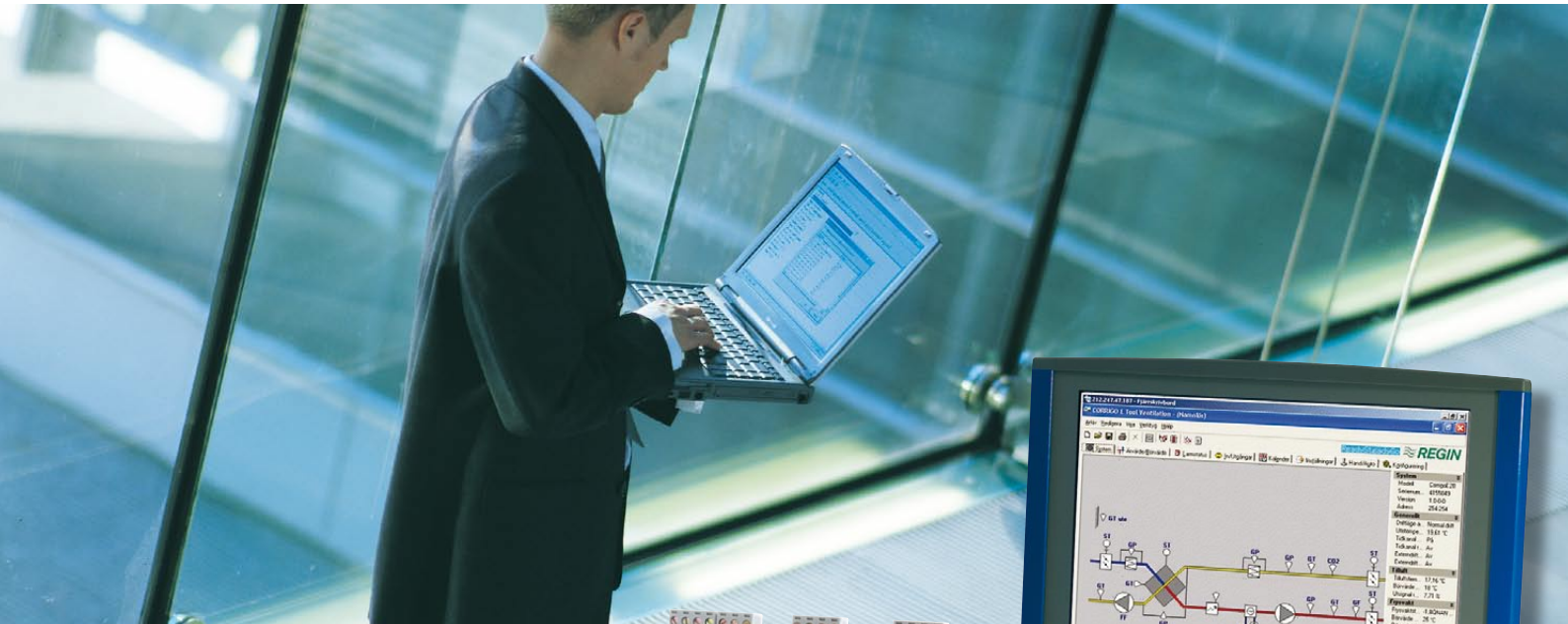




# Corrigo E-tool User Manual



THE CHALLENGER IN BUILDING AUTOMATION

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# 1. User manual Corrigo E-tool

## **Revision B June 2008**

This user manual covers Corrigo E-tool for both heating and ventilation.

This manual is published by AB REGIN without guarantee.

AB REGIN can at any time, without prior notice, make changes and improvements to the contents of this manual if this is called for due to printing errors, erroneous information or changes to hardware or software covered by the manual. Any such changes will always be included in future editions of the manual.

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® Corrigo

™ E-tool

## 2. About this manual

This manual is designed to be an aid during installation and use of Corrigo E-tool. It describes all the functions unique to the program. The Corrigo E control parameters however are not described here. For detailed information on these, please see the manual for the controller in question.

## 3. Installation

To install and run Corrigo E-tool you need a PC running Windows 2000 or Windows XP.

To communicate with a Corrigo you need a special communication cable, E-Cable.

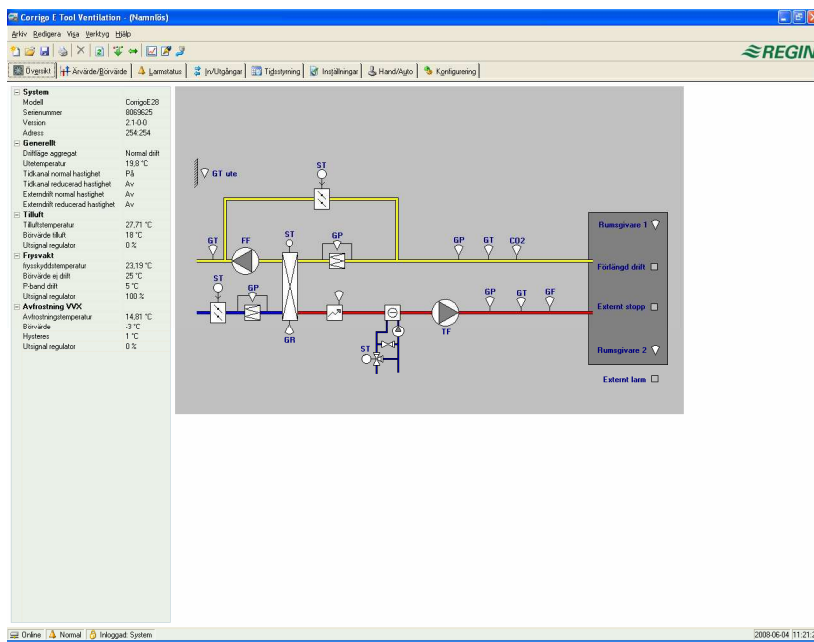
Corrigo E-tool is delivered as a self-installing program on a CD, or can be downloaded from Regin's homepage ([www.regin.se](http://www.regin.se)).

Load the CD and follow the on-screen instructions, or download the program folder from [www.regin.se](http://www.regin.se). Unzip the folder and run the setup.exe file, which you will find in the unzipped folder.

## 4. About Corrigo E-tool

Corrigo E-tool Ventilation is a Windows-based PC-program for configuration and maintenance of Corrigo E Ventilation controllers.

Corrigo E-tool has not been designed with the intention of being a full SCADA program.



The display window is divided into several parts:

At the top there is a menu bar with standard Windows type drop-down menus

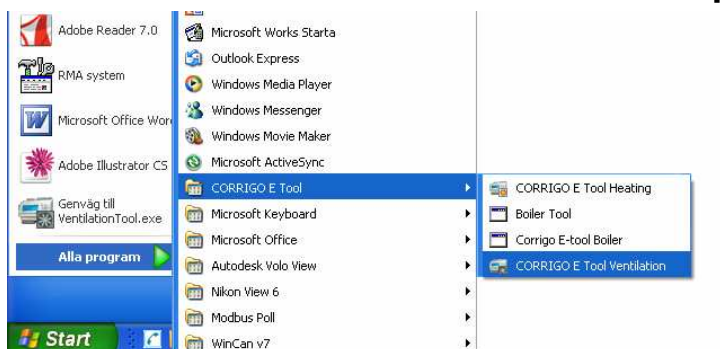
Below the menu bar there is a Toolbar which gives direct access to various functions. All the functions in the E-toolbar are also accessible through the menu bar system.

Below the E-toolbar there is a row of folder tabs giving access to a number of folders that can be shown, one at a time in the area below the tabs.

At the bottom of the window is the Status bar.

This manual will mainly describe the functions of the items in the menu bar and the E-toolbar.

## 5. Startup



The installation program will have placed a Corrigo E-tool folder in the Programs folder in the Start menu. This folder contains the links to Corrigo E-tool Heating, Corrigo E-tool Ventilation.

To start either program, click on the Start button at the lower left hand corner of the display. Then click on Programs, the folder Corrigo E-tool and finally the program you wish to run.

To save having to go through the Start folder, you can create a shortcut on the desktop by pointing at the program name, click and hold the right hand mouse button and drag the program name from the folder onto the desktop. Release the button and click on "Create shortcut here".

On start-up Corrigo E-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 no suitable Corrigo controller is found the program will start offline.



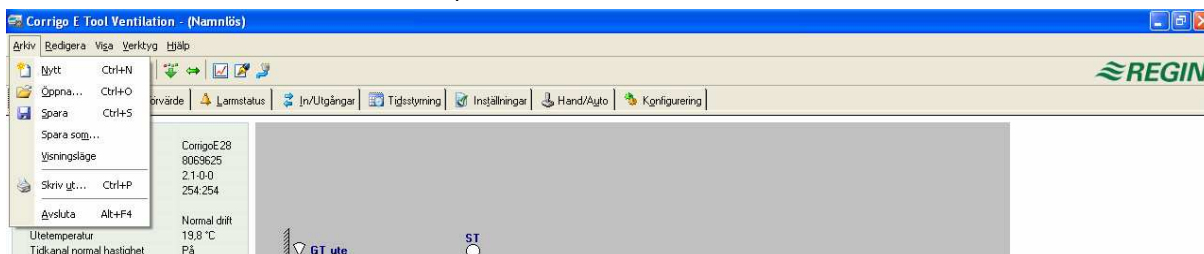
Corrigo E-tool always starts with a box where you enter which Corrigo model you are using. The System folder is also displayed. Make sure that you enter the correct model, or strange things may occur in the control and alarm handling.

## 6. Menu bar

The menu bar has five drop-down menus:

### 6.1 File

These items are used to handle configuration files. The data describing a configuration can be saved as a file. Any number of different configurations can be saved, the only limit being available disk space. The file will have a .vct extension and needs about 22 kb of disk space.



#### New

New will open a new unnamed file. A box appears where you can choose if you wish to create an E8, E15 or E28. Make sure that you choose the correct model. If you load an incorrect model in a Corrigo, unexplainable alarms etc. may appear since certain functions can be activated that are not visible in the present 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

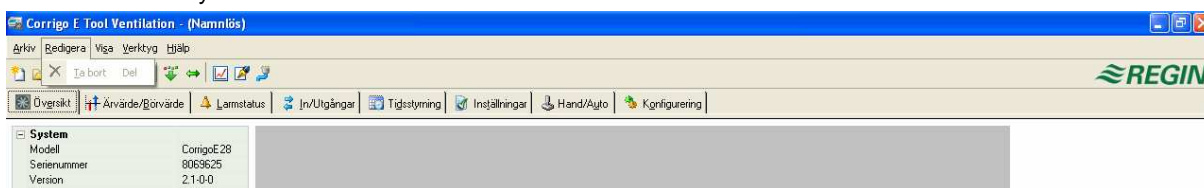
Will give a printed list showing all the configuration settings of the present file.

#### Exit

Close Corrigo E-tool. If the present configuration is unsaved you will be asked if you wish to save it before closing down.

### 6.2 Edit

The edit menu only contains one item:



#### Delete

Delete is only used in conjunction with Holiday periods. Use delete to remove assigned periods.

## 6.3 View

The view menu contains one item.

### Refresh

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

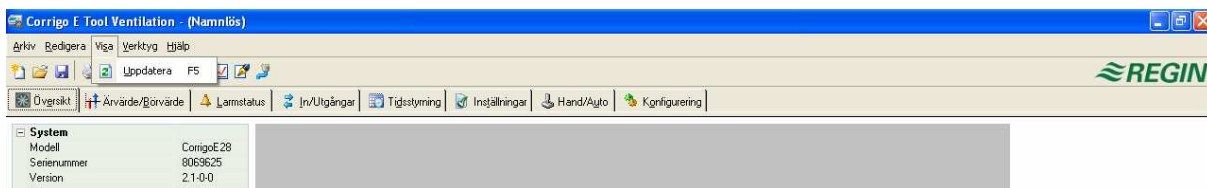
Update initiates a reading of all dynamic parameters from the connected controller. The display is updated with the new values.

When you change between display tabs, an update is automatically initiated.

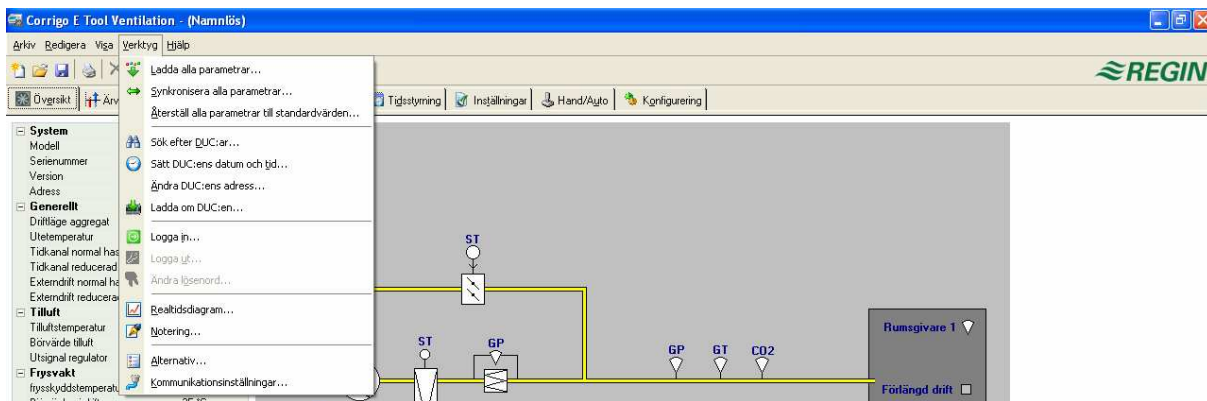
Alternatively, the Update button in the Toolbar (see Toolbar below) or the F5 key on the computer keyboard can be used.

You can choose to auto refresh pictures with dynamic values, i.e. an automatic finger that presses F5 at settable intervals. See "Options" on page 9.

If the controller revision is older than the E-tool revision, you are asked what you want to do to make them compatible. See section 9.



## 6.4 Tools



### Load all parameters

Download all present parameters from Corrigo E-tool to the Corrigo E controller.

### Synchronize all parameters

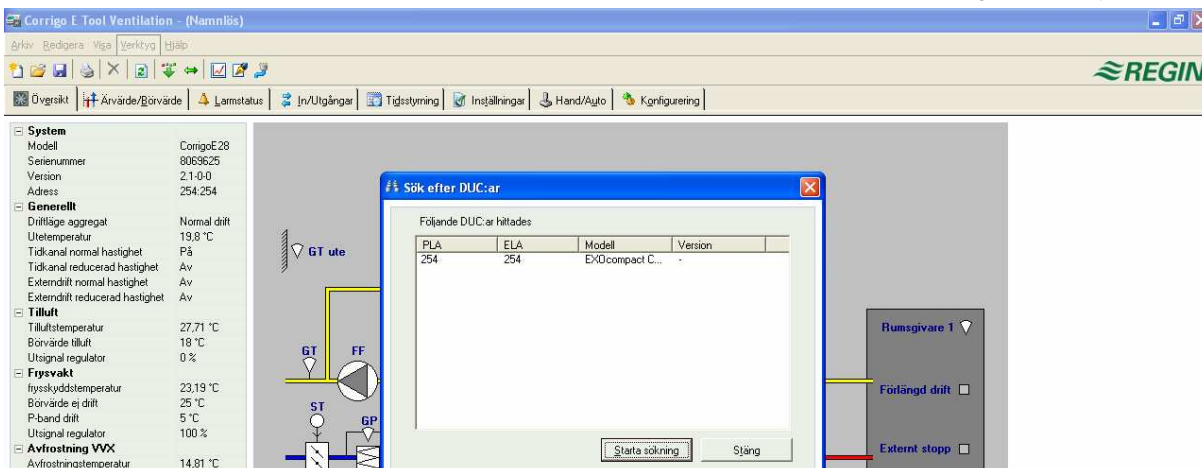
All parameter values in the Corrigo E are compared with the corresponding values in Corrigo E-tool. All discrepancies will be listed. All items in the list are normally tick-marked. By removing the tick-mark from an item you can exclude it from the selection. You can then choose to update E-tool using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

### Reset all parameters to default values

Resets all Corrigo E-tool parameter values to default values.

## Search for controllers

If, on startup, Corrigo E-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 and list the addresses of the unit that is connected to the computer. These addresses are then written into the address fields in the folder Configuration / System.



## Set controller date and time

Will synchronize the controller date and time with the computer date and time.

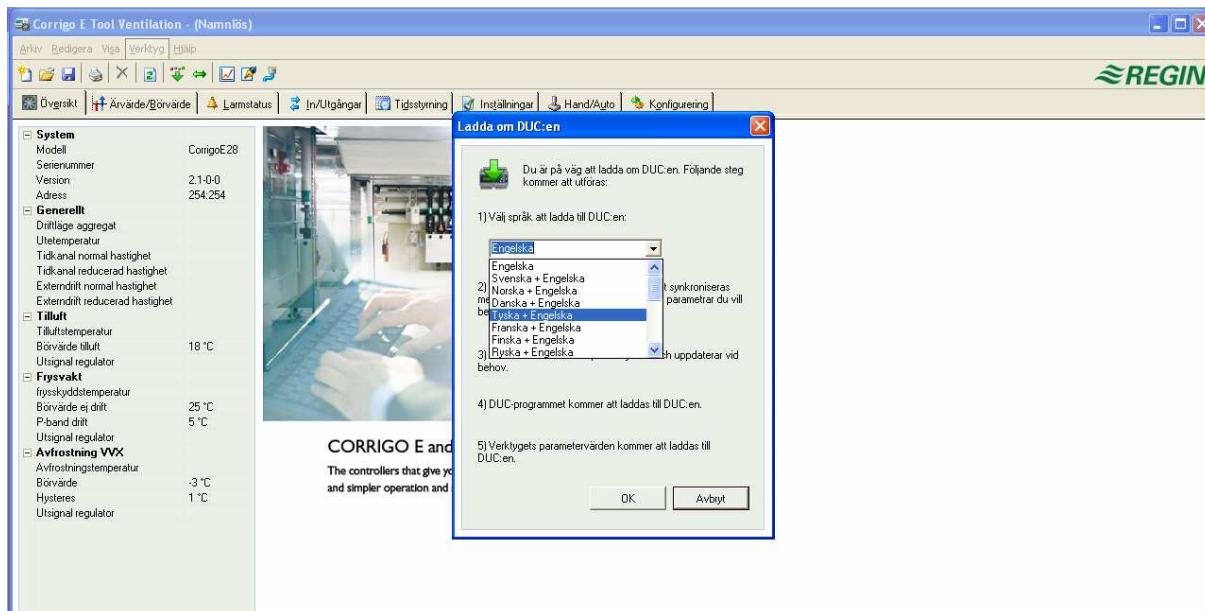
## Change controller addresses

This function is used for changing the addresses of the connected controller. The address is normally 254:254. If the controller is intended to be used in an EXOline network, the addresses must be changed since the connected controllers have different addresses.

## Reload the controller

Downloads the current control program from E-tool to the controller.

Use this function to install updated program revisions. You can also use it to convert a Corrigo E Heating to a Corrigo E Ventilation and vice versa. Note, though, that since the hardware differs between controllers of different sizes, the E-tool program and the Corrigo model must be compatible. For example, to load a Corrigo E15, the E-tool program must be made for an E15. Otherwise, unexpected events may take place.



## Log on

Corrigo E has three different log-on levels, 1, 3 and 5.

5 is the basic level with the lowest access, 3 is operator level giving more access and 1 is system level 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 log-on level.

## Log off

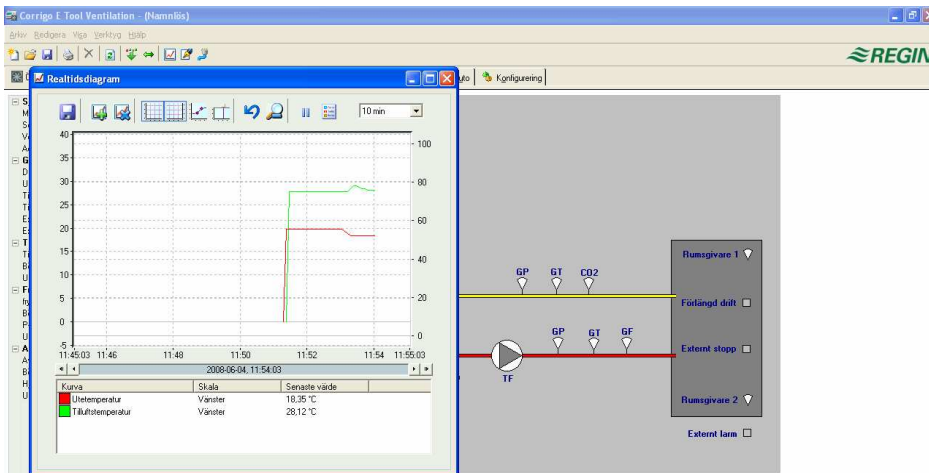
Is only active if you are logged on as Operator or System. Enables log-off to the basic level.



## Change password

Is only active if you are logged on as Operator or System. Permits change of the password for the present log-on level.

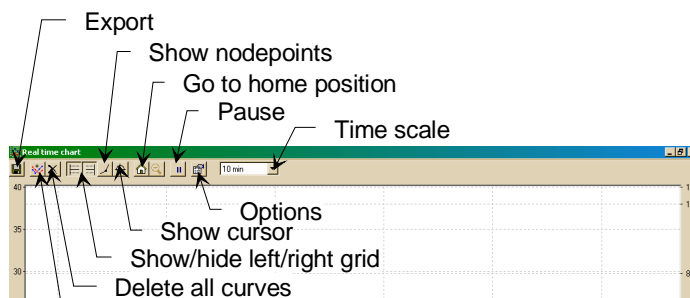
## Real time chart



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 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. 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 textfile for later use in, for example, a spread-sheet program.

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

### Real time chart 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. Any number of values can be saved, the only limit being available disk space.

## Add curves

A click on this button reveals a list of all Corrigo 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.

## Go to home

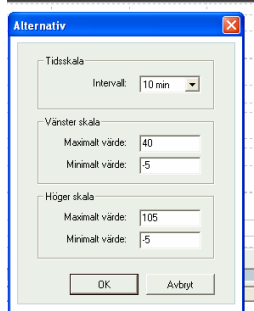
Home position is the chart position where you have the "recording pens" close to the right hand edge of the chart. If you have scrolled back along the timeline you can use this button to jump back to normal position.

## 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** signifies the time width of the chart display.

**Left scale / Right scale** sets the scaling for the left and right chart scales.

## Time scale

Sets the time width of the chart display.

## Parameter list

Kurva	Skala	Senaste värde
Ute temperatur	Vänster	18.35 °C
Tilluftstemperatur	Vänster	19.67 °C
Utsignal regulator	Vänster	24.14 %

The parameter list shows the parameters assigned to the chart. To remove a parameter, right-click on it and choose remove.

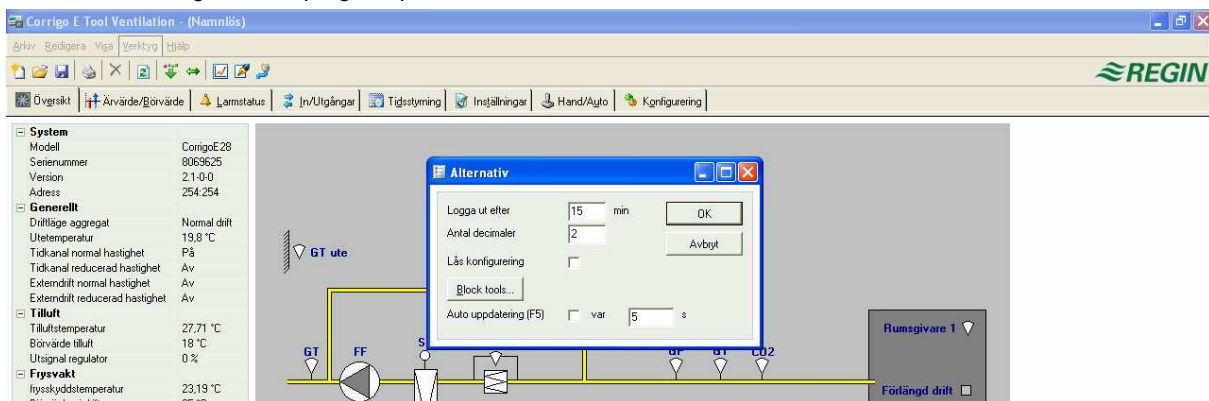
To change which of the right / left scales the parameter curve is referring to, right-click and choose properties or double-click with the left mouse-button.

## 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 is included in the printout.

## Options

Permits the setting of some program parameters.



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

## 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

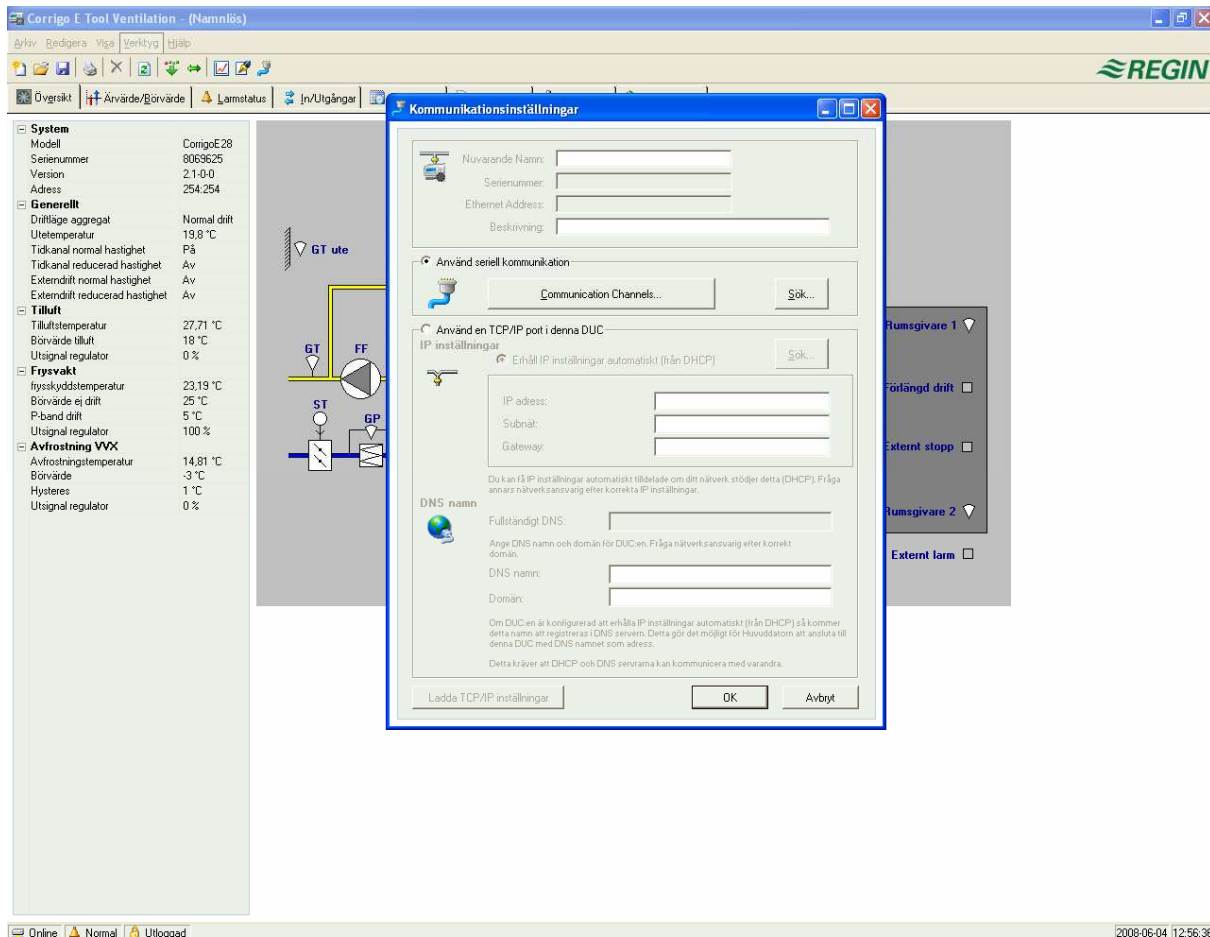
Blocks access to the configuration tab.

## Block tools

Not used.

## Communication

Setting of the communication between E-tool and controller.



Serial communication with E Cable-RS485 or E Cable-USB is suitable as standard.

### TCP/IP communication

If the controller has a TCP/IP port, it can communicate via a TCP/IP network. This is done by selecting **Use a TCP/IP**. There are three ways to connect a controller with a TCP/IP port to a network for communication with a main computer:

1. Crossover network cable
2. Automatically by DHCP (dynamic IP address)
3. Static IP address

#### Crossover network cable

In the most basic case, a crossover network cable, E Cable-TCP/IP, is used. The user is connected directly to the controller. Connect a crossover TCP/IP-cable directly between the controller and the computer. Start E-tool. Open the tool "Communication settings" from the menu "Tools" or via the icon in the toolbar.

Choose "Use a TCP/IP port in this controller". The program will ask if you are using a crossover network cable. Answer "Yes" to this question. The program will now search for controllers. Since no DHCP is available, a "broadcast" address will be used. Therefore, it is important that the computer is only connected directly to the current controller with a crossover Cat5-cable. If the search was successful, the controller's IP-settings will be shown: IP address, Subnet mask and Default Gateway (if there is one). If no values are shown: press "Search". A search window will be opened and hopefully the controller's TCP/IP card will be found and its serial number will be shown in the window. Select the row and press "OK".

If the program cannot find a controller:

- Control the cable and contacts.
- Control if there are more active network connections (Control panel/Network connections). Inactivate all except the "Local area connection".
- Press "Search" again.

Enter the IP address, the Subnet mask and, if any, the Gateway for the controller and press "Load TCP/IP-settings".

A message will be shown if the loading was successful. Press "OK". You may get a message that a TCP/IP-connection has been established, but a controller with the address 254:254 could not be found. Instead, a controller with another PLA:ELA address has been found. Answer "Yes" to the question whether this controller should be used instead.

E-tool can now be used for configuration/downloading/upgrading/synchronisation etc.

If the message "Cannot read index variable 255:30.QSystem.PLA. Not responding." is shown, there is no connection between the controller's TCP/IP card and the operating system EXOreal on the controller's base circuit board. This may be due to an old EXOreal-version combined with a certain version of components on the TCP/IP card. The problem can be solved by loading the latest EXOreal-version to the controller. However, to do this a connection must first be established (catch-22). By "Powering up" and "Searching" multiple times, you may be able to establish a connection. Otherwise, the controller must be sent to Regin for upgrading.

Automatically by DHCP (dynamic IP address)

In this case, you choose the standard setting **Obtain IP settings automatically (by DHCP)**.

This configuration is suitable for most networks equipped with a DHCP server, and, above all, when it is required that the controllers are assigned their addresses dynamically.

The following requirements have to be fulfilled:

- The DHCP server and the DNS server must cooperate since the controller sends its DNS name to the DHCP server. The Windows 2000 Server and the Windows 2003 Server support this. The DHCP server gives the controller an IP address and registers the IP address and the DNS name in the DNS server.
- Each DNS name must be unique.
- The EXOline-TCP port, 26486, must be open from the controller to the main computer. This is especially important when the communication passes through a firewall.

When the controller and the computer running E-tool are on the same subnet, you do not have to specify a DNS name or a Domain. When the controller and the computer are on different subnets, you have to specify the DNS name and the Domain. You get the domain name from the network administrator.

Static IP address

In this case, the static IP address of the controller is specified.

This configuration is most suitable for networks without a DHCP Server. You can also use it if you do not trust the network services completely, as it is the communication that has the best qualification to work when servers etc. do not. As long as routers and switches work well, this configuration alternative will work.

The following requirements have to be fulfilled: The EXOline-TCP port, 26486, must be open from the main computer to the controller. This is especially important when the communication passes through a firewall.

You get the static IP address, Net Mask and Default Gateway from the network administrator.

## **6.5 Help**

Gives access to help texts and revision information.

## 7. 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 E-tool. All the E-tools except for Refresh have been described in the menu bar description above.

## 8. Folders

### 8.1 General

The contents of the various folders depend on which of the programs E-tool Heating or E-tool Ventilation you are running and also on which Corrigo model, E28, E15 or E8 the program has been configured for.

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 Corrigo connected you must download a value to the Corrigo for it to become active.

Downloading can be done in several ways:

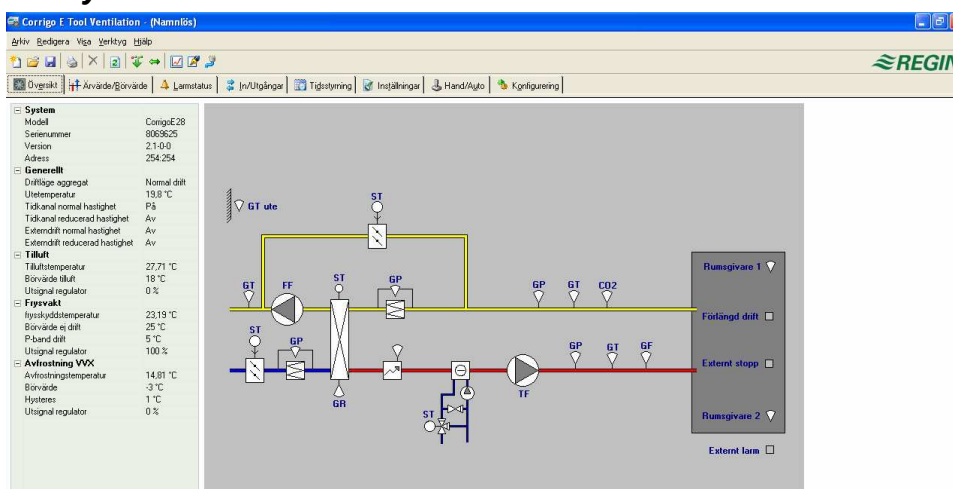
1. Right-click on any single item and choose *Load parameters*. This will download only that single parameter.
2. Right-click on a group name and choose *Load parameters*. This will download all parameters in the chosen group.
3. Click on the *Load all parameters* button on the E-toolbar.
4. Click on *Tools* on the Menu bar and choose *Load all parameters*.  
Klicka på *Ladda alla parametrar*-knappen i verktygsfältet.

These last two methods will, as the name implies, download all parameters to the Corrigo.

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

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

### 8.2 System

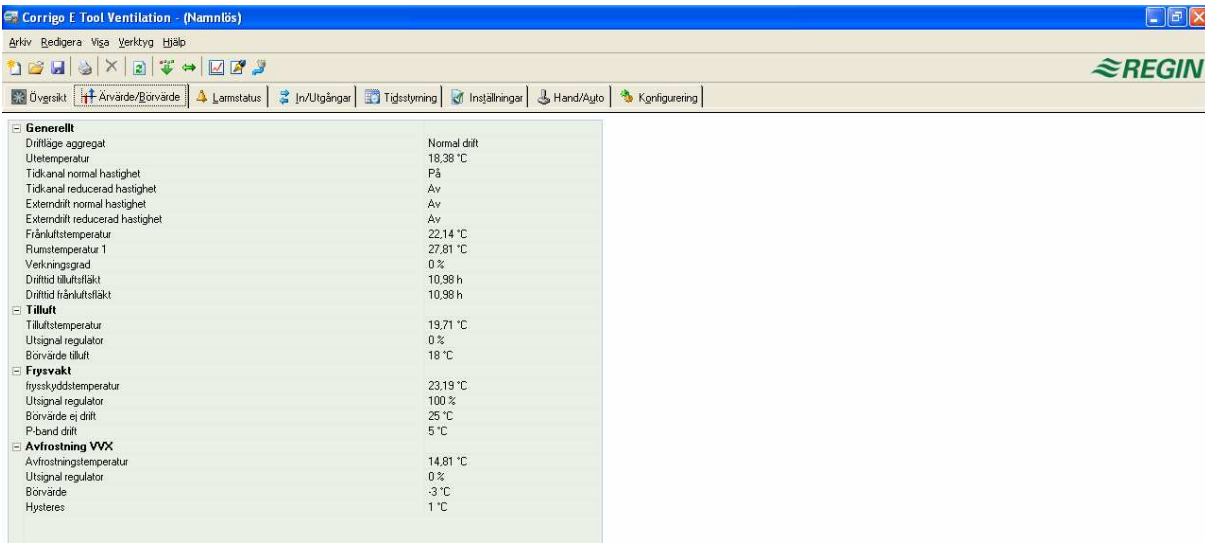


The screenshot shows the 'System' folder expanded in the software interface. On the left, a list of system parameters is displayed, including Model (CorrigoE28), Serienummer (9003625), Version (2.1-0.0), and Address (254.254). Below this, various operational parameters like 'Driftläge', 'Tidkanal normal hastighet', and 'Tilluft' are listed with their current values and units. On the right, a process diagram is shown, illustrating the flow of air through various components like fans (FF, GP), sensors (GT, ST), and control units (GR, TF). The diagram is a static bitmap illustration.

The major part of the System folder displays a process diagram. The diagram is a static bitmap illustration that can be edited using, for example Paint. Any number of different diagrams can be saved. Which diagram that is displayed is governed by the setting of the parameter *Process picture* in the System sub-folder in the Configuration folder.

Down the right-hand edge of the System folder there is a list of the most important control parameters. To update the values, press F5 or click on the refresh button in the E-tool bar. You can choose to auto refresh pictures with dynamic values, i.e. an automatic finger that presses F5 at settable intervals. See "Options" on page 9.

### 8.3 Actual / Set-point

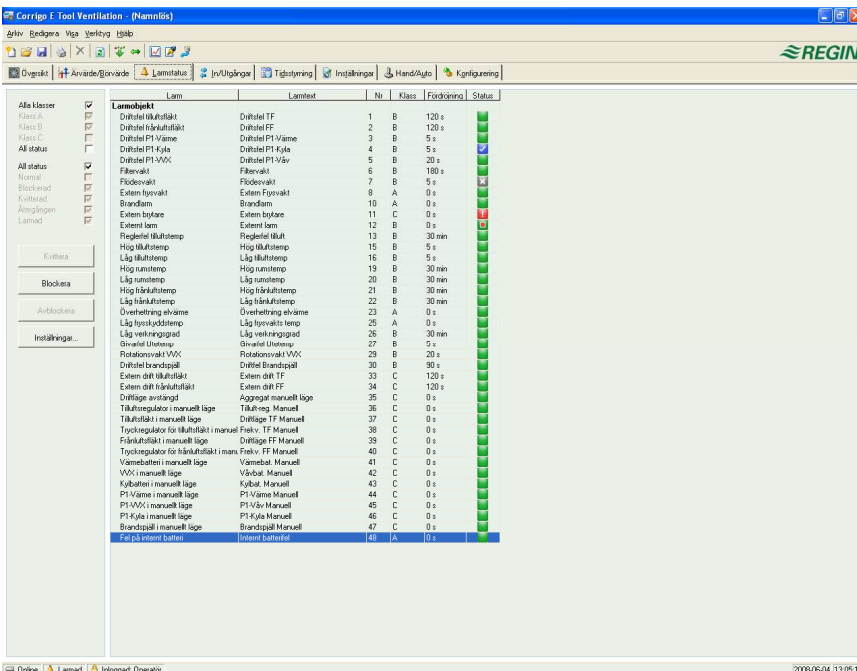


Displays actual values for inputs and outputs and relevant set-point values.

### 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.

### 8.5 Alarm status



Permits handling of all enabled alarms.

The alarm settings can be changed by either double-clicking on the alarm you wish to change or by marking the alarm and then clicking on the button *Settings*.

Alarm settings can also be changed in the folder *Settings/Alarm objects*.

**Note:** Changes made to alarm settings must be downloaded to become active.

## Alarm indications

Non-activated alarms are shown with a green status box.

Active alarms have a red box with an exclamation mark.

Reset, not acknowledged alarms have a red, green-bordered box.

Active, acknowledged alarms have a blue box with a white tick-mark.

Blocked alarms have a gray box with a black X.

Any changes made to alarm status in E-tool are instantly transmitted to the controller without the need to use *Load parameters*.

Changes in alarm status in the controller however are not displayed in E-tool until you make a refresh.

To keep track of changes in alarm status when looking at other folders, look at the alarm box in the status bar at the bottom of the window.

## Alarm categories

Corrigo has three alarm categories, A alarm, B alarm and C alarm.

A and B alarms will activate the digital outputs A-alarm and B-alarm respectively if configured. Both will activate the Sum alarm output if configured.

C alarms are internal only.

C alarms need not be acknowledged. Once they reset, they automatically return to normal status.

Alarms can be shown according to class, A, B C or All classes and according to status, Normal, Blocked, Acknowledged, Returned, Alarm active and All statuses.

The screenshot shows the 'Corrigo E Tool Ventilation - (Namnlös)' application window. The main area displays a table of alarms with columns for 'Larm', 'Larmtext', 'Nr', 'Klass', 'Fördröjning', and 'Status'. The 'Extern bytare' alarm (Nr 11, Class C) is selected, and its settings are shown in a dialog box. The dialog box has the following fields:

Klass	C
Fördröjning	0 s
Stoppa verk-aggregatet om larmat	1
Larmtext	Extern stopp

## 8.6 Inputs/Outputs

The screenshot shows the 'Corrigo E Tool Ventilation - (Namnlös)' application window with the 'In/Utgångar' folder selected. It displays two columns of data:

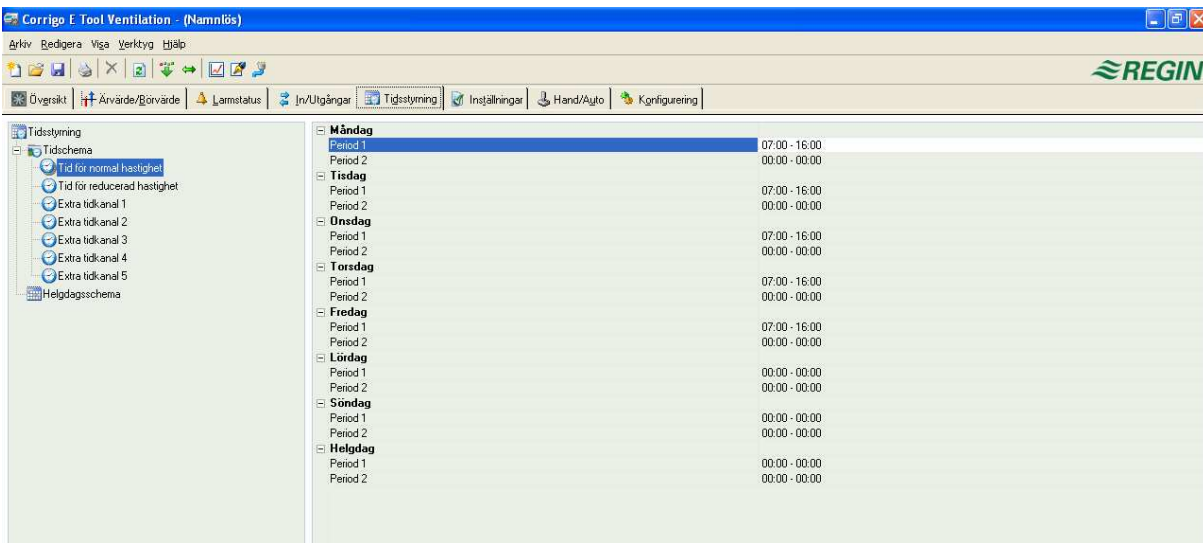
Analoga ingångar	Analoga utgångar
A11 - Uttemp 18,38 °C	A01 - Y1 Värme 10V
A12 - Tillufttemp 19,71 °C	A02 - Y2 VVX 0V
A13 - Frånlufttemp 22,11 °C	A03 - Y3 Kyla 0V
A14 - Rumtemp 1 26,83 °C	A04 - Inaktiv
UA12 - Inaktiv	A05 - Inaktiv
UA13 - Avfrostningstemp 14,81 °C	A06 - Inaktiv
UA14 - frys skyddstemp 23,19 °C	A07 - Inaktiv
Digitala ingångar	Digitala utgångar
D11 - NO - Filtervakt Av	D01 - Stat TF Normal Av
D12 - NO - Pumpindkøring Värme Av	D02 - Stat FF Normal Av
D13 - NO - Pumpindkøring Kyla På	D03 - Stat P1 värme På
D14 - NO - Brandlarm Av	D04 - Summalarm På
D15 - NO - Indkøring brandspjäll På	D05 - Brandspjäll Av
D16 - NO - Forlångd drøtt, Normal Av	D06 - Stat P1 kyla Av
D17 - NO - Extern larm Av	
D18 - NO - Extern bytare På	
UD11 - NO - Indkøring TF Av	
UD12 - NO - Indkøring FF Av	
UD13 - NO - Inaktiv	
UD14 - NO - Inaktiv	

Shows actual values for all inputs and outputs.

This is a read-only folder. No settings can be made here.

Un-configured inputs and outputs are grayed.

## 8.7 Calendar



### E-tool Heating

Here you set the daily comfort periods.

Each control function has its own set of daily schedules

For each day there are two periods.

The 8<sup>th</sup> day, *Holiday* governs the activity on all days marked as holidays in the holiday calendar, see below.

The schedules for *Timer channel output 1...5* dictate the activation of the corresponding digital output signal.

To deactivate a period, set the time to 00:00 – 00:00.

To run the unit 24 hours a day, set the time to 00:00 – 24:00.

Note: An interval cannot exceed over midnight. For example, if you want to configure a period from 18:00 to 02:00, you have to divide it into two periods: Day 1 18:00 – 24:00 and day 2 00:00 – 02:00.

### E-tool Ventilation

Here you set the daily running periods.

If single-speed fans have been configured there is only one set of daily schedules.

If two-speed or pressure controlled fans have been configured there will be two sets of daily schedules. One for normal running speed and one for reduced speed.

For each day there are two periods.

Should the running periods for normal and reduced speed overlap, normal speed will take precedence.

The 8<sup>th</sup> day, *Holiday* governs the activity on all days marked as holidays in the holiday calendar, see below.

The schedules for *Timer channel output 1...5* dictate the activation of the corresponding digital output signal.

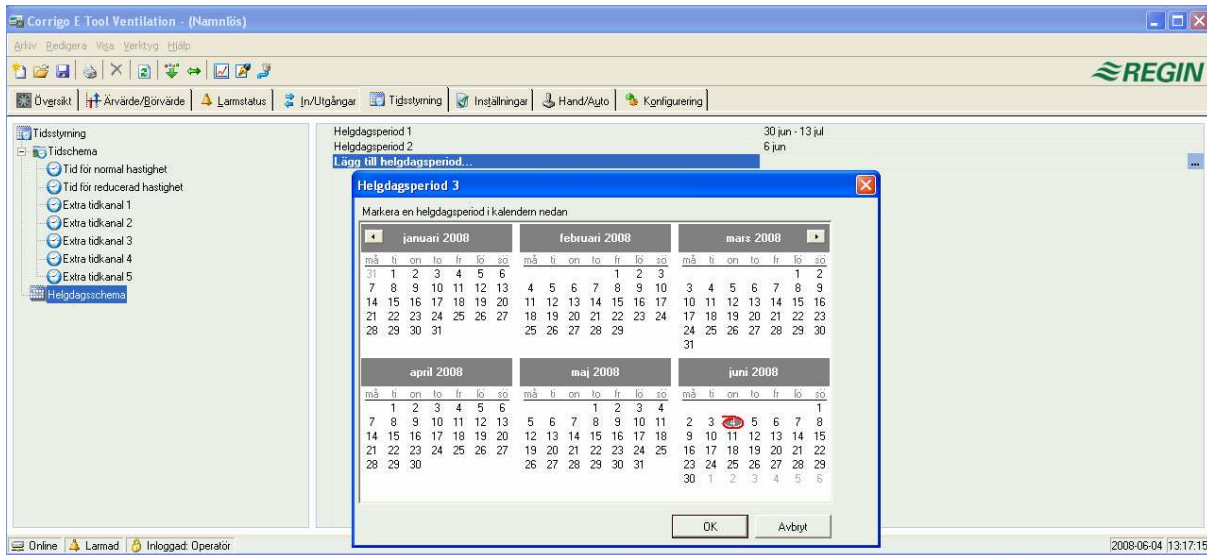
To deactivate a period, set the time to 00:00 – 00:00.

To run the unit 24 hours a day, set the time to 00:00 – 24:00.

Note: An interval cannot exceed over midnight. For example, if you want to configure a period from 18:00 to 02:00, you have to divide it into two periods: Day 1 18:00 – 24:00 and day 2 00:00 – 02:00.



## Holiday schedule



Up to 24 separate holiday periods can be configured. A holiday period can be anything from one day up to 365 consecutive days.

To create a holiday period, click on the button at the right hand end of the line *Add holiday period*.

To pick a single date, click on it, a marker will indicate your choice, then click on OK

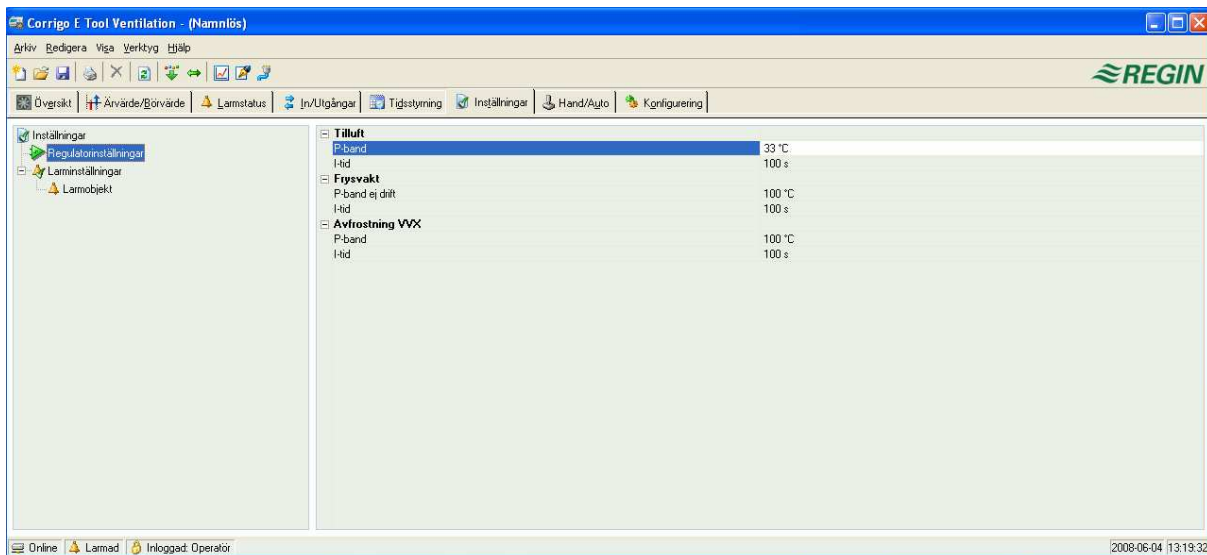
To pick a period, click and hold on the first date, drag the cursor to the last date and release the button. The period will be marked. Click OK. Alternatively, click on the first date, depress and hold the shift-key on your keyboard and click on the last date of the period. The full period should be marked. Click OK.

Although the calendar seems to extend far into the distant future, holiday periods can only extend up to one year from the present date. Should you choose a date further ahead than one year, the date will be replaced by the same date within one year from the present.

To remove unwanted holiday periods, use the delete button in the E-toolbar.

Holidays/holiday periods that have been set will be valid every year, until they are removed. This means that for example Christmas and New Year will only have to be set once and are then valid for all future.

## 8.8 Settings



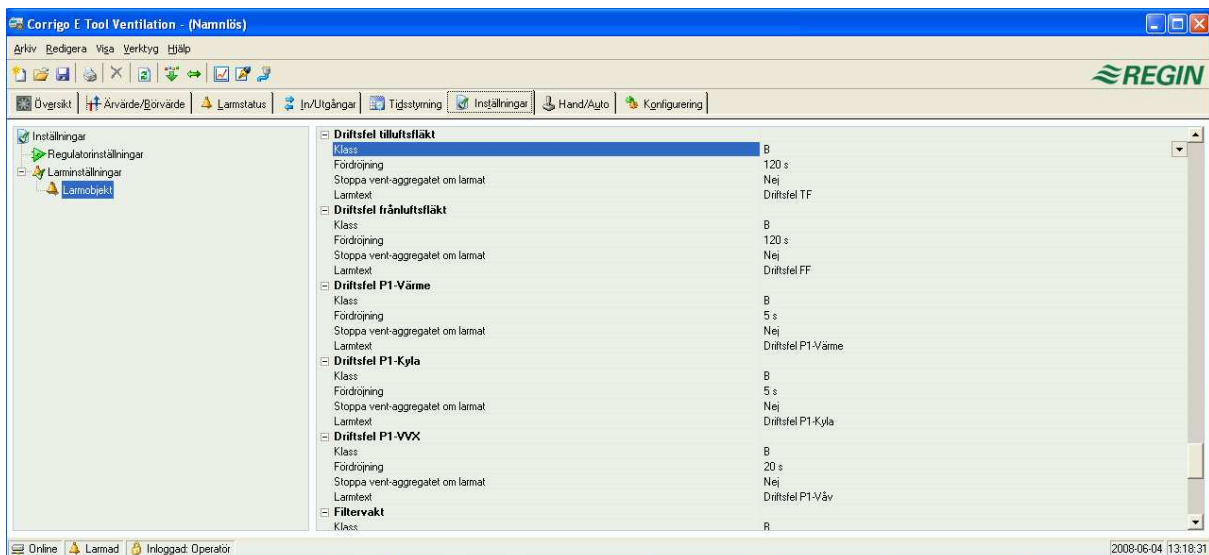
### Controller settings

Setting of the control parameters.

Parameter setting-interval endpoint values and default value 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 E-toolbar or the E-tools menu.



### Alarm settings / alarm objects

Setting of alarm parameters.

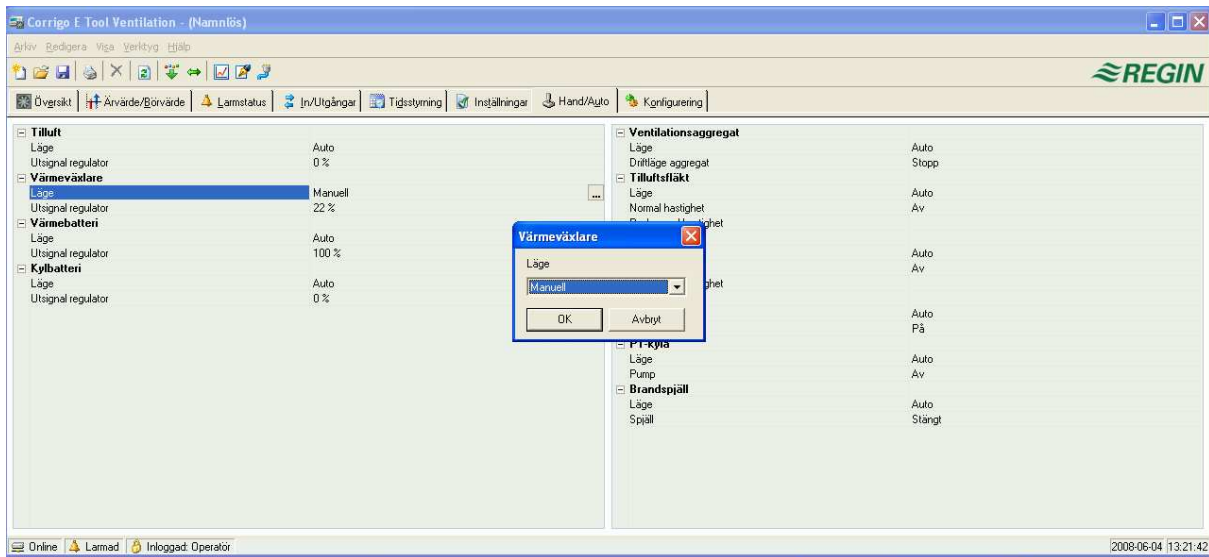
These settings can also be made in the Alarm status folder. See the section on Alarm status above.

Disabled alarms will be removed from the alarm list in the Alarm status folder.

A and B alarms will activate the digital outputs A-alarm and B-alarm respectively if configured. Both will activate the Sum alarm output if configured.

C alarms are internal only.

## 8.9 Manual / Auto

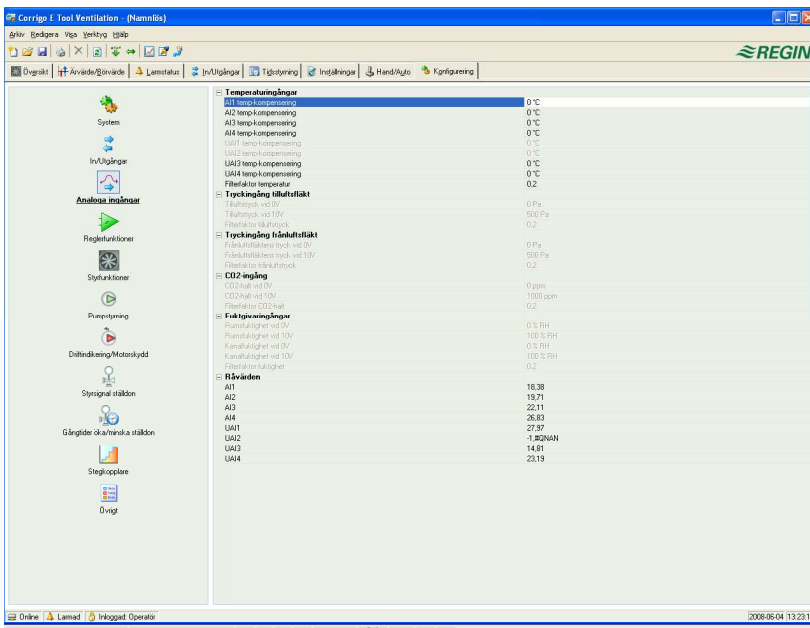


In this menu you can take manual command of most controller functions. Very useful for testing purposes.

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 changes to take effect.

## 8.10 Configuration



This folder contains all the configuration parameters for the Corrigo. 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. For detailed information on these, please see the manual for the controller in question.

## 9. Updating Corrigo E

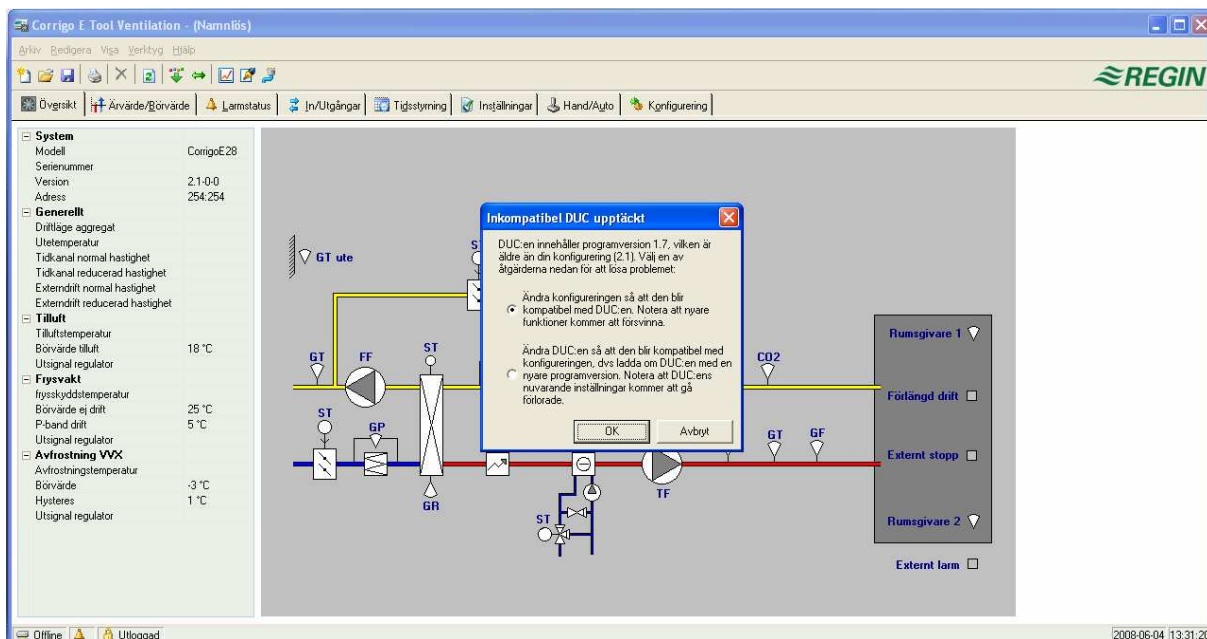
E-tool should always be updated with the latest program revision. If you are using the latest revision of E-tool and connect it to a Corrigo E with an older program revision, E-tool will give a warning and offer two alternatives.

One alternative is to temporarily downgrade E-tool to a revision corresponding to the revision in the controller. All the settings in the controller will remain intact and the controller will keep its revision.

The other alternative is to upgrade the controller to the same revision as E-tool. This will cause the Corrigo-unit to temporarily stop working. Any previous settings will be permanently lost.

Take the following actions to avoid having to configure again:

1. Start E-tool and connect it to the controller. When asked, choose to downgrade E-tool to the controller's revision.
2. Select *Synchronize all parameters* in the menu Tools. Then select *Update tools*. E-tool should now contain an exact copy of the configuration in the controller. Select *Save as* in the menu File and save the configuration under a suitable name.
3. Close E-tool. Then open it again and choose to reload the controller with a new revision.
4. After reloading, open the saved configuration file, synchronize all parameters and then select *Update the controller*. The controller should now have the latest revision and be configured as it was before the upgrade. Make sure that the settings of the parameters that were not available in the old revision have suitable values.



Corrigo E Tool Ventilation - (Namnlös)

Arkiv Redigera Visa Verktyg Hjälp

Översikt Arvärde/Börvärde Larmstatus In/Utgångar Tidstyrning Inställningar Hand/Auto Konfigurering

**System**  
 Modell: CorrigoE28  
 Serienummer: 8069625  
 Version: 2.1.0-0  
 Adress: 254.254

**Generellt**  
 Driftäge aggregat: Stopp  
 Utelens temperatur: 18,38 °C  
 Tidkanal normal hastighet: P3  
 Tidkanal reducerad hastighet: Av  
 Externdrīt normal hastighet: Av  
 Externdrīt reducerad hastighet: Av

**Tilluft**  
 Tilluftstemperatur: 19,87 °C  
 Börvärde tilluft: 18 °C  
 Utsignal regulator: 0 %

**Frys-vakt**  
 frys-skyddstemperatur: 23,19 °C  
 Börvärde ej drīt: 25 °C  
 P-band drīt: 5 °C  
 Utsignal regulator: 100 %

**Avfrostning VVX**  
 Avfrostningstemperatur: 14,87 °C  
 Börvärde: -3 °C  
 Hysteres: 1 °C  
 Utsignal regulator: 0 %

**Synkronisera parametrar**  
 De parametrar som visas nedan har inte samma värde i DUC:en som i verktyget.  
 Markera de parametrar du vill uppdatera.

Parameter	DUC-värde	Verktysvärde	Beskrivning
<input checked="" type="checkbox"/> AI3	Fri-luftstemp	Rumstemp 1	
<input checked="" type="checkbox"/> AI4	Rumstemp 1	Rumstemp 2	

Läs nu Markera allt Avmarkera allt Uppdatera verktyget Uppdatera DUC:en Stäng

GT ute

Online Larmad Utloggad 2008-06-04 13:37:00

## 10. TCP/IP – network terms

### Networks, subnets, routers

- IP network** An IP network is a cluster of cables and devices, where an equipment with one IP address can communicate with any other IP addressed equipment. Internet is **one** network, and when your home computer connects to the Internet, you become part of the Internet.
- Subnet** Networks are divided into **subnets**, which are linked with **routers**. Routers need some kind of map of the network (or at least of the closest subnets, and somewhere to send everything else). A computer only needs to know the address of the closest router. A local switched Ethernet network is **one** subnet. Routers can have several Ethernet ports for different Ethernet networks, or maybe an Ethernet port and an ADSL connection.

### IP address, Subnet mask, Default Gateway, DNS server

- IP address** Each computer or network connected controller has an IP address consisting of four numbers between 0 and 255, which makes up a total of 32 bits.
- Subnet mask** Each computer or network connected controller also has a subnet mask consisting of 32 bits.
- Example** If the IP address is 192.0.2.73 and the subnet mask is 255.255.255.0, then the subnet addresses are from 192.0.2.0 up to 192.0.2.255, and 192.0.2.73 is your address on the subnet. Sometimes the subnet mask is specified by the number of bits used (always starting at the beginning of the subnet mask). The subnet is then 192.0.2.0/24, and the IP address and the subnet mask can also be specified together: 192.0.2.73/24.
- Default Gateway** Each computer and each controller using TCP/IP communication must know the IP address to the router that goes out from its subnet. The IP address of this router is usually called the **default gateway**. All traffic that shall be sent out of your own subnet is sent to the default gateway.
- DNS name** The computer or the controller måste veta adressen för den utrustning som den ska kommunicera med. Det kan var angivet som en IP-adress eller med ett **DNS name**. DNS är en namntjänst som kan översätta hierarkiskt uppbyggda namn såsom **exohuvuddator.regin.se** till en IP-adress. En mängd DNS-servrar ingår i systemet, men man behöver bara känna till IP-adressen för en av dem.
- IP configuration** A complete IP configuration consists of the IP address of your computer, the subnet mask, the IP address of the closest router (also called the default gateway) and a DNS server.

### DHCP, fixed and dynamic addresses

- Static and dynamic** An equipment can have manually configured IP settings, a so-called **static** IP address, or they may receive a **dynamic** IP address from a special computer, a so-called DHCP server, on the subnet.
- Dynamic IP addresses** The use of dynamic addresses presents a problem when other equipments try to contact the equipment, as the dynamic addresses are unknown in advance and are subject to change. To be able to contact equipment using dynamic addresses, your equipment need to use DNS, which also has to be updated when the dynamic address is changed via DHCP. This is commonly used in corporate networks and for Windows computer. However, most Internet Service Providers and several types of EXO controllers do not support the DNS update via DHCP, and must therefore use a static IP address.

## White and black addresses

- Black addresses** There is a shortage of IP addresses on the Internet and organizations are encouraged to use internal IP addresses on internal networks. Different companies may use the same address series, as their internal work computers never really need to connect directly to each other. This kind of addressing is called **private** or **black** addressing.
- Reserved addresses** The following addresses are reserved for private nets:  
192.168.0.0 - 192.168.255.255  
172.16.0.0 - 172.31.255.255  
10.0.0.0 - 10.255.255.255  
See also: RFC1918, Address Allocation for Private Internets [Online document], [cited Nov 29 2005], Available HTTP: <http://www.ietf.org/rfc/rfc1918.txt>
- White addresses** Addresses that are unique on the Internet are called public or **white** addresses. More information of the use of IP addresses can be found on RFC3330, Special-use, IPv4 addresses, <http://www.ietf.org/rfc/rfc3330.txt>
- NAT** Firewalls can act as agents for computers with private IP addresses, when they are searching the Internet for information. A connection from a computer with a black IP address is transformed into a connection from the firewall (which has a public IP address) to the Internet server. The Internet server may then return the information to the firewall which forwards it to the computer with the black address. This is called **NAT** or **masquerading**.
- EXO** In general, NAT also works with EXO4 and EXO controllers, although the connection must be initiated from within the black network and target the white network.
- NAT router** You can also have a NAT router to forward traffic from the white net to a computer on the black net. This is accomplished by letting traffic to a specific TCP port or UDP port to be forwarded to an IP address on the black net.
- EXO controllers** There are Internet Service Providers that target, e.g. housing co-operatives, offering only private dynamic addresses. EXO controllers with a TCP/IP port can manage controllers connected this way, provided that the main computer has a static or a DNS registered **public** address. The EXO system can also manage the reverse condition, and allows a main computer with a private address to contact controllers with public addresses.

## Tunnels

- Two private networks** Another way to manage a connection via the Internet from a work computer to a main computer on a company network that uses private IP addresses, is to create a tunnel going into the network. A **tunnel** means connecting two networks using private IP addresses via the Internet, by encrypting all network packages to the destination network (encryption includes IP addresses and other information). The encryption is done by the firewall of one of the networks. The package is issued a new "address label" specifying the other firewall's public address. This firewall decrypts the contents and forwards it to the destination work station within its network. Any listeners that do not have knowledge of the password will not be able to decrypt the traffic. This technology is also called **VPN**.
- PC – black network** A tunnel can also be created between a single computer and a private network. Nowadays, it is common for travelling salesmen to connect their mobile stations via GPRS and the Internet, and then connect to the company network using a tunnel. The same technology can be used by the duty technician to work with the EXO4 work station from his home, from the service vehicle or similar.



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The logo for Regin, featuring a stylized green wave icon followed by the word "REGIN" in a bold, green, sans-serif font.

THE CHALLENGER IN BUILDING AUTOMATION