NG FAN CONFIGURATOR Operating Manual
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Rev. 1.7 – 15th July 2021
Description and Requirements

The NG Fan Configurator is a freeware tool that can be used to check and configure the Nicotra|Gebhardt EC fans (DDMP, RDP, FDP and PFP) available on the website http://www.nicotra-gebhardt.com. It runs only on a Windows operating system from 10 version onwards with a hard disk available space of 300MB. For the connection between the computer and the driver of the fan it is necessary to use an USB to 485 or an USB to 232 converter (OFFLINE cable, refer to the fan manual for more detail). After downloading and decompressing the zip file, double click on the setup.exe file and the program will be installed in the main root of the system C:\NG Fan Configurator

End User License Agreement

To proceed with any further operation, the user must accept the END USER LICENSE AGREEMENT by clicking here.

Fig. 1

EULA content

Nicotra|Gebhardt, S.p.A

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Software Menu

Accepting the EULA the fan starts in the info page and the available menu is shown in figure 2.

![Software Menu](image)

The single items are shown in figure 3.

![Software Menu Items](image)
Menu items

Connection
This item contains two sub-items for the connection of the fan to a PC through a Modbus protocol.

Cable Connection
(Refer to the EC Fan Manual for details).
Before connecting the user must select:
- The Fan Address
- The Parity
- The Baud Rate
- The COM port

NOTE:
Each cable requires its own drivers being installed on the PC.
Once the drivers are installed and the cable connected a virtual COM port is assigned.

Connection through RS485 cable
The fan must be powered on and the connection is made through the opto-insulated contacts.
For example a FTDI cable can be used: USB-RS485-WE-1800-BT.

Connection through RS232 OFFLINE cable
The fan must be POWERED OFF and the connection is made through the white connector of figure 6.
For example a FTDI cable can be used: TTL-232R-5V-WE.

Bluetooth Connection
It is also possible to communicate through a Bluetooth device using the module in figure 7.
Set
This item contains sub-items to select the fan model, to change the Operating Mode, to set the fan Holding Registers and the password to access to higher privileges.

Fan Type
After the connection the most important operation is to select the fan type.
It is possible to sort the selection by family, driver power output and power supply phases.

![Fan Type Selection](image)

Then the fan must be selected from the list in the combo box of figure 9.

![Fan Selection Combo Box](image)

Operating Mode
The Operating Mode can be changed only after the fan has been selected and connected and the available choices are depending on the fan type (refer to the EC Fan Manual for details).

![Operating Mode](image)

The Temporary Modbus Control can be set through the progress bar or through the control field.

 Registers
The fan Holding Registers can be accessed and set depending on the fan selected (refer to the EC Fan manual for details).

![Register Access](image)

The register Avoid Range Start for this fan can’t be accessed.
Password
This sub-item is reserved to the Nicotra||Gebhardt technical dept.

Table
This item contains three sub-items to monitor the Input and Holding Registers and to LOG the fan functioning variables.

Holding Registers
This sub-item shows the status of the Holding Registers read from the connected driver compared with the Holding Registers loaded when the Fan Type is selected. Where the registers are at the same value the cell background color is white while (fig. 13) it is blue in the other cases (fig. 14).

NOTE:
When the Holding Register default values are different from the stored values:
1- The user changed the value of the accessible Holding Registers
2- Verify that the fan you own corresponds to the selected one.
3- Update the software. Some fan values could have been reviewed by Nicotra||Gebhardt technical dept.
4- The values of the default and stored registers Date and Serial are always different.

Input Registers
This sub-item shows the status of the Input Registers (refer to the EC Fan Manual for further details).
NOTE:
The Input Register may be not properly displayed when the numbers have the comma as decimal separator. Here below the procedure to change the settings is shown:

1) Open the “Control Panel”

2) Select the “Region”

3) Select “Additional settings…”

4) Substitute the COMMA with DOT and as digit grouping symbol substitute the DOT with SPACE
Log Record
This sub item allows the record of the Input Registers values followed by a description.

<table>
<thead>
<tr>
<th>Airflow (m³/h)</th>
<th>Static Pressure (Pa)</th>
<th>Target Speed (rpm)</th>
<th>Measured Speed (rpm)</th>
<th>Motor Current (A)</th>
<th>Power OUT (W)</th>
<th>Analog Input (V)</th>
<th>Transducer Input (mV)</th>
<th>Module Temperature (°C)</th>
<th>Alarms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

There are two possibilities to acquire the values: either manually any single point or automatically point by point after a defined time.

Show
This item contains four sub-items to monitor the fan performance, the variables behavior and the alarms. In addition there is the possibility to tune the PID coefficients when a transducer is connected to the fan.

Performance
This sub-item works on some types of fans (refer to the EC Fan Manual) and the fan working point is shown in real time.
**Variables**

This sub-item allows the user to monitor the behavior of two variables at the same time. The variables can be chosen from two combo boxes.

An automatic scaling, zoom function and a clear button are available as shown in figure 18.

**Closed Loop PID**

This sub-item allows the user to test and set the PID parameters by monitoring the reference and the transducer variables.

(Refer to the EC fan manual for further details)

**Alarms**

This sub item has several clusters representing possible errors, alarms or wrong selections.
**Driver alarms**

This cluster shows the possible alarms occurring during the driver functioning. (Refer to the EC Fan Manual for details)

![Fig. 20](image)

**Registers Status**

This cluster shows the Holding Register status

![Fig. 21](image)

**Checks**

This cluster compares the Operating Mode and the related Holding Registers values. For example an alarm indication occurs when a Fixed Modbus Mode is selected and an analog signal is present at the input.

![Fig. 22](image)

**Warnings**

This cluster shows when the fan enters in a performance limitation by comparing the Input Registers read values and the Holding Register set limits.

![Fig. 23](image)

**General Info**

This cluster applies several cross verifications between generic data of the fan loaded with the data read from the driver.

![Fig. 24](image)

The red color below the column indicates incoherence between the data read or selected, while the red color on the right of the rows represents the incoherence between the data read and selected.
Save

This item allows the user to save a personalized fan configuration, the LOG file of the data previously recorded and the Holding Registers comparison file.

Fan Configuration

A pop-up window opens and the user must insert the name of the personalized configuration.

For example a DDMP 9/9 2kW 1Ph has been set in Fixed Modbus Constant Airflow (see figure 25)

Once the configuration is saved, the Fan Type combo box is automatically updated with the new configuration.

The selected configuration can be removed pressing the red button.
Log File

This sub-item saves in a file the data recorded in the Log Table.

Registers Comparison

This sub-item saves in a file the comparison between the Holding registers loaded and read.

Load

This item allows the user to upload his own configurations and upgrade the NG Fan configurator software. Moreover it allows a firmware upgrade of the driver if necessary through a remote assistance of the Nicotra|Gebhardt technical dept. staff.

Fan Configuration

This sub-item allows the user to upload his own configuration selected from the Fan Type combo box. A progress bar indicates the uploading status.
Printing Customized Labels

The “Print Label” button is disabled and greyed out when the Holding Registers read from the driver are different values from those selected.

When the “Print Label” button is pressed the standard fields to print are showed in figure 31.

It is possible to customize the label by pressing the button Go to “Label Customization” in this form it is possible to select which data must be printed and in which order.

And it is also possible to create customized fields with fixed (once saved there is no more possibilities to change by the operator) or changeable values (the operator must fill the fields at each print process).
Firmware upgrade
This sub-item can be activated only by a Nicotra G Gebhardt technician through a remote assistance.

Software Update
The NG Fan Configurator software must be updated when a new fan is released or some fan configurations or a new driver’s firmware versions are created.
The file ZIP can be downloaded from the web site and it must be copied in the corresponding software folder: C:\NG Fan Configurator\Updates.
Then the “Update the Software Configuration” button must be pressed.
A blue LED indicates when the update process ended with success.

The “create the Update ZIP file” button can be used only by the Nicotra G Gebhardt technicians.

Help
In this item the user can find the EC Fan Manual and the Software Manual.

Changing the Menu items
When the user selects a menu item, automatically other menu items change depending on the informations correlated to the selected item.

In Table 1 all the combinations:

<table>
<thead>
<tr>
<th>Selected item</th>
<th>Item combinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Connection</td>
</tr>
<tr>
<td>Bluetooth Connection</td>
<td>Bluetooth Connection</td>
</tr>
<tr>
<td>Set</td>
<td>Fan Type</td>
</tr>
<tr>
<td></td>
<td>Operating Mode</td>
</tr>
<tr>
<td></td>
<td>Registers</td>
</tr>
<tr>
<td></td>
<td>Password</td>
</tr>
<tr>
<td>Tables</td>
<td>Holding Registers</td>
</tr>
<tr>
<td></td>
<td>Input Registers</td>
</tr>
<tr>
<td></td>
<td>LOG Record</td>
</tr>
<tr>
<td>Show</td>
<td>Performance</td>
</tr>
<tr>
<td></td>
<td>Variables</td>
</tr>
<tr>
<td></td>
<td>Closed Loop PID</td>
</tr>
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<td></td>
<td>Alarms</td>
</tr>
<tr>
<td>Save</td>
<td>Fan Configuration</td>
</tr>
<tr>
<td></td>
<td>LOG File</td>
</tr>
<tr>
<td></td>
<td>Register Comparison</td>
</tr>
<tr>
<td>Load</td>
<td>Fan Configuration</td>
</tr>
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<td></td>
<td>Firmware Upgrade</td>
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<td></td>
<td>Software Update</td>
</tr>
<tr>
<td>Info</td>
<td>Software Manual</td>
</tr>
<tr>
<td></td>
<td>Product Manual</td>
</tr>
<tr>
<td></td>
<td>Info</td>
</tr>
</tbody>
</table>

Table 1
Revisions:

Revision 1.0:
- Introduction of the revision 6 to the firmware of the DDMP 1kW 1Phase.
- Introduction of the revision 7 on the firmware of the PFP, RDP and DDMP 2.6kW 3Phase

Revision 1.1:
- Added the printing customized label feature
- Added the “Technical Info” module to the main Menu

Revision 1.2:
- Added the differentiation for the old product revisions.
Revision 1.3:
- Added the automatic search of the communication parameters

Once the “FIND” button is pressed the first step is to disconnect the cable on the computer side and then reconnect it in order to find the associated COM port associated.

!!! The driver of the cable must be already installed.

It is possible to deselect the known items in order to reduce the search time.

During the search it is not possible to exit and if the fan is found the parameters are directly saved on the main screen.
Revision 1.4

- Introduced a new control algorithm for some new fan series.

The new control algorithm has different Holding Registers functions and names and therefore the name and labels have been differentiated for each fan series.

In the figure above is the starting Holding Registers table is shown, where only the modifiable parameters are shown. In the figures below there are some examples of different tables.
- The product manuals have been revised and placed on the website.


- Added the access to the Holding Register 35 for the new algorithm (refer to the EC Operating manuals).

Revision 1.5

- Added the NOTE about the number settings in the Input Register chapter.
- Added a check on the firmware version and the indication when the database needs to be upgraded.

- Added a check on the connection and the fan selection
Revision 1.6

- Added a control on the communication cable:
  - RS485 Opto-insulated terminals → Only two baud rates are available: 9600 and 19200
  - OFFLINE cable → Four baud rates are available: 9600 – 19200 – 38400 – 57600.

- The General Information cluster has been adapted to the severity of the error:
Revision 1.7
In the fan selection menu there are
- Standard configurations → Indicated with Fan Model, Power (by family), Phases and Driver Model.

- Special configurations (required by customers) → have an additional indication _SPE#

- The std allowed air temp. for all the fans is 40°C → fans rated for 60°C of air temperature have the indication _D60