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## 1. Overview

Genesys is a Nethix Software that offers to the user a simple, intuitive and user-friendly interface for configuring the WE120. The WE120 manual can be found in the WE120 ([we120\\_manual.html#we120-manual](#)).

It's a lightweight software compatible with the following operating systems:

- Windows
- OS X
- Linux

It allows to configure almost all aspects of the WE120:

- The basic parameters of the device
- The advanced parameters of the device
- Users
- I/O
- Alarms
- Expansion modules

In addition it allows to:

- Control inputs and outputs
- Upgrade the device
- Make a factory reset

Genesys communicates with WE120 through the **RS232** Serial Port or through the **USB mini-B port**.


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## 2. Installation

### Note

The application program Genesys works properly only on a 64bit system.

## 2.1. Windows

- Download the USB driver ([we120\\_downloads.html#we120-downloads-drivers-windows](http://we120_downloads.html#we120-downloads-drivers-windows)) for the Windows operating system, extract the files and run the file **install.bat**.
- Download the latest version of the Genesys 3 ([we120\\_downloads.html#we120-downloads-genesys-windows](http://we120_downloads.html#we120-downloads-genesys-windows)) for Windows.
- Double click on the downloaded executable file.
- Follow the installation wizard.
- Click on **Next**.
- Select the destination directory and click on **Install**.
- Once the installation is completed an icon will appear on the desktop.
- Connect the WE120 to the PC through USB or RS232.
- Turn-on the WE120.
- Start up the **Genesys 3** by double clicking on the  icon available on the desktop.

## 2.2. OS X

- Download the latest version of Genesys 3 ([we120\\_downloads.html#we120-downloads-genesys-osx](http://we120_downloads.html#we120-downloads-genesys-osx)) for OS X systems
- Extract the files
- Connect the WE120 to the Mac through the USB port
- Turn-on the WE120
- Start up the **Genesys 3**

## 2.3. Linux

- Download the latest version of Genesys 3 ([we120\\_downloads.html#we120-downloads-genesys-linux](http://we120_downloads.html#we120-downloads-genesys-linux)) for Linux systems.
- Install the prerequisites using the Linux distribution package manager:

- For Ubuntu, Mint and Debian:

```
sudo apt-get install libQt5SerialPort
```

- For Open SuSE and CentOS:

```
sudo yum install Qt5WebKitWidgets
```

- For Fedora:

```
sudo yum install qt5-qtwebkit.x86_64
sudo yum install qt5-qtserialport.x86_64
```

- Give permissions to the user for accessing the serial port of the PC. Modify through the preferred text editor the file `/etc/group` and add your user to the dialout group:

```
sudo vi /etc/group
dialout:x:20:utente
```

- Logout and login
- Connect the WE120 through the RS232 Port
- Switch on the WE120
- Run the **Genesys 3**

### 3. Communication initialization

At the start up of Genesys the following window will be displayed:

The parameters of the port used for the communication between the WE120 and the PC must be entered.

The default parameters are:

- Porta: It may vary. For example, in windows the port could be COM0 whilst in Linux it could be ttyS0
- Baudrate: **9600**
- Parity: **None**
- Data bits: **8**
- Stop bit: **Uno**
- Password: **0000**

Once entered the correct data, click on the tab **Connect**.

If the initialization is successful, the following message will appear:

Command sent successfully

Otherwise the following message will be displayed:

The communication is not successful if

- The WE120 is switched off
- The WE120 is not connected to the PC
- The wrong Port has been selected
- The Baudrate or some other serial communication parameters are not correct

Once the communication has been successfully initialized, it's possible to start the configuration of the WE120.

## 4. User interface

Let's start to familiarize with the web interface and its different sections and components.

Each page of the interface is divided into three sections, as indicated below: header, main menu and content.

The screenshot shows the GENESYS 3.3 web interface. At the top is a dark header bar with 'GENESYS 3.3' on the left and 'en-US' and icons on the right. Below the header is the main content area. On the left is a 'Main menu' with a vertical list of options: General, Users, I/O, Expansions, and System. The 'General' option is selected. The main content area is titled 'WE120 General' and has two tabs: 'Basic' (selected) and 'Advanced'. The 'Basic' tab contains several form fields: 'Name', 'Phone number', 'Service center', 'Alarms' (with a checked 'Enable' checkbox), 'Send alarm periodically' (with an unchecked 'Enable' checkbox), and 'Send confirm messages' (with an unchecked 'Enable' checkbox). A 'Save' button is at the bottom of the form. Red arrows point to the header, main menu, and content areas, with labels 'Header', 'Main menu', and 'Content' respectively.

GENESYS 3.3 en-US

**NETHIX**  
WE CONTROL

WE120  
**General**

Basic Advanced

Name

Phone number

Service center

Alarms ☒ Enable

Send alarm periodically ☐ Enable

Send confirm messages ☐ Enable

Save

**Header**





**Main menu**

**Content**

Nethix - Via dei Pini, 21 - 31033 Castelfranco Veneto (TV) - Italy - [www.nethix.com](http://www.nethix.com)  
Powered by **Nethix WE500** - [www.nethix.com](http://www.nethix.com)

### 4.1. Header

This element remains always visible on the upper part of the page.

On the right end corner the operator can easily change the language through the  icon, obtain information from the tutorial or from the site through the  icon, open the window of the serial port through the  icon or recall the page for configuring the serial port through the  icon.

This is the window for the serial port: The serial port window window shown below displays all the read and write commands that Genesys execute. Another interesting feature is that at the bottom of this window it is also possible to write the commands available on 6. Command description ([we120\\_manual.html#we120-manual-commands](http://we120_manual.html#we120-manual-commands)).

GENESYS 3.1		
Time	Sender	Message
15:38:30	Genesis 2	DEVCONF \$\$\$\$
15:38:33	WE120	CMD:DEVCONF \$\$\$\$ 1/\$\$\$\$ "2.0.7 IT'2.0'1'0'0'0'0'0'0'30 0:+393334445555'MARIO'3'3'0'0' +325554443333'GIANNI'2'0'0'0'DI1,2,3,4 DO1,2 AI1,2 1:1'AI1'0'1024'0"2 2'AI2' 2/\$\$\$\$ 0'1024'0"2 3'AI3'0'1024'0"0 4'AI4'0'1024'0"0 5'AI5'0'1024'0"0 6'AI6'0'1024'0"0 4:1'DI1'0'Off'On '0 2'DI2'0'Off'On '0 3'DI3'0'Off'On '0 4'DI4' 3/\$\$\$\$ 0'Off'On '0 5'DI5'0'Off'On '0 6'DI6'0'Off'On '0 7'DI7'0'Off'On '0 8'DI8'0'Off'On '0 9'DI9'0'Off'On '0 10'DI10'0'Off'On '0 6:1'DO1'0'Off'On '0'0 2' 4/\$\$\$\$ DO2'0'Off'On '0'0 3'DO3'0'Off'On '0'0 4'DO4'0'Off'On '0'0 5'DO5'0'Off'On '0'0 6'DO6'0'Off'On '0'0 7'DO7'0'Off'On '0'0 8'DO8'0'Off'On '0'0 7:8'1 5/\$\$\$\$/1 7'2 9:0'3'0'8'1 1'3'0'8'1
		<input type="text"/> <input type="button" value="Send"/>

## 4.2. Main menu

The main menu area shows the Nethix Logo and all available options for browsing inside Genesys:

- General
- Users
- I/O
- Expansions
- System

## 4.3. Content

From this section the user can configure all the parameters of the WE120. This area changes dynamically according to the menu that the user wants to display. In this section the result of all executed commands will be displayed:

- green: the operation has been successfully completed

- red: the operation has not been successfully completed due to an error condition

## 5. General settings

In this section is possible to configure all general and basic parameters of the device, such as the name or the SIM number, or all the advanced parameters such as the activation of the only modem mode.

### 5.1. Basic settings

Basic

Advanced

Name

MY\_WE120

Phone number

+393334445555

Service center

+3933596096|

Alarms

☒ Enable

Send alarm periodically

☐ Enable

Send confirm messages

☐ Enable

Save

This area allows to set the general basic parameters of the WE120:

- Name: The name to be assigned to the device. Only alphanumeric characters [aA-zZ] and underscore \_ are allowed.
- Telephone: The telephone number of the device, preceded by the plus sign + and the **country code**. For example, in Italy the telephone number starts with +39.
- Service Center: The SIM Provider Service Center
- Alarms: enables The sending of alarms to the user via SMS or Ring
- Sends alarms periodically: Enables the sending of a periodical message in case of alarm
- Sends confirmation message: Enables the sending of a confirmation message for each executed command

After completing all the fields, it's necessary to press **Save** in order to save the settings.

### 5.2. Advanced settings

In this section is possible to set the general advanced parameters of the WE120.

#### 5.2.1. Advanced

---

## Advanced

Enable all	<input type="checkbox"/> Enable
Send boot status	<input type="checkbox"/> Enable
Only modem	<input type="checkbox"/> Enable

---

It is possible to set the following options:

- Enable all: Any telephone number (even if they are not registered in the device) can send/receive messages to/from the WE120.
- Send boot status: Send an SMS at every start up of the device.
- Only modem: Enables the only modem mode.

### 5.2.2. Execute command

---

#### Execute command

Digital output	<input type="text" value="DO1"/>
Condition	<input type="text" value="High"/>
User	<input type="text" value="MARIO"/>
Command	<input type="text" value="STAT"/>

---

From this area it is possible to allow the WE120 to execute a command when a digital input reaches a defined value.

The result of the command will then be sent to the specified user.

- Digital output: The digital output associated to the command
- Condition: The required status of the output to execute the command
- User: The telephone number or name of a registered user
- Command: The command to be executed

### 5.2.3. RS232



---

## RS232

---

Baudrate	<input type="text" value="4800"/>
Parity	<input type="text" value="No one"/>
Data bits	<input type="text" value="7"/>
Stop bits	<input type="text" value="1"/>

Save

---

In this section the parameters of the RS232 serial port are configured:

- Baudrate
- Parity
- Data bit
- Stop bit

### 5.2.4. RS485

---

## RS485

---

Baudrate	<input type="text" value="4800"/>
Parity	<input type="text" value="No one"/>
Data bits	<input type="text" value="7"/>
Stop bits	<input type="text" value="1"/>

Save

---

In this section the parameters of the RS485 serial port are configured:

- Baudrate
- Parity
- Data bit
- Stop bit

---

## 6. Users

WE120

## Users

Name	Phone number	Privileges	Delete
MARIO	+393334445555	Administrator	<input type="radio"/>
GIANNI	+325554443333	Standard	<input type="radio"/>

Add

Delete

This page shows the list of all users registered in the device.

A table complete with name, telephone number and users privileges is given.

It's possible to delete a user just by selecting it on the column Delete of the table and then clicking on the **Delete** button.

To add a new user it's sufficient to click on the **Add** button; for editing just click on the user to be modified.

The page for adding or editing a User is the following:

WE120

## User

Name	<input type="text" value="MARIO"/>		
Phone number	<input type="text" value="+3393334445555"/>		
Alarms	<input type="text" value="Both sms and ring"/>		
Privileges	<input type="text" value="Administrator"/>		
Ring mode	<input type="text" value="Disable"/>	<input type="text" value="DO1"/>	
Ring send status	<input type="checkbox"/> Enable		

Save

Back

It allows to set the following parameters:

- Name: The user name.
- Telephone: User telephone number preceded by the plus sign + and the **country code**. For example, in Italy the telephone number starts with +39.
- Alarms: Select the type of alarm to be sent to the user:
  - No alarm
  - Only SMS alarms
  - Only ring alarms
  - Both SMS and Rings
- Privileges: The user's privileges:

- Read only: The user can only read the I/O status.
- Administrator: The user can both read and configure the I/O; it can also configure the WE120.
- Standard: The user can read and configure only the inputs and outputs selected on the field variables.
- Ring Mode: Turn- on/off or switch the status of an output through a Ring
- Send status through Ring: It enables the sending of the I/O status through a Ring.

## 7. I/O

This section shows the list of all the available inputs and outputs of the WE120.

WE120		
Inputs and outputs		
Name	Value	Quick settings
AI1	2	
AI2	2	
DO1	Off	Off On
DO2	Off	Off On
DI1	Off	
DI2	Off	
DI3	Off	
DI4	Off	

Refresh values

In the table is given the name and the value and, in case of the digital outputs, also a tab for activating or deactivating the output.

On the lower part of the table there is an **Update values** button that allows to update the I/O status.

### 7.1. Analogue inputs

For entering the configuration page of an analogue input, click on the relevant line of the table. The following page will be displayed:

WE120

## Analog input

Name	<input type="text" value="AI1"/>
Thermostat	<input type="checkbox"/> Enable
Min	<input type="text" value="0"/>
Max	<input type="text" value="1024"/>
Units	<input type="text" value="mA"/>
Decimals	<input type="text" value="1"/>

Save

Configure alarm A

Configure alarm B

Back

From this page it's possible to configure:

- Name: The name of the analogue input.
- Thermostat: Enable the thermostat function

If the thermostat function is enabled, the following parameters will be shown:

- Threshold: The threshold activation of the analogue output.
- Digital output: The output to be activated.
- Digital input: The digital input that allows to enable/disable the thermostat function.

If the thermostat function is not enabled, the following parameters will be shown:

- Minimum: The minimum value that the input can read.
- Maximum: The maximum value that the input can read.
- Unit of measurement: The measurement unit of the input.
- Decimals: Number of decimals to be displayed.

By clicking on the **Save** button the modifications of the parameters will be applied.

It's possible to set up to two alarms (A/B) on each analogue input from the relevant page by clicking **Set alarm A** and **Set alarm B**, respectively.

### Warning

Before setting the alarm it's necessary to configure the input.

### 7.1.1 Analogue inputs alarms

WE120

## Analog input alarm

Alarm	<input type="text" value="A"/>
Threshold	<input type="text" value="25"/>
Condition	<input type="text" value="High"/>
Delay	<input type="text" value="30"/>
Digital output	<input type="text" value="DO1"/>
Mode	<input type="text" value="Turn ON"/>
Message	<input type="text" value="Alarm"/>

From this configuration page it is possible to program an alarm on an analogue input, setting the following parameters:

- Threshold: The alarm triggering threshold.
- Condition: The condition of the analogue input's value with respect to the threshold:
  - High: The alarm is triggered when the value of the analogue input is **higher** than the preset threshold.
  - Low: The alarm is triggered when the value of the analogue input is **lower** than the threshold.
- Delay: The delay, expressed in seconds, of the alarm triggering after the preset condition is reached.
- Digital output: the digital output to be activated at alarm triggering.
- Mode: Digital output activation mode:
  - Enable: Enable the output.
  - Disable: Disable the output.
  - Enable only if in alarm state, otherwise disable it: If the alarm is triggered, the output is enabled, then it will disable it when the alarm is off.
- Message: The text of the message to be sent to the users.

## 7.2 Digital outputs

WE120

## Digital output

Name	<input type="text" value="DO1"/>
Mode	<input type="text" value="Open"/>
Label open	<input type="text" value="Off"/>
Label close	<input type="text" value="On"/>
Delay	<input type="text" value="0"/>
Pulse duration	<input type="text" value="0"/>

Save

Back

For entering the configuration page of a digital output, click on the relevant line of the table.

From this page it is possible to configure following parameters:

- Name: The digital output name.
- Mode: Activation mode of the output:
  - Open: Opens the relay
  - Closed: Closes the relay
  - Pulse open: Opens the relay for X seconds
  - Pulse close: Closes the relay for X seconds
- Label open: The string to be displayed when the relay is open
- Label closed: The string to be displayed when the relay is closed
- Delay: The number of seconds between the command and the activation of the relay
- Pulse duration: Duration of the pulse, expressed in seconds

By clicking on the **Save** button the modifications of the parameters will be applied.

## 7.3. Digital inputs

WE120

## Digital input

Name	<input type="text" value="DI1"/>
Mode	<input type="text" value="Normal"/>
Label open	<input type="text" value="Off"/>
Label close	<input type="text" value="On"/>

Save

Configure alarm high

Configure alarm low

Back

For entering the configuration page of a digital output, click on the relevant line of the table.

From this page it is possible to configure following parameters:

- Name: The digital input name.
- Mode: The mode of the input:
  - Reset: When the digital input is enabled, the digital outputs are reset
    - Label open: The string to be displayed when the digital input is activated
    - Label closed: The string to be displayed when the digital input is deactivated
  - Counter: the device counts how many times the digital input closes
    - Start: The initial number when starting to count
    - End: The counter will restart when reaching this number.
    - Delivery frequency: The number of seconds elapsed between the sending of the input status messages.
    - Digital output: The digital output to be activated when the counter reaches the End value.
  - Normal
    - Label open: The string to be displayed when the digital input is enabled
    - Label closed: The string to be displayed when the digital input is disabled

By clicking on the **Save** button the modifications of the parameters will be applied.

It's possible to set an alarm both on the high threshold and on the low threshold from the relevant page by clicking on **Set alarm high** and **Set alarm low**, respectively.

#### Warning

Before setting the alarm it's necessary to configure the input.

### 7.3.1 Digital inputs alarms

WE120

## Digital input alarm

Condition	<input type="text" value="High"/>
Delay	<input type="text" value="30"/>
Message	<input type="text" value="Alarm"/>

#### Note

If the digital input variable is saved after setting the relevant associated alarms, these will be reset.  
The allarms are disabled when the digital input variable is associated to an analogic thermostat variable.

From this configuration page it is possible to program an alarm on a digital input, setting the following parameters:

- Delay: The delay, expressed in seconds, elapsed between the condition and the alarm triggering.
- Message: The text of the message to be sent to the users.

## 8. Expansions

This page shows a table with the connected expansions and their respective Modbus addresses.

WE120

## Expansions

Type	Modbus address
4 temperature probes	1
6 digital inputs and 6 digital outputs	2

Add

Delete all expansions

It is possible to add new expansions by clicking in the **Add** button, whilst all the expansion can be removed at once by clicking in the Delete all expansions button.

## 8.1. Adding expansions

WE120

## Add expansion

Type

16 digital input

Modbus address

1

Save

Back

To add a new expansion the following parameters must be set:

- Type: The type of expansion:
  - 16 digital input
  - 6 digital input and 6 digital output
  - 4 analog inputs
  - 4 analog inputs black
  - 4 temperature probes
- Modbus address: The expansion's Modbus address

Once an expansion has been added, the 7. I/O page will display the new inputs and/or outputs that corresponds to this expansion.

## 9. System

This chapter is dedicated in three areas:

- Info
- Upgrade
- Factory reset



## 9.1. Info

WE120

### System

Info

Upgrade

Factory reset

Signal	20
Hardware version	2.0
Software version	2.0.8
Language	EN

Refresh values

In this area is displayed the following information that regards the device:

- Signal: The GSM signal level. The signal number can be interpreted as follows:
  - 1 to 7: GSM signal is too low for a correct operation of the device
  - 8 to 12: GSM signal is low
  - 13 to 18: GSM signal is good
  - Higher than 18: GSM signal is very good
- Hardware version
- Software version
- Language: The software language currently installed in the WE120. The SMS messages that are sent/received by the WE120 depend on this setting. For example, if the EN language is set, the WE120 will expect message commands written in English.

## 9.2. Update

WE120

### System

Info

Upgrade

Factory reset

Select file

Select file

Upgrade

In this area the WE120 firmware can be updated.

This is a quick and simple procedure:

- Download the latest firmware file [firmware \(we120\\_downloads.html#we120-downloads-fw\)](http://firmware.we120.com/we120_downloads.html#we120-downloads-fw)

- Select the just downloaded file in the **Select file** field
- Click on the **Upgrade** button.
- Turn-off the WE120
- Turn-on the WE120
- Wait for the update procedure to finish. It typically takes ~3 minutes.

For details, please read the firmware update guide ([we120\\_fw\\_upgrade.html#we120-fw-upgrade](#)).

## 9.3. Factory reset

WE120

**System**

[Info](#) [Upgrade](#) [Factory reset](#)

Attention

**Factory reset**

Using this button it is possible to clean all the device configuration. All the previous configuration will be lost except the serial port parameters. If a firmware upgrade was executed before the factory reset, that firmware will remain.

[nethix.com](http://nethix.com) (<http://nethix.com>)

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