and use the GI.bench software tool as part of your complete DAQ system. This guide will describe the different features and capabilities of GI.bench and how it is utilized.

1.1 Purpose

Any Gantner system that utilizes a Gantner controller requires software for setup and configuration. The Q.station, in any housing type, is required in order to use GI.bench. This software incorporates features for measurement module configuration, data visualization, recording, and analysis of acquired data.

1.2 Software Downloads

You can find the latest release of GI.bench (32 and 64-bit) at the downloads section of our website www.gantner-instruments.com/resources/downloads-and-support-tools/

1.3 Recommendations and Restrictions

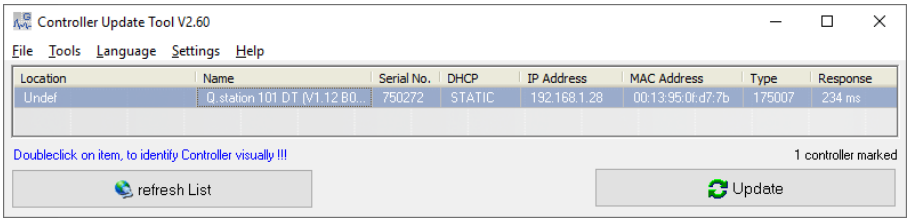
- PC Specifications
  - Minimum OS: Windows 7
  - Recommended RAM: 4 GB
  - Recommended Processor: Dual Core (2+ GHz)
  - Data Storage: Depends on application requirement.
  - 1 x Ethernet port (minimum)
  - 1 x USB port (minimum)
- Gantner Controller
  - GI.bench is only compatible with the Q.station X, Q.station, or Q.monixx
- Always use the GI.bench version with the corresponding Q.station firmware
- Do not use a bootable USB drive, Q.station will not start
- After configuring a device with GI.bench, hardware cannot be used with test.commander until doing a factory reset. Save your test.commander projects if needed for future use.
- A GI.bench project is still component specific and cannot be distributed on other similar systems
- By using enhanced streams, configuration can be involuntarily change after reading a controller. Please control this parameter before writing your project.

2. FIRMWARE UPDATE

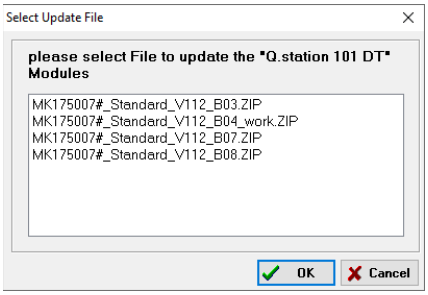
In order to use the latest version of GI.bench, the firmware of the controller must be up to date. Please contact our support team for the latest firmware versions. Firmware updates will soon be integrated into GI.bench.

2.1 Q.station V1.XX

1. Make sure test.commander is installed and activated
2. Download all the zip files from the folder **V1.XX BXX Q.station Firmware** to the PC
3. Move all the files to the following folder:
   C:\ProgramData\Gantner Instruments\test.commander\Firmware
4. Restart test.commander
5. Utilities > Controller Firmware Update, click Refresh List to scan network for Q.station
6. Select controller and click Update



7. Select the latest firmware from the list (e.g. V1XX_BXX) and click OK.



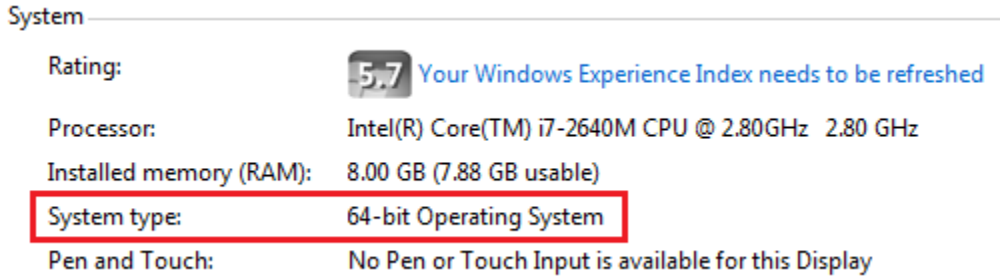
2.2 Q.station V2.XX

1. In the download link below, go to V2.XX BXX Q.station Firmware
2. Download the **MK175XXX#_Standard_##qstation-qa3-32_V2XX_BXX.zip** file to your PC
3. Depending on if your PC is 32 (x86) or 64-bit (x64), unzip the respective GInsFirmwareLoader_x86/64 zip file
4. Make sure GI.bench is running first. Locate the GInsFirmwareLoader application file and run it
5. Select the MK175XXX#_Standard_##qstation-qa3-32_V2XX_BXX.zip file when updating the firmware

3. SOFTWARE INSTALLATION

3.1 Install Process

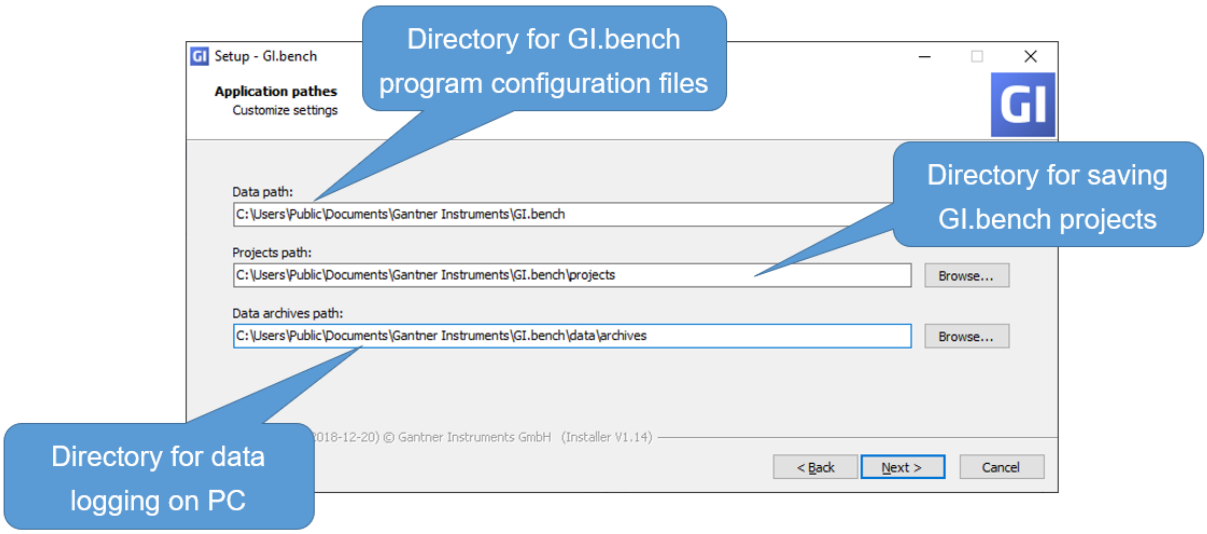
1. Determine if your OS is 32-bit or 64-bit. Right-click **Computer > Properties**



2. Locate the appropriate zip file based on your OS version and unzip the contents
   a. 64-bit: GI.bench_Setup_64bit_VX.X.X.X_20XX-XX-XX
   b. 32-bit: GI.bench_Setup_32bit_VX.X.X.X_20XX-XX-XX

3. Locate the setup executable and double-click it to start the installation process. If there are admin privilege issues, right-click the exe and click Run as administrator.

4. Default directories to set during installation



5. After the installation process has completed, double-click the GI Bench icon on the desktop, system tray icon, or from the installation directory.

3.2 Firewall Exceptions

Before connecting Gantner hardware to GI Bench, make sure to configure the correct IP address settings of the PC and to provide proper exceptions in the firewall for all the Gantner Instruments software tools.

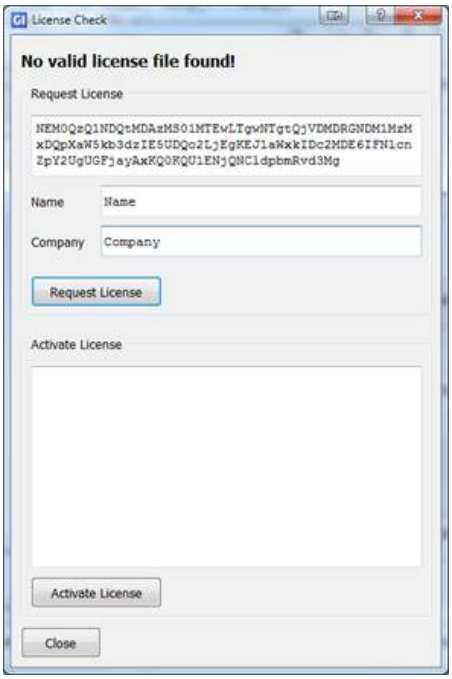
1. GI data handling system
2. GI.com application
3. GI.config – GI.bench sub-application
4. GI.service – GI.bench sub-application
5. gibenchui

3.3 Getting License

A trial license is available which will provide full functionality for 30 minutes. For a full license, it can be requested after starting the software.

Licenses are associated with the PC the request was generated from. The same license can be used for either OS version and for newer versions of GI Bench.

1. After running the software, the first screen you should see is the License Check. Enter your name and company in the blank fields. Click **Request License**.



2. This will auto-generate an email to request for the license. Send the email.

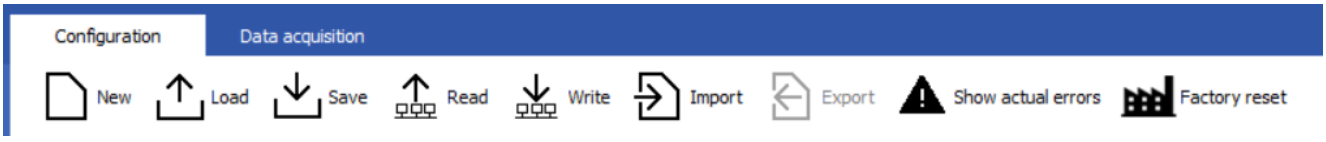
3. Once the license is received, copy and paste it into the Activate license field, then click **Activate License**.

3.4 Interface Overview

GI.bench has two main sections: Configuration and Data Acquisition

3.4.1 Configuration Tab

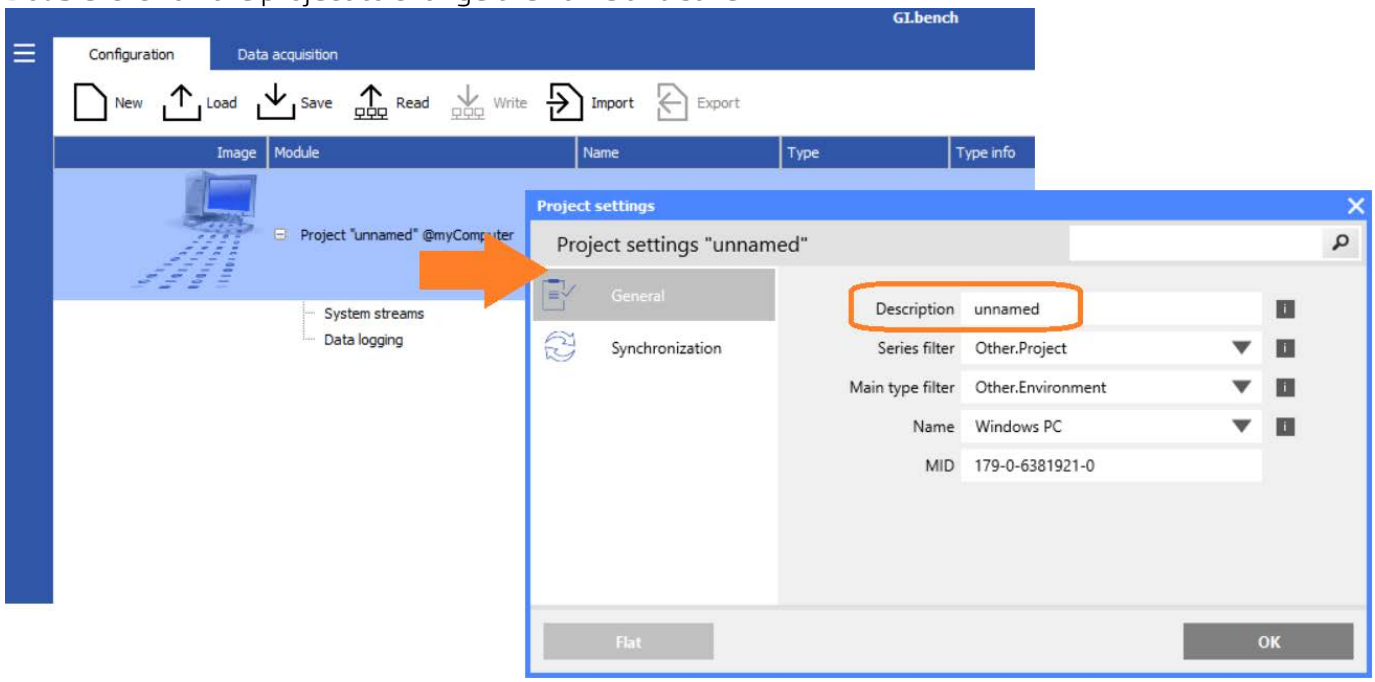
The configuration tab is for managing projects and devices



New	Create a new project
Load	Load an existing project from disk
Save	Save the current project to disk
Read	Read configuration from online controller(s)
Write	Write configuration to online controller(s)
Import	Import configuration of EtherCAT modules from EtherCAT master
Export	Export configuration of EtherCAT modules to EtherCAT master
Show actual errors	Configuration warning or error information
Factory reset	Reset hardware to factory defaults

3.4.2 Rename a Project

Double-click on the project to change the name and save

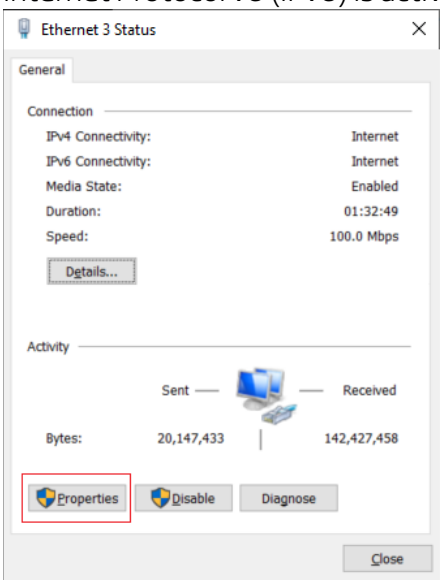


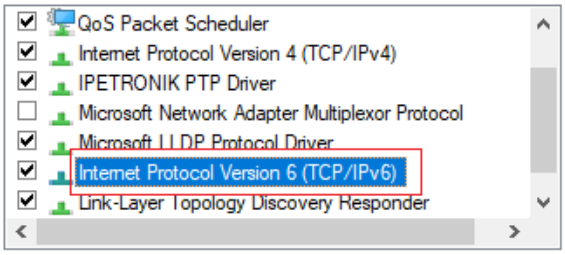
Default project directory: C:\Users\Public\Documents\Gantner Instruments\GI.bench\projects

4. SOFTWARE CONFIGURATION

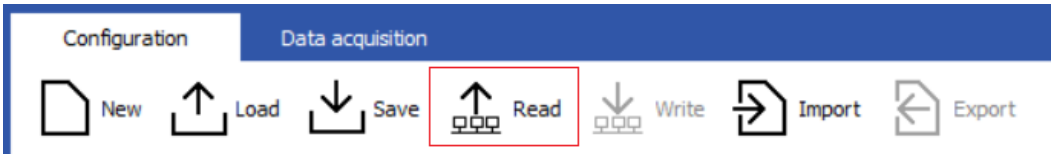
4.1 Scan for Controllers

1. PC and controller should connected directly or on the same ethernet network. Verify that Internet Protocol v6 (IPv6) is activated. (test.commander scans with IPv4)

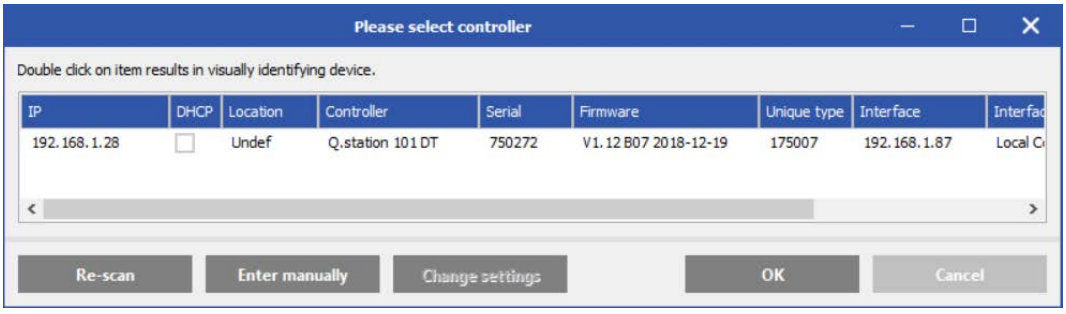




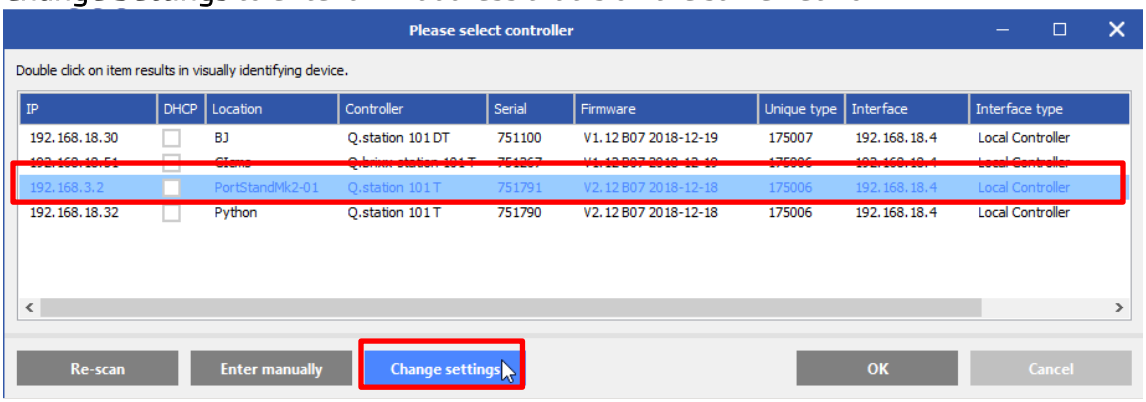
2. If license is activated, GI Bench will open to a blank page. Click Read to scan your network for a Q.station controller.



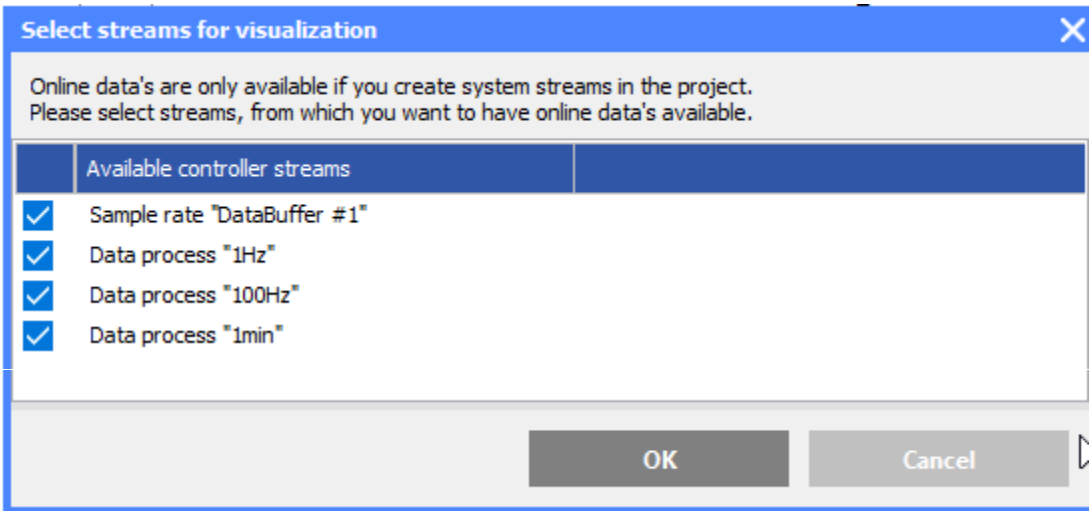
3. Scan if the controller was not initially detected. You can also manually enter the IP address of the controller. Once discovered, click the controller and click OK.



4. If the controller appears in blue, it is not on the same network as the PC. Highlight it and select **Change Settings** to enter an IP address that is on the same network.



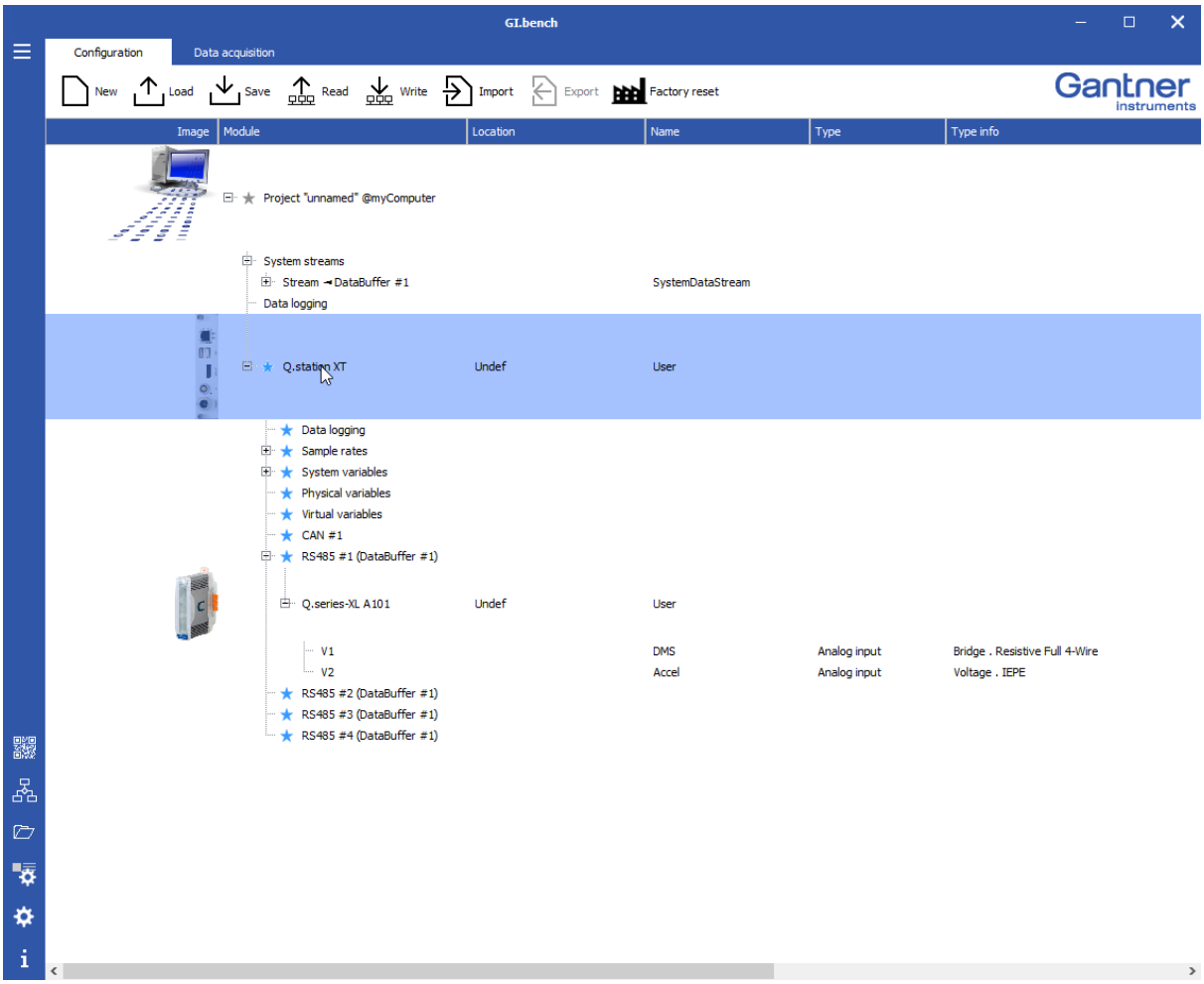
5. If the system was previously configured, you will be asked which streams for visualization are to be imported. Depending on what you select, some channels will or will not be displayed during visualization



6. The software will read the configuration on the controller and display the project

Examples:

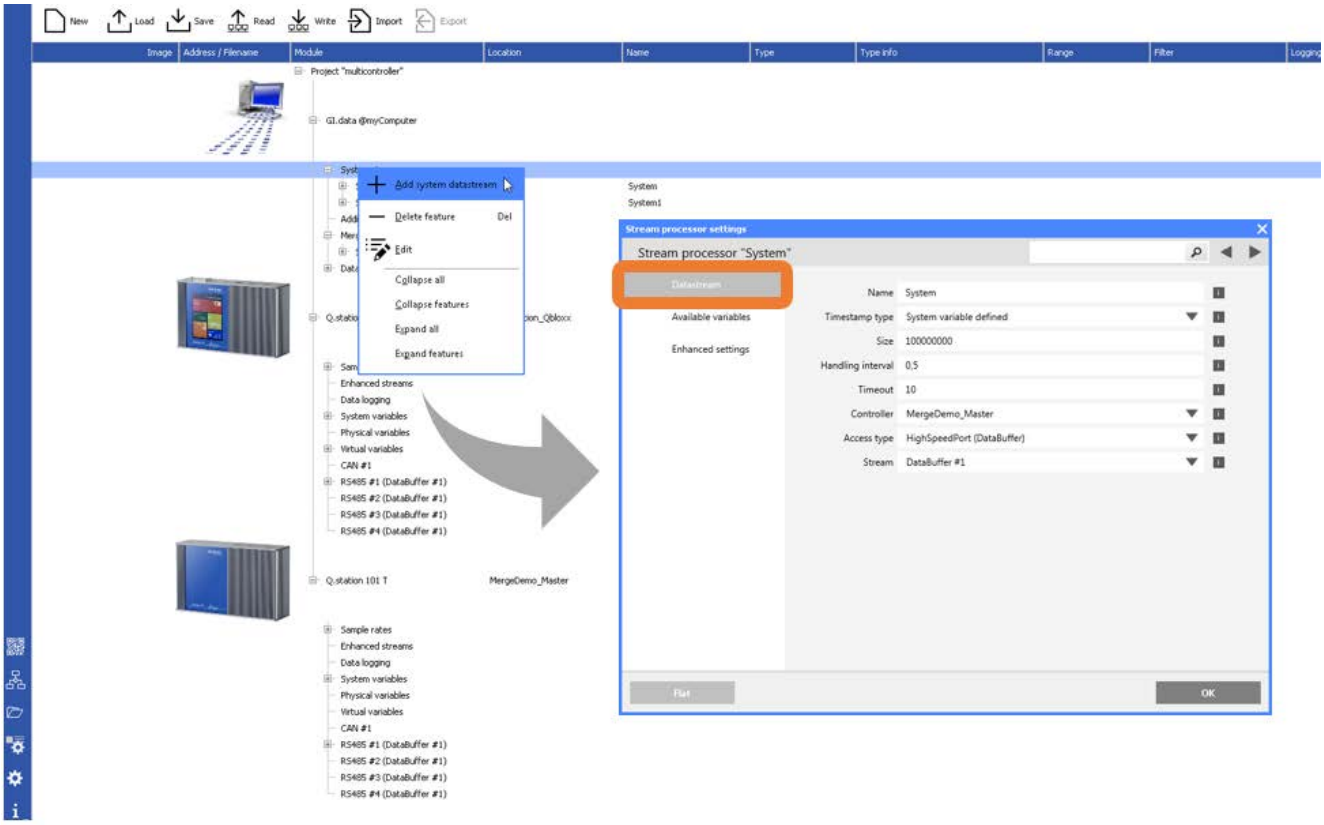
GI.bench
Configuration
Data acquisition
New
Load
Save
Read
Write
Import
Export
Factory reset
Gantner
instruments
Image
Module
Name
Type
Type info
Range
Filter
Logging
Sample rate
Project "unnamed" @myComputer
System streams
Data logging
Q.station 101 DT
User
Data logging
Sample rates
System variables
Physical variables
Virtual variables
CAN #1
RS485 #1 (DataBuffer #1)
Q.bloxx A116
User
V1
UI#1/A#1/VI#1
Analog input
Bridge . Resistive Full 6-Wire . Supply 4 V
-2.5 ... 2.5 mV/V
(0 samples)
DataBuffer #1
Q.bloxx A109
User


GI.bench
Configuration
Data acquisition
New
Load
Save
Read
Write
Import
Export
Factory reset
Gantner
instruments
Image
Module
Location
Name
Type
Type info
Project "unnamed" @myComputer
System streams
Stream → DataBuffer #1
SystemDataStream
Data logging
Q.station XT
Undef
User
Data logging
Sample rates
System variables
Physical variables
Virtual variables
CAN #1
RS485 #1 (DataBuffer #1)
Q.series-XL A101
Undef
User
V1
DMS
Analog input
Bridge . Resistive Full 4-Wire
V2
Accel
Analog input
Voltage . IEPE
RS485 #2 (DataBuffer #1)
RS485 #3 (DataBuffer #1)
RS485 #4 (DataBuffer #1)

7. When there is a blue star in front of a controller or module this indicates that there is a configuration change that has not been written to the controller. Click Write to export the configuration to the controller.

4.1.1 System Datastreams

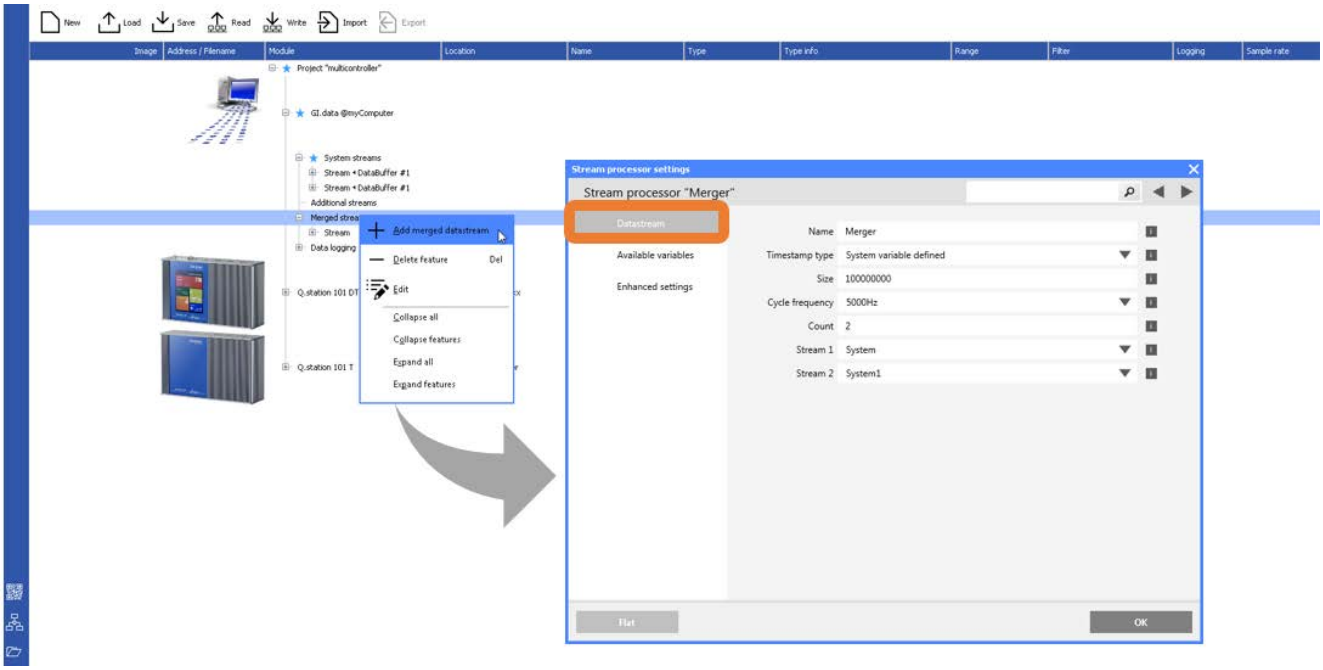
Each controller can have its own data logger which writes the data to the PC as individual files. Create a datastream for each controller buffer that you want to add to the merged datastream



Name: Name for system datastream
Controller: Select the controller from which to create a system datastream
Stream: Select the controller buffer from which to create a system datastream

4.1.1 Merged Datastreams

GI.data collects all data from the local buffers on the controllers and merges the data into one merged datastream.

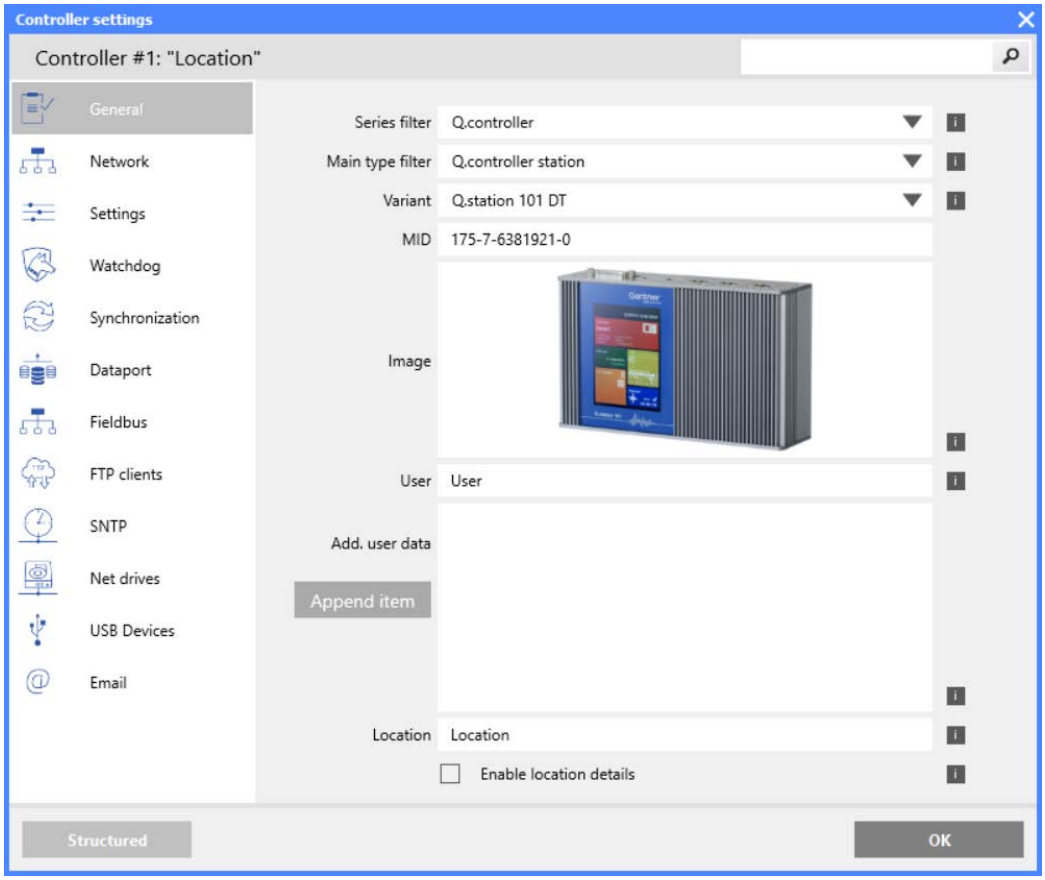


Cycle frequency: Sample frequency of merged datastream
(whole number divisors of system datastreams only)
Count: No. of system datastreams in the merged datastream
Steam 1, 2, ..: System datastreams to be merged

4.2 Configuring a Controller

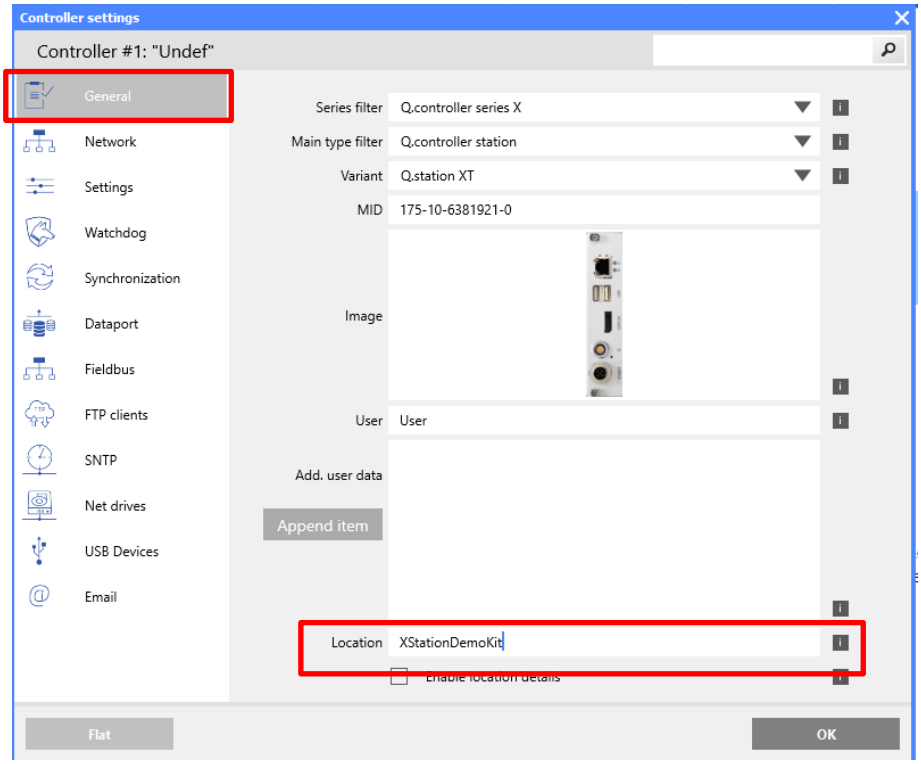
On the Configuration tab, double-click on the controller on the project screen to bring up the controller settings

In this menu you will find the various settings of the Q.station controller. There is a flat and structured layout option. Click OK when done making changes.



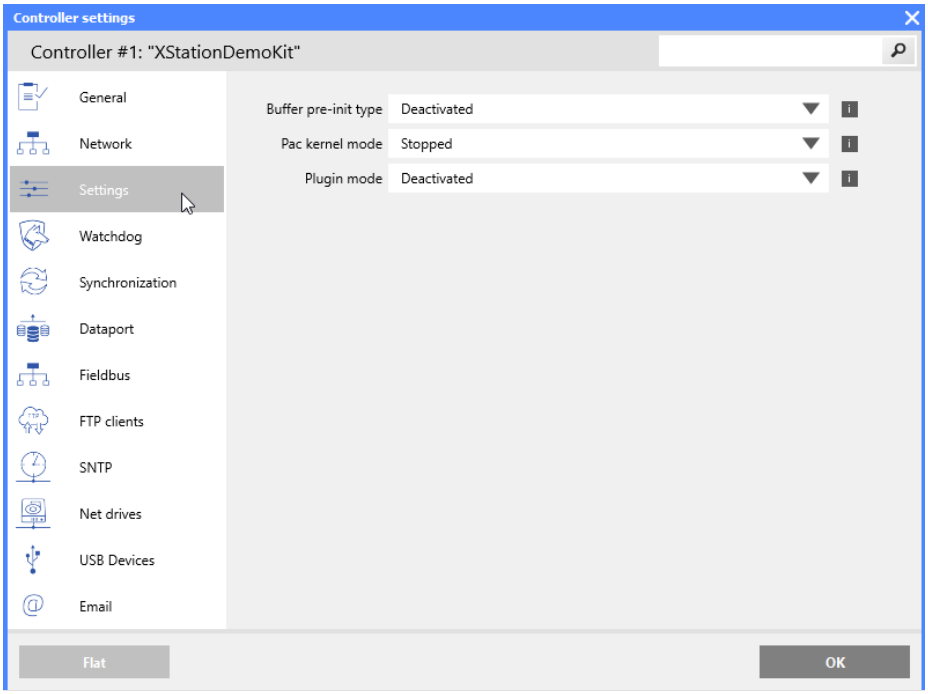
4.2.1 Controller Name

Under General > Location, you can change the Q.station name/location



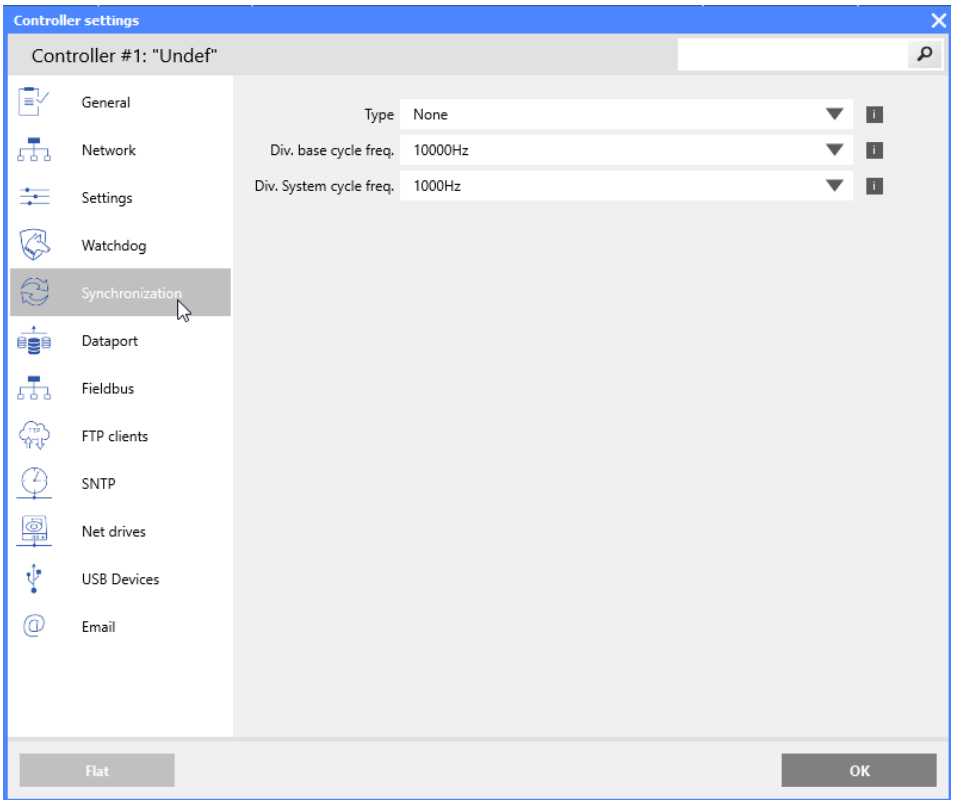
4.2.2 Activation of test.con and plugins

Go to Settings > Pac kernel mode or Plugin mode to activate/deactive test.con and/or plugins



4.2.3 Controller System Frequency

Go to Synchronization to configure the controller's base sample rate and system cycle frequency



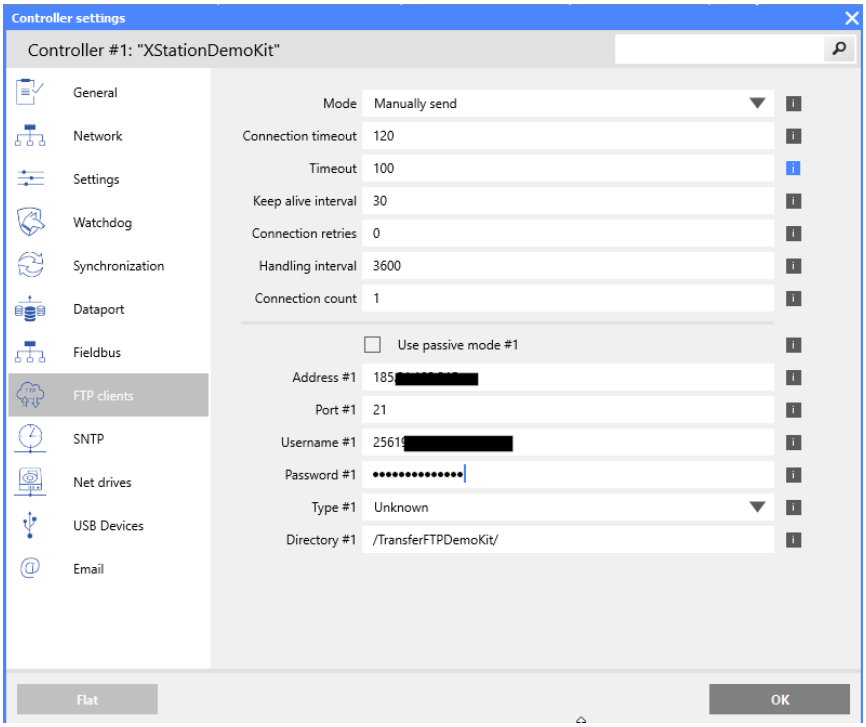
Div. base cycle frequency: The maximum possible cycle frequency of the controller

Div. system cycle frequency: Internal controller cycle time for handling virtual variables and arithmetics.

It is possible to setup an external synchronization by selecting the protocol from the type list such as AFNOR, IRIG-B, or Q.sync. Select Q.sync over RS485 for controllers that are slaves to a master controller.

4.2.4 Send Data to FTP

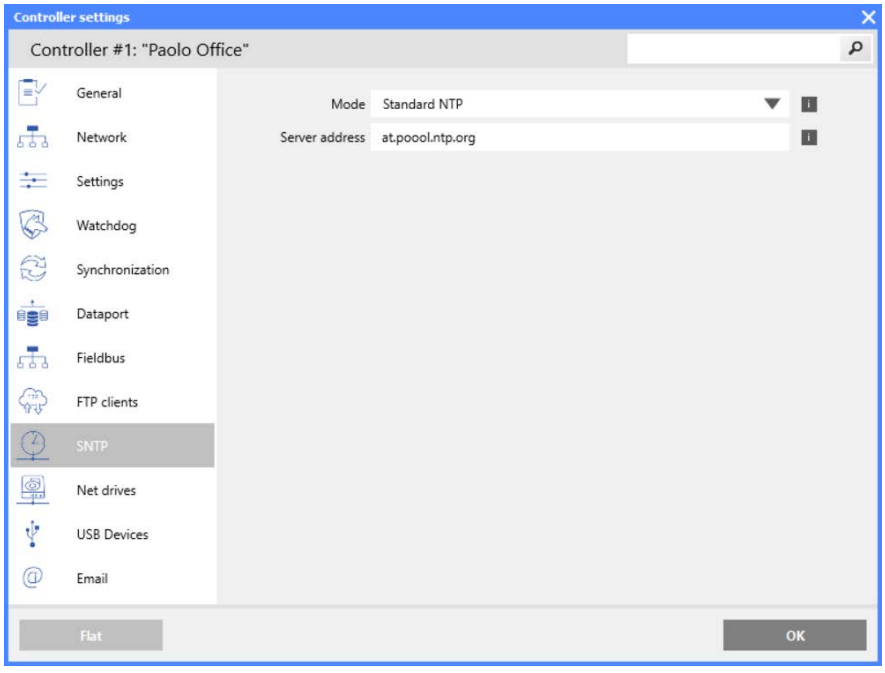
Go to FTP clients to configure the Q.station to send logged files to a FTP server



Logger configuration is shown in section 5 starting on page 35

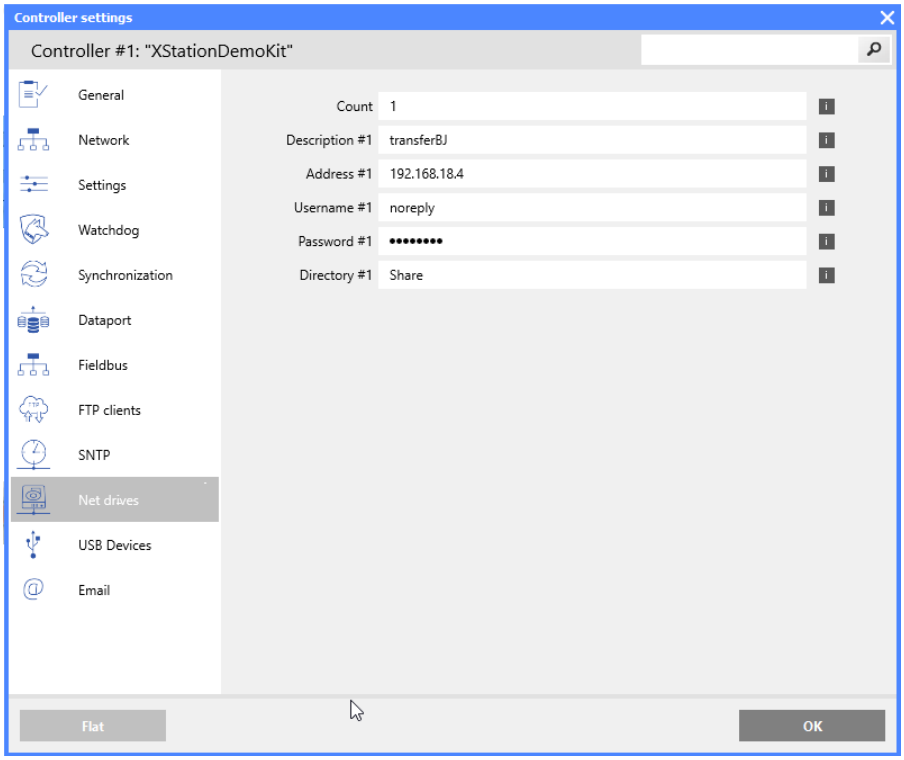
4.2.5 Network Time Protocol

The Q.station be synced to a time server for continuous clock time synchronization by select the mode and IP address of the NTP server (local network or internet)

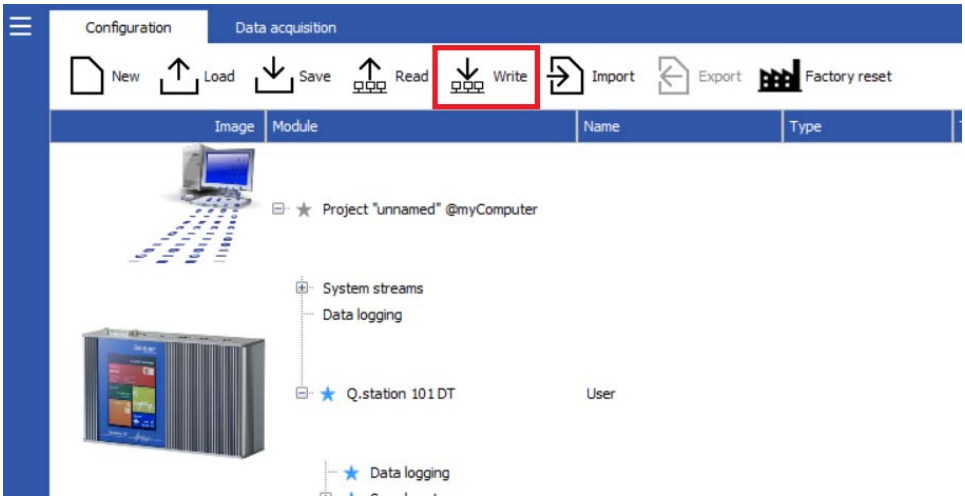


4.2.6 Send Data to Network Drive

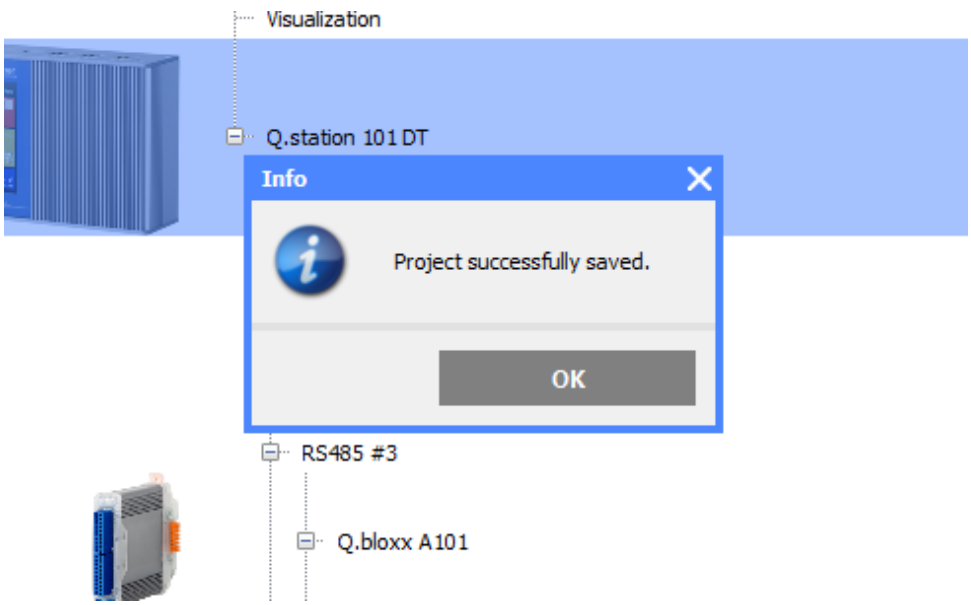
Go to Net Drives to configure a network drive location for the Q.station to logged files to



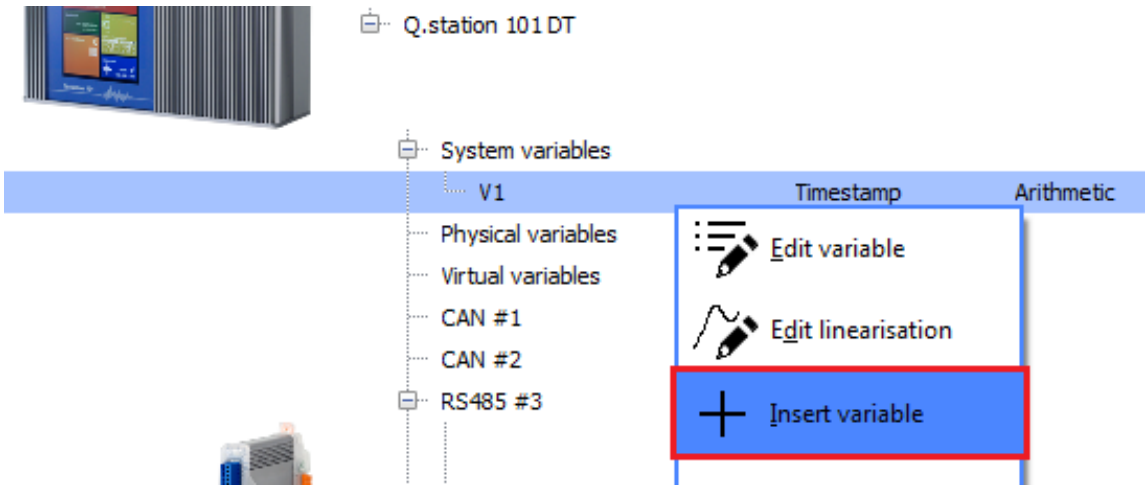
1. If any settings have been modified on the controller or channel configuration of the slave modules, these settings need to be updated to the hardware, and will be marked with a ★blue star icon. Select Write from the Project tab screen.



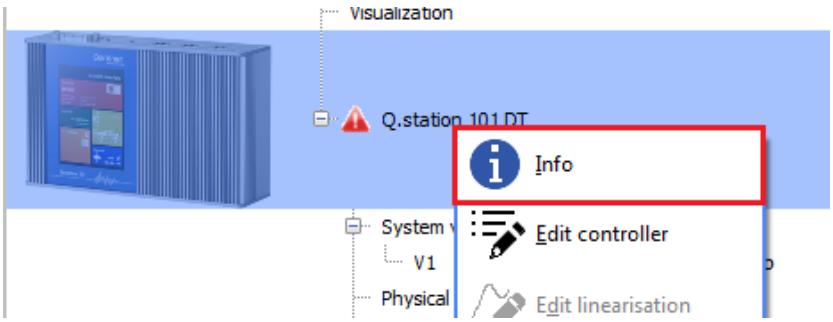
2. The system will write the updated project to the controller.



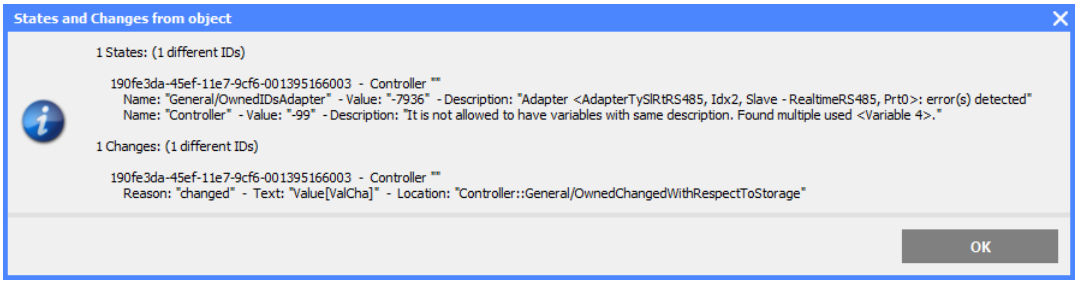
3. To add additional internal or virtual variables, right-click on an existing variable and select **Insert variable**. Double-click on the newly created variable to edit it.



4. If there are any errors on the controller or modules at any time, a icon will appear next to it. Right-click on the controller/module and select **Info.**



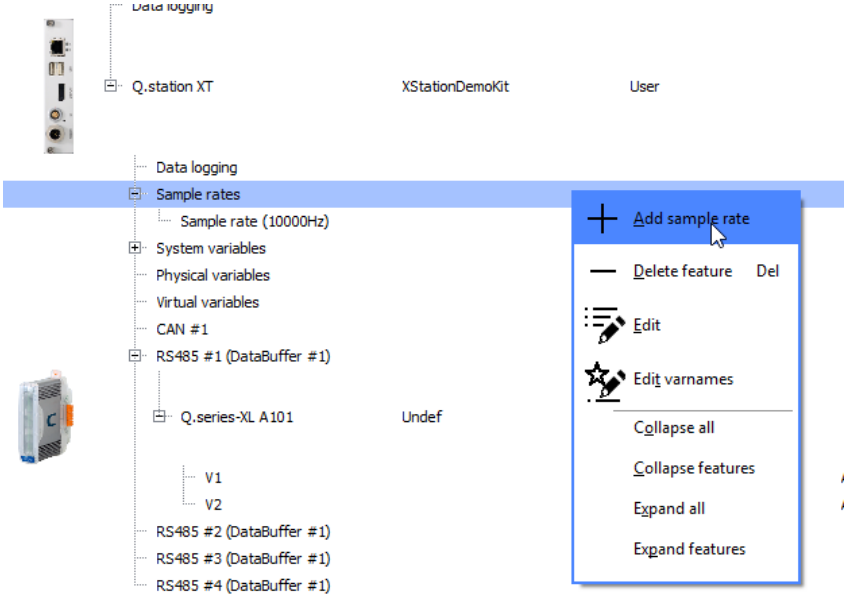
5. A States and Changes from object window will appear and display the error state information



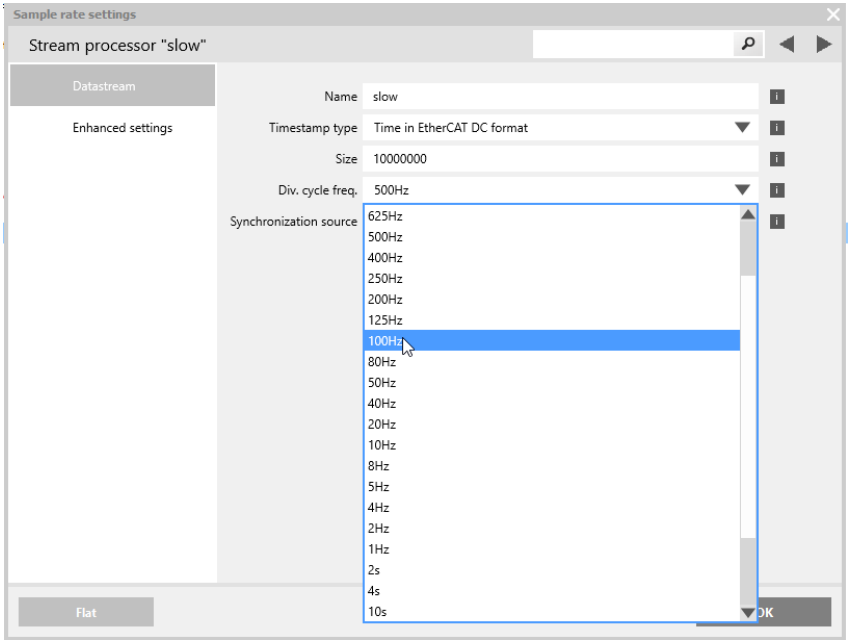
4.2.7 Sample Rate and Data Buffer Size

It is possible to add up to 4 sample rates on a Q.station.

1. Right-click sample rates and select Add sample rate



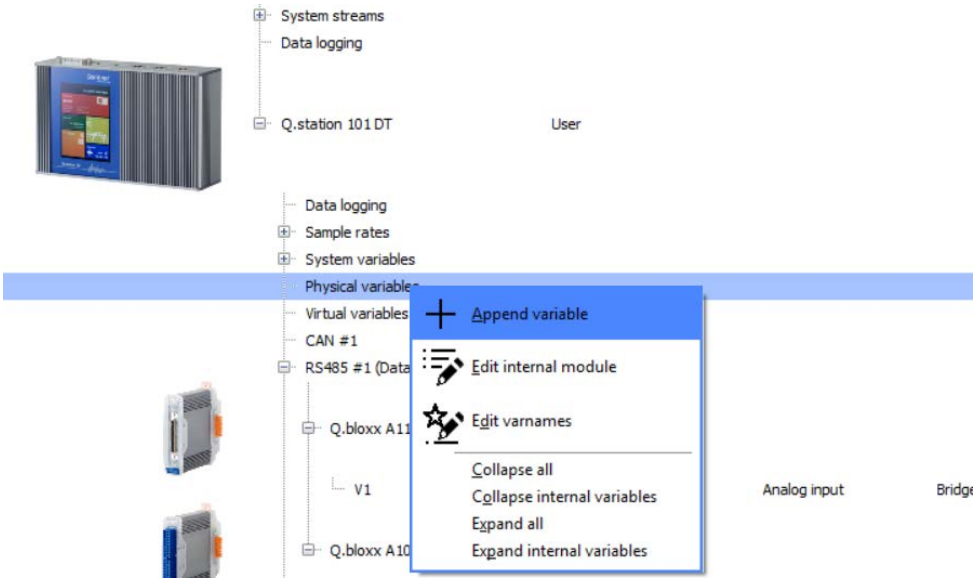
2. Double-click the new sample rate to change the settings such as buffer size



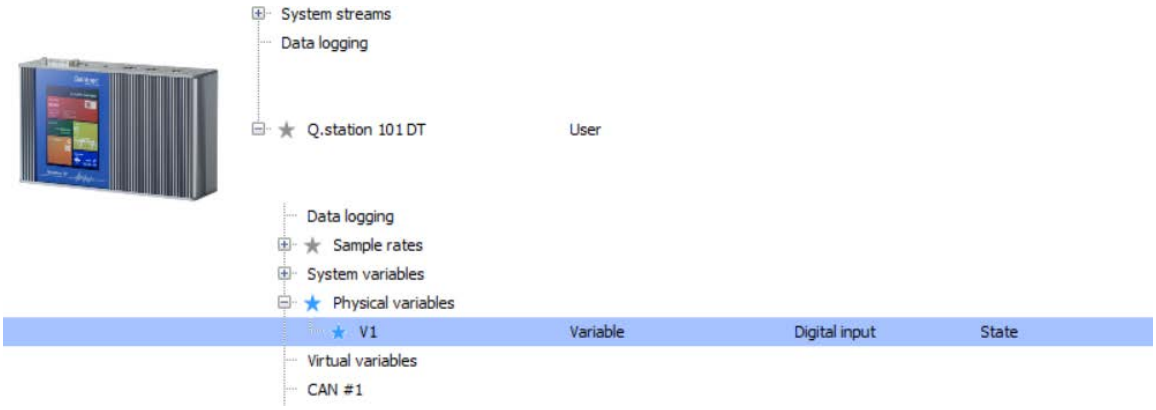
4.2.8 Controller Variables

A Q.station has several internal variable types that can be configured. There is system, physical (digital inputs), and virtual variables

1. Right click on either system, physical, or virtual variables and click Append Variable



2. The new variable will be created under the respective section. Double-click the variable to open the setting menu for that variable.

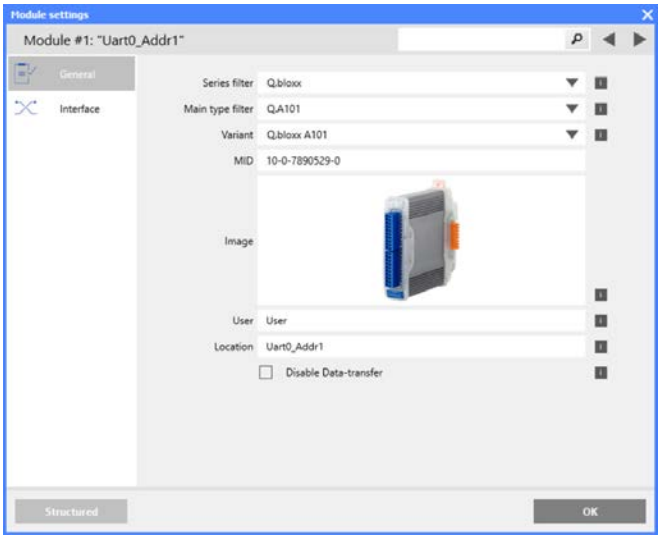


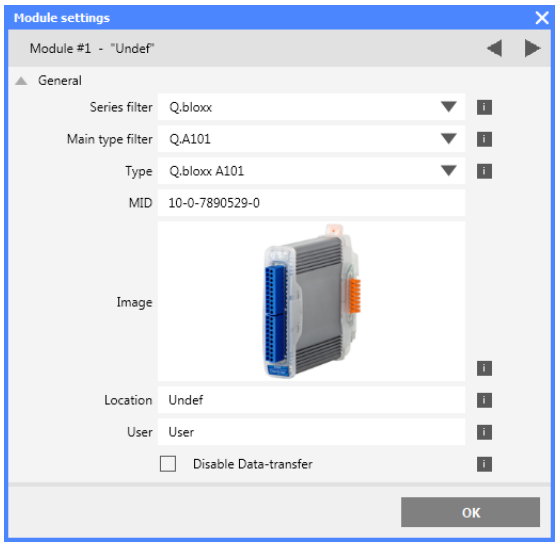
3. Write the updates to the controller.

4.3 Slave Module Configuration

Unlike test.commander, which called on ICP100 software, slave module configuration changes is made within the GI Bench software.

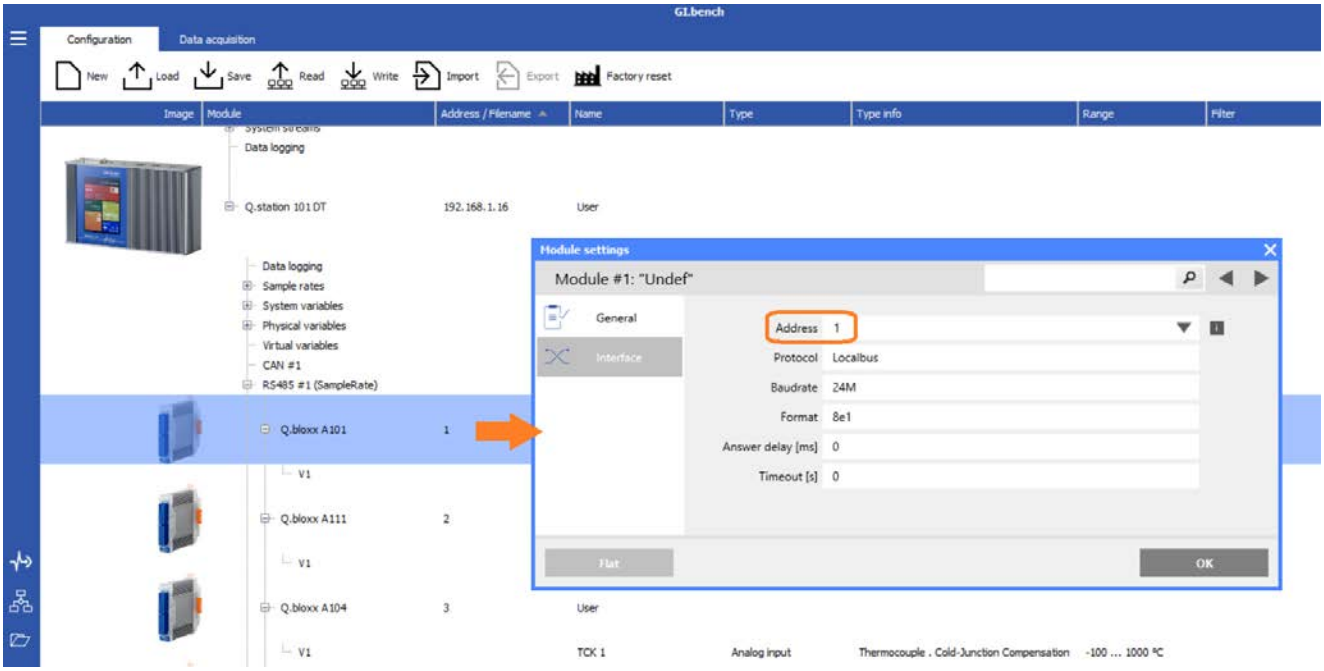
Double-clicking on a specific module within the project will open the module settings menu. It can be viewed in flat or structured layout.





4.3.1 Module Addressing

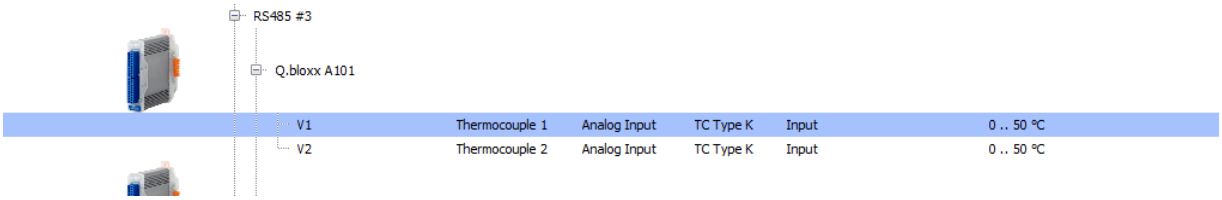
If the hardware address of the modules is not set in the socket via DIP switches, then it must be done in the software. For each UART, start at address 1 (up to 16 maximum).



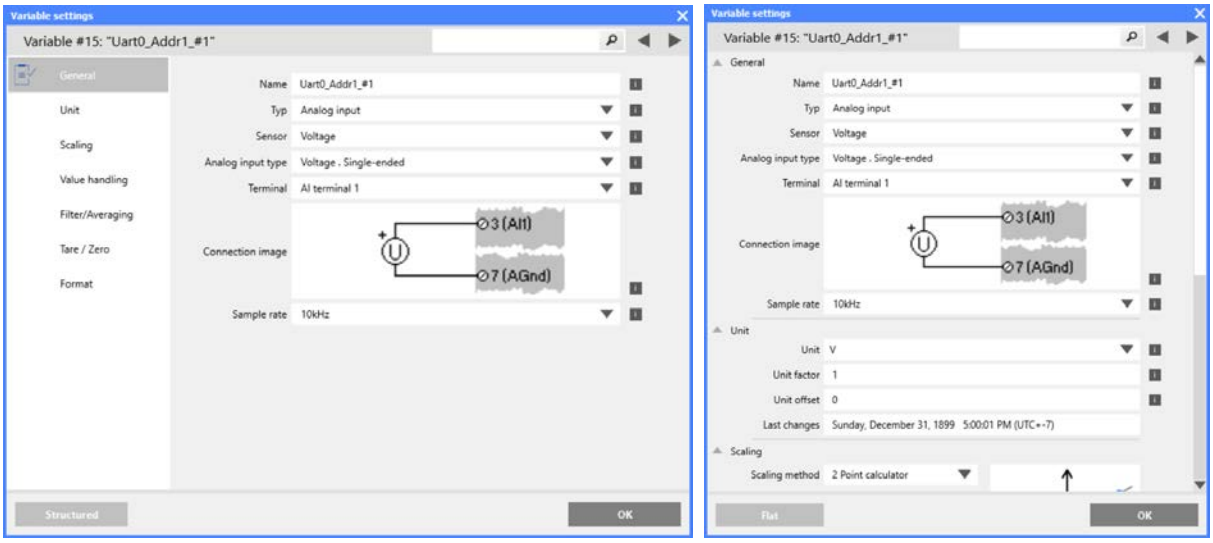
4.3.2 Definition of Channels

In GI.bench, the sensor database is not as detailed as it is in test.commander. This is not an issue, but take note when importing previous test.commander projects that you always choose the more generic sensor and adapt the range to your application.

1. To make configuration changes to specific channels, double-click on the variable



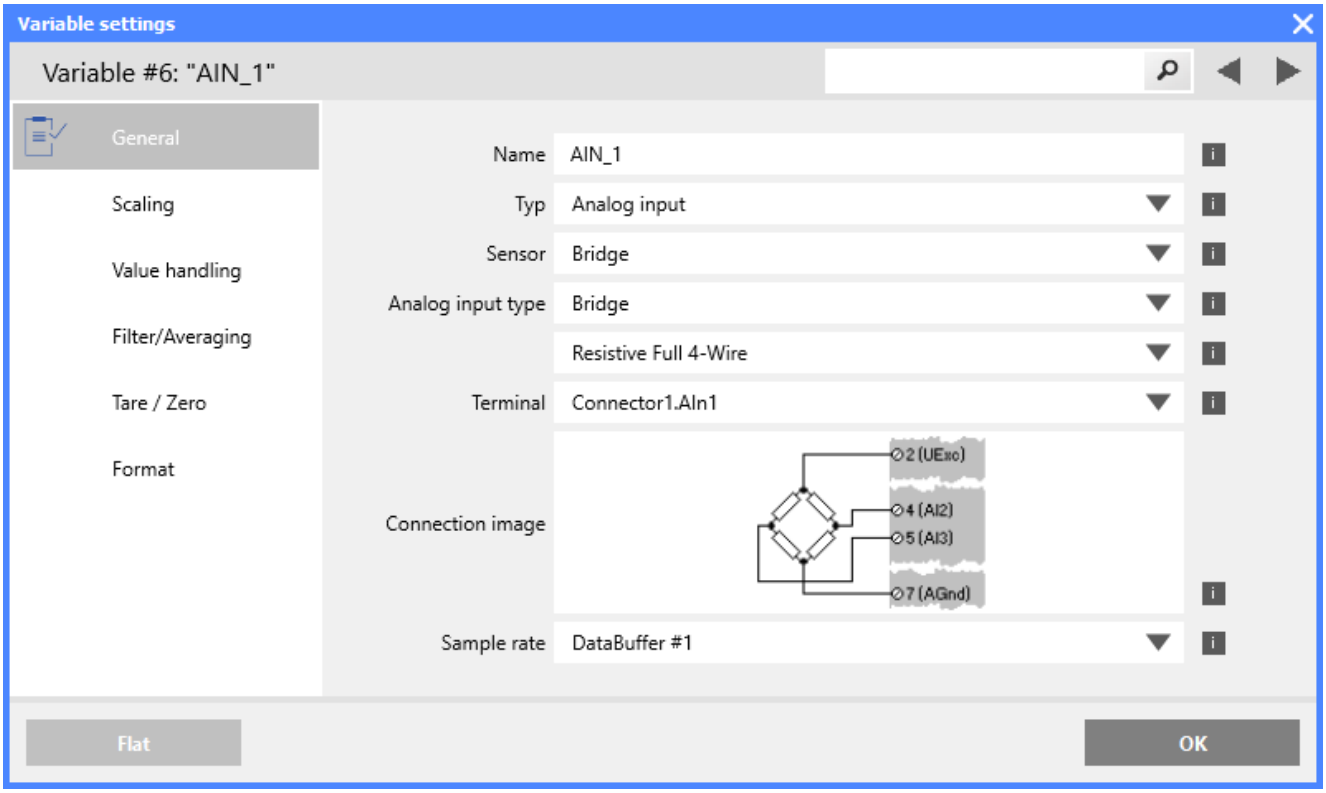
2. This will open the Variable Settings menu which can be viewed flat or structured. There are settings for general, value handling, linear equation, averaging, tare, zero, etc. Use the arrows at the top right to scroll between all the variables in the system.



3. Click OK when done making changes.

4. Make sure to Write the updates onto the controller.

4.3.3 Channel General Settings

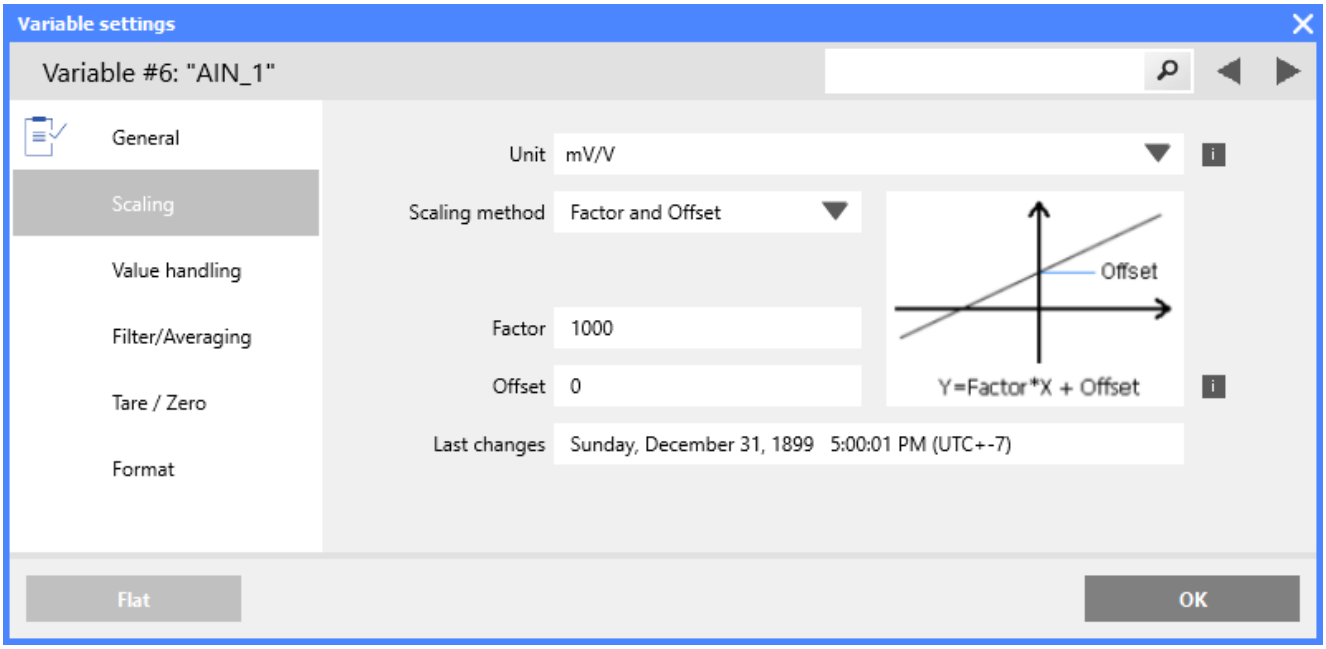


Name: Channel name, also used in data logger and graphics

Terminal: Physical connection of the sensor to the measurement module

Sample rate: Maximum possible sample rate of the module that is applied to all channels. Affects data throughput on the UART, controller UPS utilization, and the amount of buffer space needed. Select previously created data buffers from drop-down list.

4.3.4 Channel Unit/Scaling



Unit: Unit of measurement, used in storage files and graphics. Select from drop-down list.

Custom units: It is possible to create custom units by entering it as the base unit and applying a unit factor and offset or 2 point calibration

Base units			
Temperature	°C	**Current**	A
Charge	C	**Resistance**	Ohm
Voltage	V	**Weight**	g
Distance	m	**Frequency**	Hz
Force	N	**Pressure**	bar
Torque	Nm	**Speed**	m/s
Acceleration	m/s2	**Bridge**	V/V
Strain	m/m	**Angle**	deg
Time	s	**Counter**	times

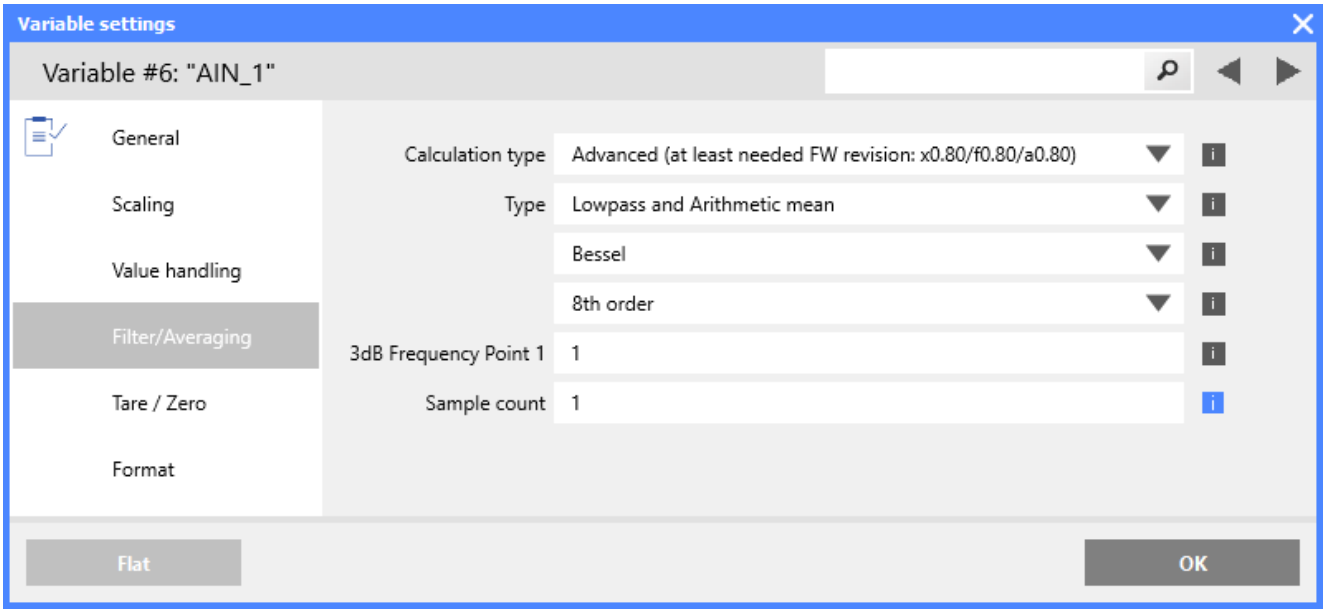
4.3.5 Channel Value Handling

Hardware defined: Hardware input range

Min/Max: Allowable minimum or maximum input range (limit)

Error Handling: Value of channel when input range limit is reached

4.3.3 Channel Filter/Averaging

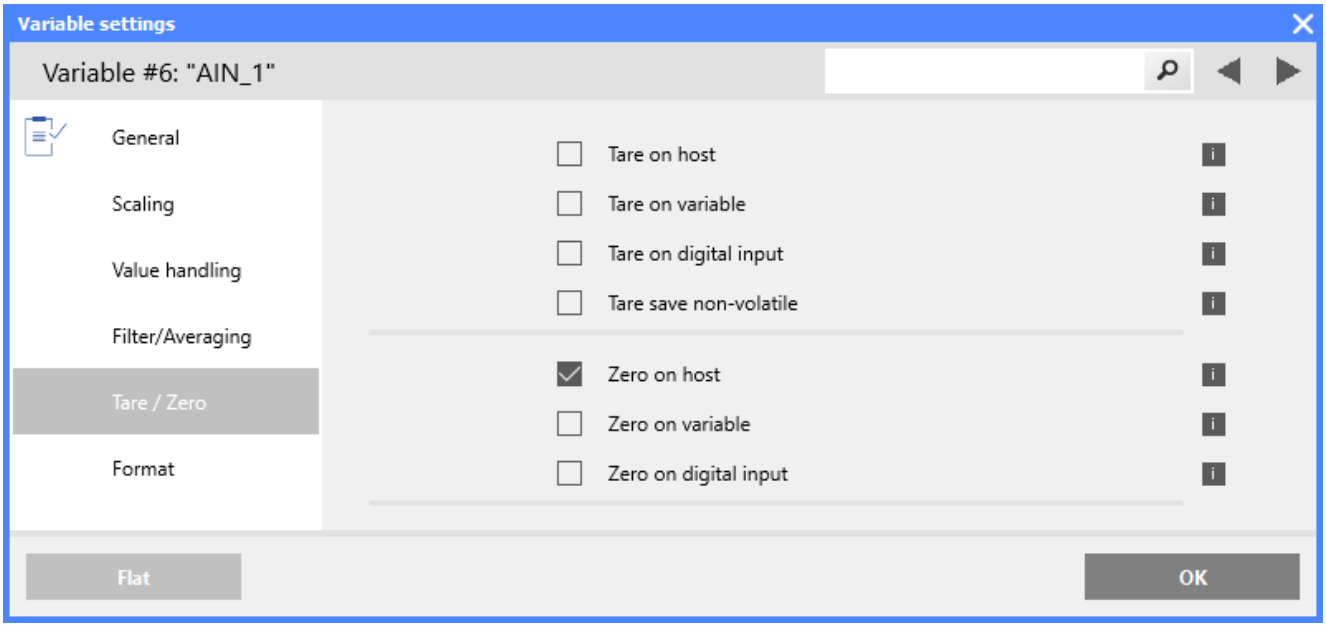


Filter Types: Arithmetic mean (average), low-pass, high-pass, band-pass, band-stop, Bessel, Butterworth, 1^{st}-4^{th} order

3db frequency point: Cut-off frequency for digital filters

Sample Count: No. of measurements used for averaging. If 0, the software will auto determine the optimum number of points based on sample rate.

4.3.6 Channel Zero/Tare



Tare: Nulling the measurement with a single sample. The tare value is only saved if "Tare save non-volatile" is selected

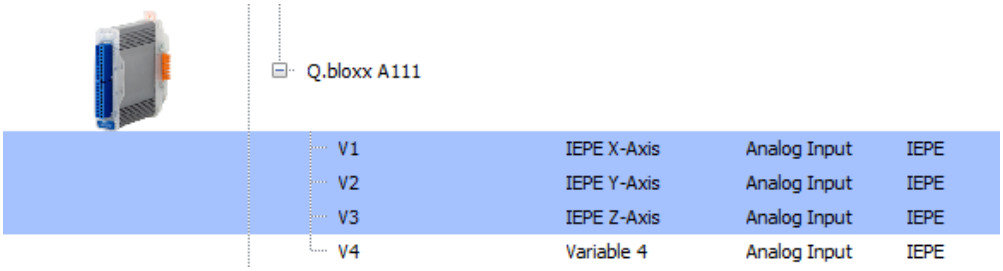
Zero: Nulling the measurement with an average of multiple samples. The zero value is automatically saved to the module config.

Tare/Zero on host: Allows use of command buttons in the channel & group view

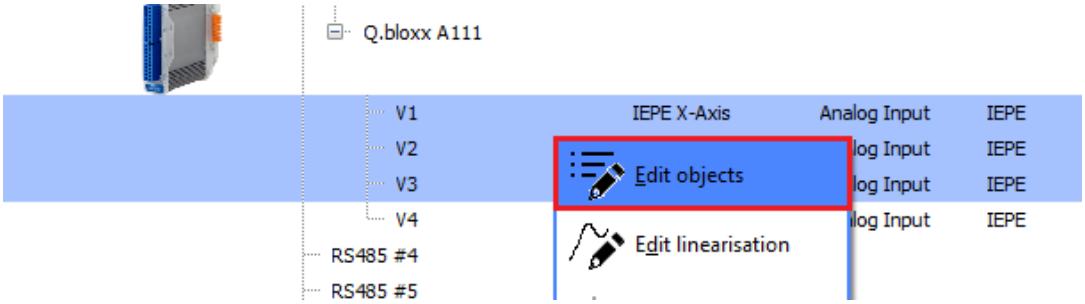
Tare/Zero on variable: Using of an external signal as the trigger to perform a zero or tare. Trigger is when signal > 0.5

4.3.7 Multi-channel Configurations

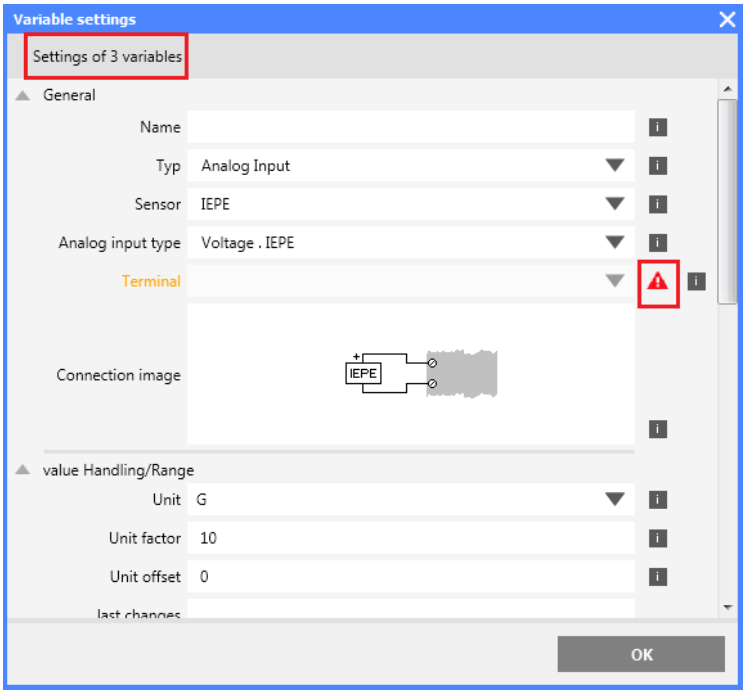
1. It is possible to make multi-channel configurations. Ctrl-select the channels to be configured. You can select channels from multiple modules



2. Right-click the channels and select **Edit objects.**



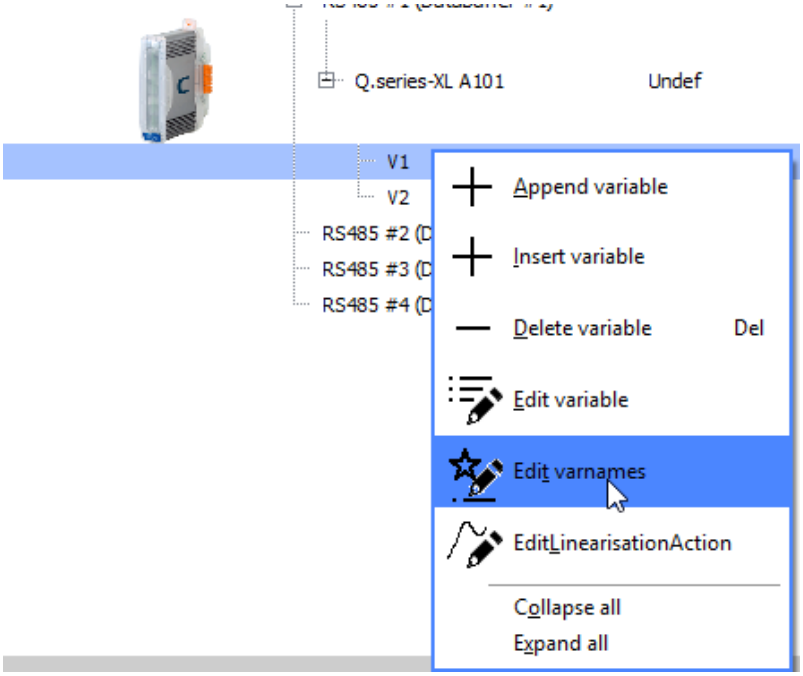
3. The Variable Settings menu will appear and display how many channels are being configured at the top-left. Any dissimilar settings between modules will be marked by the icon.



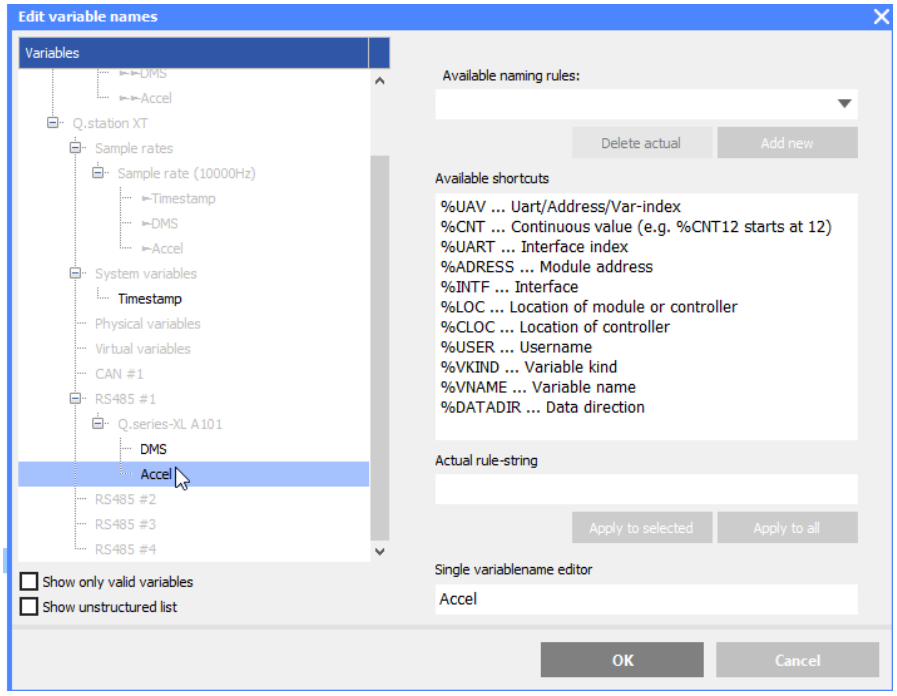
4.3.8 Fast Variable Name Changes

To quickly change multiple variables names use the "Edit varnames" functionality.

1. Right-click on a variable and select Edit varnames



2. It is possible to edit several variables names at the same time



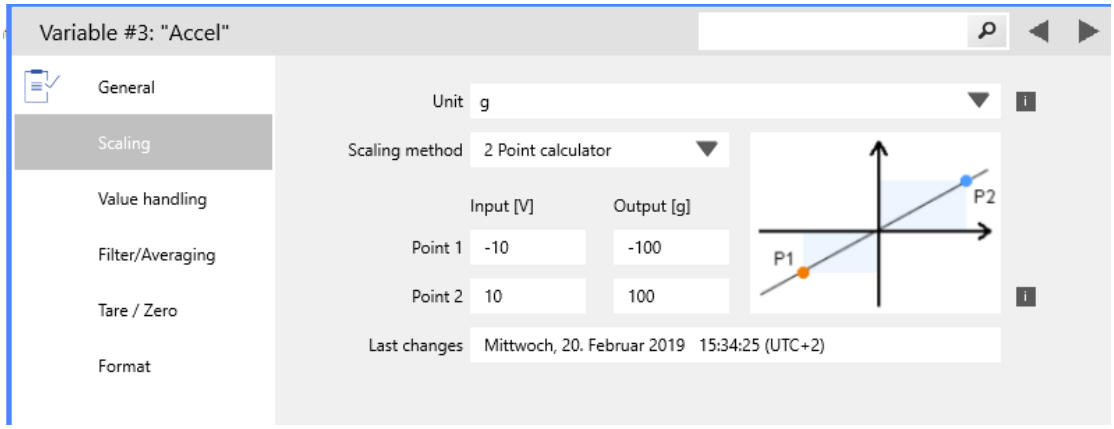
4.3.9 Sensor Calibration

As an example, we will calibrate an accelerometer using its provided specifications.

The sensor has a sensitivity of 100mV/g

Input [V]	Output [g]
-10V	-100g (-981m/s²)
10V	100g (981m/s²)

1. Under the scaling section, manually enter the unit of "g".
2. Make sure 2 point calculator is selected as the scaling method.
3. Enter the values for Point 1 and 2 as listed in the table and in the screenshot below



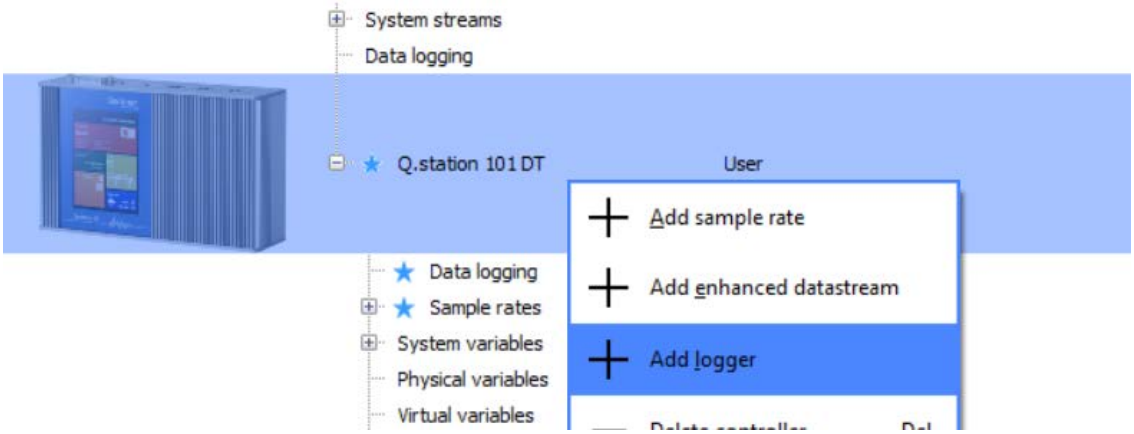
4. Click OK to save the changes. Write the updates to the controller.

5. DATA LOGGING

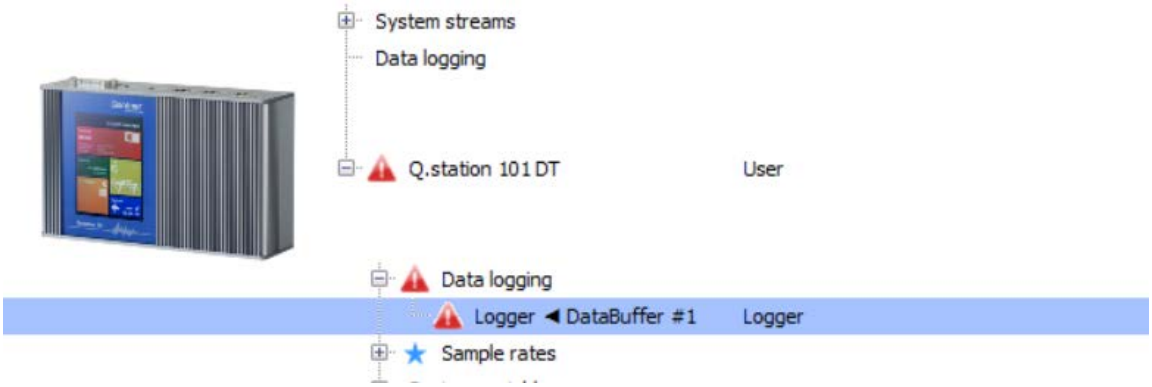
Loggers reside within the controller and work independent of a PC. Up to 20 independently configurable loggers can be configured on a single Q.station. A software based logger can also be created using GI.bench to log data directly to the PC.

5.1 Create Onboard Data Loggers

1. To create data loggers in the controller right-click the controller and click Add Logger



2. Double-click on the newly created logger under the data logging section of the controller to bring up the settings menu

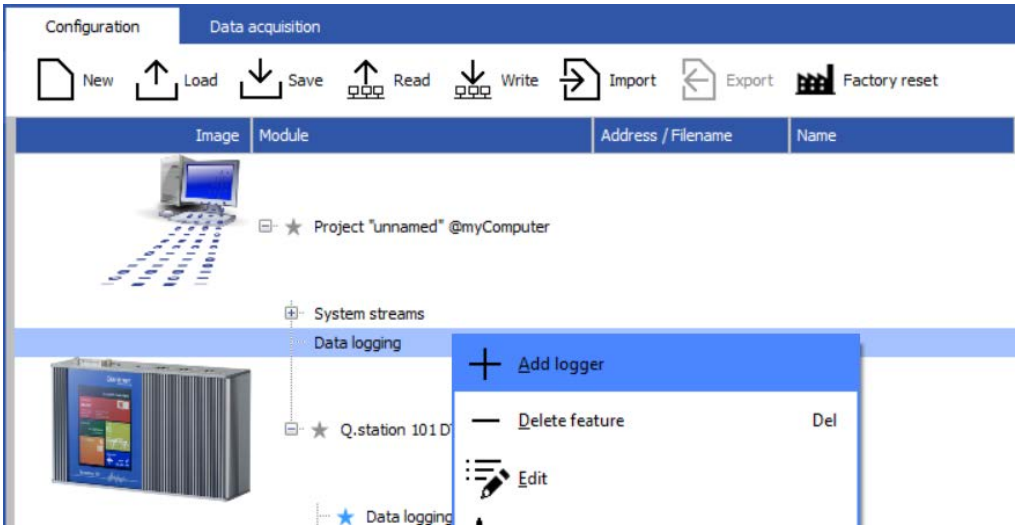


3. In either a flat or structured layout you can change the logged variables, settings, and storage. Currently it is not possible to change the logging rate with GI.bench. Must be done with test.commander.

5.2 Create PC Data Logger

It is possible to create a software based logger that is running on the PC (GI.bench/GI.data) and store the data directly on the folder on the PC

1. Right-click Data logging right below System streams and click Add Logger

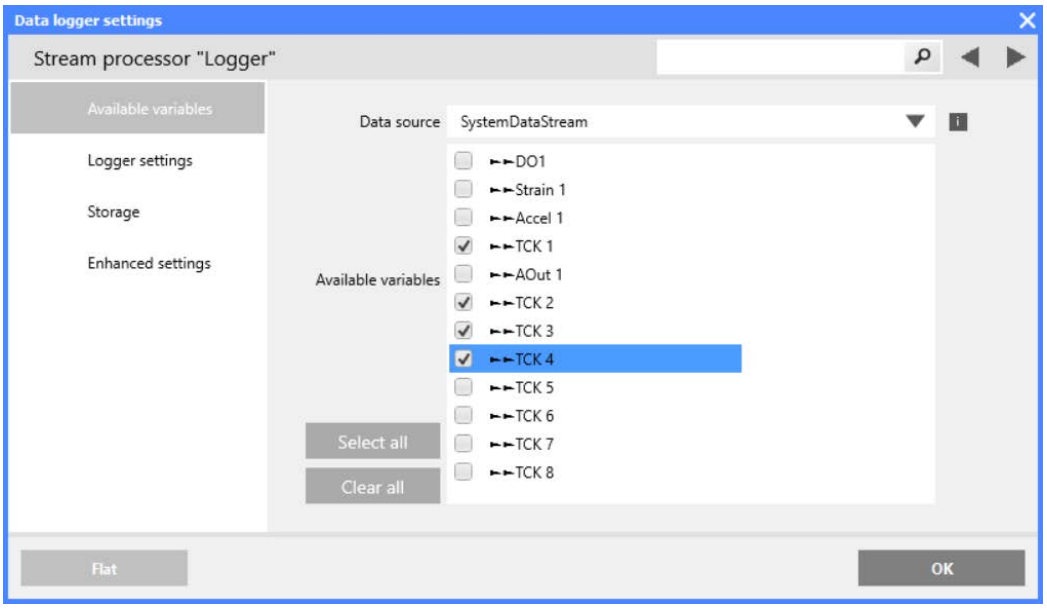


2. Double-click on the newly created logger to enter the settings. Select the data source and the variables you wish to log

5.3 Data Logger Settings

5.3.1 Available Variables

Select the Data source from the drop-down list, then select the variables you wish to be logged



5.3.2 Logger Settings

Here you can change the logger name and the type

Name: Data logger name, used in data file name

Logger Type: Continuous, triggered, or event-based

Continuous: logging is ON as soon as project is activated

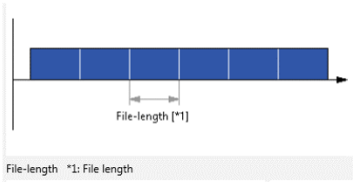
Triggered: logging uses a start/stop triggers. Pre/post trigger logging times are optional

Event-based: logging uses a single trigger (event) with a pre-defined pre/post trigger time.

Logger information: Explanation of logger parameters

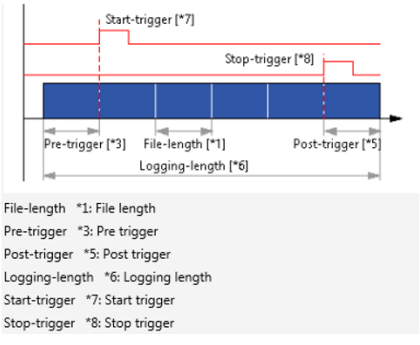
File length: Maximum length of the data file specified in data sets (samples), seconds, or bytes. When the max file length is reached a new data file is created.

Continuous Data Logger



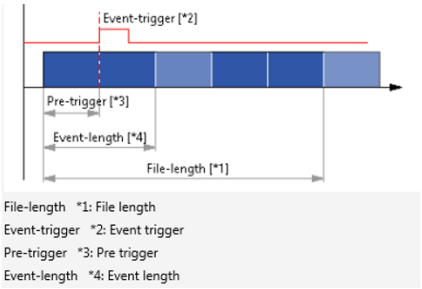
Continuous data logging is ON as soon as the project is activated.

Triggered Data Logger



Data logging using a start / stop trigger (e.g. input channel). Pre- and post-trigger time are optional

Event-bases Data Logger



Data logging using a single trigger (event) with a pre-defined pre- and post-trigger time.

5.3.3 Logger Storage

5.3.3.1 Logger Mode

There are several ways to store and collect data from the Q.station. There are Protected/Unprotected options. Protected means only when a special USB drive is connected to the controller will data be transferred.

1. Protected/Unprotected move

   Data will log to Destination #1. When a USB is connected, it will move data files to the USB and delete it from the Q.station internal HD.

2. Protected/Unprotected copy

   Data will log to Destination #1. When a USB is connected, it will copy the data files to the USB. The files will also remain the Q.station internal HD.

3. Protected/Unprotected copy, only new data

   Same as the previous mode, but only data that has not been transferred before will be copied to the USB drive.

4. Store to a new connected drive

   Data will log to Destination #1. If a new destination is connected it will switch the destination to the new one.

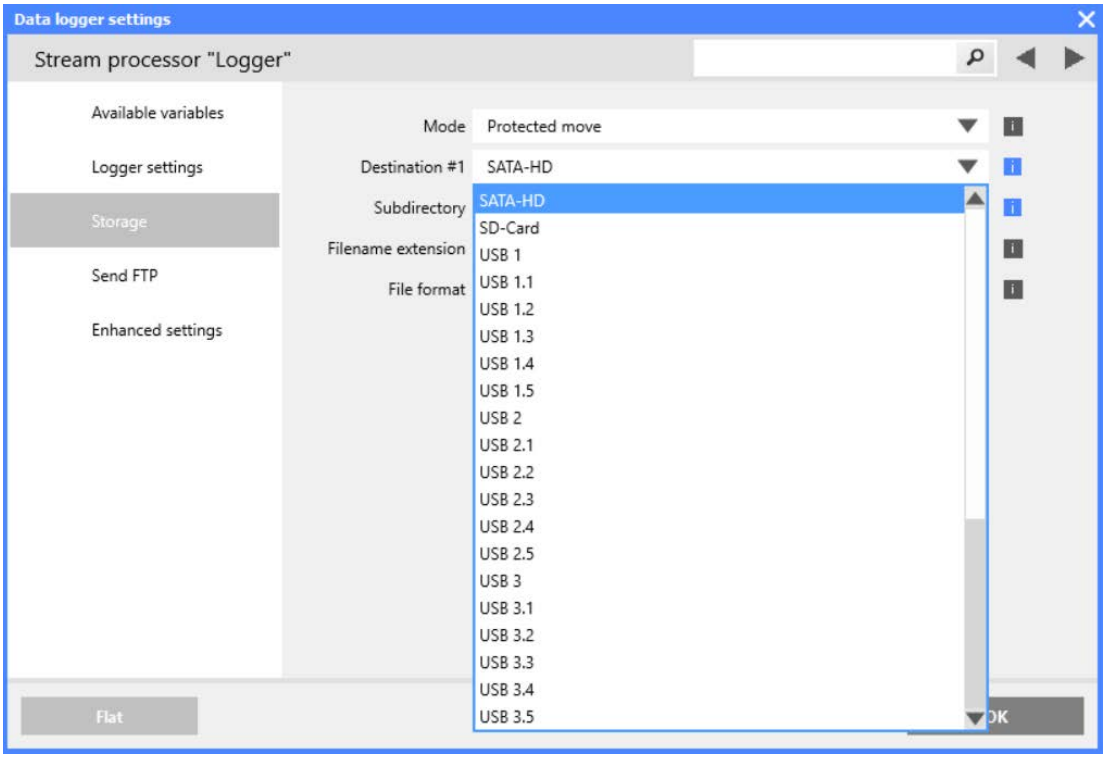
5. Automatic drive selection

   Data will log to Destination #1. If there is a loss of connection to the drive, it will log onto another destination if available.

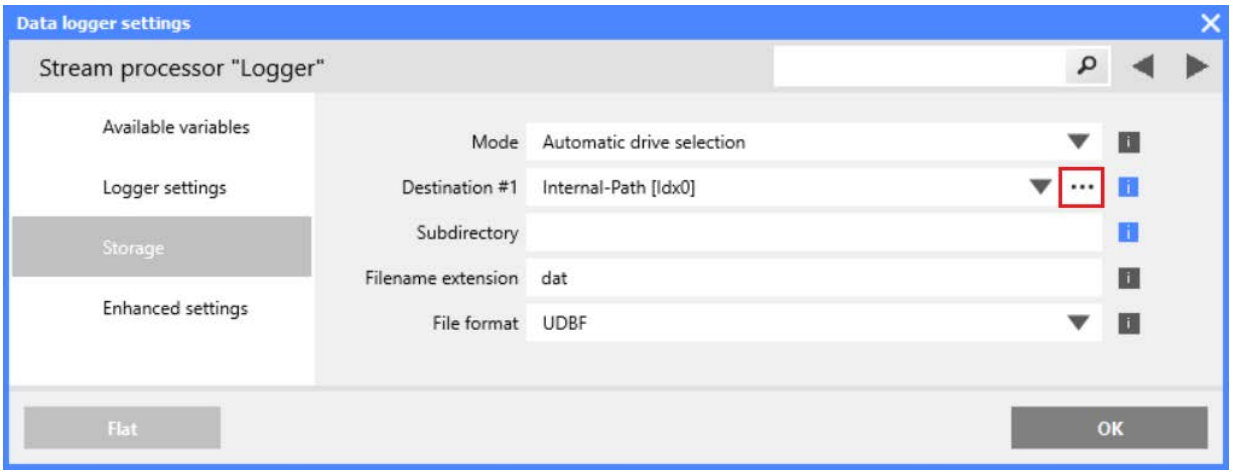
5.3.3.2 Logger Destination

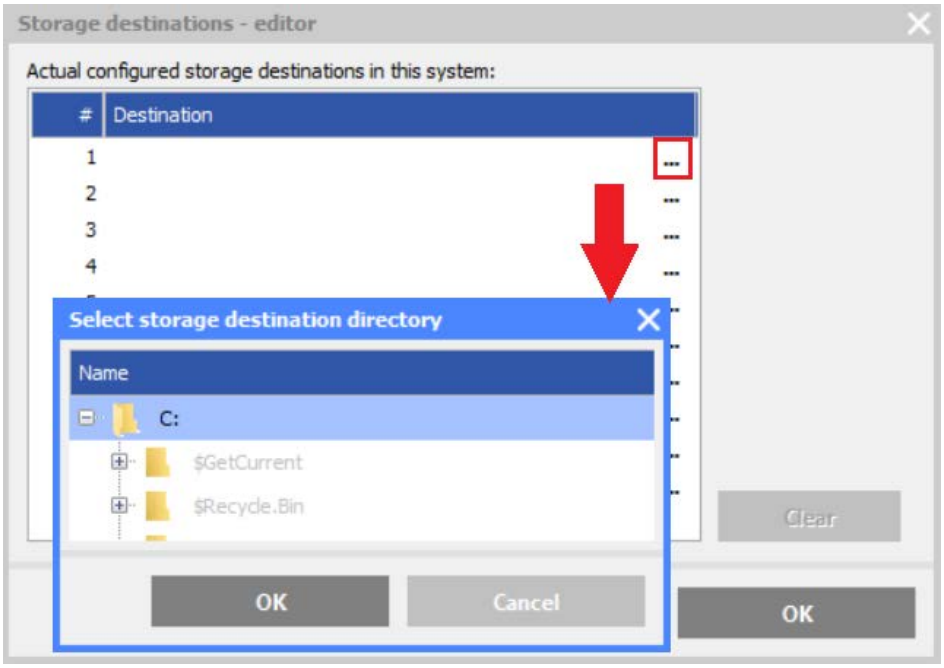
This is where to set the default storage destination for the logger files.

For a Q.station based logger you can select from internal HD (SATA-HD), SD-card (if available), or USB 1/2. More than 2 USB is possible using a USB hub.

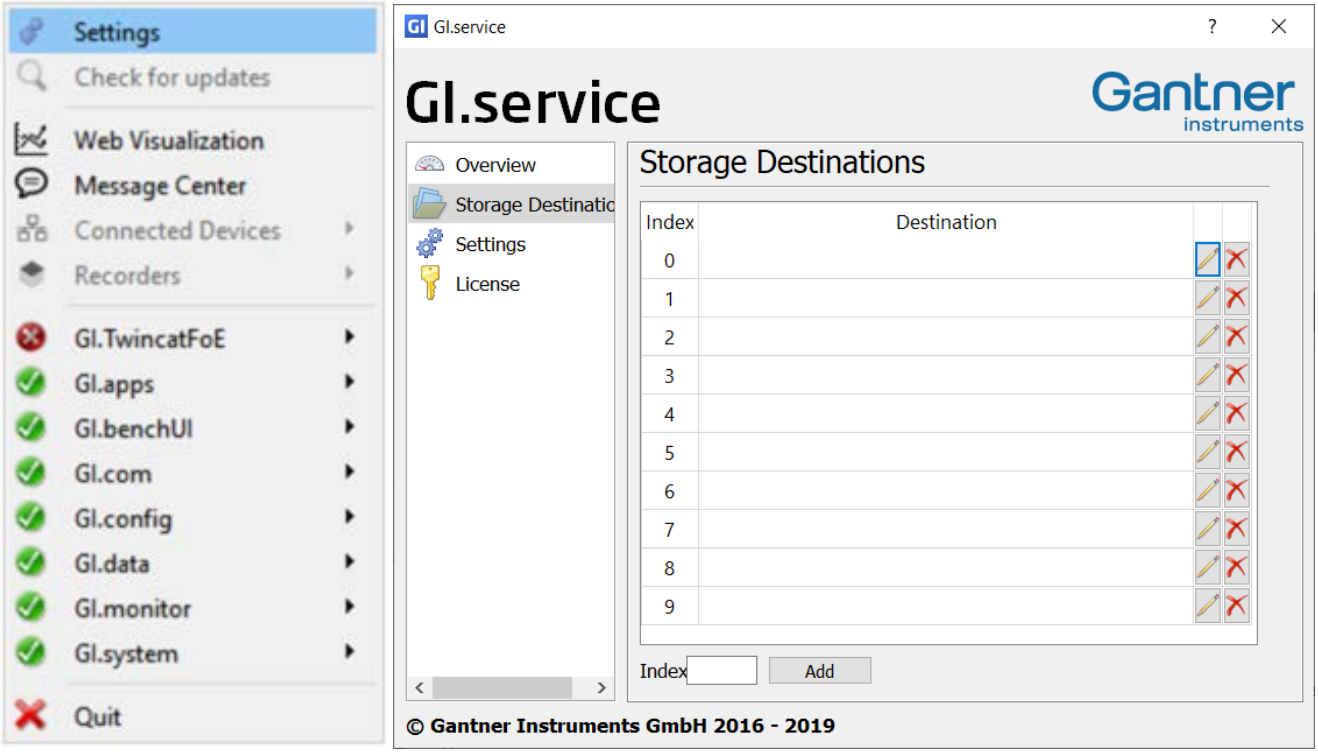


For a PC based logger you edit the Internal-Path with a directory on the PC. Click the icon to modify.





These destinations can also be modified by right-clicking on the GI.bench icon in the system tray and selecting Settings. Under the Storage Destinations section modify the directory.



5.3.3.3 Subdirectory

An optional sub-directory in the destination. Placeholders can be used in the name to dynamically change the directory name. Click the info icon for more details.

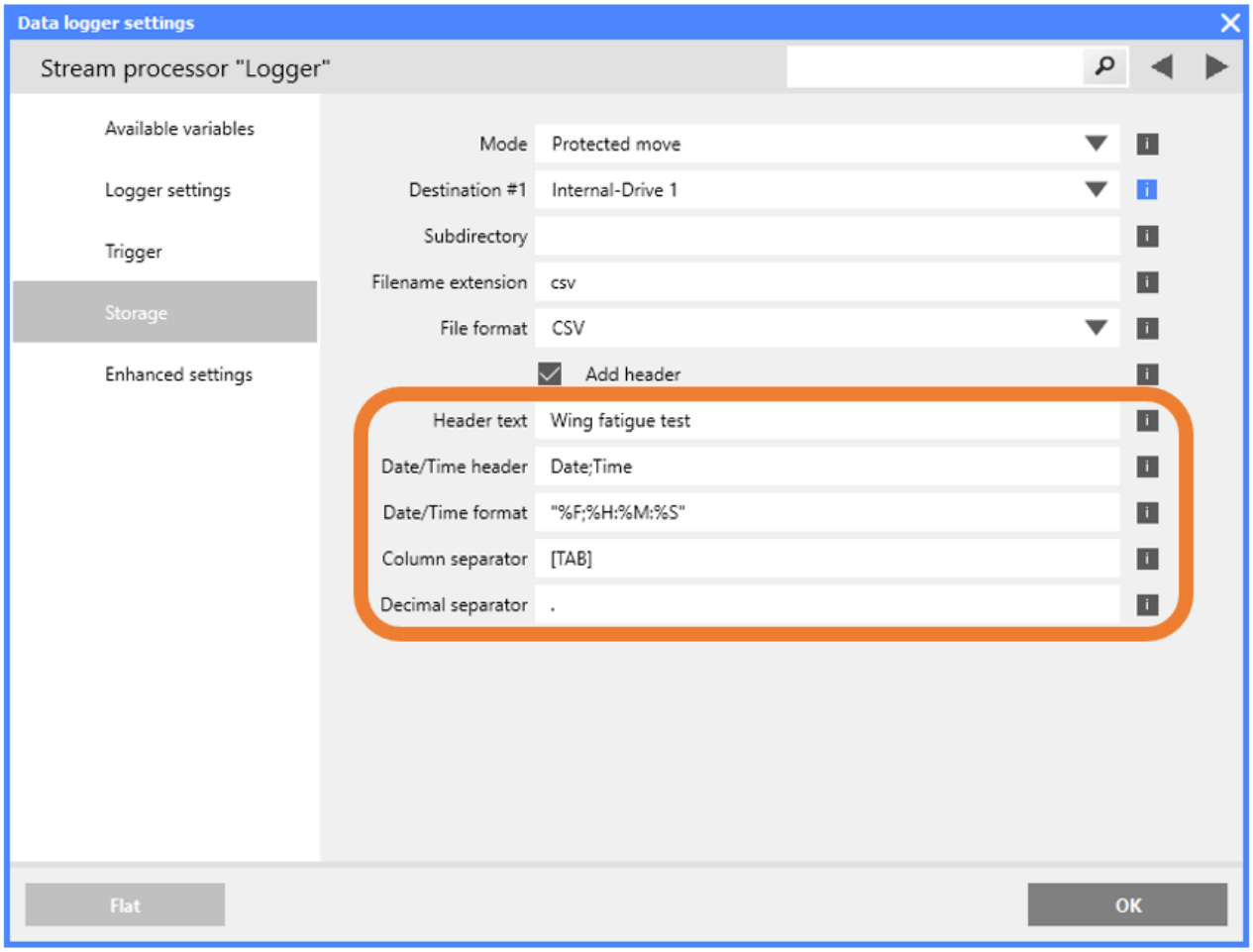
5.3.3.4 Filename Extension

Extension for the data file. Default is .dat (for UDBF format). Other option is .csv but is limited to 100 Hz logging rate

5.3.3.5 File Format

UDBF (binary format – Gantner proprietary), CSV (configurable ASCII format)

CSV configuration example:



CSV Add Header Settings

Header Text: Optional header text

Date/Time Header: Optional data and time to be included in the header text (“Data;Time”)

Data/Time format: Format of the data and time column

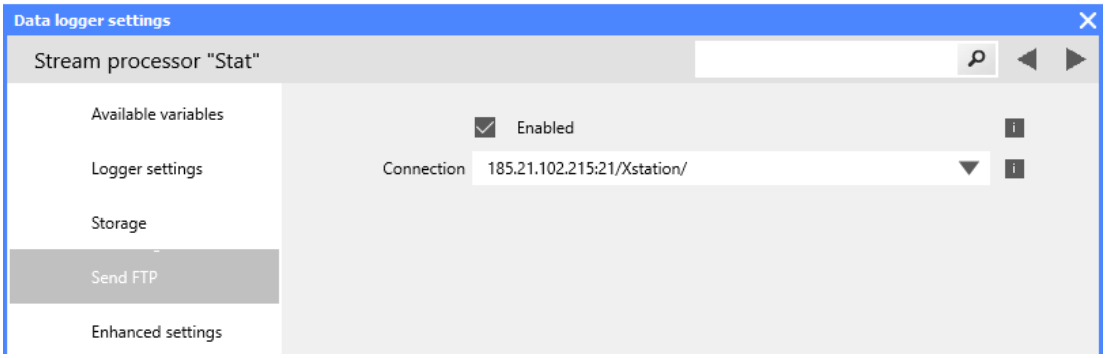
[%F];[%H:%M:%S]; -> 2016-07-04;10:16:00;

Column separator: [TAB] (tabulator) - ; (semicolon) - , (comma)

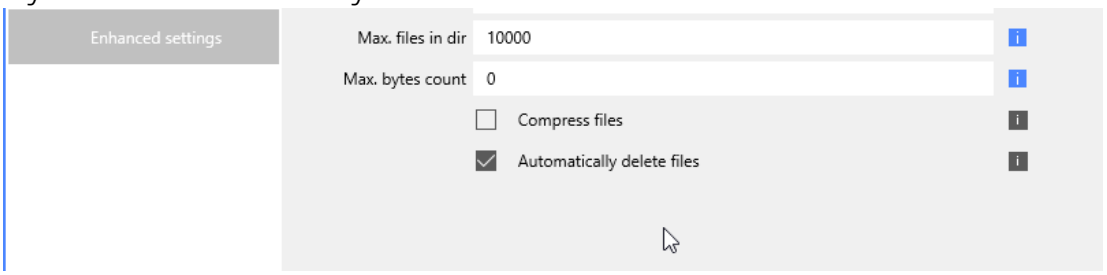
5.3.4 Send FTP

For a Q.station based logger only, it is possible to also send data simultaneously to an FTP drive

1. If a FTP or Network drive connection was previously defined, the logger can be configured to send files to that destination as well.

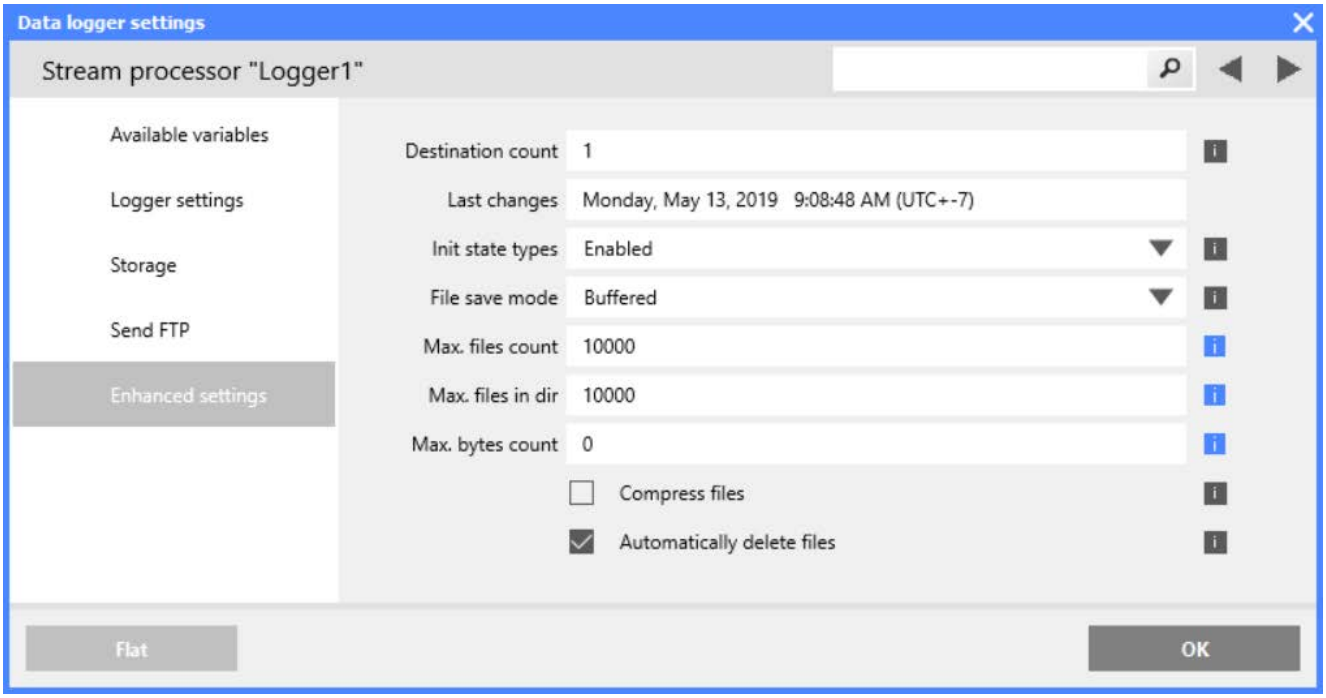


2. If you want to automatically delete files after an FTP transfer



3. Click OK to save changes. Write updates to controller.

5.3.5 Logger Enhanced Settings



Max. files count: Maximum number of files to be crated by this logger. 0 = disabled.

Max. files in dir: This restricts the maximum files in one directory to be created by this logger to save storage space. 0 = disabled.

Max. bytes count: This restricts the maximum number of bytes allocated to this logger to save storage space. 0 = disabled.

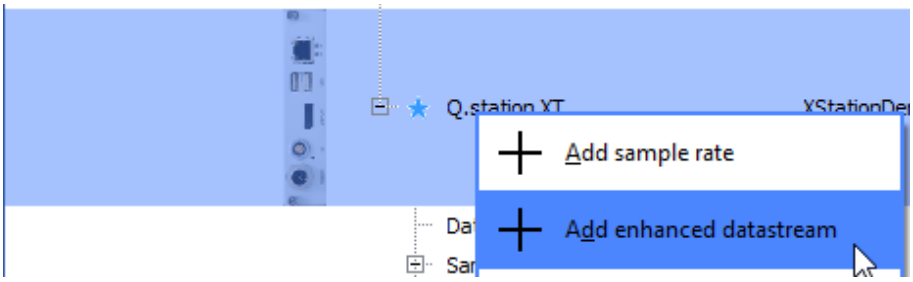
Automatic file deletion: If enabled, deletes the oldest file when maximum number of files/files in directory/bytes has been reached.

5.4 Enhanced Datastream

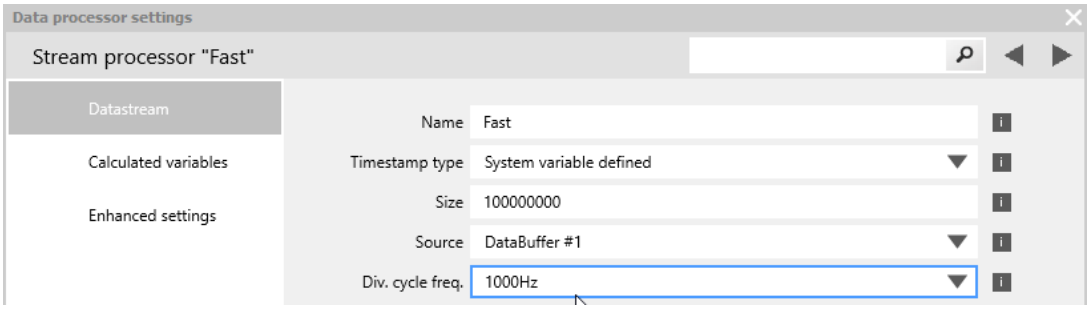
In GI.bench, setting the logging rate is different than in test.commander and is no longer defined in the data logger settings. Instead it is in the Q.station properties as an enhanced datastream.

You should create and definite as many enhanced datastreams as needed for your logger configuration. Please use this function instead of adding an extra databuffer, as this will reduce the performance of GI.bench and the Q.station.

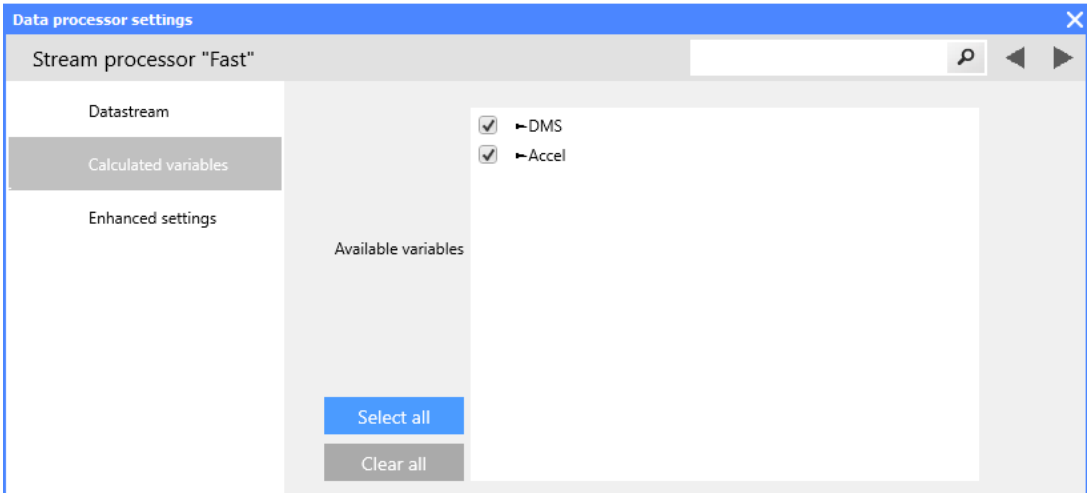
1. Right-click the controller and select "Add enhanced datastream"



2. Double-click on the new dataprocess stream to configure it



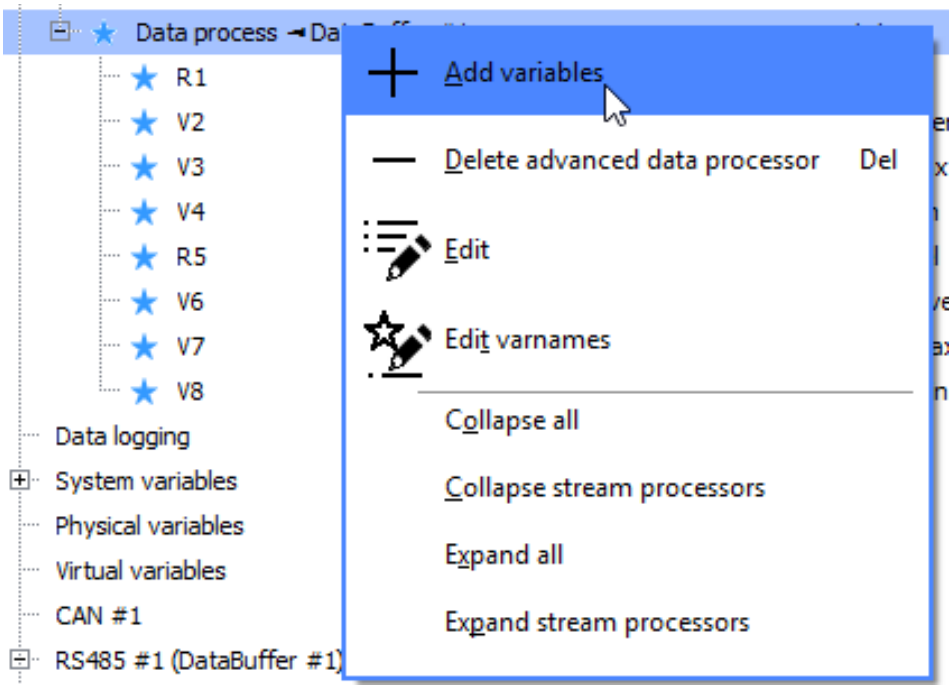
3. You can give the stream a name (e.g. fast), select the data buffer source, and enter the cycle frequency. Then select the variables



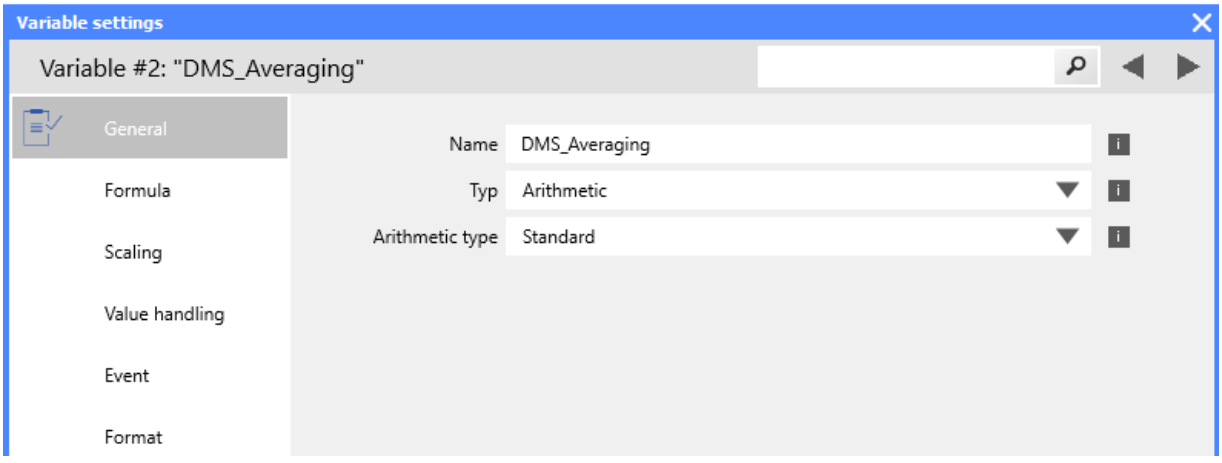
5.5 Arithmetic Variables (statistical variables)

Once the enhanced datastream is configured, you can add arithmetics such as statistical variables (e.g. min, max, standard deviation)

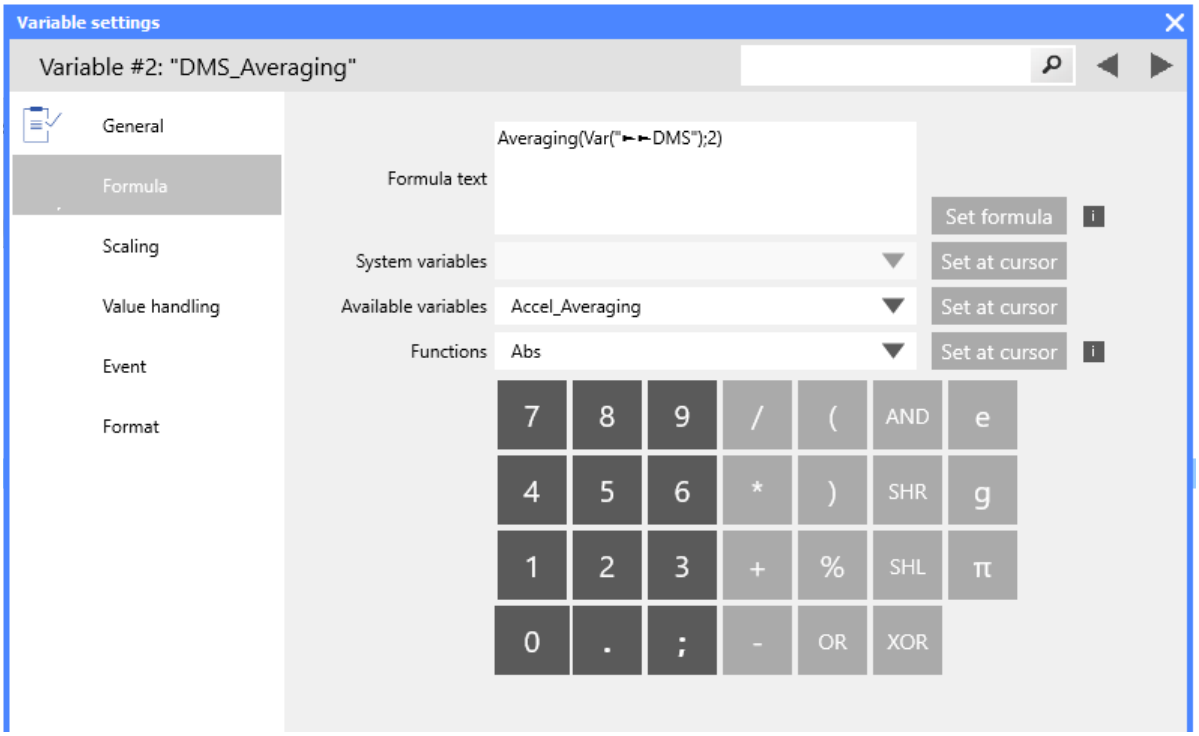
1. Right-click the datastream/process and select "Add variables"



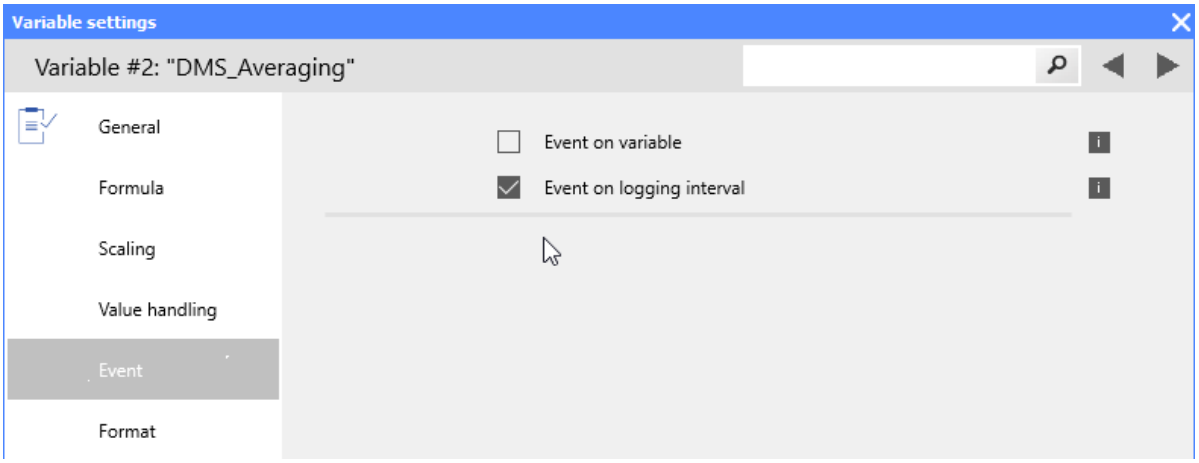
2. Double-click the created variable to enter the settings. The General section is where you can configure the name and type of the variable



3. Go to the Formula section to edit the formula

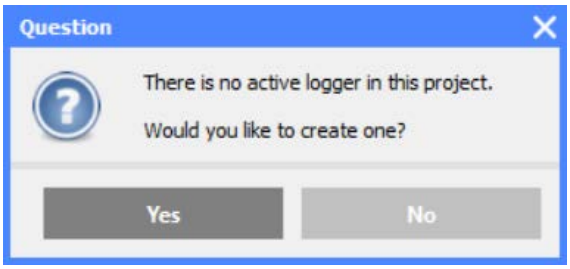


4. Go to the Event section and select "Event on logging interval" to reset the min, max, or calculated average for every logging interval (e.g. 1 min)

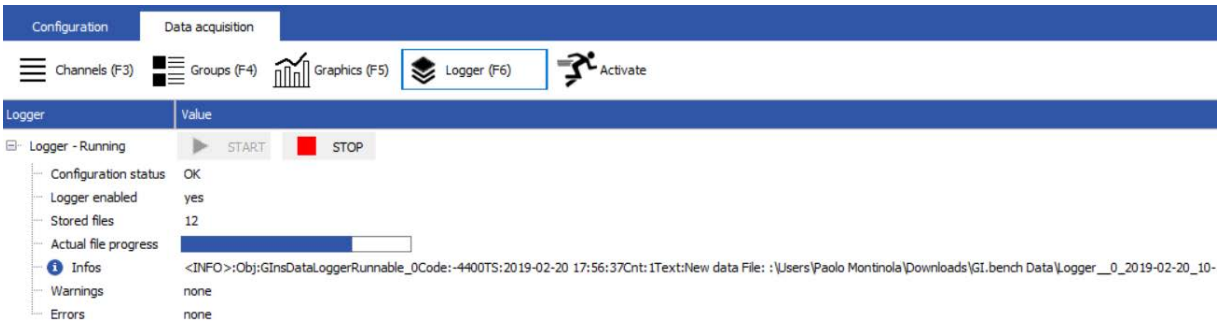


5.6 Logger Control

1. Under Data Acquisition go to Logger. If no data logger exists, you will be prompted to create one.

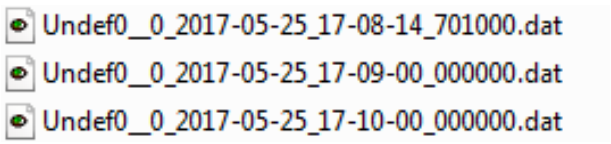


2. Click on START to enable the logger. It will start collecting data if a continuous logger, or when the conditions are met if a triggered or event-based logger.



3. Click STOP disable the logger. You can also view the actual file progress as data is being recorder.

4. The recorder will generate and save either.dat or .csv files, depending on how the logger was configured, to the specified directory using the following naming scheme: [Recorder Name]_[Date]_[Time].[file extension]

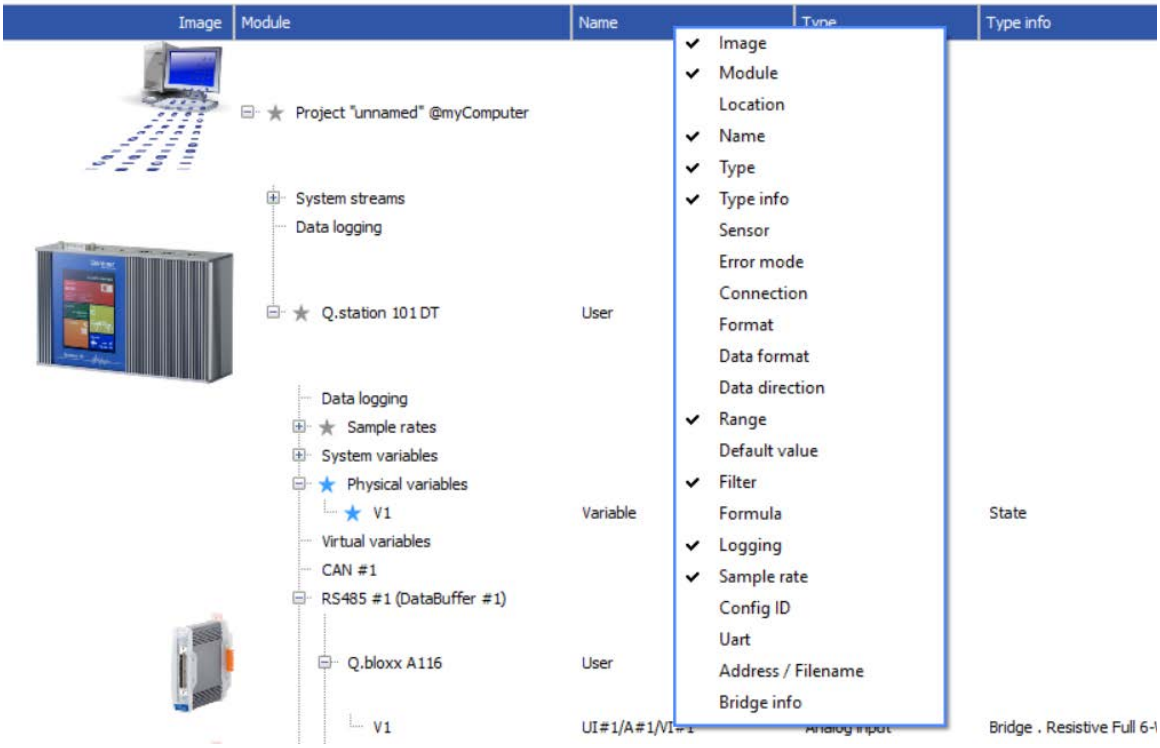


5. These files can be opened with test.viewer or other software for post-analysis or converting to another file format.

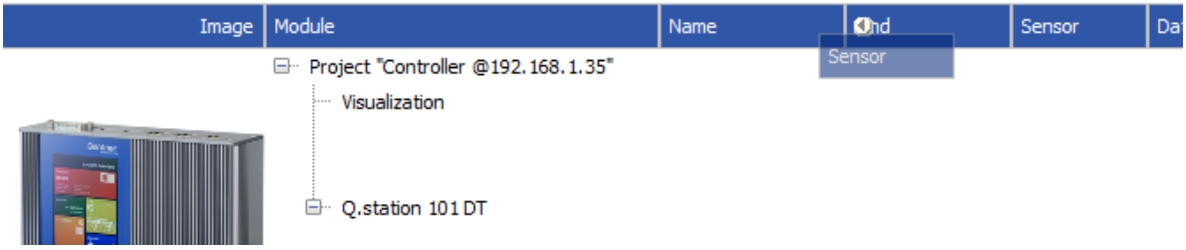
6. ORGANIZING THE PROJECT WORKSPACE

1. After connecting to the controller, the individual modules will be displayed under the controller. The various specifications of the modules can be displayed in the workspace.

2. Right click in the header of the workspace to open the specification selection column.



3. The columns can be organized by dragging the columns to the desired locations.



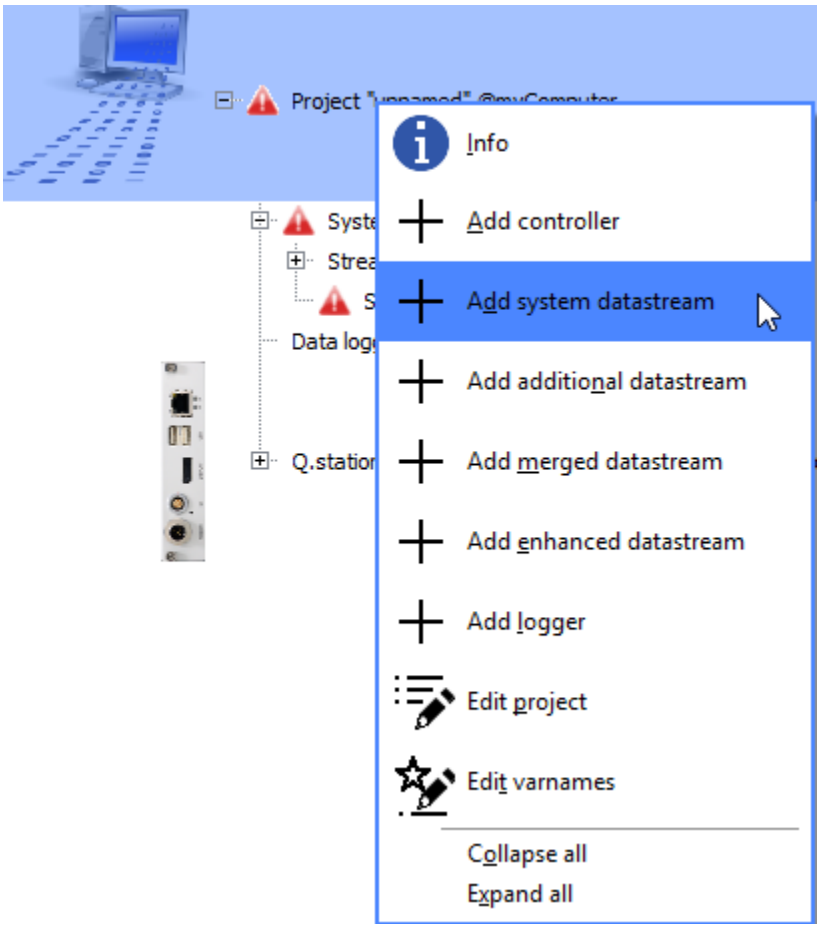
4. The columns can be resized by dragging the columns left and right.

7. DATA VISUALIZATION

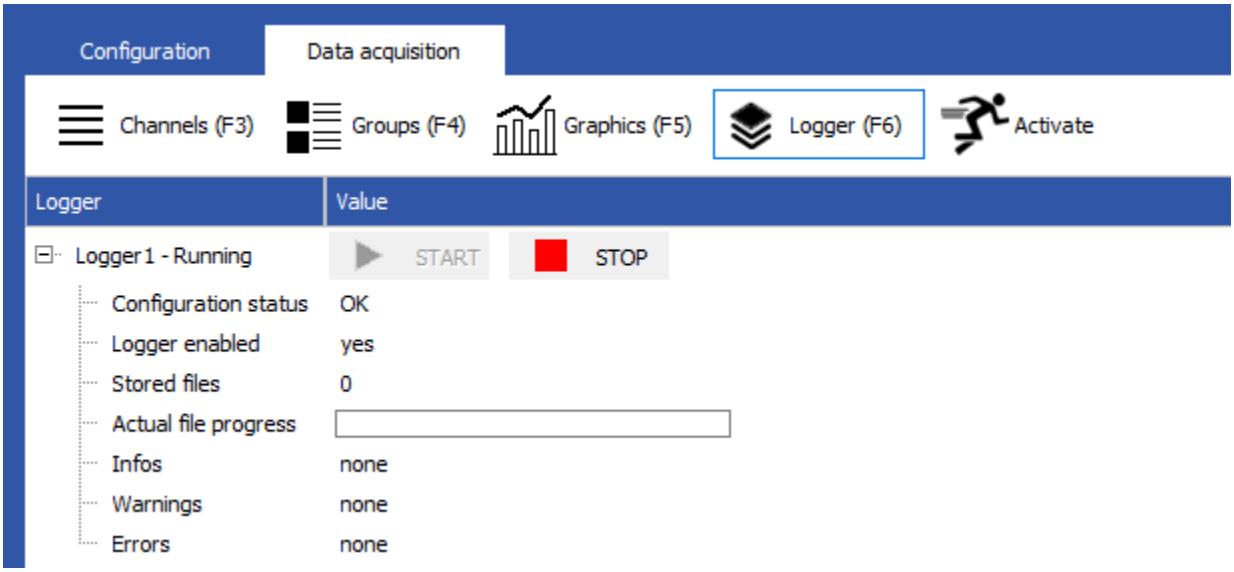
Unlike test.commander which used test.viewer for visualization, GI.bench handles visualization and custom HMI screens all within the software.

7.1 Data Streams

The visualization is controlled by GI.data in the system streams. You can add new datastreams and use a merged datastream to visualize synchronous data that are logged with different sample rates.

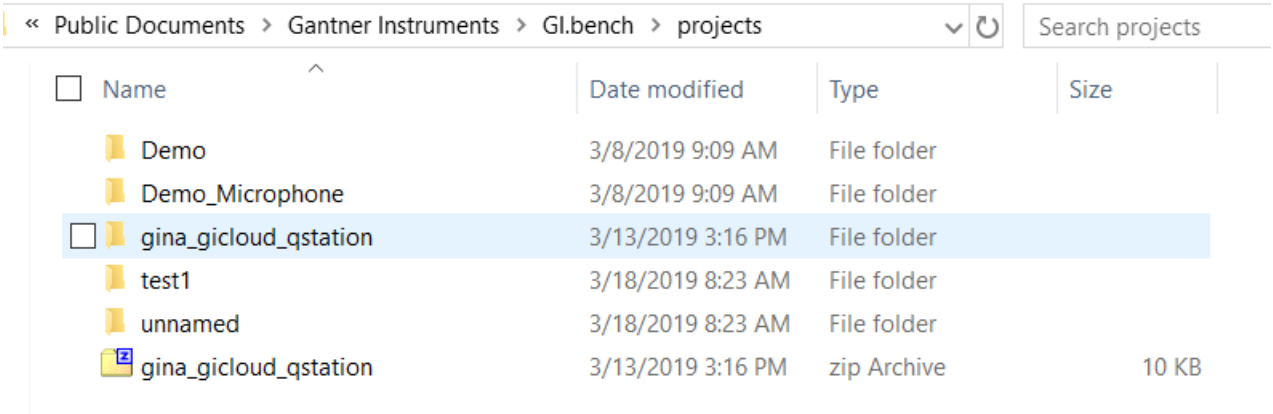


A local logger can also be added to log data files locally onto the PC. From the Logger section it is possible to manually start/stop the logger.



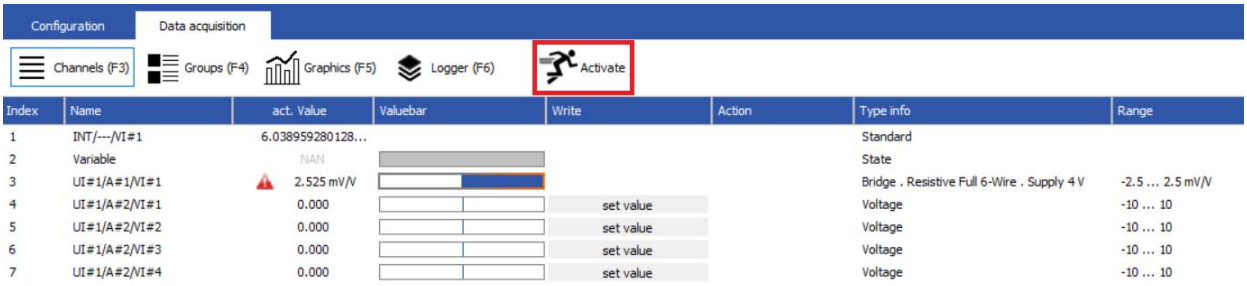
To load the results outside of GI.bench, open the project folder

The project directly will be shown. Go to GI.bench > data > archives to access to the local logger



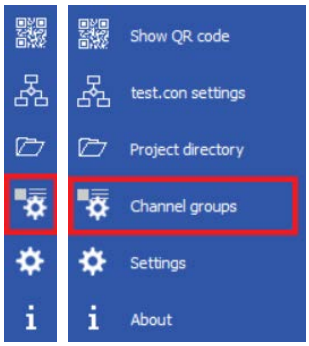
7.2 View Online Values

Go to the Data Acquisition tab. The channels tab shows the list of configured variables. Click on Activate to show the online values.

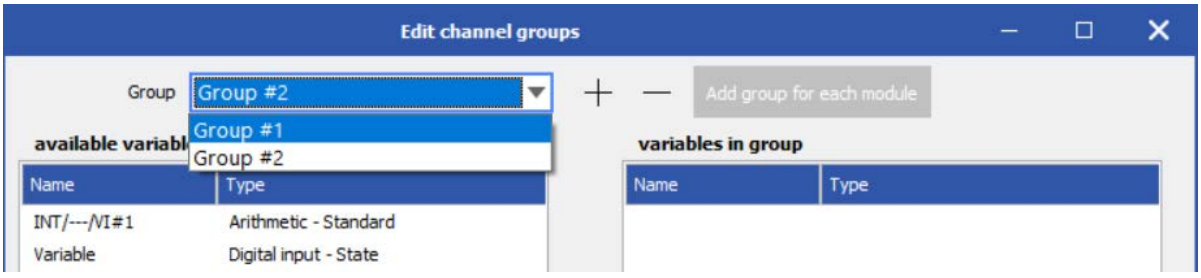


7.2.1 Channel Groups

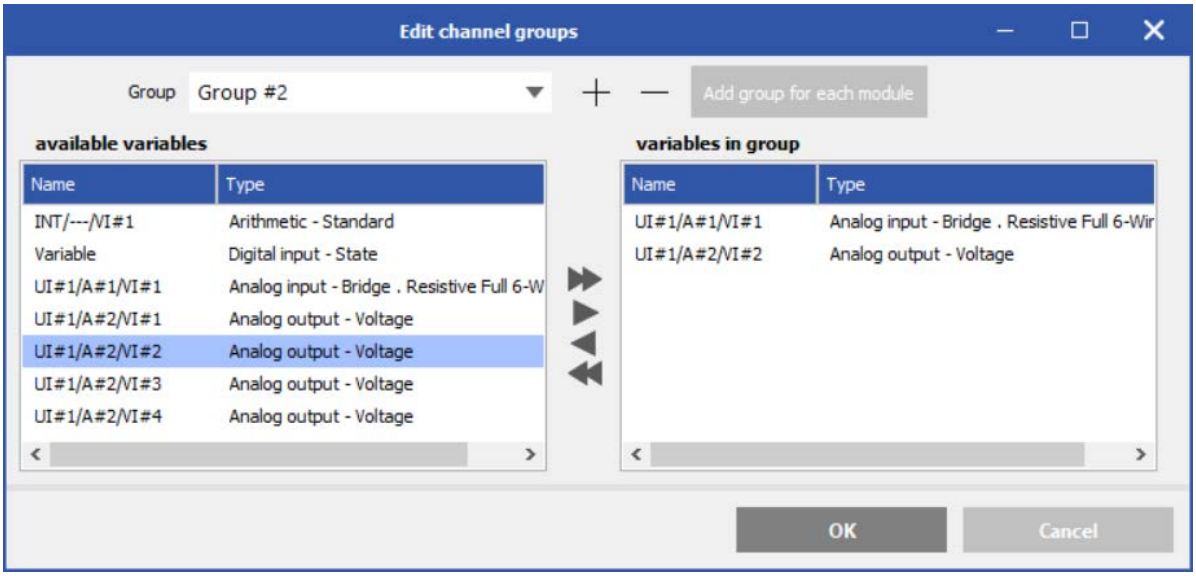
1. The Group tab allows channels to be grouped together by user preference. To change the group settings, go to Channel-groups at the bottom left.



2. This will open the Edit Channel Groups window. Create/delete a group by selecting the +/- icon, or select an existing group by clicking on the arrow for the drop down list.

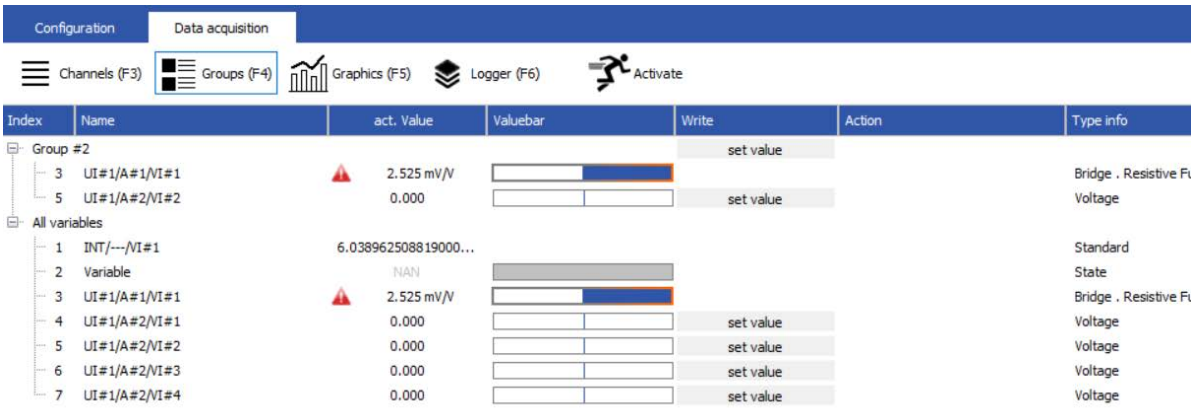


3. Select on the channels to be added to the desired group and select the single right arrow. To remove variables, highlight the variables to be removed from the right side, and select the single left arrow



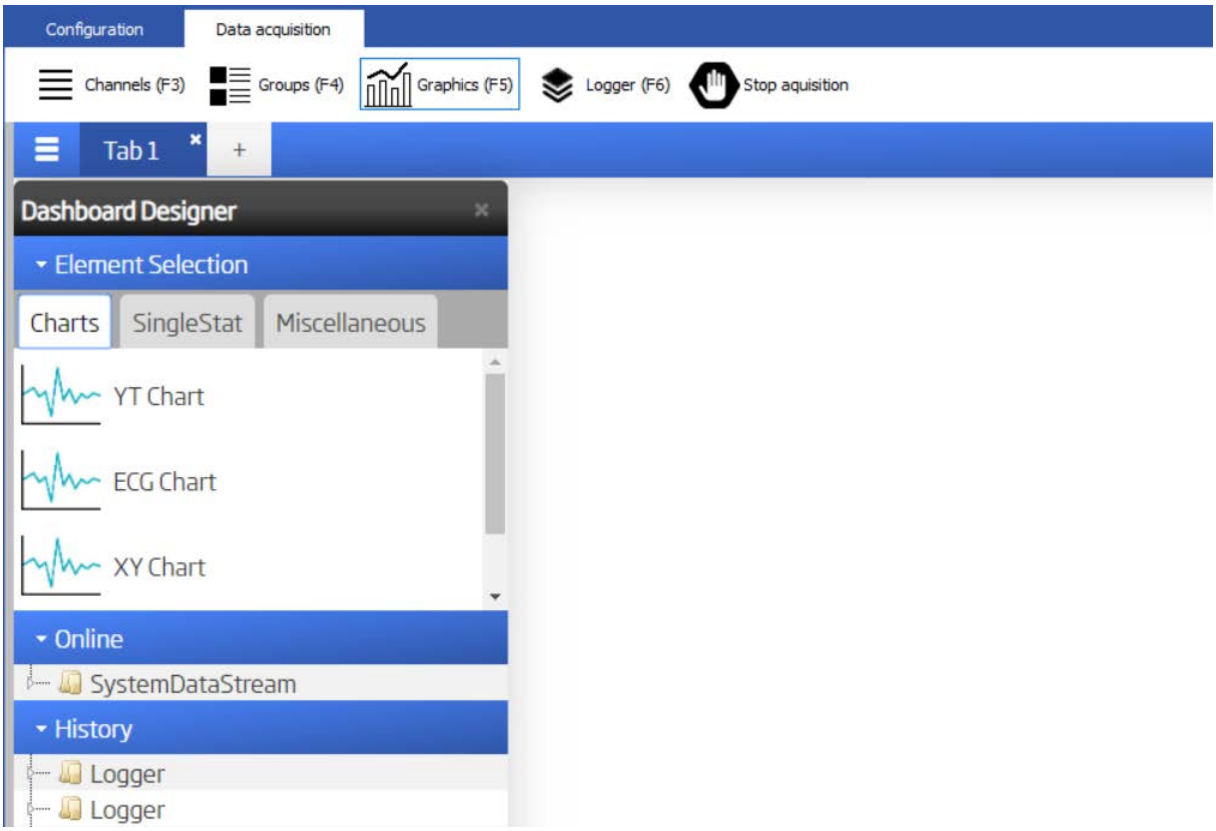
4. Use the double right or left arrows to either add all available variables or remove all variables from a group. Click OK to save changes.

5. Go back to Data Acquisition > Groups to see the created groups
   A list of all variables will be shown below the created groups.
   Use the +/- buttons to expand or collapse the groups



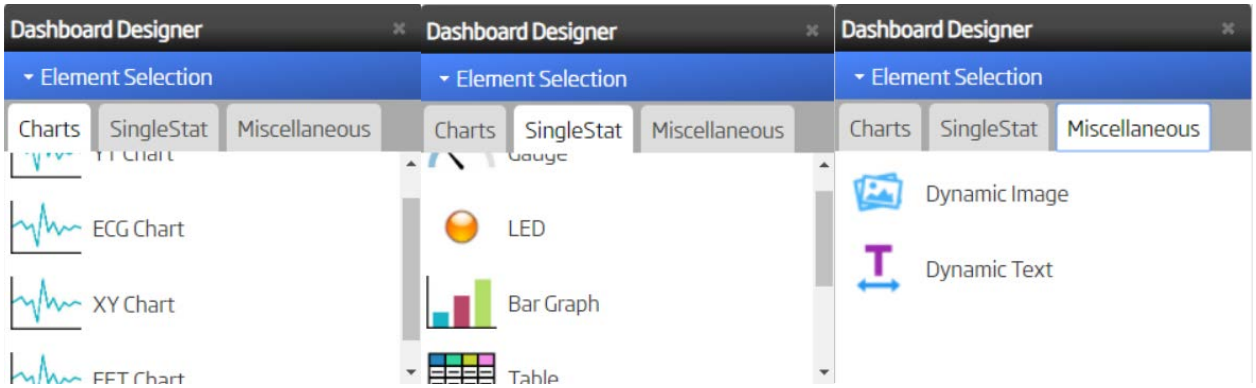
7.3 Online Graph

1. Under Data Acquisition select Graphics. To make changes, use the Dashboard Designer that appears.

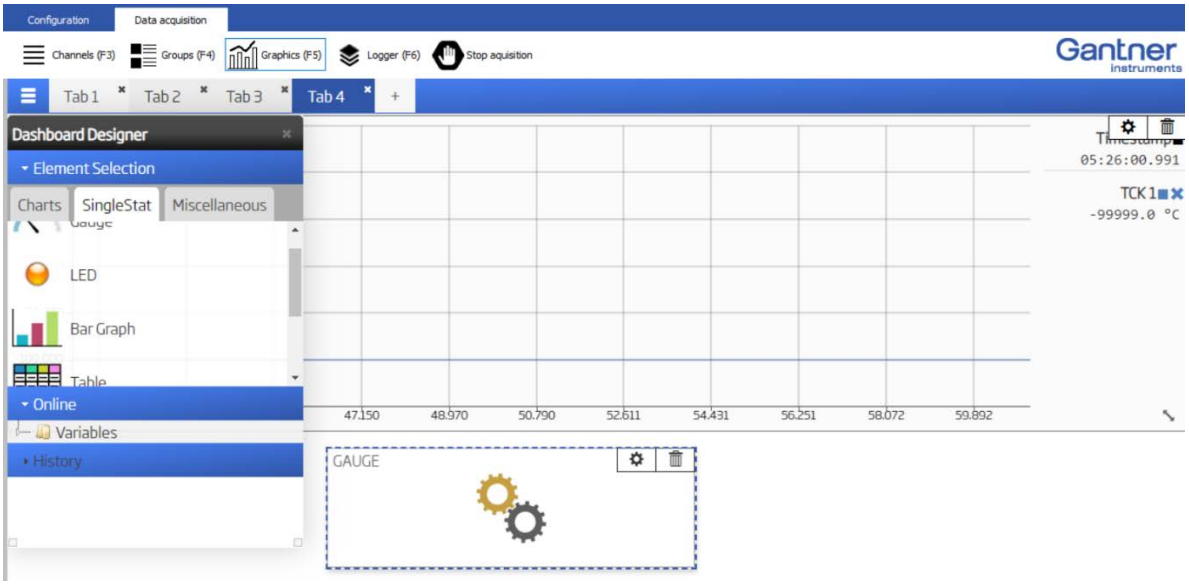


2. A tab is created by default. Create additional tabs by clicking on the "+" icon. Multiple tabs are possible. Double-click on the tab to change the name:

3. In the Dashboard Designer, you can select various elements for visualization. Click an element or drag it to add it to the window.



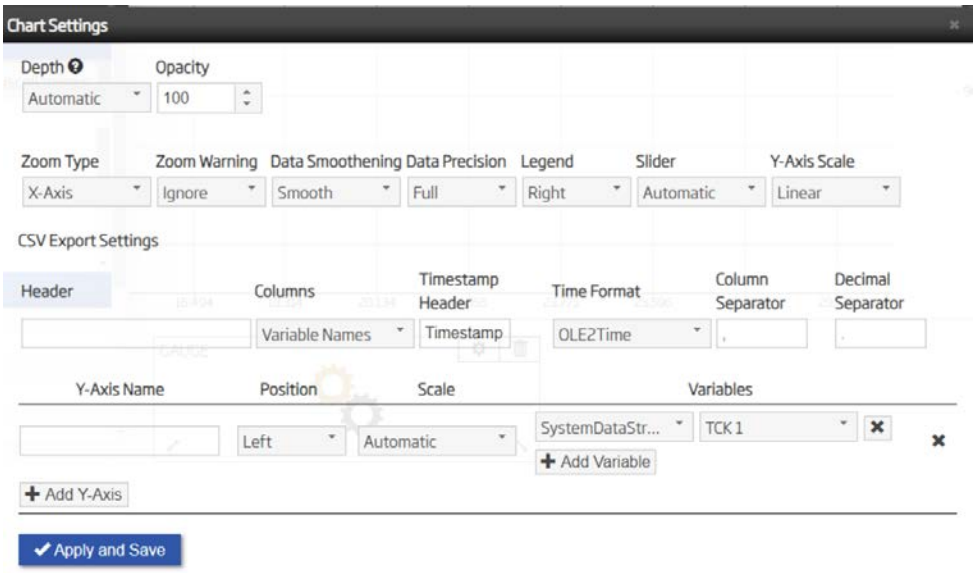
4. You can reposition by holding the left-click and resize the elements by clicking and holding the arrows at the corners of the elements



5. To delete a chart, click on the trash icon at the top-right of the element

6. Populate the displays with the desired variables by dragging the channels from the desired data buffer under the online section

7. Click on the gear icon for each element to bring up its respective settings menu. You can edit which variables are attached and make changes to the chart.



8. After completing the changes, click Apply and Save. Click on the X in the Dashboard Designer window to lock the elements in place.

9. Changes will be reflected after saving. Switch between the tabs by selecting them from the top

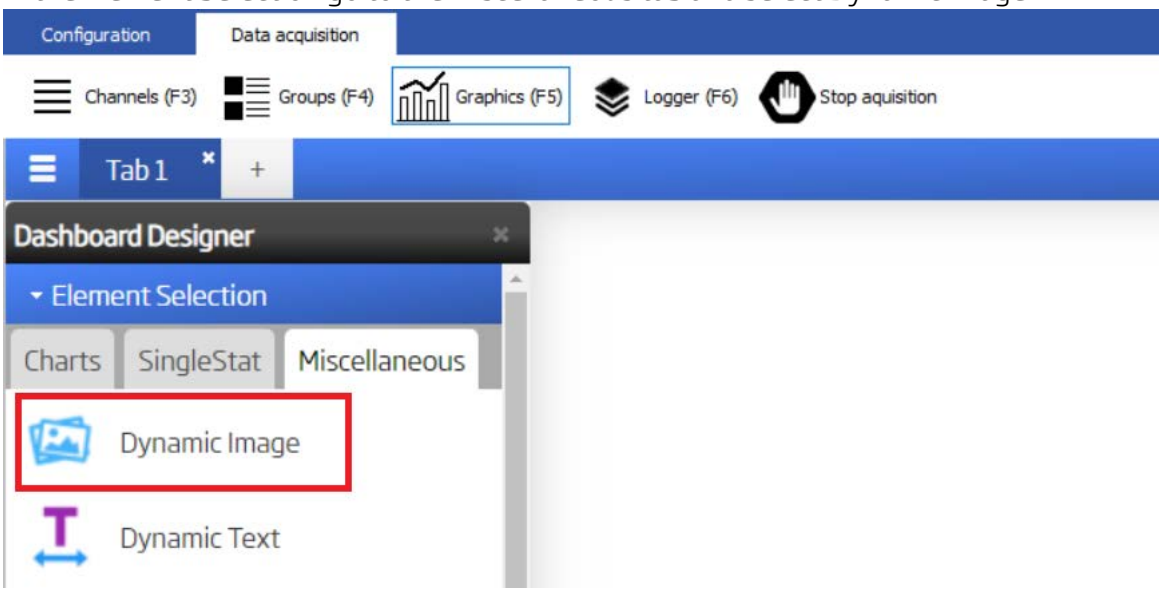
10. With the Chart elements, click the icon to print or export the streamed data as a jpeg, png, csv, or UDBF

7.3.1 Dashboard

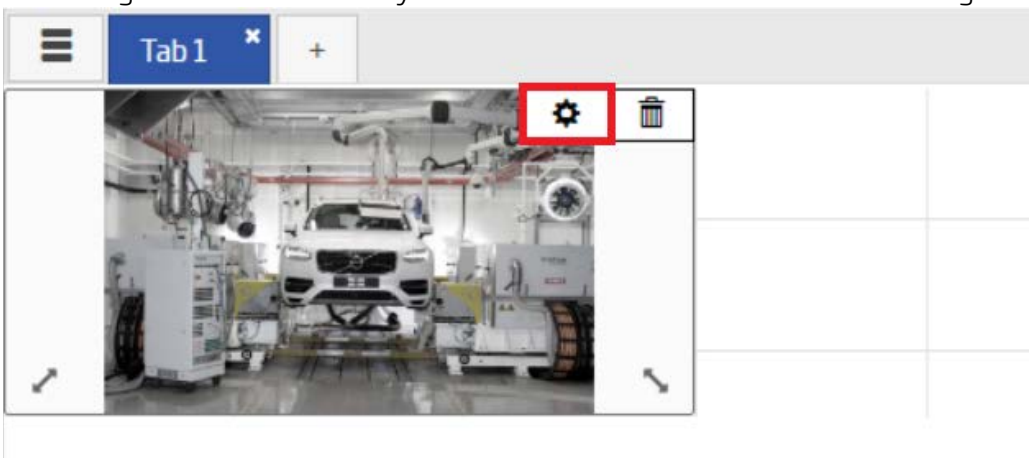
You can create custom dashboards with personalized images

1. Place the application pictures in the following directory:
   C:\Program Files\Gantner Instruments\GI.bench\V1.3.2.0_2019-02-15\gibenchwebui\lib\img

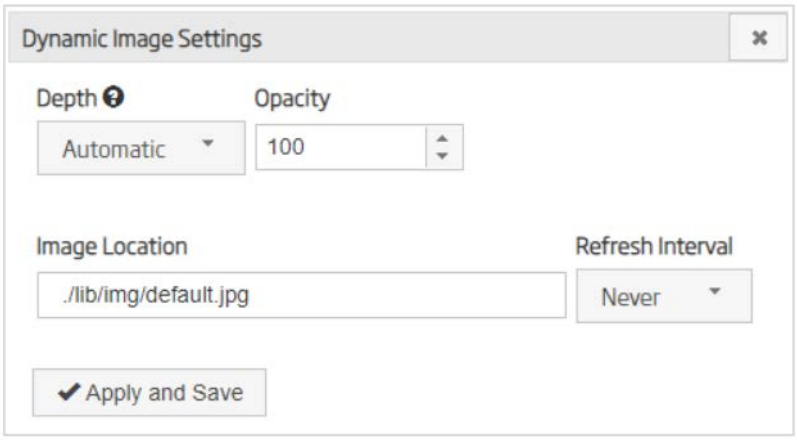
2. In the Element Selection go to the Miscellaneous tab and select Dynamic Image



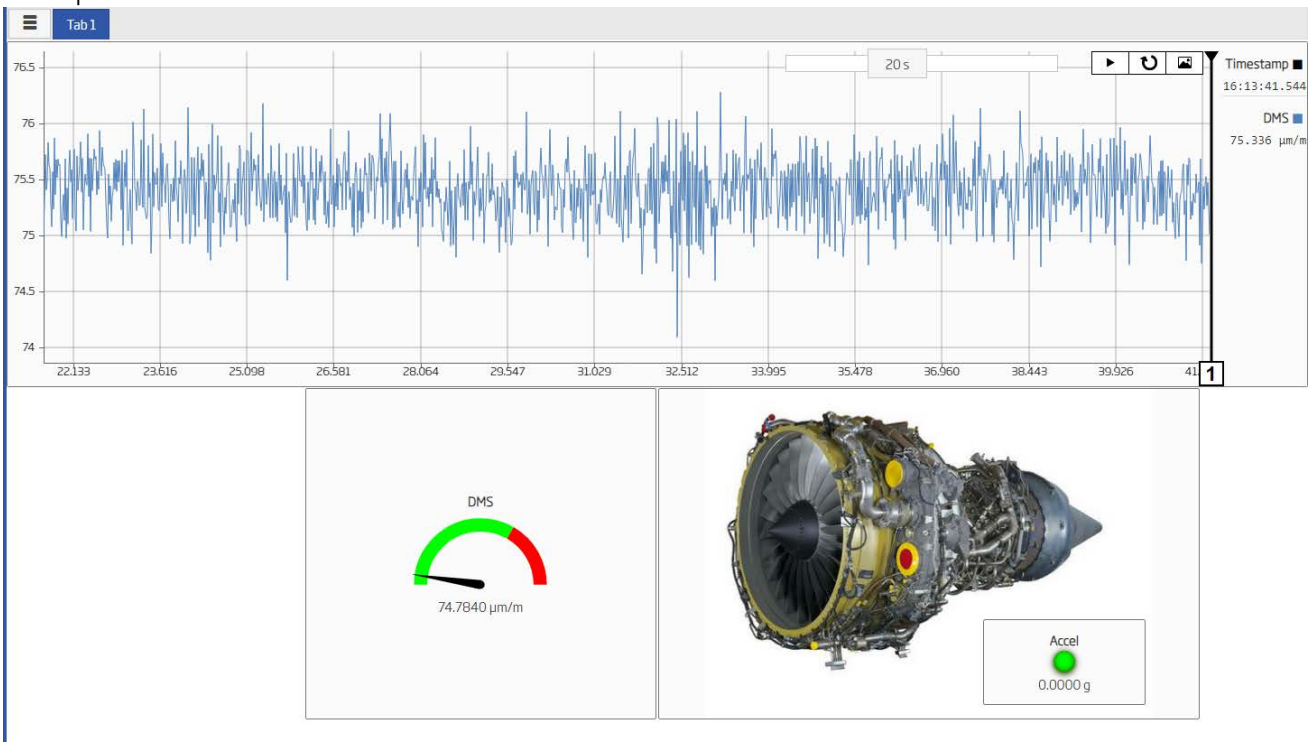
3. Click the gear icon on the newly create visual element to access the settings



4. Change the file name to the desired picture. Click Apply and Save.



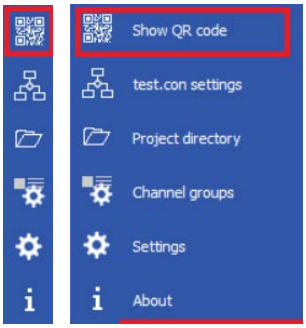
Example Dashboard



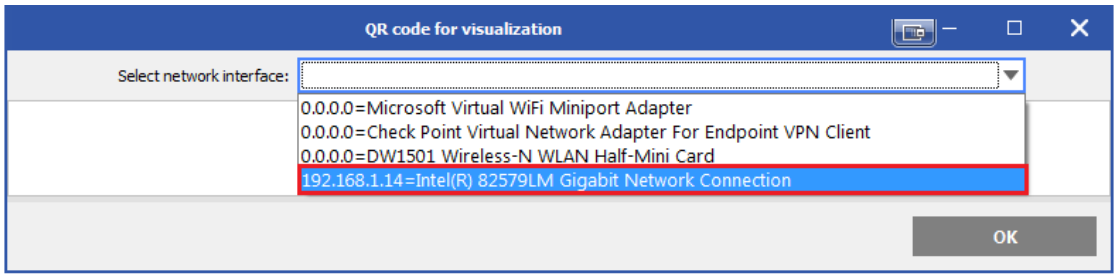
7.3.2 Visualization QR Code

GI Bench can generate a unique QR code that can be scanned by any smart device to instantly acquire a link to display the visualization tools that has been configured.

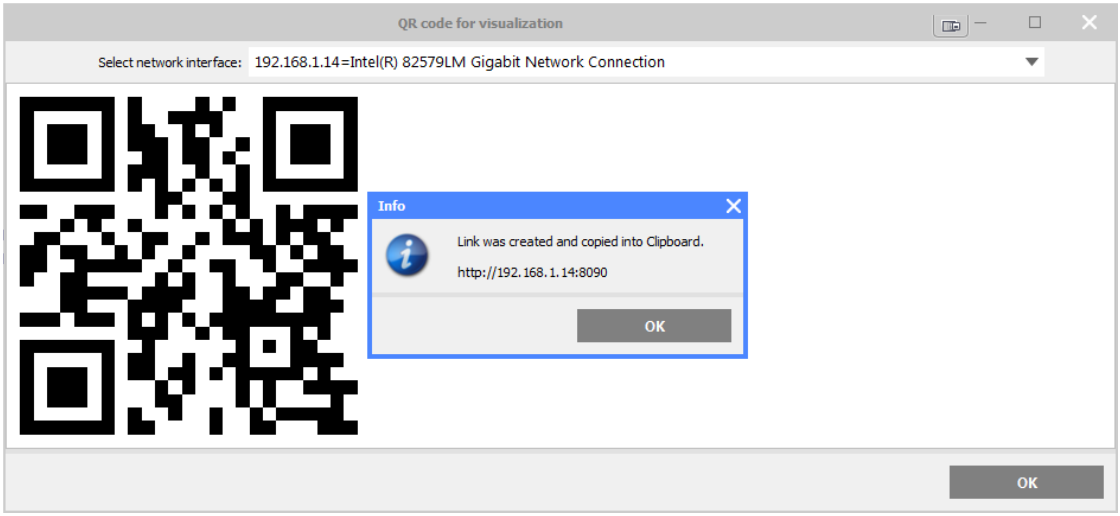
1. Go to Visualization QR code at the bottom left



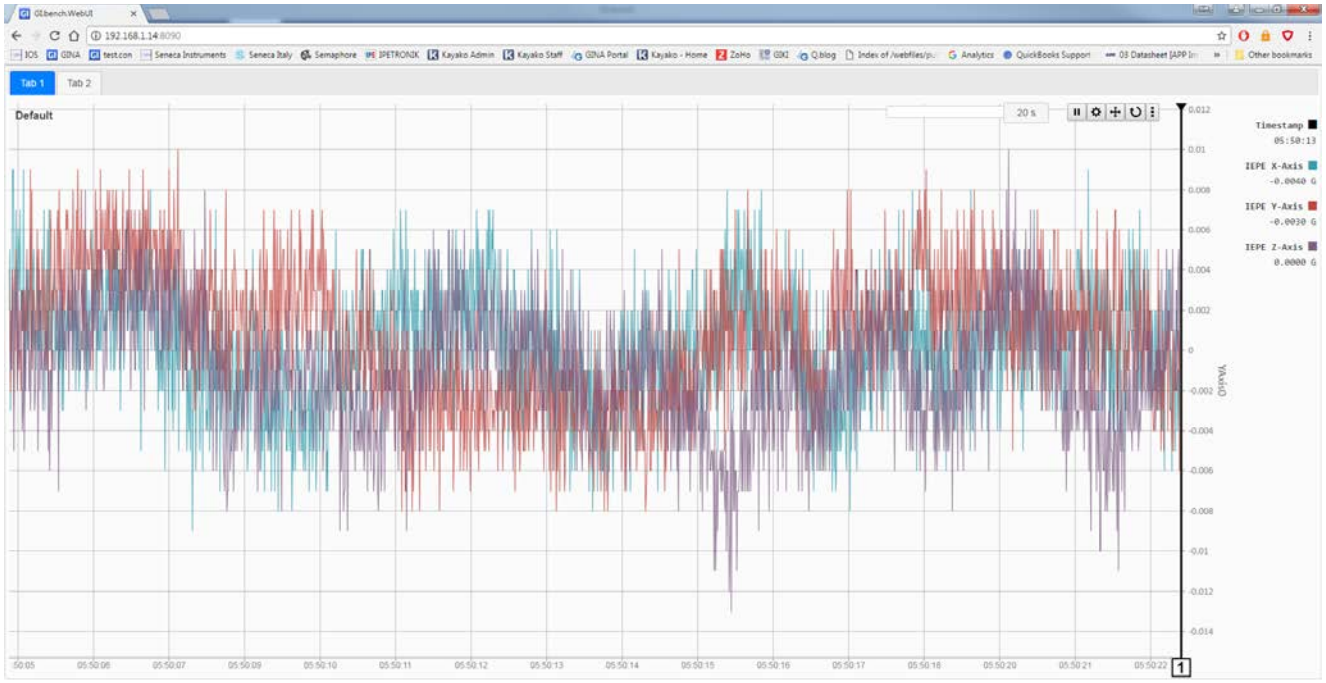
2. The QR code for visualization window will appear and prompt for an interface to be selected. Click the arrow to bring the drop down list and select the IP address

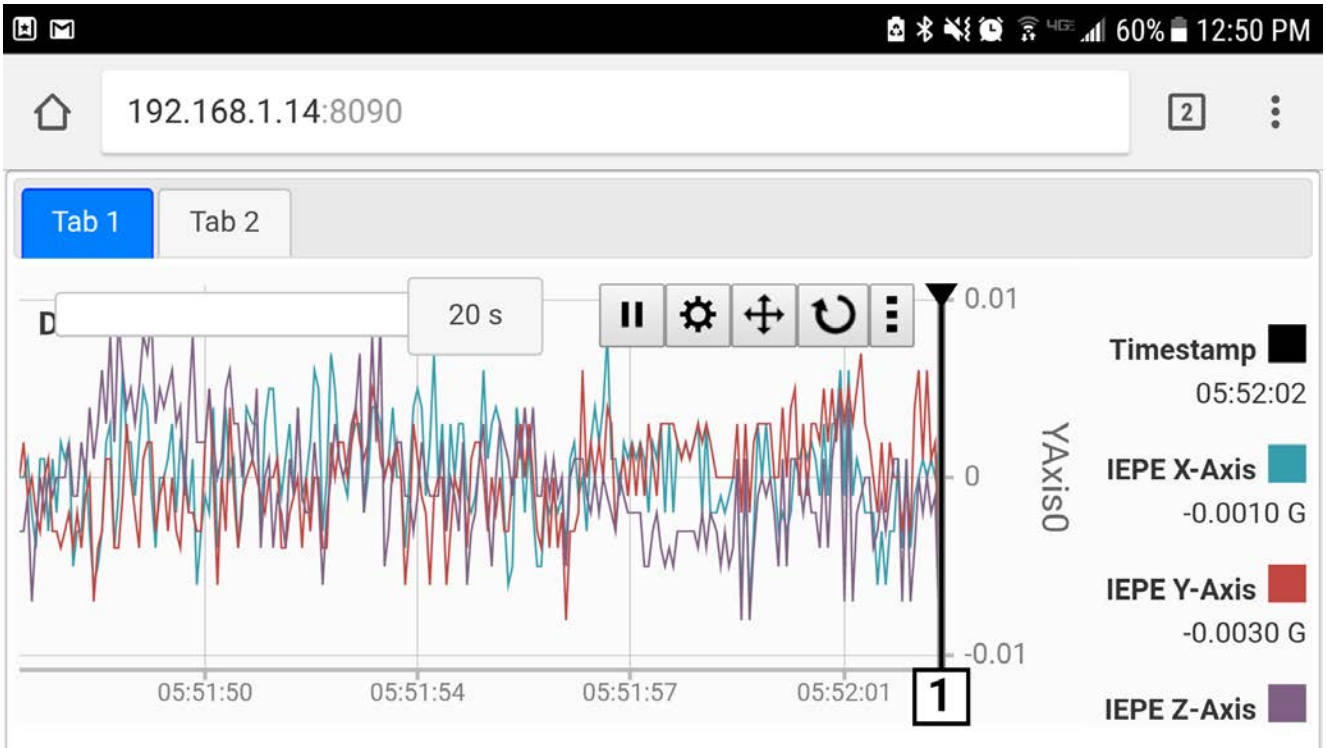


3. A QR code will be generated and the link will automatically be copied to the PC's clipboard.



4. Assuming it is on the same network as the PC, this code can be scanned by a smart device or the link copied into a browser page.

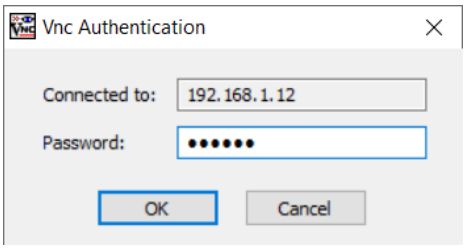

Default
Tab 1
Tab 2
20 s
Timestamp
IEPE X-Axis
IEPE Y-Axis
IEPE Z-Axis
YAxis0


60% 12:50 PM
192.168.1.14:8090
Tab 1
Tab 2
20 s
0.01
0
-0.01
YAxis0
05:51:50
05:51:54
05:51:57
05:52:01
Timestamp
05:52:02
IEPE X-Axis
-0.0010 G
IEPE Y-Axis
-0.0030 G
IEPE Z-Axis

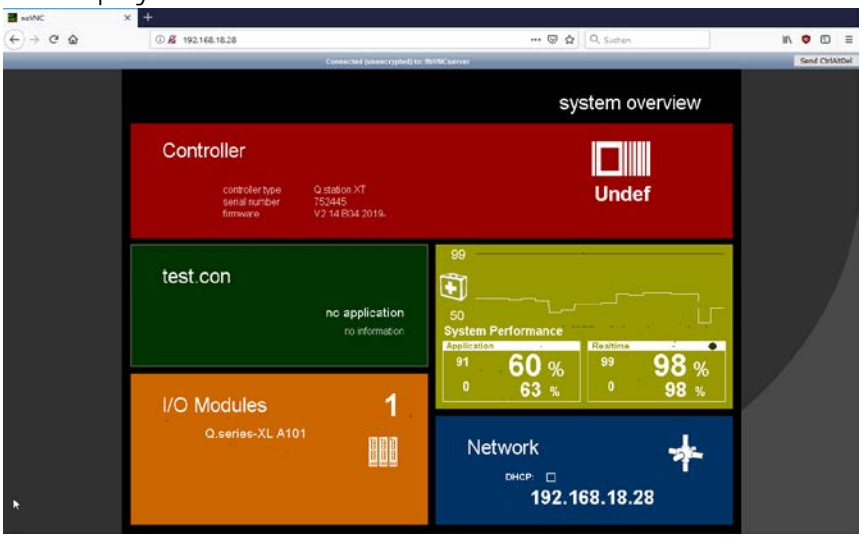
8. VNC VISUALIZATION

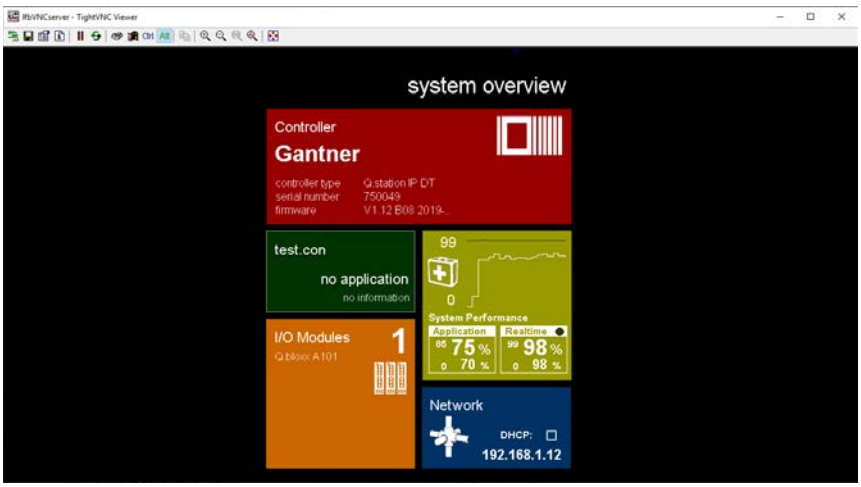
A virtual network computing (VNC) connection can be established to access the Q.station's internal display.

1. Enter the Q.station's IP address in a browser or VNC viewer (e.g. TightVNC).
   Password: master



2. The display will be shown and can be interacted with



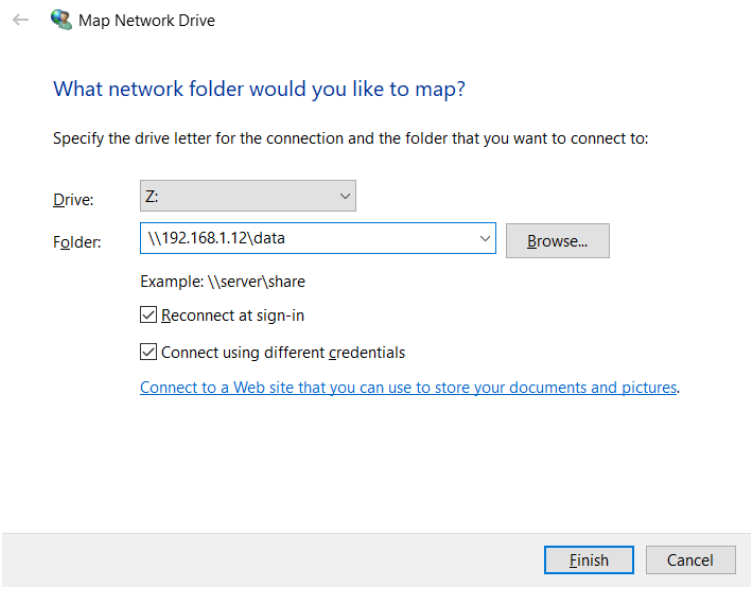


9. ACCESS INTERNAL DATA

To access the internal memory of the Q.station via SMB protocol, you can define a new network connection on your PC by mapping the Q.station as a network drive.

1. In a Windows Explorer window, right-click "This PC" or "Network" and select Map Network Drive

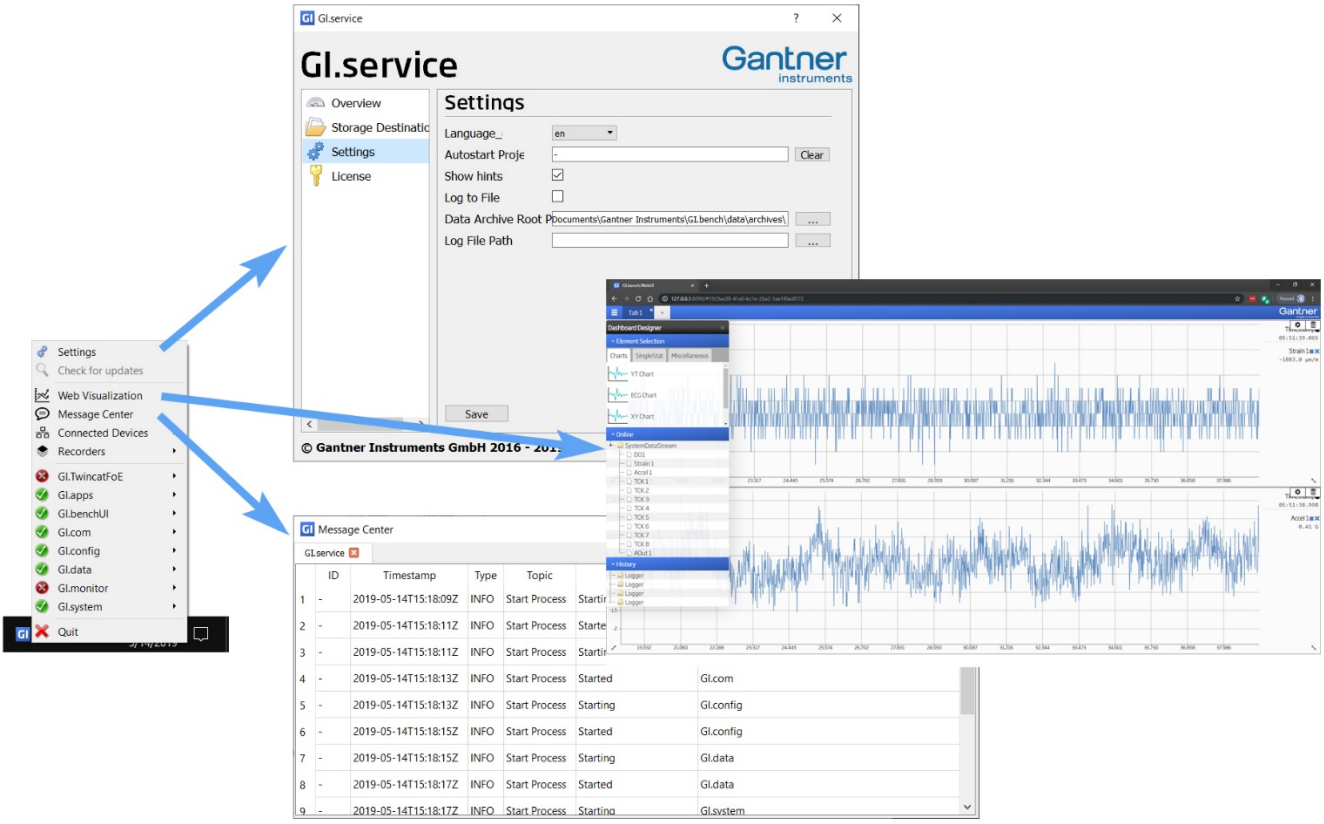
2. In the menu select a drive letter, then enter the IP address of the Q.station and the data directory. Check the box for "Connect using different credentials"



User: **data**
Password: **ginsdata***
**password is "data" for an older version Q.station*

10. GI.SERVICE OVERVIEW

Right-click on the GI.bench icon in the system tray to edit settings, quick access to visualization, check the message center, see connected controllers, manage PC recorders, and start/stop software tools.



11. INTERNATIONAL SALES AND SERVICE

The current addresses of our sales partners can be found on our website. You can take up direct contact with Gantner Instruments at any time.

You will find further information in the Technical Information section in our Wiki at https://dev.gantner-instruments.com/doku-wiki. The username is *support* and the password is *gins* (not all sections are open to the public).

Austria

Gantner Instruments GmbH
Montafonerstr. 4
6780 Schruns / Austria
Phone: +43 5556 77463-0
Fax: +43 5556 77463-300
office@gantner-instruments.com
www.gantner-instruments.com

Test and Measurement Technology
Designed for You

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Austria
Gantner Instruments GmbH
Montafonerstr. 4
6780 Schruns / Austria
Phone: +43 5556 77463-0
Fax: +43 5556 77463-300
office@gantner-instruments.com
www.gantner-instruments.com

Germany
Gantner Instruments Test & Measurement GmbH
Heidelberger Landstr. 74
64297 Darmstadt / Germany
Phone: +49 6151 95136-0
Fax: +49 6151 95136-26
testing@gantner-instruments.com
www.gantner-instruments.com

Americas
Gantner Instruments, Inc.
1550 Hotel Circle North, Suite 180
San Diego, CA 92108
United States
Phone: +1 (888) 512-5788
info.us@gantner-instruments.com
www.gantner-instruments.com