

WITH MORE THAN 60 YEARS OF EXPERIENCE IN COMPRESSOR TECHNOLOGY AND HIGHLY DEDICATED EMPLOYEES, OUR FOCUS IS ON DEVELOPING AND

APPLYING ADVANCED COMPRESSOR TECHNOLOGIES TO ACHIEVE STANDARD SETTING PERFORMANCE FOR LEADING PRODUCTS AND BUSINESSES AROUND THE WORLD.



TOOL4COOL® v3.01 FLEXIBLE CONTROL SETTINGS

OPERATING INSTRUCTIONS TOOL4COOL®



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Gateway 105N9501			

SOFTWARE LICENSE AGREEMENT

1. The USER is granted a non-exclusive right to use the Tool4Cool® LabEdition software.
2. The USER shall not be entitled to alter the Tool4Cool® LabEdition software.
3. SECOP retains the title and copyright to the Tool4Cool® LabEdition software and documentation as well as the principles used in the Tool4Cool® LabEdition software.
4. The USER shall not be entitled to publish, transfer or in any other way make the Tool4Cool® LabEdition software accessible to third parties.
5. The USER shall be entitled to make one (1) copy of the Tool4Cool® LabEdition software for back-up purposes. Beyond that, the Tool4Cool® LabEdition software shall not be copied.
6. The USER shall inform any member of his staff affected by the agreement on the use of Tool4Cool® LabEdition software of the content of same and that it will be his responsibility to adhere to the conditions of said agreement.
7. SECOP shall be entitled to cancel the agreement on use of Tool4Cool® LabEdition software with immediate effect if the USER or any party for whom he is responsible should be guilty of a violation of the conditions for use of Tool4Cool® LabEdition software and of confidentiality, and said violation does not cease 30 days at the latest after SECOP drawing attention to it in writing.
8. The USER assumes responsibility for the use of the Tool4Cool® LabEdition software from the moment where the conditions are accepted.
9. SECOP shall not be held liable for any damage or loss under this license arising from the use of the Tool4Cool® LabEdition software, including damage to the plant or other goods, such as consequential damage or other loss of goods.
10. The USER shall in every respect be obliged to indemnify SECOP for any and all costs arising in connection with any action for damages against SECOP initiated by a third party and having relation to the USER'S use of the Tool4Cool® LabEdition software.
11. Unless agreed otherwise in writing between SECOP and the USER:
SECOP shall assume no liability with regard to service or maintenance of the Tool4Cool® LabEdition software. SECOP shall be under no obligation to update or provide the USER with new releases of the Tool4Cool® LabEdition software.

1.

INTRODUCTION TO TOOL4COOL®
LABEDITION**1.1
What Is Tool4Cool®
LabEdition?**

Tool4Cool® LabEdition is a software tool for use with Secop compressor °CCD® controllers. It is designed for a broad range of tasks ranging from product development to service and maintenance.

**1.2
Getting Started**

In order to set up and run Tool4Cool® LabEdition with a Secop °CCD® controller, the user must first have the following items and information, which are available from the controller supplier:

- Controller type and version number
- Secop °CCD® controller Operating Instructions
- Product Key for each controller type and version, for more details see below.
- Parameter definition file, for more details see below. Required for certain controllers only. Please consult the product documentation as to whether this is required.
- Cables and adaptors for network connection. Please consult the Secop °CCD® controller Operating Instructions for cable and adaptor specifications.

Product Key

The product key is an alphanumeric code, which is specific to single or multiple types and versions of Secop °CCD® controllers. The user must enter the product key to gain access to the Tool4Cool® LabEdition functions for the Secop °CCD® controller.

The user access level is coded into the Product Key, defining which parameters and level of the controller the user is entitled to access. For user access at a different level, a new product key is required.

Keys, which contain wildcards (question mark) in the code number or software version are valid for multiple electronics. More specific keys with less wildcards have a higher priority than more general keys with more wildcards.

Product keys for products not listed below are available from the supplier of the application.

Generic Product Keys for DC-Powered Series Controllers (High Customer Level)

- 101N???? ZH3TT6RBAD1GW8G68ZM1N8G62ZMCO916IER6GH2YZEIR
- 101N071? ZX3TT6RBAD1GRLGB9ZM1N8G62ZMCO0916IER6GH2YZEIR
- 101N0720 ZF3TT6RBAD1GRLGBY311N8G62ZMCO0916IER6GH2YZEIR
- 101N0730 DG3TT6RBAD1GRLGBU311N8G62ZMCO0916IER6GH2YZEIR
- 101N0732 DH3TT6RBAD1GRLGBU911N8G62ZMCO0916IER6GH2YZEIR
- 101N0820 DG3TT6RBAD1GRLT6Y311N8G62ZMCO0916IER6GH2YZEIR
- 101N1010 DL3TT6RBAD1GWLTB9311N8G62ZMCO0916IER6GH2YZEIR

Parameter Definition File

The parameter definition file contains the parameter data and settings specific to one type and version of Secop °CCD® controller.

For some controllers, the parameter definition file must be imported. For others, the software will automatically obtain the parameter definition file from the controller electronics. When a parameter definition file import is required, the system will make a request via a dialog in the software.

When required, the parameter definition file is available from the supplier as a file attachment via e-mail.

Minimum System Requirements

Minimum system requirements for normal operation (.NET Framework is part of the installation package):

- 500 MB disk drive space for .NET Framework, 12MB disk drive space for Tool4Cool®
- Operating system: Windows 7, Windows 8 or Windows 10
- .NET Framework with the latest patches and updates for .NET Framework released by Microsoft.

System requirements for data storage:

- Adequate data storage capacity to accommodate logged data.

The memory requirement will depend upon how many controllers and how many networks are connected to the application, as well as the volume of data logging to be performed. Data storage capacity requirements will vary greatly according to the application.

The user must ensure there is adequate space available on the hard disk to store logs and plots.

Please Note:

Normal operation refers to operation with up to 5 controllers. If Tool4Cool® LabEdition is used to monitor multiple networks with a large number of controllers, the system requirements may grow. It is the responsibility of the user to ensure adequate available memory and data storage capacity, suitable for the application.

1.3 How to Use Tool4Cool® LabEdition

For brief start-up and operation instructions, please refer to the controller Operating Instructions. For detailed instructions please read the following chapters in the Tool4Cool® LabEdition manual.

Installation steps and operation functions for Tool4Cool® LabEdition:

Tool4Cool® LabEdition can be used to monitor a single Secop °CCD® controller, or one or more networks of many controllers.

Tool4Cool® LabEdition can communicate with

- Locally connected controllers or networks, e.g. a Secop °CCD® controller connected directly to the computer.
- Remote networks, e.g. customer networks in another geographical location.

Procedure for installation:

- Connect and install hardware – see Secop °CCD® controller Operating Instructions
- Install software – see 2. Software Installation.
- Set up network - see 4.1 Connect Network.
- Enter Product Key – see 4.7 Product Key

Operation functions available – see section 5. Operation:

- Read and set parameters
- Log
- Plot
- Import and Export
- Print
- Modbus communication log
- Modbus communication log
- Alarm and event list

SOFTWARE INSTALLATION

2.1
Initial Installation


Procedure

- Visit the Tool4Cool® LabEdition page on www.secop.com
- Direct link: www.secop.com/solutions/application-detail/variable-speed-drive-software-tool4cool/

SECOP

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Variable-Speed Drive Software (Tool4Cool)




Optimum Control and Monitoring

Tool4Cool® is a unique PC software tool that enables you to precisely configure Secop variable speed drive compressors (inverter) to your cooling systems.

As well as using Tool4Cool® to customise and optimize settings during development, you can also use it for remote control and monitoring of your refrigeration circuit during operation.

Tool4Cool® retrieves and sends information to all controllers in the refrigeration system, including settings, temperature and speed. This enables you to control and monitor your system from a central station. With Tool4Cool® your service department has a constant overview of your cooling system, so trouble-shooting can be carried out remotely. Technicians only need to visit the plant in the event that a component needs to be replaced, for example.

[Home » Solutions » Variable-Speed Drive Software \(Tool4Cool\)](#)



Full Version
(including FTDI driver and .NET framework)

English (203 MB)
[↓ TOOL4COOL® v3.00](#)
 release date: July 2018
[↓ changelog](#)
[↓ disclaimer](#)

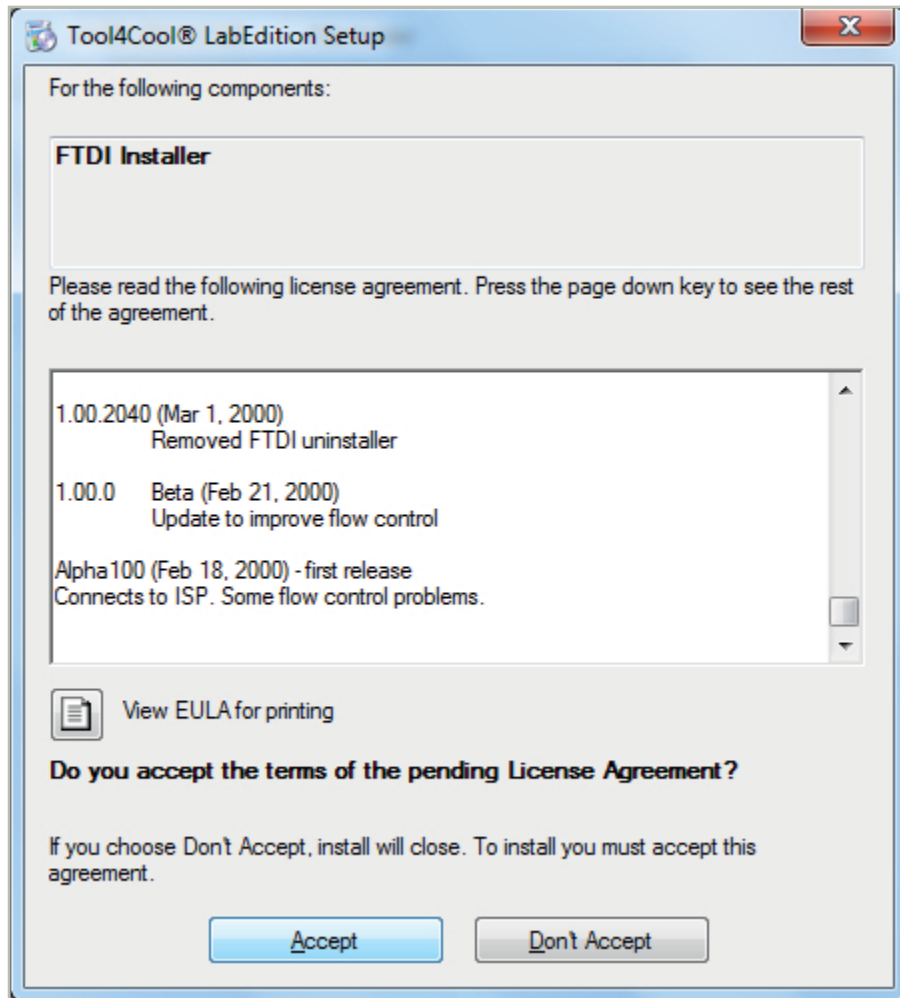
German (203 MB)
[↓ TOOL4COOL® v3.00](#)
 release date: July 2018
[↓ changelog](#)
[↓ disclaimer](#)

Chinese (203 MB)
[↓ TOOL4COOL® v3.00](#)
 release date: July 2018
[↓ changelog](#)
[↓ disclaimer](#)

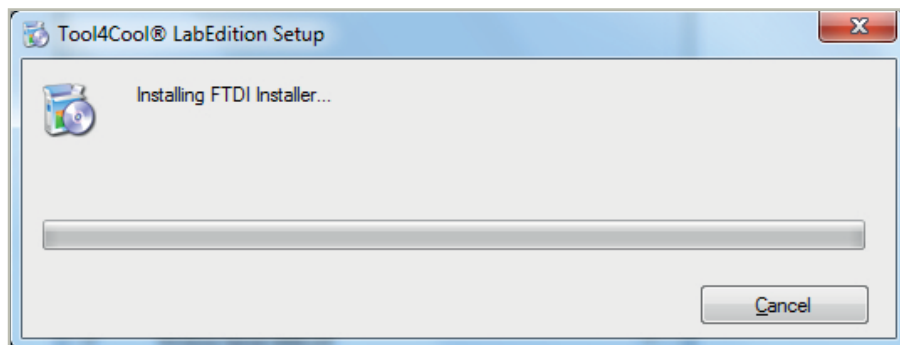
Download and unzip the The Tool4Cool® installation package and then run the file setup.exe.

- The Tool4Cool® LabEdition Setup Wizard will open. To install Tool4Cool® LabEdition, click on "Next".

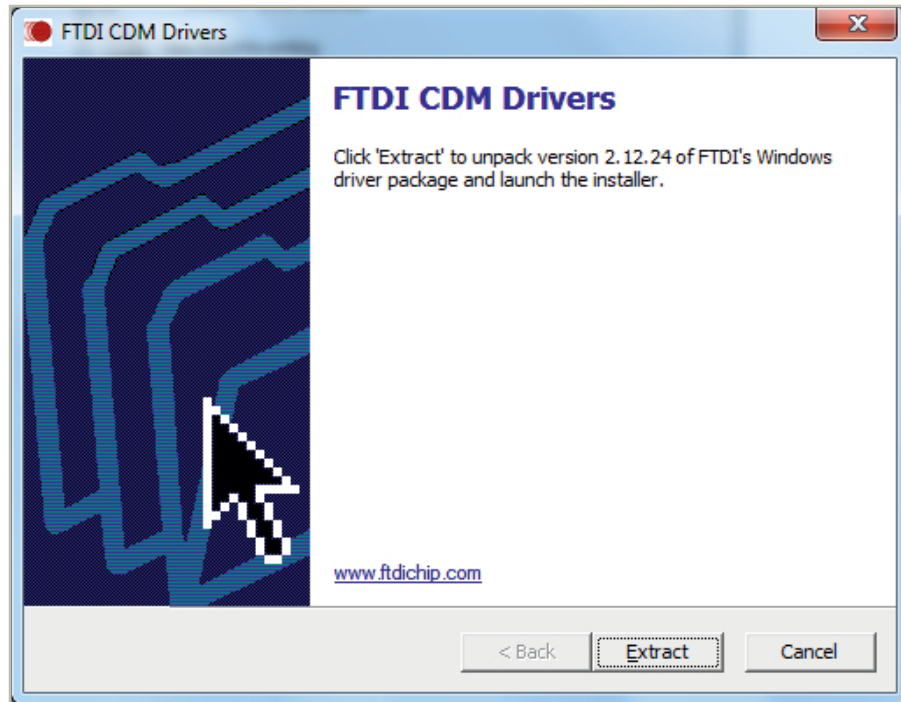
- Tool4Cool® installer, first installs the FTDI driver required for "Secop One wire LIN Gateway".



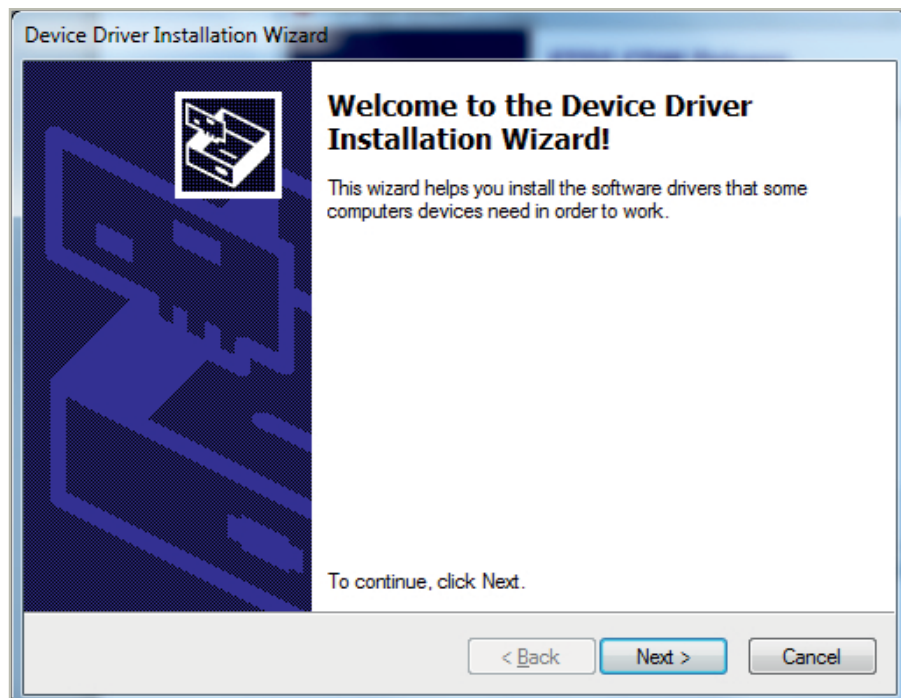
- Installation is initialized.

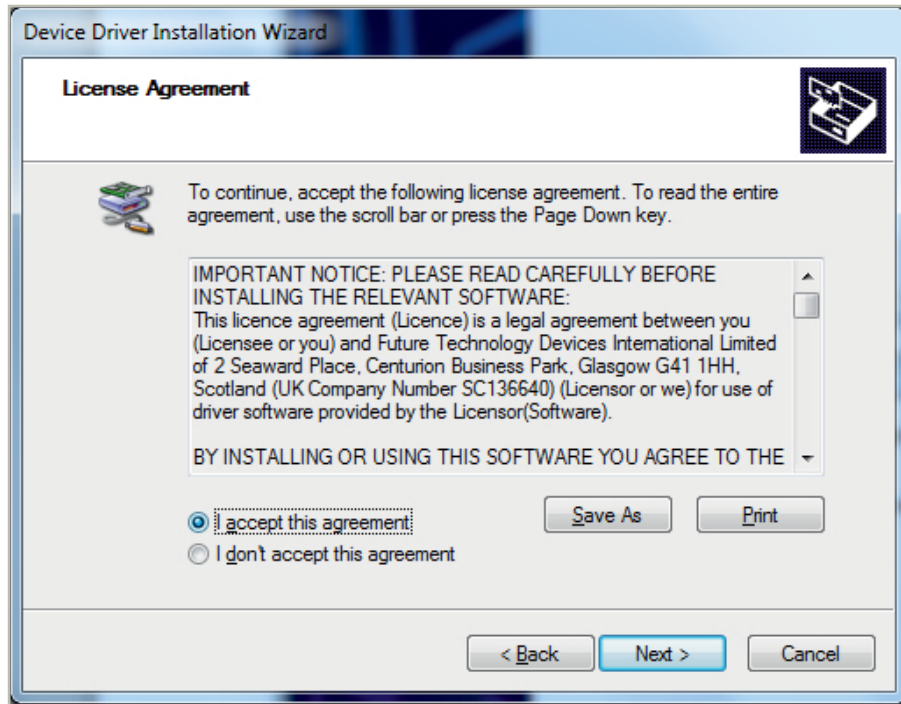


- Click on "Extract" to continue.

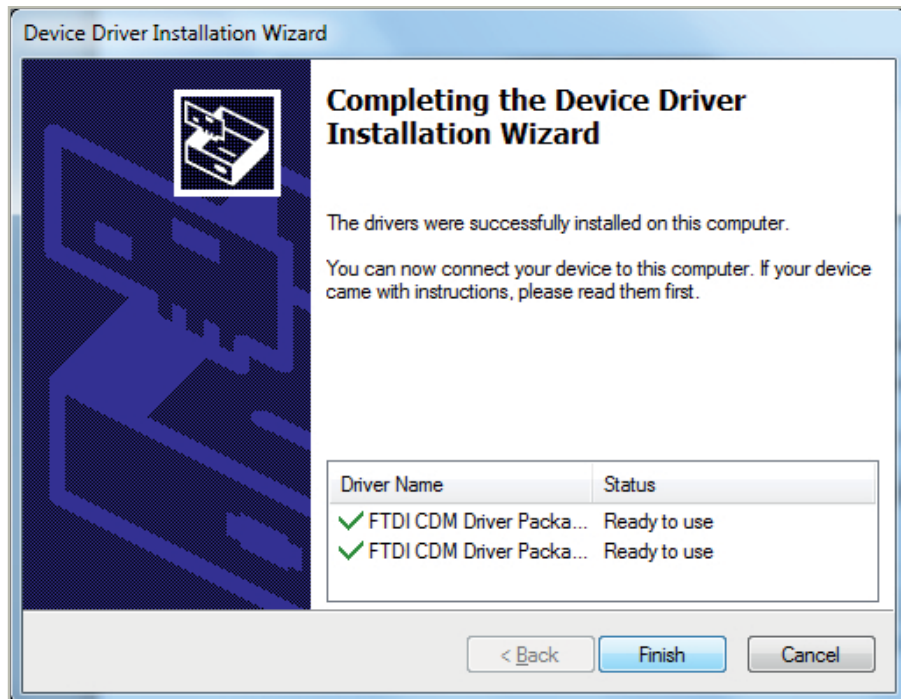


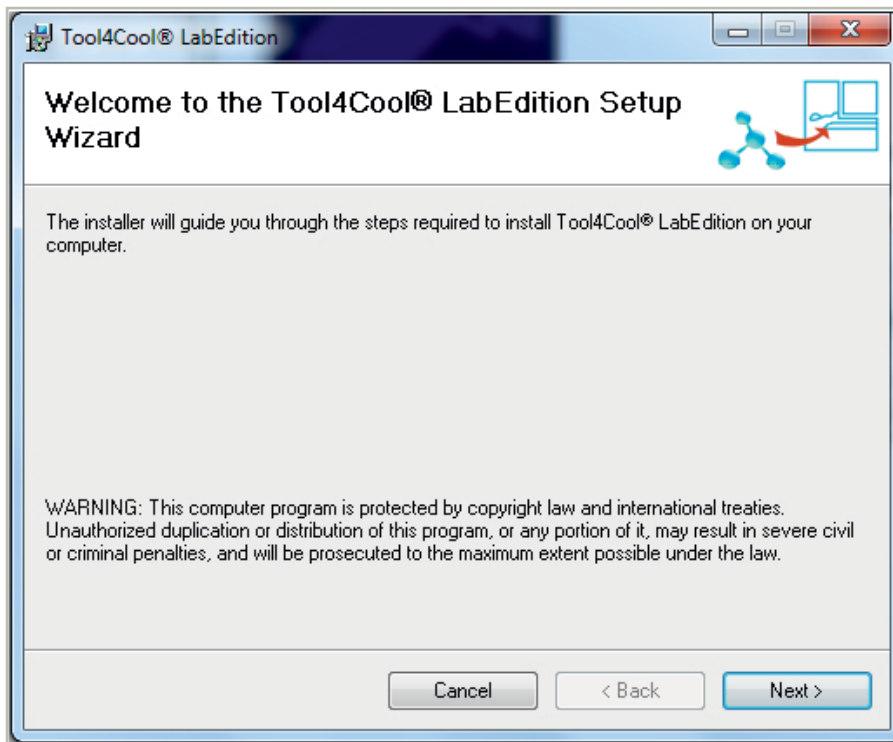
- Click on "Next" to continue.



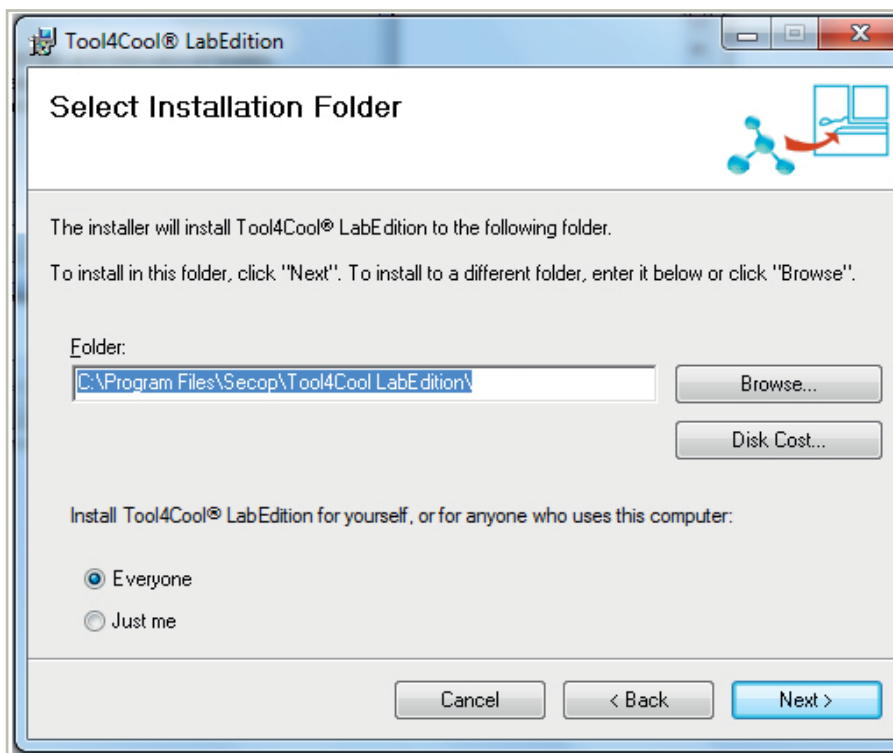


- Once installation of the FTDI driver has been completed, click on "Finish".





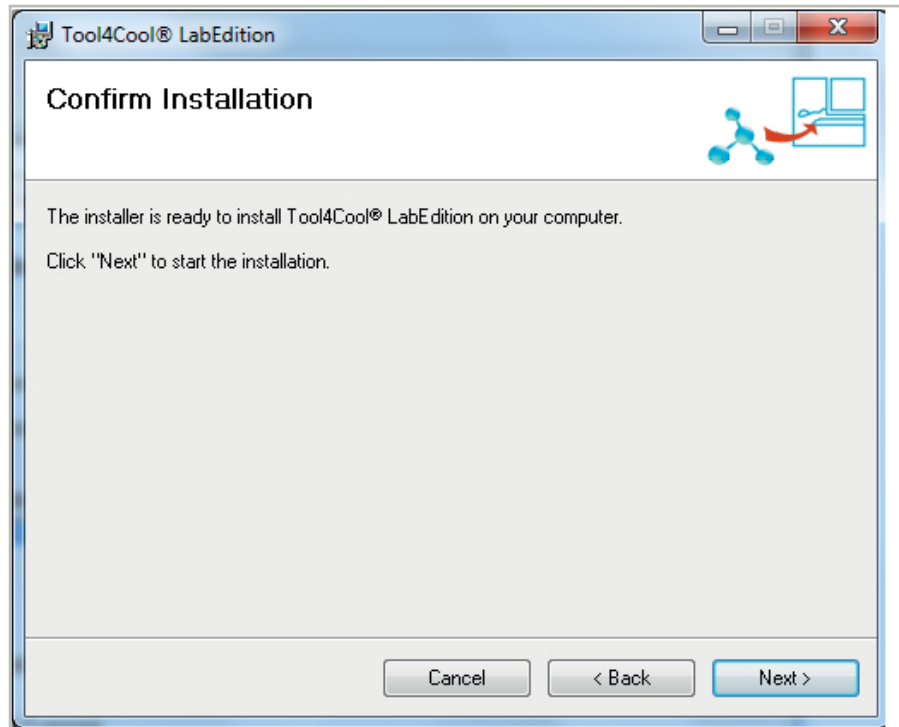
- To install Tool4Cool® LabEdition in the folder shown, click on "Next".
- To install Tool4Cool® LabEdition in a different folder, click on "Browse", browse to the desired location, and then click on "Next".



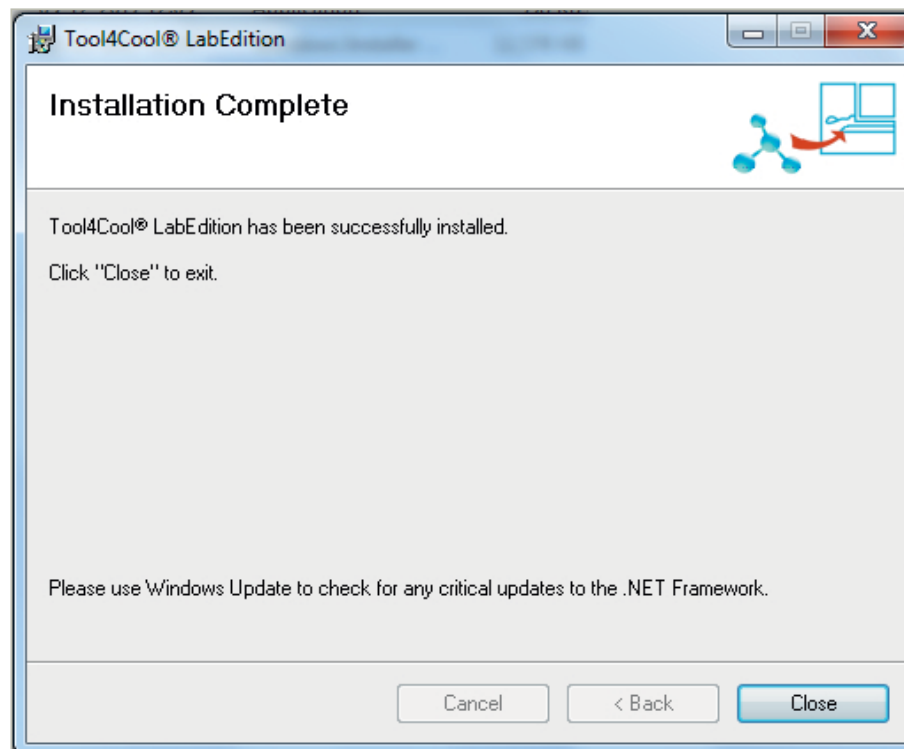
- To begin installation, click on "Next". The program will now install the Tool4Cool® LabEdition software.

Please Note:

The "Everyone" option is selected by default. This type of installation will automatically give all users access to Tool4Cool®. If you select the "Just me" check box, the installation will only give the current user access to Tool4Cool®.



- The installation is now complete. Click on "Close".
- Please use Windows Update to check for any critical updates to the .NET Framework.



Result:

- If Tool4Cool® LabEdition has been installed successfully, a shortcut will appear in the Start menu and on the desktop.

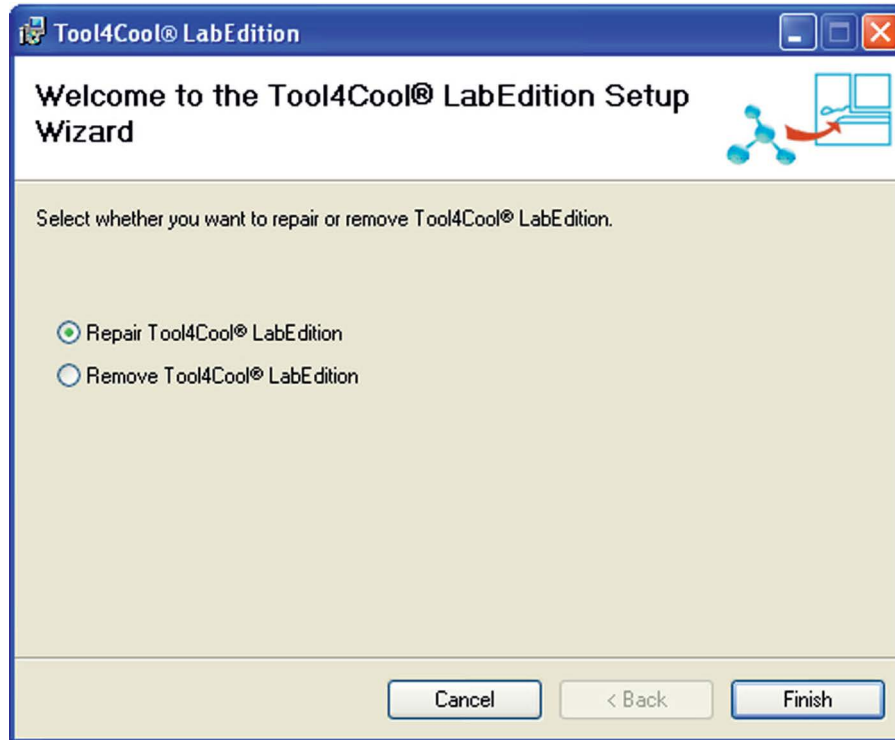


Run the software by double-clicking on the Tool4Cool® LabEdition shortcut in the Start menu, or on the Tool4Cool® LabEdition icon on the desktop.

**2.2
Installation –
Repairing Installed
Software**

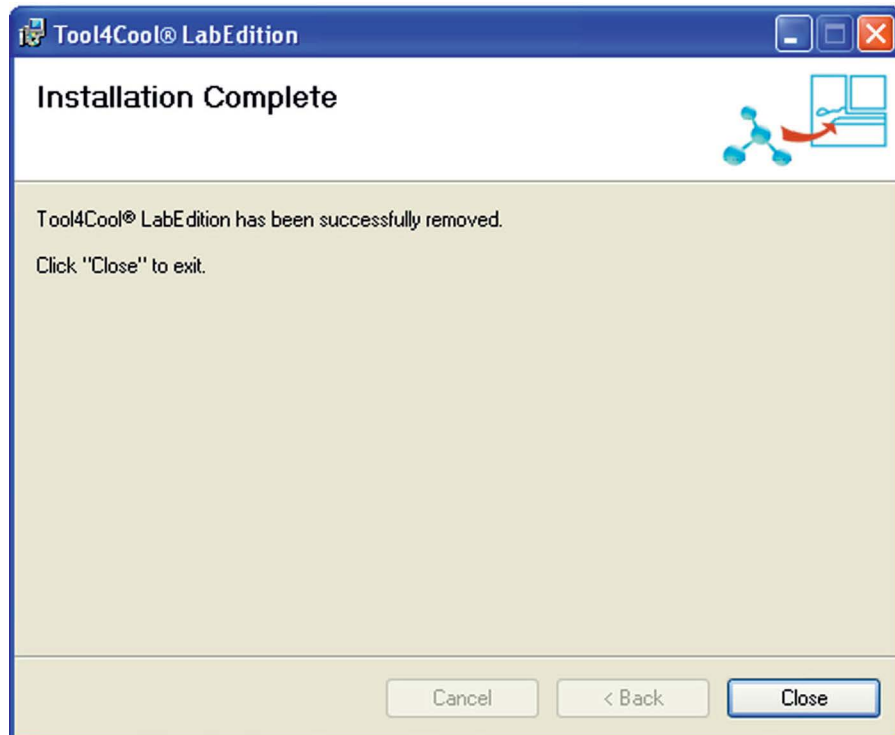
Procedure:

- The Tool4Cool® LabEdition Setup Wizard will open. To repair an installed version of Tool4Cool® LabEdition, select "Repair Tool4Cool® LabEdition".



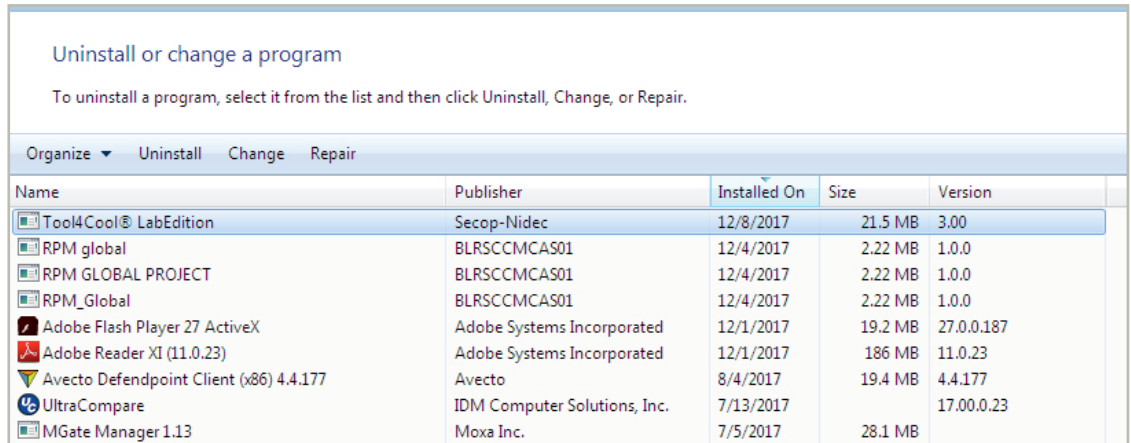
Result

- The software has now been repaired. Click on "Close" to exit.



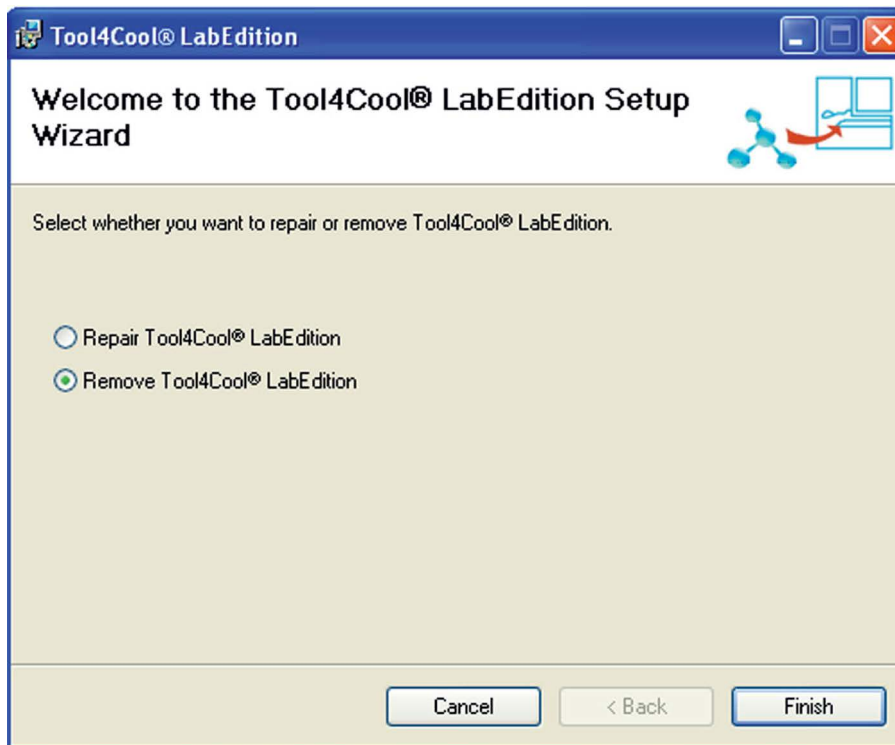
**2.3
Installation –
Updating Installed
Software**

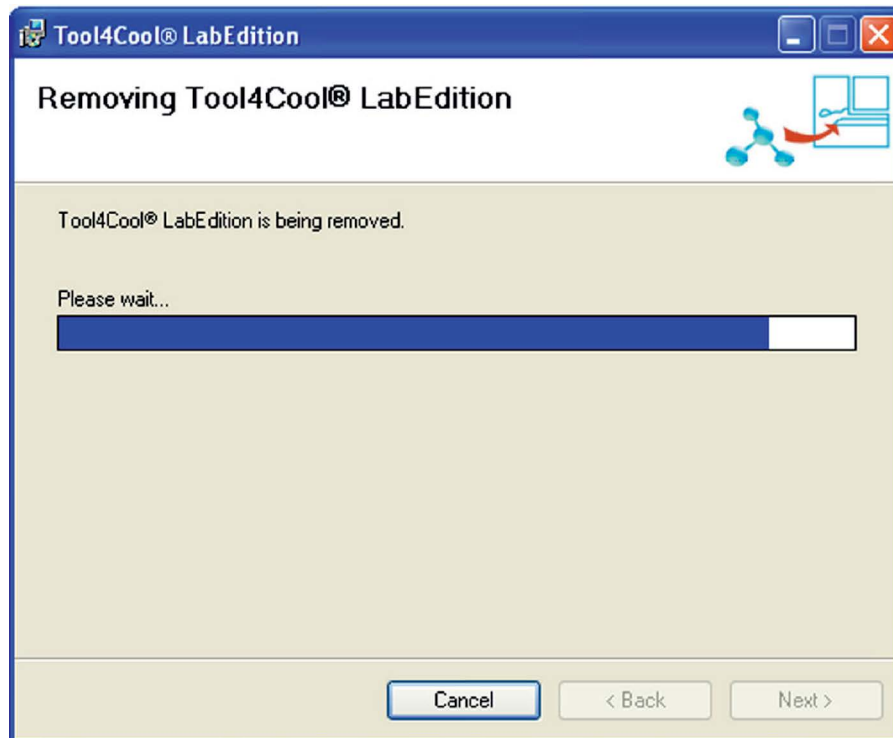
Procedure:



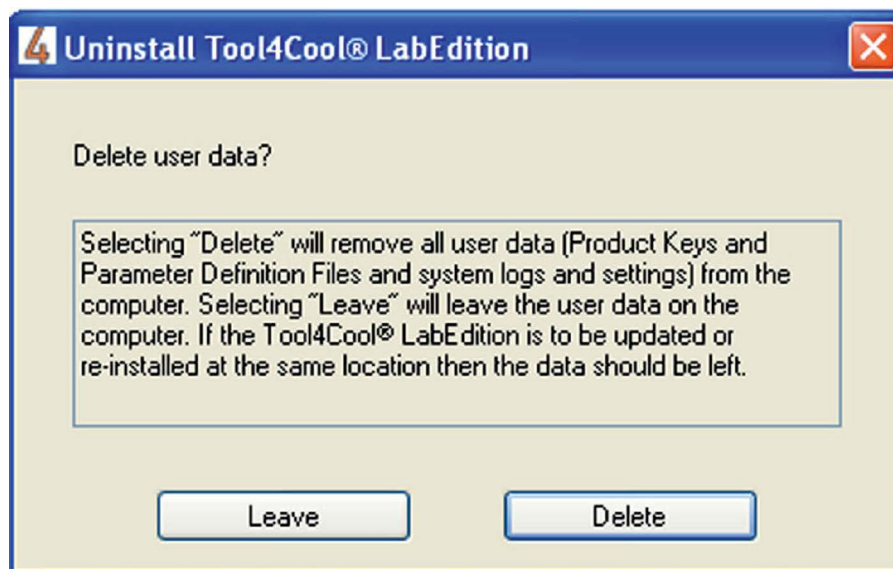
- The Tool4Cool® LabEdition Setup Wizard will open.
- To install an update of Tool4Cool® LabEdition, the previous version must first be removed. Select "Remove Tool4Cool® LabEdition".

- The following dialog box will appear.



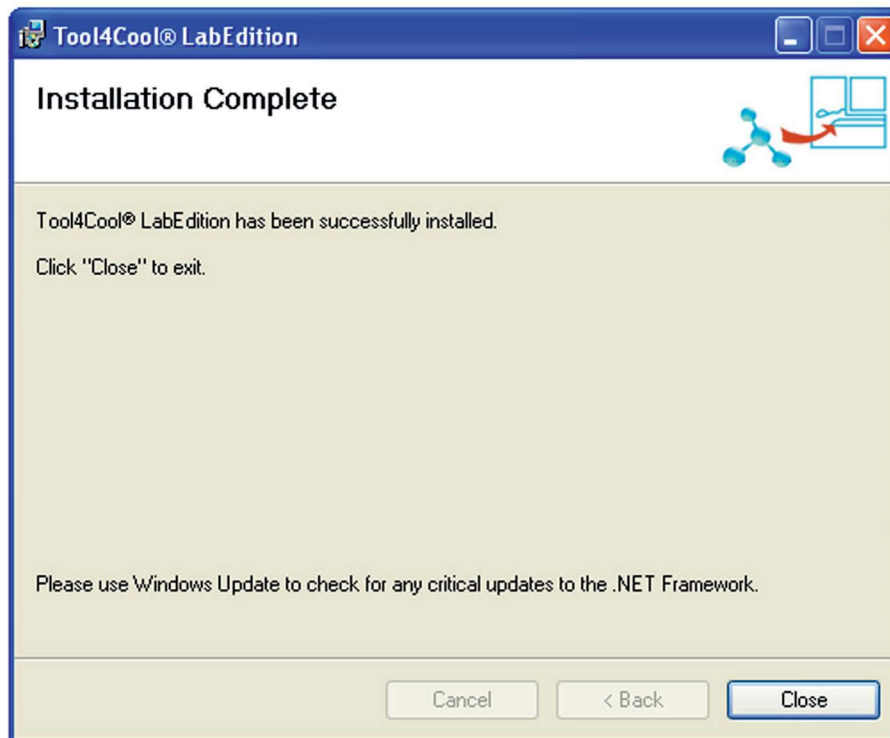


- The Uninstall Tool4Cool® LabEdition dialog box will appear. Select "Leave" to retain the existing Tool4Cool® LabEdition logs and settings.



Result

- The software is removed. Click on "Close" to exit.
- If updating from Tool4Cool® LabEdition v2.01 to v3.00 it is recommended to press the "Delete" button.



- The software update can now be installed. Follow the steps in 2.1 Initial Installation.

2.4 Deinstallation

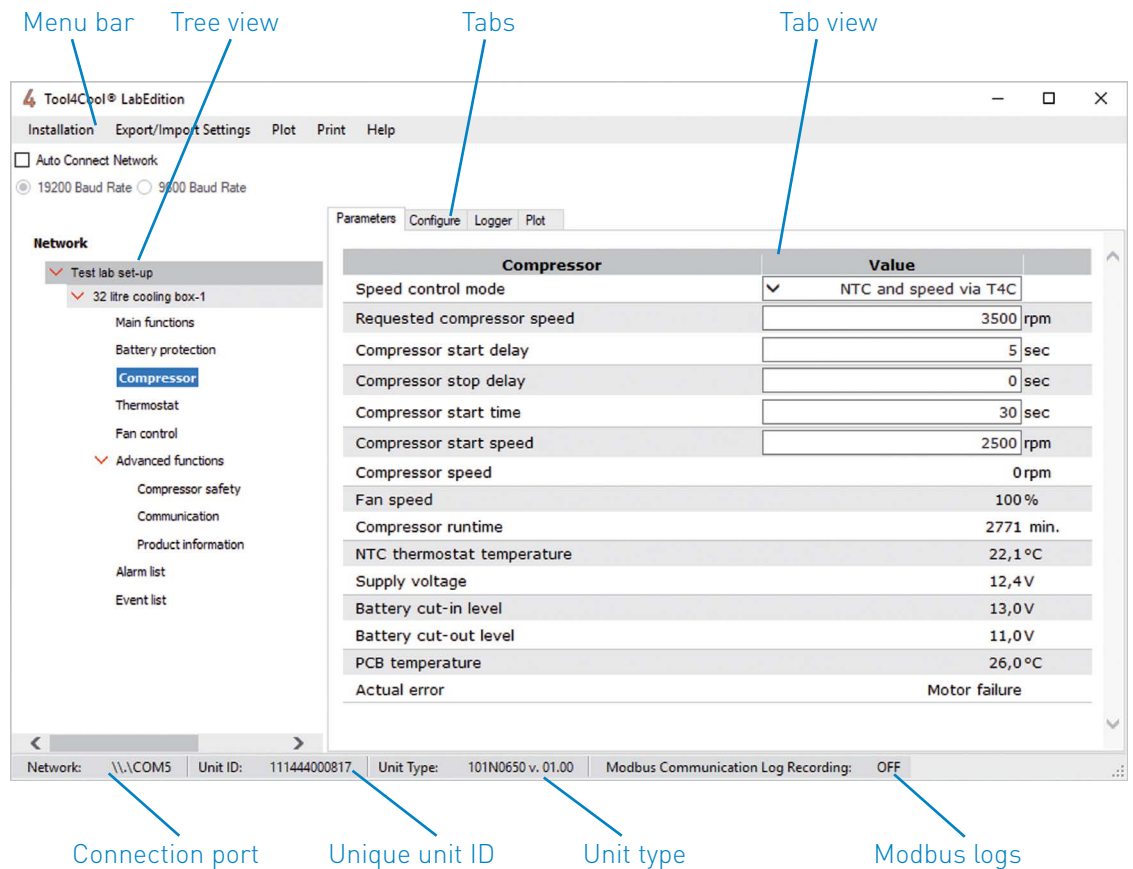
Remove the software using

- The Remove Tool4Cool® LabEdition option in the setup wizard as shown above, or
- Add or Remove Programs in the Control Panel.

USER INTERFACE

The Tool4Cool® LabEdition software is compatible with all Secop °CCD® controllers. The overall structure of the user interface is the same for any Secop °CCD® controller or network of controllers.

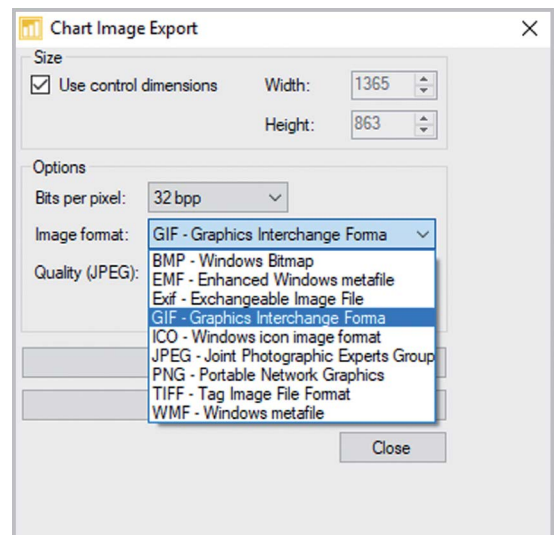
Example showing elements of the Tool4Cool® LabEdition user interface:



- The network structure is displayed in the Tree View on the left side of the screen.
- Controller-specific information is displayed in the Tab Views on the right side of the screen. The content of the Tab Views may vary greatly, depending upon the controller.

- Operate the software by
- Making selections from menu options
 - Typing in values or text
 - Importing files

- The output from the software is in the form of
- Data logs (.csv files)
 - Snapshots (.htm files or various bitmap formats)
 - Different types of graphic exports

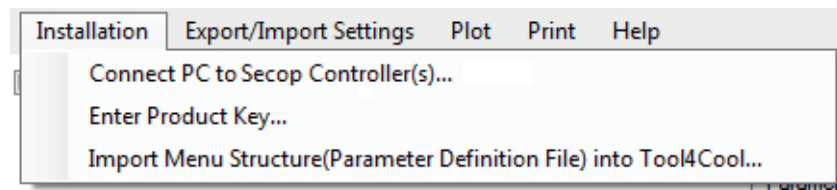


3.1 Menu Bar

- The menu bar contains functions used for
- Handling Product Keys
 - Network connection
 - Import and export of files
 - Saving plot files
 - Viewing plot files
 - Printing
 - Recording Modbus logs
 - Handling automatically collected data



To use a function, click on the menu bar item, either "File" or "Help". Then select the desired option from the drop-down menu.



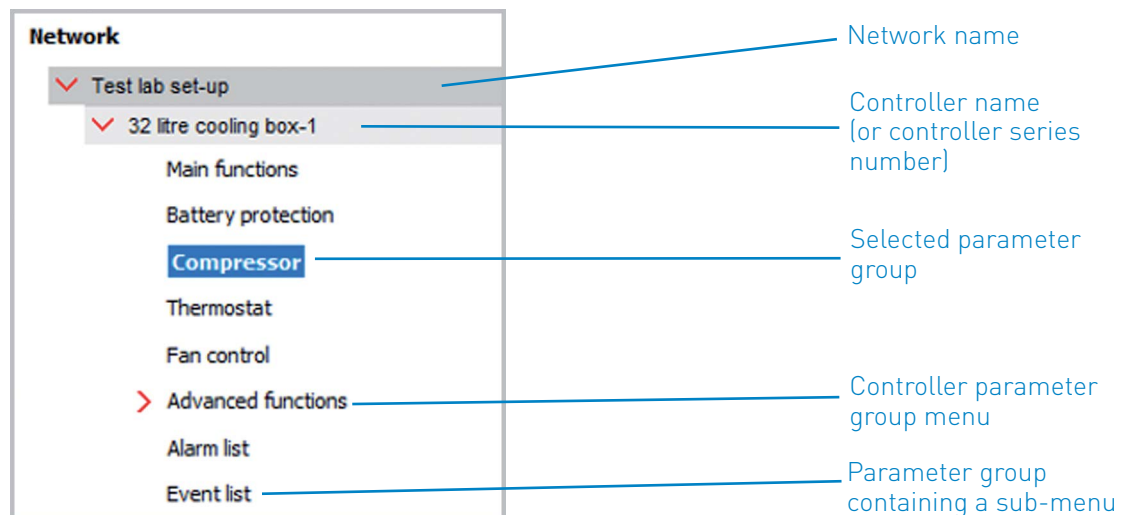
3.2 Tree View

The Tree View is located on the left of the Tool4Cool® LabEdition window. Use the Tree View to navigate and select

- Networks
 - Controllers
 - Parameter groups of Secop °CCD® controllers which are connected to the computer
- The first level of the Tree View shows network names.
 - The second level shows controller names.
 - The third level shows parameter groups.
 - The fourth level and onwards show sub-menus of parameter groups.

A red arrow to the left of a menu item indicates a sub-menu. Click on the red arrow to expand or close the sub-menu.

Example:



3.3 Tab Views

There are four Tab Views:

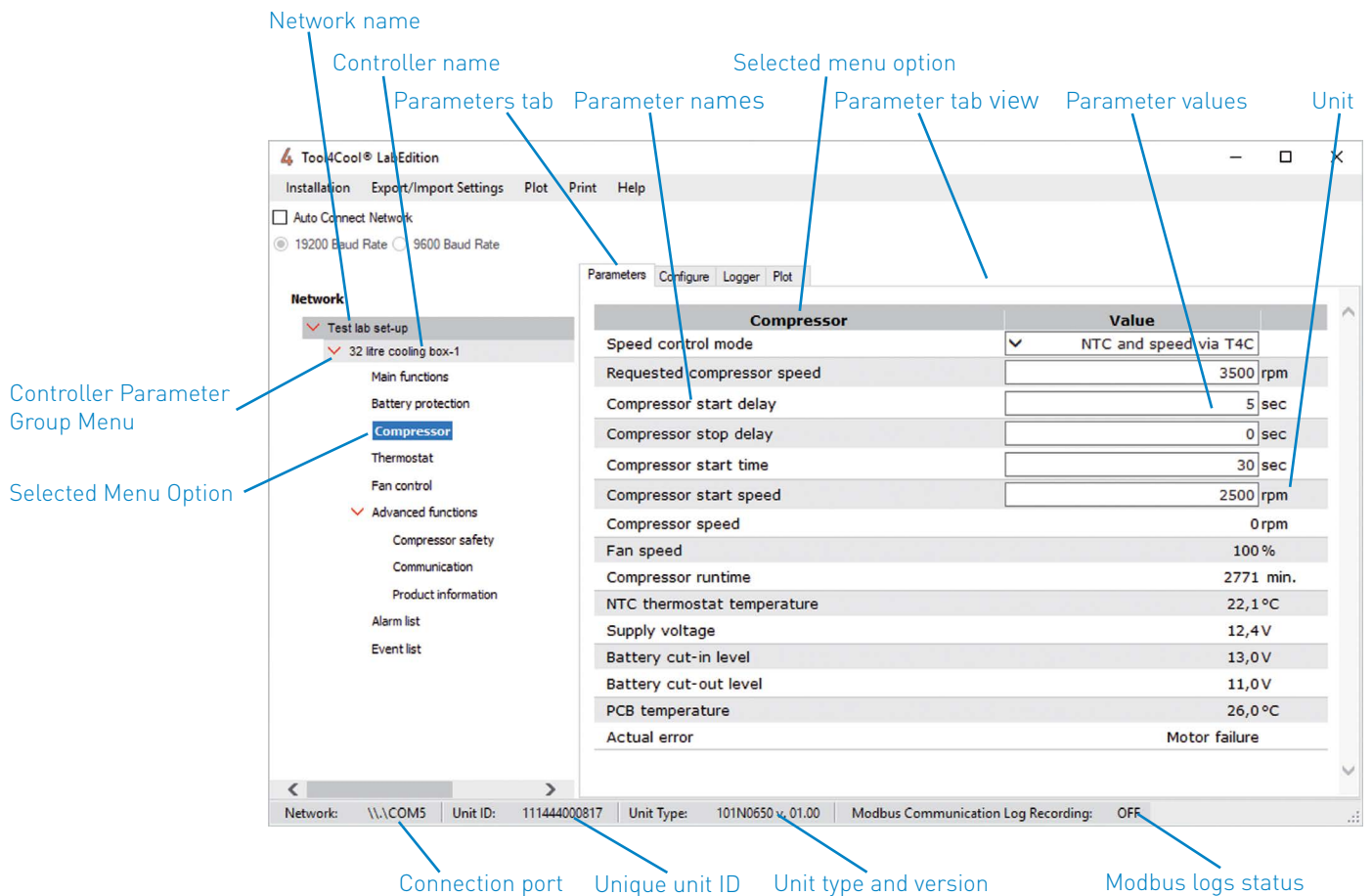
- Parameter
- Configure
- Logger
- Plot

Use the Tab Views to observe and record performance of the connected Secop °CCD® controllers, and to handle data logs and plots of real-time data. The Tab Views also allow the user to copy and program the controller settings.

Click on the name of the network, controller, or parameter group in the Tree View to view its detailed information in the Tab View.

Example of Parameter Tab View:

Click on the menu option in the Tree View to see the Parameter Tab View on the right.



Function Buttons in Tab Views

In the Tab Views, a variety of functions are accessible via the function buttons. The function buttons are always located above the tab field on the right side of the Tool4Cool® LabEdition window.

Note:

- The functions of the function buttons can change, depending on which view is active in the tab field.
- The function buttons for the various Tab Views are described in sections 5.4 to 5.6.

Example of changing function buttons in Logger Tab View:

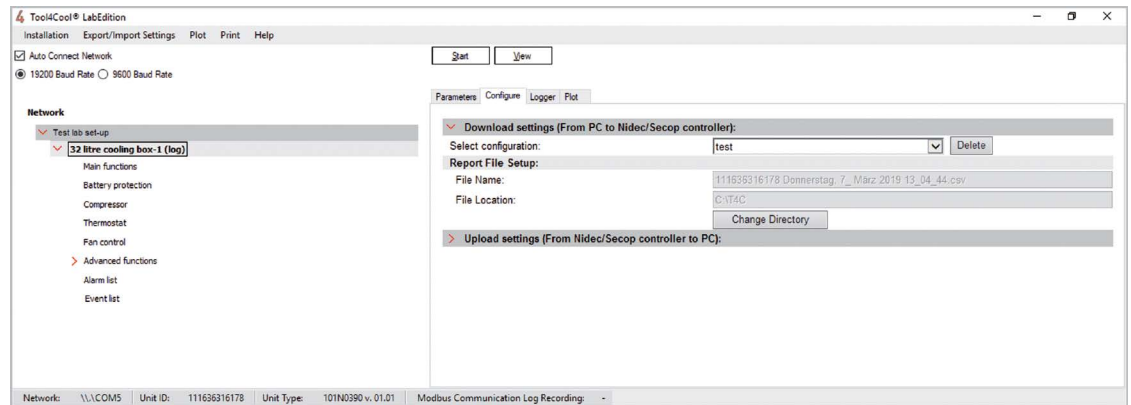
Exit Current Tab View

To leave any Tab View (to the right of the window), click one level up in the Tree View (to the left of the window).

For example, click on the network name (Test lab set-up) to leave the Logger Tab View shown on the next page.

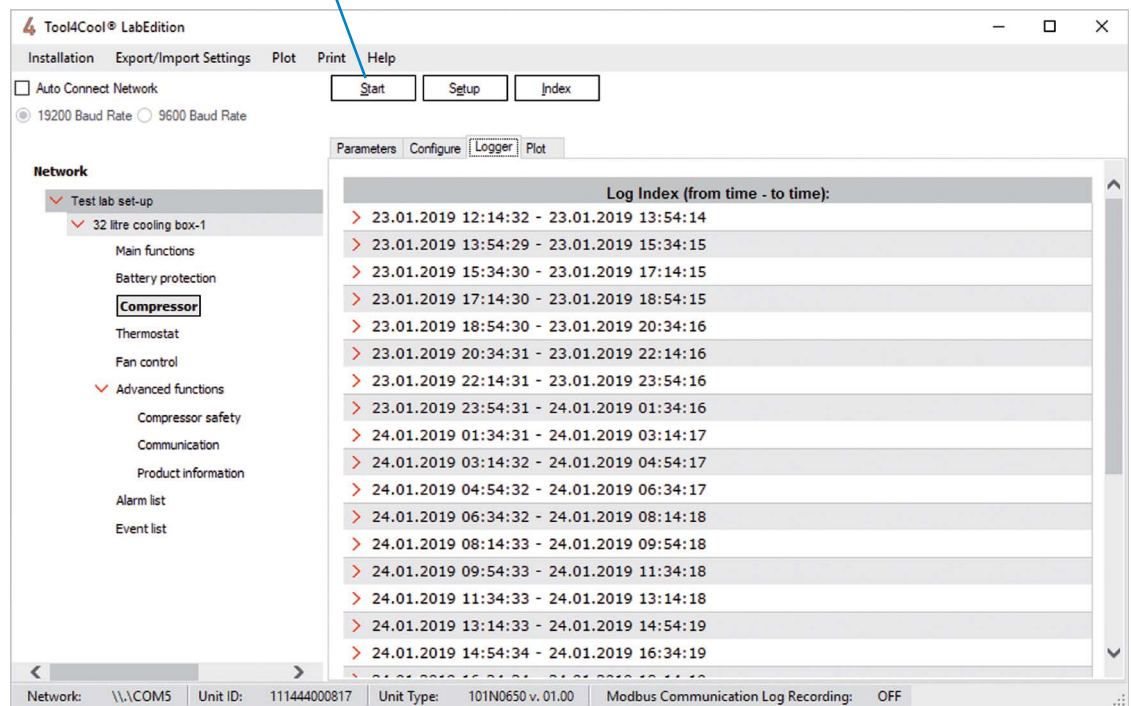
Example of Configure Tab View:

Click on the Controller Parameter Group Menu in the Tree View to see the ConfigureTab View on the right.

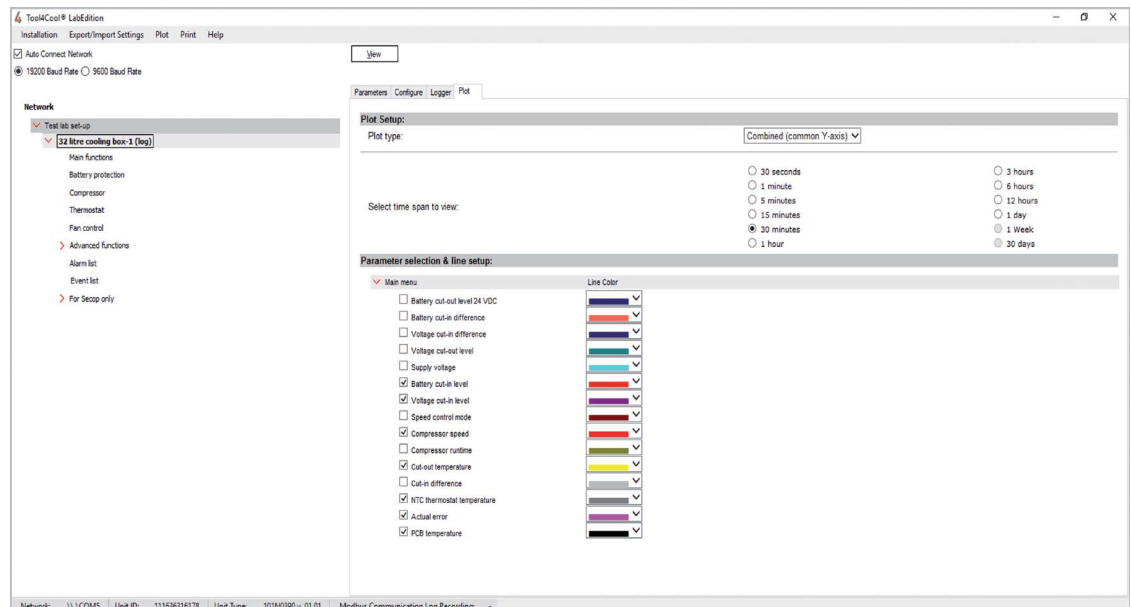


Example of Logger Tab View:

"Start" shows when the log is stopped



Example of Plotter Tab View:



SOFTWARE CONFIGURATION

This chapter explains how to

- Set up a network so Tool4Cool® LabEdition can recognize a Secop °CCD® controller which has been connected to the computer.
- Enter the Product Key, which grants access to a Secop °CCD® controller. In BD compressor controllers, the Product Key is pre-installed when Tool4Cool® LabEdition is installed.
- Import a parameter definition file, when this is specified in the controller Operating Instructions.
- In BD compressor controllers, the parameter definition file is installed automatically when the controller is connected to Tool4Cool® LabEdition for the first time.

After completing these steps, the user will be able to view the Secop °CCD® controller parameters in Tool4Cool® LabEdition and will have access to the Tool4Cool® LabEdition functions.

Network refers to one or more Secop °CCD® controllers to which the computer is connected.

4.1 Connect Network

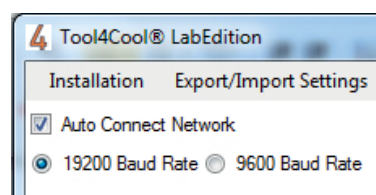
Tool4Cool® LabEdition can be connected to a network of one or more Secop °CCD® controllers, or to multiple networks of one or more controllers. Tool4Cool® LabEdition can communicate with controllers in different geographical locations.

4.1.1 Auto Connect

Auto connect functionality enables auto detection of a connected controller electronic unit for a selected baud rate.

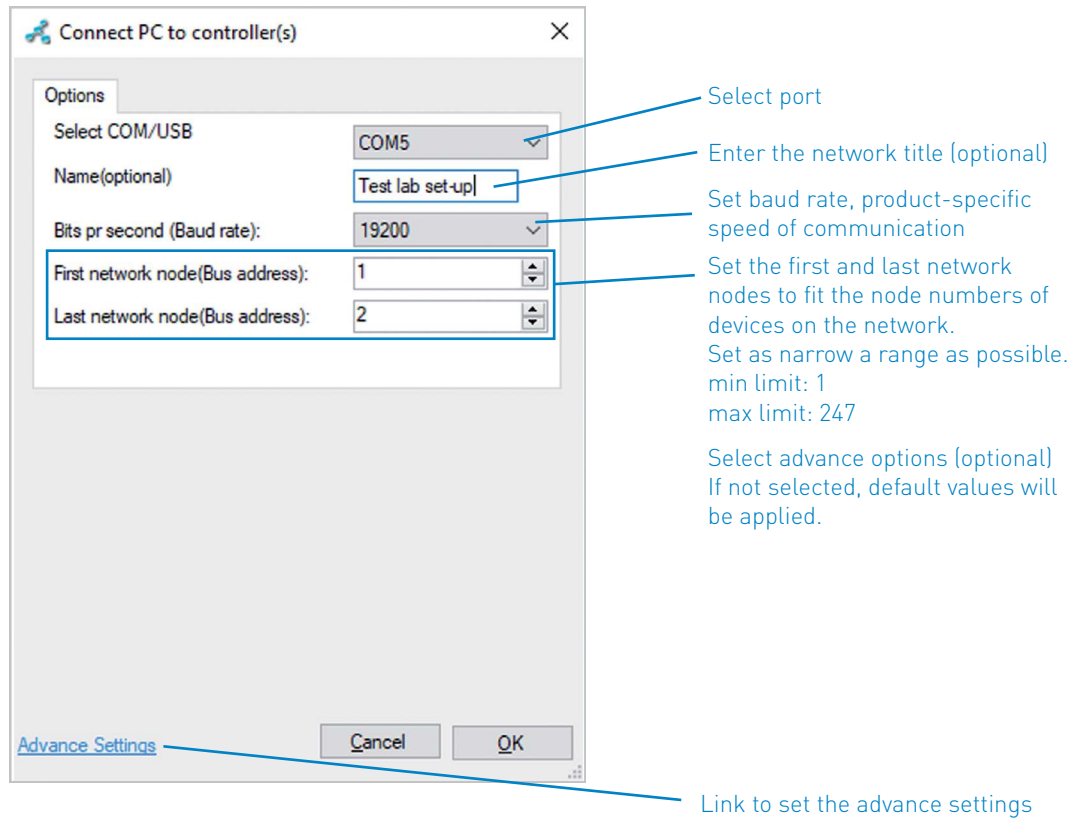
Procedure:

- To enable Auto Connect, click on the “Auto Connect Network” check box and select the baud rate.



Please Note:

- o To ensure minimum connection time, please set the start node and end node range to a narrow range as possible.
- o Other parameters for network connection are used as per the values set in the screen shown below during manual connection. If manual connection is not done before, then default values of these parameters are used for Auto Connect



4.2 Set-up Hardware and Software

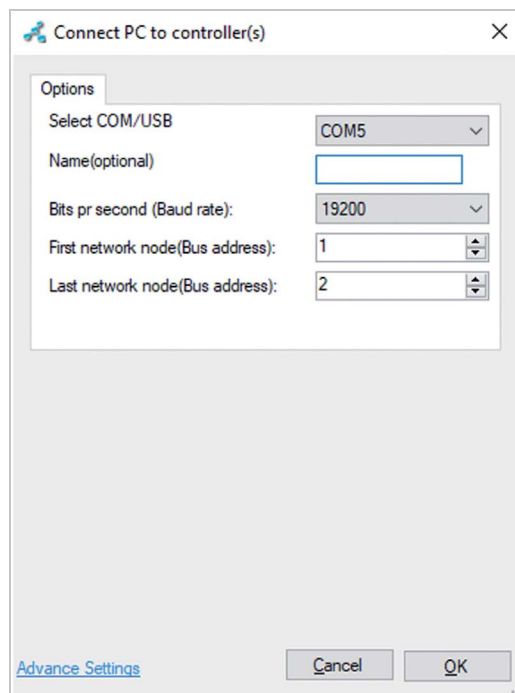
First, consult the controller Operation Instructions to make cable and adaptor connections. The necessary USB drivers are installed together with Tool4Cool® LabEdition.

Next, set up the Tool4Cool® LabEdition software to recognise the Secop °CCD® controllers which are connected to the computer.

Procedure:

- Open the Tool4Cool® LabEdition software by selecting the Tool4Cool® LabEdition shortcut in the Start menu.
- In the menu bar, click on "Installation".
- Select "Connect PC to controller(s)" from the drop-down menu. The "Connect PC to controller(s)" dialog box will appear.

Example:

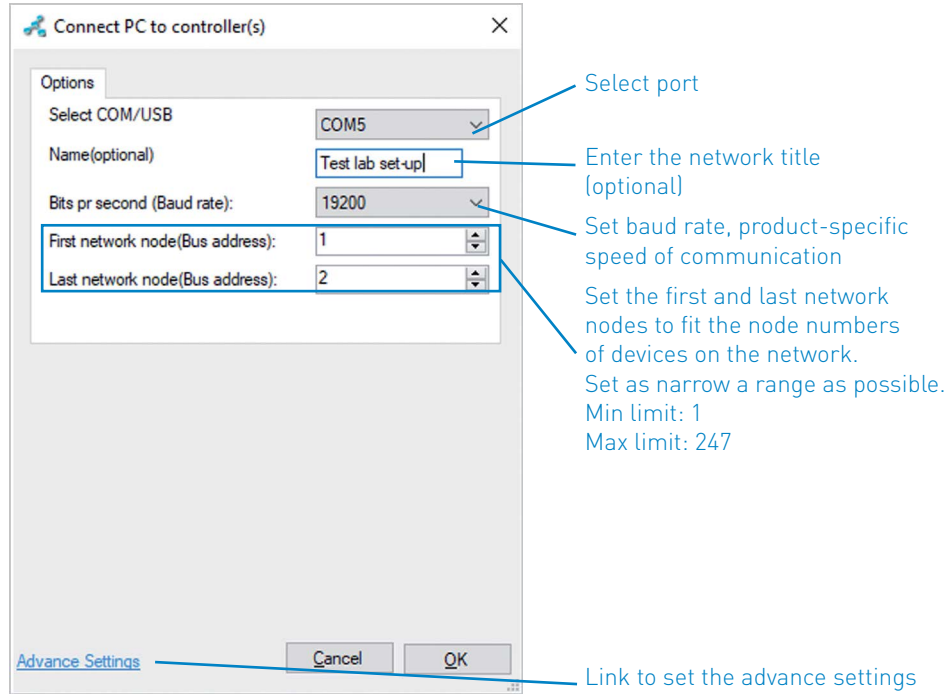


4.3 Local Connection

Procedure

- In the "Connect PC to controller(s)" dialog box, select the connection port from the "Select COM/USB": drop-down options.
- To make a local connection, select the COM port to which the network is connected.

Example:

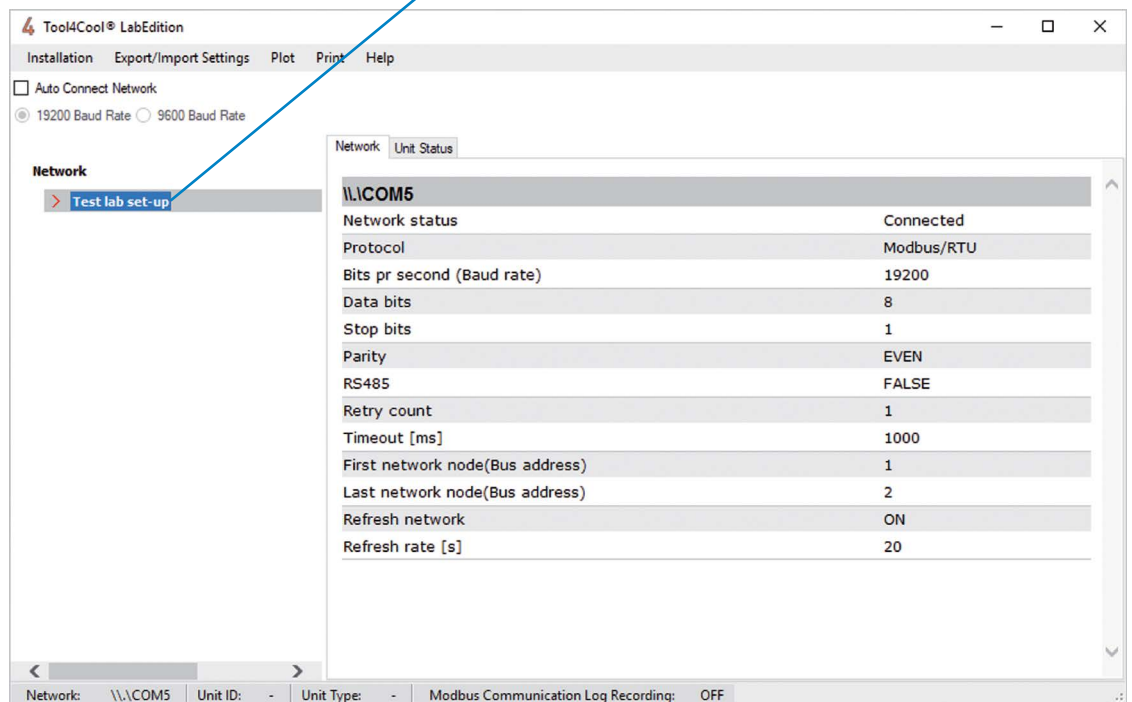


- In the Name field, type a title for the network (optional). If no title is entered, the network title will default to the port name.
- Set "First network node" and "Last network node" to match the range of node numbers of the Secop °CCD® controllers connected to the network. Set as narrow a range as possible. If these default values are not changed, Tool4Cool® LabEdition will scan all 247 nodes, causing slower operation than necessary.
- Click on the "Advance Settings" link to set up the advance settings. The "NetworkAdvanceSettings" dialog will open.

Result:

- The network name will appear in the Tree View.

Network names. The default is the name of the connected port.



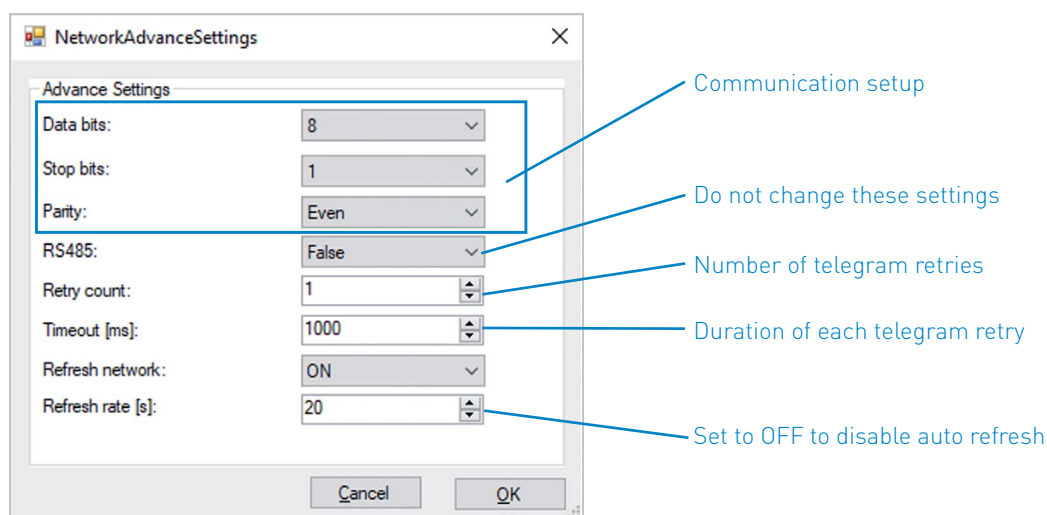
Configuring a Local Network Connection: Advance Settings

The default settings of a local network configuration must be changed when:

- The controller Operating Instructions specifies that changes to the COM port settings are required.
- The connection is poor, requiring a change to Timeout/Retry
- The user wants to detect controllers faster, requiring a change to Refresh Network/Refresh rate

Procedure

- In the "Connect PC to controller(s)" dialog box, click on the "Advance Settings" link to set up the port. The "NetworkAdvanceSettings" dialog will appear.



Change the settings only when explicitly specified in the controller Operating Instructions.

- Select the baud rate, to specify the speed of communication.
- Define the communication setup by selecting "Data bits", "Stop bits", and "Parity".
- Do not change the "RS485" field. It must be set to "False".
- Retry count shows the number of times Tool4Cool® LabEdition will attempt to send a telegram, in the event of a communication error. Increase Retry count if the connection is poor.
- Set First network node and Last network node to match the number of Secop °CCD® controllers which will be connected to the network. Set as narrow a range as possible. If the default values are not changed, Tool4Cool® LabEdition will scan all 247 nodes and operation may be slower than is necessary.
- Set "Refresh network" to "ON" to automatically detect new controllers. However, this can be a slow process. When "Refresh network" is "ON", set "Refresh rate" to the desired frequency of the new controller detection.
- Set "Refresh Network" to "OFF" to disable automatic detection of new controllers.
- When "Refresh Network" is "OFF", use the right-click refresh function to detect new controllers.
- Click on "OK" to activate the connection, or "Cancel" to return to the previous dialog box.

4.4 Remote Connection

- Remote connections can be made to
- Controllers which support Modbus/TCP protocol via ethernet or
 - Serial controllers connected via a Modbus/TCP ↔ Modbus/RTU gateway.

To make a remote connection to a Secop °CCD® controller, a Modbus/TCP ↔ Modbus/RTU gateway is required.

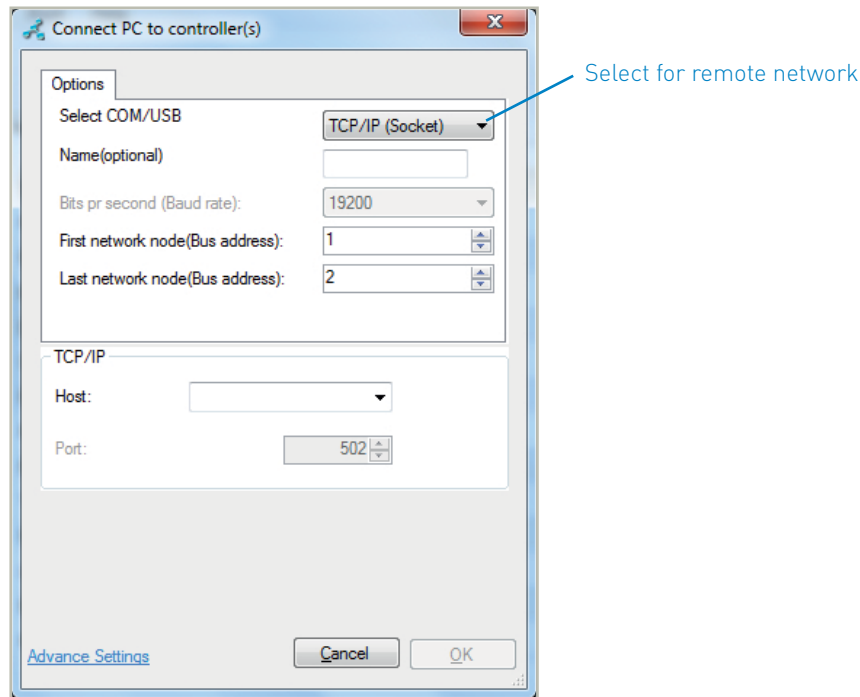
Different types of Modbus/TCP ↔ Modbus/RTU gateways for various applications are commonly available at retail outlets.

- Examples:
1. GPRS Modbus/TCP ↔ Modbus/RTU gateways.
 2. Ethernet Modbus/TCP ↔ Modbus/RTU gateways.

Please refer to the controller Operating Instructions. for further details.

- Procedure:
- In the "Connect Network" dialog box, select the connection port from the "Connect PC to controller(s)" dialog box using drop-down options.
 - To connect to a remote network select TCP/IP (Socket) from the "Connect PC to controller(s)" dialog box using the drop-down menu.

- Procedure:**
- In the "Connect PC to controller(s)" dialog box, select the connection port from the "Select COM/USB": drop-down options.
 - To connect to a remote network select TCP/IP (Socket) from the "Select COM/USB" drop-down menu.



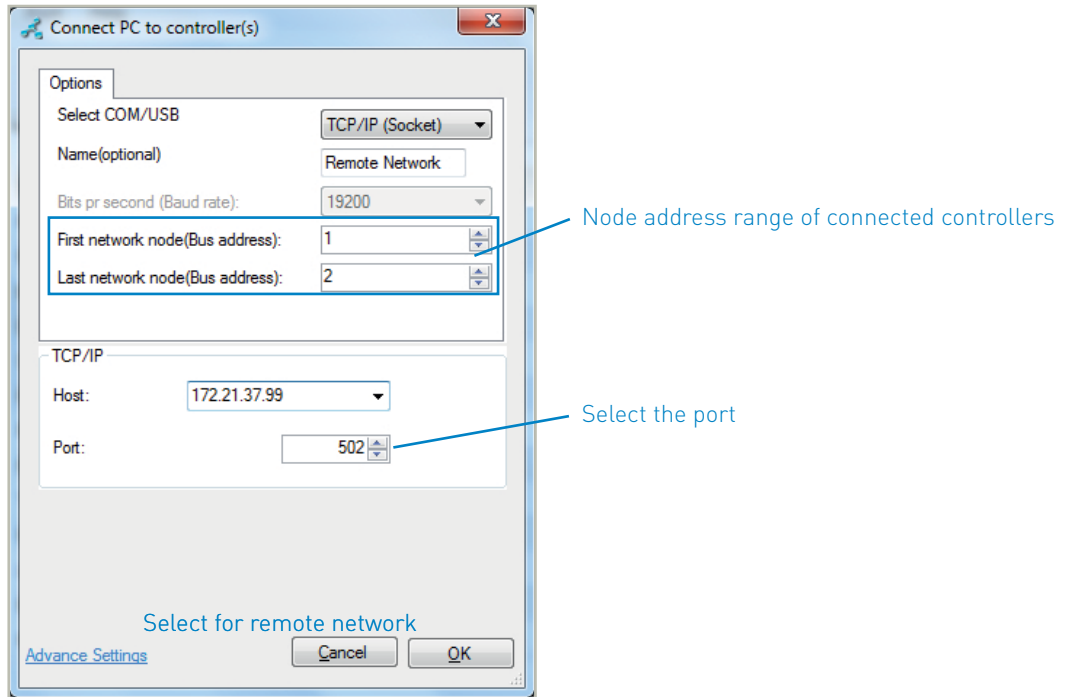
- Enter the Host address (IP address) of the controller or gateway, or select an address from the drop-down menu.
- Set "First network node" and "Last network node" to match the range of node numbers of the Secop CCD® controllers which will be connected to the network. Set the range as narrow as possible. If these default values are not changed, Tool4Cool® LabEdition will scan all 247 nodes, causing slower operation than otherwise necessary.

Note:
If the network supports DNS requests, DNS name might also work instead of an IP address.

- Enter the host address (IP address) of the controller or gateway, or select an address from the drop-down menu.
- Set "First network node" and "Last network node" to match the range of node numbers of the Secop °CCD® controllers which will be connected to the network. Set the range as narrow as possible. If these default values are not changed, Tool4Cool® LabEdition will scan all 247 nodes, causing slower operation than otherwise necessary.

Please Note:

If the network supports DNS requests, DNS name might also work instead of an IP address.



- Select the required port.
- In the "Name" field, type a title for the network (optional). If no title is entered, the network title will default to the port name.
- Set "First network node" and "Last network node" to match the range of node numbers of the Secop °CCD® controllers which will be connected to the network. Set the range as narrow as possible. If these default values are not changed, Tool4Cool® LabEdition will scan all 247 nodes, causing slower operation than otherwise necessary.

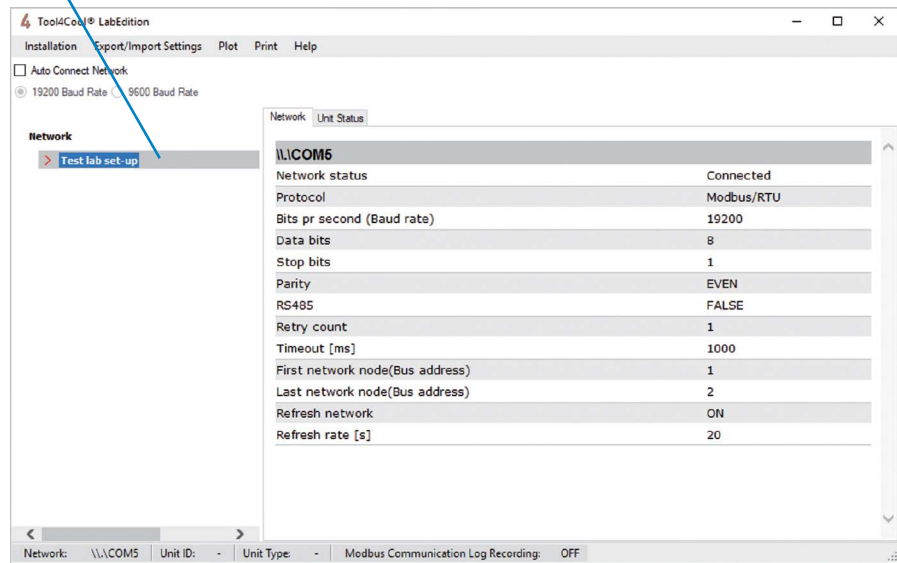
Note:

- Port 502 is the default port. This should be changed only if required and by expert users.

Result:

- The network will appear in the Tree View.

Network name in Tree View.



Configuring a Remote Network Connection

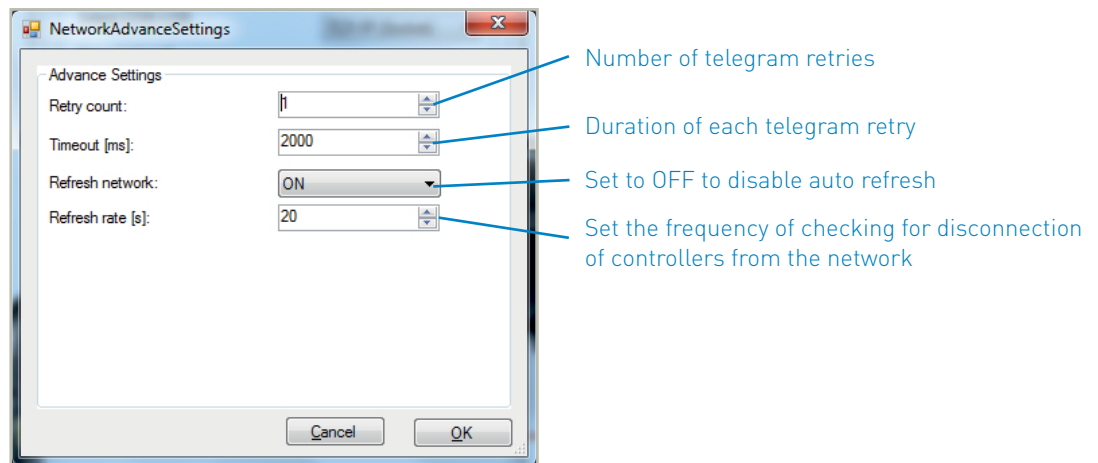
The default settings of a remote network configuration can be changed if:

- The connection is poor. It may help to increase the retry count.
- The connection is slow. A longer timeout may be needed.
- The connection is very slow. The refresh rate and refresh unit interval can be increased.

Procedure:

- In the Connect PC to controller(s) dialog box, click on "Advance Settings" to set up the port. The "NetworkAdvanceSettings" dialog will then appear.

Example:



- Retry count shows the number of times Tool4Cool® LabEdition will attempt to send a telegram in the event of a communication error. Increase retry count if the connection is poor.
- Set "Refresh network" to "ON" for automatic detection of new controllers. However, this can be a slow process. When the "Refresh network" is "ON", set the "Refresh rate" to the desired frequency of new controller detection. The refresh rate defines how often the network is scanned for new controllers. A value of 900s means that the maximum time before a new network controller automatically is found is 900s.
- Set "Refresh network" to "OFF" for manual detection of new controllers using the refresh network function.
- Click on "OK" to activate the connection, or "Cancel" to return to the previous dialog box.

Example

A GPRS network could be set up as follows:

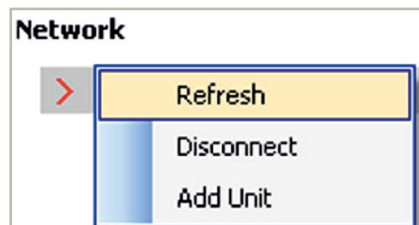
- Retry count: 3-5
- Timeout: 5000-15000
- Refresh rate: 3600
- Refresh unit interval: 30

4.5 Refreshing a Network

The refresh network function is used to detect the connection of new controllers, or removal of controllers, from the network. Refresh network is useful when the network is configured with "Refresh network" switched to "OFF", and auto refresh is therefore disabled.

Procedure

- Right-click on the connection port name in the tree view.
- Select "Refresh" from the drop-down menu.



Result:

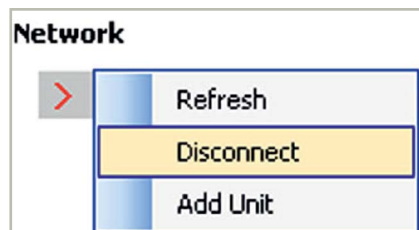
- The network will be scanned to detect all connected controllers. The connected controllers will be displayed in the Tree View.

4.6 Disconnecting a Network

The disconnect network function is used to disconnect a network.

Procedure

- Right-click on the connection port name in the tree view.
- Select "Disconnect" from the drop-down menu.



Result:

- When the controller or network is disconnected it will disappear from the tree view.

4.7 Finding a Controller using Add Unit

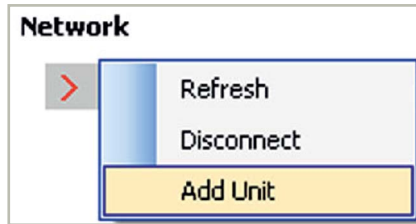
Use the "Add Unit" function as a short-cut, to navigate directly to a specific controller connected to a network.

The Add Unit function is normally used with network configuration setting "Refresh network" is switched to "OFF".

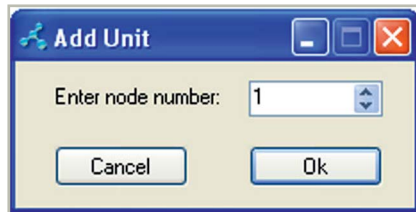
When used in conjunction with network configuration setting of "Refresh network switched to "ON", the "Add Unit" function provides a quick alternative to finding a controller via automatic scanning of all network nodes, which can be time-consuming.

Procedure:

- Right-click on the network name in the tree view
- Select "Add Unit" from the pop-up menu



- The "Add Unit" dialog appears.
Enter the node number of a controller and click on "OK".

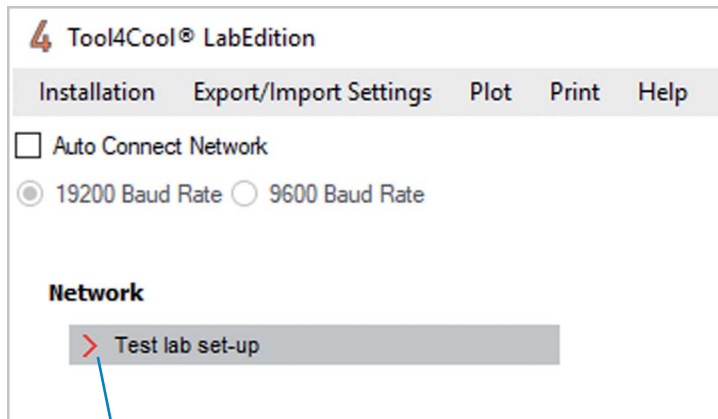


Important:

The node number must lie within the node range configured for the network (First network node Last network node)

- A red arrow appears beside the network name.

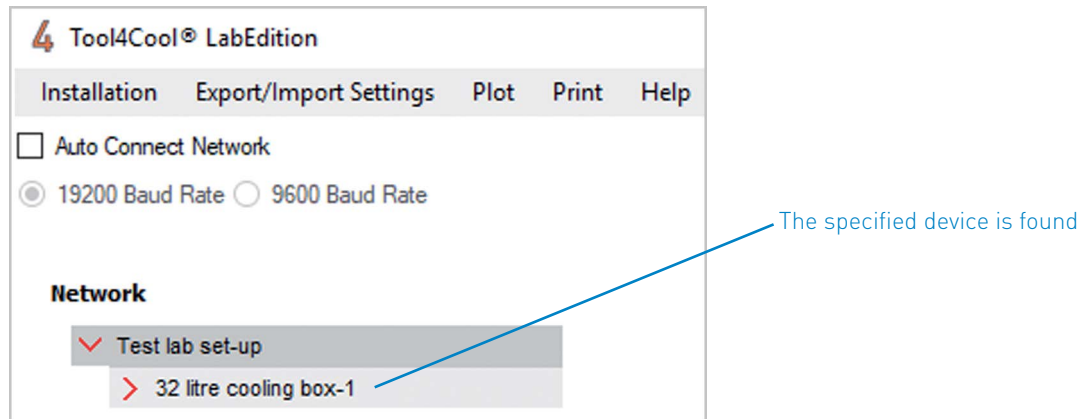
Example:



Red arrow beside the network name

- Click on the red arrow to view the controller detected in the network.

Example:



4.8 Product Key

Before a controller can be accessed in Tool4Cool® LabEdition, the user must enter a Product Key. If no product key has been entered, the controller cannot be seen or accessed from Tool4Cool® LabEdition.

The product key is an alphanumeric code, which is specific to one Secop °CCD® controller type and version.

The user access level is coded into the product key, defining which parameters of the controller the user is entitled to access. For user access of a different level, a new product key is required.

A new product key is required for every individual type and version of controller connected to a network.

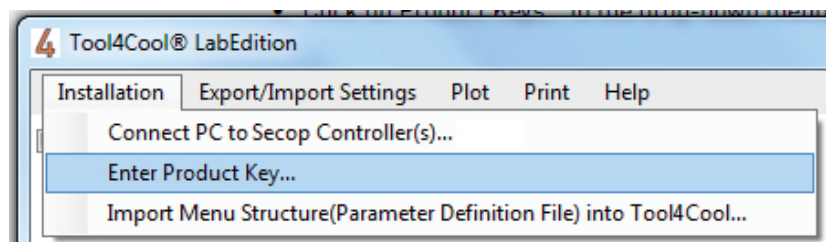
The product key is available from the supplier.

How to Enter a New Product Key

Method 1. Using "Enter Product Key" Menu

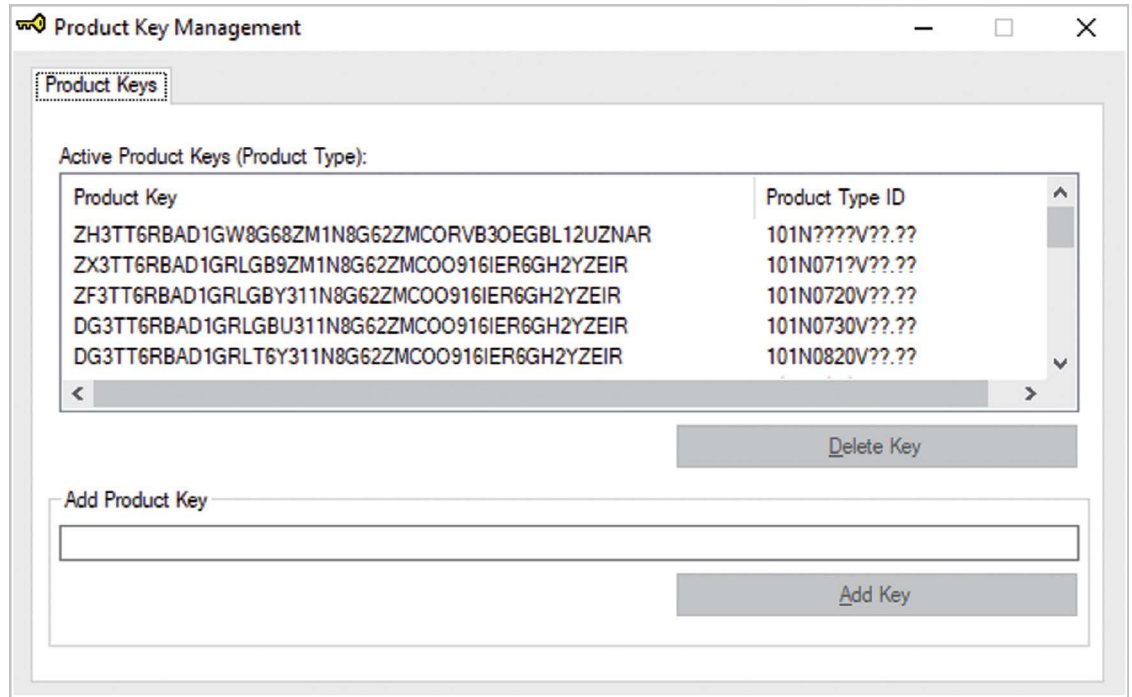
Procedure:

- Click on Installation in the menu bar.
- Click on "Enter Product Key"... in the drop-down menu.
- For BD compressor controllers, it is not necessary to enter a product key. These are installed with Tool4Cool® LabEdition



- The dialog box "Product Key Management" will appear.

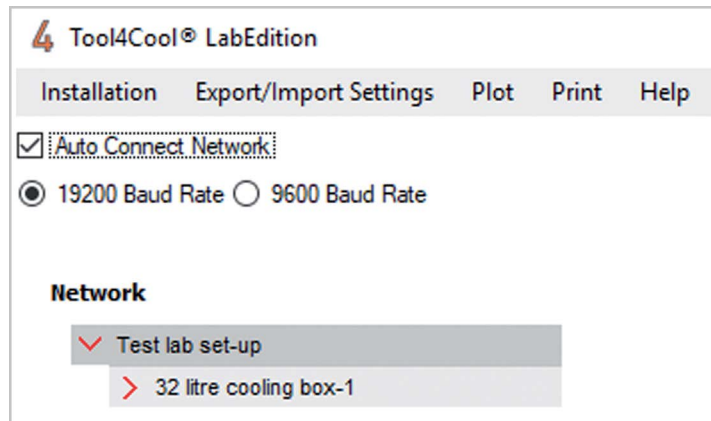
Example:



Result:

- When a product key is successfully entered, the following occurs:
 - o The corresponding Secop °CCD® controller name appears in the tree view.
 - o A red arrow appears beside the corresponding network name in the tree view.
- When the red arrow appears, the connection to the Secop °CCD® controller is active and the Tool4Cool® LabEdition functions are accessible.

Example: The product key was successfully entered for a Secop °CCD® controller BD 101N0730



Please Note:

- After entering the product key or after restarting of the system, the red arrow may take several minutes to appear.
- Use the "Add Unit" function as a short cut to activate the red arrow as quickly as possible. See 4.7 Finding a Controller Using Add Unit.

Method 2: Using the Drag and Drop Feature

This functionality is for drag and drop parameter file and product key files in Tool4Cool® application.
 Procedure:

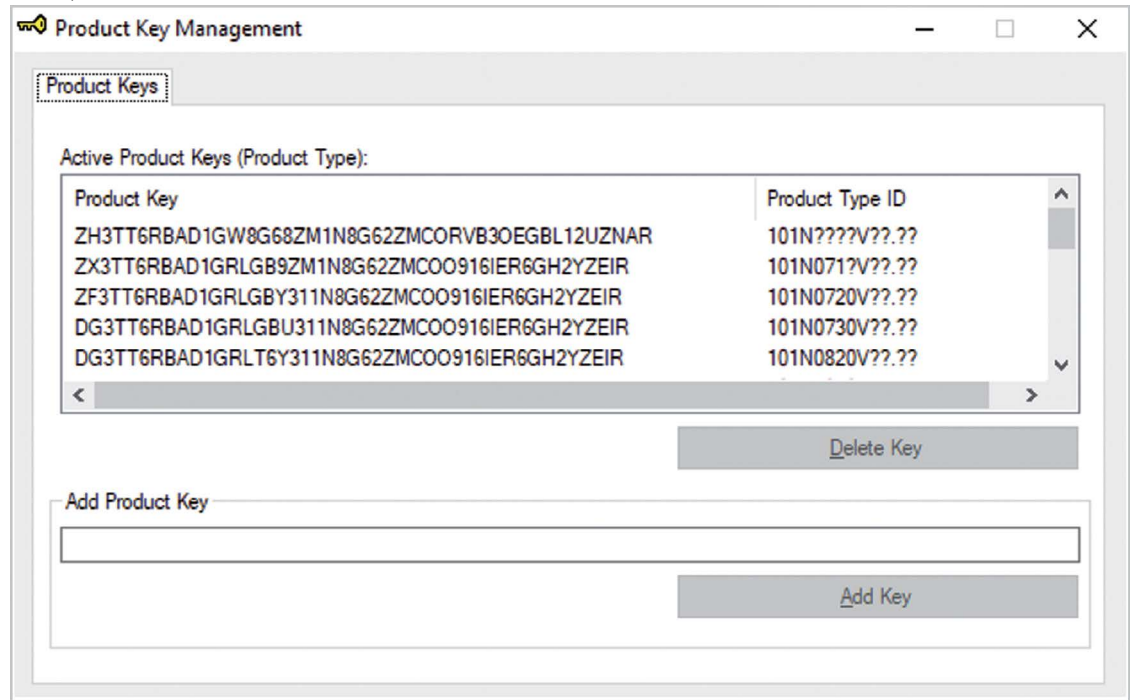
- Drag and drop product key file onto the Tool4Cool® main page.
- If the network is already connected, It should add a unit automatically now.
- If the network is not connected, connect network and the unit will get connected.

Viewing Product Keys Which Have Been Entered Previously

Procedure:

- Click on "Installation" in the menu bar.
- Click on "Enter Product Key" in the drop-down menu. The "Product Key Management" dialog box will appear.
- The previously-entered product keys appear in the field "Active Product Keys (Product Type)".

Example:

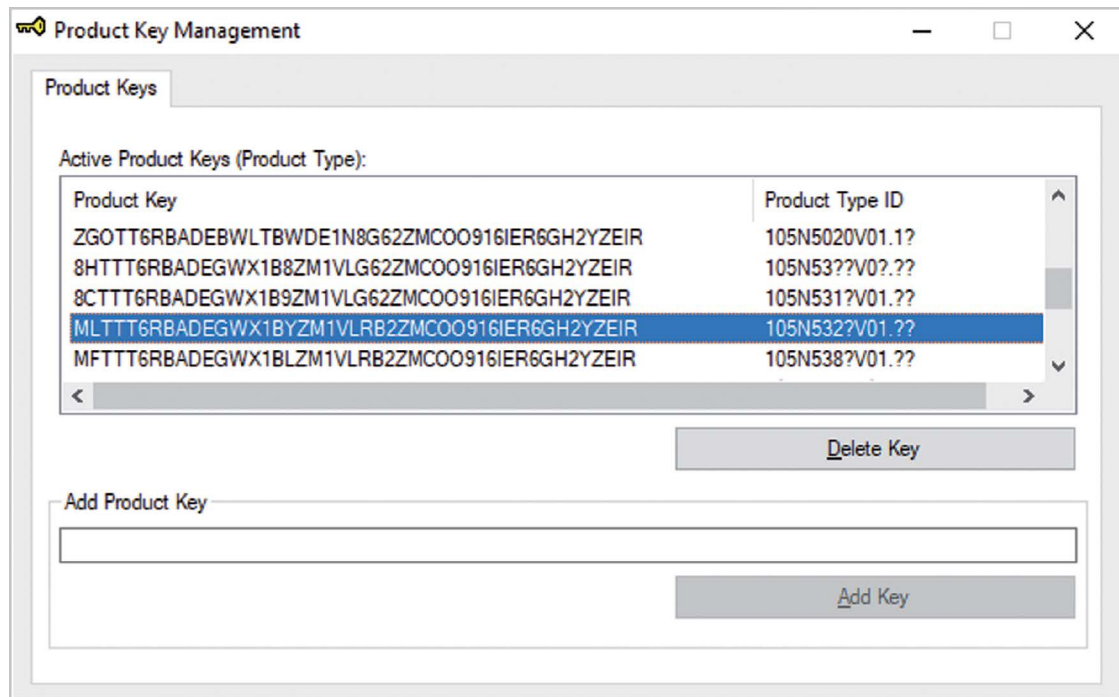


How to Delete a Product Key

Procedure:

- Click on Installation in the menu bar.
- Click on Enter Product Keys in the drop-down menu. The dialog box Product Key Management will appear.
- Select the desired Product Key from the list in the Active Product Keys field.

Example:



- Click on the "Delete Key" button. The product key will no longer appear in the list.

Default Product Keys

Few default product keys are added during installation of the Tool4Cool® application. The list of the default product keys available in Tool4Cool® is as follows:

Product Type	Product Key
101N????	ZH3TT6RBAD1GW8G68ZM1N8G62ZMCORVB3OEGBL12UZNAR
101N071?	ZX3TT6RBAD1GRLGB9ZM1N8G62ZMCOO916IER6GH2YEIR
101N0720	ZF3TT6RBAD1GRLGBY311N8G62ZMCOO916IER6GH2YEIR
101N0730	DG3TT6RBAD1GRLGBU311N8G62ZMCOO916IER6GH2YEIR
101N0732	DH3TT6RBAD1GRLGBU911N8G62ZMCOO916IER6GH2YEIR
101N0820	DG3TT6RBAD1GRLT6Y311N8G62ZMCOO916IER6GH2YEIR
101N1010	DL3TT6RBAD1GWLTB9311N8G62ZMCOO916IER6GH2YEIR
105N54??	MCTTT6RBADEGWXAB8ZM1VLG62ZMCOO916IER6GH2YEIR
105N541?	MLTTT6RBADEGWXAB9ZM1VLRB2ZMCOO916IER6GH2YEIR
105N542?	8LTTT6RBADEGWXABYZM1VLRB2ZMCOO916IER6GH2YEIR
105N548?	8FTTT6RBADEGWXABLZM1VLRB2ZMCOO916IER6GH2YEIR
105N53??	8HTTT6RBADEGWX1B8ZM1VLG62ZMCOO916IER6GH2YEIR
105N531?	8CTTT6RBADEGWX1B9ZM1VLG62ZMCOO916IER6GH2YEIR
105N532?	MLTTT6RBADEGWX1BYZM1VLRB2ZMCOO916IER6GH2YEIR
105N538?	MFTTT6RBADEGWX1BLZM1VLRB2ZMCOO916IER6GH2YEIR
105N539?	8FTTT6RBADEGWX1BZZM1VLRB2ZMCOO916IER6GH2YEIR
105N5020	ZGOTT6RBADEBWLBTWDE1N8G62ZMCOO916IER6GH2YEIR
105N5020	HFOTT6RBADEGWXTBYZM1VLRB2ZMCOO916IER6GH2YEIR

4.9 Importing Other Files

Read the controller Operating Instructions to determine whether other files need to be imported, and if so, where the files are located.

The files which may be required are:

- Parameter definition file
- Configuration File

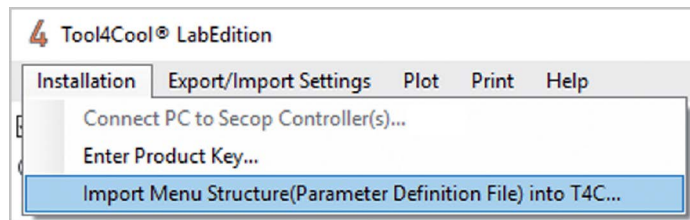
To import a file, click on "Installation" in the menu bar, and then click on Import Menu Structure (Parameter Definition File) into Tool4Cool®...

Example - How to Import a Parameter Definition File.

Method 1: Using "Import Menu Structure(Parameter Definition File) into Tool4Cool" menu

Procedure

- Click on "Installation" in the menu bar.
- Select "Import Menu Structure(Parameter Definition File) into Tool4Cool" from the drop-down menu.



- The "Import Parameter Definition File" dialog box will appear.
- Browse to the parameter definition file to be imported.
- Click on the "Open" button to import the file.

Method 2: Using the Drag and Drop Feature

This functionality is for drag and drop parameter files (.xml /.enc) in the Tool4Cool® application.

Procedure:

- Drag and drop the parameter file onto Tool4Cool® main page.
- If the network is already connected, it should add a unit automatically now.
- If the network is not connected, connect network and the unit will get connected.

Result:

- The parameter definition file import is confirmed by the message "Parameter Definition File Import Successful"

5. OPERATION

This chapter explains how to set up, observe, log, and plot operational data in the tab views.

Please Note:

The tab views displayed in this chapter are examples only. Please refer to the controller Operating Instructions for product-specific information about the content and appearance of the tab views.

5.1 Viewing Network Information

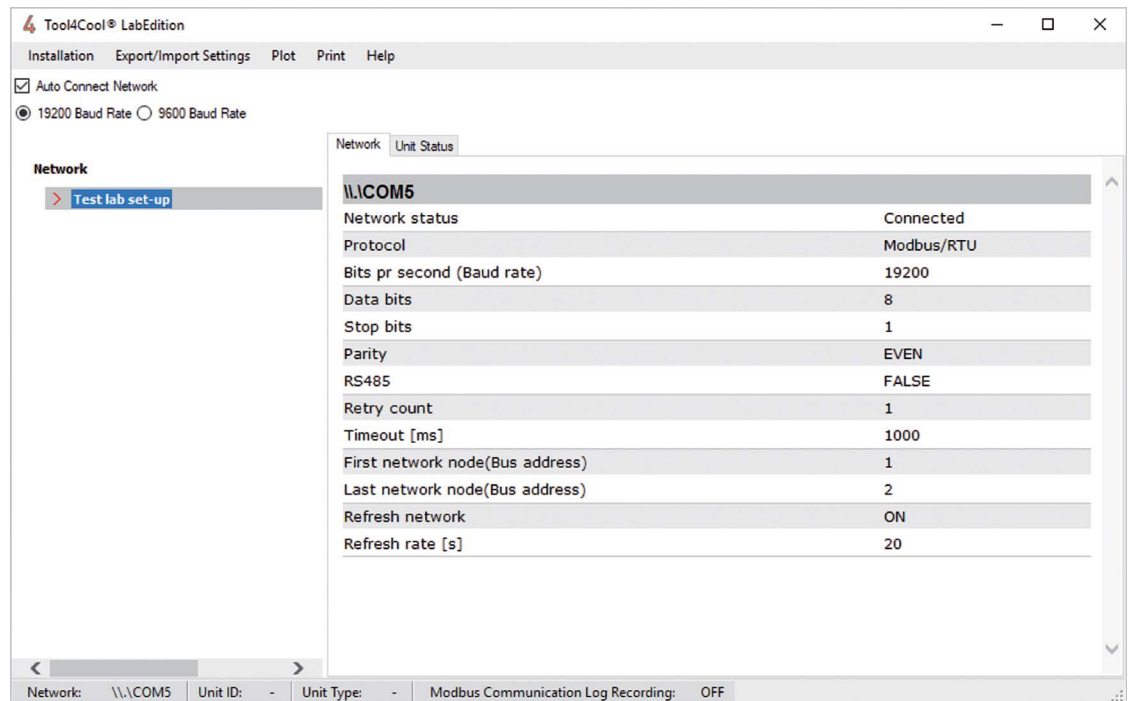
Select Network

Select the controller to be monitored before using the Tool4Cool® LabEdition functions.

Procedure:

- In the tree view, left-click on the network name

Example:



Result:

- The tab view for the selected network will be displayed.
- The network tab displays selected network configuration details.

5.2 Automatically Configuring a Network

Tool4Cool® will be able to automatically initiate a download of a set of parameter values selected by the user. This function is individually configured for each network in Tool4Cool®'s network list.

When auto parameterizing is enabled for a network, Tool4Cool® will start waiting for new units to be detected on the network. When a unit is detected, Tool4Cool® will check if a matching configuration is selected in the setup for auto parameterizing. If a configuration is found the settings for the new unit will begin to download.

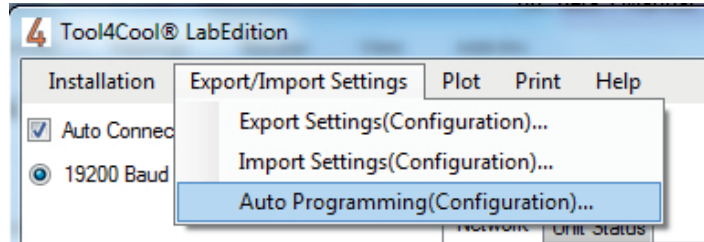
Please Note:

- When a single unit is in the process of uploading or downloading, auto parameterizing cannot be started for that network.
- If Tool4Cool® is terminated while the auto parameterizing process is running for the network, the auto programming process for the selected network will automatically initiate when restarting Tool4Cool®.

Auto Parameterizing

Procedure:

- In the tree view, click on the network name .
- Select "Export/Import Settings" menu



- Click on the "Auto Programming (Configuration)" sub menu.
- The "Auto Configure" tab will appear
- Click the "Setup" button to open the Setup page. On the setup page, the configuration for all units connected to the network can be selected.
- Set the log file name and location.
- Select the required configuration for the type of unit.
- Select the "Show Status Dialog" option to open the status window. It displays the programming status of network unit.

Click here to select network

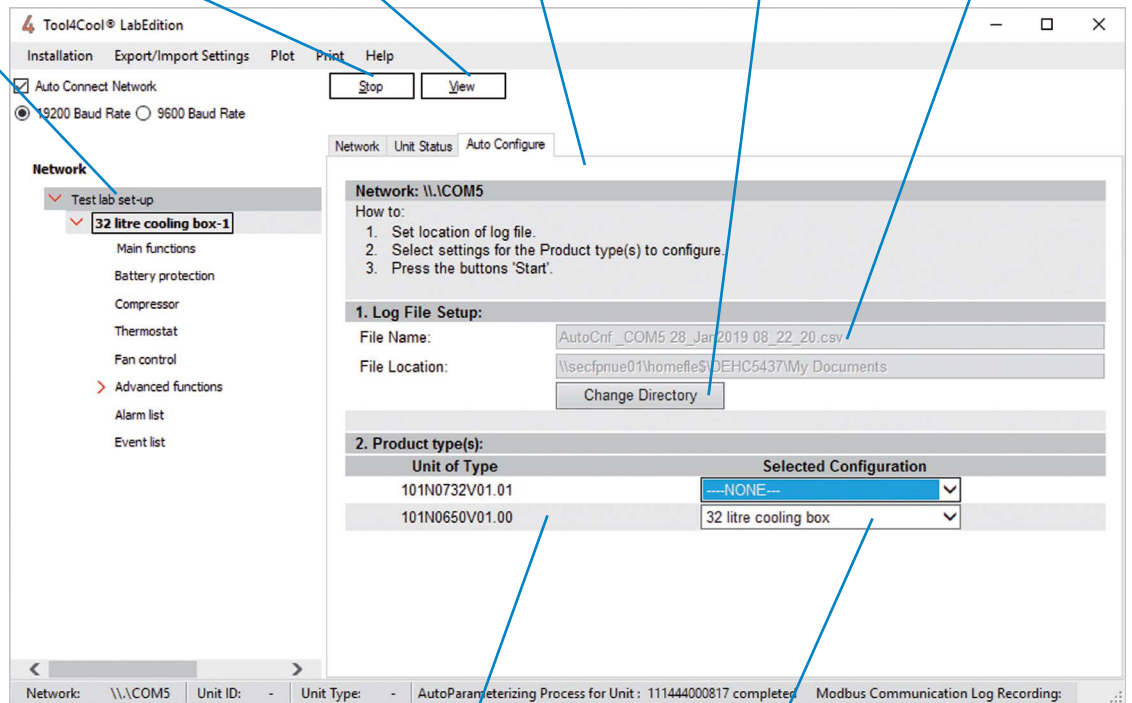
Click here to stop auto parameterizing

Click here to view log

Click here to select auto parameterizing tabs

Click here to navigate to a different file storage location

The file name indicates controller, date, and time. The file type is .csv



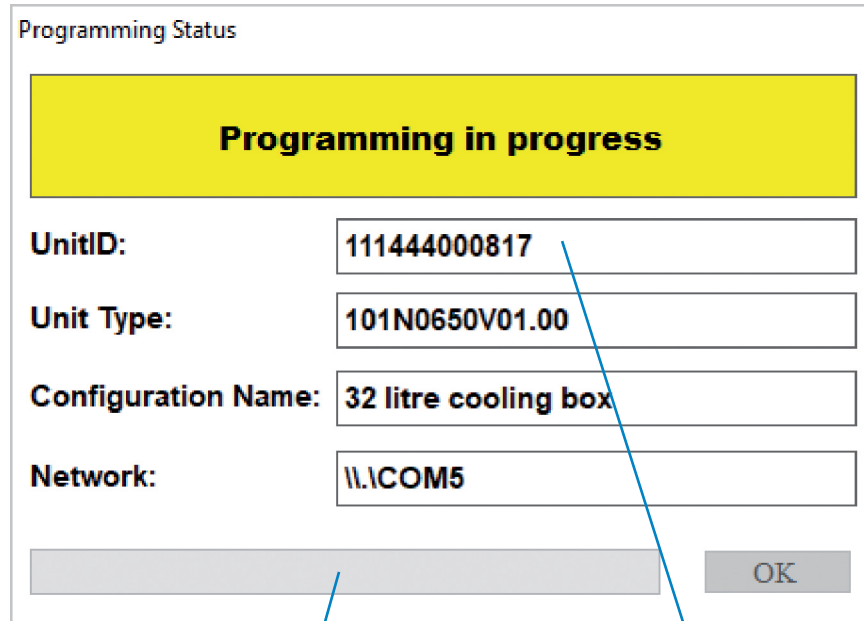
Select the required configuration from drop down for auto parameterizing.

Start Auto Parameterizing

Procedure:

- Click on the "Start" button above the auto configure tab view.

Example:



Progress bar will show the progress of auto configuration

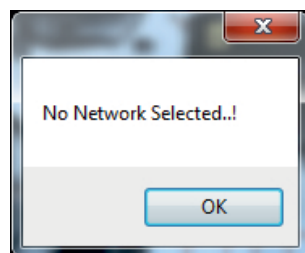
Shows Status of auto configuration
 Grey = Not connected
 Yellow = Programming in progress
 Green = Succeeded
 Red = Failed

Result:

- Starts specified configuration for first found unit in the network.
- Displays status window with programming status "Programming in progress" for unit.
- Performs unit parameter configuration.
- If it is completed successfully, the programming status "Programming Succeeded" is displayed.
- If it failed, the programming status "Programming Failed" is displayed.
- If auto configuration is in progress or completed successfully then the progress bar appears in green.
- If auto configuration fails, the progress bar appears in red.

Note:

- If the "Show Status Dialog" option is not selected, Tool4Cool® displays the log view. The log view displays information about the configured units in the network.
- If the configuration file is not selected for a particular unit then auto programming will not work for that particular unit.
- When auto parameterizing is in progress for a network, no units under this network can upload or download the configuration using the "Configure" tab.
- To perform auto configuration, the user must select network first, or else the dialogue box below will appear displaying the message "No Network Selected"



Stopping Auto Parameterizing

Procedure:

- Select network to open network tab view.
- Click on the "Auto Configure" tab.
- Click on the "Stop" button above the auto configure tab view.

View Log

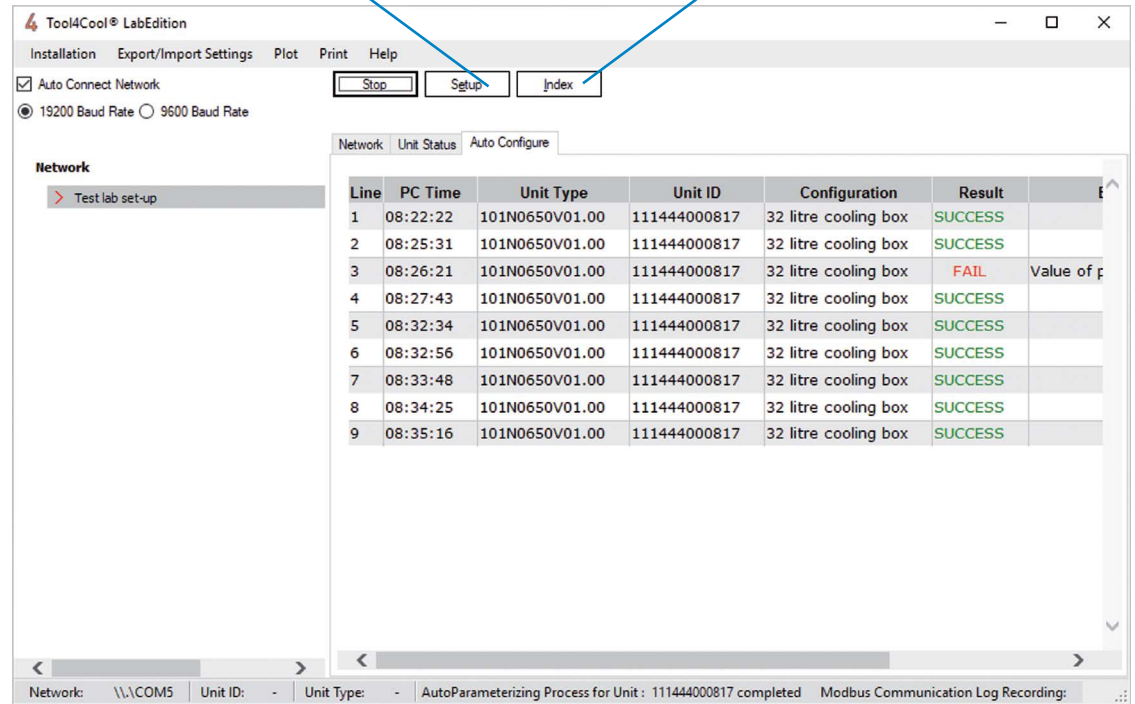
Procedure:

- Select the network to open network tab view.
- Click on the "Auto Configure" tab.
- Click on the "View" button above the auto configure tab view.
- Displays the auto parameterizing log for selected network.

Example:

[Click here to select the auto parameterizing setup page](#)

[Click here to select the auto parameterizing index page](#)



Index

Procedure:

- Click on the "Index" button above the auto configure tab view.
- Display the auto parameterizing log index.
- The user can click on the red arrow next to the index item to view log.

Please Note:

- One log index entry contains up to 400 lines of log. A new log index entry displays for each 400 lines.



5.3 Viewing Unit Status Information

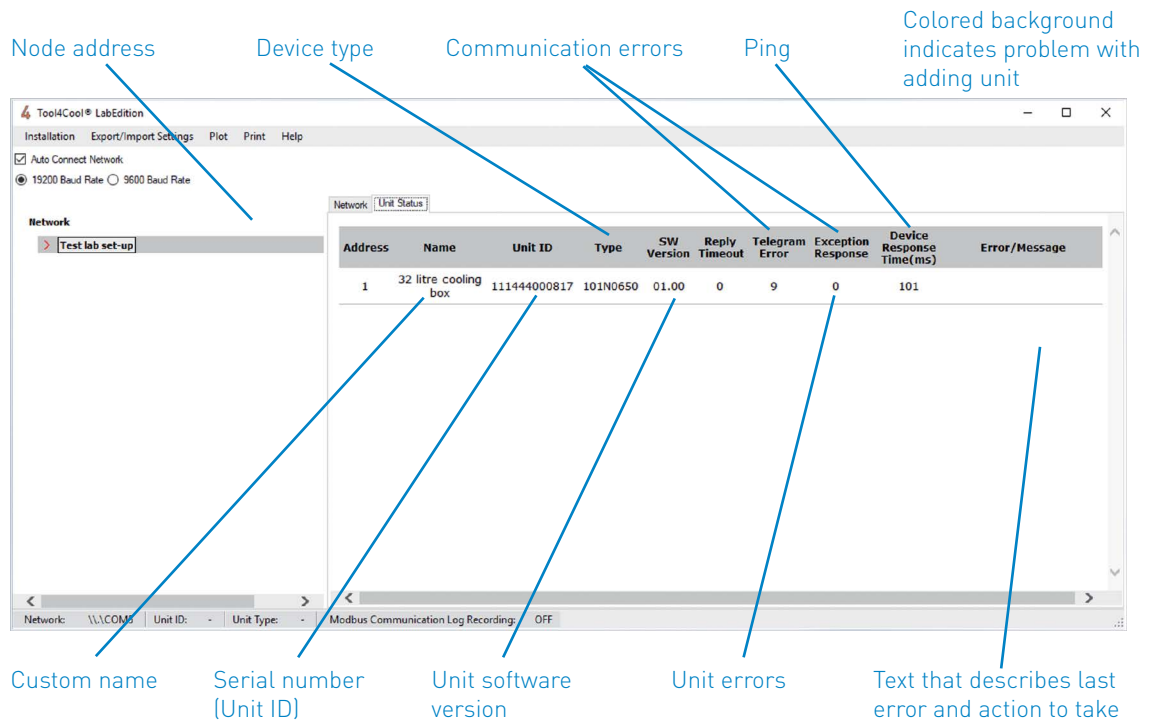
The "Unit Status Tab" in the network tab displays the information about the units connected to a network. It includes:

- Address
- Name
- Unit ID
- Type
- SW version
- Telegram errors
- Reply Timeout
- Exception response (Number of exception response raised by unit)
- Device response time (ms)
- Error/Message (Represents last error detected and user action, if any)

This information helps users with troubleshooting a network by displaying errors or events in Tool4Cool®. For example, Error/Message describes last error detected by tool and messages for user action needed to solve a problem.

Procedure:

- In the tree view, left-click on the network name.
- Click on the "Unit Status" tab from network tab view.



Result:

- The "Unit Status" tab displays information about the units connected to the network.

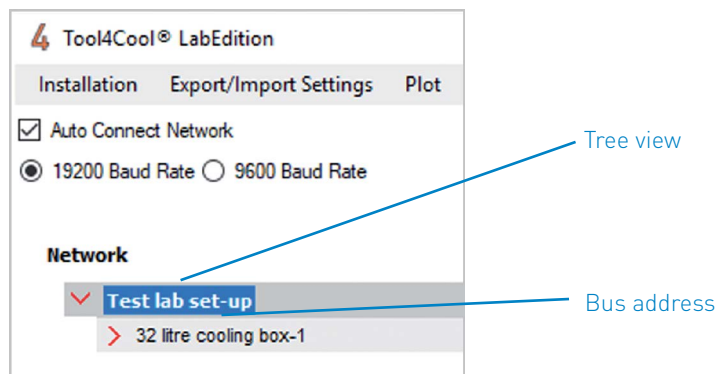
5.4 Navigation

Selecting the Controller

Select the controller to be monitored before using the Tool4Cool® LabEdition functions.

Procedure:

- In the tree view, left-click on the arrow next to the controller name.



Please Note:

If the red arrow is not visible, or the controller is not listed in the tree view, it may not be connected and set up. For connection instructions please refer to 4.1 Connect Network and the Tool4Cool® LabEdition Connection Manual.

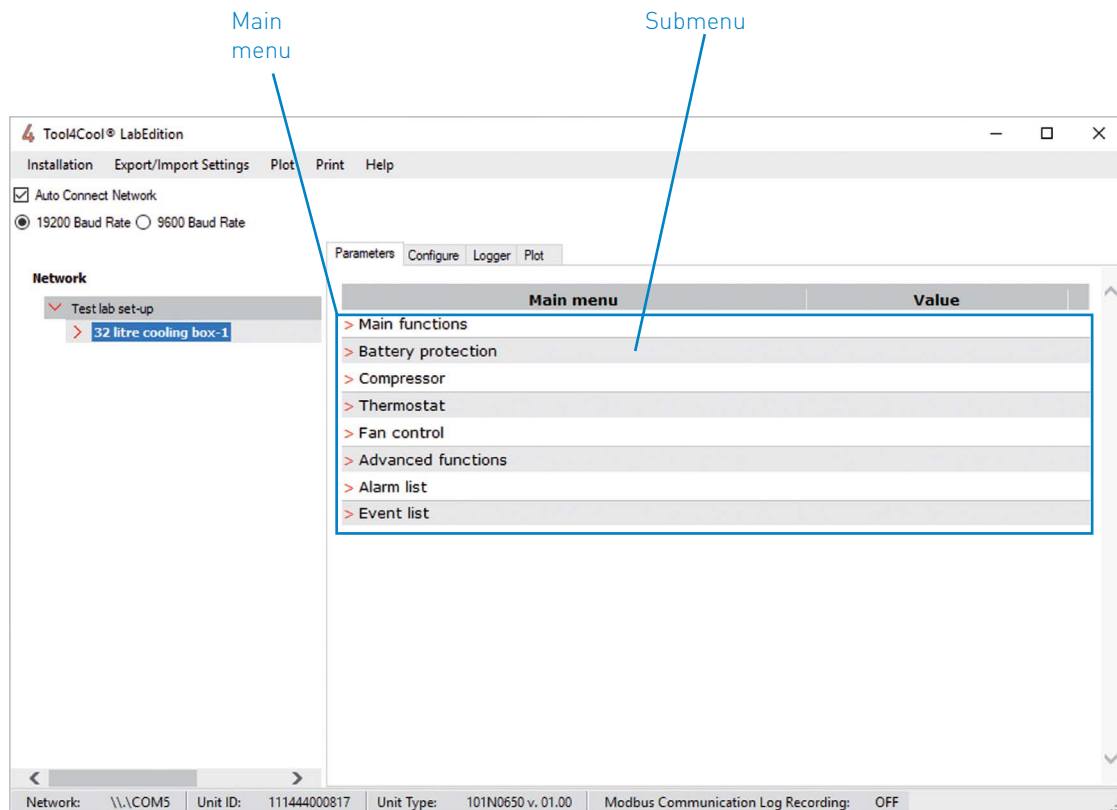
Result:

- The controller parameter groups will be displayed in the tree view
- The tab views for the controller will be displayed.

Controller Main Page

Click on the controller name in the tree view to display the controller main page in the tab view.

Example:



The controller main page overview displays parameter groups and possibly also key parameters. Key parameters are typically the most important or most frequently used parameters and are located in the overview for convenience.

Please Note:

The layout/design of this page is product-specific.

5.5 Viewing Controller Parameters

The parameters tab view displays information about controller parameters.

When the controller name is highlighted, the parameters tab view is the default tab view. To return to the parameters tab view from elsewhere in Tool4Cool® LabEdition, click on the "Parameters" tab.

Parameter information is controller-specific and therefore individually defined for each product. Parameter information can therefore vary greatly from product to product, and can include:

- Real-time values
- Factory settings
- Selection options for units
- Data entry field for values and text

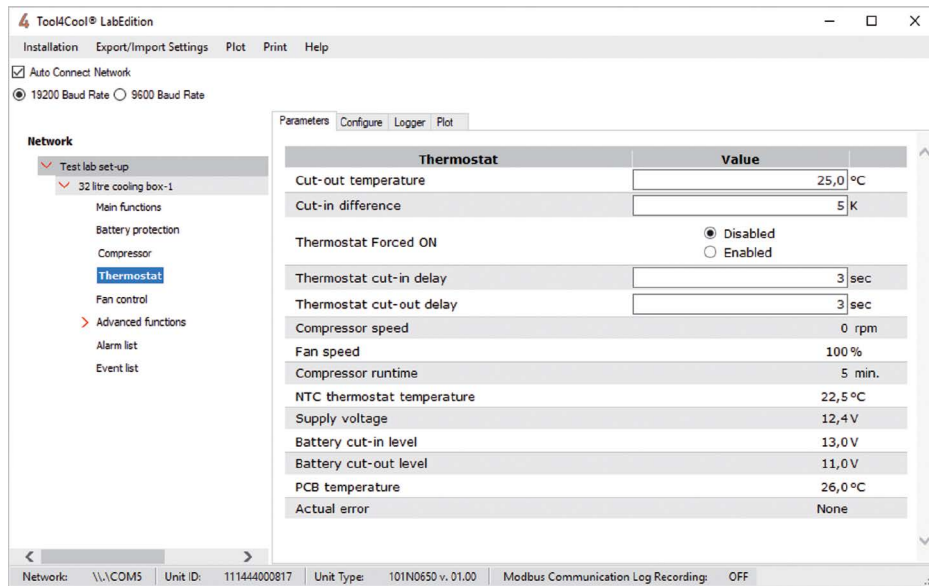
Parameters are organized into groups. A group of parameters is indicated by a heading in the tree view.

To view parameters:

Procedure:

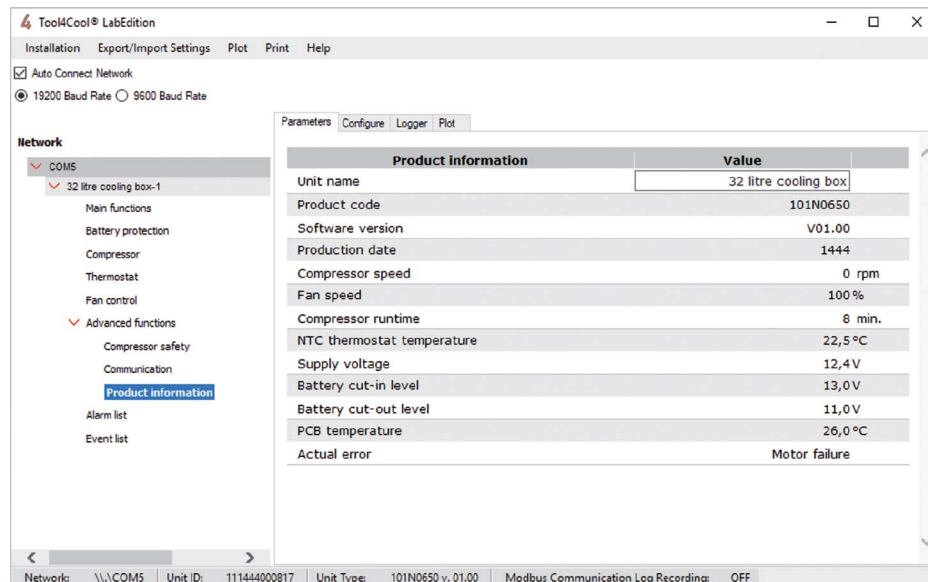
- Click on the arrow next to the controller name to see the parameter group headings.
- Click on a parameter group heading to view the parameters in the group.

Example:



- If parameters are grouped at more than one level, this will be indicated by a red arrow next to the group heading. To view the next level, left-click on the arrow.

Example: "32 litre cooling box" → Advanced functions → Product information



5.6 Changing Parameter Settings

The setting of the parameter can be changed when the parameter displays a data entry field, a set of selection buttons, or a drop-down menu.

To change the setting of a parameter
 Procedure:

- Type the new setting into the data entry field, click on the desired button or select an option in the drop-down box.
- Alternatively, the new values can be entered using a configuration file, see 5.2 Auto Programming (Configuration).

Note:

- View the permissible range of any parameter by holding the cursor over the value field. A small box will appear stating the minimum and maximum values permissible.
- Enter the parameter settings only within the permissible range.
- If the color of a parameter value is red, the parameter is outside the permissible range. This originates from the controller.
- It is not possible to enter a value outside the permissible range, when using Tool4Cool® LabEdition. If attempted, an error message will appear. Please refer to section 6.1 Alarms and Error Messages.

Help:

- In some cases, hold the cursor over the parameter name to view a pop-up window with information about the parameter.

Example: How to change settings in the parameter tab view

Choose a button from the list

Type in a value

Measurement

Thermostat	Value
Cut-out temperature	5,0 °C
Cut-in difference	5 K
Thermostat Forced ON	<input checked="" type="radio"/> Disabled <input type="radio"/> Enabled
Thermostat cut-in delay	3 sec
Thermostat cut-out delay	3 sec
Compressor speed	0 rpm
Fan speed	100 %
Compressor runtime	9 min.
NTC thermostat temperature	22,5 °C
Supply voltage	12,4 V
Battery cut-in level	13,0 V
Battery cut-out level	11,0 V
PCB temperature	26,0 °C
Actual error	Motor failure

Network: \\.\COM5 Unit ID: 111444000817 Unit Type: 101N0650 v. 01.00 Modbus Communication Log Recording: OFF

5.7 Configuration

A configuration is:

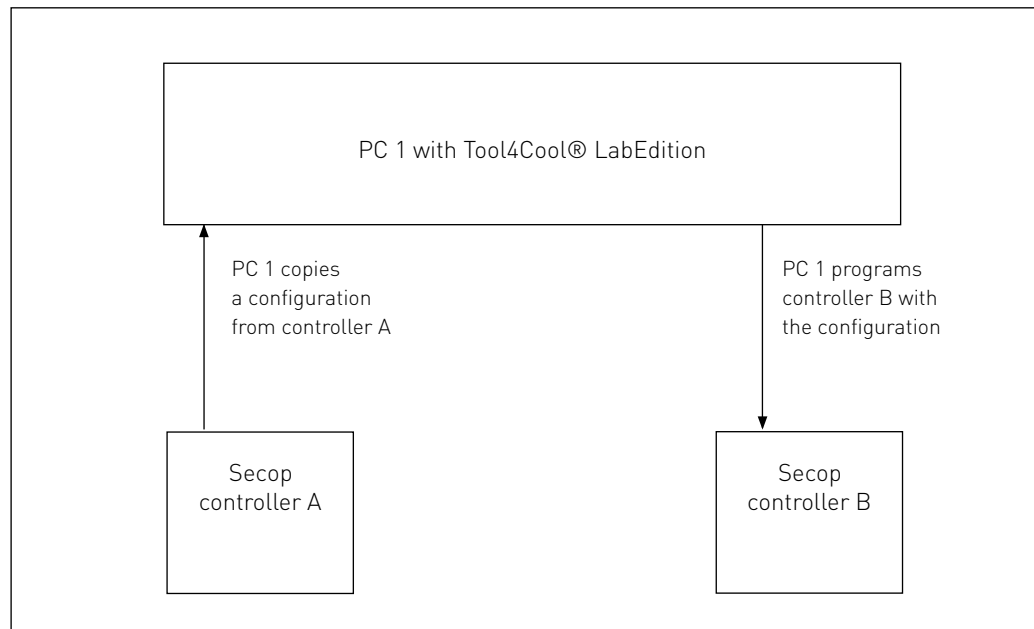
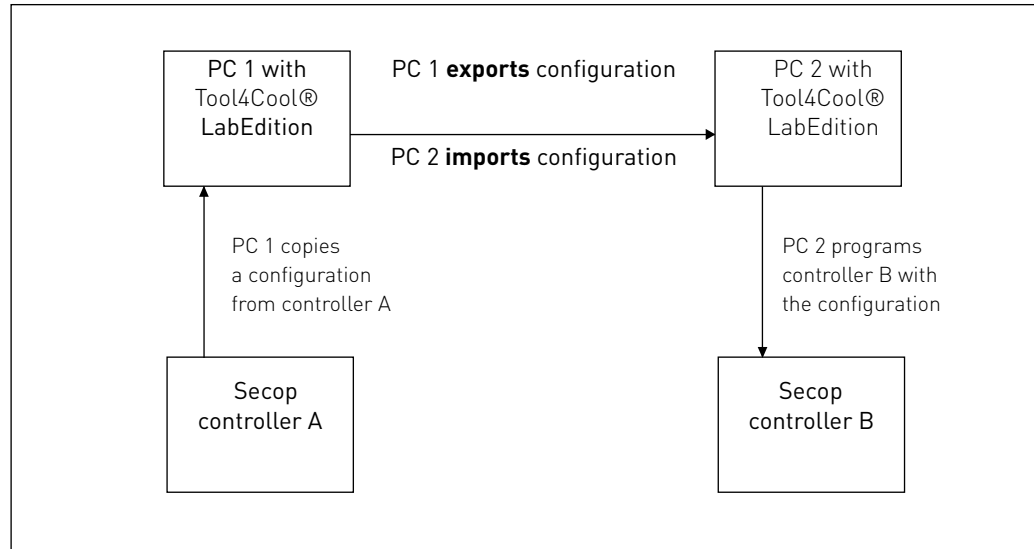
- A series of parameter settings
- A combination of parameter settings and actions used to test a controller in the factory
The test can be either a self-test or an installation test.

Use the functions in the configure tab view to copy (save) the parameter settings of a Secop °CCD® controller, for re-use with other controllers.

Configurations are stored in a database for later use or export.

A copied configuration can be downloaded to other Secop °CCD® controllers of the same type and software version.

Schematic View of Configuration Functions: Copy, Program, Export, and Import



Please Note:

Only the parameters to which access is granted by the Product Key will be copied. To copy additional parameters, a new product key with broader access rights is required.

5.7.1 Copying (Uploading) a Configuration from the Controller

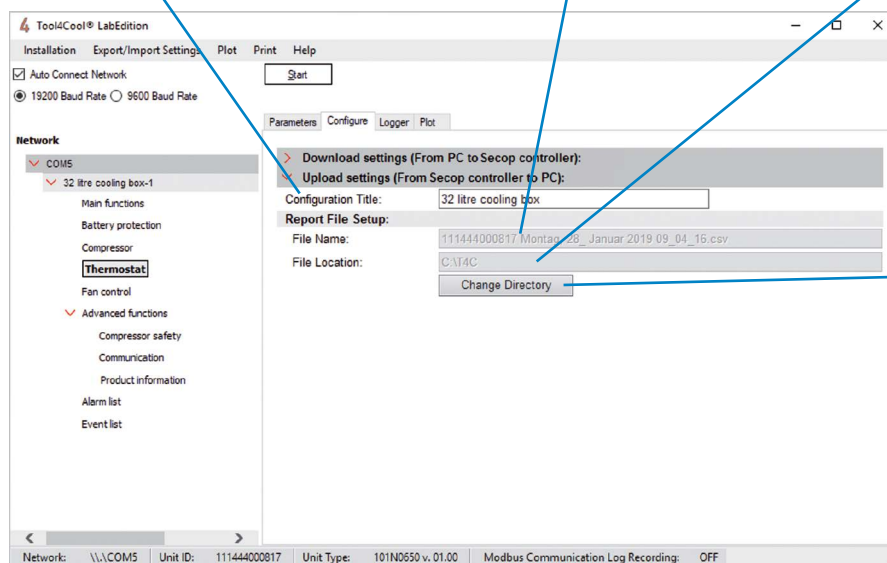
Procedure

- Left-click on the Configure Tab.
- Left-click on the red arrow next to the heading "Upload settings (From Secop controller to PC)".
- Enter a title in the field "Configuration Title". This title will be used when retrieving the configuration for later use.

Change the default configuration title here (optional)

The file name indicates unit ID, date, and PC-time. The file type is .csv

The file is copied (saved) to this location as default



Click here to navigate to a different file storage location

The report file contains a list of the steps occurring during copying of the configuration file. The report file can be used in testing and troubleshooting.

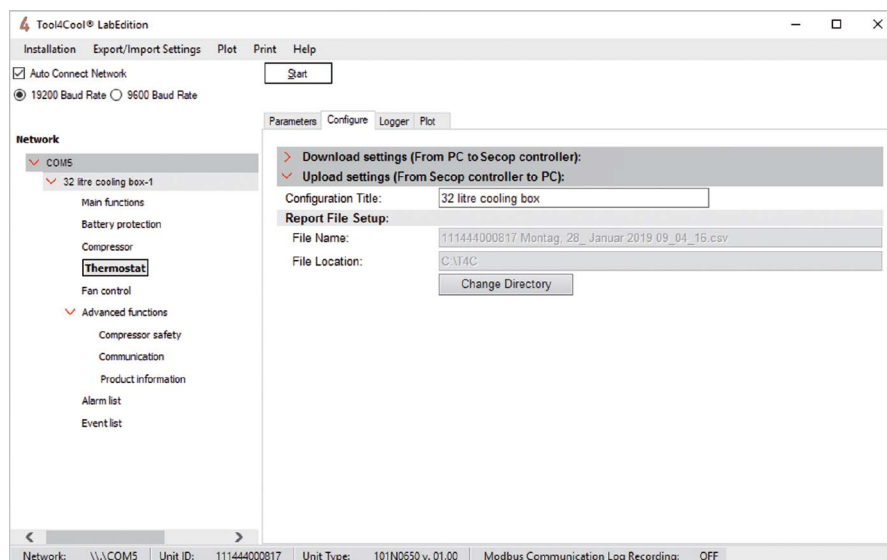
- Check the location of the report file, as shown.
- To change the report file location from default, click on the "Change Directory" button.
- In the dialog box which appears, browse to the desired location, then click "OK".

Example:



- Click on the "Start" button above the configure tab view.

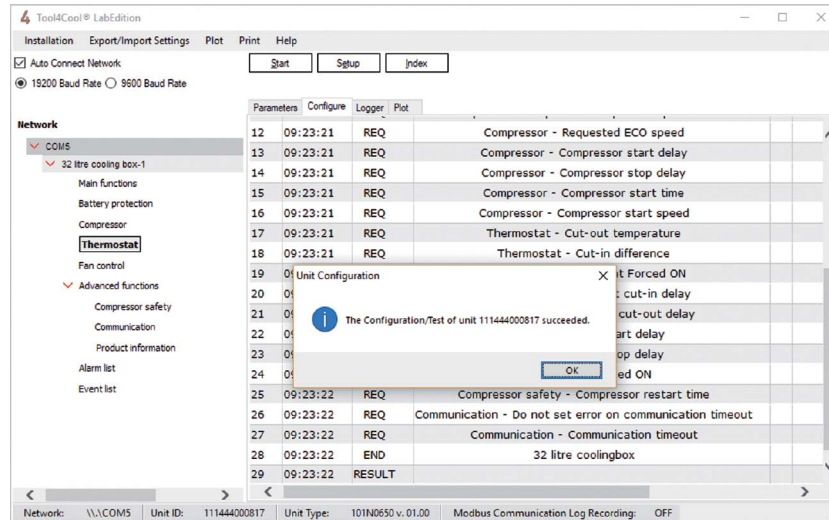
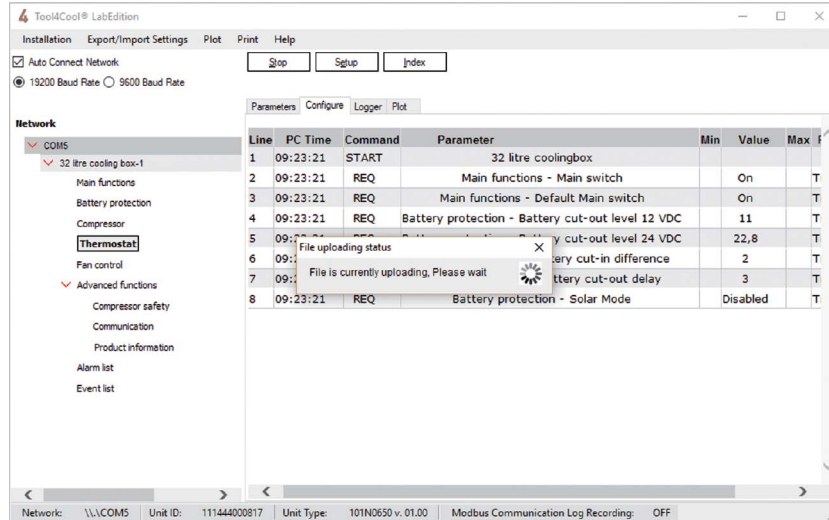
Example: Start button



Result:

- The setting file is saved to the specified title and location.

Example:

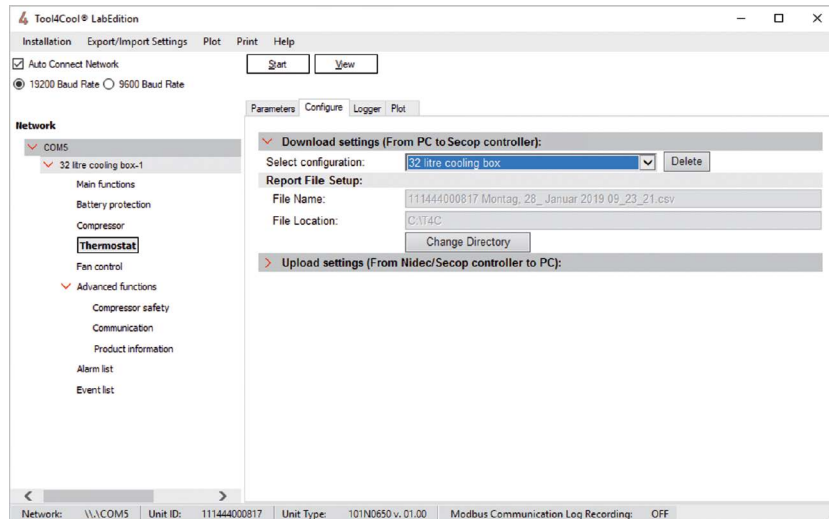


5.7.2 Programming (Downloading) a Saved Configuration File

Procedure

- Left-click on the configure tab.
- Left-click on the red arrow next to the heading "Download settings(from PC to Secop controller)".
- Select a configuration from the list of titles in the drop-down menu in the "Select configuration" field.

Example:



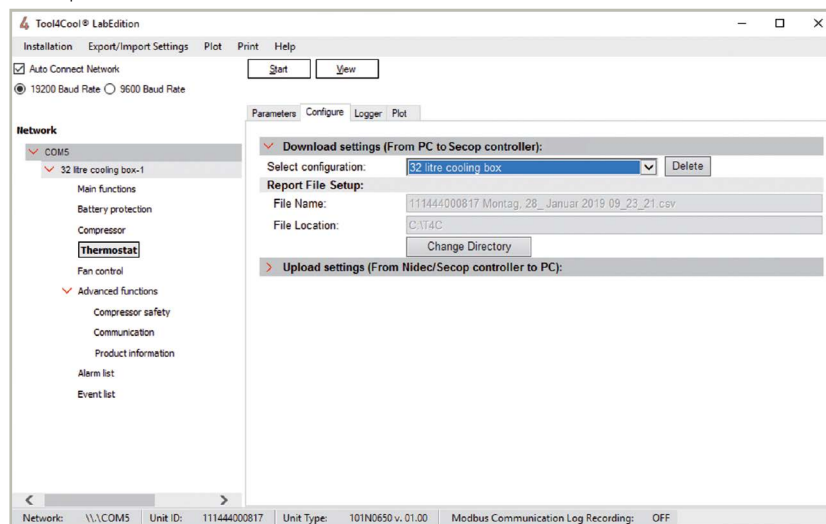
- Check the location of the report file, as shown.
- To change the report file location from default, click on the button "Change Directory".
- In the dialog box which appears, browse to the desired location, then click "OK".

Example:



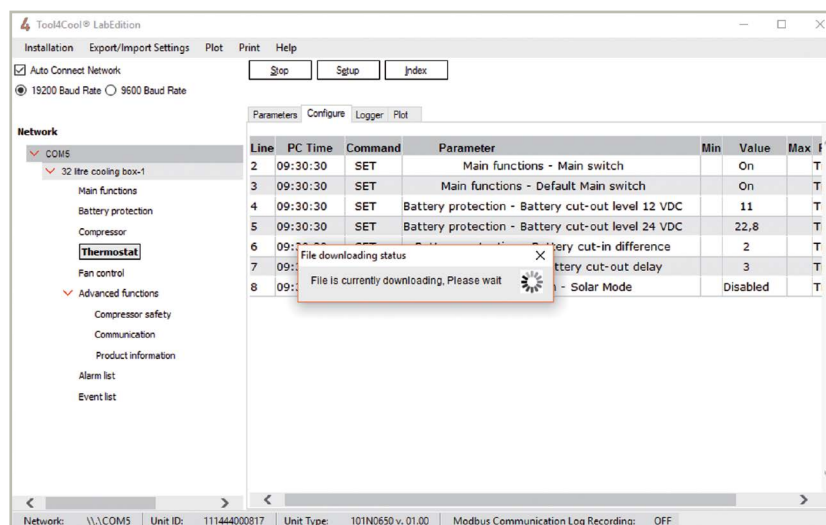
- Click on the "Start function" button above the configure tab view.

Example:



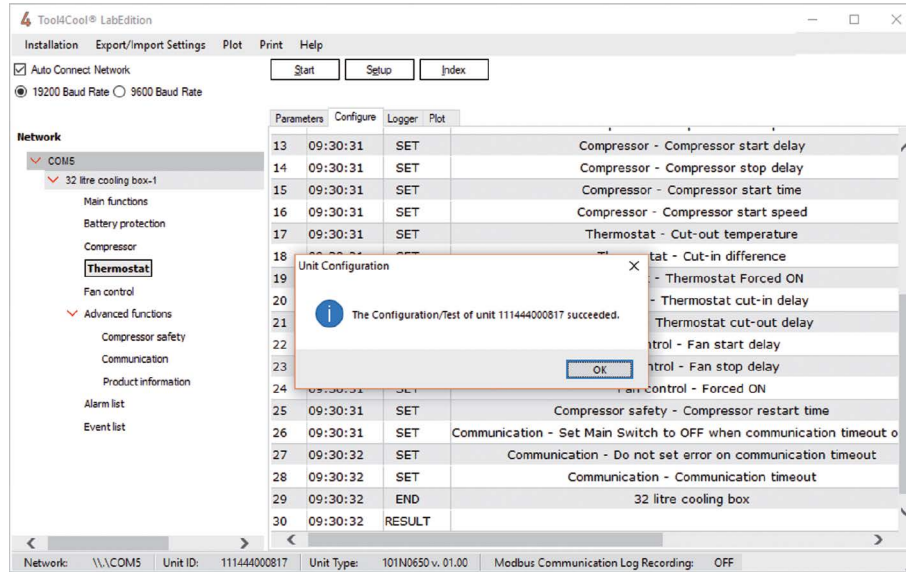
Result:

- The configuration is programmed.
- The parameters which have been set during programming are listed, and the "File downloading status" window is displayed.



- The dialog box "Unit configuration" appears, to indicate the status of the configuration: successful or unsuccessful.
- If the configuration is unsuccessful please refer to section 6. Troubleshooting.
- The function buttons for the tab view display new functions.
- Click "OK" to close the dialog box.

Example:



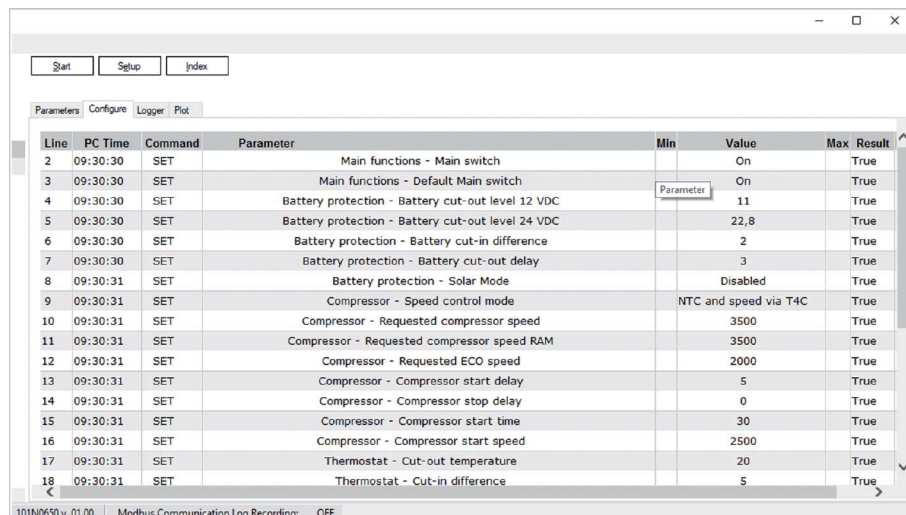
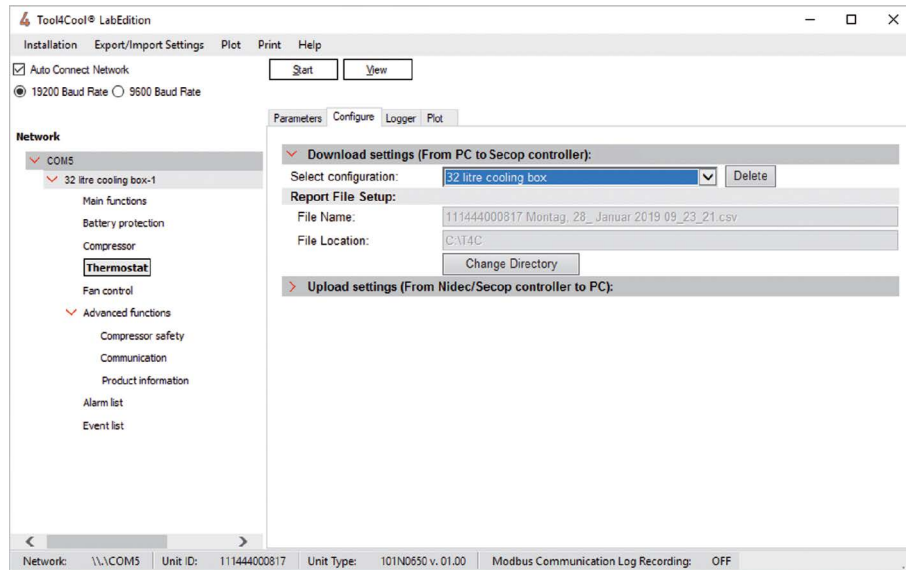
Setup

Click on the Setup button to return to the functions Download settings (from PC to Secop controller) and Upload settings (from Secop controller to PC).

View

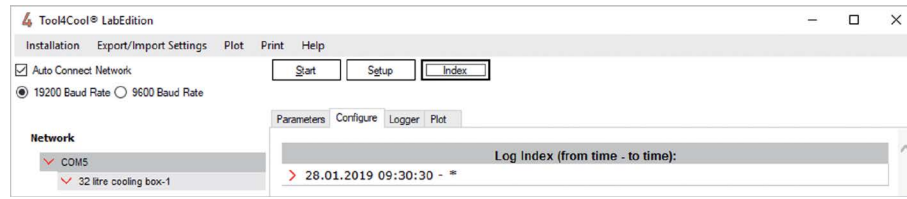
Click on the "View" button to display the task report for the most recent configuration.

Example:



Index

- Click on the "Index" button to view a log of the most recent configuration.
- Open the configuration log by clicking on the red arrow next to the index item.
- One log index entry contains up to 400 lines. A new log index entry will begin for each 400 lines.
- A typical configuration log contains less than 400 lines, and therefore the log index will normally contain only one entry.

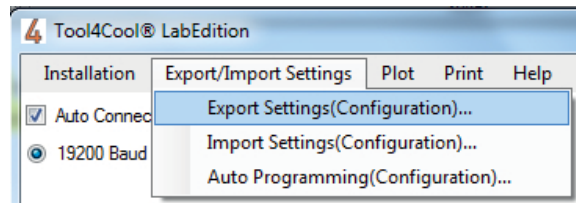


5.7.3 Exporting a Configuration File

Exporting a configuration is used to distribute configurations from one PC to another via e-mail or similar. This is useful in testing and setting up multiple controllers.

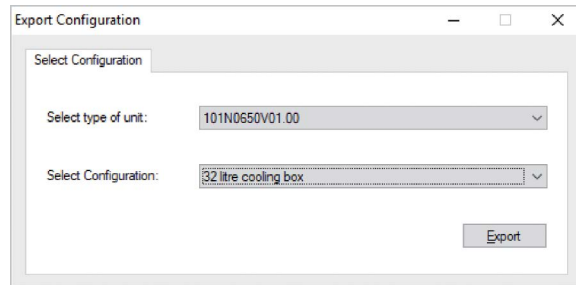
Procedure:

- Select "Export/Import Settings" in the menu bar.
- Select "Export Settings (Configuration)" from the "Export/Import Settings" drop-down menu.



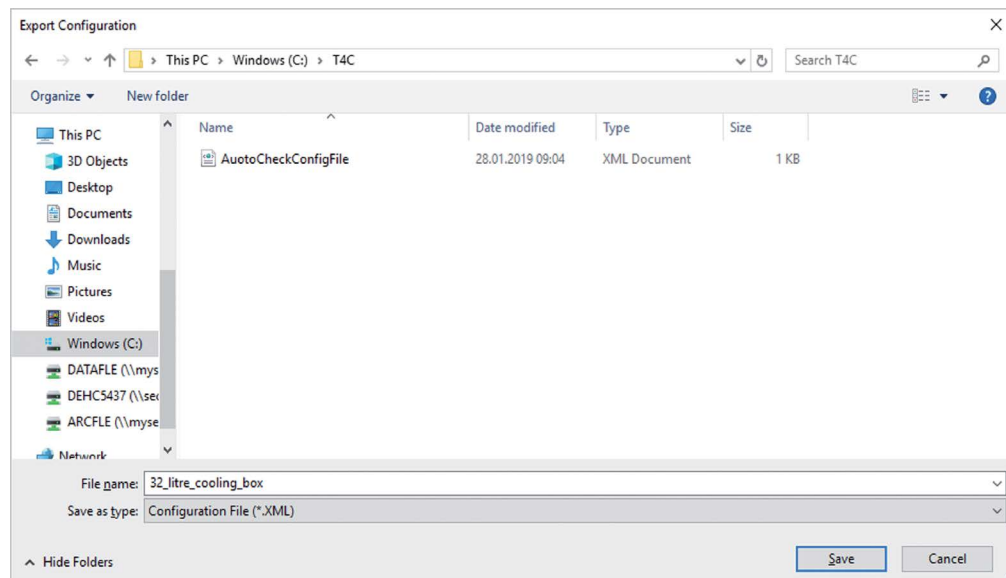
- The "Export Configuration" dialog box opens. Select the type of controller and its configuration.
- Click on "Export".

Example:



- The "Export Configuration" dialog opens. Enter a name and location for the configuration file.

Example:



Result

- The configuration file is saved as an .xml file.

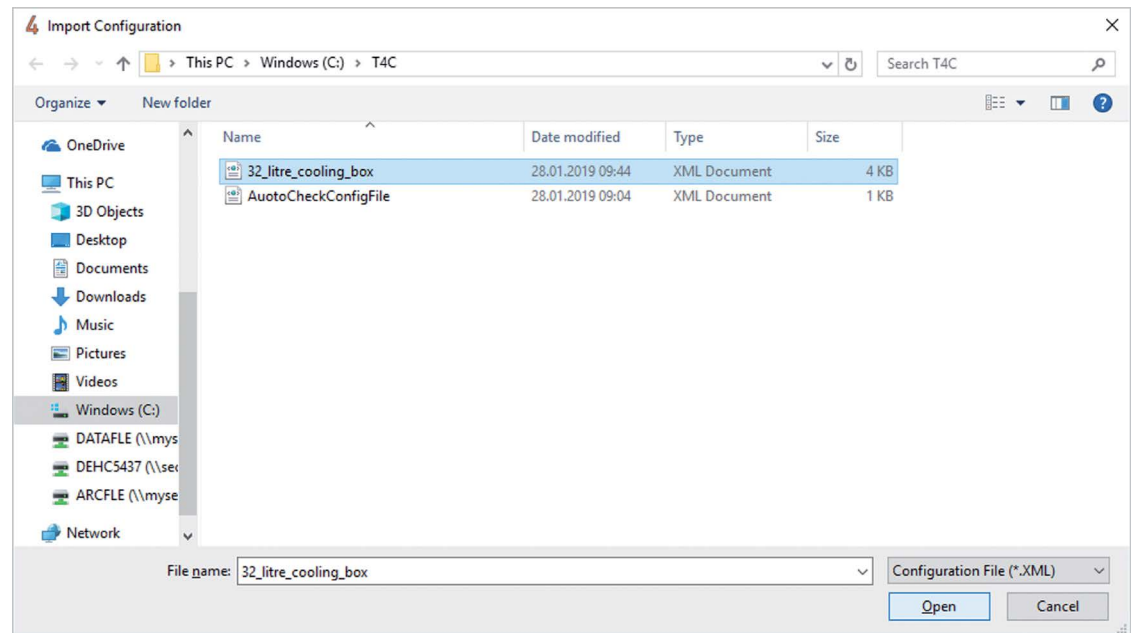
5.7.4 Importing a Configuration File

Import a Configuration File

Procedure

- Select "Export/Import Settings" in the menu bar.
- Select "Import Settings (Configuration)" in the file drop-down menu.
- The "Import Configuration" dialog box opens.

Example:



- Browse to the configuration file and click on "Open".

Result:

- The configuration file will be available for selection in the "Configure" tab view under "Program Configuration."

5.8
Sorting Tables

In the parameter tab view, structures are displayed in the table format. These table data can be sorted by clicking the column header. By default, the table is not sorted. The user can sort data in ascending or descending order.

Procedure:

- In the tree view, left-click on the arrow next to the controller name to see the parameter groups.
- Select structured parameter group (e.g. Event list, View Temperature Logger, etc.)
- Data is displayed in tabular format on the parameter page.
- Click on the respective column header to sort data.

Example:

Click column header to sort table

Sequence	Uptime	Event		Value
0	00:29:33	Parameter Changed	Thermostat Cut-out temperature	20,00 °C
1	00:29:41	Parameter Changed	Thermostat Cut-in difference	5,00 °K
2	00:30:06	Parameter Changed	Requested compressor speed	3501,40 rpm
3	00:30:21	Parameter Changed	Compressor start delay	5,00 sec
4	00:30:34	Parameter Changed	Solar Mode	Disabled
5	00:31:49	Parameter Changed	Battery cut-out level 12 VDC	11,50 V
6	00:31:54	Parameter Changed	Battery cut-out level 24 VDC	-11,03 V
7	00:31:58	Parameter Changed	Battery cut-out level 12 VDC	11,40 V
8	01:47:31	Parameter Changed	Battery cut-out level 12 VDC	11,00 V
9	01:48:30	Parameter Changed	Battery cut-in difference	2,00 V
10	21:26:43	Thermostat Off		1 time(s)
11	21:50:39	Thermostat On		1 time(s)
12	5.18:14:00	Parameter Changed	Thermostat Cut-out temperature	30,00 °C
13	5.18:14:03	Thermostat Off		2 time(s)
14	5.18:14:25	Parameter Changed	Thermostat Cut-out temperature	20,00 °C

Result:

- This sorts table data based on selected column values.
- Clicking an already sorted column, reverses the sort order of the column.

5.9 Logging Data

Use the logger tab view to set up and run a data log when operating a Secop °CCD® controller.

Tool4Cool® LabEdition can log data for many controllers on different networks simultaneously. Please refer to the section "Log File Setup for Multiple Controllers".

Data Log Format

The data logger in Tool4Cool® LabEdition records real-time data as semicolon separated data in a .csv file. This format is suitable for handling in a wide variety of data processing software, such as Microsoft Excel, among others. The data log is stored in a location specified by the user.

The user defines which parameters should be logged, and how frequently. Each column in the data log shows the real-time values of one parameter. Each row in the data log contains the data for a new time interval.

Data cannot be imported into a Tool4Cool® LabEdition data log.

Important:

- Once a log is stopped, it cannot be restarted or continued later. However, a new log with the same parameters can be started.
- Log data must be saved before a log is stopped, or the data will be lost. See section 5.10 Plotting Logged Data.

Setting Up and Running a Data Log

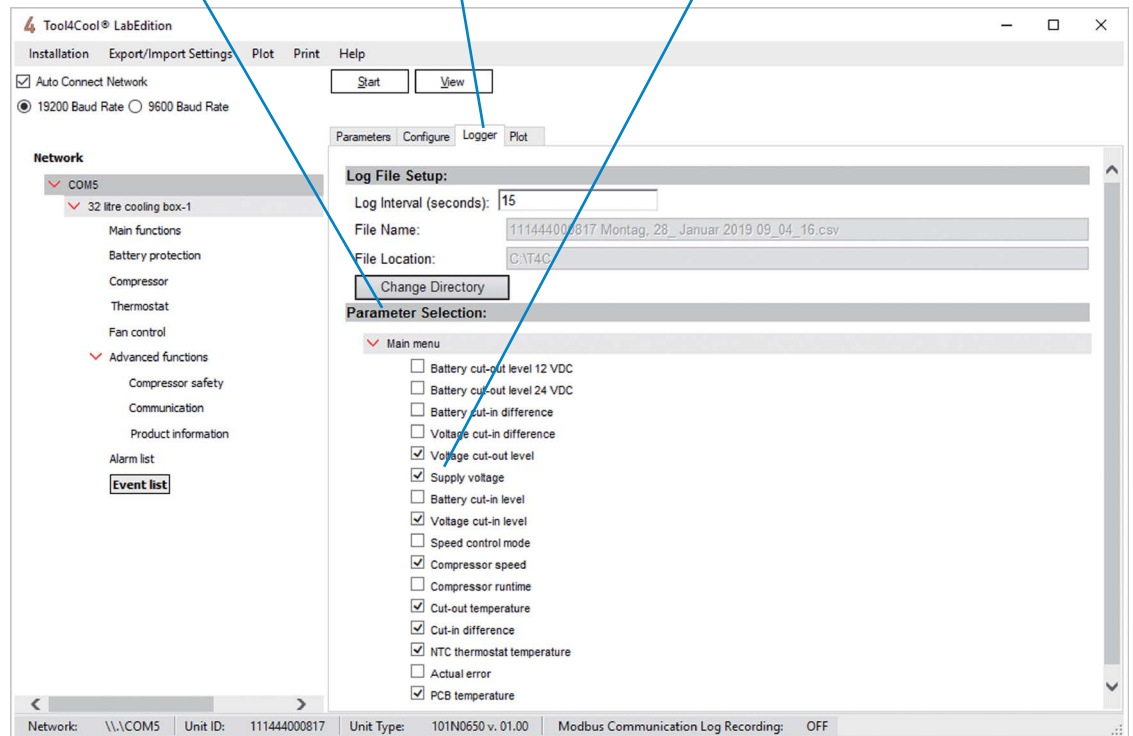
Procedure:

- Click on the "Logger" tab

Example:

Logger tab view before the first data log has been recorded.

Only parameters suitable for logging are available for selection Logger tab Default log selections are displayed



Log File Setup

In order to set up a new log, or change a log setup, any logs which are running for that controller must first be stopped.

Logs running for other controllers can continue to run.

Log Interval

- Set the log interval by typing a value into the field at Log Interval (seconds).

Please Note:

Consider the log interval carefully. A short interval will generate a lot of data in a short time. For example, a data log with a log interval of 1 second run over two days will generate a volume of data which exceeds the capacity of an Excel spreadsheet. Alternatively, a log interval of 300 seconds results in a much lower volume of data, which in most cases is still adequate.

File Name

- The name of the log file is created automatically and cannot be changed.
- The log file name is structured: Controller ID_Date_Time.csv

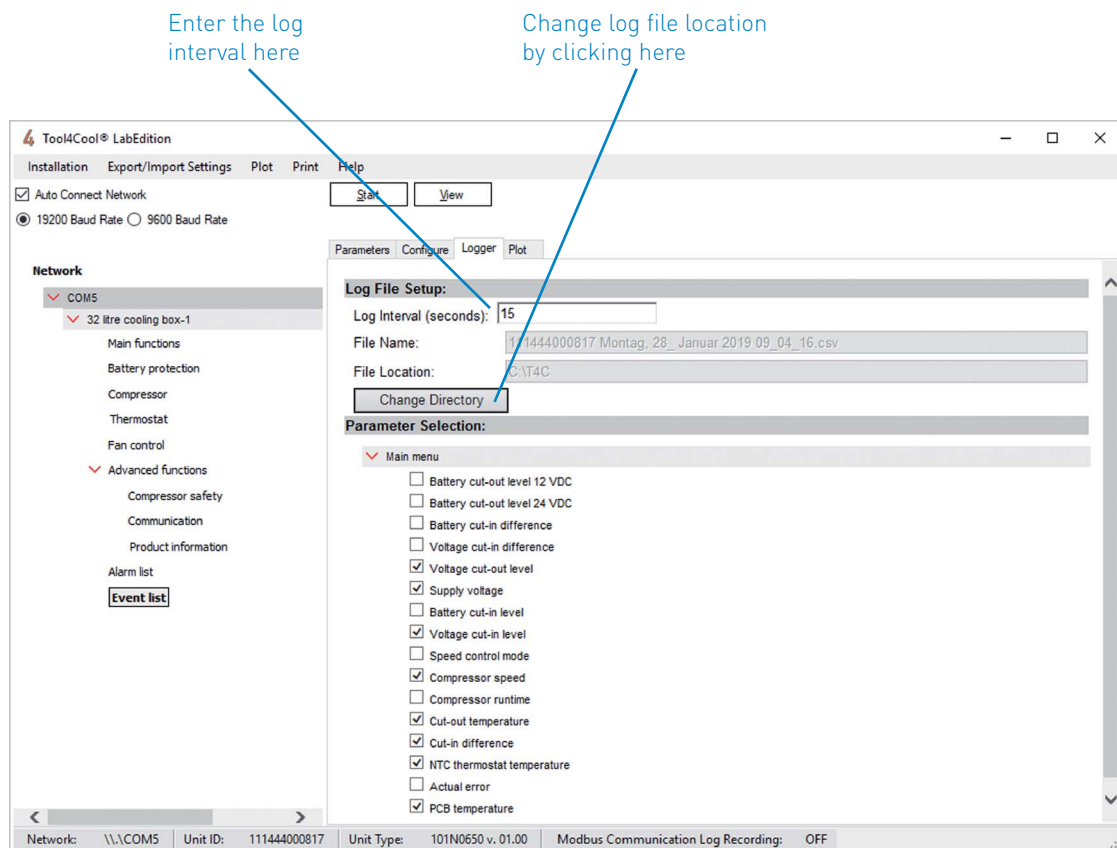
File Location

- The log file will be stored in the default location shown, unless another location is specified.
- Creation of a separate log file folder is recommended.
- To change the log file storage location, click on the "Change Directory" button, browse to the desired location and click on "OK".
- When the log file location is changed, the new location will automatically become the default file location for subsequent log file setups.

Please Note:

The "Change Directory" button is not accessible while a log is running.

Example of Log File Setup:



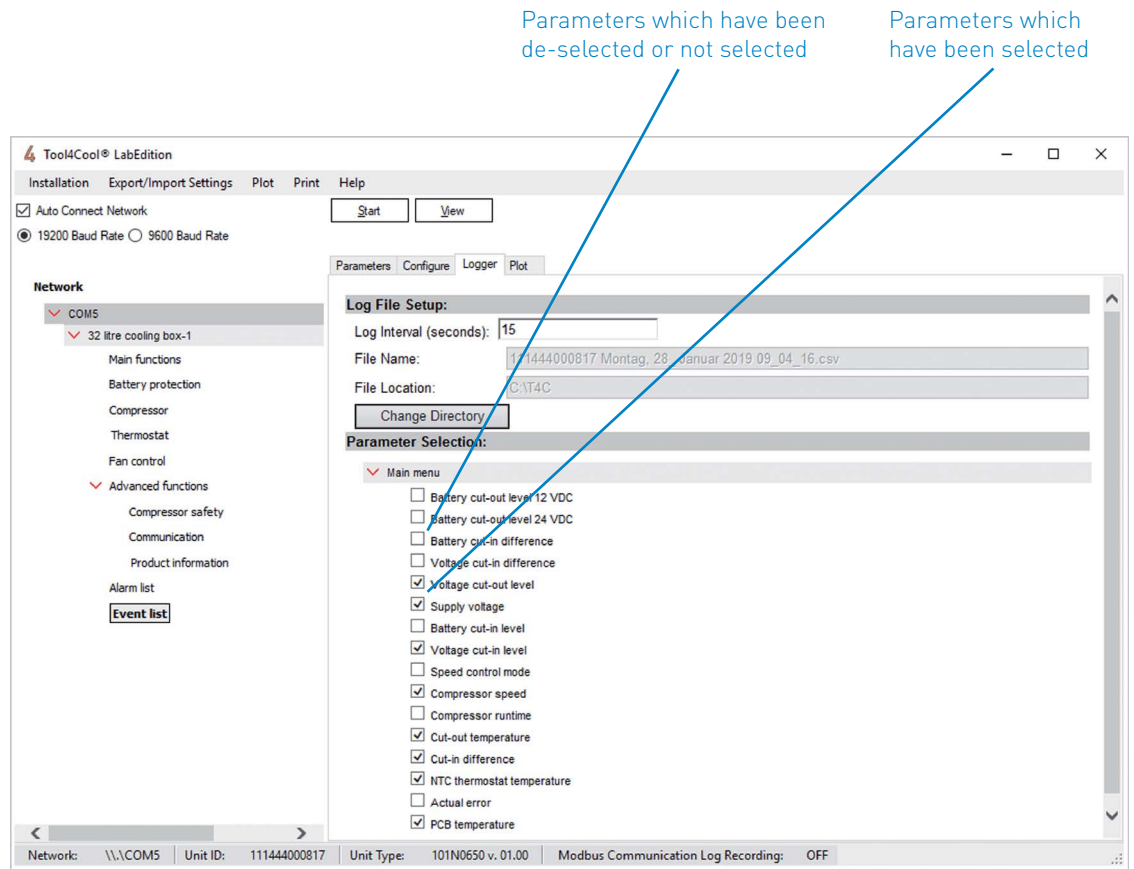
Parameter Selection

Certain parameters are intentionally selected for availability for logging. Only these parameters will be available for selection in the logger menu.

Selecting a parameter to be recorded in the data log:

- Left-click in the box beside the parameter name. When the selection is made a check will appear in the box.
 - Repeat for each new selection until all the desired selections have been made.
- De-selecting a parameter which has already been selected:
- Left-click in the box beside the parameter name. When the de-selection is made, the box will be empty.

Example:



Starting a Data Log

To start a data log

- Left-click on the "Start" button above the logger tab view.

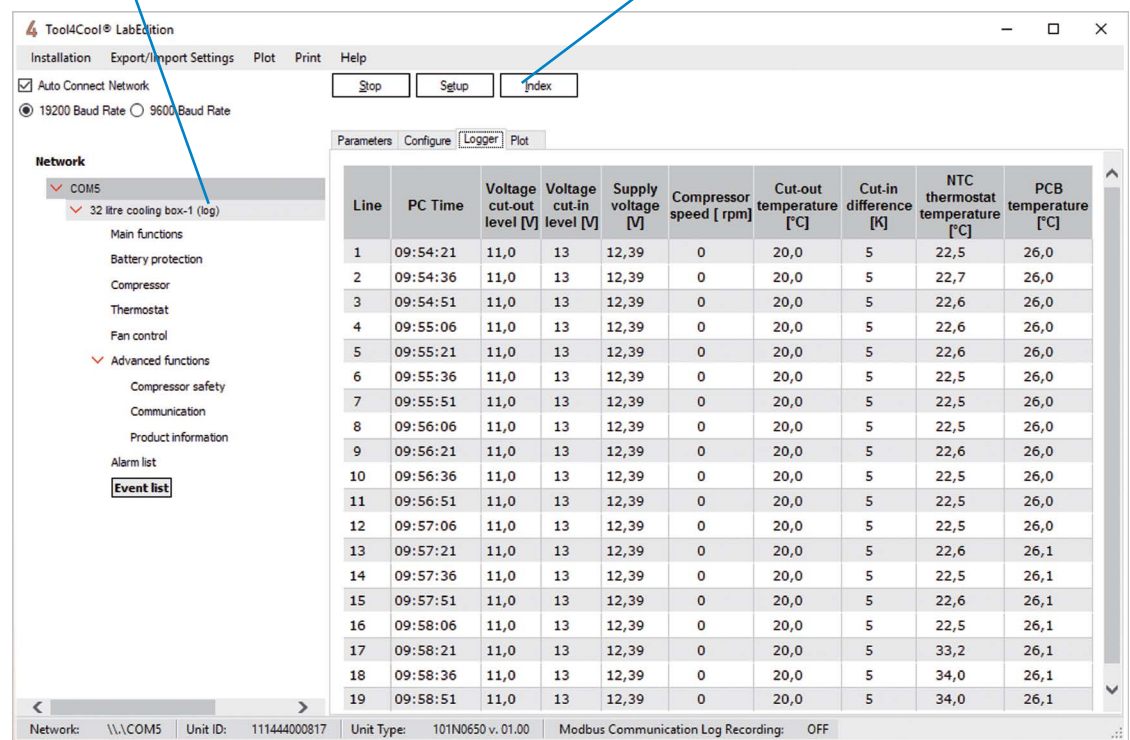
Result:

- A new view will appear, showing the real-time data log for local PC time.
- Three new function buttons appear above the logger tab view: "Stop", "Setup", and "Index".
- The controller name in the tree view is displayed with the suffix '(log)', to indicate that the log is running.
- The parameters which were selected will be displayed as the data log headings.
- The de-selected parameters will not appear.
- A new line will appear for each completed interval, with the interval frequency as defined in "Log File Setup".
- The log displays parameter values as a function of time.
- The data log will continue running until it is stopped or the application is terminated.

Example:

The suffix '(log)' shows that a log is currently running on this device

New function buttons appear



Log File Setup for Multiple Controllers

Tool4Cool® LabEdition can run logs for many controllers simultaneously.

One log can run per controller.

Each individual log can be stopped, set up, and started again, independently of the other logs.

The settings made for a log in "Log File Setup" on one controller will automatically appear as default settings for the next Log File Setup on a controller of the same type. This feature is designed to simplify the task of setting up logs for a series of many similar controllers.

Stop Data Log

To stop a data log

- Open the controller in the tree view by clicking on the red arrow next to the controller name
- Left-click on the Stop button above the logger tab view.

Result:

- A new view will appear, showing the data log so far. No new data will appear.
- The function buttons above the logger tab view change to "Start", "Setup", and "Index".
- The suffix '(log)' will no longer appear after the controller name.

Example:

The screenshot shows the Tool4Cool LabEdition software interface. The 'Logger' tab is active, displaying a table of data log entries. The table has 10 columns: Line, PC Time, Voltage cut-out level [V], Voltage cut-in level [V], Supply voltage [V], Compressor speed [rpm], Cut-out temperature [°C], Cut-in difference [K], NTC thermostat temperature [°C], and PCB temperature [°C]. The data shows a sequence of 19 lines with varying temperatures and constant voltage levels.

Line	PC Time	Voltage cut-out level [V]	Voltage cut-in level [V]	Supply voltage [V]	Compressor speed [rpm]	Cut-out temperature [°C]	Cut-in difference [K]	NTC thermostat temperature [°C]	PCB temperature [°C]
1	09:54:21	11,0	13	12,39	0	20,0	5	22,5	26,0
2	09:54:36	11,0	13	12,39	0	20,0	5	22,7	26,0
3	09:54:51	11,0	13	12,39	0	20,0	5	22,6	26,0
4	09:55:06	11,0	13	12,39	0	20,0	5	22,6	26,0
5	09:55:21	11,0	13	12,39	0	20,0	5	22,6	26,0
6	09:55:36	11,0	13	12,39	0	20,0	5	22,5	26,0
7	09:55:51	11,0	13	12,39	0	20,0	5	22,5	26,0
8	09:56:06	11,0	13	12,39	0	20,0	5	22,5	26,0
9	09:56:21	11,0	13	12,39	0	20,0	5	22,6	26,0
10	09:56:36	11,0	13	12,39	0	20,0	5	22,5	26,0
11	09:56:51	11,0	13	12,39	0	20,0	5	22,5	26,0
12	09:57:06	11,0	13	12,39	0	20,0	5	22,5	26,0
13	09:57:21	11,0	13	12,39	0	20,0	5	22,6	26,1
14	09:57:36	11,0	13	12,39	0	20,0	5	22,5	26,1
15	09:57:51	11,0	13	12,39	0	20,0	5	22,6	26,1
16	09:58:06	11,0	13	12,39	0	20,0	5	22,5	26,1
17	09:58:21	11,0	13	12,39	0	20,0	5	33,2	26,1
18	09:58:36	11,0	13	12,39	0	20,0	5	34,0	26,1
19	09:58:51	11,0	13	12,39	0	20,0	5	34,0	26,1

Data Log Management

The data log can be used to present historical data.

The data log can also be processed in a data processing program.

To change the data log setup

- Left-click on the "Setup" button above the logger tab view.
- Enter the changes as described above in "Log File Setup", "File Name", and "Parameter Selection".

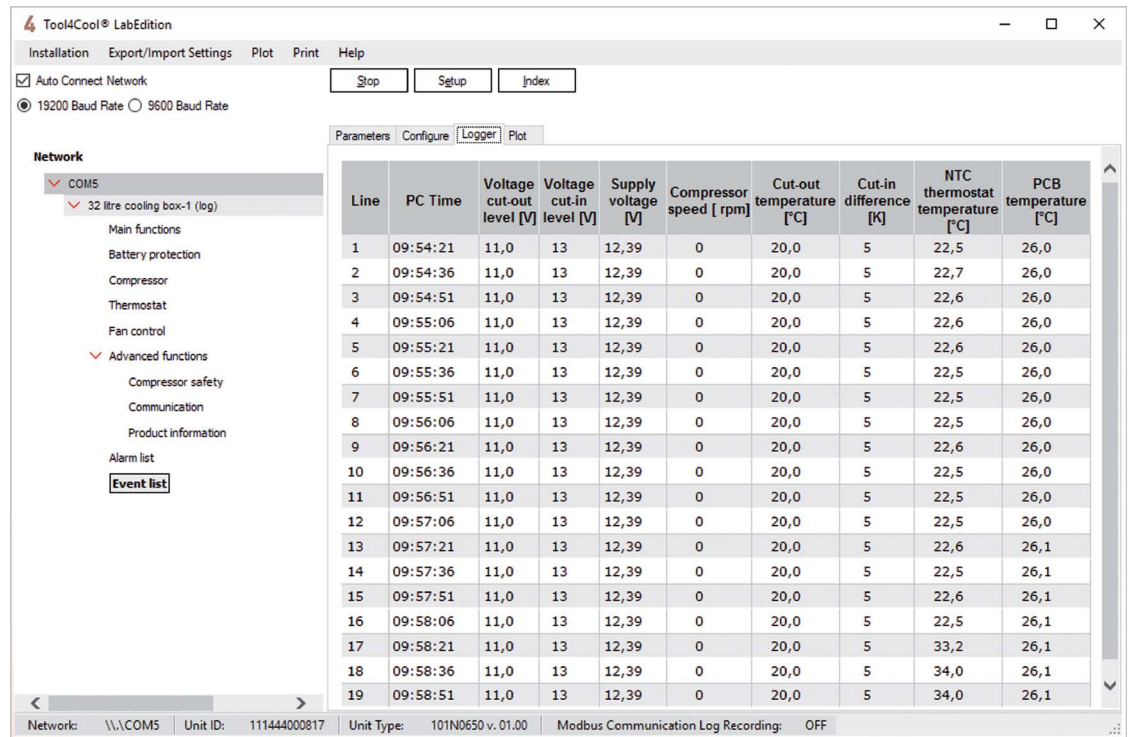
Example:

This screenshot is identical to the one above, showing the Tool4Cool LabEdition software interface with the 'Logger' tab active and displaying the same data log table.

To view a data log

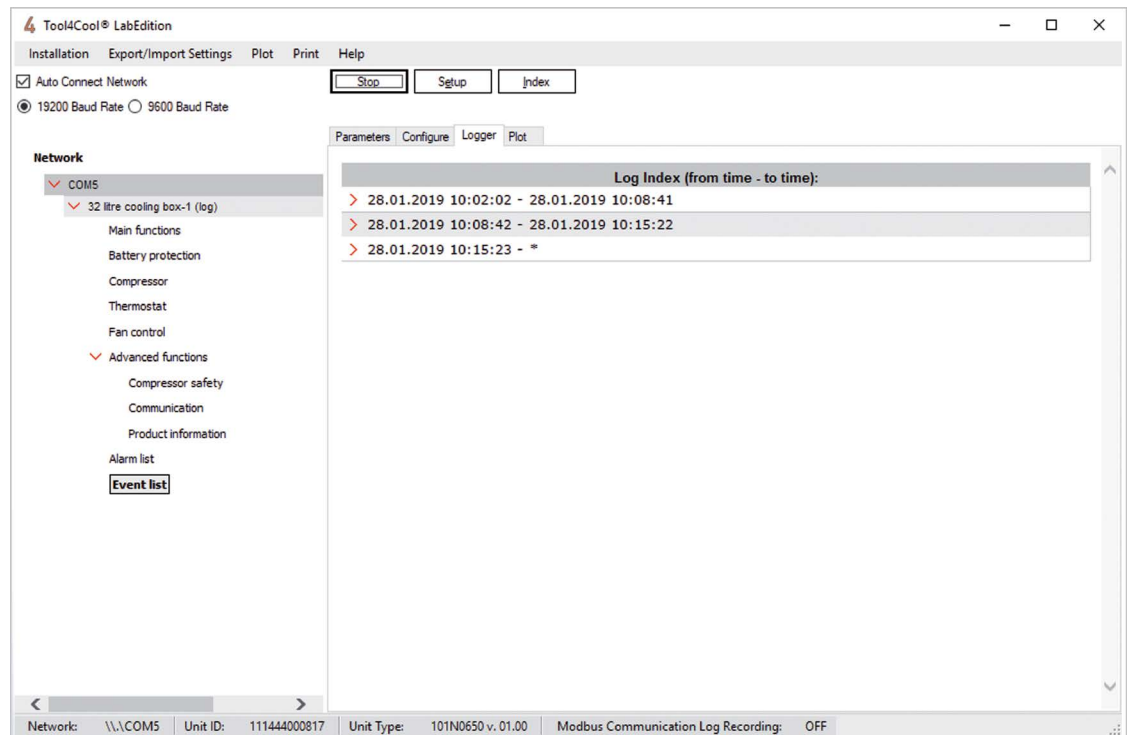
- Left-click on the "Index" button above the logger tab view.

Example:



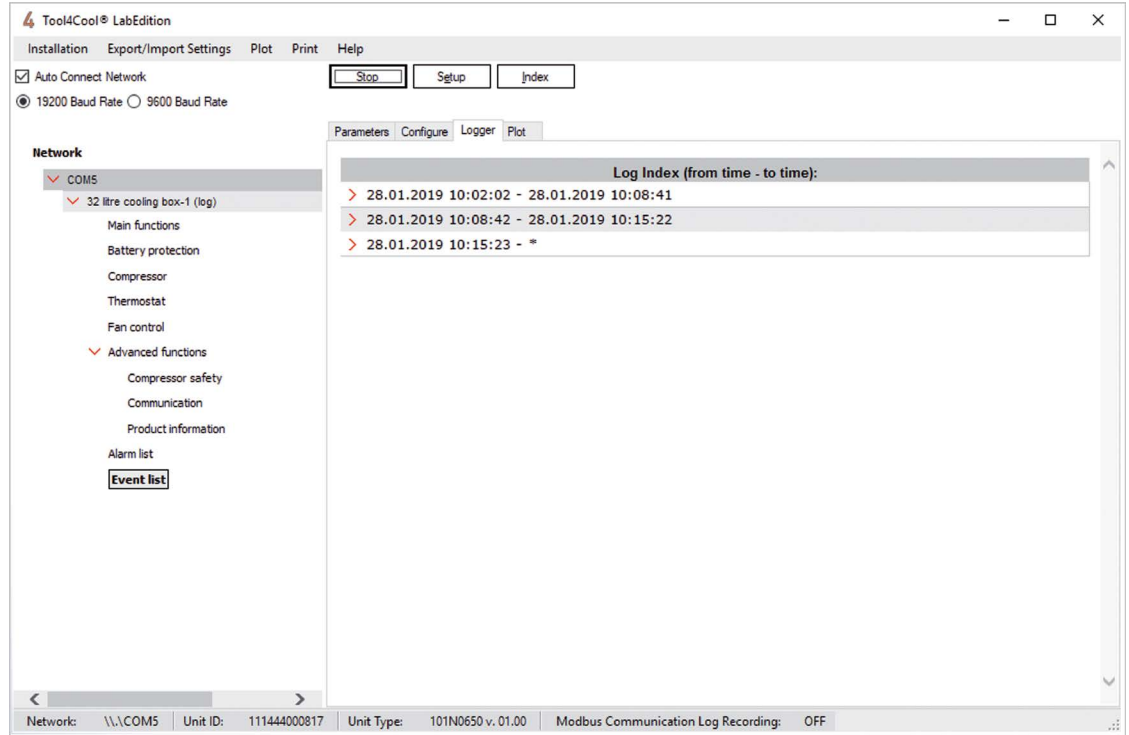
- The log index will appear.

Example:



- Each index item name indicates the date and time range of log data contained within the item.
- A maximum of 400 index items can be displayed. For more than 400 index items, a new level of index items is established, containing sub-indexes. Therefore, for very large logs, the Index items can contain many levels of sub-indexes.
- Real-time data can be viewed by opening the last index item.
- Click on the red arrow next to an index item to view its contents.

Example: Click on the arrow next to the last index item.



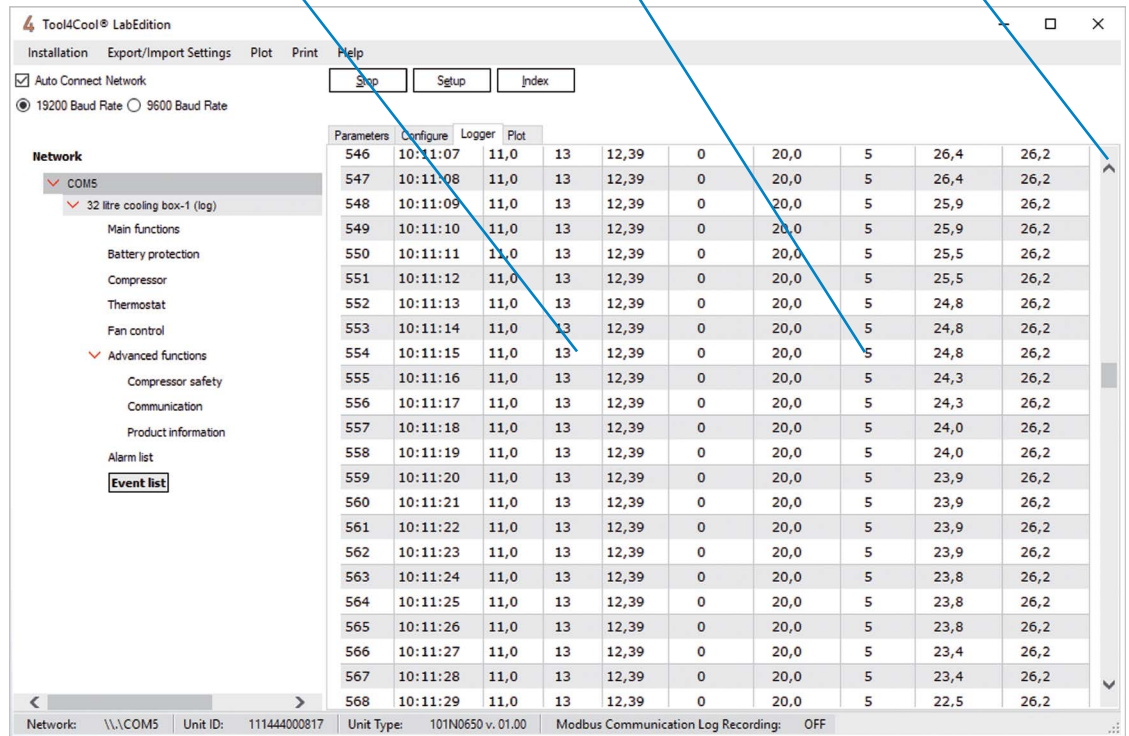
- The log data for this time interval will appear.

Example:

Click on any cell to view real-time data

Hold the cursor over a cell to view the parameter name

Click to use the scroll bar



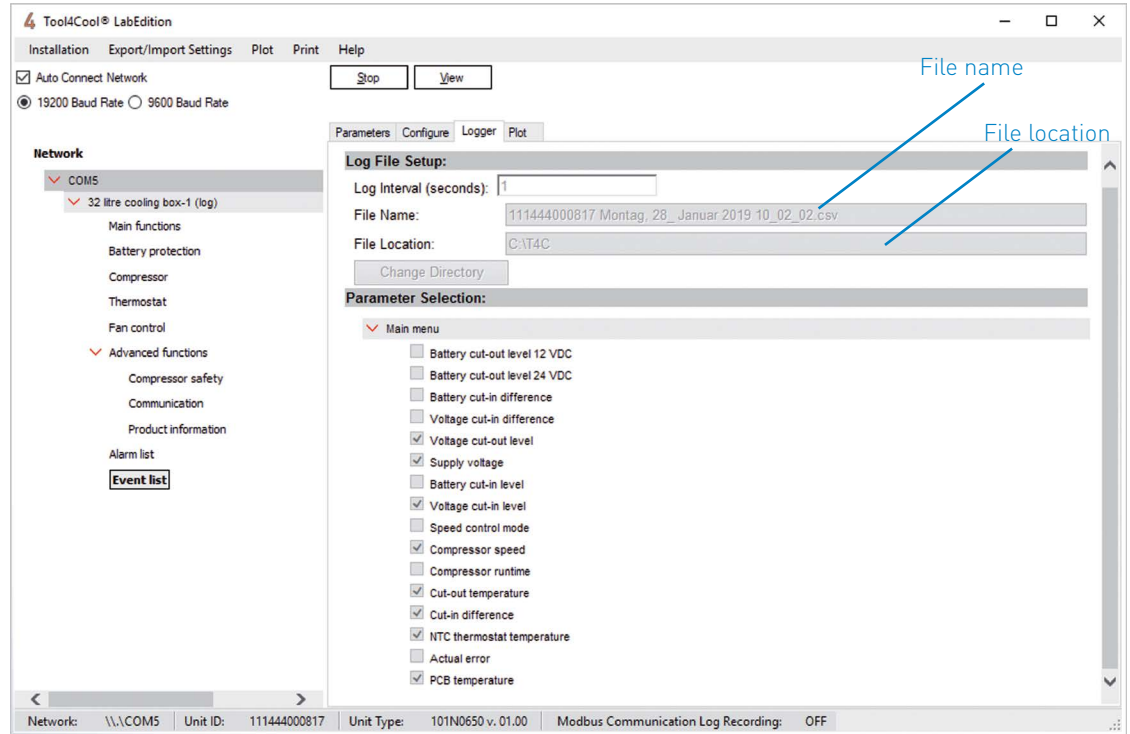
- Hold the cursor over a cell to view the associated parameter name. This feature is useful after making initial data entries, when the headings are no longer visible.
- For data in the last index item: Click in the cell field to view real-time data. The screen will scroll up stepwise as a new row of data is added in real-time at the bottom of the table.
- To stop the real-time scrolling view and freeze the display, click in the scroll bar.

Importing a Data Log File to Excel

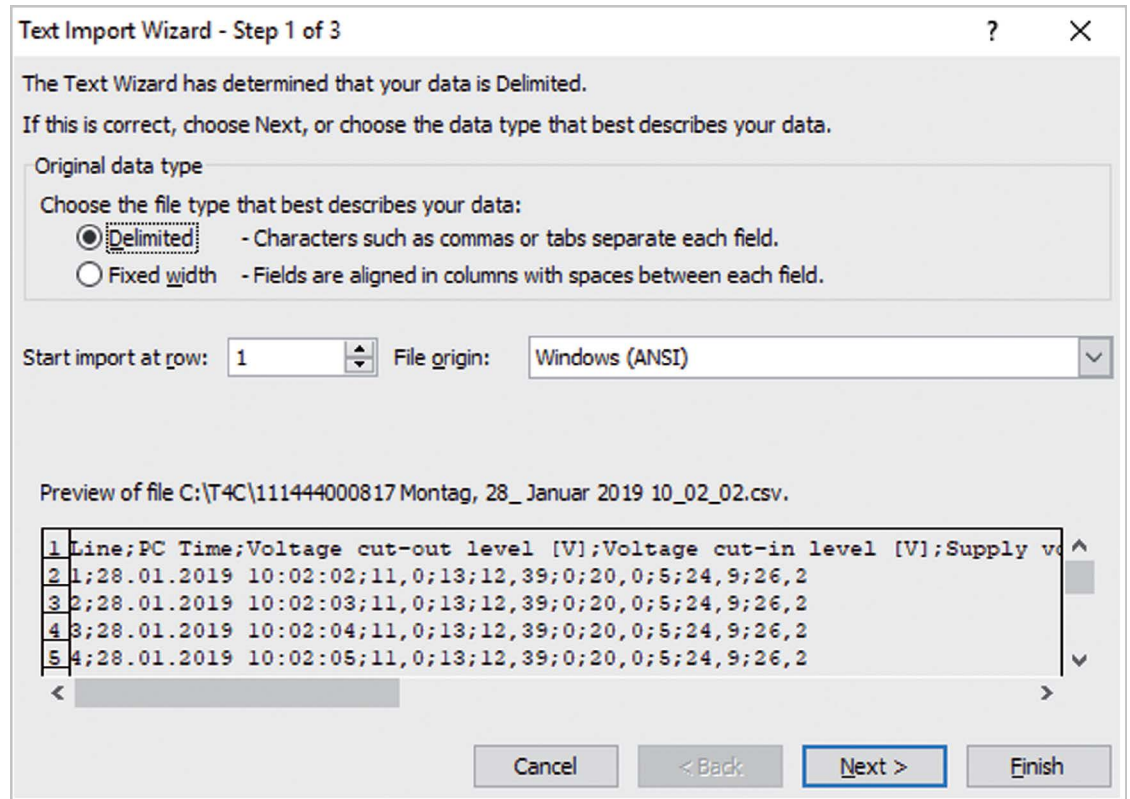
Data logs can be imported to Excel to adapt data for presentation purposes.

Procedure:

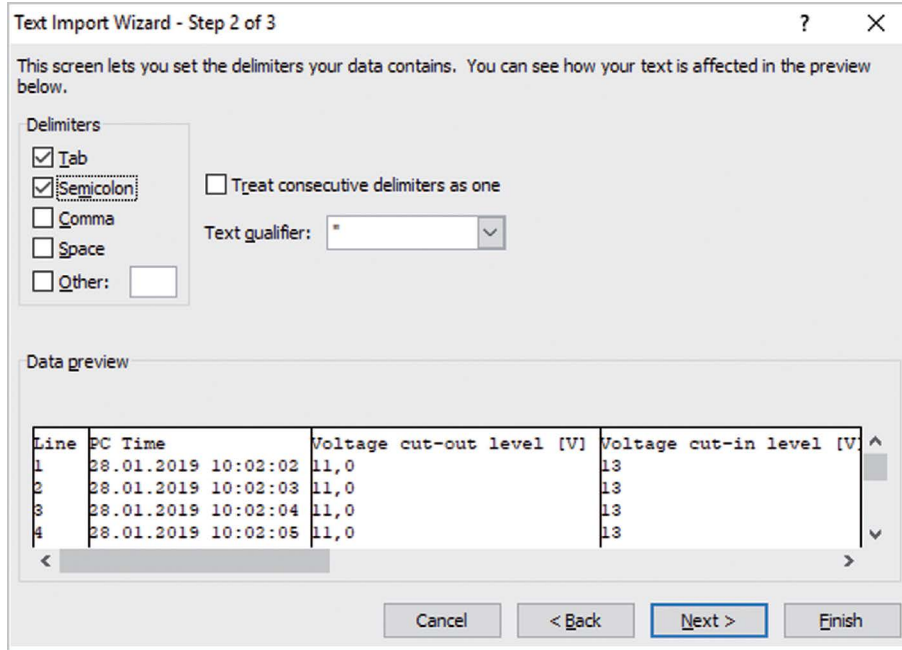
- Open Excel (Microsoft Office 2010 in this example)
- Open the data log file (see below how to find the location of the file)



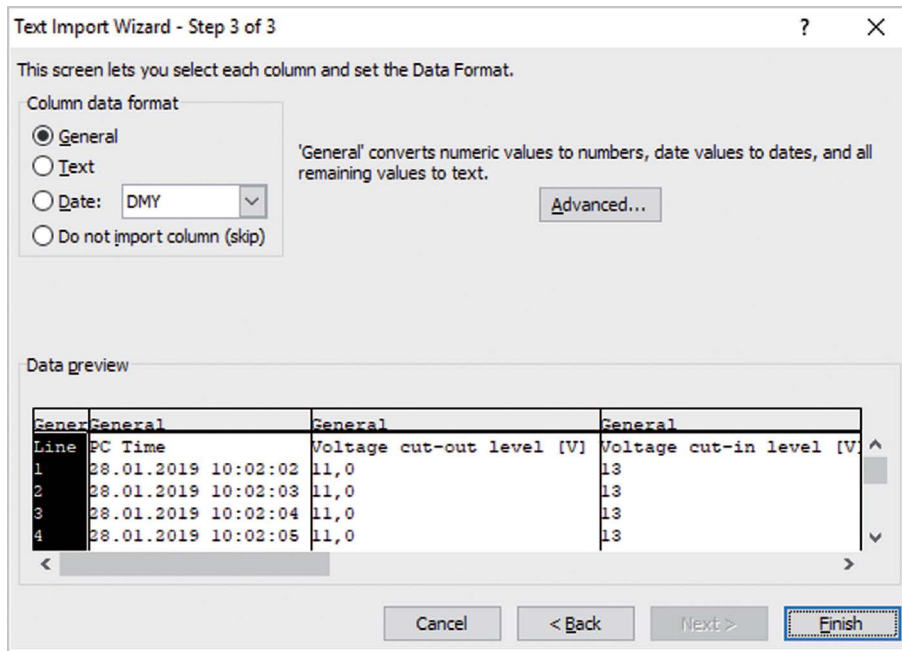
- A Text Import Wizard opens click Next



- Place a check next to "Semicolon" and click "Next".



- Click "Finish"



- The data log has now been imported into Excel

	A	B	C	D	E	F	G	H	I	J	K	L
1	Line	PC Time	Voltage cu	Voltage cu	Supply volt	Compressi	Cut-out ter	Cut-in diffe	NTC therm	PCB temperature [°C]		
2	1	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
3	2	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
4	3	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
5	4	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
6	5	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
7	6	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
8	7	28.01.2019 10:02	11	13	12,39	0	20	5	24,9	26,2		
9	8	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
10	9	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
11	10	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
12	11	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
13	12	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
14	13	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
15	14	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
16	15	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
17	16	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
18	17	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
19	18	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
20	19	28.01.2019 10:02	11	13	12,39	0	20	5	24,7	26,2		
21	20	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
22	21	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
23	22	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		
24	23	28.01.2019 10:02	11	13	12,39	0	20	5	24,8	26,2		

5.10 Plotting Logged Data

Use the plot tab view to set up and view plots of the data logs recorded under logger.

Important:

The plot function operates only when logged data is available, i.e. only when the logger is running.

Remember to save the plot while the data log is still running. Save the plot file in the plot menu

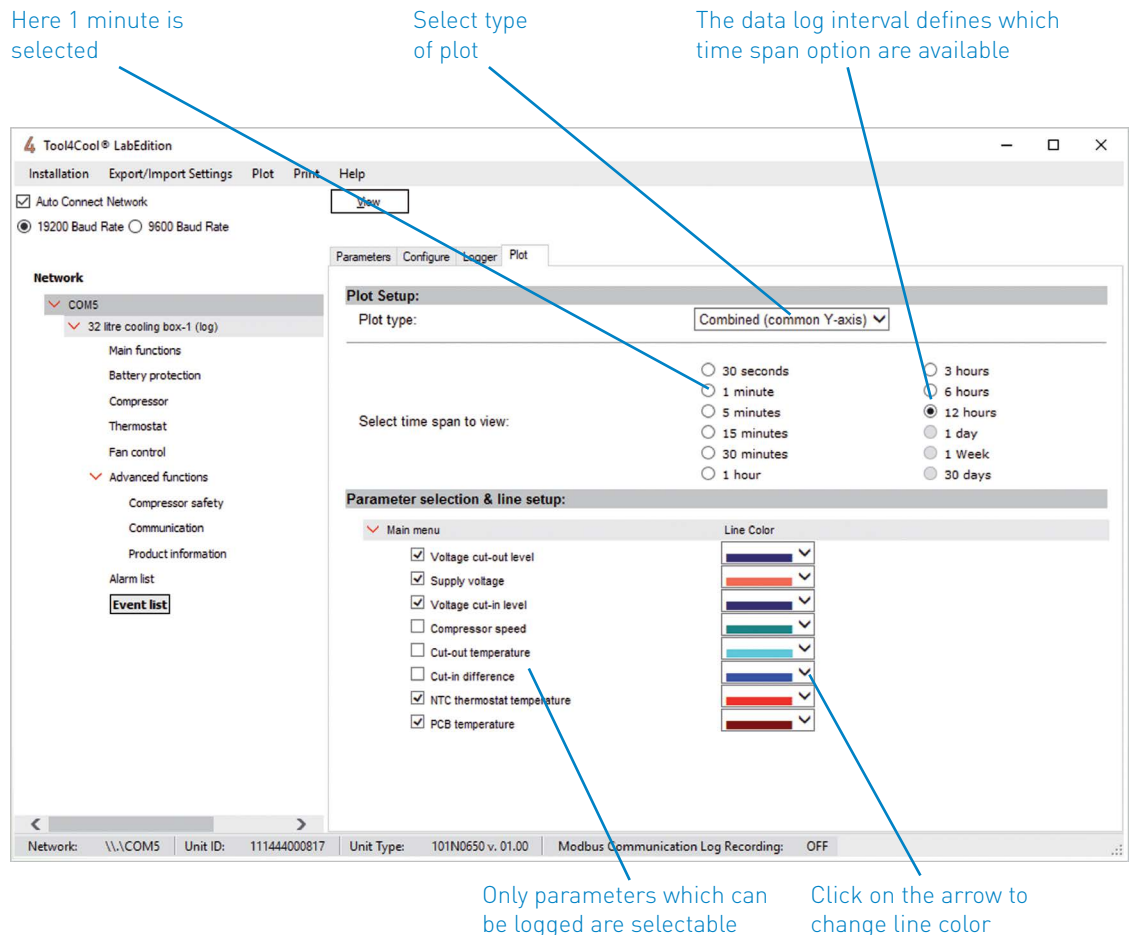
If the plot is not saved, the Tool4Cool® LabEdition plot will be lost when the log is stopped and cannot be retrieved.

Creating a Plot

Procedure:

- Click on the "Plot" tab view
- Plot setup: Choose the desired settings for plot type and time span. The data log interval defines which time span intervals may be selected for viewing. The shorter the log interval, the shorter the time span limits for viewing, on the screen without scrolling right or left.
- Parameter selection and line setup: Choose the parameters to be plotted by clicking in the box beside the parameter name. A check appears in the box, to show the parameter will be plotted. Change the line color if desired, by clicking on the arrow beside the line color field to view and select from the available colors.
- Click on the "View" button.

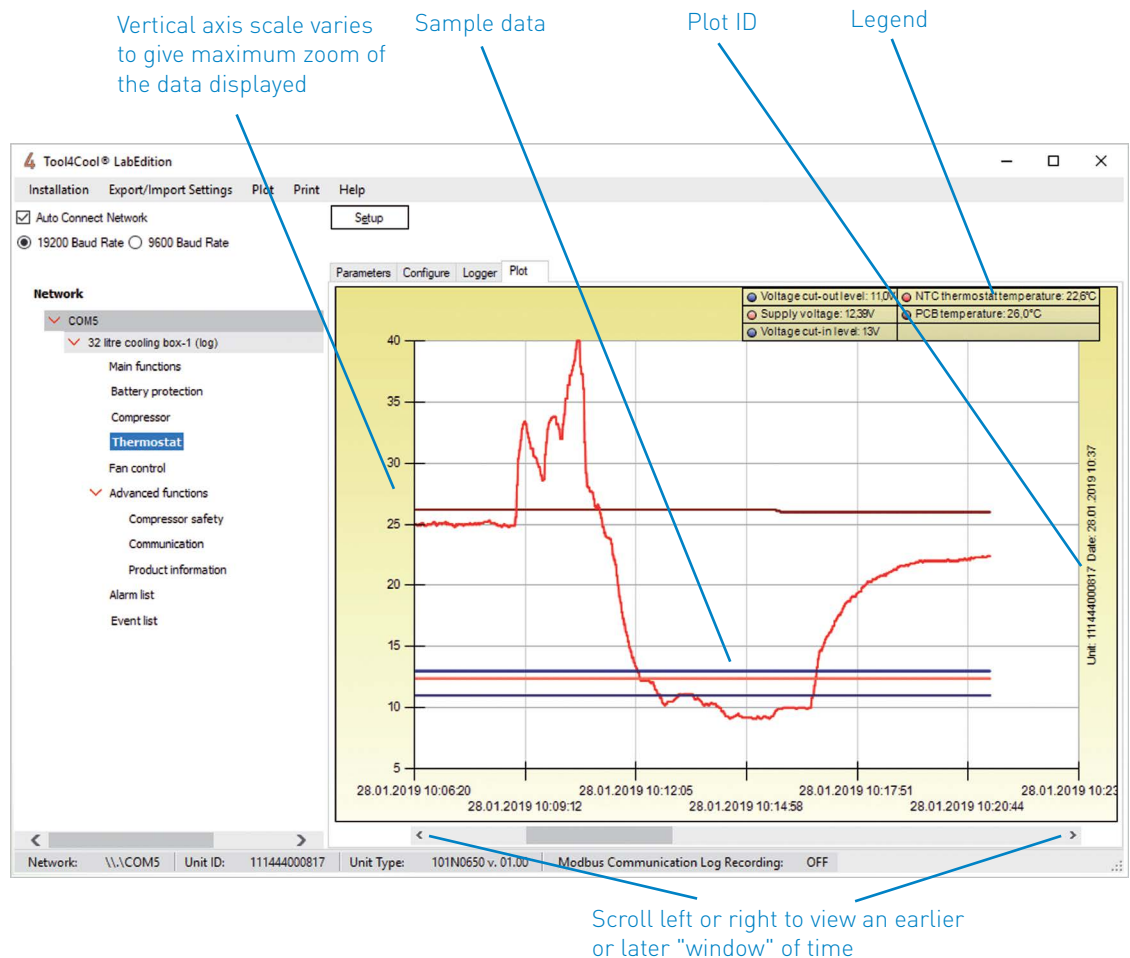
Example:



Result:

- A plot of the selected parameters is displayed.

Example of a Stacked Plot:



Features of a Plot

- A legend is located at the top corner, showing
 - o Line color for each parameter
 - o Real-time data value, or the most recent value available
- The plot ID on the right shows the controller serial number and the time of final data.
- The scale of the horizontal axis is defined by the selection in Plot Setup.
- To view the plot for an earlier or later period ('window') of time, scroll to the left or right along the horizontal axis.
- The scale of the vertical axis adjusts to fit the range of data on display, always providing maximum zoom. Therefore, the scale of the vertical axis is likely to change when scrolling horizontally to a new "window" of time to view a new set of data.
- Click on a plot to activate it.
- Right-click on a line in the plot to view the sample data at that point. the data are shown according to Time; Parameter name; Parameter value in a bar directly above the plot.

Re-Scaling the Horizontal Axis (x-axis)

- To reduce or increase the scale on the horizontal (time) axis, reduce the time span in the plot setup.
- There is no zoom function for the horizontal axis

Zoom on the Vertical Axis (y-axis)

- To zoom in on the vertical axis, click and drag to the RIGHT, marking the area to be zoomed into, then release. The area to be zoomed in is marked in blue.

The scale of the x-axis remains unchanged.

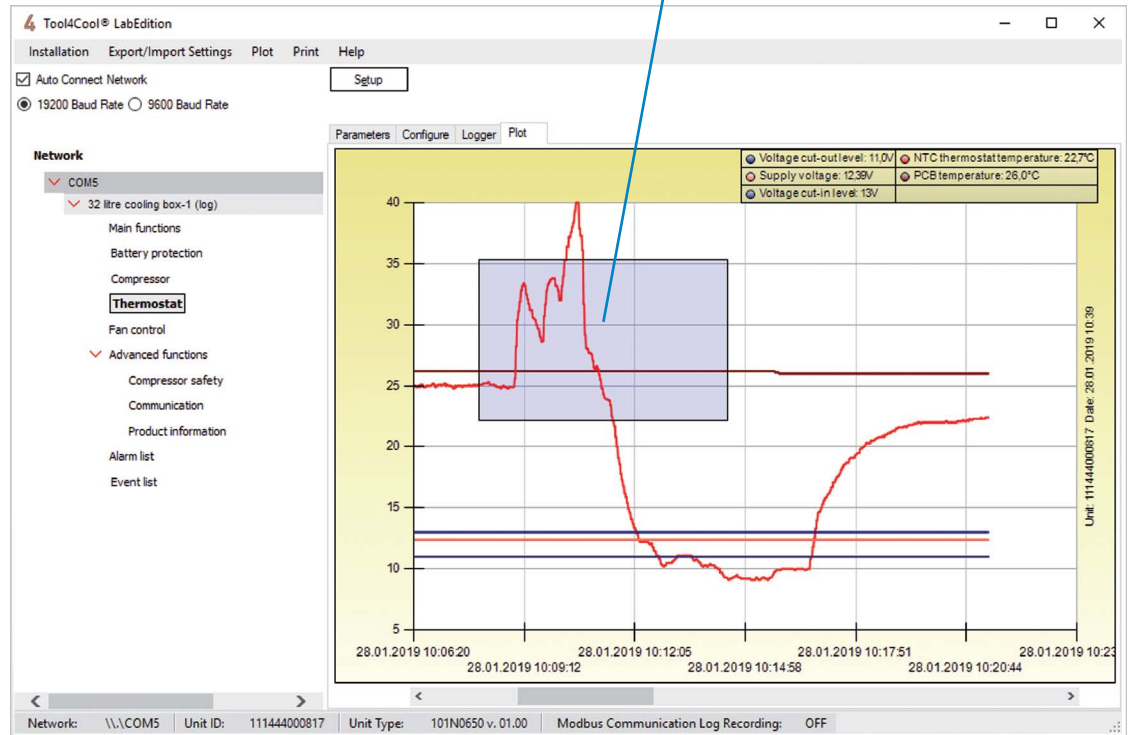
Please Note:

Zoom on the vertical axis functions best in a combined plot. In a stacked plot, the vertical axis is already scaled for maximum zoom.

- To return to the original view, left-click in the plot field of the zoomed view

Example of zoom in on a combined plot:

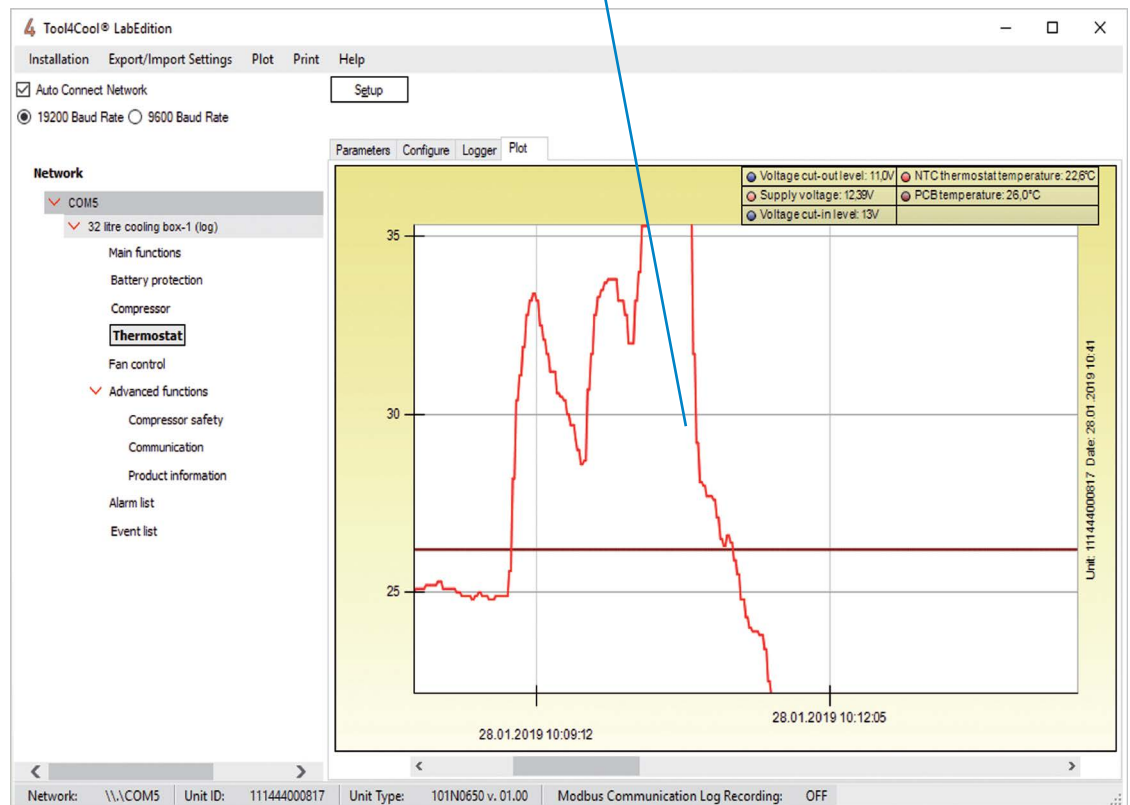
To zoom in on the vertical axis, click and drag to the right, then release



- To zoom out on the y-axis, click and drag to the LEFT, marking the area to be zoomed out, then release. The area to be zoomed out is marked in red.

Example:

To zoom out, click and drag to the left, then release



- To return to the original view, left-click in the plot field of the zoomed view.
- In a zoomed view, right click on the plot to read point data.
- To change the settings of the plot, click on the "Setup" button to return to plot setup.

Plotting for Multiple Controllers

Tool4Cool® LabEdition can run plots for many controllers simultaneously. One plot can be run per controller.

The configuration of each individual plot can be changed independently of the other plots.

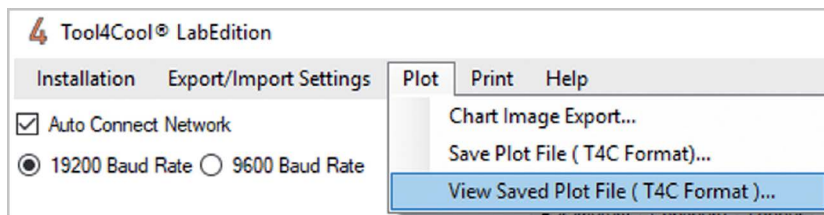
The plot setup, parameter selection and line setup settings made for a plot on one controller will automatically appear as default settings for the next plot setup on a controller of the same type. This feature is designed to simplify the task of setting up plots for a series of many similar controllers.

Saving a Plot – Important Note!

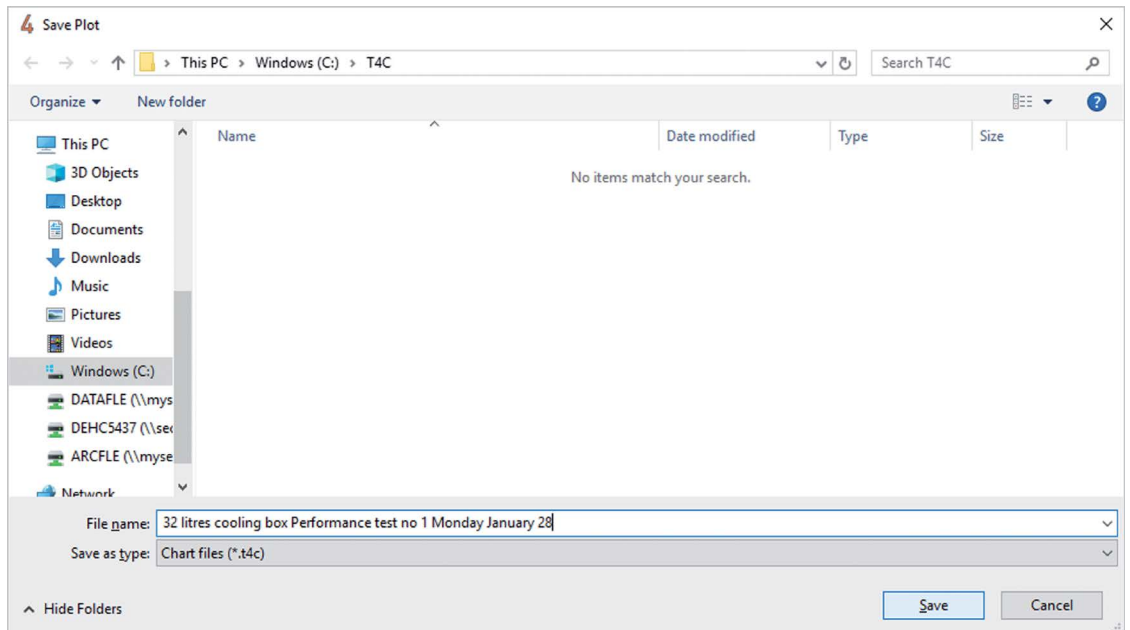
Remember to save the plot while the data log is running. Once the log has stopped, the Tool4Cool® LabEdition plot is lost and cannot be retrieved.

Procedure:

- Click on "View" in the plot tab view to view the plot.
- Click on "Plot" in the menu bar.
- Click on "Save Plot File (t4c format)..." in the Plot drop-down menu.



- In the save plot dialog, enter a file name and choose a location, then click on "Save".



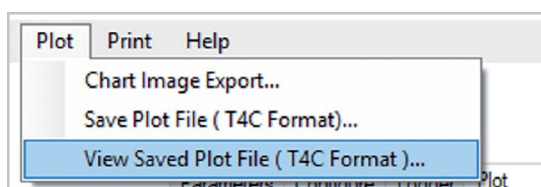
Result:

- The plot is saved as a .t4c file in the format: Plot name.controller ID.t4c

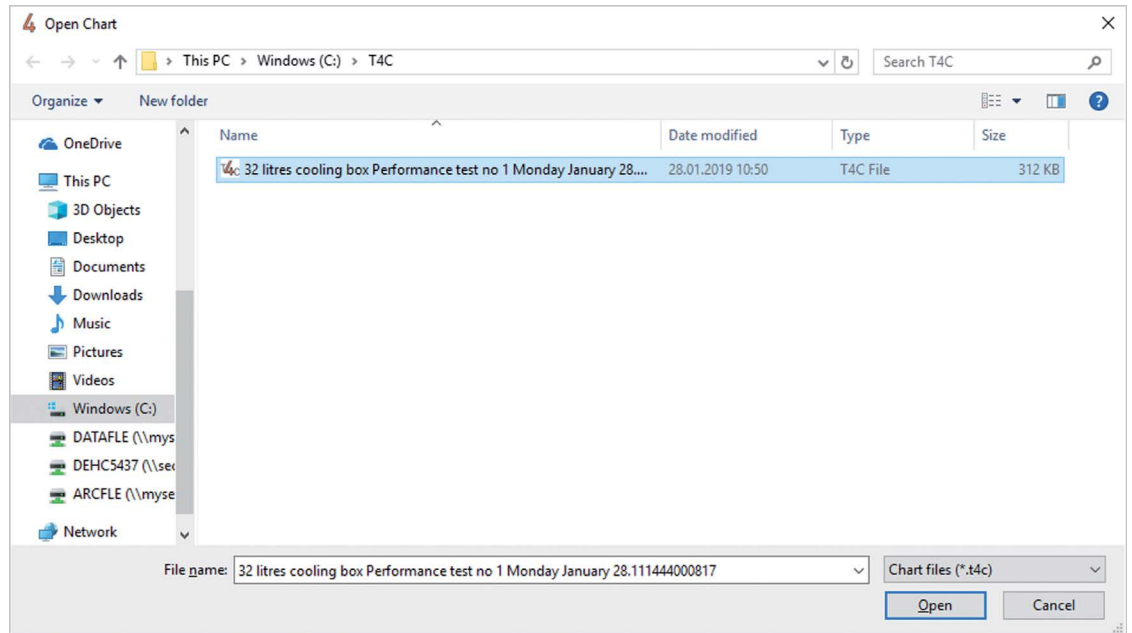
Viewing a Saved Plot

Procedure:

- Click on "Plot" in the menu bar.
- Click on "View Saved Plot File (t4c format)..." in the Plot drop-down menu..



- The open chart dialog box will open.
 - Browse to the file location and click on "Open".
- Note: A controller does not need to be connected to view a plot file.

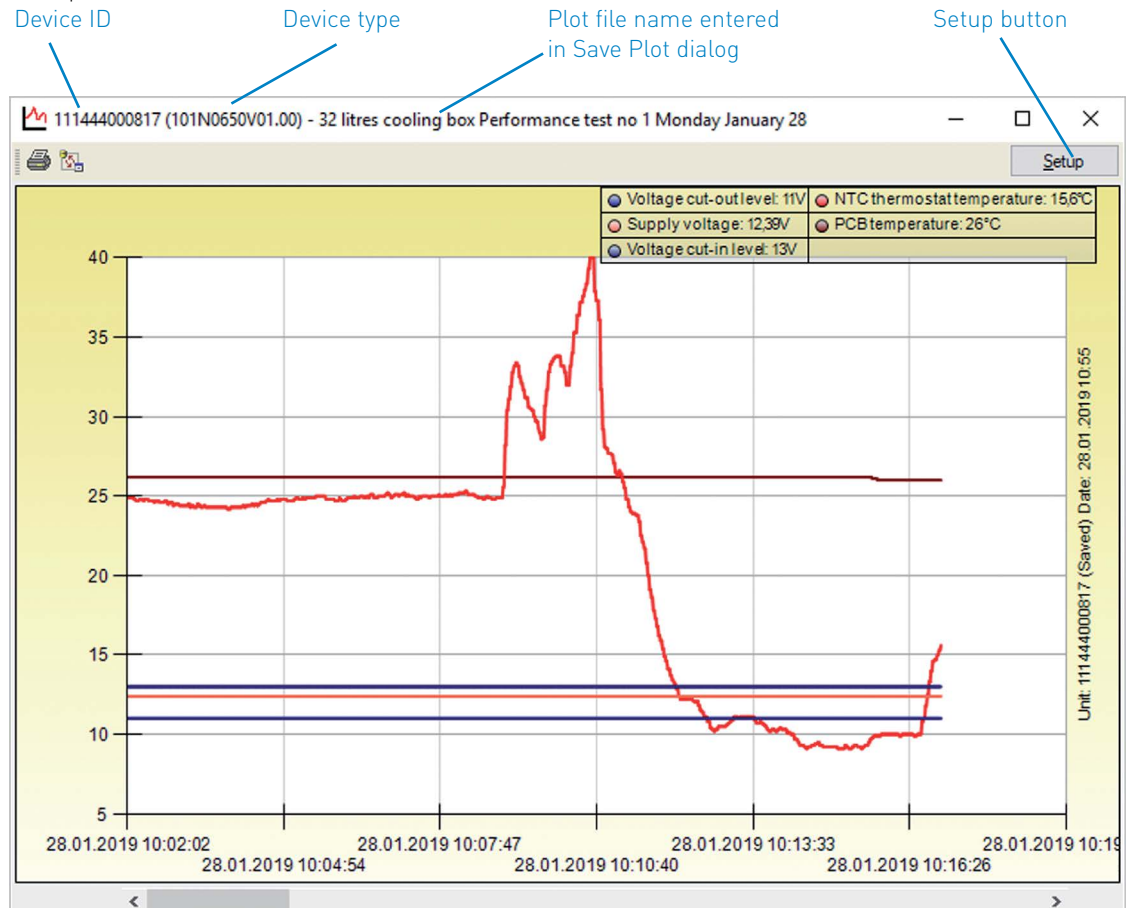


Result:

- The plot file opens.
- The plot file has all the functionality of the plot view:
 - Scroll horizontally to view different "windows" of time in the plot.
 - Read sample data from the plot.
 - Zoom in and out.
 - Click on the "Setup" button to change the plot settings.

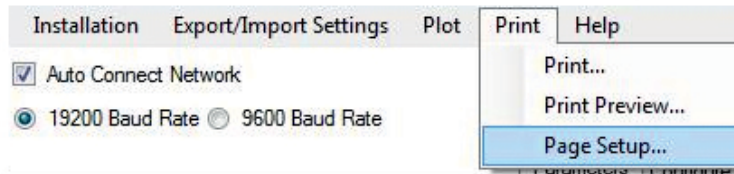
Note: The "Setup" button in a saved plot is located at the top right of the window.

Example:

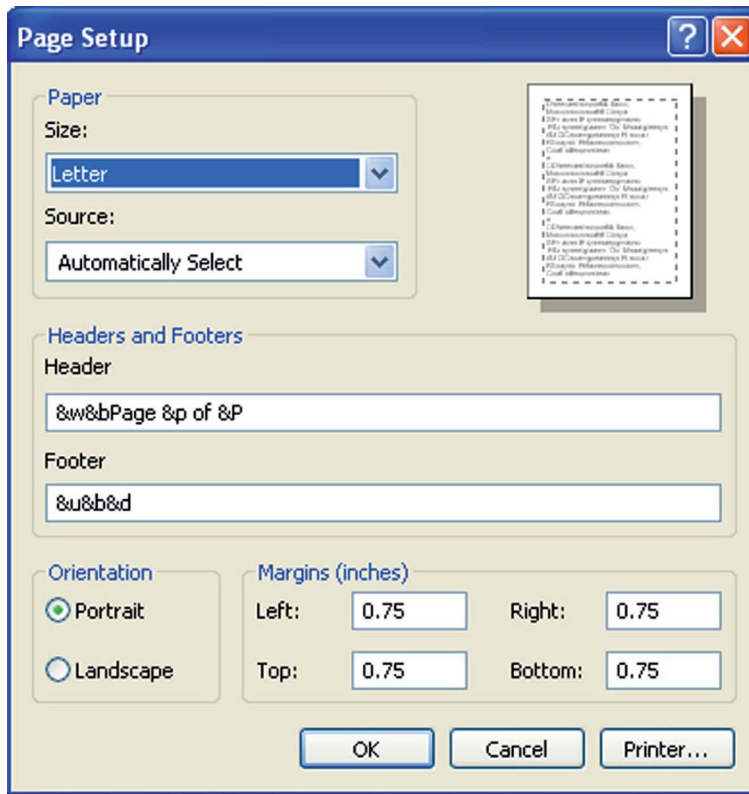


5.11
Printing Tab Views

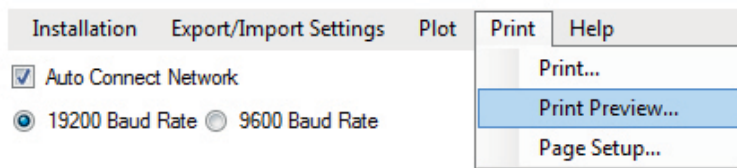
To print the tab views including data logs and plots, use the "Page Setup...", "Print...", and "Print Preview..." options under print in the menu bar.



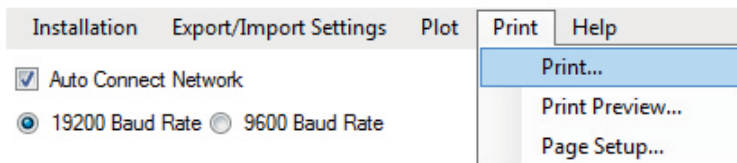
Example of Page Setup Dialog:



Example of Print Preview Dialog:



Example of Print dialog:

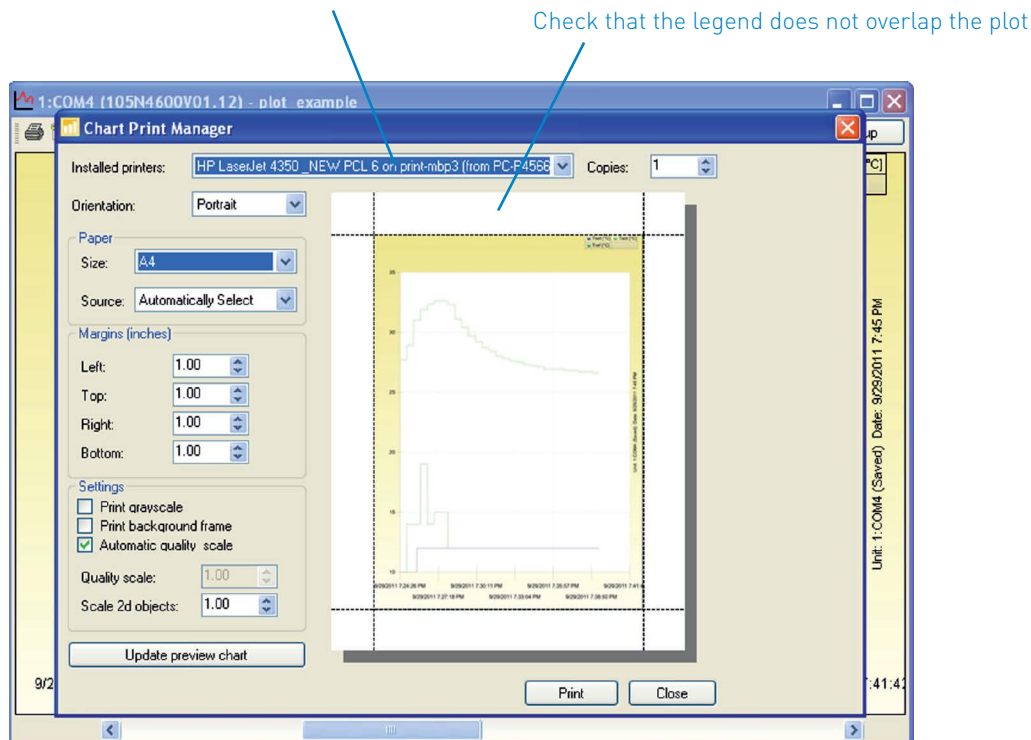


**5.12
Printing Plots**

For plots, the functions of "Page Setup", "Print Preview", and "Print" are combined into a single dialog, the Chart Print Manager dialog. Therefore, the same dialog will appear when these options are selected in the "File" drop-down menu.

Example of Chart Print Manager Dialog:

Note: Cannot print to older versions of Adobe pdf



Note:

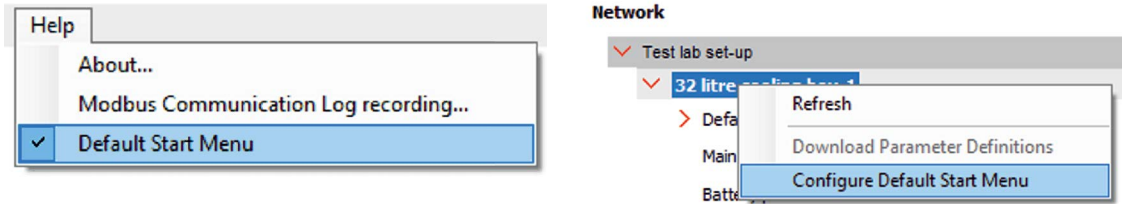
The legend size changes with screen resolution. For low screen resolution, the size of the legend can be so great that the legend overlaps the plot in the print preview.

If the legend overlaps the plot in the print preview, adjust the screen resolution and/or Tool4Cool® LabEdition window size until the legend is free of the plot, before printing.

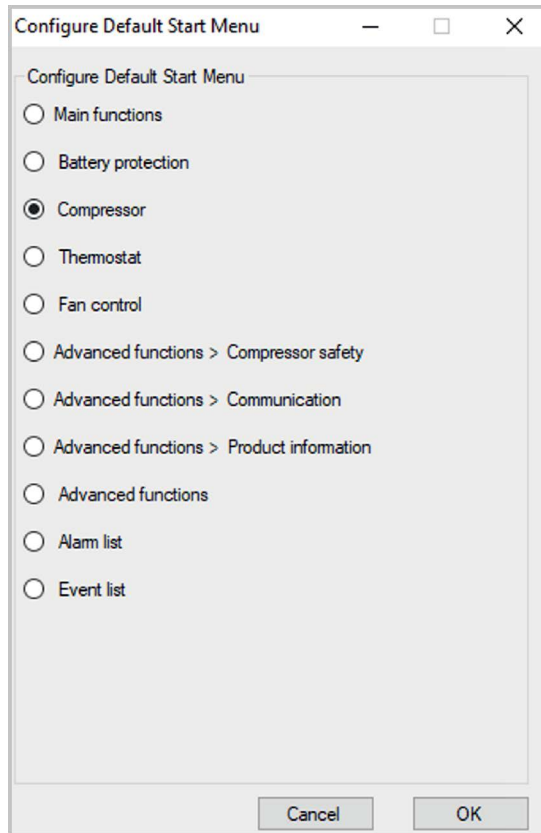
5.13 Default Start Menu

The "Default Start Menu" enables a pre-selected menu when Tool4Cool® starts up.

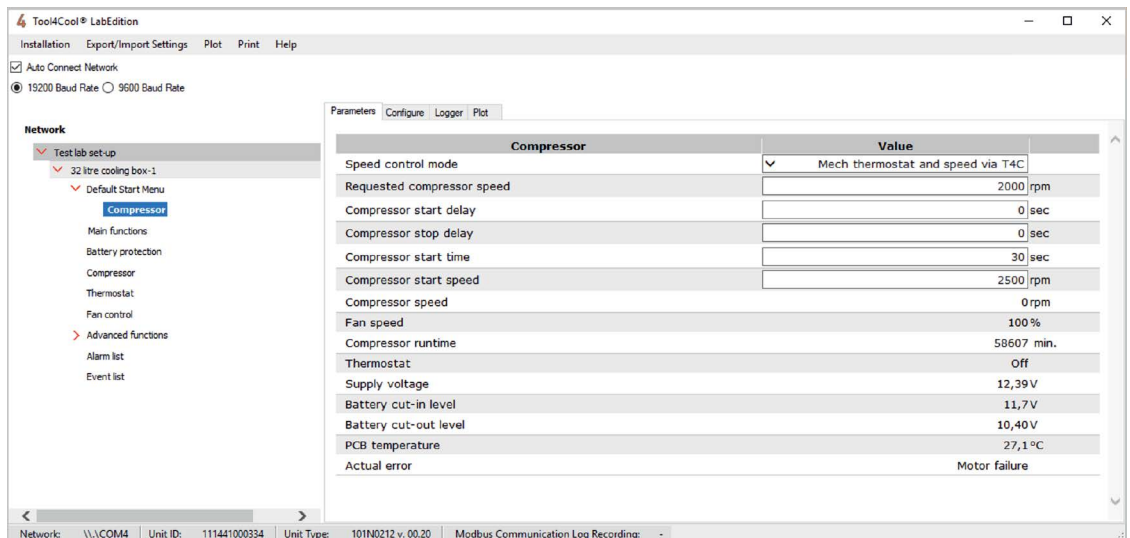
- The "Default Start-up Menu" has to be enabled under the "Help" menu.



- After enabling the "Default Start Menu" right-click on Controller name (or controller series number) to open the "Configure Default Start Menu".
- The screen below pops up for the user to select the sub menu.



Note: The user can only select one menu in the "Default Start-up Menu".
Result: The selected menu will open and display the next time Tool4Cool® is started.

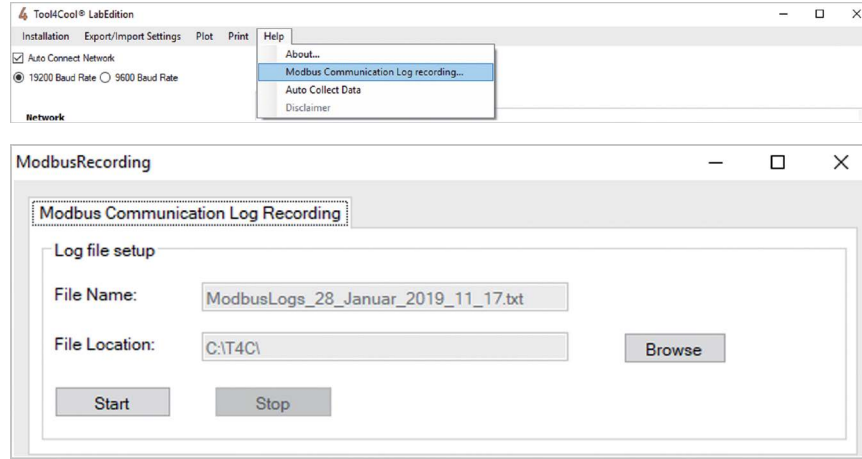


5.14 Modbus Communication

Modbus communication functionality helps to capture communication log between unit and Tool4Cool®. Only used by developers designing Modbus interfaces for external controllers.

Procedure:

- Select “Modbus Communication Log Recording” under “Help”
- Select the log file location and click on the “Start” button to start recording modbus logs.



File Name: On start, every time a new log file will be created with name as “Modbus_[Currant date time].txt ”

File Location: The user can browse a folder location to store modbus logs by clicking “Browse” button. The default location is “C:\T4C”

“Start” button: Clicking on the “Start” button, starts recording the log in selected file in selected path.

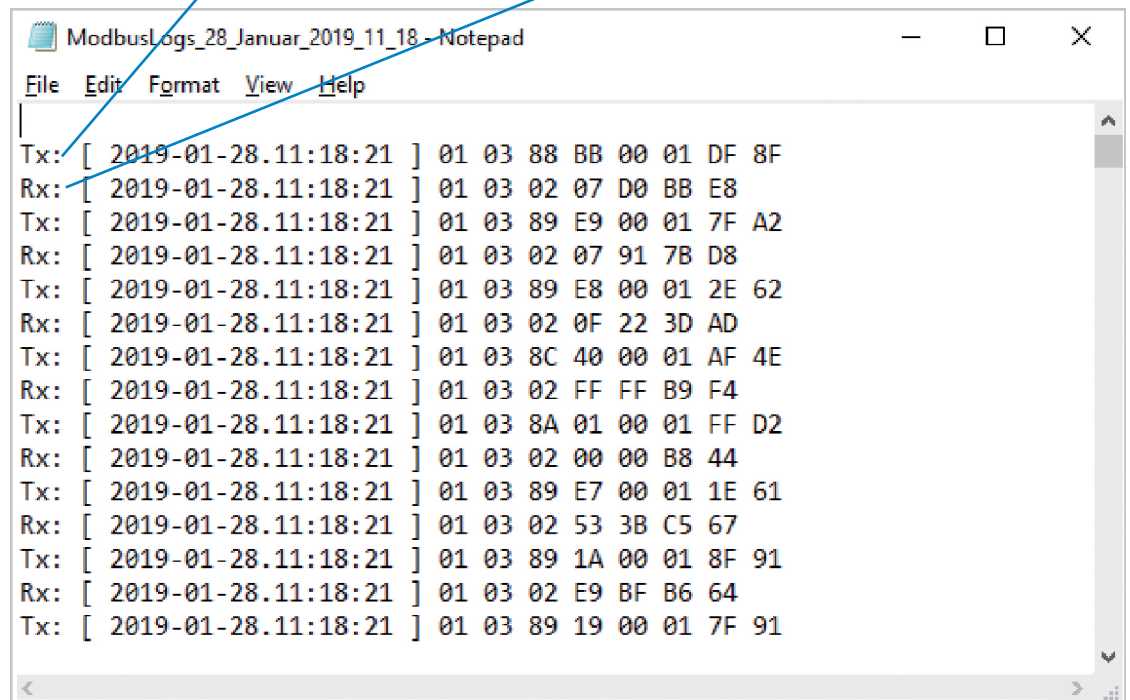
“Stop” button: Clicking on the “Stop” button, stops recording the log.

- To stop modbus recording, click on the “Stop” button.

Note: Modbus recording stops when exiting the application.

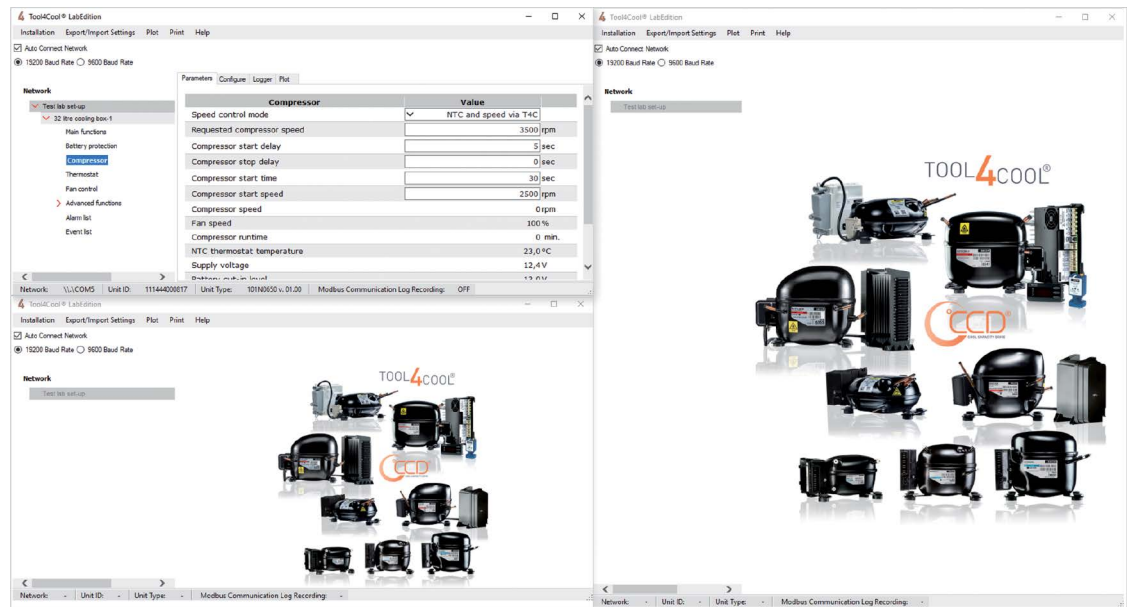
Result:

Data transmitted from Tool4Cool® to Unit Data received from Unit to Tool4Cool®



5.15 Multiple Sessions of Tool4Cool®

Users can open the multiple sessions of Tool4Cool®. The application might be slower, if more than three instances are opened. The recommended maximum number of instances is thus three.



Note: Once the Secop °CCD® controller is connected in one instance, it cannot be detected in another instance.

TROUBLESHOOTING

6.1 Alarms and Error Messages

The majority of alarms and error messages are specific to the individual Secop °CCD® controller. Details of these alarm codes and error messages can be found in the controller Product Documentation and/or in the Parameter Tab View of the individual controller.

The following Tool4Cool® LabEdition error messages are common to all controllers:

Error Message	Cause and Action
Access denied	The level of access permitted by the product key does not permit the given action. To obtain broader access rights, obtain a new product key from the supplier.
Communication error	Communication with the controller is not working correctly. Check that the cables are connected correctly and check the configuration settings.
Parameter setting was rejected by unit	The controller does not permit setting the parameter. Check the controller Operating Instructions.
The parameter is not known	1. The parameter is not relevant for this controller. 2. The product key does not permit access to the given parameter. To obtain broader access rights, obtain a new product key from the supplier.
Parameter value exceeds the maximum allowed	The user has attempted to enter a value above the maximum permissible value. Enter a lower value, or change the maximum permissible value.
Parameter value is below minimum allowed	The user has attempted to enter a value below the minimum permissible value. Enter a higher value, or change the minimum permissible value.
Parameter value is out of range	The user has attempted to enter a value outside the permissible range. Enter a different value, or change the permissible range.

6.2 User Is Unable to Configure the Controller

Cause 1:
User access rights do not permit the desired change to the configuration of the controller.

Solution:
The user access rights are defined in the product key provided by the supplier of the controller. To obtain access to additional parameters and functions please contact the supplier to obtain a new Product Key with broader access rights.

Cause 2: Product key is incompatible with controller configuration

Solution:
Contact the supplier of the controller to confirm that the product key provided is compatible with the available configurations of the controller. If not, obtain a new product key from the supplier of the controller.

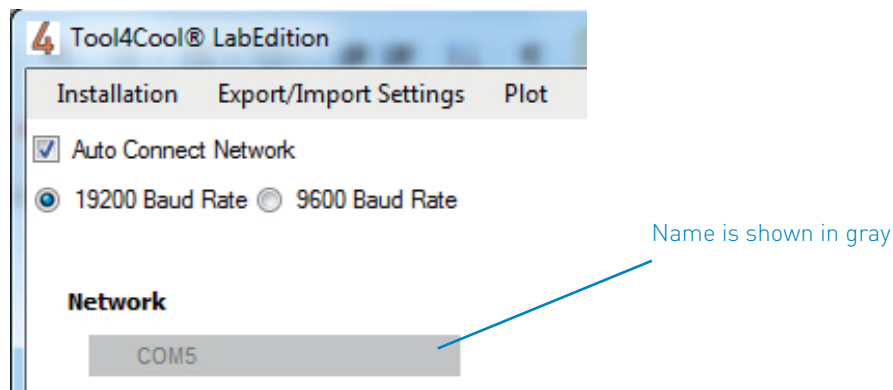
**6.3
Connected
Controller or
Network Is Not
Visible in Tree View**

- Solution:
- Check that the product key for the product is imported into Tool4Cool® LabEdition.
 - Wait for elapse of the refresh interval after setting up the controller or network connection.
 - Use the add unit function, see section 4.7 Finding a Controller Using Add Unit.
 - Scan for all controllers connected to the network using the Refresh function, see section 4.5 Refreshing a Network.
 - If the controller or network is still not visible, check that the cabling is correct and that the software has been set up correctly as described in section 4. Software Configuration.

**6.4
Network Name Is
Displayed in Gray in
Tree View**

Cause:
A cable has been disconnected from the computer, the controller, or the network adaptor.

Example:



Solution:
Check that the cabling is correctly connected. When the cable is reconnected correctly, the name will appear in black in the tree view.

**6.5
Controller Not
Visible**

Cause:
The parameter definition file may be missing.

Solution:
Check the controller Operating Instructions and the Quick Start Guide to determine whether an import of a parameter definition file is required for this controller. The parameter definition file is available from the supplier of the controller. Import the parameter definition file according to the instructions in 4.5 Importing Other Files.

Look in the System log file to help find the cause of the problem (see section 6.8 System Log).

**6.6
Controller Performs
Differently than
Expected after
Importing a
Configuration File**

Cause:
A configuration file created using the "Copy Configuration from unit" function will include only the parameters to which the user has access rights. Therefore when such a configuration file is applied to a different controller, it can perform differently than expected if the controller incorporates more parameters than those to which the user has access rights.

- Solutions:
- The user can request a new product key from the controller supplier to obtain broader access rights, or
 - The user can request a new configuration file from the controller supplier

6.7 Selection Options Are Not Visible in Plot Tab View

Cause:

When no data log is running, it is not possible to set up and view a plot. Therefore, neither the setup options or the "View" button will be available in the plot tab view.

Solution:

Set up and start the data log in the logger tab view. Then the plot setup options will be available.

6.8 System Log

The system log records data whenever the Tool4Cool® LabEdition software is in use. If requested, please send the system log for the relevant period of use to Secop for support in troubleshooting.

The system log is located in the folder:

Program Files → Secop Compressors → Tool4Cool® LabEdition → System log

The system log is an .xml file, named as follows: Log - Start date – Start time.xml

Example:



Log 9_29_2011 3_56_15
PM.xml

6.9 Error Message Appears when Computer Attempts to Go on Standby

Cause:

Standby is not compatible with a controller connected to a COM (USB) port

Solution:

Disable the standby function when a controller is connected to a COM port.

6.10 Configuration of Controller Unsuccessful

When programming a saved configuration file, the final dialog box Unit Configuration may indicate "Unit Configuration Unsuccessful".

Cause 1:

There may be an error in the configuration programming.

Solution:

Check the configuration for the file report which logs the events occurring during configuration.

The file report may show the cause of the error.

Cause 2:

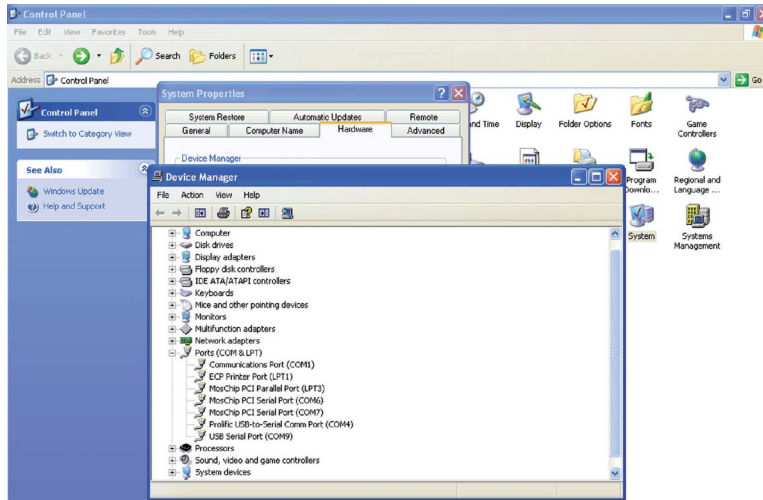
A communication error may have occurred. Check the cabling.

Check the configuration for the file report, which may show the cause of the error.

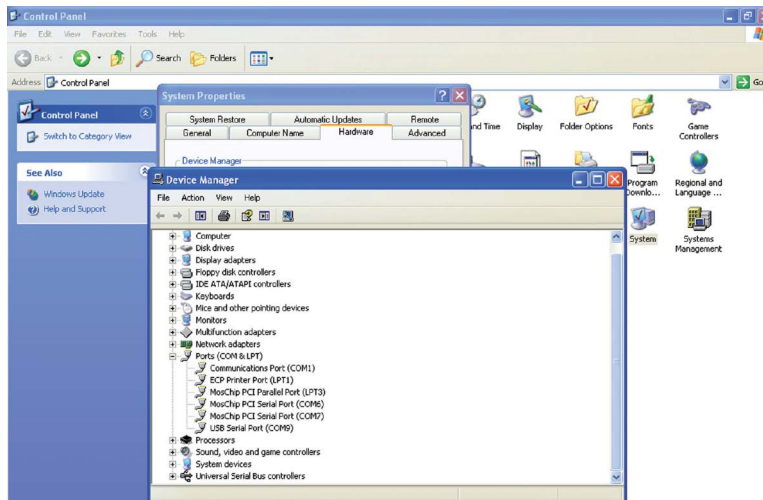
6.11 Connect Network Dialog: Cannot Find Which COM Port to Select

Solution:

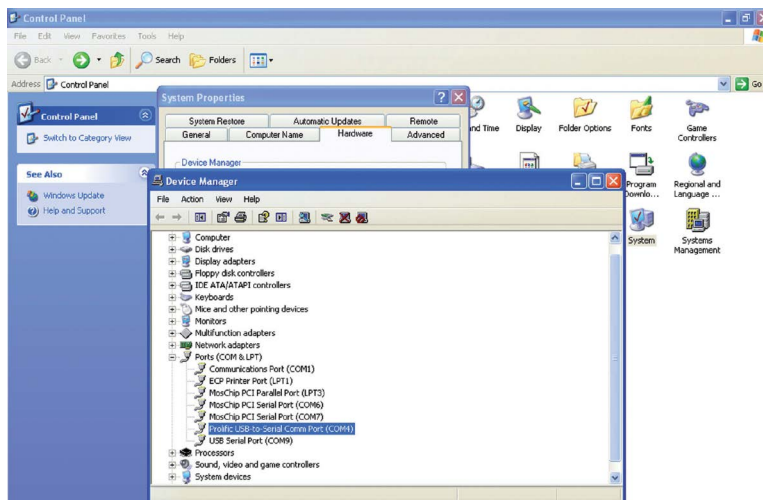
With the gateway connected to the PC, open the Device Manager in Windows Control Panel to view the COM ports in use, listed under 'Port'. In this example COM1, COM4, COM6, COM7, and COM9



1. Remove the gateway cable from the USB port on the PC. Under 'Port' one of the COM ports will disappear. In this example, COM4 disappears.

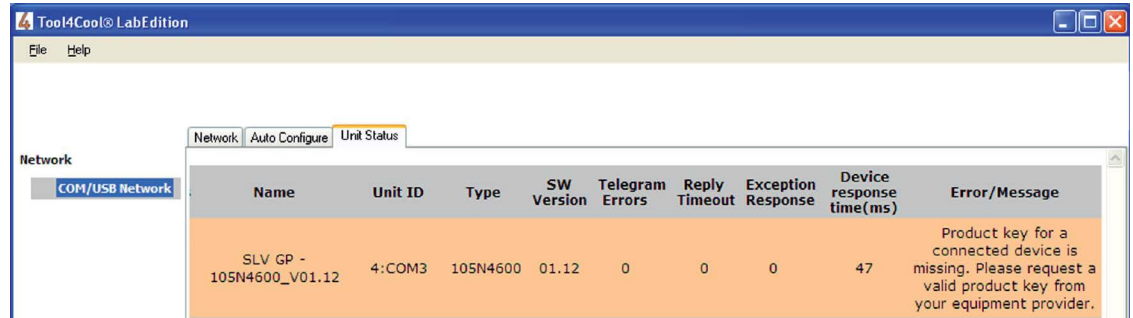


2. Then reconnect the gateway cable to the same USB port on the PC. The COM port which disappeared in step 1 should reappear on the 'Ports' list, and is therefore the correct port to choose in the Connect Network dialog. In this example, the port which reappears is COM4.



6.12
Unit Status Error/
Message “Product
key for connected
device is missing.
Please request valid
product key from
your equipment
provider”

Cause: Product key is missing. Example:

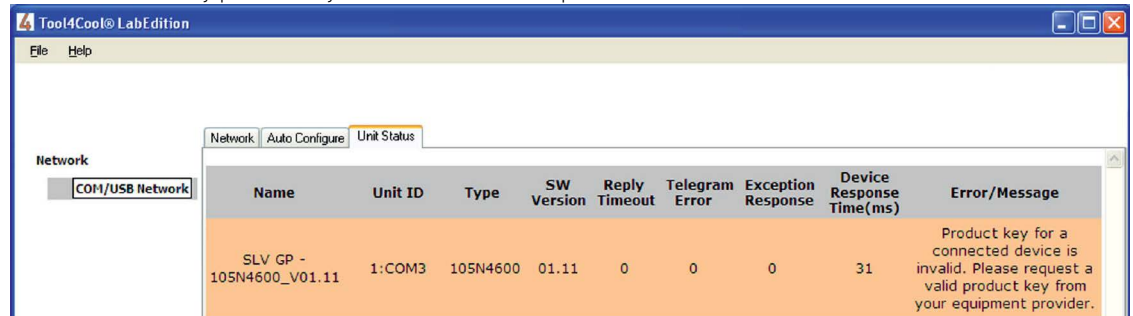


Name	Unit ID	Type	SW Version	Telegram Errors	Reply Timeout	Exception Response	Device response time(ms)	Error/Message
SLV GP - 105N4600_V01.12	4:COM3	105N4600	01.12	0	0	0	47	Product key for a connected device is missing. Please request a valid product key from your equipment provider.

- Solution:
- Add a valid product key for the connected device.
 - If a valid product key is not available, request a valid product key from the equipment provider.

6.13
Unit Status Error/
Message “Product
key for connected
device is Invalid.
Please request valid
product key from
your equipment
provider.”

Cause: Product key provided by user is invalid. Example:

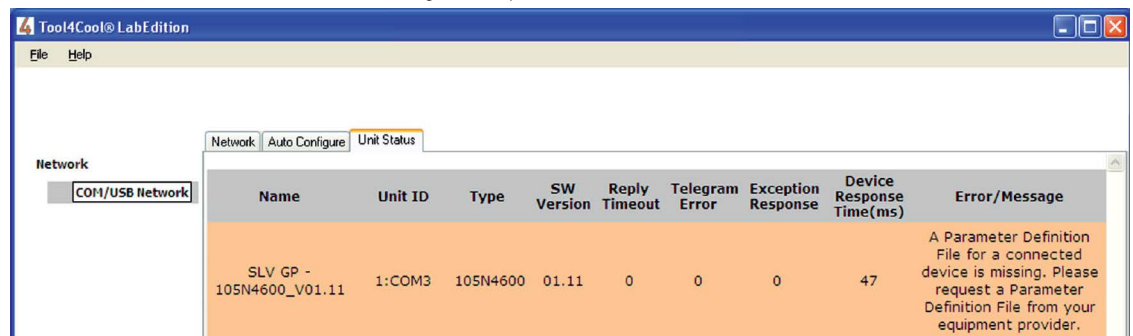


Name	Unit ID	Type	SW Version	Reply Timeout	Telegram Error	Exception Response	Device Response Time(ms)	Error/Message
SLV GP - 105N4600_V01.11	1:COM3	105N4600	01.11	0	0	0	31	Product key for a connected device is invalid. Please request a valid product key from your equipment provider.

- Solution:
- Add a valid product key for the connected device.
 - If a valid product key is not available, request a valid product key from the equipment provider.

6.14
Unit Status Error/
Message “Parameter
Definition file for
connected device is
missing.
Please request
Parameter definition
file from your
equipment provider”

Cause: Parameter Definition file missing. Example:

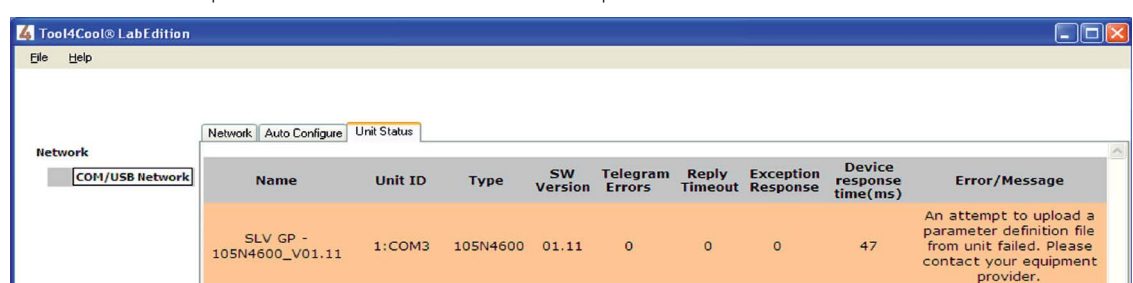


Name	Unit ID	Type	SW Version	Reply Timeout	Telegram Error	Exception Response	Device Response Time(ms)	Error/Message
SLV GP - 105N4600_V01.11	1:COM3	105N4600	01.11	0	0	0	47	A Parameter Definition File for a connected device is missing. Please request a Parameter Definition File from your equipment provider.

- Solution:
- Import a valid parameter definition file for the connected device.
 - If a valid parameter definition file is not available, request a valid parameter definition file from the equipment provider.

6.15
Unit Status Error/
Message “An
attempt to upload
Parameter Definition
file from unit failed.
Please request
Parameter definition
file from your
equipment provider
and import it.”

Cause: Could not upload Parameter definition file. Example

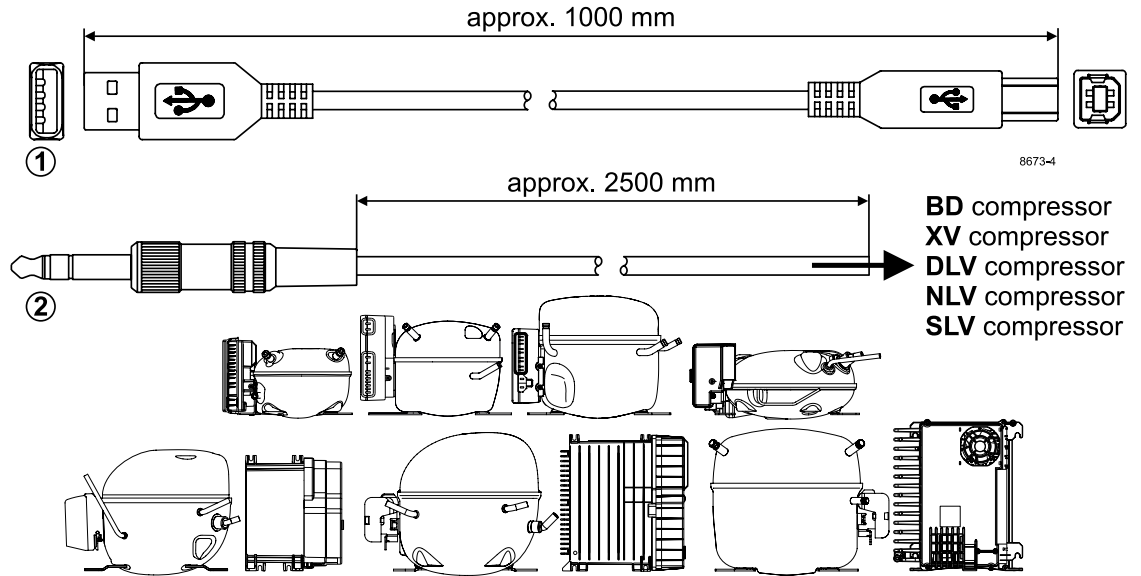


Name	Unit ID	Type	SW Version	Telegram Errors	Reply Timeout	Exception Response	Device response time(ms)	Error/Message
SLV GP - 105N4600_V01.11	1:COM3	105N4600	01.11	0	0	0	47	An attempt to upload a parameter definition file from unit failed. Please contact your equipment provider.

- Solution:
- Check device connection.
 - Import valid parameter definition file for connected device.
 - If valid parameter definition file is not available, request valid parameter definition file from equipment provider.

ONE WIRE/LIN GATEWAY 105N9501

7.1 Instructions

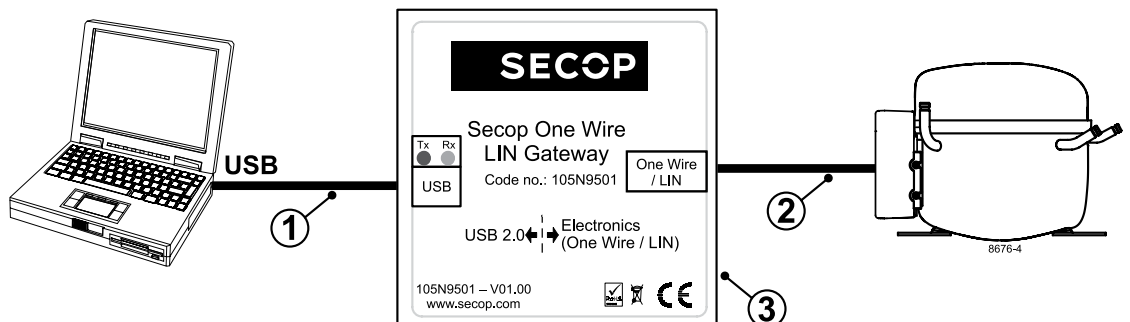


Gateway 105N9501 package contains:

Pos.	Description
1	USB 2.0 A/B cable
2	One Wire/LIN Gateway communication cables for various Secop compressor series/controllers
3	Secop One Wire/LIN Gateway Length, Height: 55 mm / Width: 82 mm / Depth: 80 mm



Please install the latest **Virtual COM Port Driver** from Future Technology Devices International Ltd. www.ftdichip.com/Drivers/VCP.htm



TOOL4COOL®



TOOL4COOL® SOFTWARE - FLEXIBLE CONTROL SETTINGS

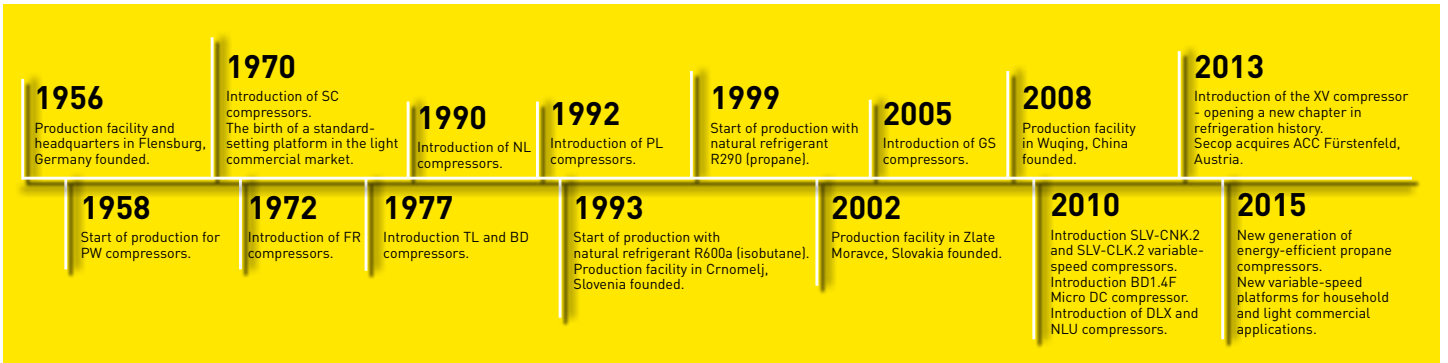
TOOL4COOL® is a unique PC software tool that enables you to precisely configure your Secop compressors to your cooling systems.

Via microprocessor-based controllers, TOOL4COOL® gives you easy access to all parameters. These can be changed, monitored, downloaded or uploaded to get the optimum performance out of your cooling system.

TOOL4COOL® covers a wide range of applications within parking cooling, light commercial cooling and transport cooling and much more. Using TOOL4COOL®, you can determine the basic specifications of your product, giving you the ability to clearly differentiate yourself in the market.



OUR JOURNEY SO FAR



Low Cooling Capacity High

