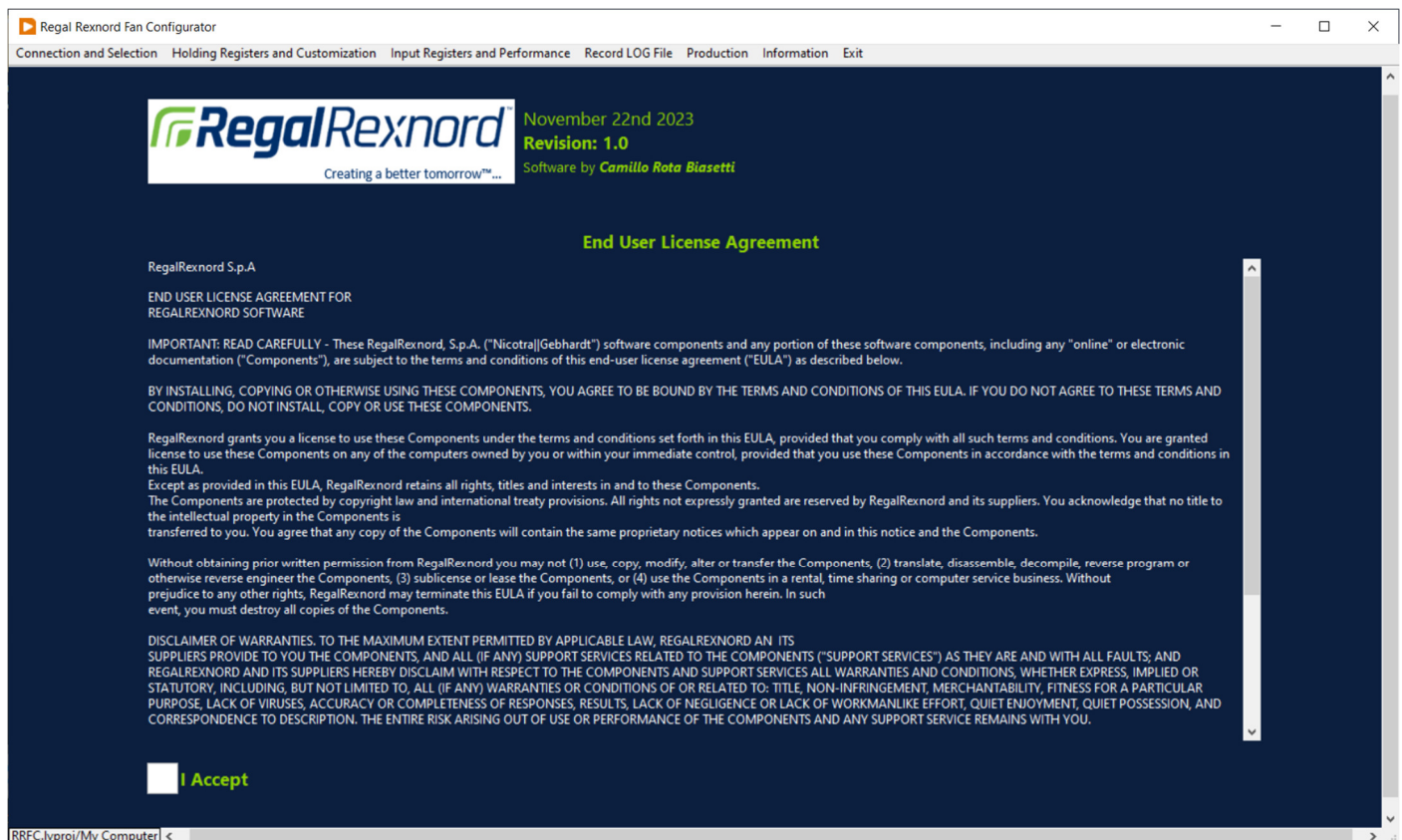




Fan Configurator

Operating Manual



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Copy the configuration.	8
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System requirements

The Regal Rexnord Fan Configuration is a Labview software, and it runs only on a Windows operating system from 10 version onwards with a hard disk available space of 500MB. If the Labview runtime is already present, the installer will copy only the software requiring only 50Mb of hard disk space.

The communication protocol is Modbus RTU and an USB to 485 converter is necessary to connect the software to the fan. 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:**.

Alarms and Warnings

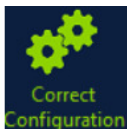
The alarm and Warnings vertical cluster is always present, and it indicates the status of the driver.



It's an error indicating when the connection between the computer and the driver is lost.



It's an error indicating that the user hasn't selected the fan yet.



It's an error indicating that the read fan configuration and the selected one are different.



The description of the alarm is indicated in Fan Status label in the Connection menu.



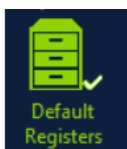
It's an error indicating that the read driver model is different from the selected one.



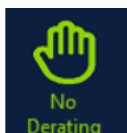
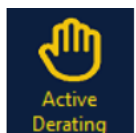
It's a warning when the firmware version of the fan read is more recent than that of the selected one.



It's a warning when the firmware version of the fan read is less recent than that of the selected one.



It's an indication that the driver has a different configuration than the std. one.

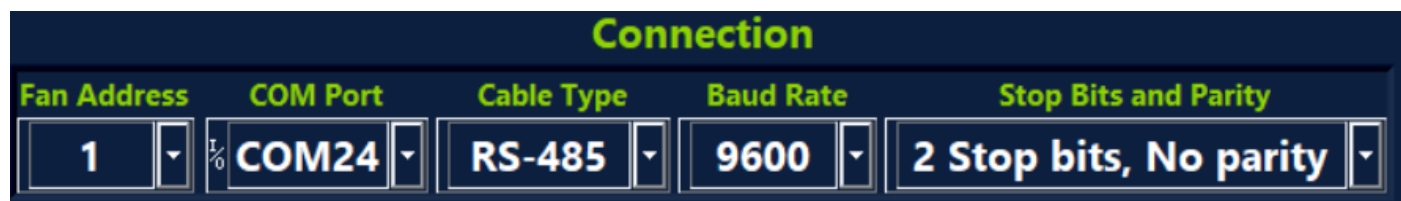


It's an indication that the derating strategies of the driver are active.

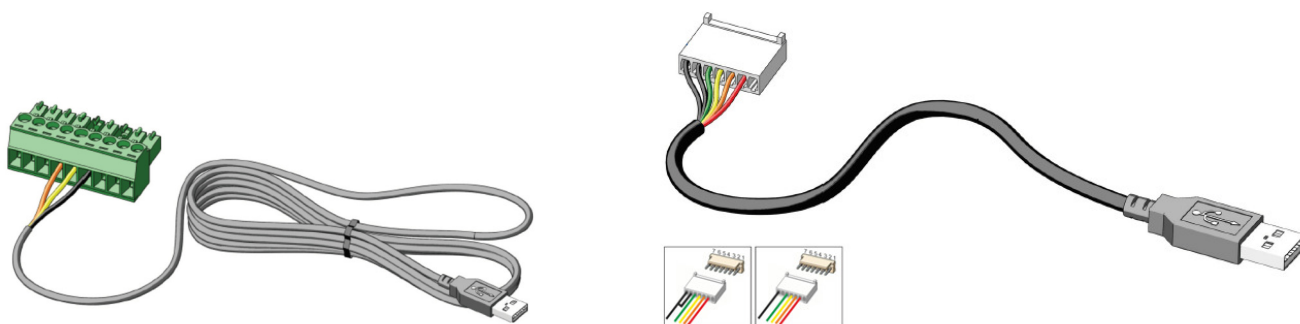
Connection and Selection



Connection

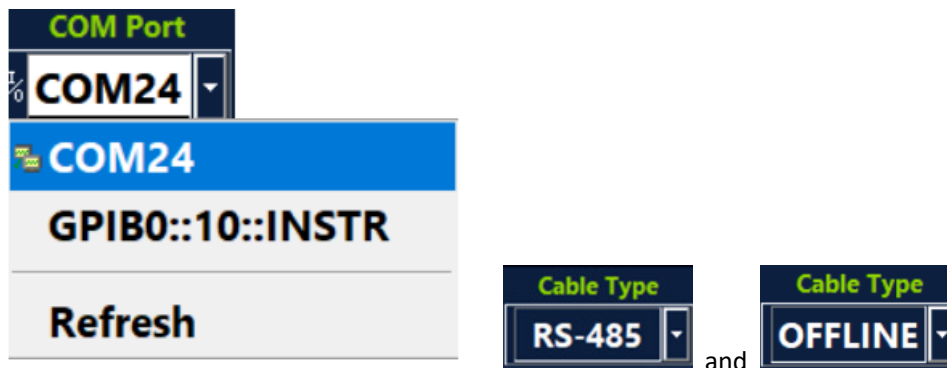


Connect the Modbus USB to 485 converter cable to the port A, B and ground of the driver or the OFFLINE to the Molex connector.



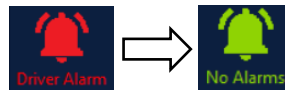
For more details refer to the fan product manual.

Once the cable drivers are correctly installed on the computer, the COM Port should appear in the list and can be selected for connecting to the driver and choose the used cable in the menu.



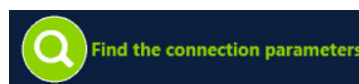
Note:

Since the OFFLINE cable MUST be used with the driver POWERED OFF and in that condition the driver is in Input Voltage alarm, the software automatically correct the error status.

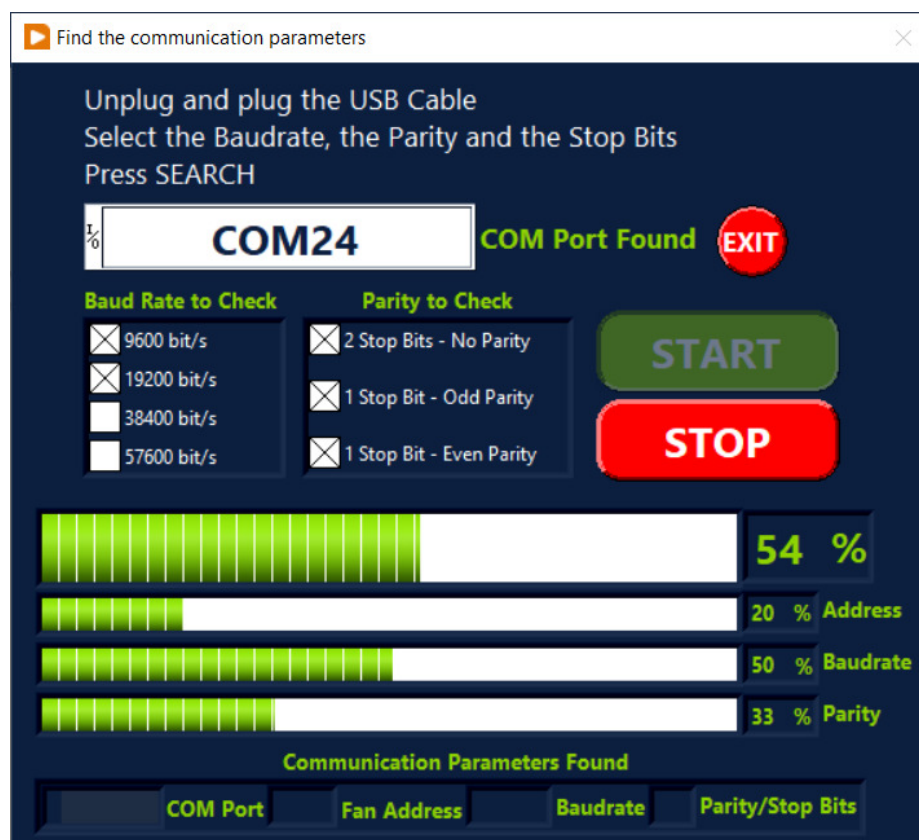


Select the remaining Modbus parameters basing on the cable type and when different from the factory default.

Find the communication parameters.

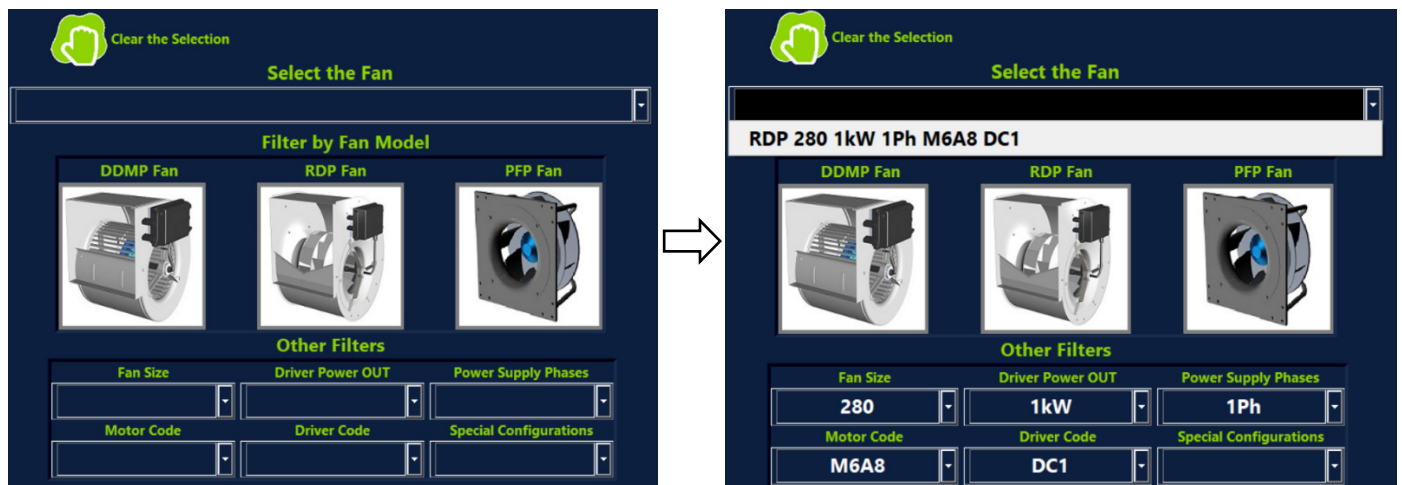


It is possible to search the communication parameters if they are not known by pressing the related button. The software will take several minutes depending on how many options are chosen to be checked.



Fan Selection

The user can read from the label on the side plate of the fan all the information and select the fan he bought from the combo box, or he can filter the search to restrict the fan list.



The “Clear the Selection” button clears the selected fan and all the filters.

General Information

Both when the fan is connected and selected the General Information cluster populates with all the fan information. And when the information matches the text color is white and when they are different is in red or orange.

General Information			
Fan Model Read		Fan Model Selected	
RDP		RDP	
Fan Size Read		Fan Size Selected	
280		280	
Power OUT Read		Power OUT Selected	
1kW		1kW	
Input Phases Read		Input Phases Selected	
1Ph		1Ph	
Motor Code Read		Motor Code Selected	
M6A8		M6A8	
Firmware Version Read		Firmware Version Selected	
8		8	
Driver Model Read		Driver Model Selected	
41505		41505	
Driver Code Read		Driver Code Selected	
DC1		DC1	

General Information			
Fan Model Read		Fan Model Selected	
RDP		DDMP	
Fan Size Read		Fan Size Selected	
280		15-11	
Power OUT Read		Power OUT Selected	
1kW		5.5kW	
Input Phases Read		Input Phases Selected	
1Ph		3Ph	
Motor Code Read		Motor Code Selected	
M6A8		M6M1	
Firmware Version Read		Firmware Version Selected	
8		9	
Driver Model Read		Driver Model Selected	
41505		61987	
Driver Code Read		Driver Code Selected	
DC1		DG7	

Holding Registers and Customization

DRIVER Configuration
RDP 280 1kW 1Ph M6A8 DC1

USER Configuration
RDP 280 1kW 1Ph M6A8 DC1

Registers Unlock

Copy the configuration (DRIVER --> USER)

Save the configuration
 TAG

Clear the USER modifications

Delete the selected configuration

Save a configuration ZIP file

Restore all the configurations

Upload the configuration (USER --> DRIVER)

Motor Control Firmware Update

Communication Firmware Update

None Uploaded File

Holding Registers

Reg.	Description	DRIVER	USER	Reg.	Description	DRIVER	USER
0	Reset	0	0	32	---	20000	20000
1	MIN SPEED	500	500	33	---	20000	20000
2	MAX SPEED	2600	2600	34	INPUT TYPE	1	1
3	Acceleration	120	120	35	---	20000	20000
4	Deceleration	60	60	36	MAX POWER	1050	1050
5	Pole Couples	4	4	37	Power Kp	1000	1000
6	Startup Current	4000	4000	38	Power Ki	14000	14000
7	MAX CURRENT	5000	5000	39	---	0	0
8	Stator Resistance	143	143	40	---	0	0
9	Synch. Inductance	60	60	41	---	0	0
10	P.M. Flux	1645	1645	42	---	0	0
11	Current Kp	645	645	43	---	0	0
12	Current Ki	618	618	44	FAN MODEL	1	1
13	Speed Kp	20000	20000	45	MODBUS ADDRESS	1	1
14	Speed Ki	50	50	46	TACHO OUT	0	0
15	Flux Fb.Gain	10	10	47	MODBUS SPEED	96	96
16	---	0	0	48	MODBUS STOP BITS	0	0
17	Startup Time	800	800	49	---	0	0
18	Flux est. filter tau	10	10	50	EXTERNAL PID SET	0	0
19	Sampling Frequency	13600	13600	51	KP EXT PID	0	0
20	Freq. Ratio	1	1	52	KI EXT PID	0	0
21	FIXED SPEED SETTING	0	0	53	KD EXT PID	0	0
22	Max. Blocking Current	1000	1000	54	PID TIME	0	0
23	Min. Blocking Current	150	150	55	THRESHOLD SPEED	0	0
24	Blocking Time	200	200	56	COMM. TIMEOUT	0	0
25	Alignment current	4000	4000	57	Limit RPM min	500	500
26	Alignment time	800	800	58	Limit RPM max	2600	2600
27	Id Fall time	50	50	59	Limit I OUT	5000	5000
28	Id ref	0	0	60	Limit P MAX	1050	1050
29	MAX TEMPERATURE	750	750	61	---	0	0
30	---	0	0	62	---	0	0
31	PID POS/NEG	0	0	63	---	0	0

The user can compare the Holding Registers read from the driver and the selected one.

When the registers description is highlighted in white with the text in blue it means that the registers can be changed by the customer.

INPUT TYPE	1	1
------------	---	---

When the value of the registers is highlighted in light blue, it means that the value of the modifiable registers of the read register is different from the selected one.

INPUT TYPE	1	6
------------	---	---

When the value of the registers is highlighted in light red, it means that the value of the NON modifiable registers of the read register is different from the selected one.

P.M. Flux	1645	56
-----------	------	----

Holding Registers changing

The user can directly modify the registers by writing the value in the corresponding cell of the table.

The user must click the cell first and then click again to modify it.

If the changed value is a DRIVER value, the software will write it directly into the driver memory.

Description	DRIVER	USER
MIN SPEED	500	500

If the changed value is a USER value, the user can save the final custom configuration.

Description	DRIVER	USER
MIN SPEED	500	500

Option Buttons

On the top part the window the DRIVER and USER selection fan description are shown.

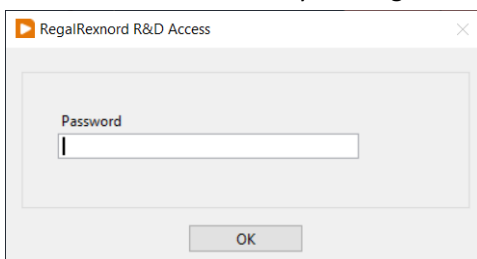


Below there is the description of all the option buttons.

Unlock Registers

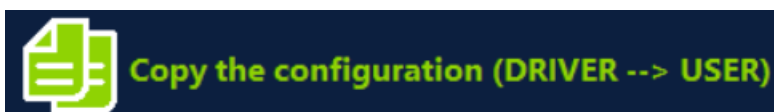


This button can be used by the Regal Rexnord R&D technician only and it is protected by password.



It can allow the technician to access the protected registers and modify their value.

Copy the configuration.

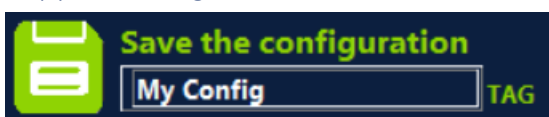


With this button the user can copy all the register value read from the driver inside the USER cell to be modified.

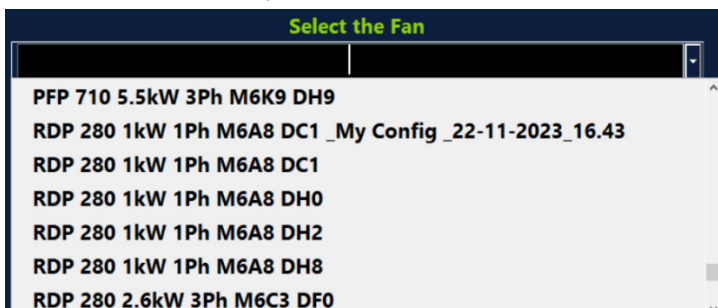
Note:

When this button is pressed the eventual previously selected fan is cleared.

Copy the configuration.



Once the user has completed its own customization, it can be saved and found in the Fan Selection combo box.

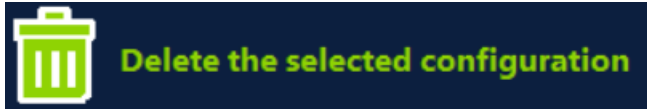


Clear the USER modifications.

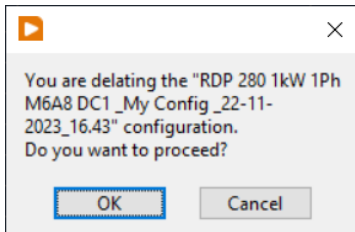


The user can restore the values in the USER cell and clear all the modification done.

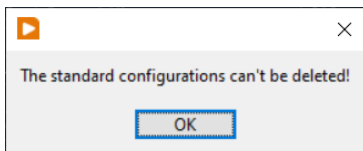
Delete the selected configuration.



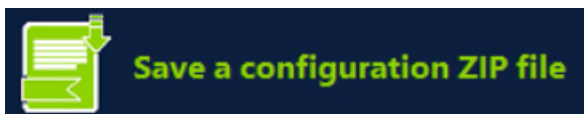
The user can delete only the custom configuration.




A popup message appears in case of wrong pressing and trying to delete a std. configuration.



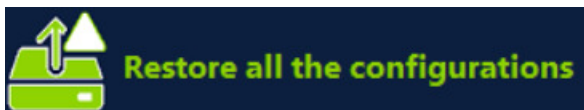
Save a configuration ZIP file.



All the configurations can be saved in a ZIP file and stored in the C:\RegalRexnord Fan Configurator\Backup

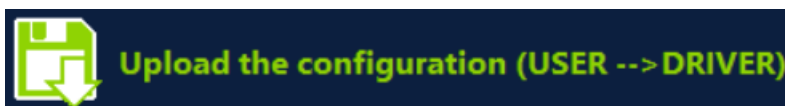
 Backup 27-09-2023 17.16.zip 27/09/2023 17:16

Restore all the configurations.

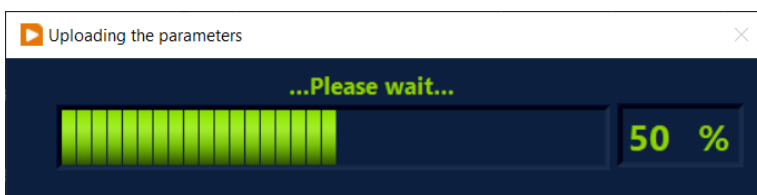


If for some reason some custom configuration are accidentally deleted, they can be restored.

Upload the configuration.



When this button is pressed all the values in the USER cells that are different from that of the DRIVER are uploaded into the driver.



Note:

All the locked registers can't be written unless the ULOCK button is previously pressed.

Motor Control Firmware Update



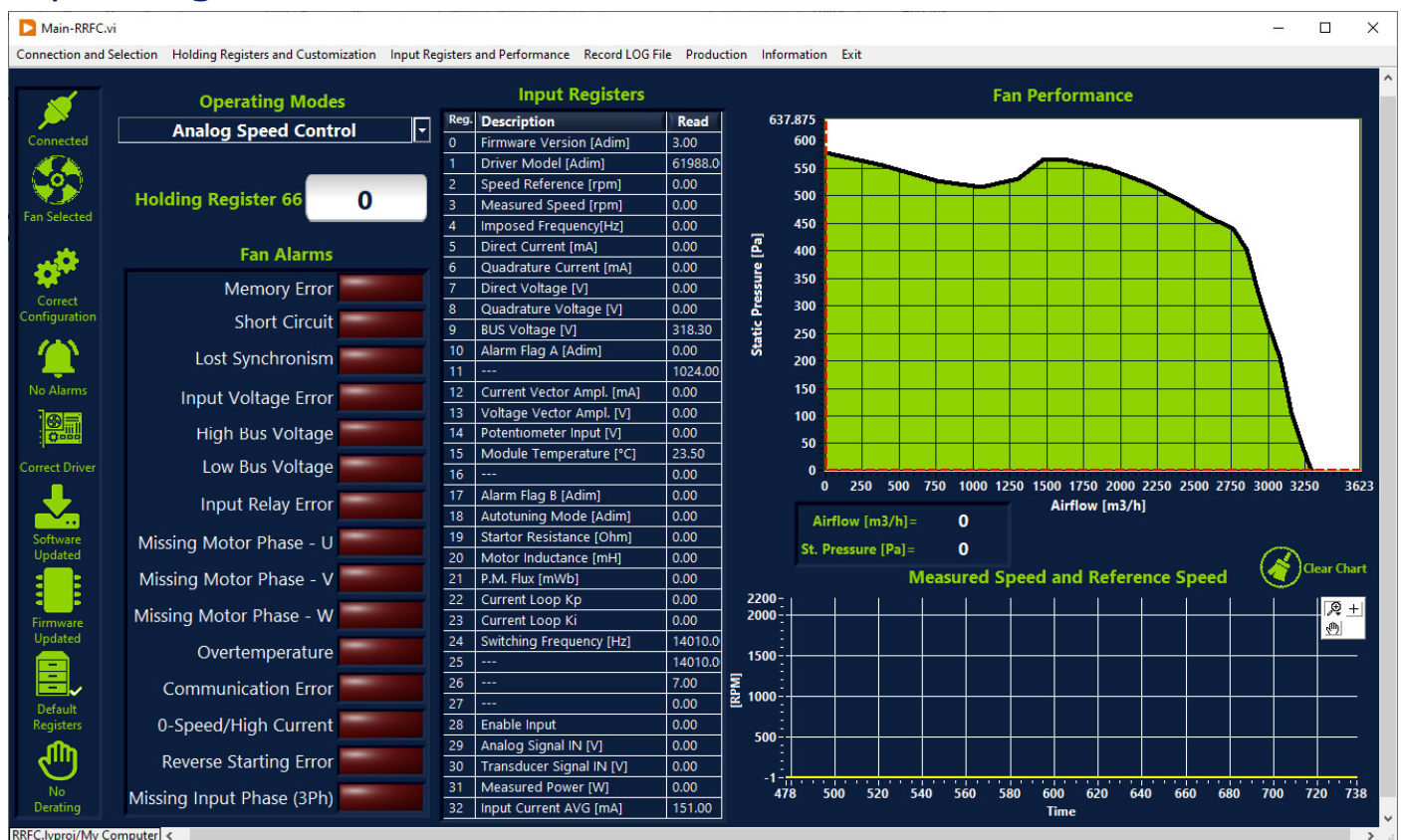
This function can be accessed by the Regal Rexnord R&D technicians.

Communication Firmware Update



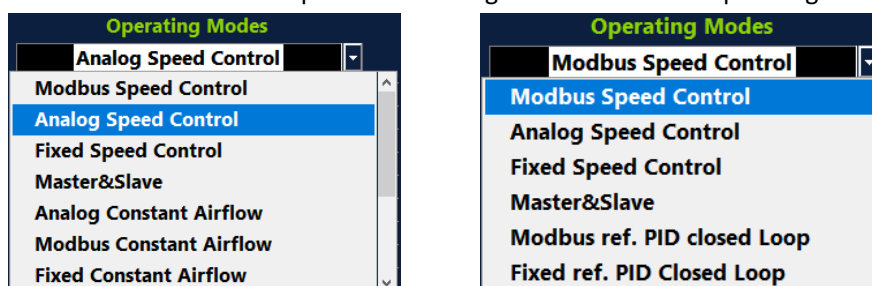
This function can be accessed by the Regal Rexnord R&D technicians.

Input Registers and Performance



Operating Modes

From this combo box it is possible to change the value of the Operating Modes Holding Register 34.



Note:

The Operating Modes combo box displays only the available operating modes for each fan model.

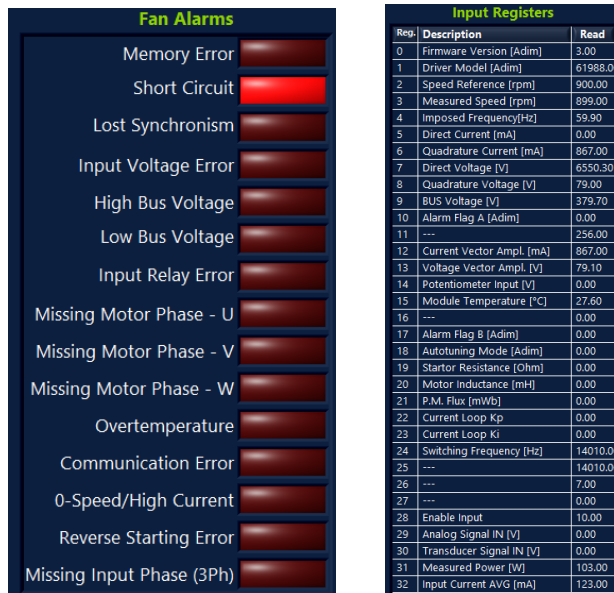
Holding Register 66

The Holding Register 66 value can be modified basing on the Operating Mode selected.



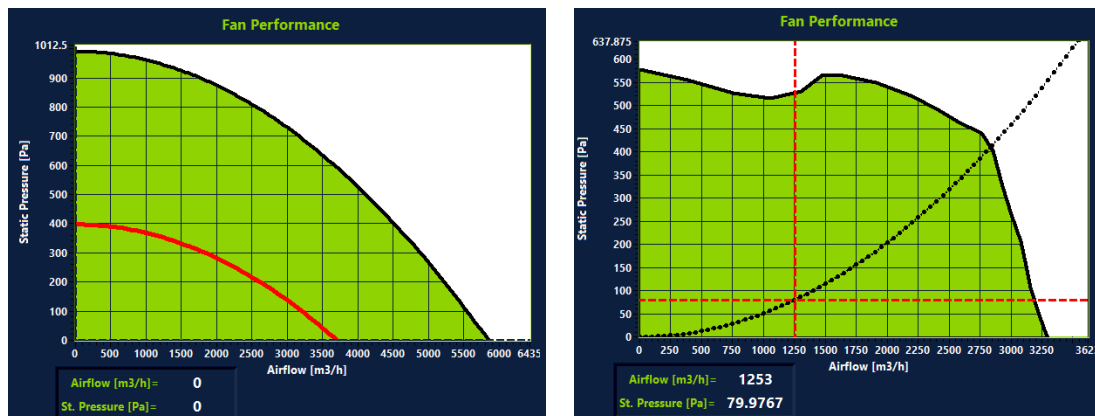
Fan Alarms and Input Registers

While the fan is running all the Input Registers values can be read from the related table and the alarms are displayed through a cluster of LEDs. Please refer to the fan operating manual for detailed information.



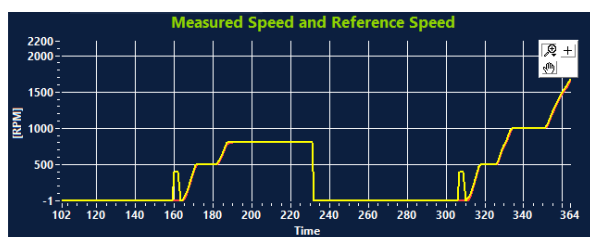
Fan Performance

For the DDMP fans it is possible to estimate the working point and it is displayed in the graph, while for the RDP and PPF fans it is only possible to determine the curve basing on the speed.



Measured Speed and Reference Speed

It is possible to monitor at the same time the behavior of both the value of the read (red) and reference (yellow) speed.



Record LOG File

Option Buttons

It is possible to record a LOG file, adding manually or automatically the points and save them in a file.

Add Record



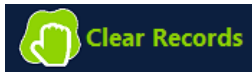
It adds a new point.

Delete Record



It deletes the last saved point.

Clear Record



It deletes all the saved points.

Auto Logging



It automatically saves a working point every N second defined by the Set Time [s] value inserted

Save LOG File



It saves the LOG file in the folder C:\RegalRexnord Fan Configurator\Save

Save Fan Info



It saves the Fan Information in a file in the folder C:\RegalRexnord Fan Configurator\Save

Save file format.

The files are tabulated text files that can be exported in an Excel sheet. Here below the two examples:

DDMP 7-7 1kW 1Ph M6AD D88_INFO 23-11-2023 12.31.txt - Blocco note di Windows

Information	Read Data	Selected Data
Fan Model	DDMP	DDMP
Fan Impeller Size	7-7	7-7
Driver Power Out	1kW	1kW
Driver Input Phases	1Ph	1Ph
Motor Code	M6AD	M6AD
Firmware Version	3	3
Driver Model	61988	61988
Driver Code	DG8	DG8



Register	Description	Read	Selected	Measured Speed (rpm)	Read Speed (rpm)	Motor Current (mA)	Driver Power OUT (W)	Module Temp. (°C)	BUS Voltage (V)	Analog Signal (V)	Transd. Signal (V)	ENABLE Signal (V)	Fan Signal (V)	Static Airflow (Pa)	Alarm Pressure (Pa)	Alarm Code 1	Switching Code 2	Local Frequency (Hz)	Time
0	Reset	0	0																
1	MIN SPEED	400	400																
2	MAX SPEED	2000	2000																
3	Acceleration	200	200																
4	Deceleration	150	150																
5	Pole Couples	4	4																
6	Blocking Current	4	4																
7	MAX CURRENT	4500	4500																
8	Stator Resisten	318	318																
9	Synch. Inductan	165	165																
10	P.M. Flux	2068	2068																
11	Current Kp	494	494																
12	Current Ki	278	278																
13	Speed Kp	1000	1000																
14	Speed Ki	100	100																
15	Id Ref	500	500																
16	LOW THRESHOLD S	0	0																
17	Kp AF	1000	1000																
18	Ki AF	500	500																
19	Sampling Freq	14000	14000																
20	Freq. Ratio	1	1																
21	FIXED SPEED SET	0	0																
22	Num Failures Tr	15	15																
23	Max err rpm	30	30																

LOG Table

The LOG array is displayed in the LOG Table here below.

Measured Speed (rpm)	Read Speed (rpm)	Motor Current (mA)	Driver Power OUT (W)	Module Temp. (°C)	BUS Voltage (V)	Analog Signal (V)	Transd. Signal (V)	ENABLE Signal (V)	Fan Airflow (Pa)	Static Pressure (Pa)	Alarm Code 1	Alarm Code 2	Switching Frequency (Hz)	Local Time (s)
999.00	1000.00	1050.00	138.00	28.00	379.80	0.00	0.00	10.00	1404.94	101.49	0.00	0.00	14010.00	14.51.27
999.00	1000.00	1050.00	139.00	28.00	379.80	0.00	0.00	10.00	1408.11	100.83	0.00	0.00	14010.00	14.51.27
999.00	1000.00	1050.00	138.00	27.80	379.80	0.00	0.00	10.00	1405.73	101.05	0.00	0.00	14010.00	14.51.28
1000.00	1000.00	1050.00	138.00	27.80	379.80	0.00	0.00	10.00	1402.55	101.71	0.00	0.00	14010.00	14.51.25
999.00	1000.00	1050.00	138.00	27.90	379.80	0.00	0.00	10.00	1406.92	100.95	0.00	0.00	14010.00	14.51.23
999.00	1000.00	1055.00	138.00	27.80	379.80	0.00	0.00	10.00	1402.15	101.40	0.00	0.00	14010.00	14.51.22
998.00	1000.00	1056.00	138.00	27.80	379.80	0.00	0.00	10.00	1404.13	100.87	0.00	0.00	14010.00	14.51.21
928.00	956.00	1025.00	124.00	27.80	379.80	0.00	0.00	10.00	1422.58	74.88	0.00	0.00	14010.00	14.51.20
998.00	900.00	867.00	102.00	27.70	379.80	0.00	0.00	10.00	1253.77	79.60	0.00	0.00	14010.00	14.51.19
823.00	851.00	851.00	92.00	27.70	379.80	0.00	0.00	10.00	1290.69	33.42	0.00	0.00	14010.00	14.51.18
799.00	800.00	693.00	73.00	27.60	379.80	0.00	0.00	10.00	1102.84	62.80	0.00	0.00	14010.00	14.51.17
797.00	800.00	715.00	75.00	27.60	379.80	0.00	0.00	10.00	1133.72	59.86	0.00	0.00	14010.00	14.51.16
699.00	700.00	547.00	51.00	27.50	379.80	0.00	0.00	10.00	981.40	45.76	0.00	0.00	14010.00	14.51.14
699.00	700.00	552.00	51.00	27.50	379.80	0.00	0.00	10.00	988.66	45.25	0.00	0.00	14010.00	14.51.13
622.00	650.00	570.00	48.00	27.40	379.90	0.00	0.00	10.00	1081.81	19.14	0.00	0.00	14010.00	14.51.12
599.00	600.00	419.00	33.00	27.40	379.90	0.00	0.00	10.00	884.43	29.62	0.00	0.00	14010.00	14.51.11
599.00	600.00	423.00	34.00	27.40	379.90	0.00	0.00	10.00	890.91	29.19	0.00	0.00	14010.00	14.51.10
531.00	549.00	458.00	32.00	27.30	379.90	0.00	0.00	10.00	1032.80	12.80	0.00	0.00	14010.00	14.51.09
500.00	500.00	309.00	21.00	27.30	379.90	0.00	0.00	10.00	938.97	12.80	0.00	0.00	14010.00	14.51.08
495.00	500.00	368.00	25.00	27.30	379.90	0.00	0.00	10.00	843.70	3.37	0.00	0.00	14010.00	14.51.07
400.00	400.00	219.00	12.00	27.30	379.90	0.00	0.00	10.00	NaN	0.00	0.00	0.00	14010.00	14.51.06
399.00	400.00	220.00	12.00	27.30	380.00	0.00	0.00	10.00	NaN	0.00	0.00	0.00	14010.00	14.51.04
400.00	400.00	218.00	11.00	27.30	380.00	0.00	0.00	10.00	NaN	0.00	0.00	0.00	14010.00	14.51.03

Production



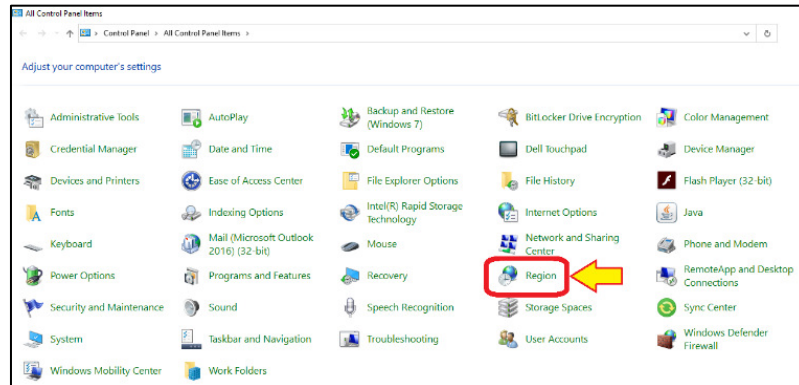
This area can be accessed by Production and R&D Technician.

Notes

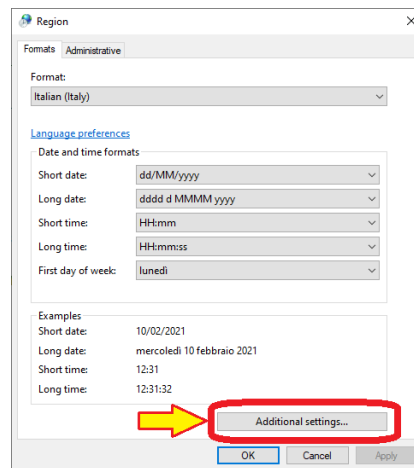
The Input Register may be not properly displayed when the numbers have the comma as decimal separator.

Here below the procedure to change the settings is shown:

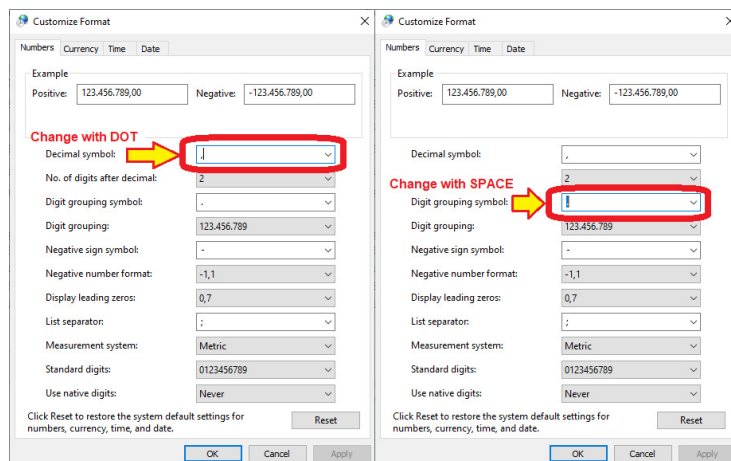
- 1) Open the "Control Panel"



- 2) Select the "Region"



- 3) Select "Additional settings..."



- 4) Substitute the COMMA with DOT and as digit grouping symbol substitute the DOT with SPACE