NRT tool Manual

SAUTER ITALIA SPA

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Contents

Chapter 1 **About the manual**

This manual is designed to be an aid during installation and use of NRT tool.

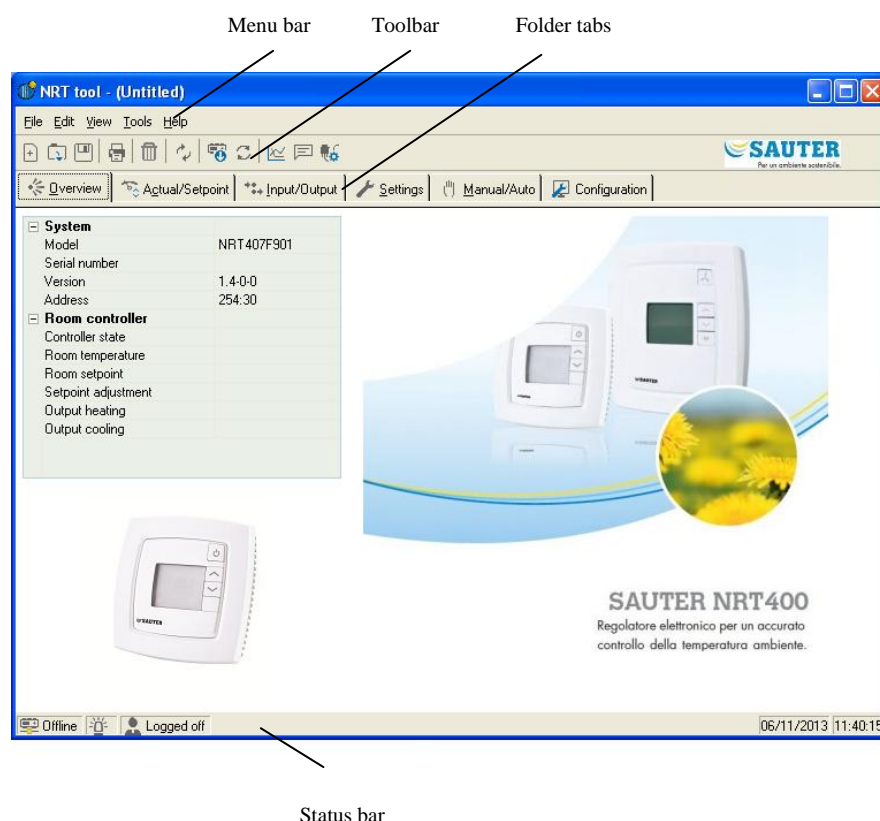**More information**

More information about NRT can be found in:

- *NRT407 Manual* – Manual for the NRT407F90x controllers

- *NRT405F901 Manual* – Manual for the NRT405F901 controller

The information is available for download from SAUTER ITALIA SPA's homepage, www.sauteritalia.it.

Chapter 2   Introduction to NRT tool

NRT tool is a Windows-based PC-program for configuration and maintenance of the controllers in the NRT407 and NRT405 series. It has not been designed with the intention of being a full SCADA program.

The display window is divided into several parts:

Menu bar   Toolbar   Folder tabs

Status bar

Menu bar: Standard Windows type drop-down menus.

Toolbar: Gives direct access to various functions. All the functions in the NRT toolbar are also accessible through the menu bar system.

Folder tabs: Give access to a number of folders that can be shown one at a time in the area below the tabs.

This manual will mainly describe the functions of the items in the menu bar and the toolbar. Since the contents of the folders vary depending on which of the models that are connected they will not be covered in detail in this manual. Use the appropriate NRT manual for reference.

Chapter 3 **Installation and start-up**

To install and run NRT tool you need a PC running Windows 2000, Windows XP, Windows Vista or Windows 7.
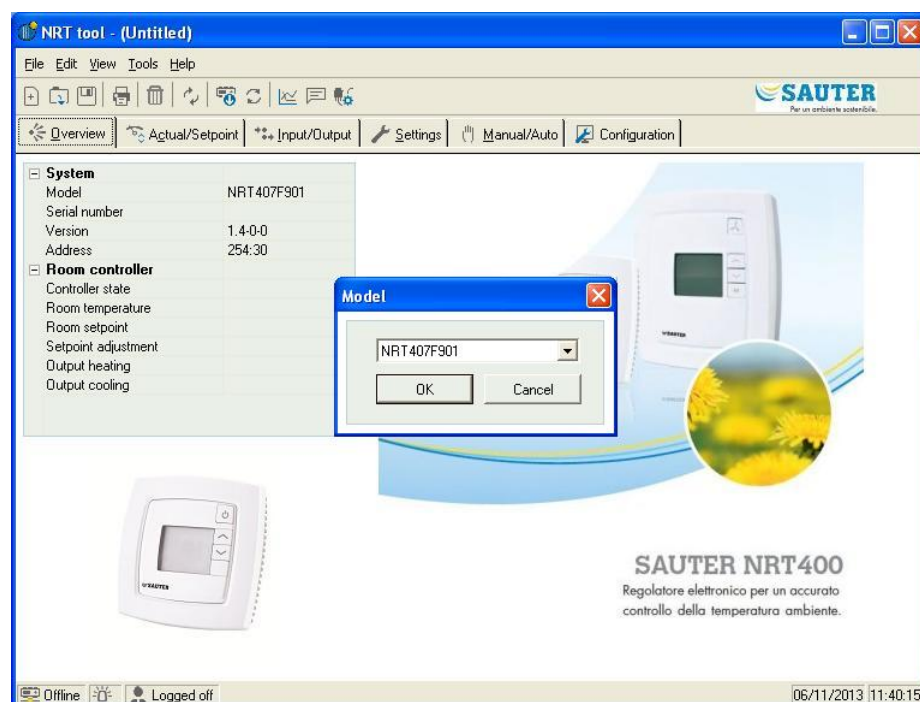
It is a self-installing program, double-click on the setup.exe file and follow the instructions of the installation program.

On start-up, NRT tool will automatically search for any controller connected to the computer and connect to it if it is of a type suitable to the program being loaded. If the program does not find a suitable NRT controller, it will start offline.

NRT tool always starts with a box where the user chooses which NRT model is used with the System folder displayed. Make sure that you choose the correct model or functionality of the connected controller may be lost.

Setting the controller address

The controller address is set in the Configuration folder. Each controller has a unique PLA- and ELA-address on delivery. This address should be entered instead of the NRT tool default address (254:30).

Chapter 4 **Menu bar**

The menu bar has five drop-down menus:

4.1 File

The items in the file menu are used to handle configuration files. The data describing a configuration can be saved as a file. Any number of configurations can be saved, as long as there is enough available disk space. The file will have a .rtc extension and needs about 22 kb of disk space.

New

Opens a new unnamed file. A box appears where you can choose for which controller model you wish to create the file. Make sure that you choose the correct model.

Open

Opens a saved file.

Save

Saves the current file to disk. If the file is unnamed you will be prompted for a name.

Save as

Saves the current file to disk using a new name of your choice.

Read only

This item can normally be ignored. Should you for some reason open two instances for the same file, one of them will be marked as Read only to prevent data conflict.

Print

Gives a printed list showing all the configuration settings of the present file.

Exit
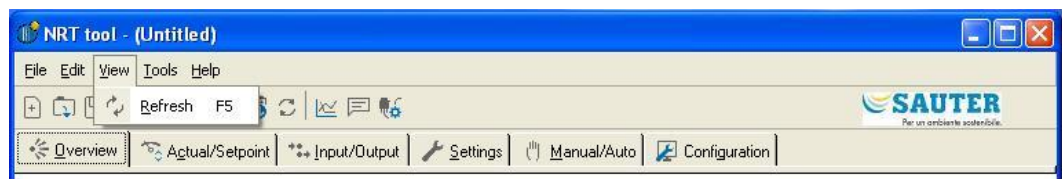
Closes NRT tool.

4.2 Edit

The edit menu only contains one item:

Delete

This feature does not apply to the NRT controller range.

4.3 View

The view menu contains one item:

Refresh

NRT tool is not a dynamic program. If a parameter value is changed in a connected controller, the corresponding value in NRT tool will not automatically be updated. The NRT tool user must initiate reading of parameter values from the controller.

Refresh initiates a reading of all dynamic parameters from the connected controller. The display is updated with the new values.
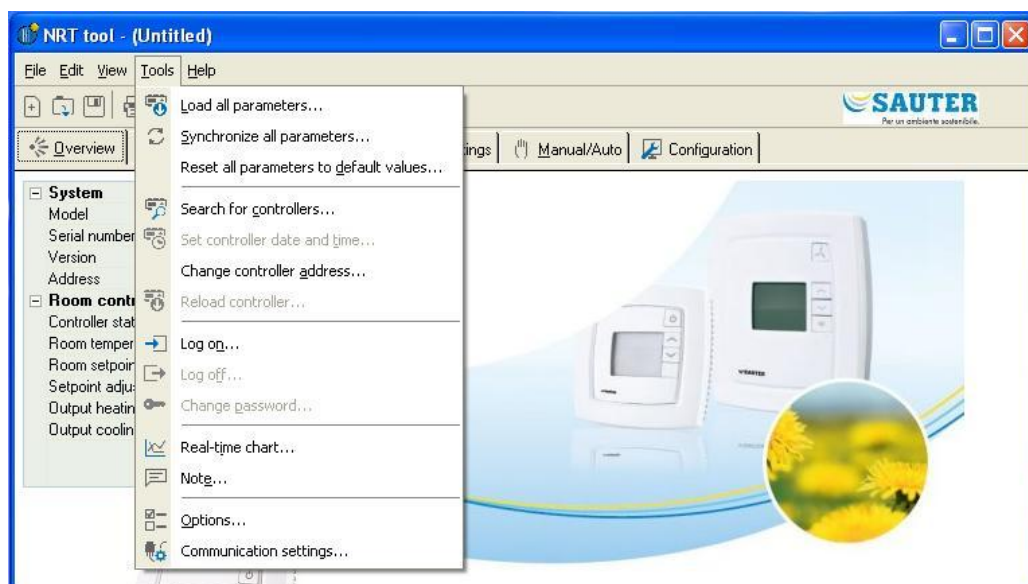
When you change between display tabs, an update will automatically be initiated.

As an alternative to the refresh button, the Update button in the Toolbar or the F5 key on the computer keyboard can be used.

You can also choose to auto refresh pictures with dynamic values, i.e. an automatic finger that presses F5 at settable intervals.

If the controller revision is older than the NRT tool revision, you are asked what you want to do to make them compatible. See the chapter *Updating NRT*.

4.4 Tools

Load all parameters

Downloads all present parameters from NRT tool to the connected controller.
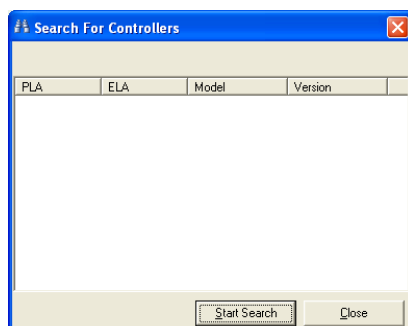
Synchronize all parameters

All parameter values in the connected NRT controller are compared with the corresponding values in NRT tool. All discrepancies will be listed. All items in the list are normally tick-marked. By removing the tick-mark from an item you can exclude it from the selection. You can then choose to update NRT tool using the controller values or update the controller using the NRT tool values.

Reset all parameters to default values

Resets all NRT tool parameter values to default values.

Search for controllers

If, on startup, NRT tool fails to establish contact with a connected controller it is usually due to an address mismatch. This function will search through all the possible addresses until a unit is detected. The displayed address values should then be written into the address fields in the folder Configuration / System.

Set controller date and time

This it not applicable to NRT407 or NRT405 controllers.

Change controller addresses

Each controller has a unique address on delivery. The address should be entered instead of the NRT tool default address (254:30). See the section Configuration for more information.

Reload controller

This is not applicable to NRT407 or 405 controllers.

Log on

There are two different log-on levels, operator level (password 3333) with limited access and administrator level (password 1111) with full access.

Should you try to perform an operation which requires a higher access level than the one you have, you will be prompted to change the log-on level.
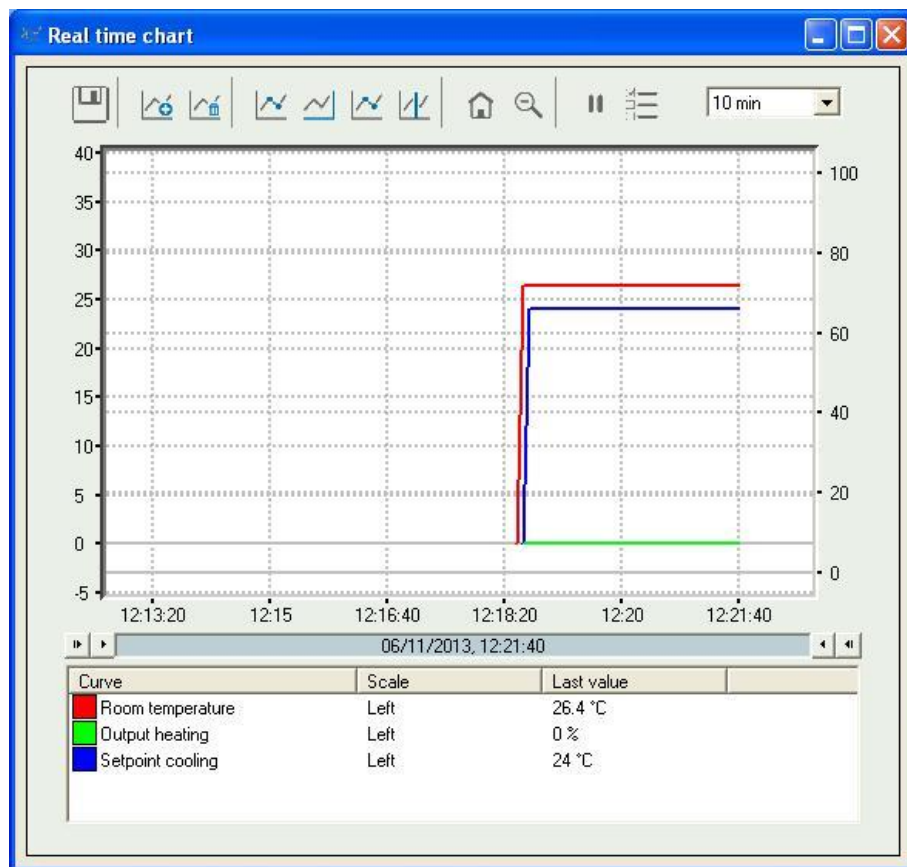
Log off

Enables log-off to the basic level.

Change password

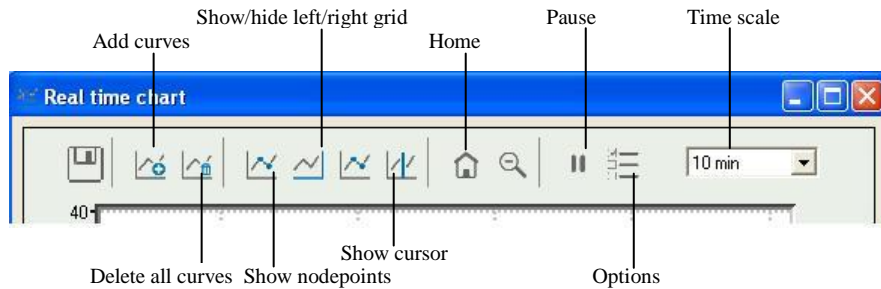Permits change of the password for the present log-on level.

Real time chart

Creates a real time chart. Up to four parameters of your choice can be logged. The chosen parameters are listed at the bottom of the screen together with information on colour, which of the vertical scales it is referring to and the latest recorded value. The chart has left and right vertical scales with individually settable ranges. The horizontal timeline can be changed so that the chart window can show longer or shorter intervals. By using the scrollbar at the bottom of the chart, you can scroll along the timeline to show any position since the recording started. Values are recorded every 5 seconds. All recorded values can be saved to a text file for later use in, for example, a spread-sheet program.
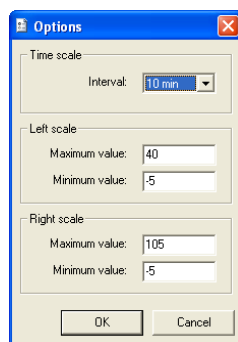

The chart cannot be saved. On exiting, all values and settings will be lost.

The real time chart has the following tools:

- **Export**: Exports all recorded values to a .txt file. The values are tab-separated for easy import to, for example, Excel. Each line of the text file contains the values from one recording together with the time for the recording.

- **Add curves**: A click on this button reveals a list of all NRT parameters that can be displayed in the chart. Choose up to 4 parameters.

- **Delete all curves:** Deletes all the selected curves.

- **Show/hide left/right grid:** Chart grids scaled to the left and right scales can be displayed or hidden.

- **Show nodepoints:** A marker can be displayed on each curve at the point of each recording.

- **Show cursor:** Displays a vertical line on the chart display. The cursor can be moved along the timeline. When the cursor is active, instead of showing the latest recorded values in the parameter list, the values at the cursor position are displayed. In this way you can check back on earlier record values.

- **Home:** Home position is the chart position where you have the "recording pens" close to the right hand edge of the chart. If you have scrolled back along the timeline you can use this button to jump back to normal position.

- **Pause:** Pauses the chart. The "paper" stops scrolling and no new curve segments are added. Data acquisition continues, however, and new readings are saved every 5 seconds. Press Pause again and all the saved readings will be added to the chart.

- **Options:** Set various options.

- **Time scale:** Sets the time width of the chart display. **Left scale / Right scale** sets the scaling for the left and right chart scales.

- **Parameter list:**

The parameter list shows the parameters assigned to the chart. To remove a parameter, right-click on it and choose remove.
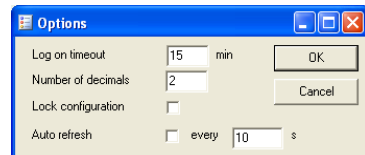
To change which of the right / left scales the parameter curve is referring to, right-click and choose properties or double-click with the left mouse button.

Notes

Gives access to a notepad area. Any text written here is saved together with the configuration file. If you make a printout of the configuration, the notepad text will be included in the printout.
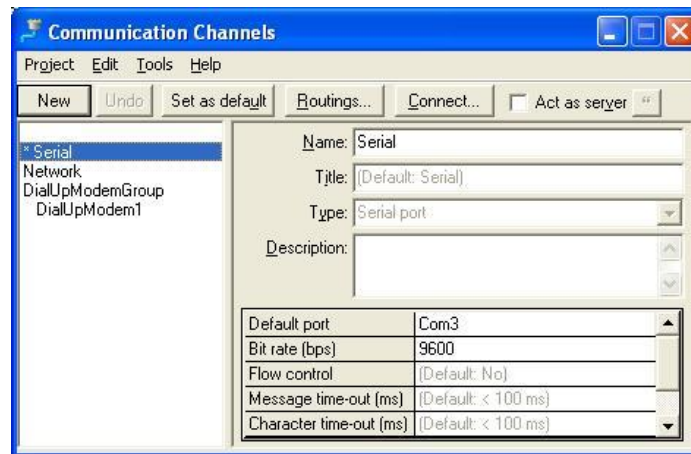
Options

Permits the setting of certain program parameters:

- **Log-on timeout:** After inactivity for longer than the set time the log-on level will be set to 5.

- **Number of decimals:** Sets the number of decimals displayed. All calculations, however, are always done with full precision.

- **Lock configuration:** Blocks access to the configuration tab.

- **Auto refresh**

Communication settings

Setting of the communication between NRT tool and controller

NRT407 and NRT405 controllers need a RS-485 serial data interface for communication with the PC.

4.5 Help

Gives access to help texts and revision information.

Chapter 5 **Toolbar**

The toolbar provides shortcuts to some frequently used commands.

By placing the cursor over a tool icon, a tool tip will be displayed giving a short description of the tool.

All the tools have been described in the chapter *Menu bar* above.

Chapter 6 **Folder tab**

The folder tab consists of the following folders:

The contents of the various folders depend on for which NRT model the program has been configured. Therefore, the contents will not be described in detail here.

Items in a folder that somehow belong together are grouped. Group names are displayed in bold. The groups are normally shown expanded, that is that all the items in the group are displayed, headed by the group name. A group can be compressed to show only the group name by clicking on the box with a - (minus) to the left of the group name. For a compressed group the box will contain a +. Click on it to expand the group.
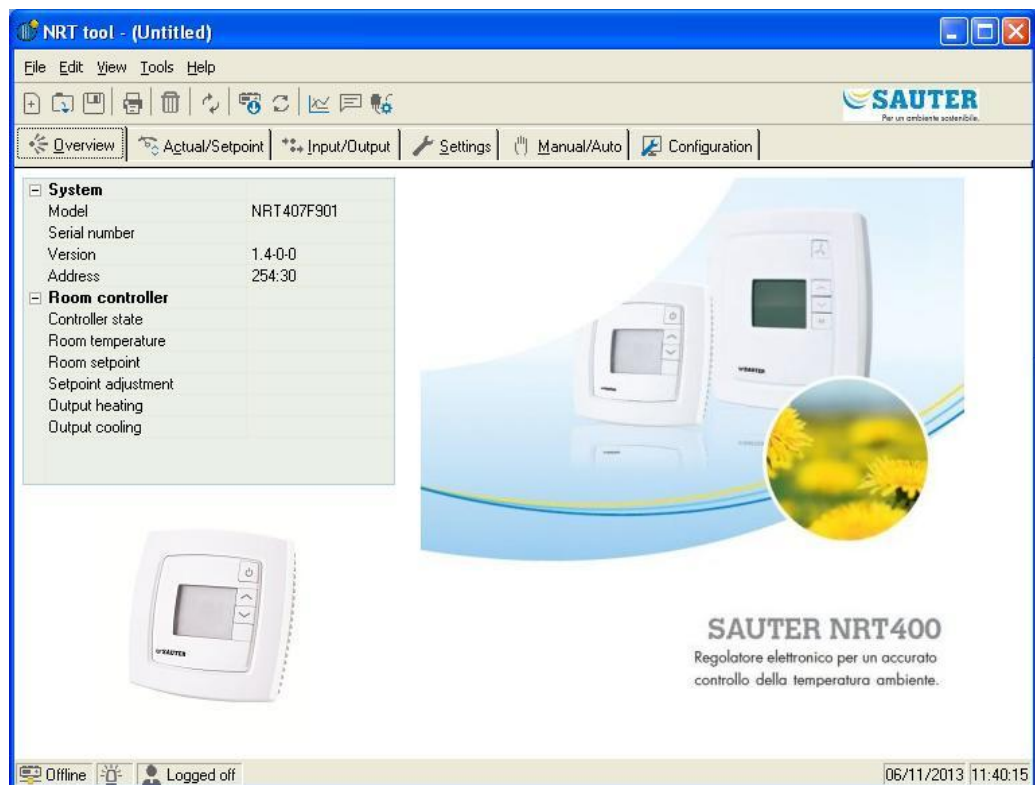
Setting values

Many of the folders contain settable values. If you pass the cursor over such a value a text box (tool tip) will be displayed showing the permitted value interval.

If you have a NRT controller connected you must download a value to the controller for it to become active.
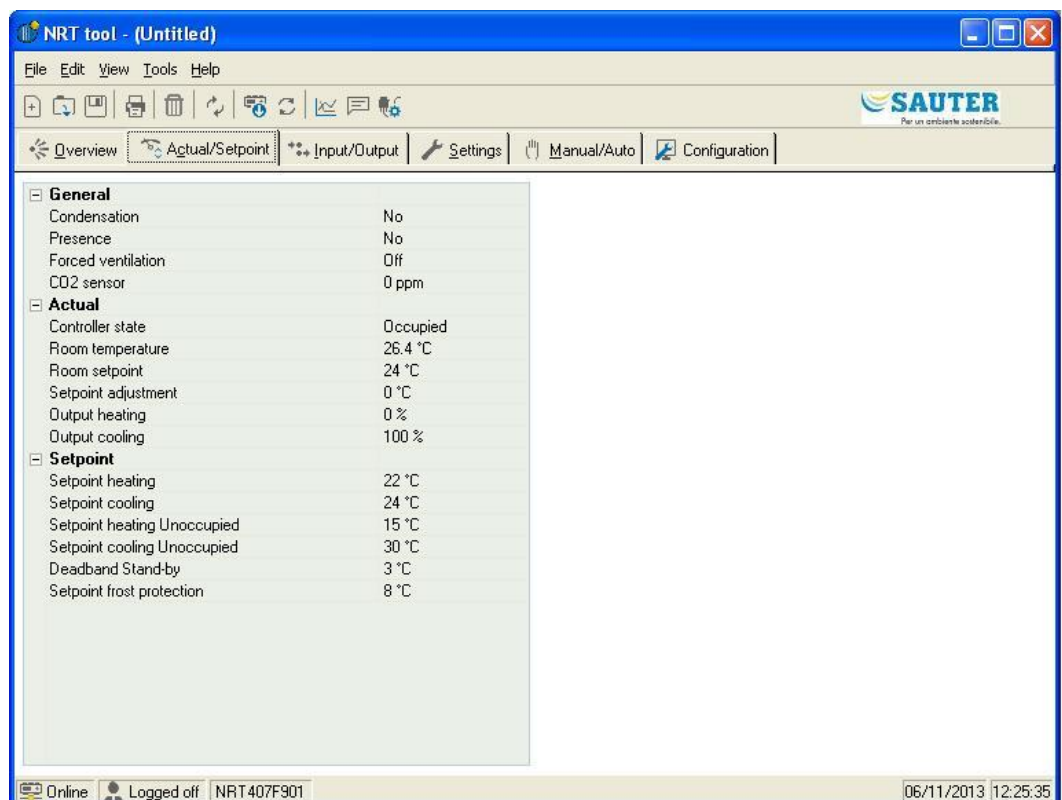
Downloading can be done in several ways:

- Right-click on any single item and choose *Load parameters*. This will download only that single parameter.

- Right-click on a group name and choose *Load parameters*. This will download all parameters in the chosen group

- Click on the *Load all parameters* button on the toolbar.

- Click on *Tools* in the Menu bar and choose *Load all parameters*. These last two methods will, as the name implies, download <u>all</u> parameters to the controller.

- You can also synchronise parameters following the same rules as above but choose *Synchronize parameters*. A useful tool to compare the settings in the controller with the settings in NRT tool.

- It is also possible to reset parameters to default values by right-clicking and choosing *Reset parameters to default values.*

6.1 Overview

At the left-hand edge of the Overview area there is a list of the most important control parameters. To update the values, press F5 or click on the refresh button in the toolbar.
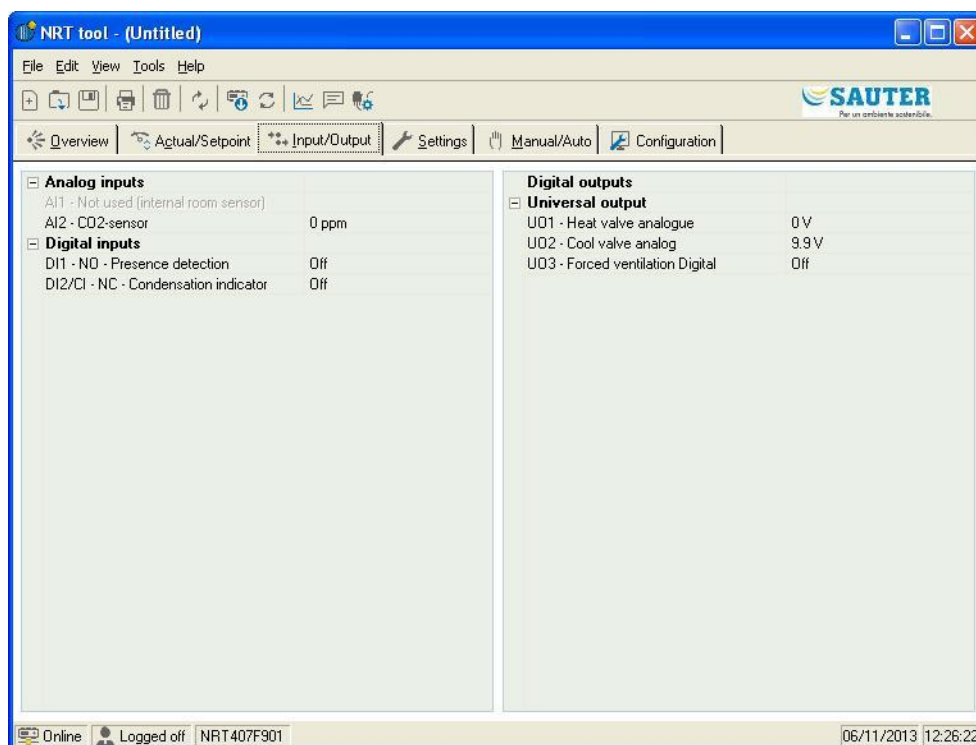
6.2 Actual / Setpoint

Displays actual values for inputs and outputs and relevant setpoint values.

Actual and setpoint values must be downloaded to the controller in order to take effect. To download, right-click on a value and choose *Load parameters,* or click on *Load all parameters* in the Toolbar or the Tools menu. You can also synchronise the controller values with the computer values by selecting *Synchronize all parameters* in the menu Tools.
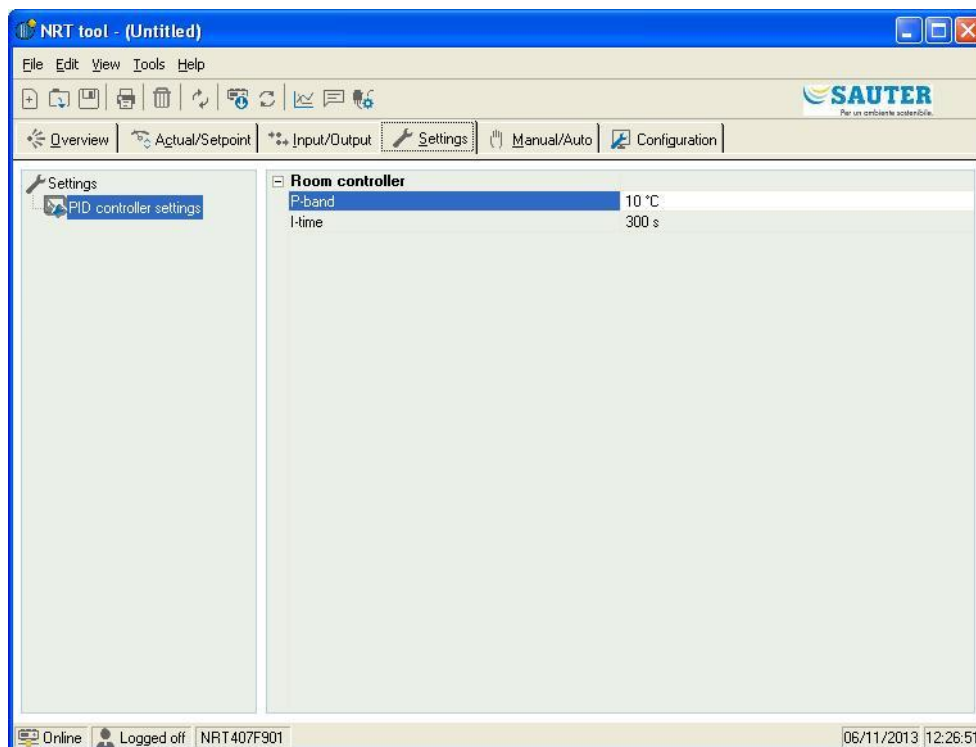
Real time chart

When right-clicking on some of the groups you are given the option of creating a real time chart. This chart will be created containing the four first recordable parameters in the group.

6.4 Input/Output

Shows actual values for all inputs and outputs. This is a read-only folder. No settings can be made here. Unconfigured inputs and outputs are grayed.
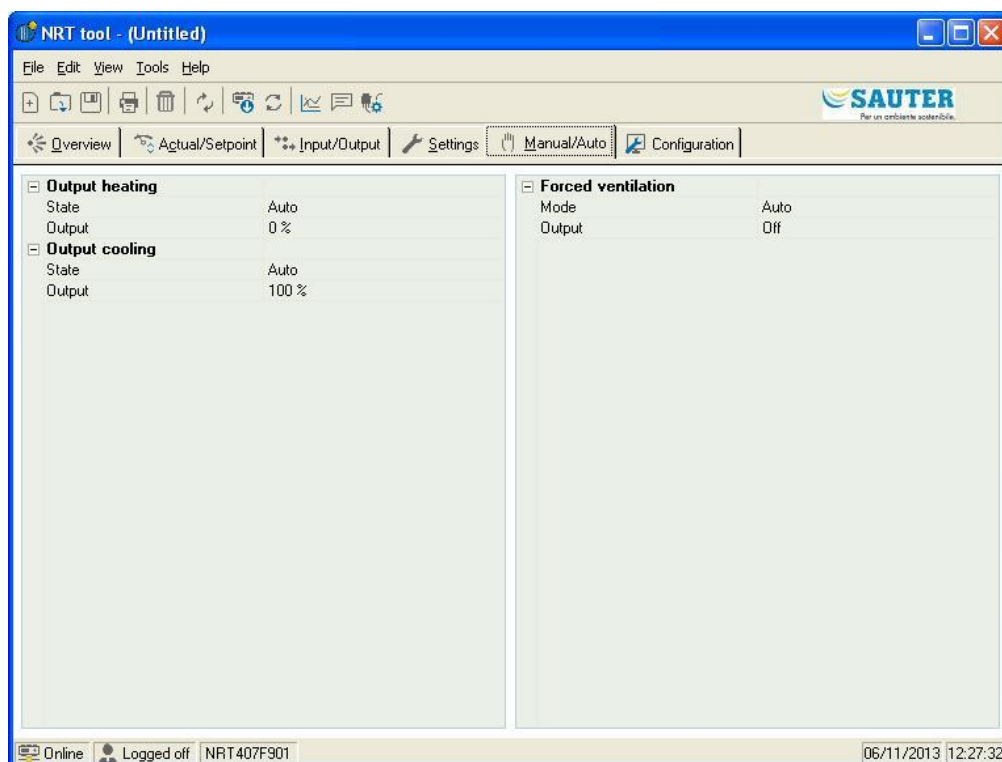
6.6 Settings

PID Controller Settings

Setting of the parameters P-band and I-time.

Parameter setting-interval endpoint values and default values are displayed if you place the cursor over a parameter value.

Changes must be downloaded to the controller in order to take effect. To download, right-click on a parameter name or a parameter group name and choose *Load parameters,* or click on *Load all parameters* in the Toolbar or the Tools menu.

6.7 Manual / Auto

In this menu you can take manual command of most controller functions. It is very useful for testing purposes.

Setting functions to manual command will generate alarms to ensure that control is returned to Auto.

In this menu all changes are instantly downloaded to any attached controller, it is not necessary to run *Load parameters* for the changes to take effect.
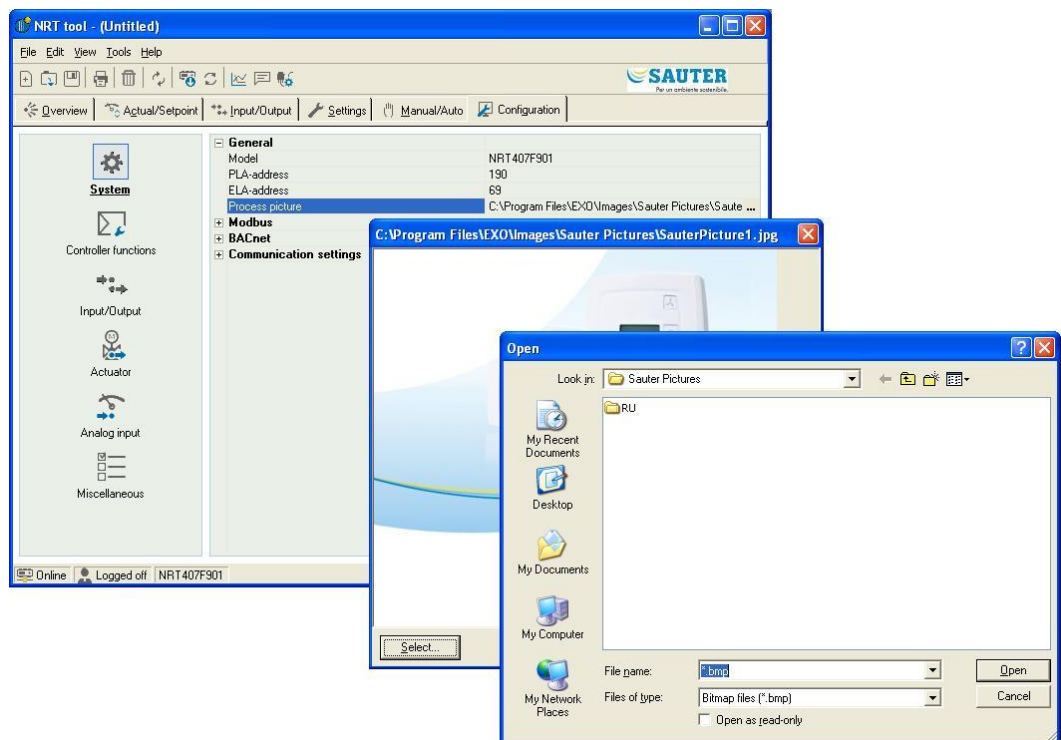
6.8 Configuration

This folder contains all the configuration parameters for the NRT controller. Since the contents are very diverse, the folder has been divided into sub-folders. These are accessed by clicking on the buttons in the left-hand button-list.

Only relevant configuration alternatives are shown. Which alternatives are relevant depends on what has been configured in the Input/Output folder and under Controller Functions in the Configuration folder.
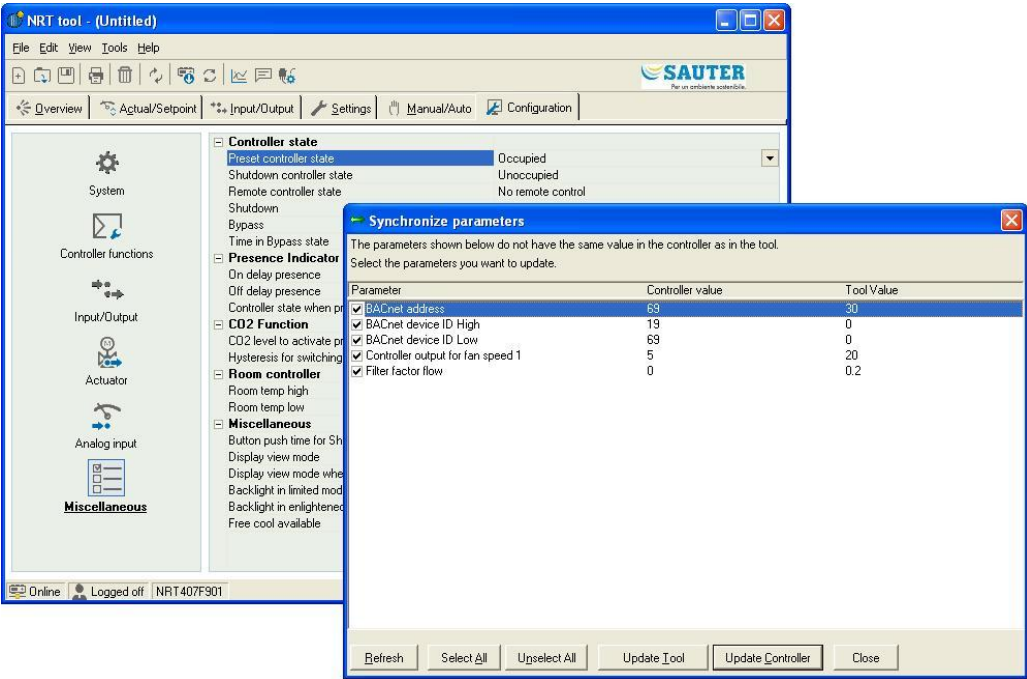
No controller has the NRT tool.default address (PLA=254, ELA=30). Instead, each controller has a unique address on delivery. This address should be entered instead of the NRT tool default address.

In the Configuration folder, it is possible to change the picture shown in the Overview area. Under System/Process Picture, you can choose a picture in the bmp format as process picture.

Chapter 7 Updating NRT

NRT tool should always be updated with the latest program revision. If you are using the latest revision of NRT tool and connect it to a NRT controller with an older program revision, NRT tool will give a warning and offer the alternative of temporarily downgrade NRT tool to a revision corresponding to the revision in the controller. All the settings in the controller will remain intact.

Chapter 8 **Index**

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