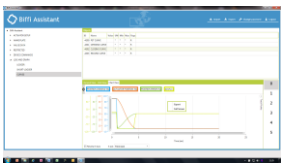
DTDE 330

ECU 1000
BIFFI-Assistant

USER MANUAL

ECU1000 cards

PC or Tablet



BIFFI-Assistant

INDEX

1 INTRODUCTION 2

2 REFERENCE DOCUMENTS 2

3 PC REQUIREMENTS 3

4 TO INSTALL THE BIFFI-ASSISTANT 3

5 TO UNINSTALL THE BIFFI-ASSISTANT 4

6 WORK ONLINE – WORK OFFLINE 5

7 WORK ONLINE 5

7.1 Connection to ECU1000 5

7.2 Channel selection 6

7.3 RS232 connection 7

7.4 Bluetooth connection 8

7.4.1.1 Direct connection to the Device Password page 9

7.4.1.2 Notice of the Bluetooth Connection before Device Password page 10

7.4.1.3 Request of Bluetooth password before Device Password page 11

8 LOGIN 16

8.1 User Levels 16

9 NAVIGATION IN THE MENU 16

9.1 Menu structure 17

9.1.1 Status of parameters and ECU commands 19

9.2 View and setting mode 20

9.3 Read/Write functions 21

9.3.1 Read a parameter from ECU1000 memory 21

9.3.2 Write a parameter in the ECU1000 memory 21

9.3.3 Read a TAB from ECU1000 memory 22

9.3.4 Write a TAB in the ECU1000 memory 23

9.3.5 Read a Function Block from ECU1000 memory 24

9.3.6 Write a Function Block in the ECU1000 memory 24

9.3.7 Read the parameters of enabled functions from ECU1000 memory 25

9.3.8 Write the parameters of enabled functions in the ECU1000 memory 25

9.3.9 Write the full set of parameters in the ECU1000 memory 26

9.3.10 Change USER and OPERATOR passwords 26

9.4 Refresh structure function 27

10 IMPORT AND EXPORT 29

10.1 Export 29

10.1.1 Export of full set of data 30

10.2 Import 30

10.3 Use of "Full copy" command 32
10.3.1 Copy the full set of parameters in a new card 32
10.3.2 Copy all parameters except calibration, name plate and valve data 32
10.3.3 Copy all parameters except calibration and electronic card info 33
10.3.4 Copy all parameters after a firmware upgrade 33

11 LOG AND GRAPH FUNCTION BLOCK 34

11.1 Logger and Short Logger 34

11.2 Curves 36

11.3 Curves signature 39

12 DEVICE COMMANDS FUNCTION BLOCK 40

12.1 Operation 40
12.1.1 Actuator Variables 40
12.1.2 Failure 42
12.1.3 Alarm 42
12.1.4 Clear fail-alarm 43
12.1.5 Out. Relay Status 44
12.1.6 Digital Input 44
12.1.7 Actuator Status 45
12.1.8 Analogue Input 46
12.1.9 Analogue Output 46
12.1.10 Function summary 47

12.2 PST command 48

12.3 OP Limit Autocalib 49

12.4 Change Close Limit 51

12.5 CL Limit Manual Set 53

12.6 PSOV autocalibration 54

12.7 Clear logger 55

12.8 Full default 56

12.9 Clear Counters 57

12.10 HPU Config 58

13 WORK OFFLINE 59

13.1 Change of value of a parameter and save it in a new file 60

13.2 Change of Work Offline password 63

13.3 View of loggers 63

13.4 View of short logger 65

13.5 View of graphs 65

REV.	DATE	PREPARED	APPROVED	NOTES
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1	**05/08/2014**	**M. Giuliani**	**A. Affaticati**	
2	**20/01/2015**	**M. Giuliani**	**A. Battaglia**	
3	**13/10/2017**	**M. Giuliani**	**A. Battaglia**	

Warning: 	**For any information regarding actuator parameters or settings please refer to the relevant ECU1000 and Actuator documentation.** **Wrong parameter settings may cause actuator malfunctions.**

Warning: 	**All parameters changes not saved into the internal application database or sent to the actuator will be lost once the application is closed.**

Warning: 	**It is assumed that the installation, setting, commissioning, maintenance and repair works are carried out by qualified personnel and checked by responsible Specialists. Operating the actuator and the ECU1000 could damage the actuator and cause personal injury**

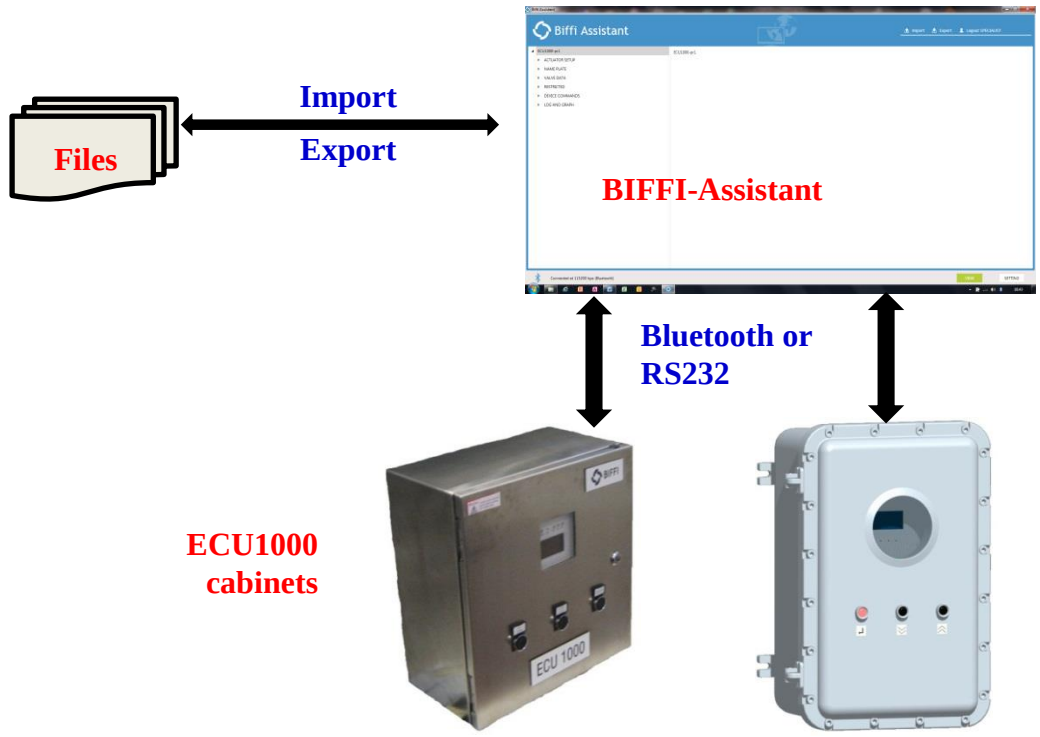
Warning: 	**Any repair work other than the operations outlined in this manual will be strictly reserved to qualified BIFFI ITALIA personnel or to personnel directly authorised by the Company itself.**

Warning: 	**Whenever the PC will be used in HAZARDOUS AREA as defined by the applicable rules, it is mandatory to check whether the PC nameplates indicate their suitability to an hazardous area, and the appropriate protection degree.**

1 Introduction

BIFFI-Assistant is a PC SW tool to be used with ECU1000 and ELBS20. It provides the ability to configure, diagnose and collect data from the above devices and a PC with Windows platform. The document DTDE330 provides the instruction for installation and use of BIFFI-Assistant with reference to ECU1000.
Even if the ECU1000 is provided with a powerful Local Operator Interface, the BIFFI-Assistant is a very a useful tool. In fact it allows the operator performing the complete set of operation available by the ECU1000 Local Operator Interface (except Local Control) and in addition it allows easy navigation in the ECU1000 menu by using the PC facilities and in particular

- Viewing of maintenance data collected by the ECU1000 in the loggers and graphs function blocks and saving them in files on the PC (Failure, alarm and statistic loggers, Opening, Closing, PST and Recorder graphs)
- Graph comparison
- Saving of ECU1000 configuration parameters in files on the PC
- Saving and printing of ECU1000 data in text files on the PC
- Downloading of configuration file from PC to ECU1000
- Wireless connection to ECU1000 by Bluetooth interface
- Online and Offline operation
    - **Work Online**: ECU1000 is connected to PC and BIFFI-Assistant
    - **Work Offline**: BIFFI-Assistant works on files previously saved, without any connection to ECU1000



2 Reference Documents

DTDE326 “Installation and Maintenance” of ECU1000
DTDE 327 “Control functions and Local Operator Interface”
DTDE328 “Functions description”
DTDE300 “Product description”

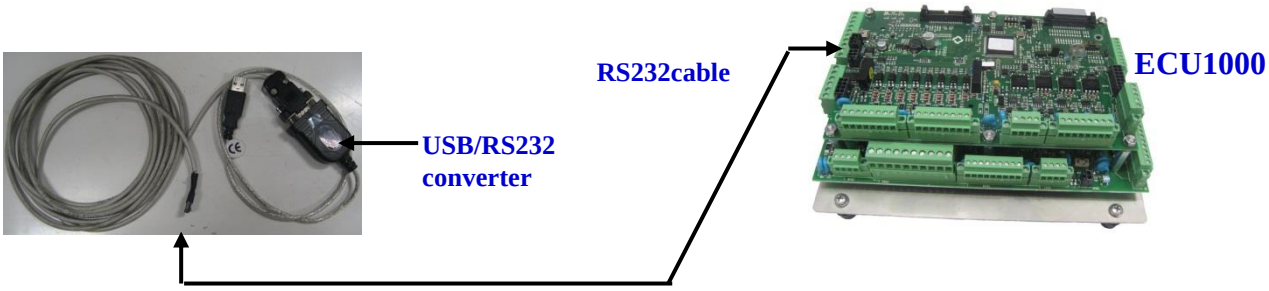
3 PC requirements

Biffi Assistant is tested for working with the following OS:
- Windows XP - 32bit service pack 2 or 3 and .NET Framework >= 4.0
- Windows 7 - 32bit Enterprise
- Windows 7 - 64bit Enterprise

The connection to the ECU1000 requires an USB Bluetooth Dongle or an RS232 port and RS232 cable.
In the below table is the list of the tested Bluetooth Dongles.
Here below is the list of USB/Bluetooth Dongle tested with BIFFI-Assistant. They do not require the installation of the driver

USB/Bluetooth adapter	Windows XP	Windows 7
HAMLET EXAGERATE XBTUS100 2.0 cl. 1	ok	ok
BELKIN F8T017 Bluetooth Adapter cl. 1	**no ***	ok
SITECOM CN-523 USB microadapter Bluetooth 2.1version 100m	ok	ok
ATLANTIS Mobile Life mini Bluetooth 2.1 30metri, POO8-BT-038	ok	ok
KENSINGTON Bluetooth 2.1 USB Micro Adapter PN/MN:K33902 / M01011	ok	ok
DIGICOM PALLADIO USB Bluetooth EDR 100	**no ***	ok
TARGUS Mod.ACB10-US	**no ***	ok

* The Bluetooth adapters indicated with "**no**" can work only after installation of the appropriate driver.
The figures below show the RS232 cable and the position of RS232 connector on the ECU1000 card.

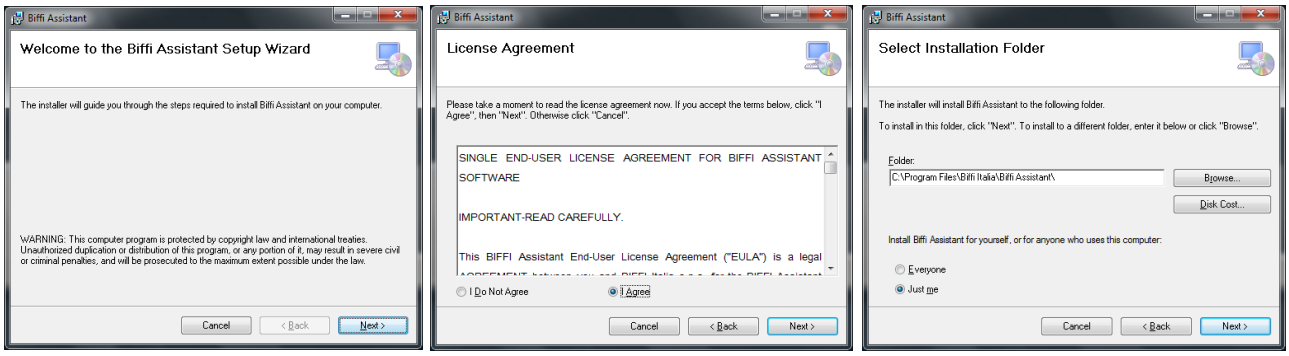


4 To install the BIFFI-Assistant

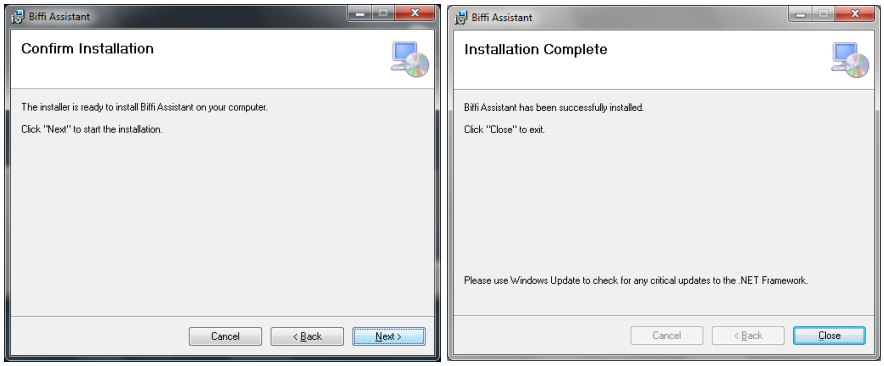
Warning:	**Installation can be done only by the administrator of PC**

Important:	"BIFFI-Assistant" for PC installation software consists of two files: - BiffiAssistant.msi - setup.exe

Before initiating the installation procedure of a new version of BIFFI-Assistant remove any previously installed version.
The installation process starts by a double click of the left key of mouse on "setup.exe".
A simple wizard will guide through the installation process:



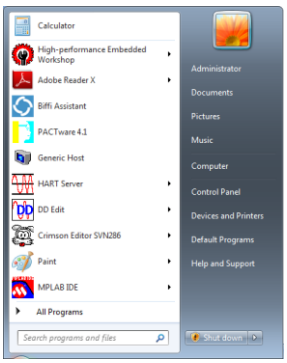
Click Next and then agree to End User License Agreement
Select installation folder and then click Next

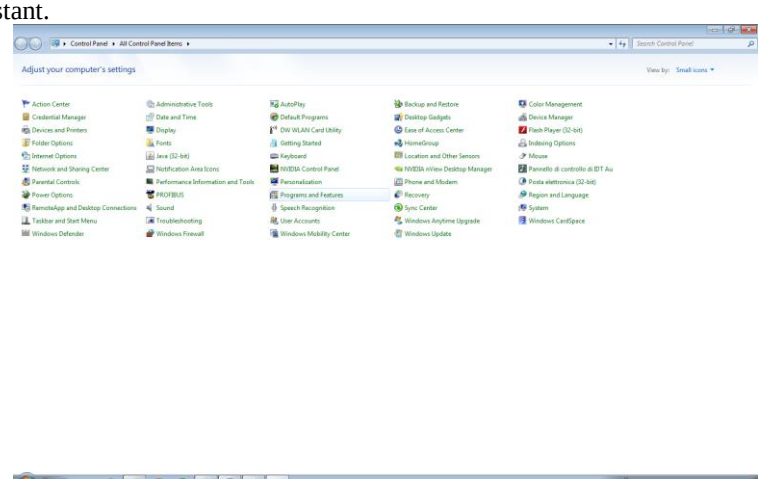


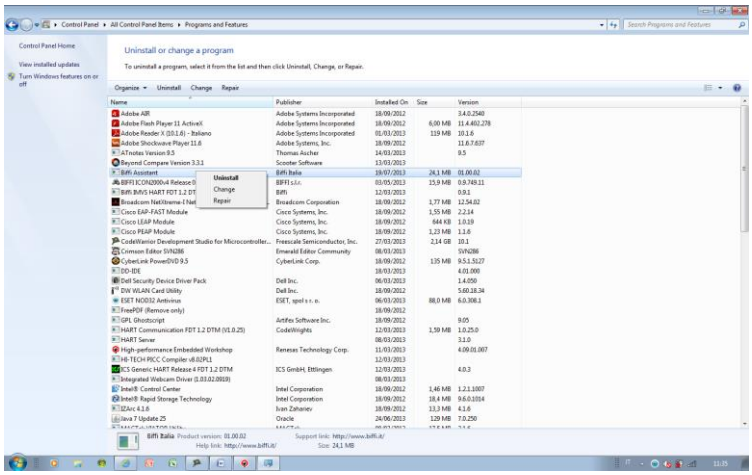
Left click of mouse on “Next” to begin the program installation
When the message “Installation complete” appears left click on Close.
An icon with BIFFI logo, named **BIFFI-Assistant** will be created on the desktop and a new program folder, named “Biffi”, will be added to Start Menu\Program folder.
The program starts by a double left click of mouse.

5 To Uninstall the BIFFI-Assistant

In the taskbar click “Start”. Left click of mouse on “Control Panel” and then double left click on “Programs and Features”. Left click on BIFFI-Assistant.

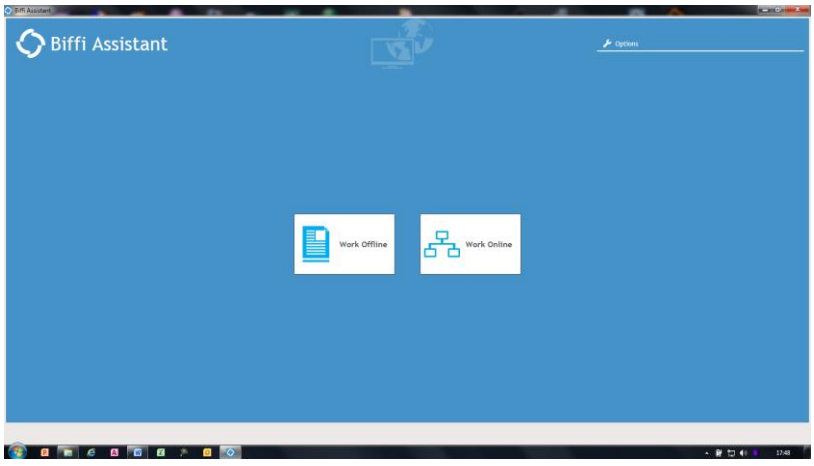






Right click of mouse on Biffi Assistant. Left click on "Uninstall" and then "YES". BIFFI-Assistant will be removed and PC is ready to re-install a new version.

6 Work Online – Work Offline



Work Online: when the ECU1000 can be connected to BIFFI-Assistant, for configuration, download / upload data, maintenance operation

Work offline: when ECU1000 is not connected to BIFFI-Assistant. It allows handling file previously uploaded from ECU1000 (curves, loggers, etc.)

7 Work Online

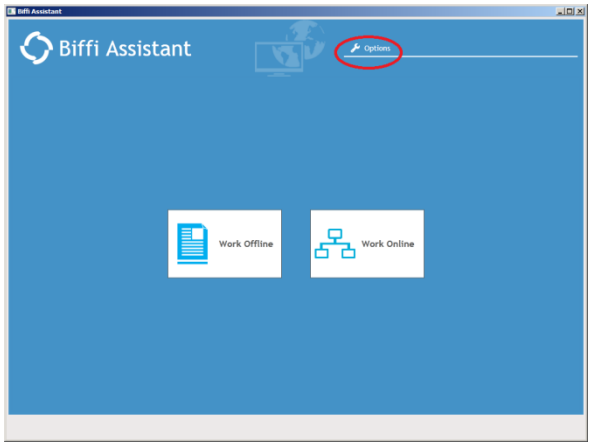
7.1 Connection to ECU1000

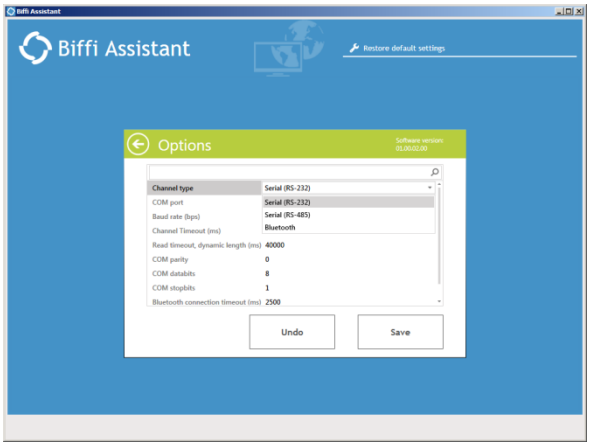
User PC's may be directly connected to an ECU1000 device by Biffi-Assistant SW tool, through Bluetooth or RS232. A direct connection with Biffi Assistant is convenient for users that need to configure or diagnose many ECU1000 devices or users who require immediate detailed analysis on a large screen on-site. Note that Biffi Assistant may save "transfer files" to review them at a later time.

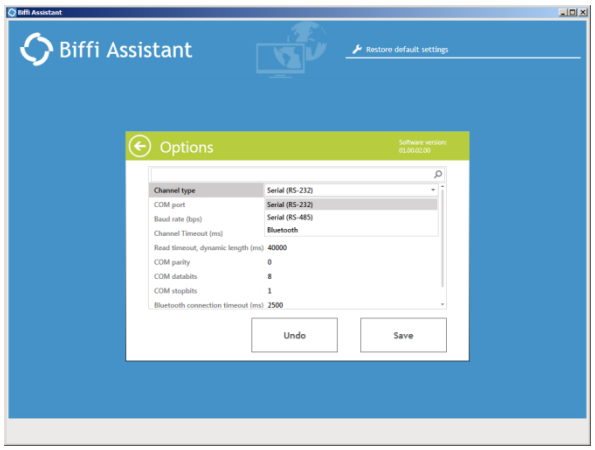
Warning: 	**It is recommended to use only one Serial Communication Interface (RS232 or Bluetooth) at a time to avoid configuration errors.**

7.2 Channel selection

Launch the program by a double click of left key of mouse on the BIFFI-Assistant icon.
The following screen appears. By the left key of mouse, click on "Options" to set the Communication Channel.
On the right corner of "Options" it is available the **SW version** of BIFFI-Assistant.







Select the Communication channel, RS232 or Bluetooth (RS485 is not available in the ECU1000).

According to the selected "Channel Type", set the parameters as follows (*):

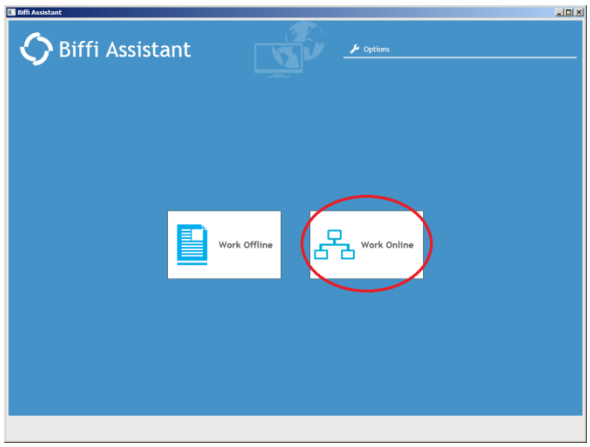
	RS232	Bluetooth
COM port	set the used COM	-
Baud Rate (bps)	115200 (fixed)	115200 (fixed)
Channel Timeout (ms)	2000	2000
Read timeout, dynamic length (ms)	40000	40000
COM parity	0 (fixed)	0 (fixed)
COM databits	8 (fixed)	8 (fixed)
COM stopbits	1 (fixed)	1 (fixed)
Bluetooth connection timeout (ms)	-	2500
Language	en (fixed)	en (fixed)

The table shows the typical value of the parameters. In some cases (PC with low performance) it could be necessary to increase the value of the following parameters: "Channel Timeout", "Read timeout, dynamic length" and "Bluetooth connection timeout".

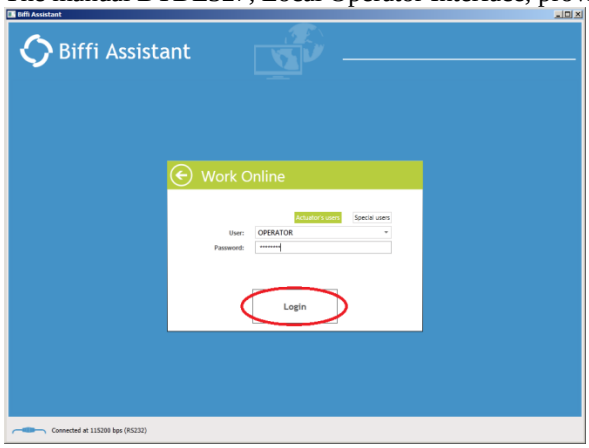
Left click of mouse on "Save" to save the settings or "Undo" to exit.
The selected Interface, with its settings, will be used by the Biffi Assistant, for the connection with the device.
In case of Bluetooth check that the Bluetooth interface is enabled by the ECU1000 Local Operator Interface.
Click the left key of mouse on "**Restore the default settings**" to set the default values.

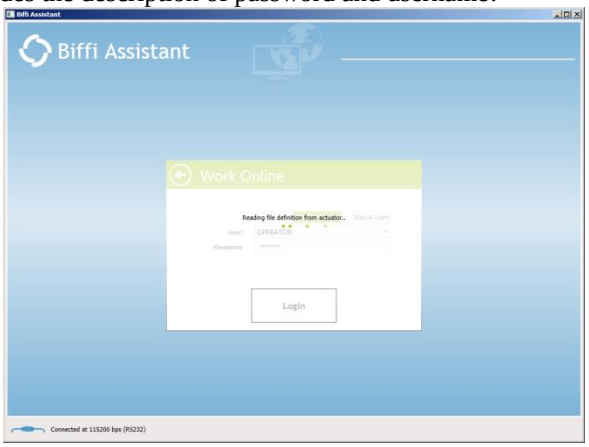
7.3 RS232 connection

Check that the RS232 cable is correctly connected. Click the left key of mouse on "**Work Online**", to connect the PC with the ECU1000.

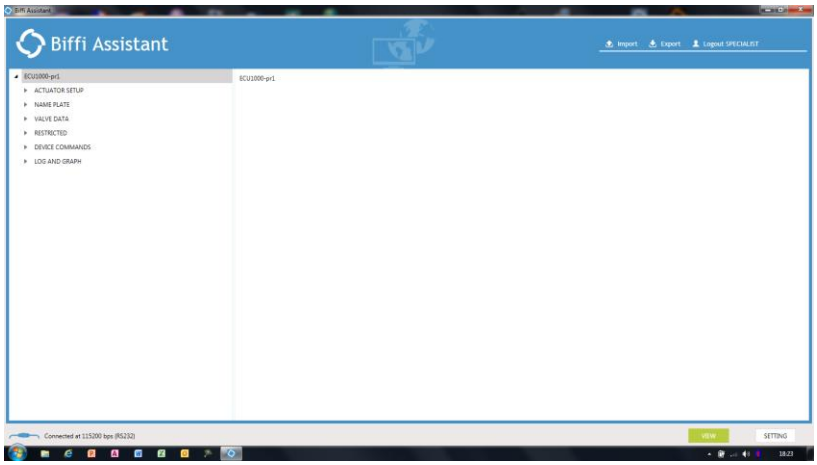


Enter username and password. Username and password are the same of the ECU1000 Local Operator Interface. The manual DTDE327, Local Operator Interface, provides the description of password and username.





Click the left key of the mouse on "Login" (or press ENTER) to go ahead. To cancel the Login, click the left key of the mouse on the left arrow near to "Work Online".
If password and username are correct the communication between ECU1000 and PC starts. The following screen will appear.



To Logout, left click of the mouse on "Logout Username".

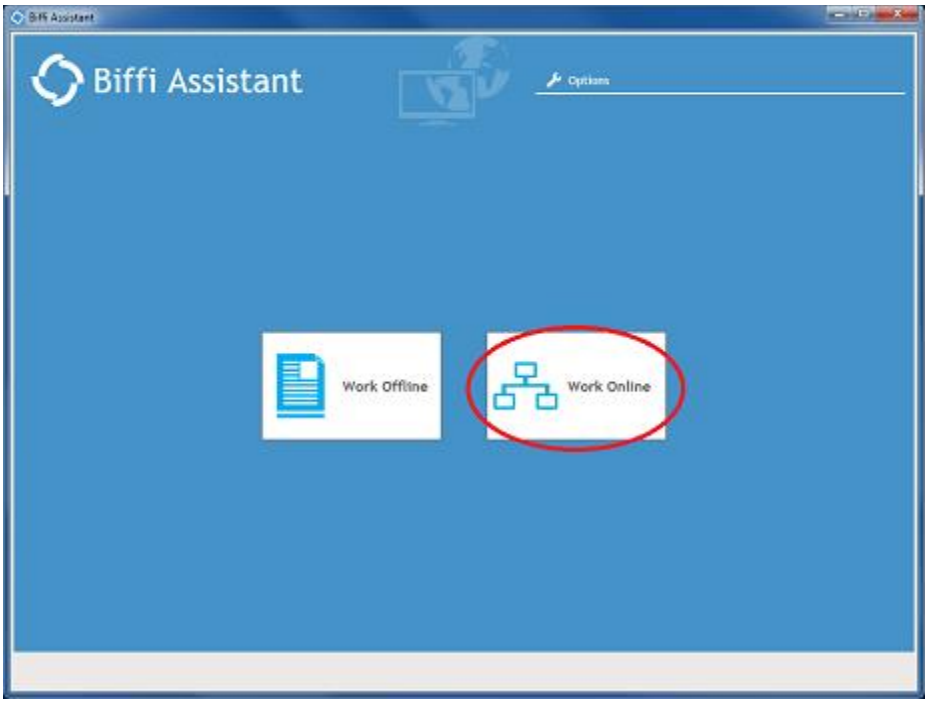
In the left low corner of the screen is indicated the type of connection and the baud rate.

After having read the menu structure, the BIFFI-Assistant reads the full set of parameters of ECU1000, but the PC shows only the data of the functions enabled to work in the connected ECU1000 device and having password less or equal to the entered username.

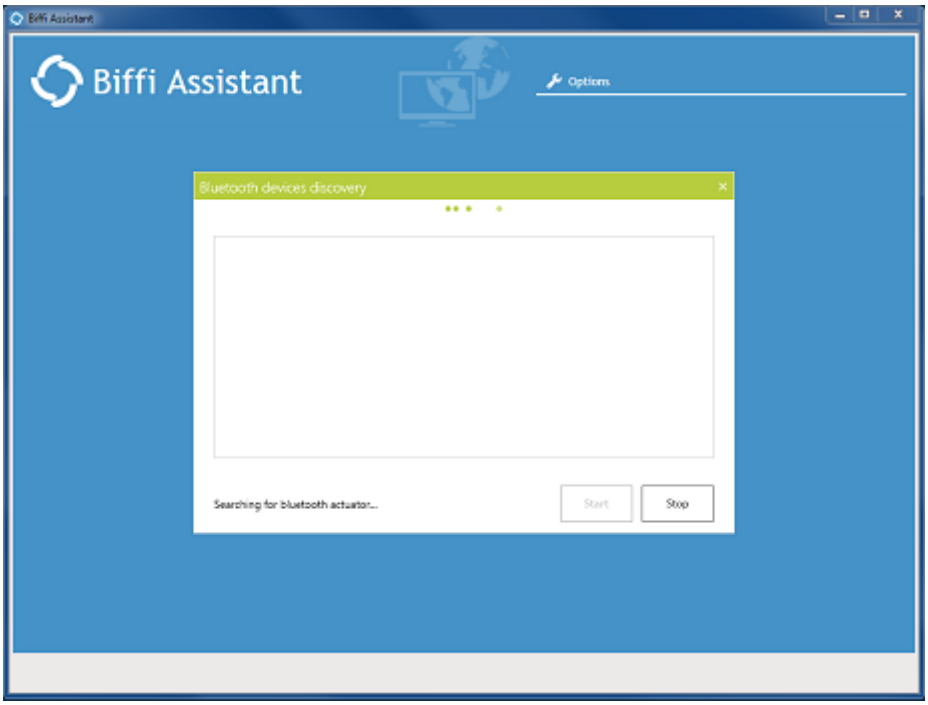
7.4 Bluetooth connection

For the Bluetooth, to operate properly, bring the PC to within 10 meters of the IMVS2000v2 device. Note that Bluetooth configuration is provided by your Bluetooth hardware manufacturer (see **Error! Reference source not found.** for the approved USB/Bluetooth adapters).

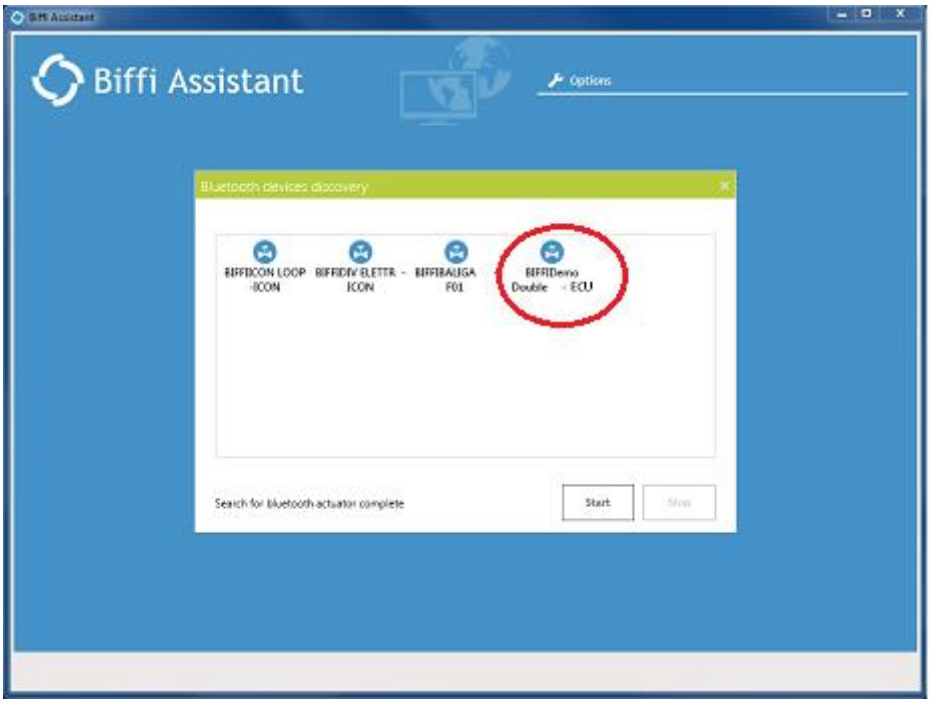
1) Left-click of the mouse on “Work Online“, for starting the connection with the IMVS2000v2.



2) Left click of the mouse on “Start”, for searching the Bluetooth devices.



3) Double Left-click of the mouse on the desired device, for starting the connetion.



At this point, depending on the Bluetooth stack of the laptop and on the Bluetooth module installed into the device, the following three different connection sequences can occur:

- Direct connection to the Device Password page (paragraph 7.4.1.1)
- Notice of the Bluetooth Connection before Device Password page (paragraph 7.4.1.2)
- Request of Bluetooth password before Device Password page (paragraph 7.4.1.3)

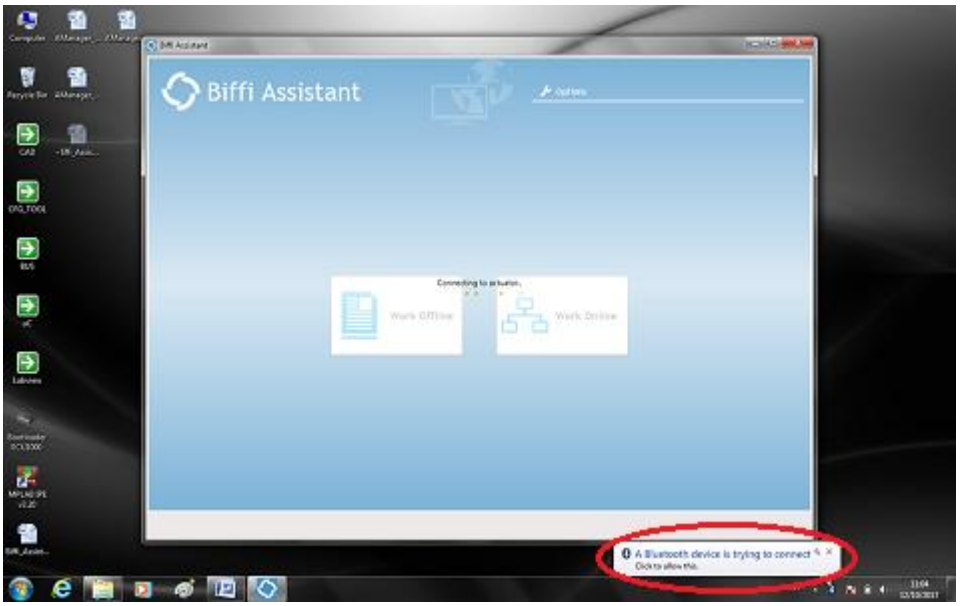
7.4.1.1 Direct connection to the Device Password page

The “preliminary” connection starts.

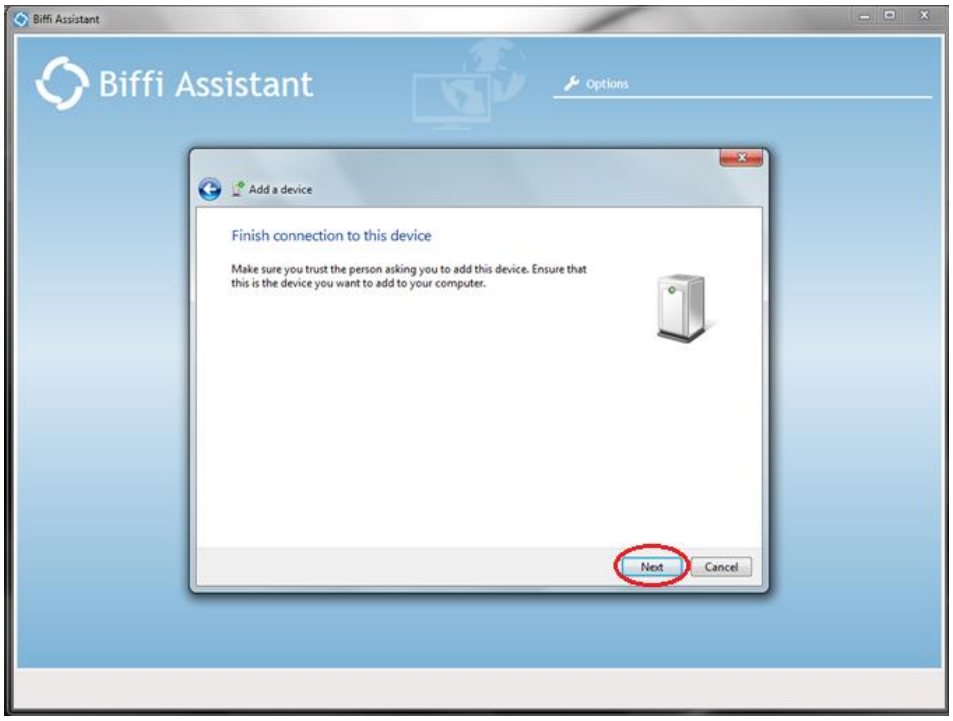
Go to step 4).

7.4.1.2 Notice of the Bluetooth Connection before Device Password page

Left click of the mouse on the message that appear in the bottom on the right.



Left click of the mouse on the “Next” button.

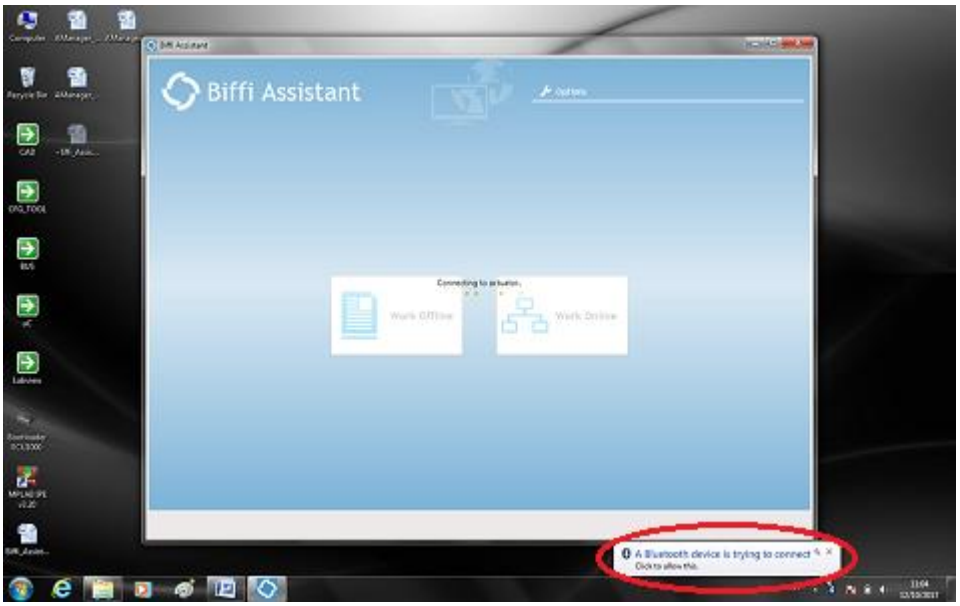


Left click of the mouse on the “Close” button.

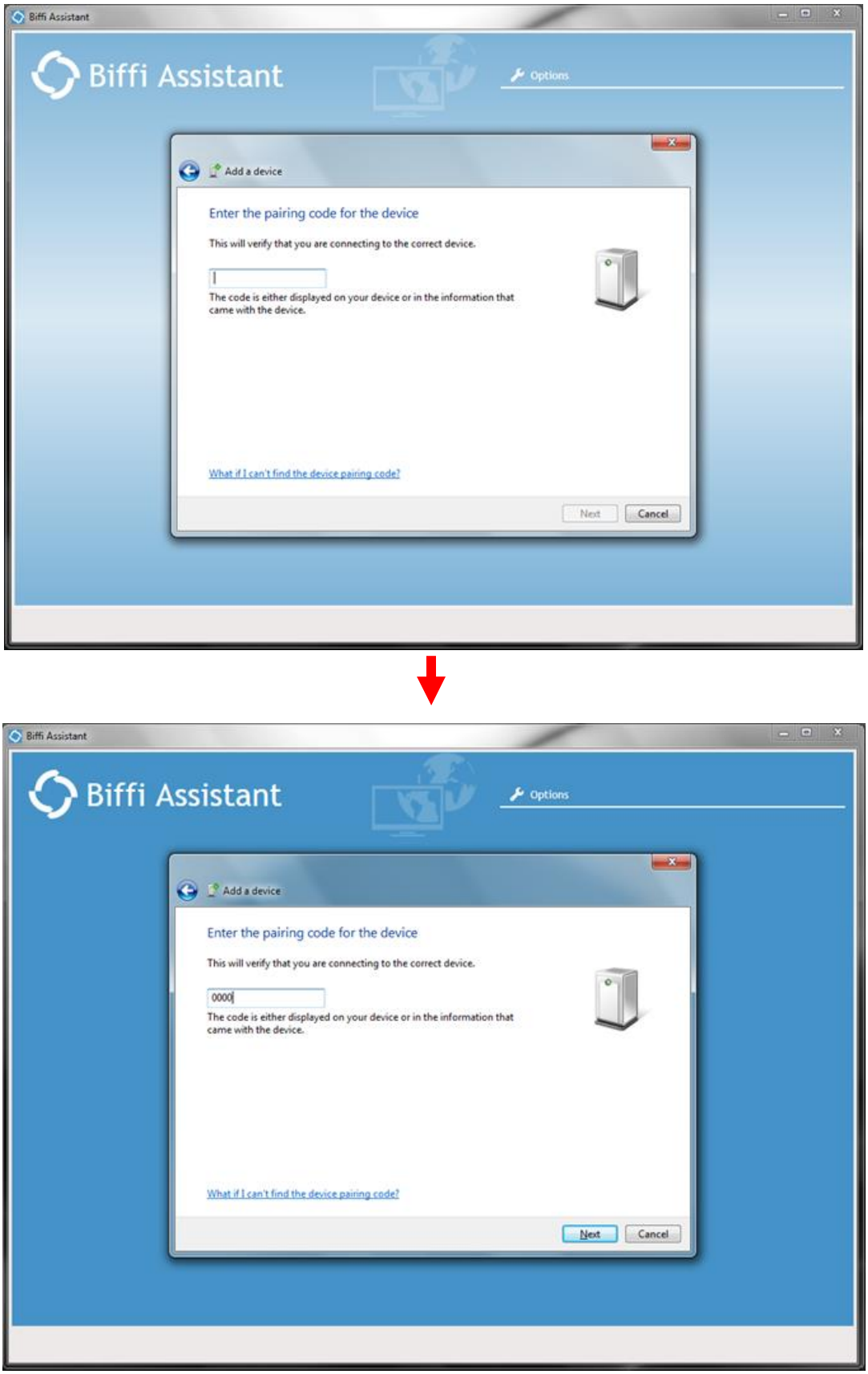
Go to step 4).

7.4.1.3 Request of Bluetooth password before Device Password page

Left click of the mouse on the message that appear in the bottom on the right.



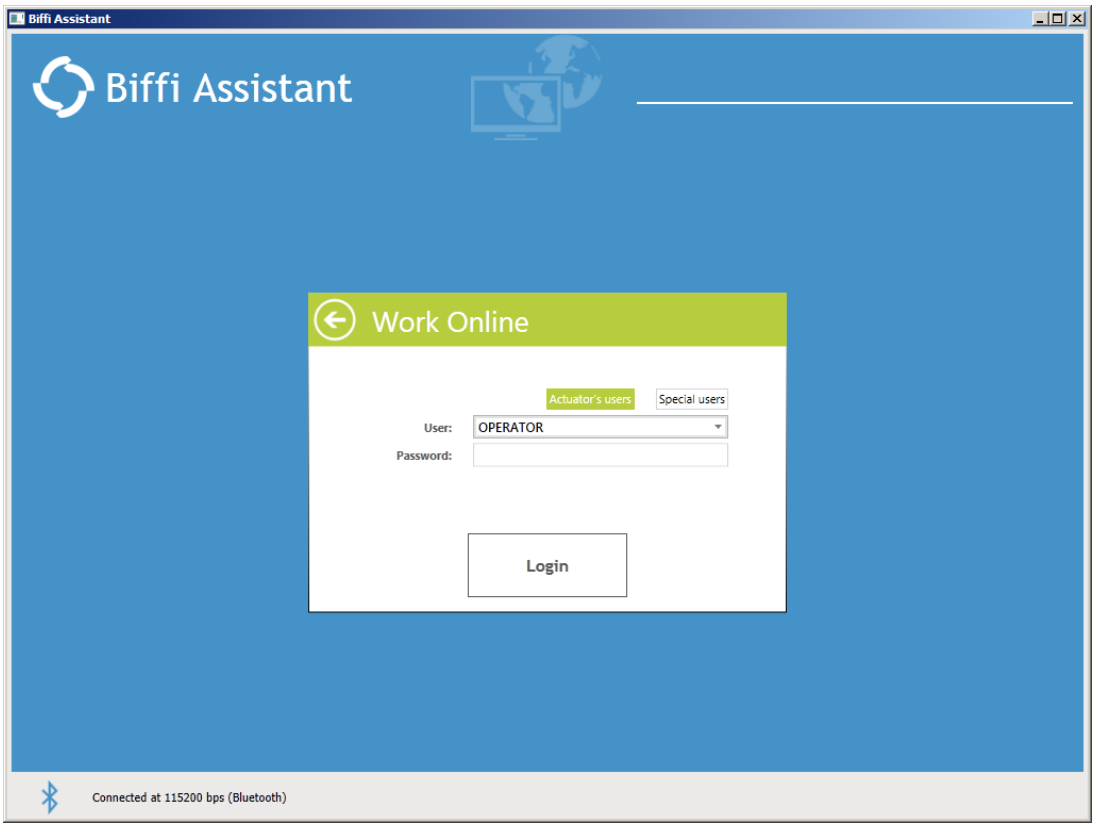
Insert the password “0000” and then click on the “Next” button.



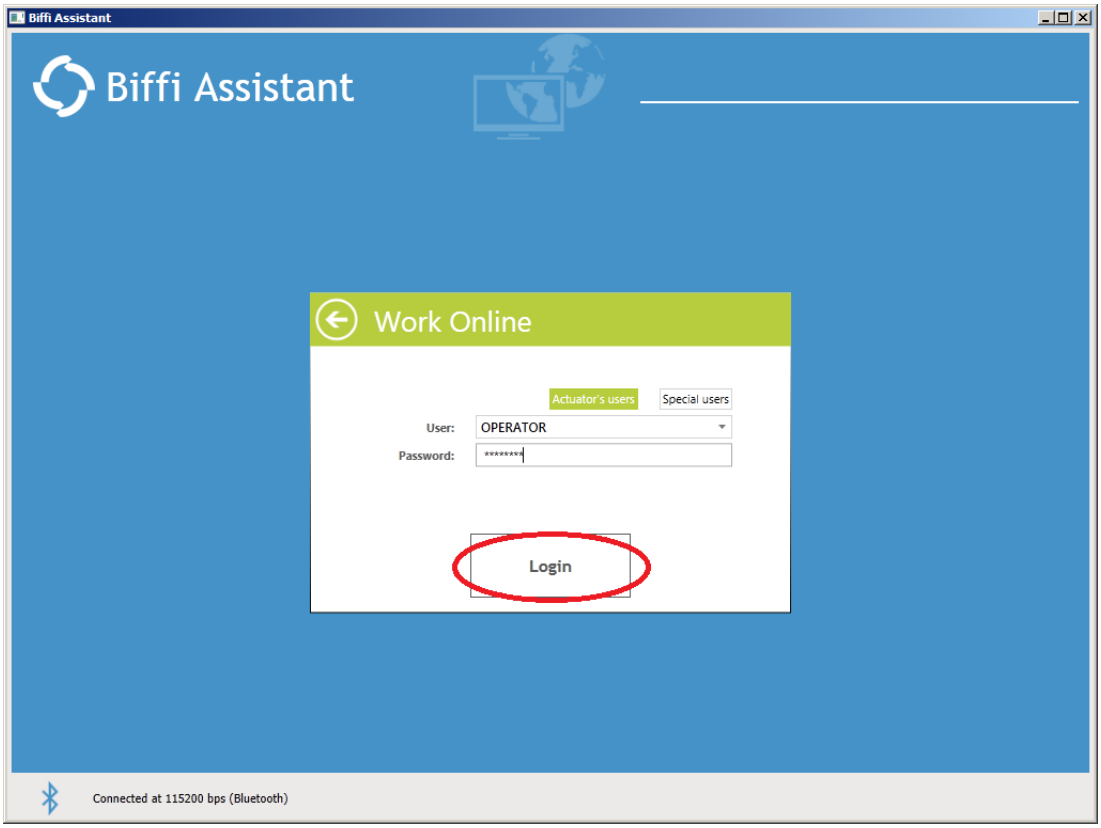
Left click of the mouse on the “Close” button.

Go to step 4).

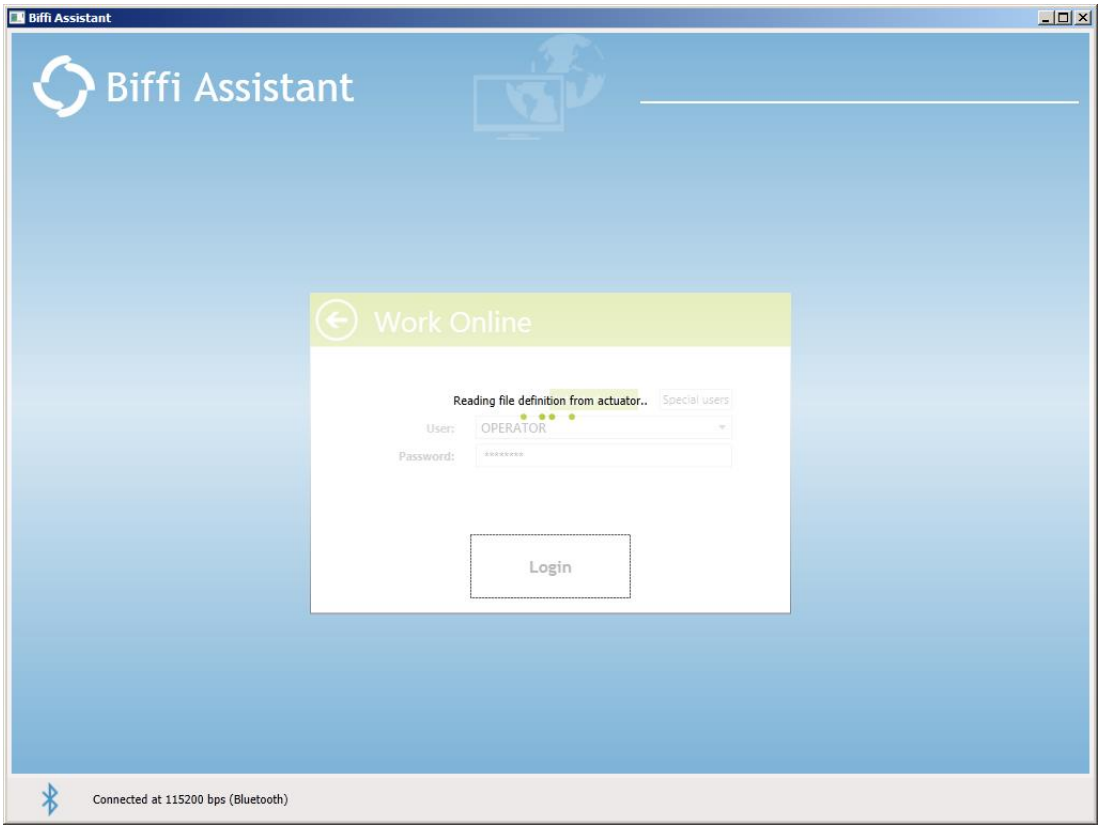
4) Wait until the end of the “preliminary” connection and the Login screen queries the user for a “User” and a “Password”.



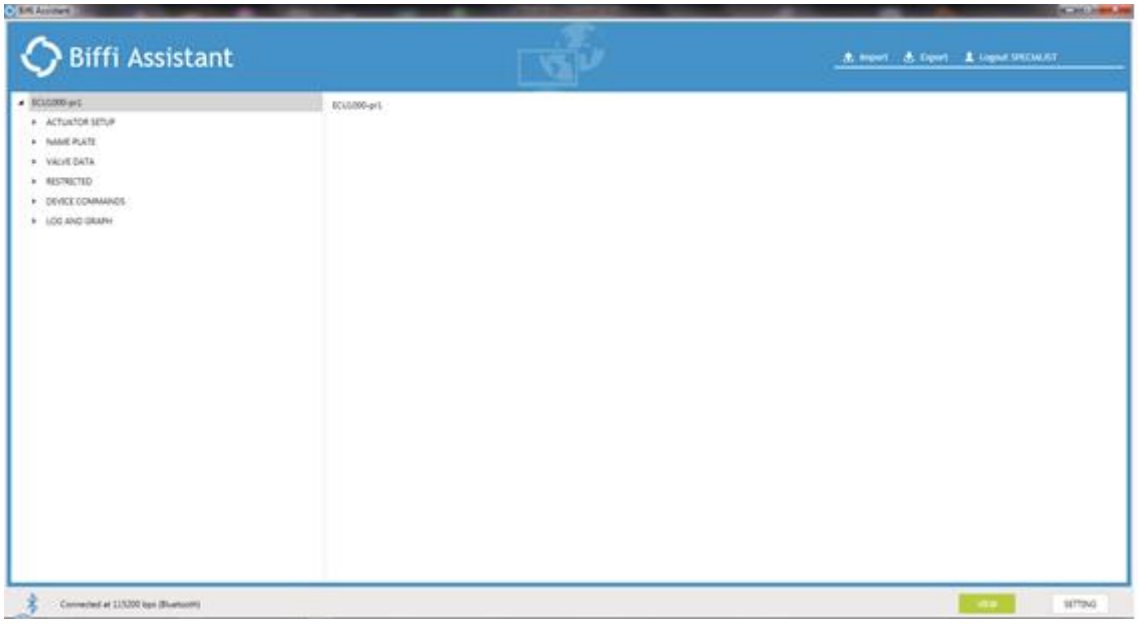
5) To login, select the “User” (see 4) for details), insert the password and left-click of the mouse on “Login” (or press ENTER). To cancel the Login left-click of the mouse on the left arrow.



6) If the password is correct the connection with the ELBS-20 starts.



7) When the ELBS-20 is connected ("User" = OPERATOR) the following screen appears.

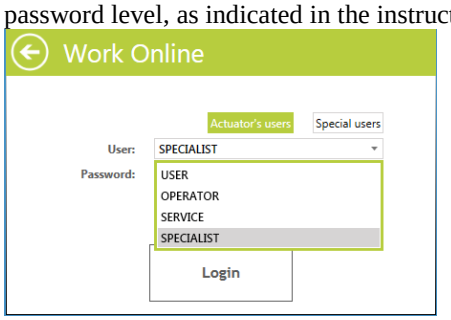


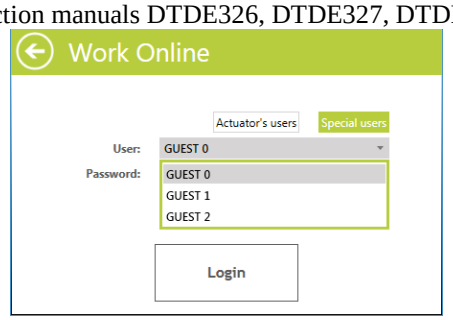
For Logging out, left-click of the mouse on "Logout *User Level*".

8 Login

8.1 User Levels

In **Work Online** mode the BIFFI-Assistant use the same passwords and usernames of the ECU1000 Local Operator Interface.
According to the instruction in DTDE327, Local operator Interface, the following "Username" are available: **User** (in Actuator's users), **Operator** (in Actuator's users), **Service** (in Actuator's users), **Specialist** (in Actuator's users), and **Guest0** (in Special users), **Guest1** (in Special users), **Guest2** (in Special users). Each username requires a 6 character (numbers or capital letters) password to connect the BIFFI-Assistant to ECU1000. Each username is associated to a password level, as indicated in the instruction manuals DTDE326, DTDE327, DTDE328.





The combination of username and password defines the **User level**:

- Level **USER**: only the parameters and ECU cmd's of active functions in the connected ECU1000 device with password **level 1** can be viewed/modified/executed. The default password is "**100000**". The password is configurable and allows modifying few parameters (Dead band, Recorder, output relay, etc.)
- Level **OPERATOR**: only the parameters and ECU cmd's of active functions in the connected ECU1000 device with password **levels 1 and 2** can be viewed/modified/executed. The default password is "**200000**". The password is configurable and allows commissioning the actuator (positioner, ESD, status relay, travel limit calibration, etc.)
- Level **SERVICE**: only the parameters and ECU cmd's of active functions in the connected ECU1000 device with password **levels 1, 2 and 3** can be viewed/modified/executed.
- Level **SPECIALIST**: this password (**level 4**) allows viewing/modifying/executing any parameter and ECU cmd.
- Level **GUEST0:** it allows viewing the **full set of parameters and ECU commands**, including the parameters and ECU commands of the non-active functions. **No write** operation is allowed. The GUEST0 password is "**10000A**".
- Level **GUEST1:** it allows only viewing the NAME PLATE function block. **No write** operation is allowed. The GUEST1 password is "**A0000A**"
- Level **GUEST2:** it has the same permits of the SPECIALIST, but the maximum number of access to menu of connected ECU1000 device is 10.

The instruction manuals DTDE326, DTDE327, DTDE328 give further information relevant to the password levels, the menu structure and the parameter and command list. The passwords of SERVICE, SPECIALIST and GUEST2 are available only to product specialists.

Important:	**Only the parameters and ECU-commands with username levels less or equal to entered username level can be viewed/modified/executed. Parameters and functions not enabled to work in the connected ECU1000 device will not showed (except username GUEST0).**

9 Navigation in the menu

During the connection process the BIFFI-Assistant reads the menu structure and the full set of data from ECU1000. The data of each TAB are also read when the TAB is selected the first time. Any further update should be manually done by the commands described in the next paragraphs (**read object_x, read TAB_x, read block_x, read all objects**).

Warning:	**Any change or write operation of parameter, TAB or Block should be done after a read operation of the same parameter, TAB or Block.** **It is suggested that any write operation is checked by a read operation of the changed data.**

9.1 Menu structure

As described in the manuals DTDE327 and DTDE328 the ECU1000 menu is organized in "**Function block**", "**Function TAB**", "**Parameters and ECU Commands**". Each "Function TAB" collects a group of "Parameters or ECU Commands", each "Function block" collects a group of "Function TAB". The **parameters** are in the TAB's of function blocks "ACTUATOR SETUP", "NAME PLATE", "VALVE DATA" and "RESTRICTED"; the **ECU Commands** (or **ECU-cmd**) are in the TAB's of function blocks "DEVICE COMMANDS" and "LOG AND GRAPH". The "parameters" allow changing the behavior of the working functions in the ECU1000; the "ECU commands" allow executing operations with the ECU1000 as "analogue I/O calibration", "up-loading of logger and curves", "travel limit configuration", "data memory setting", etc.

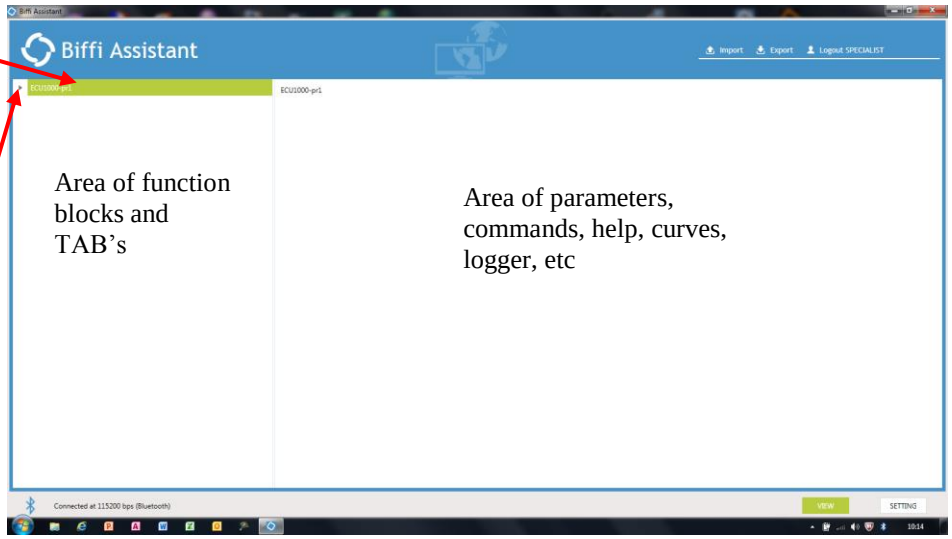
• **DEVICE NAME** ○ **FUNCTION BLOCK 1** ▪ **TAB 1_1**	○ **Parameter/Command 1_1_1** ○ **…** ○ **Parameter/Command 1_1_y**
▪ **…** ▪ **TAB 1_x**	○ **…** ○ **…**
○ **FUNCTION BLOCK N** ▪ **TAB N_1** ▪ **…** ▪ **TAB N_z**	○ **Parameter/Command N_z_1** ○ **…** ○ **Parameter/Command N_z_r**

The structure of the BIFFI-Assistant menu repeats the menu structure of the ECU1000 Local Operator Interface (see manual DTDE 327)

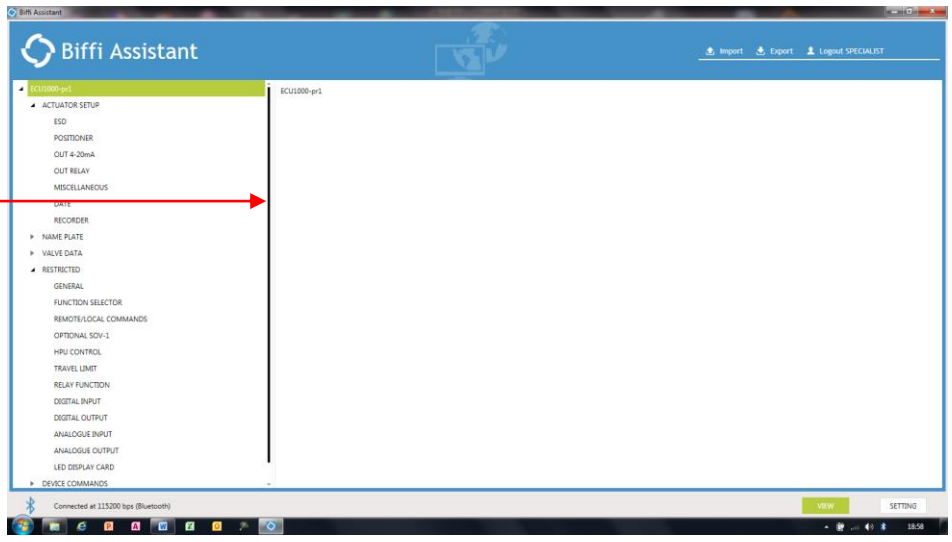
The PC screen is divided in two sections: the left side shows Device Name, Function Blocks and function TAB's, the right side shows the Parameters, the ECU Commands, the Help, etc. Each parameter/ECU command is defined: by Name, Value, UM (Unit Measure), Min (Minimum value), Max (Maximum value) and the Flags (R, W, S).

The name of the device is determined by the parameter "Actuator setup, Miscellaneous, Bluetooth Name". The available options are "Actuator serial number, Valve tag and Cabinet serial number"

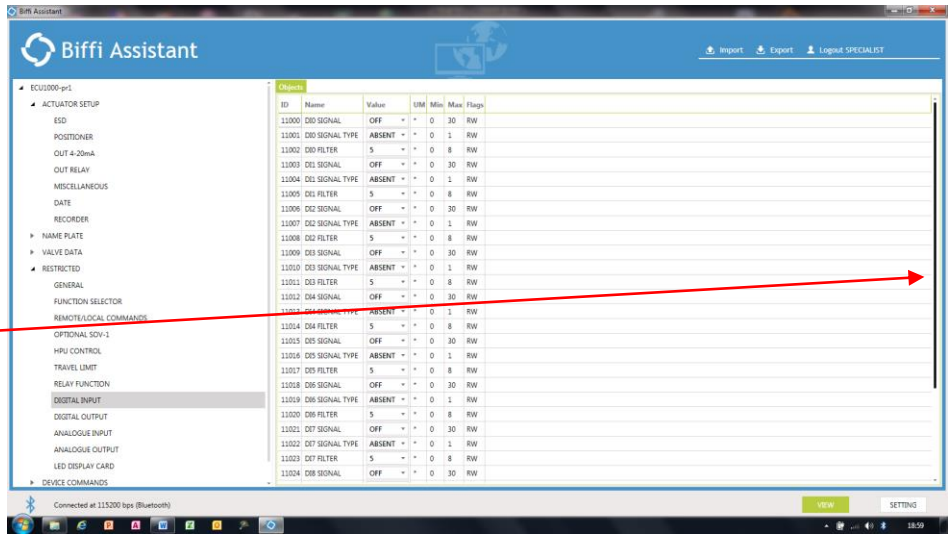
Minimize or maximize the menu:
- Single left-click of mouse on the arrow on the left of the Menu Name
- Double left-click of the mouse on the Menu Name



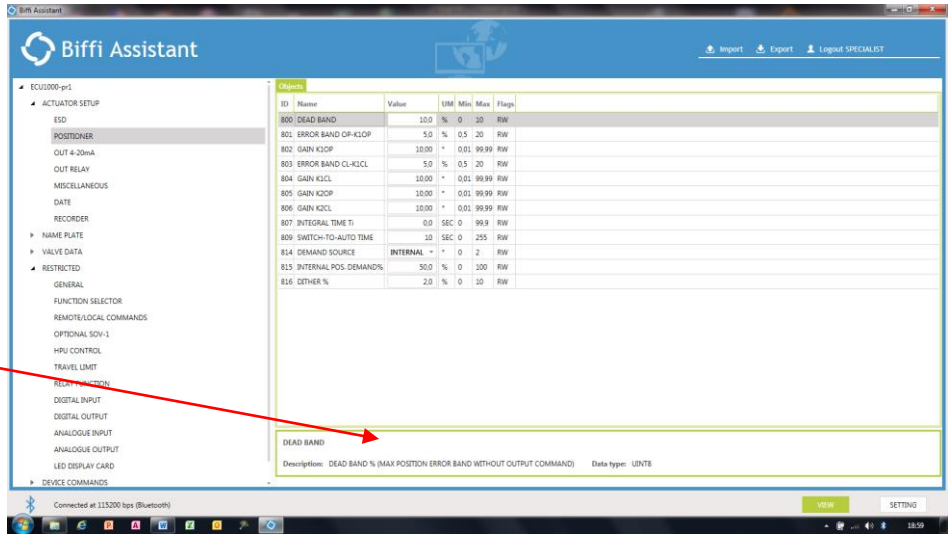
Use the scroll bar to view all function blocks and TAB's



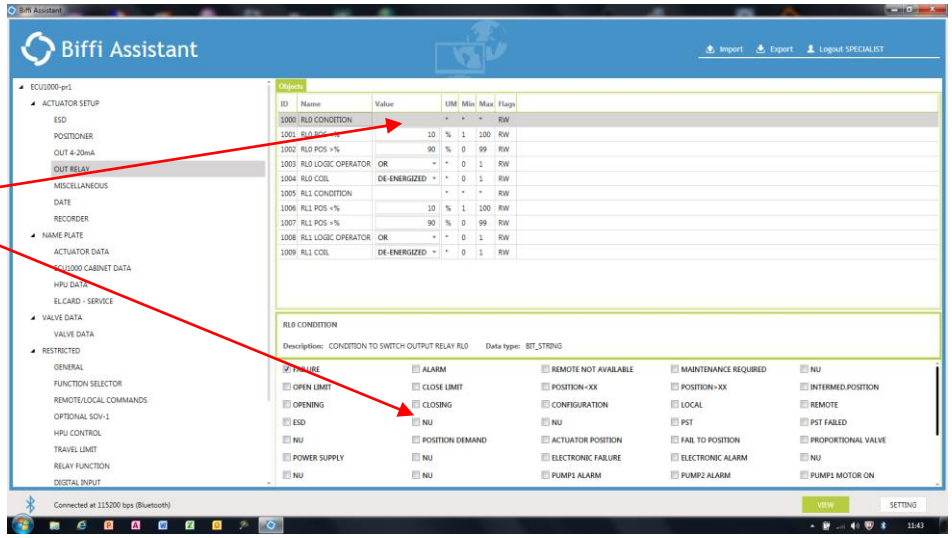
Left click on the name of the TAB.
The Parameters or ECU Commands appear on the right side of the screen
Use the scroll bar on the right side of screen to view all parameters of the selected TAB



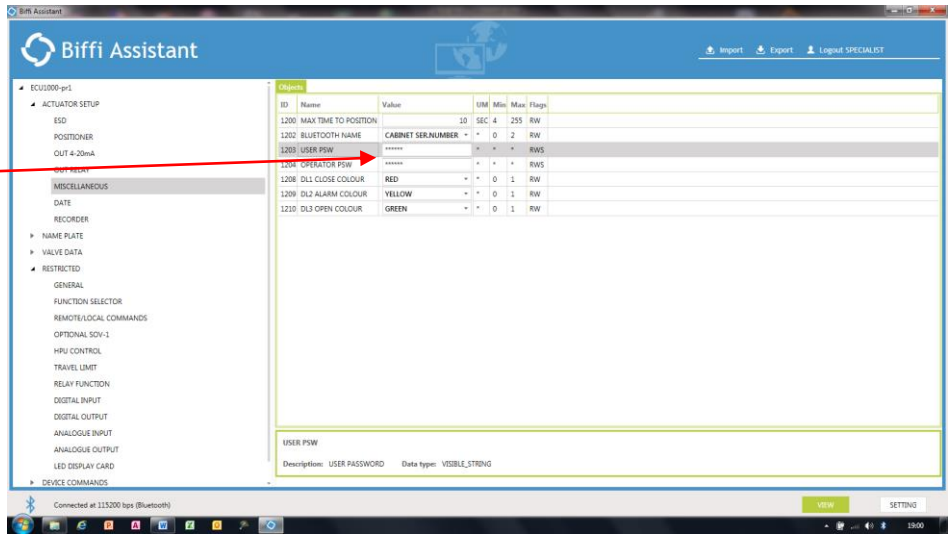
Each parameter/command line contains ID number, Name, Value, Engineering Unit, Min value, max value and Status (flag **R**=**R**eadable, **W**=**W**ritable, **S**=**S**pecial).
The **Help** window is shown as the parameter line is selected.



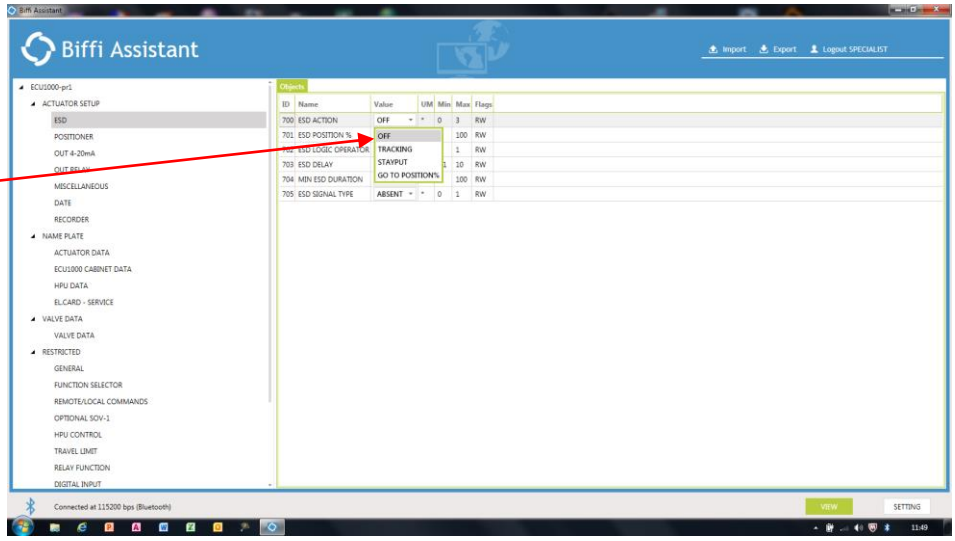
If the box of value is "blank", the value of the parameter is shown in an optional window



If the box of value is "******", the value of the parameter is not visible



If the value of the parameter is discrete, click ▼ to see the list of the available options



9.1.1 Status of parameters and ECU commands

The column "FLAGS" shows the status of each parameter and ECU cmd. The status "**R**" indicates that the "parameter/ECUcmd" is readable. The status "**W**" indicates that the "parameter/ECU" cmd is writable. The status "**S**=**S**pecial" is only for parameters; it indicates that the parameter is **writable** by the command "**Write object_x**", but writing it by the commands "**Write active objects**", "**Write Block_x**", "**Write TAB_x**" and "**Full copy**" requires a further step with selection and confirmation. By the above mechanism the operator can write a set of standard parameters (with "**W**" flag) using one only command, but he can choose to write/no-write the special parameters (with flag "**S**"). The flag "**S**" collects the parameters whose value depends on the electronics or on the device which is connected to the BIFFI-Assistant. Examples of parameters with flag "**S**" are :

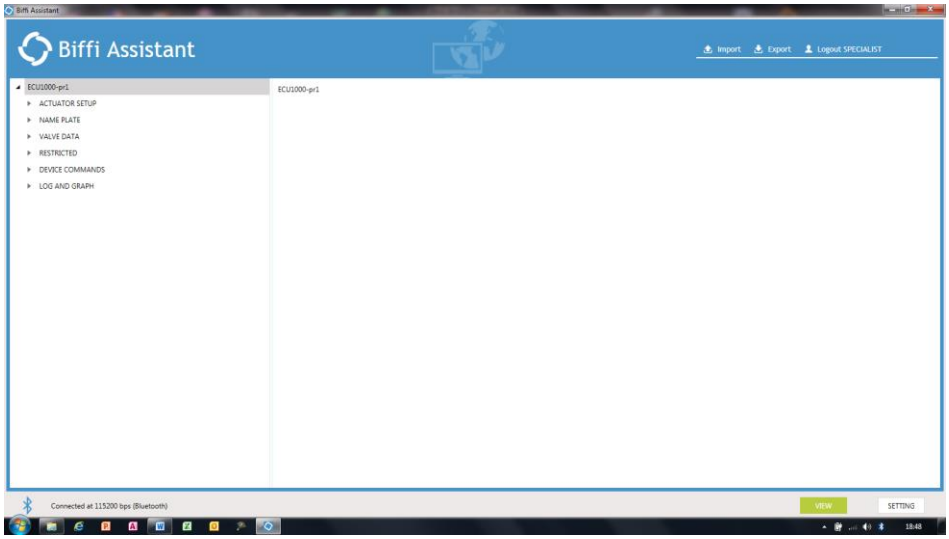
- the parameters of the calibration of the analog inputs and outputs. They fix the relationship between mA/V and bits. The calibration of the analogue inputs and outputs is done by the manufacturer, it is different for each ECU1000 device, it depends on the hardware tolerances of the electronic components and A/D and it should never be changed except for a new calibration.
- The USER and OPERATOR password
- The parameters of the NAME PLATE block
- The parameters of the VALVA DATA block

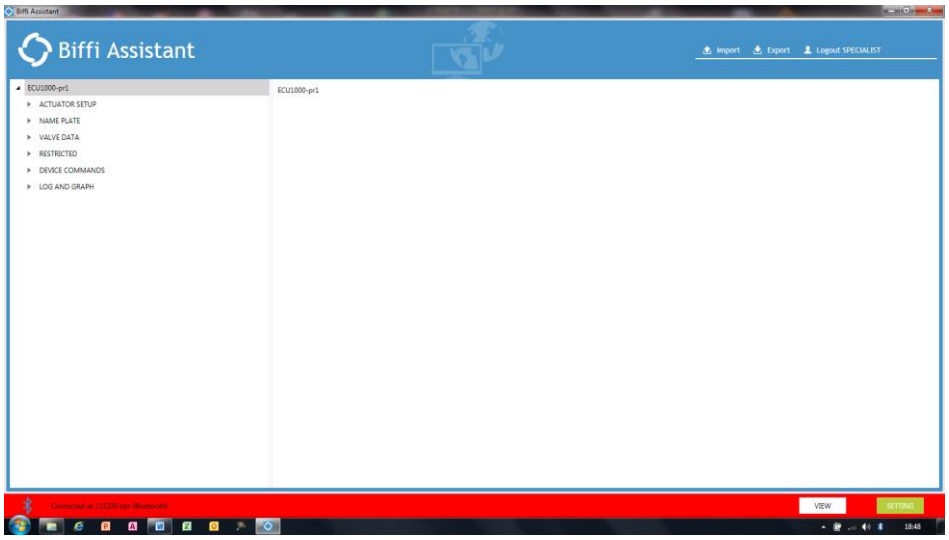
The below table shows the list of parameters:

AI_x bit at 4mA	**AI_x bit at 20mA**	**AO_x min bit**	**AO_x max bit**
AI_x bit at 2.5V	**AI_x bit at 4.5V**	**NAME PLATE block**	**VALVE DATA block**
User PSW	**Operator PSW**		

9.2 View and setting mode

If ECU1000 is in **LOCAL** control by Local Operator Interface the switch to "**SETTING**" mode is not allowed





VIEW and **SETTING** mode is selectable by clicking on the buttons **VIEW** and **SETTING** located on the right low corner of screen
The default mode is "**VIEW**".
In **VIEW** mode the working parameters of ECU1000 can be only viewed but not changed. Commands to open or close are not available.
In **SETTING** mode the ECU1000 parameters can be changed and ECU1000 switches in **configuration mode** (see instruction manuals DTDE326, DTDE327, DTDE328).
A **red bar** appears on the screen to highlight that ECU1000 is in **configuration mode** (**stayput**).

Warning:	**In CONFIGURATION mode the ECU1000 performs the commands "write object_x/Tab_x/Block"_x/active objects, "full copy" and "send command_x" only if they come from the communication channel that has previously set the configuration mode. The other channels can work only in view mode.**

For instance: if the Local Operator Interface sets **configuration** mode, the BIFFI-Assistant via Bluetooth or RS232 can work only in **VIEW** mode (even if it indicates configuration (SETTING) status). On the contrary if BIFFI-Assistant via Bluetooth sets "**SETTING"** mode, the Local Operator Interface allows only view operation, but write operations are not carried out.

Warning:	**In SETTING mode the operator can change parameters, enable functions, send ECU-commands, etc. The ECU1000 controls the actuator, it could control the ECU, it could drive generic electric, pneumatic, mechanic and hydraulic devices, it is mandatory to place the above devices in their safe condition to avoid injury of people and damage of equipment and ambient (see installation and maintenance manual)**

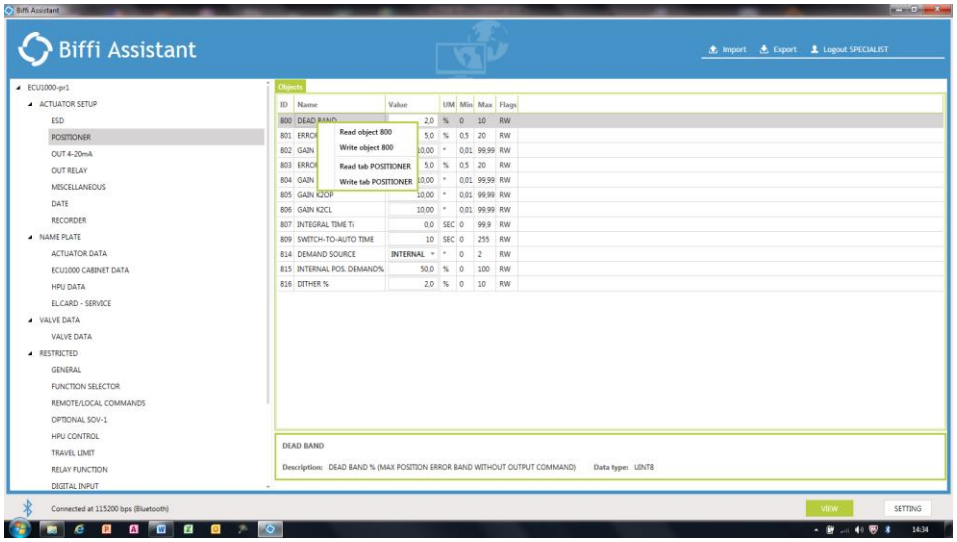
9.3 Read/Write functions

At end of the connection process the complete set of data of the connected ECU1000 device is updated to the PC memory. BIFFI-Assistant shows only the "parameters" and "ECU commands" enabled to work in the connected ECU1000 device with password level less or equal to entered username.
The parameters of a single TAB are automatically updated at first access to the TAB; the updating of the parameters must be done manually in the successive accesses to the TAB. The following table lists the Read/Write commands

Description	Command
Read/write a single parameter	**By " Read/Write object_x"**
Read/write all parameters of the selected TAB	**By " Read/Write TAB_x"**
Read/write all parameters of the selected Block	**By " Read/Write Block_x"**
Read/write all parameters of the functions enabled to work in the ECU1000 device	**By " Read/Write active objects"**
Write the full set of ECU1000 parameters (including the disabled functions)	**By " Full copy"**
Send an ECU command (only function blocks "Device Commands" and "Log and Graph")	**By "Send command_x"**

The command "Full copy" is not available to username "USER" and "OPERATOR".

9.3.1 Read a parameter from ECU1000 memory



Left click of mouse on the selected TAB.

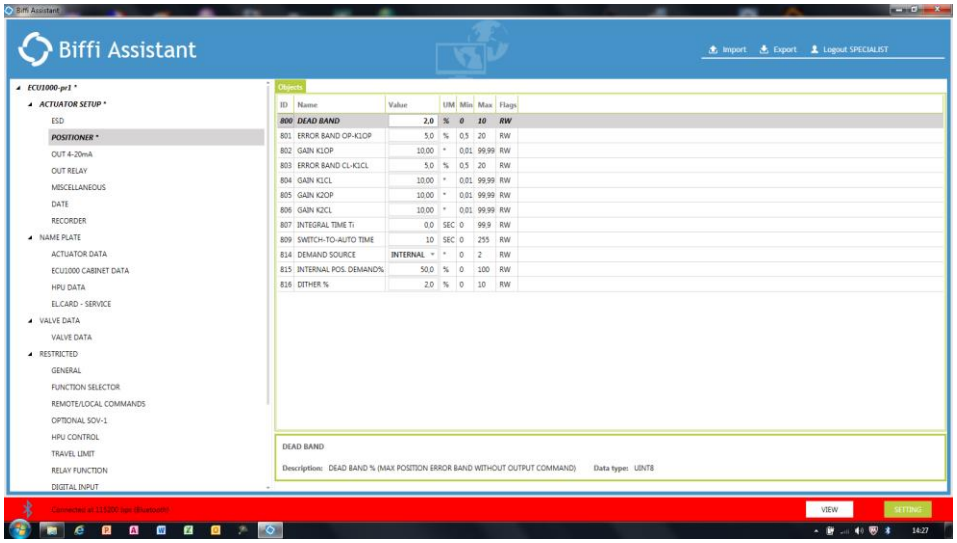
Left click of mouse on the selected parameter.

Right click of mouse on the object name to view the available options.

Select "Read object_x"

The value will be read from ECU1000 memory.

9.3.2 Write a parameter in the ECU1000 memory

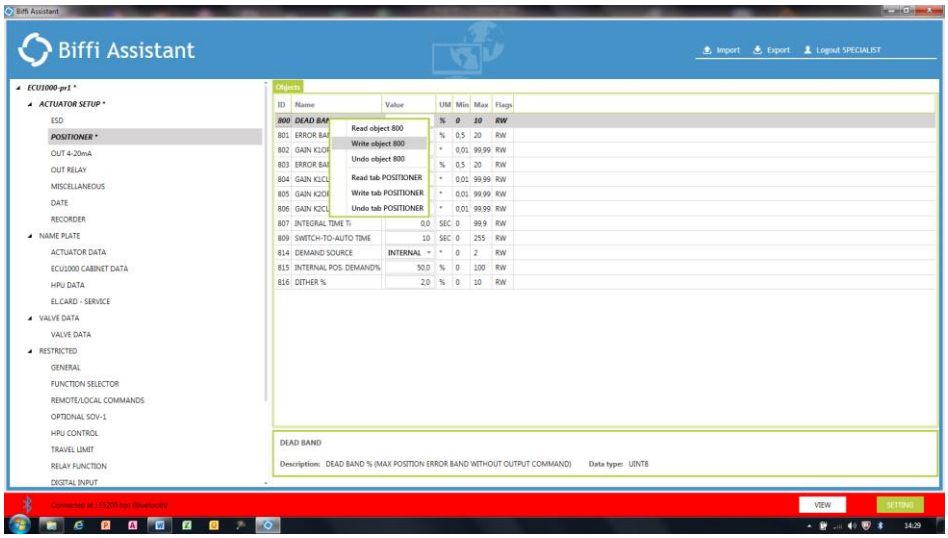


Click the button **SETTING.**

Left click of mouse on the selected TAB.

Left click of mouse on the selected parameter.

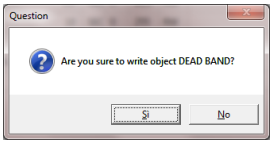
In the column "Value" enter the new value. An "*" appears on the line of the function block and of the TAB.



Right click of mouse on the object name to view the available options "Write obj_x".

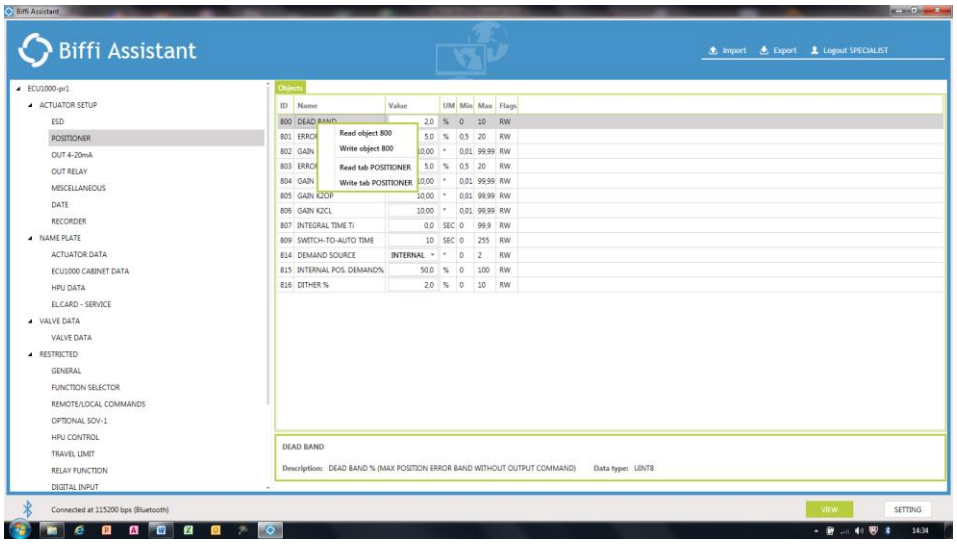
Left click of mouse on "Write object x.

Click Yes.



The value will be written in the ECU1000 memory. By the "Read object x" procedure verify the value

9.3.3 Read a TAB from ECU1000 memory



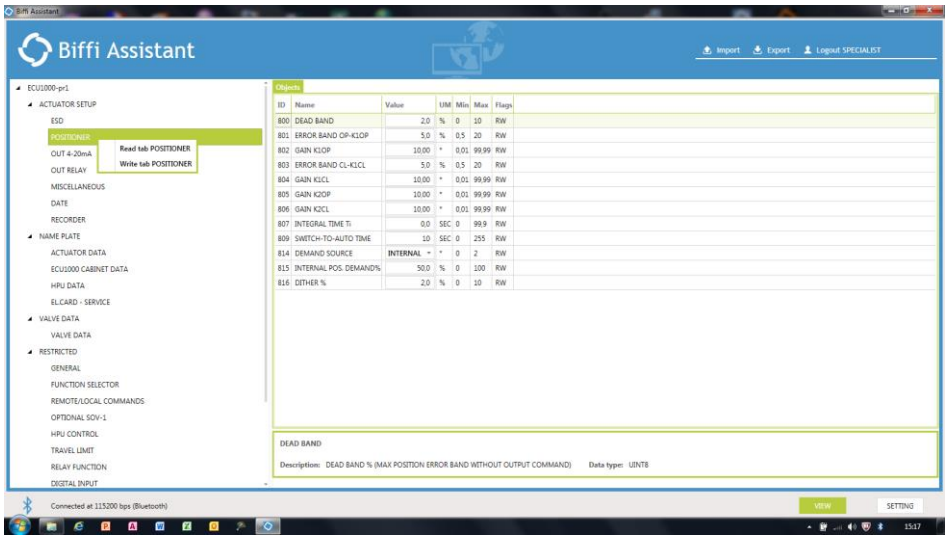
Left click of mouse on the selected TAB.

Left click of mouse on the selected parameter.

Right click of mouse on an object name to view the available options.

Select "Read TAB_x"

The value of complete TAB will be read from ECU1000 memory.



Read TAB can also be done on the left side of the screen.

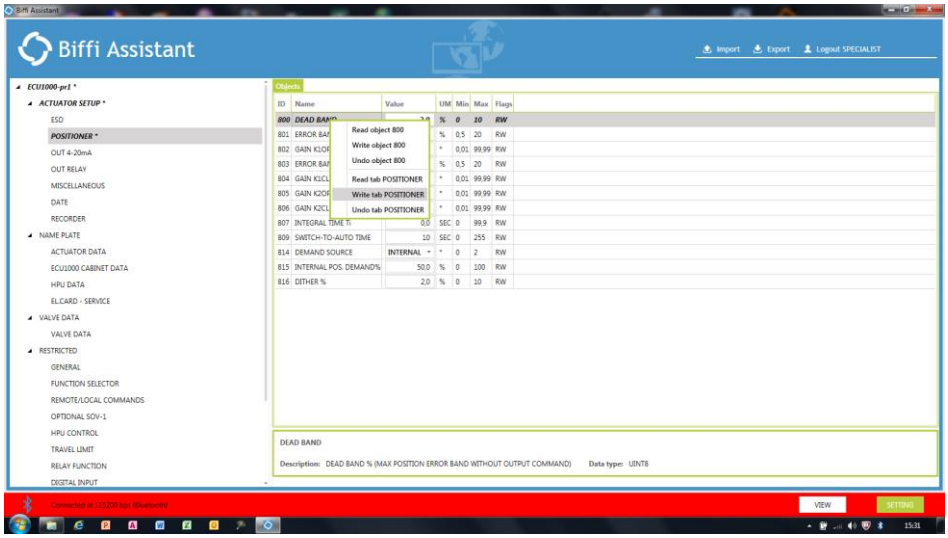
Left click of mouse on the selected TAB.

Right click of mouse on the TAB name to view the available options.

Select "Read TAB_x"

The values of complete TAB will be read from ECU1000 memory.

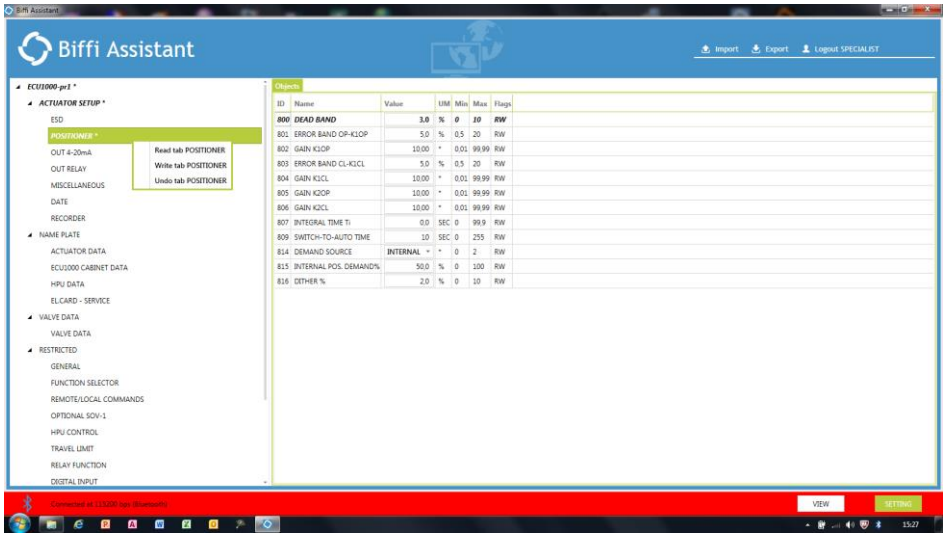
9.3.4 Write a TAB in the ECU1000 memory



Click the button **SETTING.**
Left click of mouse on the selected TAB.
Modify the value of the parameters as described in the previous paragraphs.

Right click of mouse on an object name to view the available options.

Select “Write TAB_x”.

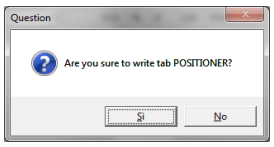


Write TAB can be also done on the left side of the screen

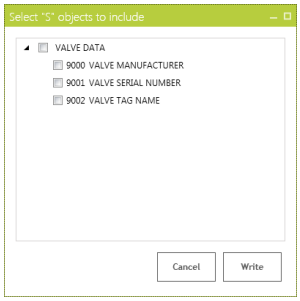
Left click of mouse on the selected TAB.

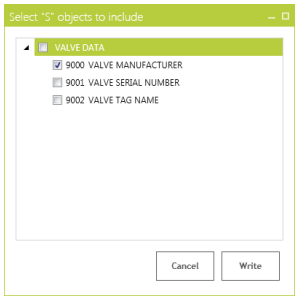
Right click of mouse on the TAB name to view the available options.

Select “Write TAB_x”.



Click YES. If the TAB does not contain any parameter with flag “**S**”, the complete set of parameters of the TAB will be written in the ECU1000 memory. The only readable parameters (flag “**R**”) will not be written. If the TAB contains parameters with flag “**S**” a new screen-shoot appears with the list of **S**pecial objects to select

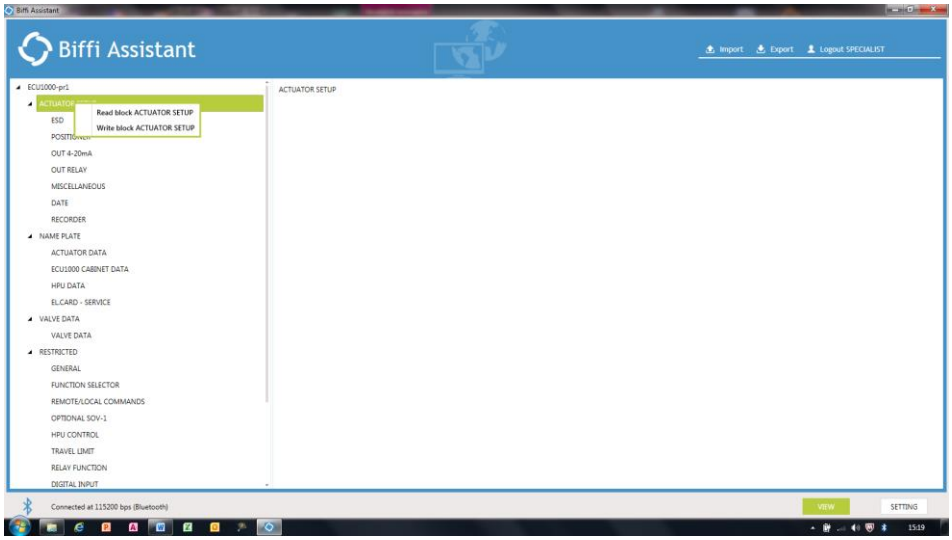




Select the Special objects to write and then click “Write”.

The complete TAB will be written (except the only readable parameters (flag “**R**”) and the parameters with flag “**S**” not selected). In the example the TAB to write is “Valve data”. The TAB contains 3 parameters with flag “**S**”. Only the parameter “Valve Manufacturer” will be written to ECU1000

9.3.5 Read a Function Block from ECU1000 memory

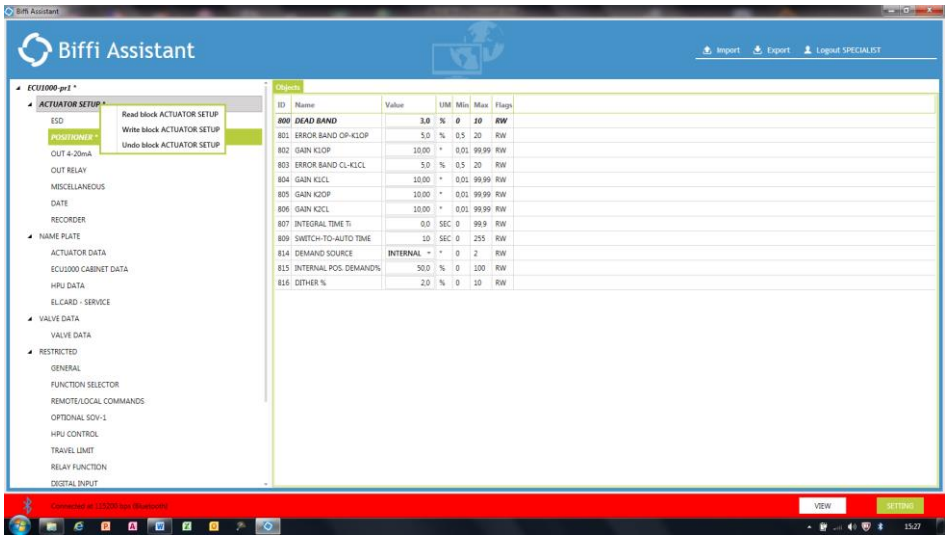


Left click of mouse on the selected BLOCK.

Select “Read Block_x”

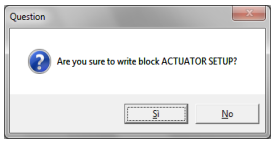
The values of complete BLOCK will be read from ECU1000 memory.

9.3.6 Write a Function Block in the ECU1000 memory

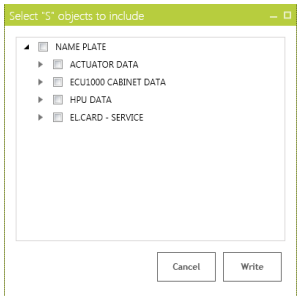


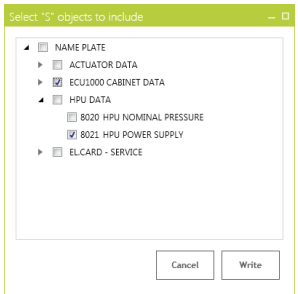
Modify the value of the parameters of the BLOCK
Click the button **SETTING.**
Left click of mouse on the selected BLOCK.

Right click of mouse on the Block name to view the available options.



Select “Write block_x”. Click on YES. If the Block does not contain any parameter with flag “**S**”, the complete set of parameters of the Block will be written in the ECU1000 memory. The only readable parameters (flag “**R**”) will not be written. If the Block contains parameters with flag “**S**” a new screen-shoot appears with the list of **S**pecial objects.

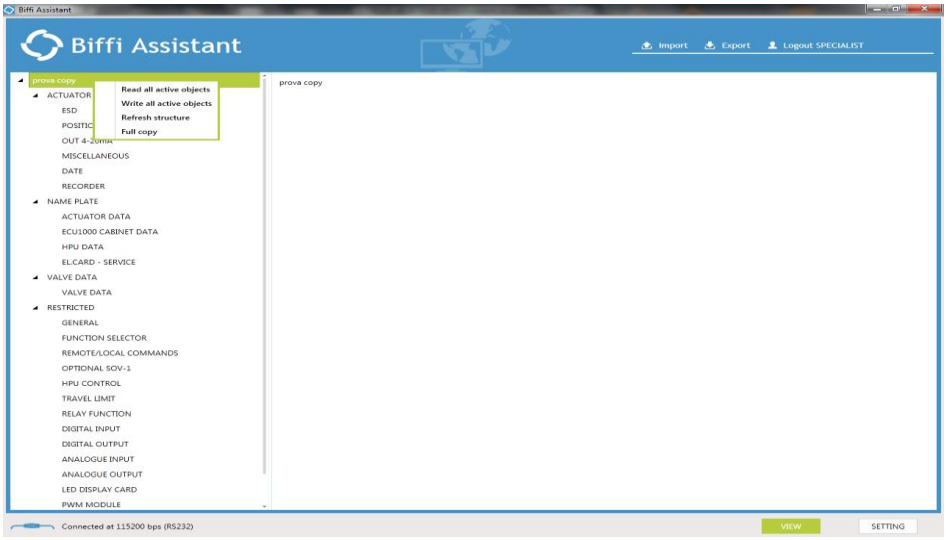




Select the **S**pecial objects to write and then click “Write”.

The complete Block will be written (except the only readable parameters (flag “**R**”) and the parameters with flag “**S**” not selected). In the example the Block to write is “Name Plate”. The Block contains 4 TAB’s with parameters with flag “**S**”. Only the parameter “HPU Power Supply” and the TAB “ECU1000 cabinet data” will be written to ECU1000

9.3.7 Read the parameters of enabled functions from ECU1000 memory

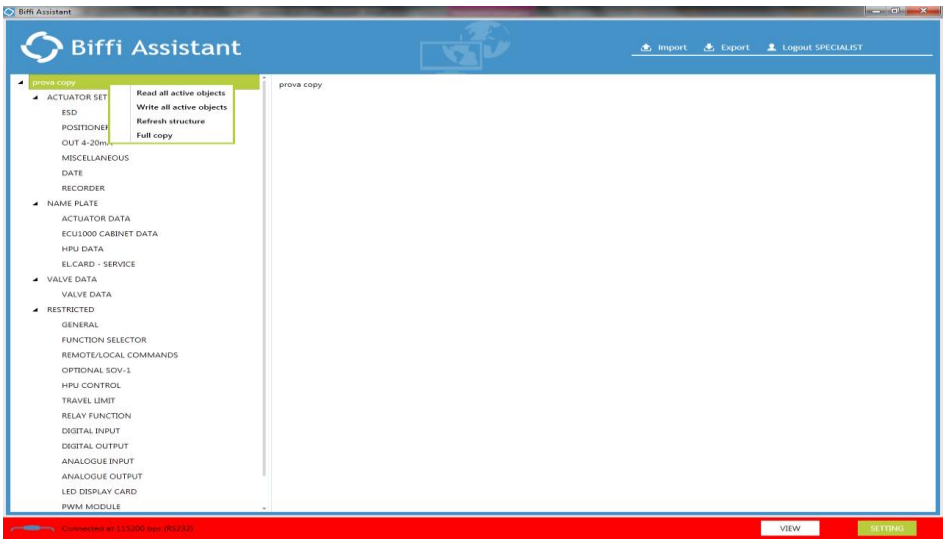


Left click of mouse on the DEVICE NAME.

Select “Read active objects”

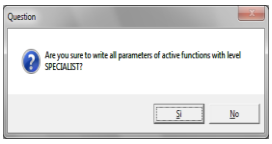
The values of complete device will be read from ECU1000 memory.

9.3.8 Write the parameters of enabled functions in the ECU1000 memory

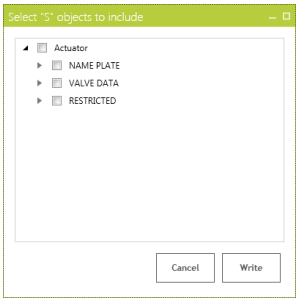


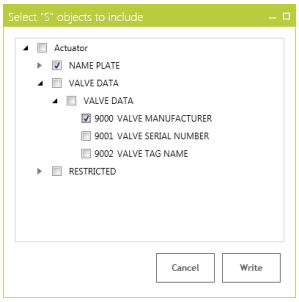
Modify the parameters.
Click the button **SETTING.**
Left click of mouse on DEVICE NAME.

Select “Write all active objects”. Click on YES



If no parameter with flag “**S**” is present, the complete set of parameters will be written in the ECU1000 memory. The only readable parameters (flag “**R**”) will not be written. If some parameter with flag “**S**” is present, a new screen-shoot appears with the list of the **S**pecial objects.

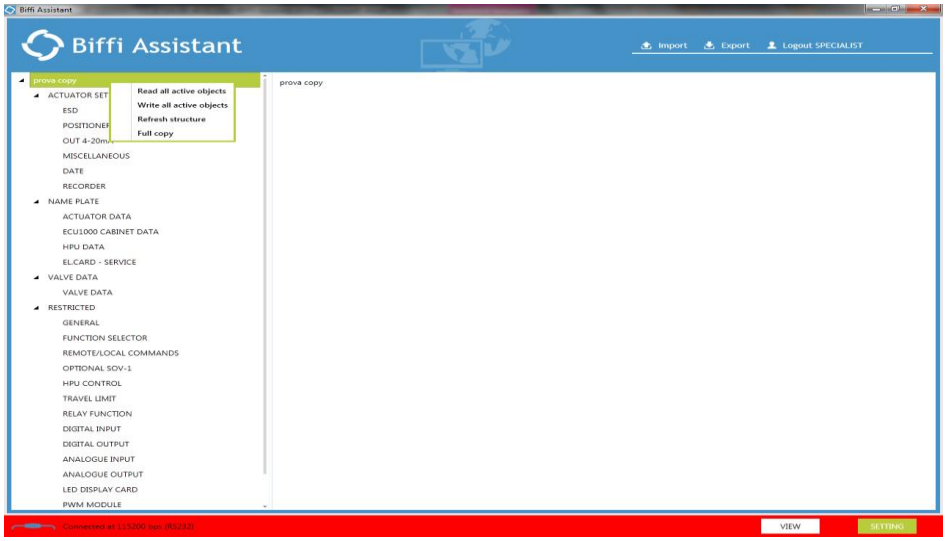




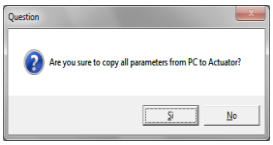
Select the **S**pecial objects to write and then click “Write”.

The complete set of active parameters will be written (except the only readable parameters (flag “**R**”) and the parameters with flag “**S**” not selected). In the example the Blocks “Name Plate”, “Valve data” and “Restricted” have parameters with flag “**S**”. Only the Block “Name Plate” and the parameter “Valve manufacturer” will be written to ECU1000.

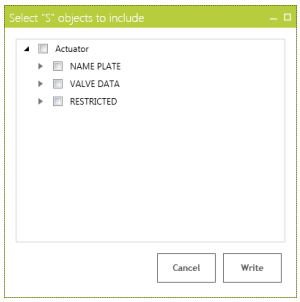
9.3.9 Write the full set of parameters in the ECU1000 memory

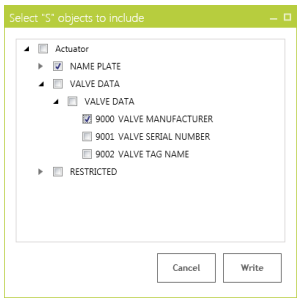


The option "**Full copy**" is available only with username "**SPECIALIST**" and "**GUEST2**". It allows writing the complete set of ECU1000 parameters, including the parameters not visibile because the relevant function is not enabled to work.



If no parameter with flag "**S**" is present, the complete set of parameters will be written in the ECU1000 memory. The only readable parameters (flag "**R**") will not be written. If some parameter with flag "**S**" is present, a new screen-shoot appears with the list of the **S**pecial objects.



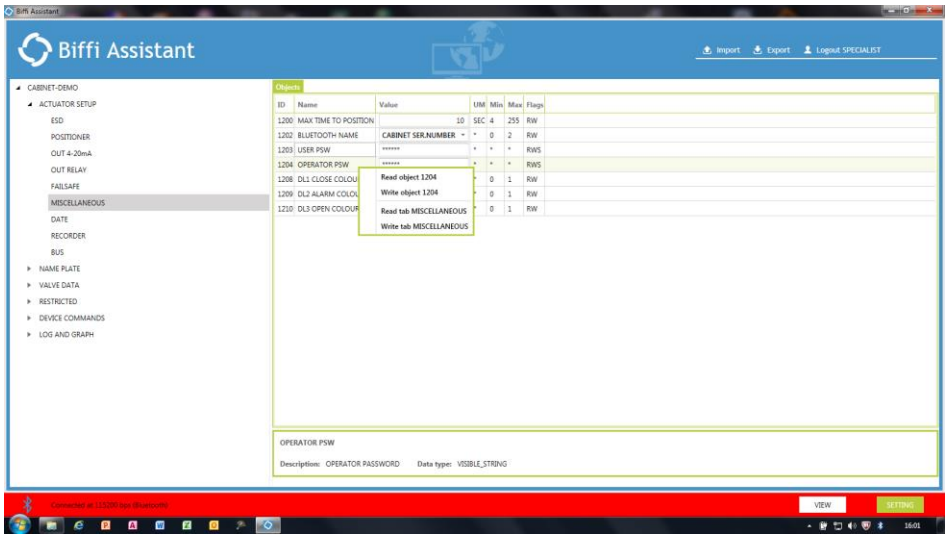


Select the **S**pecial objects to write and then click "Write".

The complete set of active parameters will be written (except the only readable parameters (flag "**R**") and the parameters with flag "**S**" not selected). In the example the Blocks "Name Plate", "Valve data" and "Restricted" have parameters with flag "**S**". Only the Block "Name Plate" and the parameter "Valve manufacturer" will be written to ECU1000.

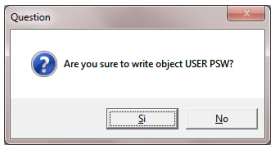
The paragraph "IMPORT and EXPORT" shows how to use the function.

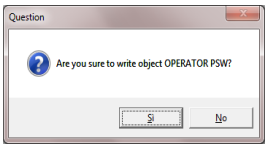
9.3.10 Change USER and OPERATOR passwords



In **Work Online** mode the username and operator passwords of the ECU1000 Local Operator Interface are the same of the BIFFI-Assistant. The password corresponding to username USER and OPERATOR can be changed by the end user. The "change password" procedure can be done by Local Operator Interface or by BIFFI-Assistant.

Left click of mouse on the button **SETTING**. Maximize the function block “Actuator setup”. Click the left key of mouse on the TAB “Miscellaneous”. Enter the new password (USER or OPERATOR). The value is not visible, it is indicated by “*”. Right click of mouse on the name of the parameter. Left click of mouse on “Write object_x”. Passwords cannot be written by the commands “write TAB, write Block, write all active objects and full copy”.





Click on YES to confirm.
Left click of mouse on the button **VIEW**

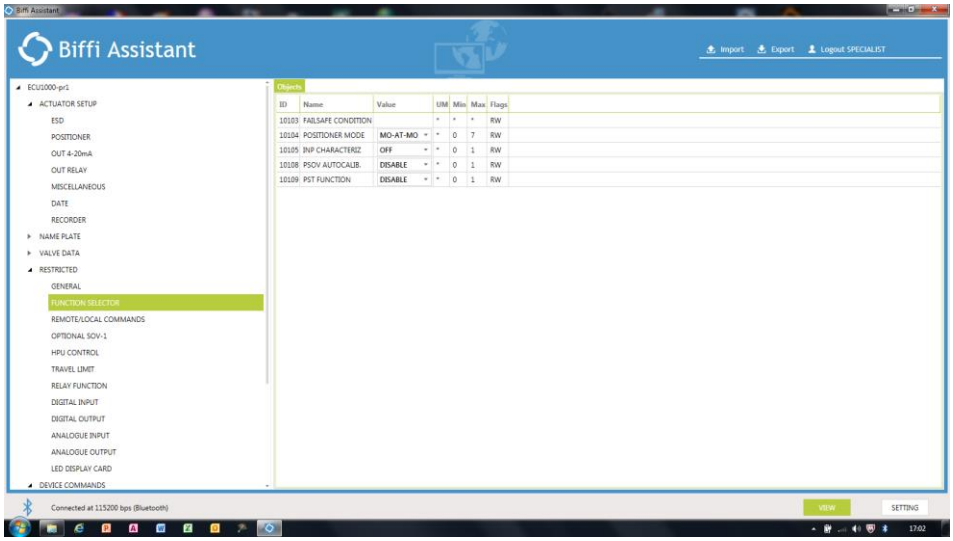
When the new password is enterd the old one is no longer valid, both for Local Operator Interface and BIFFI-Assistant.

9.4 Refresh structure function

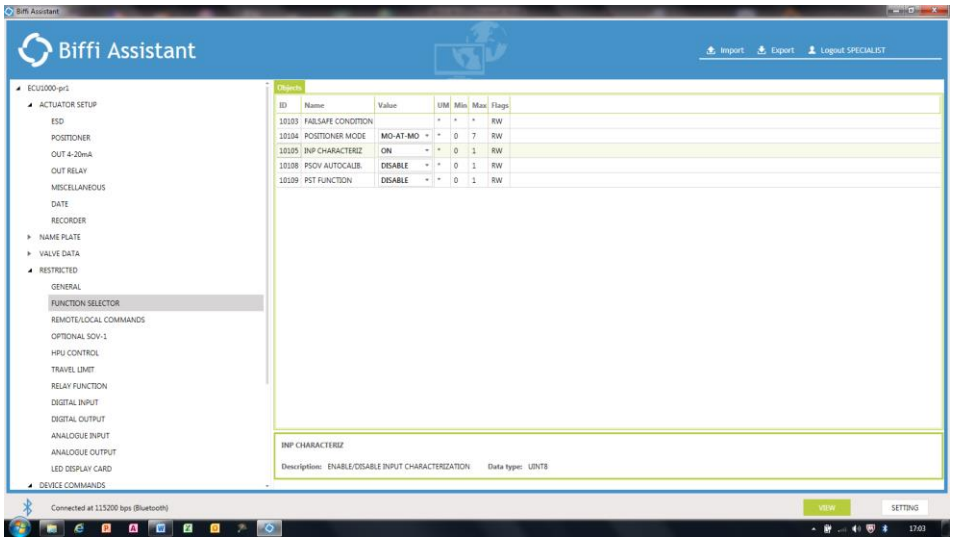
The “Refresh Structure” function allows updating the BIFFI-Assistant menu if a new function has been enabled in the ECU1000 device.
In fact the BIFFI-Assistant read the menu structure from ECU1000 at the connection time. The parameters and commands shown are according to the user level and the ECU1000 functions not active are not viewed.
If a function is enabled to work it need to re-read the menu structure as follows:

- after having enabled the function by the instruction in the previous paragraphs perform a logout and then a new login
- after having enabled the function by the instruction in the previous paragraphs click on the “Refresh Structure” option (available by clicking the right key of mouse on the DEVICE NAME)

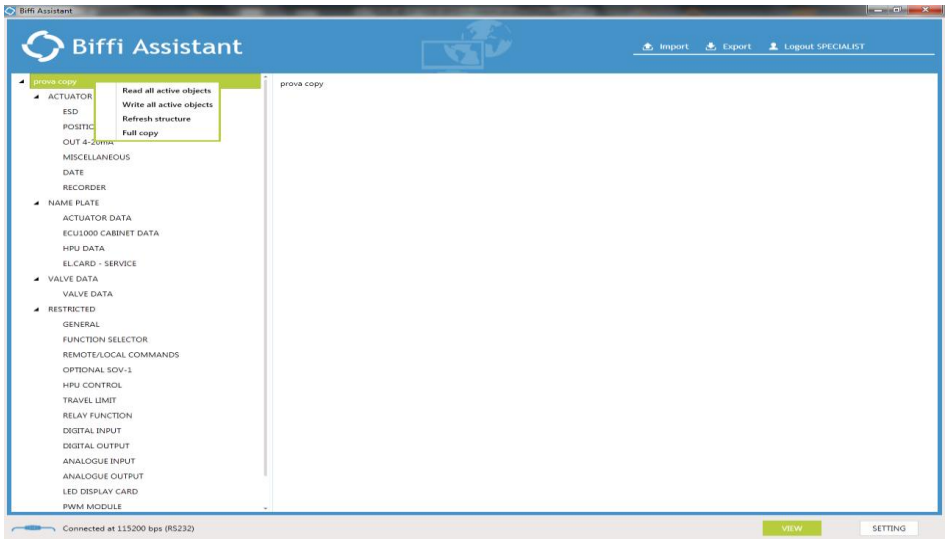
Example : Input Characterization function disabled
The TAB “Input Characterization” is not present in the function block ACTUATOR SETUP



By the instructions of the previous paragraphs the function can be enabled in the function block RESTRICTED, TAB FUNCTION SELECTOR, parameter INP CHARACTERIZ (OFF/ON).
After having enabled the function, it is still not present in the ACTUATOR SETUP block

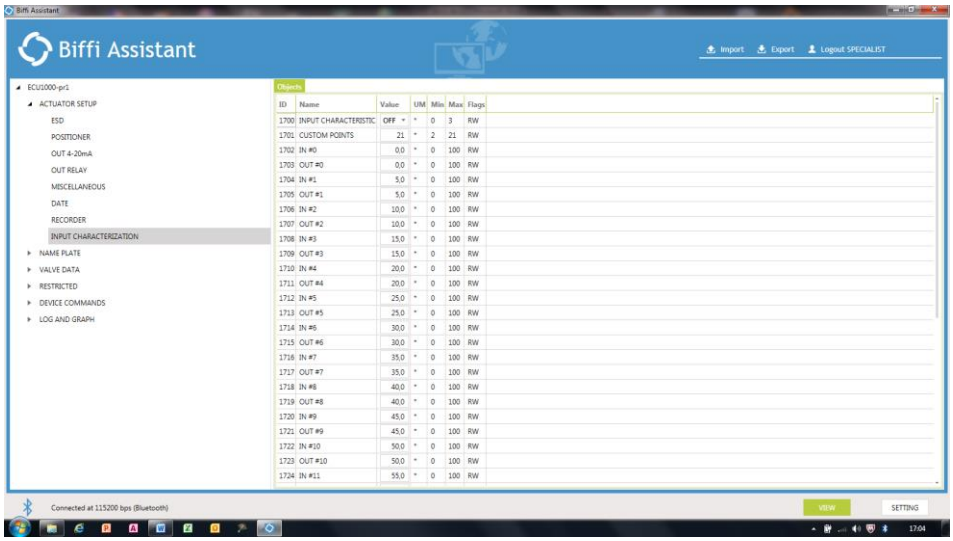


Click the right key of mouse on the DEVICE NAME



Click the left key of mouse to select “Refresh Structure”

Maximize the function block ACTUATOR SETUP
Now the TAB INPUT CHARACTERIZATION is present and the menu structure is updated.

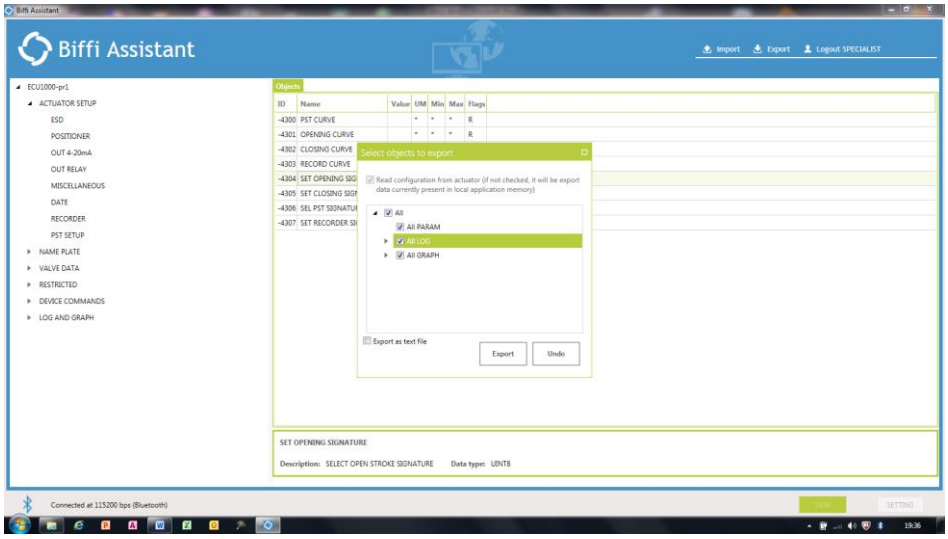


10 Import and Export

10.1 Export

The Export function allows saving the set of ECU1000 data or a part of them in a file. The set of saved data depends on the user level and the active ECU1000 functions. The full set of data available in the ECU1000 (including the not active functions) can be saved only with password corresponding to username **GUEST0**. Two export options are available:

- Save of data as text file ***.txt**. The saved file is printable and can be used for comparison, analysis and filing. The ***.txt** file cannot be used by the BIFFI-Assistant
- Save of data in the BIFFI-Assistant data base, as file ***.biffia**. The file can be imported by the BIFFI-Assistant and used for configuration, analysis and filing in **online** and **offline** mode. The files can be managed only by the BIFFI-Assistant.



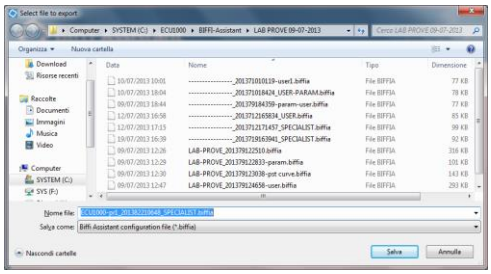
Left click of mouse on EXPORT (on the right high corner of screen).

In the Export windows select the set of data to export.

Use ▶ and the scroll bar to maximize, minimize.

Select the data to export.

Left click of mouse on button Export.



Confirm or change the file name. The default name contains: Device Name, Date and Time, Username.

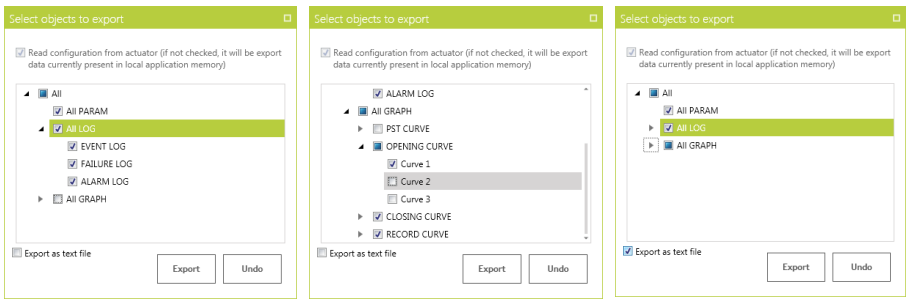
The file extension is **.biffia** or **.txt** according to the export option selected.

Click on SAVE.

The export process starts. BIFFI-Assistant read the data from the actuator and save them in the file.

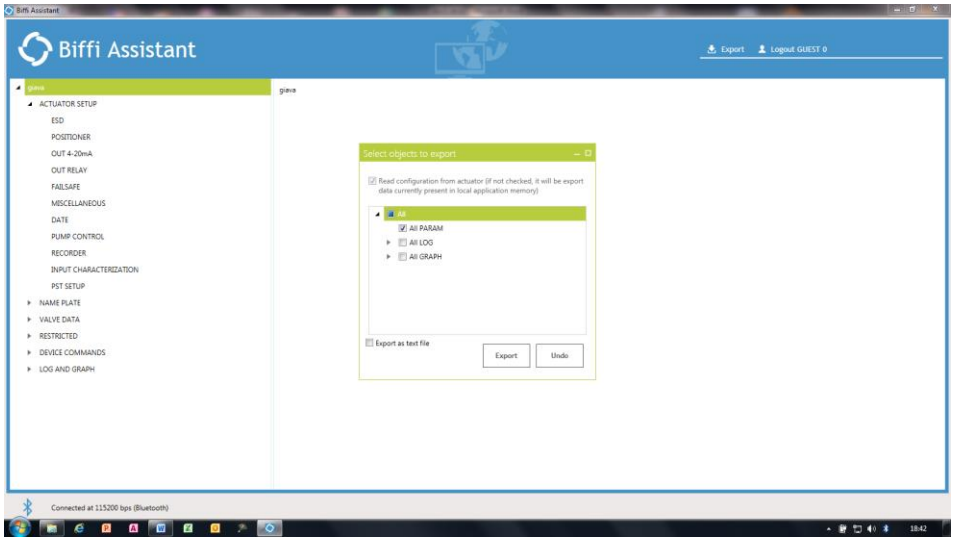
In the above figure all the ECU1000 data (according to user level) will be exported in the BIFFI-Assistant data base. The figures below show examples of setting:

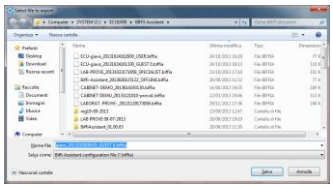
1) Export of parameters and loggers (no graphs) in the BIFFI-Assistant data base
2) Export of parameters, logger, opening curve 1, closing curves, PST curves in the BIFFI-Assistant data base
3) Export of parameters and loggers as text file

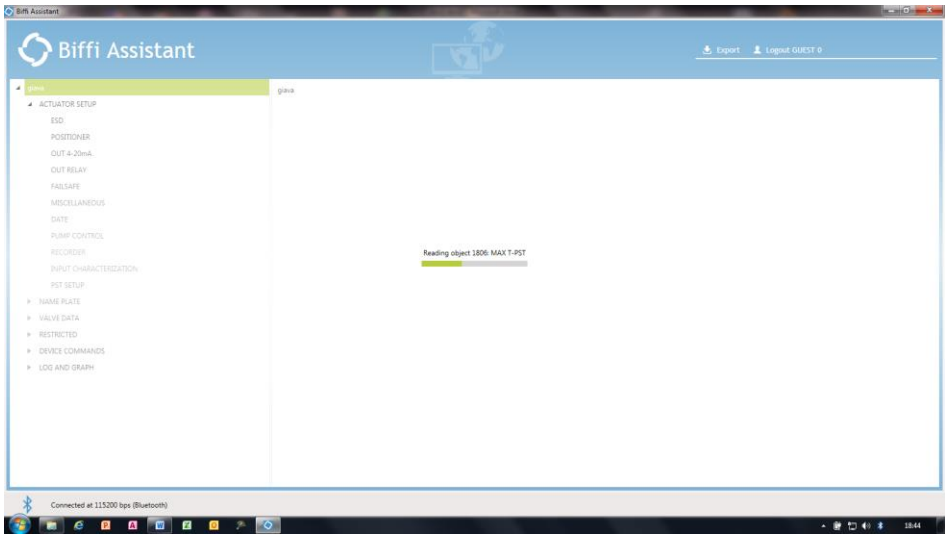


10.1.1 Export of full set of data

Use the BIFFI-Assistant with username **GUEST0** and password "**10000A**". Connect the BIFFI-Assistant to the ECU1000 card with the parameters to be read. Export the ECU1000 parameters in the BIFFI-Assistant data base, as file *.biffia. Export only the parameters. The name of saved file contains date,time and username (**GUEST0**).

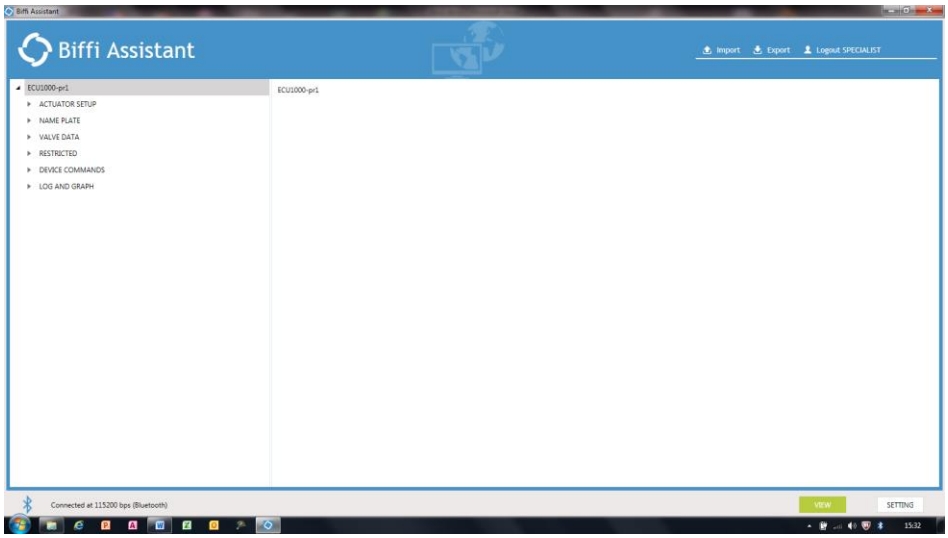






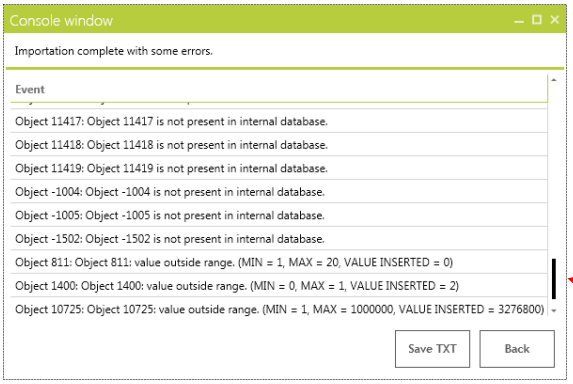
10.2 Import

The Import function allows copying the previously saved file (with extension **.biffia**) in the PC memory. If the PC is connected with the ECU1000 and the PC memory already contains data (read from ECU1000), the new data are overwritten, but only in the PC memory. The data are not sent to ECU1000. The imported file contains data according to the username level and the number of enabled functions. It is suggested to import files with the same password level used in the connection to ECU1000. The functions described in the previous paragraphs "**write object_x**", "**write Tab_x", "write Block_x", "write active parameters**" "**full copy**" should be used to send all data or a part of them to the ECU1000. Graphs, Logger, in general any "only readable" data (flag "**R**") cannot be written to ECU1000.



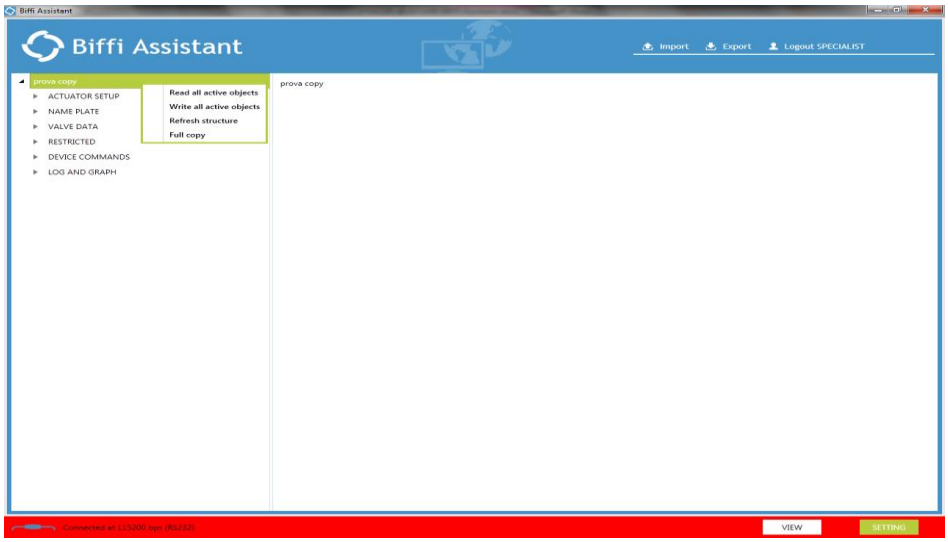
Left click of mouse on IMPORT (on the right high corner of screen).

Select the file to import and then click OPEN. The file will be overwritten in the PC BIFFI-Assistant memory



If the imported file contains objects not present or not correct, the BIFFI-Assitant shows a report with the list of the wrong objects. Wrong or not present objects will not written in the ECU1000 memory. The report can be saved in a *.txt file.

Scroll bar



Left click of mouse on **SETTING**.

Right click of mouse on the function block or TAB (left screen side)

Left click of mouse on "**Write all active objects**, **or Full copy**" to update the ECU1000 data.

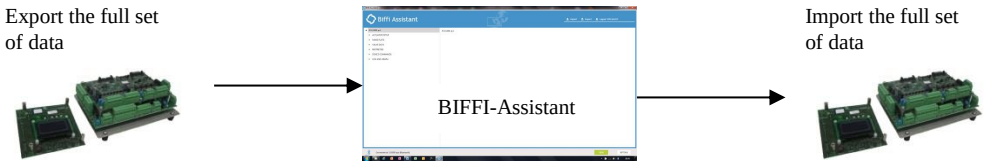
Alternatively select a Block, a TAB or a parameter and then use the commands "**Write Block_x**, **Write Tab_x, or Write object_x"**

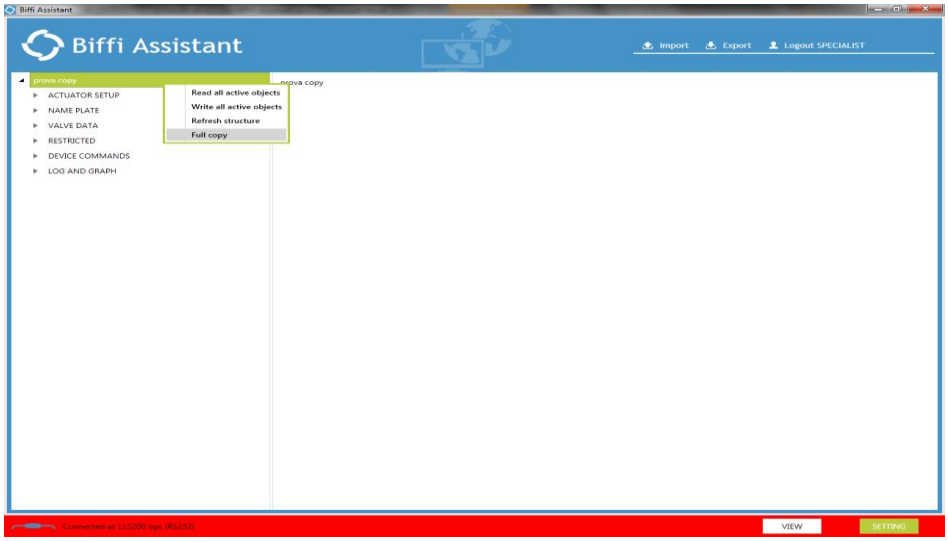
The commands "**Write all active objects**, **Full copy, Write Block_x**, **Write Tab_x, and Write object_x"** decribed in the previous paragraphs allow to send the parameter to the ECU1000 memory.

By the left key of mouse click **VIEW** to exit from setting mode.

10.3 Use of "Full copy" command

The procedure allows exporting the full set of parameters from an ECU1000 card and copy it in a new ECU1000 card.
By BIFFI-Assistant and the procedures described in the prevoius paragraphs export the full set of data and save them in a file (use username **GUEST0** and password "**10000A**").
Exit from BIFFI-Assistant and disconnect the previous ECU1000 card.
Connect the new ECU1000 card. Run the BIFFI-Assistant with username **SPECIALIST** or **GUEST2**. Import the file saved prevoiusly with username **GUEST0**.
Send the full set of data to the new ECU1000 card by the BIFFI-Assistant command "**full copy**", as decribed in the prevoius paragraphs. The command is not active with password USER and OPERATOR.





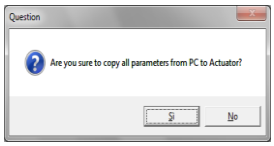
Left click of mouse on "**Setting**"

Left click of mouse on the device name

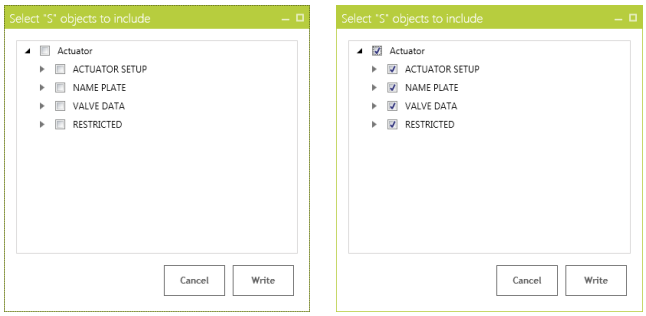
Right click of mouse on the device name

Left click of mouse on "Full copy"

Left click of mouse on "Yes"



10.3.1 Copy the full set of parameters in a new card



Include all "**S**" data

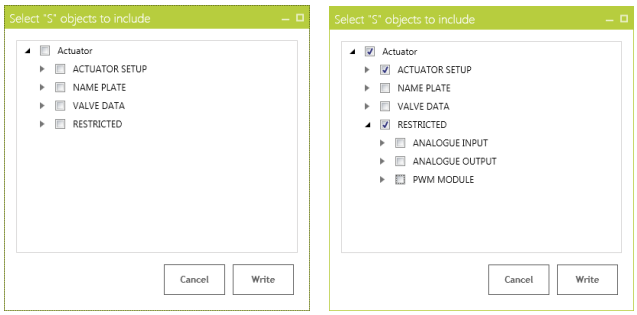
Left click of mouse on "Write"

The complete set of active parameters will be written in the ECU1000 memory

Left click of mouse on "**VIEW**"

10.3.2 Copy all parameters except calibration, name plate and valve data

This procedure allow copying in a new card all parameters except the data relevant to calibration of analog input and outputs, name plate and valve data. The above data will not be changed.



Select the "**S**" data to send

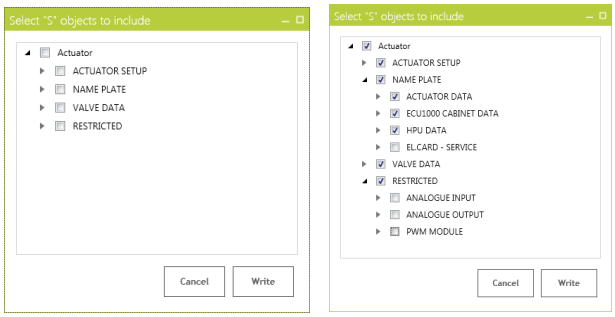
Left click of mouse on "Write"

The complete set of active parameters will be written in the ECU1000 memory

Left click of mouse on "**VIEW**"

10.3.3 Copy all parameters except calibration and electronic card info

This procedure allow copying in a new card all parameters except the data relevant to calibration of analog input and outputs and the electronic card info TAB. The above data will not be changed.



Select the "**S**" data to send

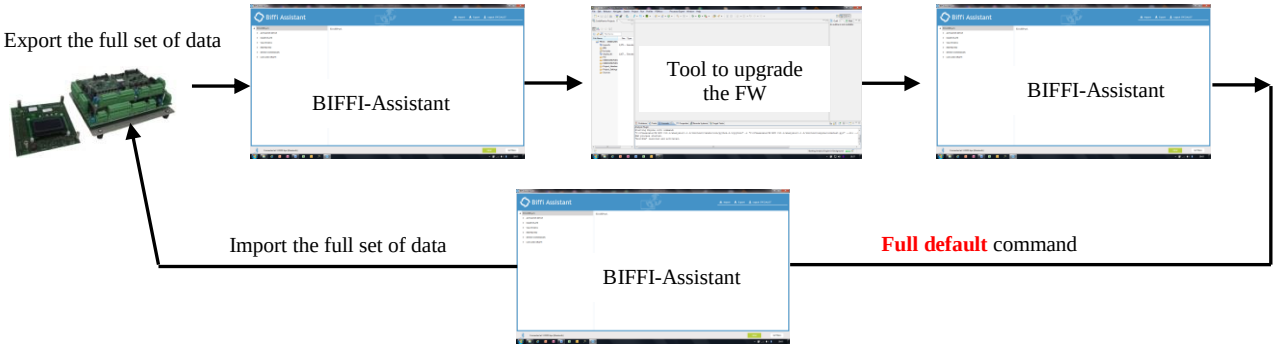
Left click of mouse on "Write"

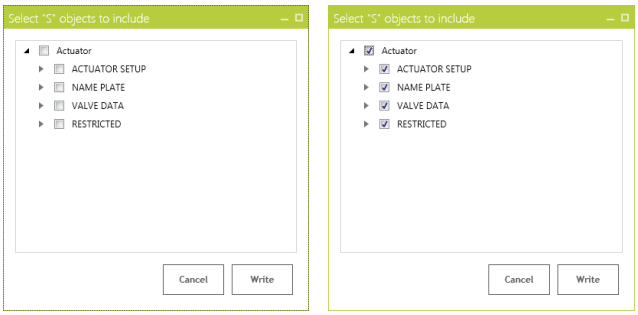
The complete set of active parameters will be written in the ECU1000 memory

Left click of mouse on "**VIEW**"

10.3.4 Copy all parameters after a firmware upgrade

This procedure allows saving in a file all parameters and restore them in the ECU1000 memory after a FW upgrade and a "**Full default**" command (see paragraph "Full default " command).





Select the "**S**" data to send

Left click of mouse on "Write"

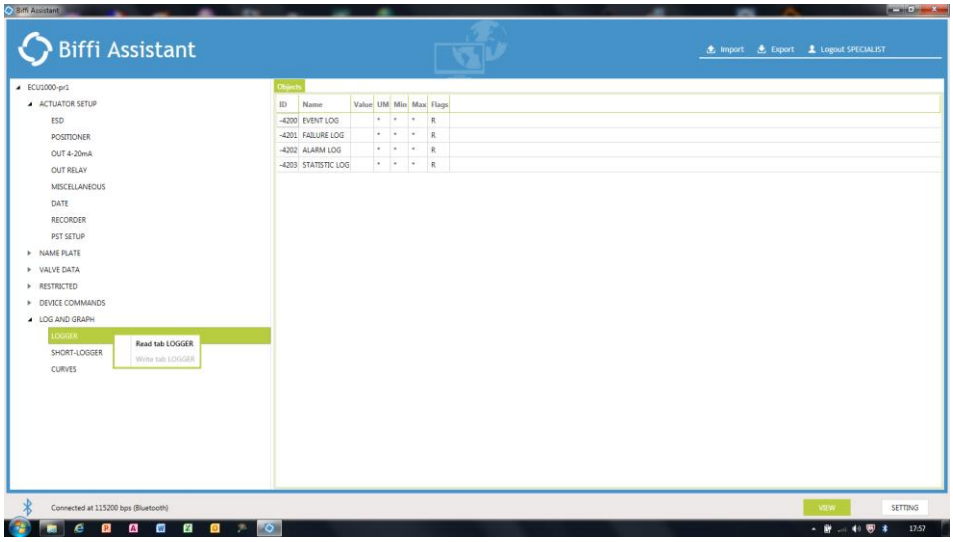
The complete set of active parameters will be written in the ECU1000 memory

Left click of mouse on "**VIEW**"

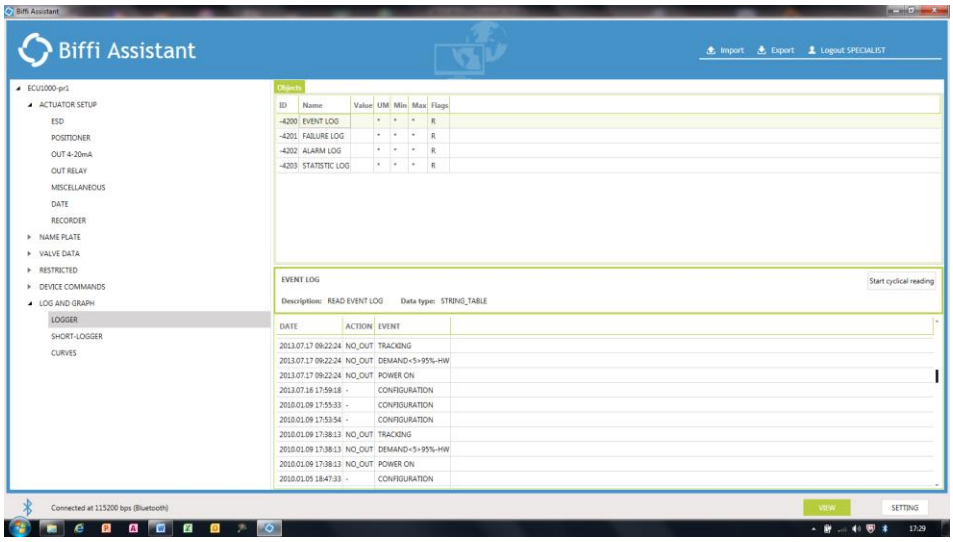
11 Log and Graph function block

Loggers and Graphs are memorized in the ECU1000 memory. BIFFI-Assistant allows viewing the content of the above memory. The instruction manuals DTDE326, DTDE327, DTDE328 describe the features of the loggers and graphs.
The function block “LOG AND GRAPH” contains the TABS “LOGGER, SHORT LOGGER and CURVES”
The TAB’s LOGGER and SHORT LOGGER can only be read. The LOGGER can contain upto 255 lines. The SHORT LOGGER contains only 10 lines and is faster to read from ECU1000.
The TAB CURVES allows viewing the curves memorized in the ECU1000 and setting the the curve signatures. The curves can be visualized using the full area of PC screen and exported by the command EXPORT (as file *.biffia or *.txt described in the previous paragraphs) or by a printable file *.png.

11.1 Logger and Short Logger



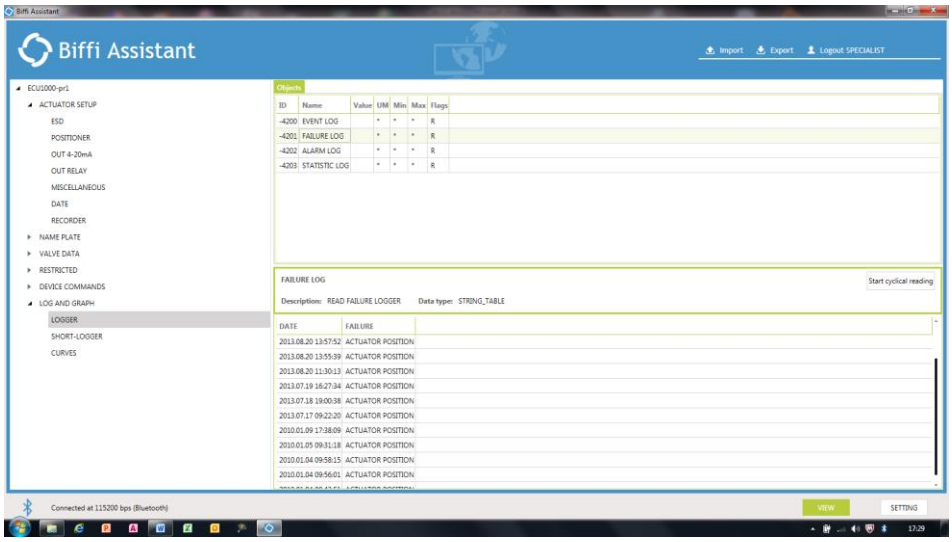
Right click of mouse on the tab LOGGER.
Left click of mouse on “Read the tab LOGGER”.
The LOGGER will be read from ECU1000 memory



Right click of mouse on “EVENT LOG”.

Left click of mouse on “Read object_ x”.

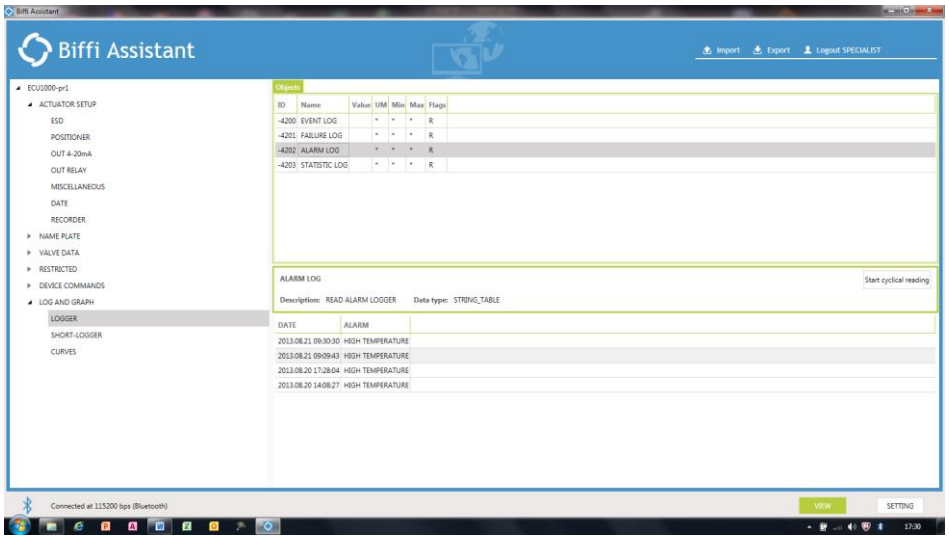
Use the scrollbar to view the complete event list



Right click of mouse on "FAILURE LOG".

Left click of mouse on "Read object _x".

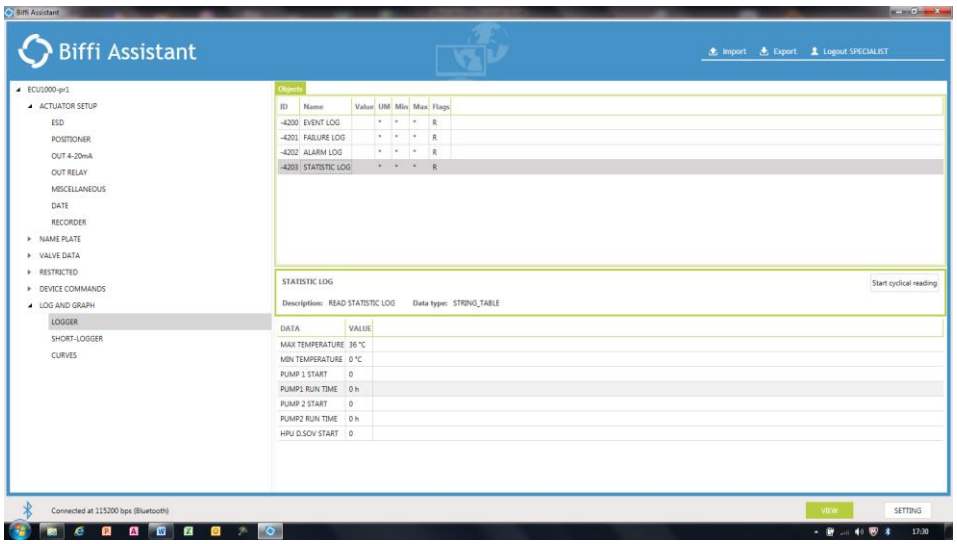
Use the scrollbar to view the complete failure list



Right click of mouse on "ALARM LOG".

Left click of mouse on "Read object x".

Use the scrollbar to view the complete alarm list



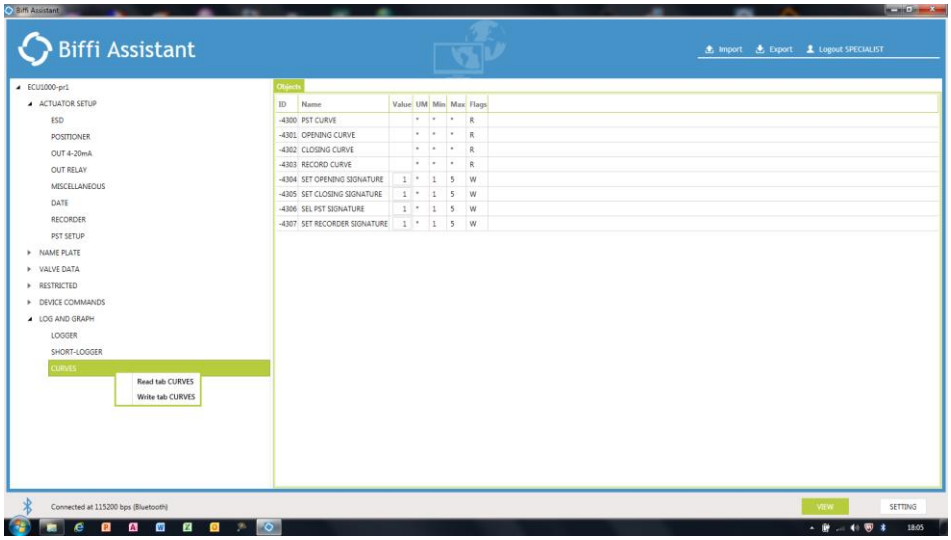
Right click of mouse on "STATISTIC LOG".

Left click of mouse on "Read object _x".

Use the scrollbar to view the complete failure list

11.2 Curves

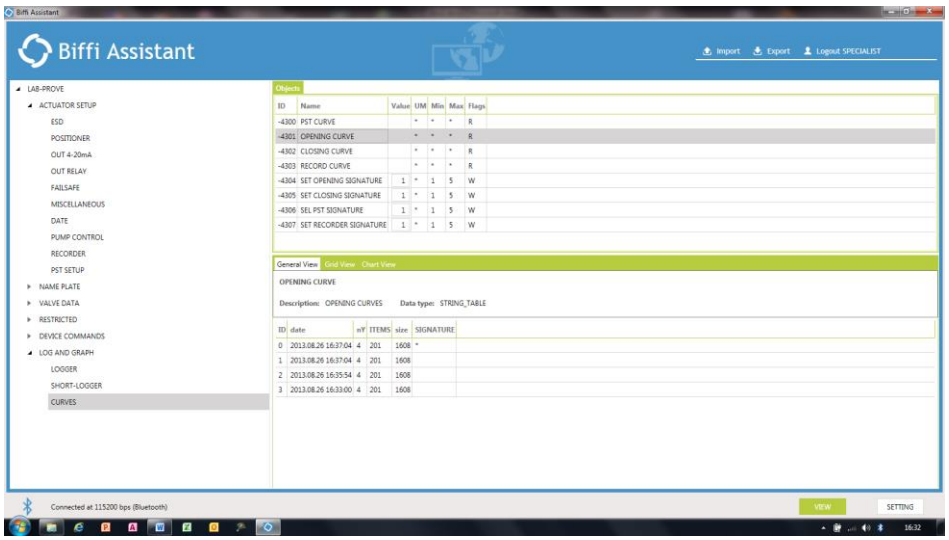
By the **Recorder** function the ECU1000 can save different types of curves, (opening, closing, record, PST). The instruction manuals DTDE326, DTDE327, DTDE328 describe the features of the Recorder function. The data saved in the ECU1000 memory can be read in the function block "LOG and GRAPH" and viewed as tables or **Y-t** or **Y-X** graphs on the PC screen.



Right click of mouse on TAB "CURVES".

By the left key of mouse select "Read tab CURVES".

The graphs can also be exported as ***.png** files. In the TAB "CURVES" are also available the commands to set the signature of each type of curve.
The following procedure describes the operation available on the OPENING CURVE. The same procedure can be used for CLOSING CURVE, RECORD CURVE and PST CURVE.

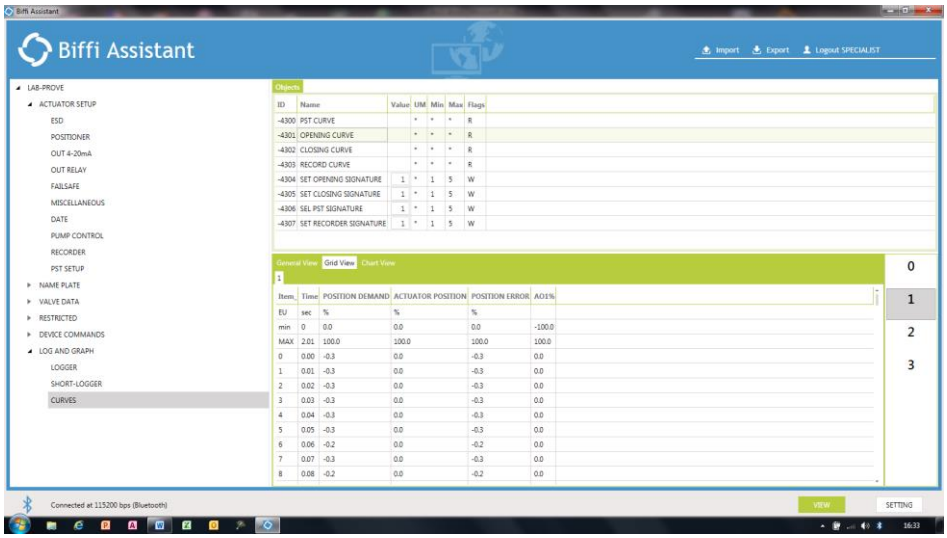


Right click of mouse on OPENING CURVE.

By the left key of mouse select "Read object_x".

The GEN VIEW shows the list of curves available.

The signature is marked with **0**.

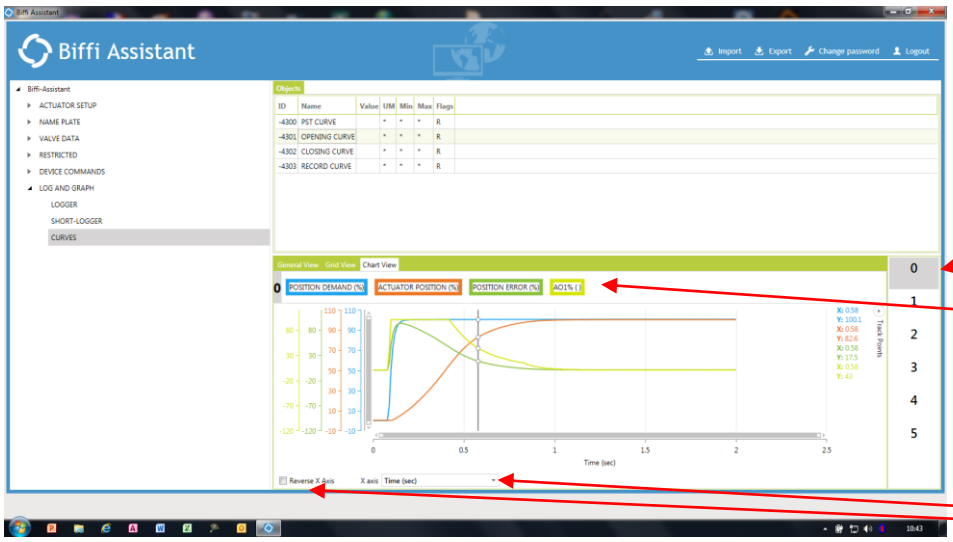


Left click of mouse on GRID VIEW.

Select the curve number (0,1,2,3,4,5).

The values of the curve are shown by a table

Use the scroll bar to view the values



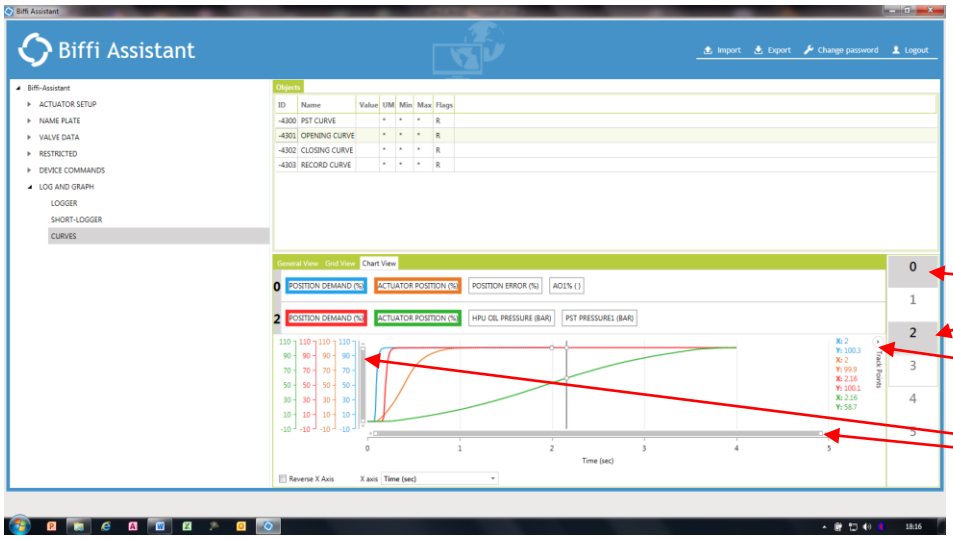
Left click of mouse on CHART VIEW.

Select the curve number (0,1,2,3,4,5).

Select the variable to view (Position Demand, Actuator Position, etc.

The curve are shown by a **Y-t** graph.

By the options "X-axis" and "Reverse X axis" change graph in **Y-X** mode

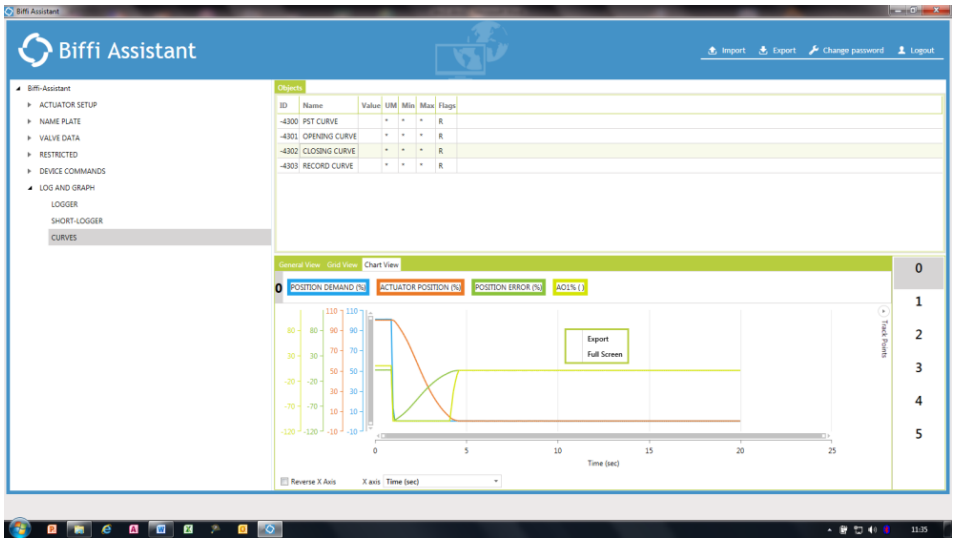


Each curve has **max. 4 variables**.

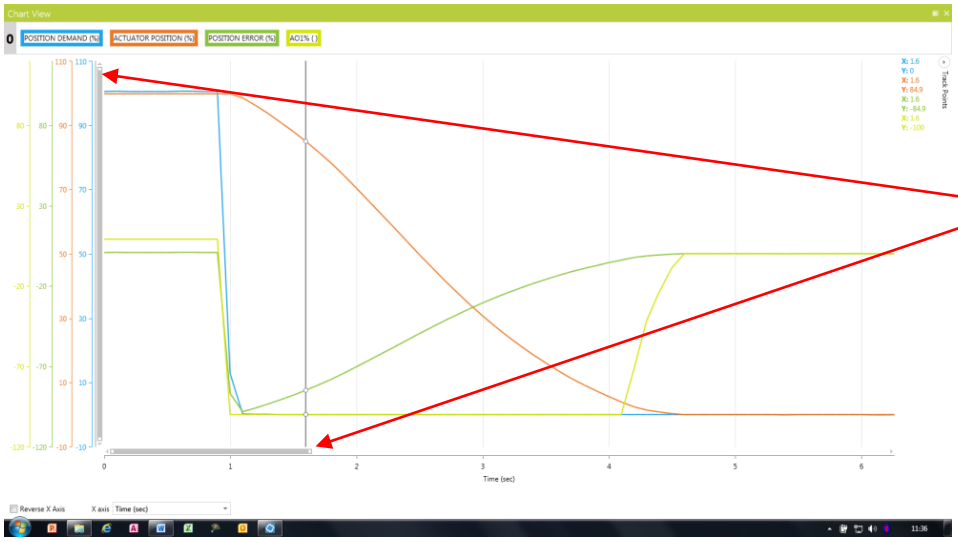
Max 2 curves at a time can be viewed.

Left click of mouse on "Track Points" to view the X and Y measures.

Use the ZOOM function to zoom the picture



Right click of mouse in the graph area to select "Export" as *.png file or "Full screen" to view the curve on the complete PC screen



Full Screen view of Y-t curve.

Click **X** to return to normal view.

Use the ZOOM function to zoom the picture

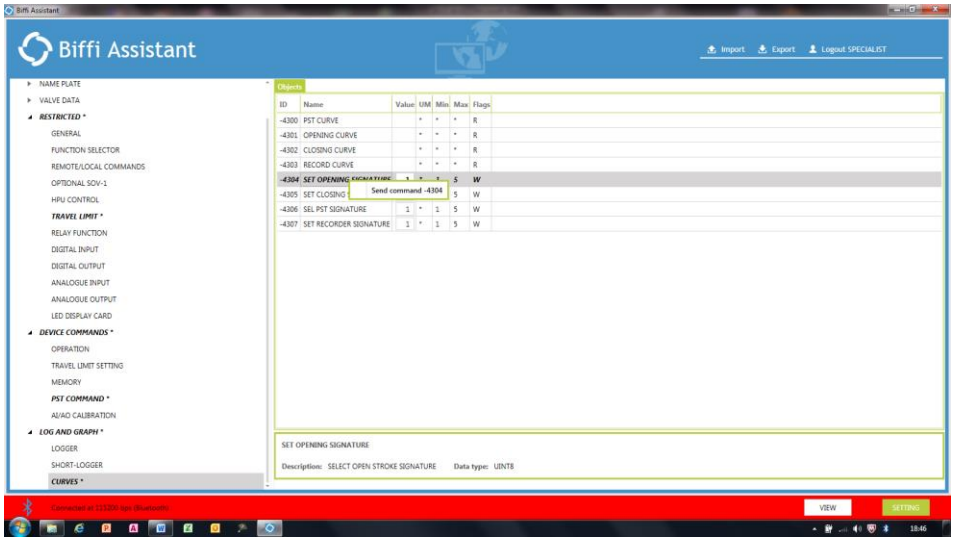
Full screen view of Y-X graph (PST function, Y= Pressure in bar, X= Actuator position in %, Reversed X axis.

Click **X** to return to normal view.

Right click of mouse to select Export as *.png file.

11.3 Curves signature

The example shows the procedure to set the Opening Signature. The same procedure can be used to set the Closing, Record and PST signatures. Before setting the signature it is necessary to verify that at least one curve is present in the ECU1000 memory by means of the procedure described in the previous paragraph.



Left click of mouse on **SETTING**

Left click of mouse to select SET OPENING SIGNATURE.

Enter the number of the curve (from 1 to 5).

Right click of mouse.

Left click of mouse to send the command to ECU1000.

The new signature will be marked **with 0**

Click OK

Click the left key of mouse on the button **VIEW**

12 Device Commands function block

The function allows monitoring status, variables and I/O of ECU1000. The function can be useful also to send commands to ECU1000 unit for testing or calibration purposes. Commands availability depends on the user level entered. Commands like "Memory and AI/AO calibration" are available only for Service or Specialist username. The present manual describes the procedures

- to view the data in the TAB "OPERATION", commands "Actuator variables", "Failure", "Alarm", "Clear fail-alarm", "Out relay status", "Digital input", "Actuator status", "Analogue input" and "Analogue output"
- to send the command "PST START" in the TAB "PST command" (if the PST function is enabled).
- to send the command "CL limit autocalib", "Change close limit" and "CL limit manual set" in the TAB "Travel limit setting"

The procedure is the same for the rest of the commands of the Device Commands function block.
The TAB "AI/AO calibration" is not available since the calibration of the analogue inputs and outputs needs using the Local Operator Interface of the ECU1000.

Important:	**All command of TAB's of Device Commands block (except the TAB Operation) can be carried out only if the BIFFI-Assistant is in SETTING mode**

12.1 Operation

In the TAB Operation are present the following data:

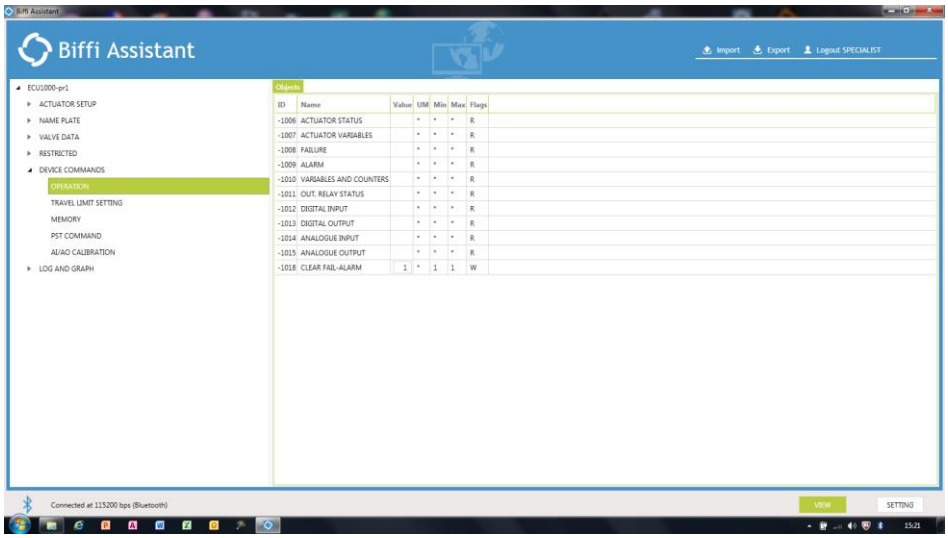
- Actuator status: to view actuator status, operating mode, etc.
- Actuator variables: to view the analogue variables of ECU1000 in engineering units
- Failure: to view the present failures of the ECU1000
- Alarm: to view the present alarms of the ECU1000
- Variables and counters: to view special internal counter
- Out.relay status: to view the present status of the output relays (on, off)
- Digital input: to view the status of the digital inputs (0 or 1)
- Digital output: to view the status of the digital outputs (0 or 1)
- Analogue input: to view the value in bits of the analogue inputs (from 0 to 4095)
- Analogue output: to view the value in bits of the analogue outputs (from 0 to 4095)
- Clear fail-alarm: to send the commands to clear the detected alarms and failures. If the alarm/failure is present it will reappear again
- Function summary: to view the list of function enabled by the manufacturer to control the actuator/HPU/HCU

The option "**Start cyclical reading**" allows updating the read value about every 2 sec.

12.1.1 Actuator Variables

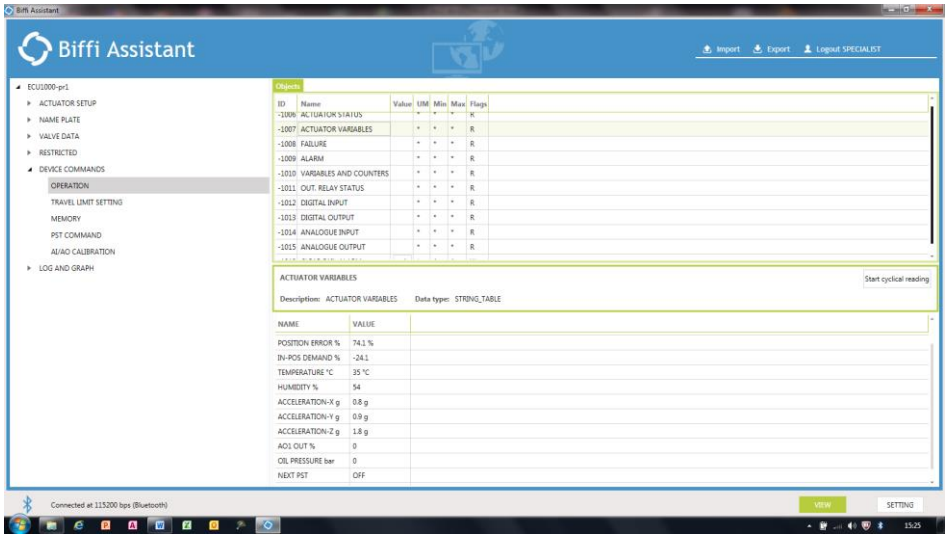
The following variables can be monitored:

- Position %: actuator position in % of opening
- Position Demand %: position demand in % of opening (after characterization function if it is enabled)
- Position Error %: position error %
- In-Position Demand %: position demand input %
- Temperature °C: temperature of ECU1000 device
- Acceleration X-g, Y-g, Z-g: acceleration of ECU1000 device
- AO1 %: analogue output AO1 in % of output (0-10V)
- Oil Pressure bar: HPU pressure (only if the ECU1000 controls an HPU)
- Next PST: date of the next PST (only if PST function is enabled)
- Pump Switch: time to the next pump switch (only if the ECU controls an HPU with double pump)
- EV1-2 monitor (e:0 1:0 2:0): in case of PWM driver it shows the PWM command% and the PWM out%
- EV1-2 rate (1:0 2:0): in case of PWM driver it shows the utilization rate% of PWM 1 and PWM 2 channels



Maximize the function block DEVICE COMMANDS.

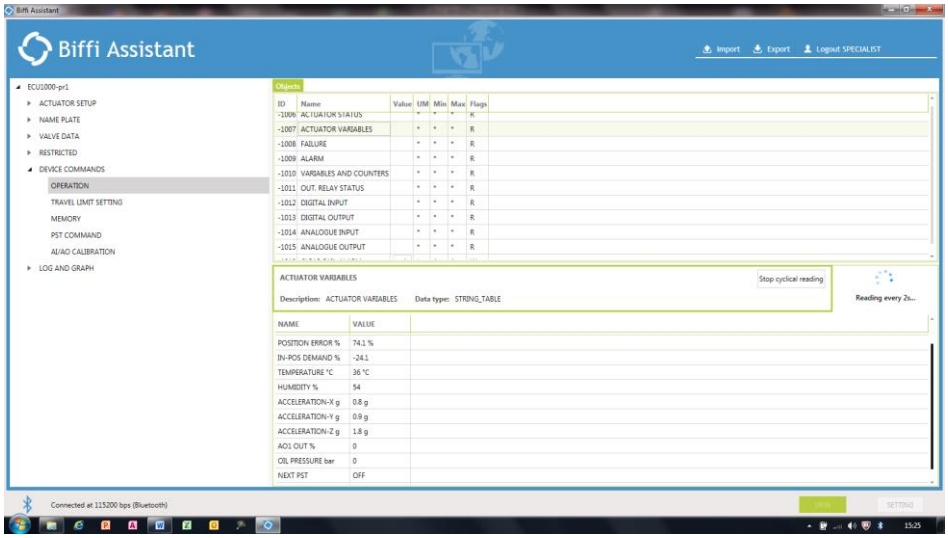
Left click of mouse on OPERATION.



Use the scroll bar to see the available options.

Left click of mouse on ACTUATOR VARIABLES.

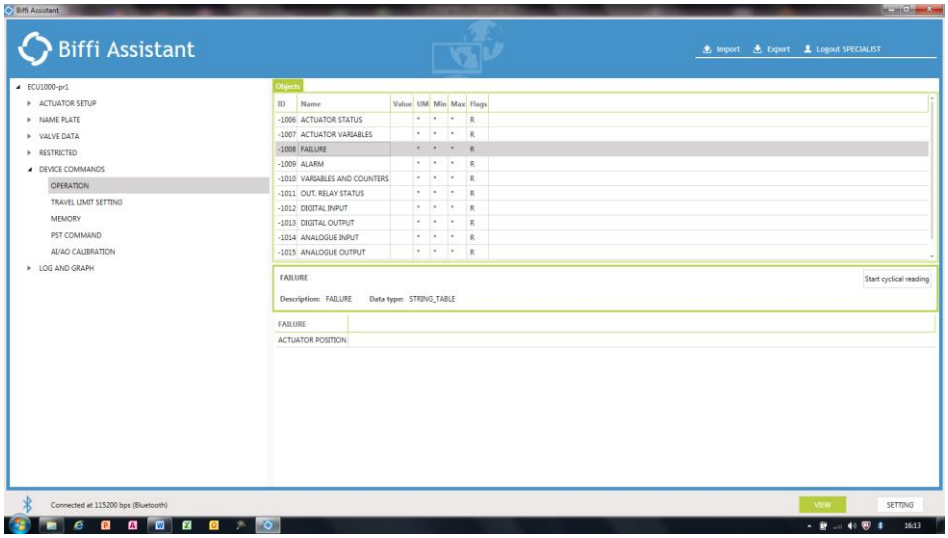
Left click of mouse on "**Start cyclical reading**".



Use the scroll bar to see the available variables.

Left click of mouse on "**Stop cyclical reading**" to stop updating of data.

12.1.2 Failure

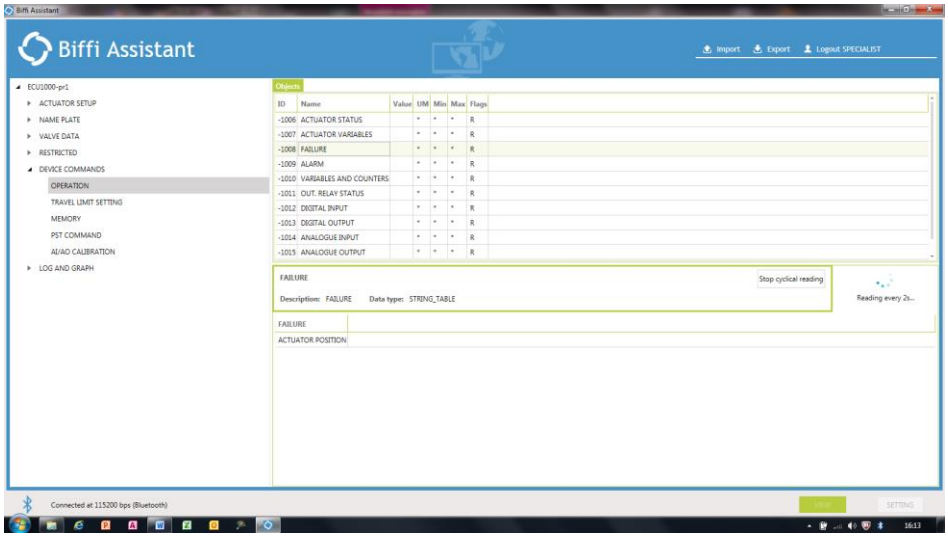


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on FAILURE.

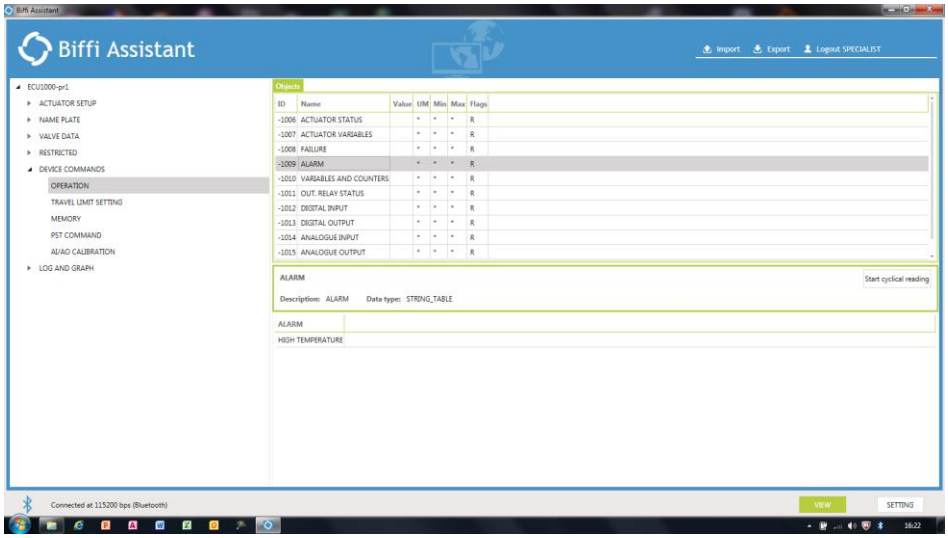
Left click of mouse on "**Start cyclical reading**".



Use the scroll bar to see the list of present failures.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

12.1.3 Alarm

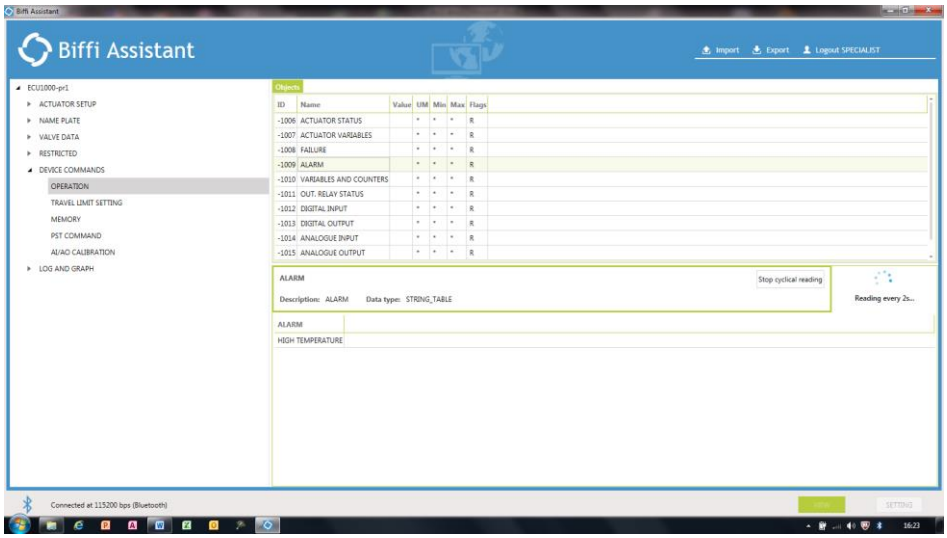


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on ALARMS.

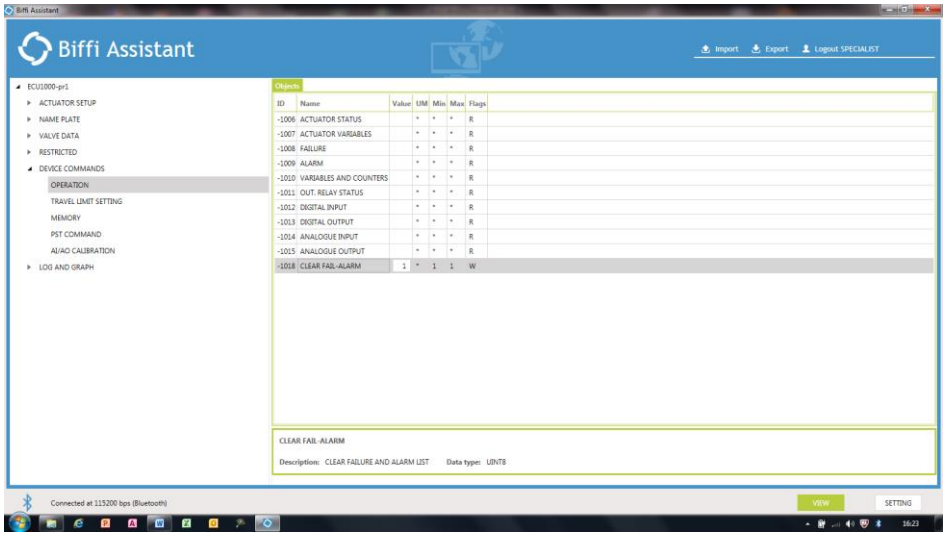
Left click of mouse on "**Start cyclical reading**".



Use the scroll bar to see the list of present alarms.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

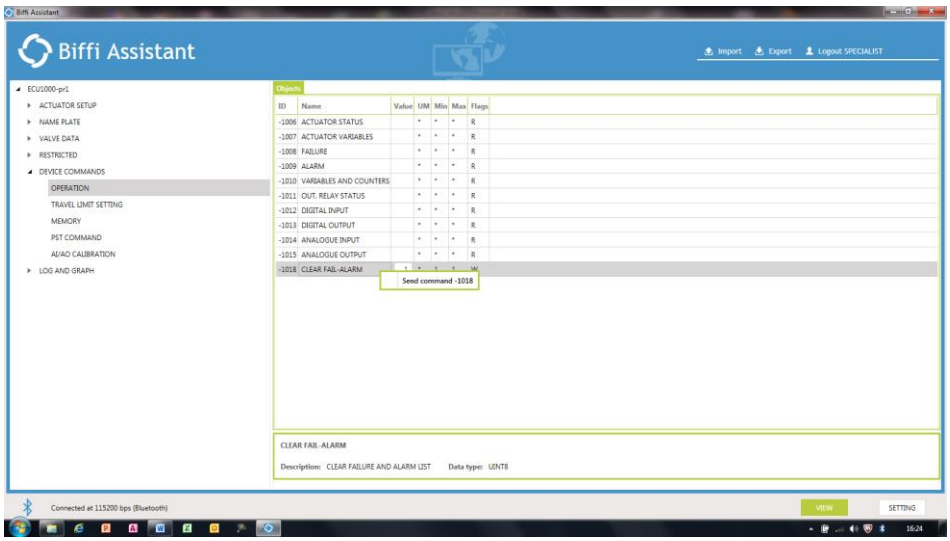
12.1.4 Clear fail-alarm



Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on CLEAR FAIL-ALARM.

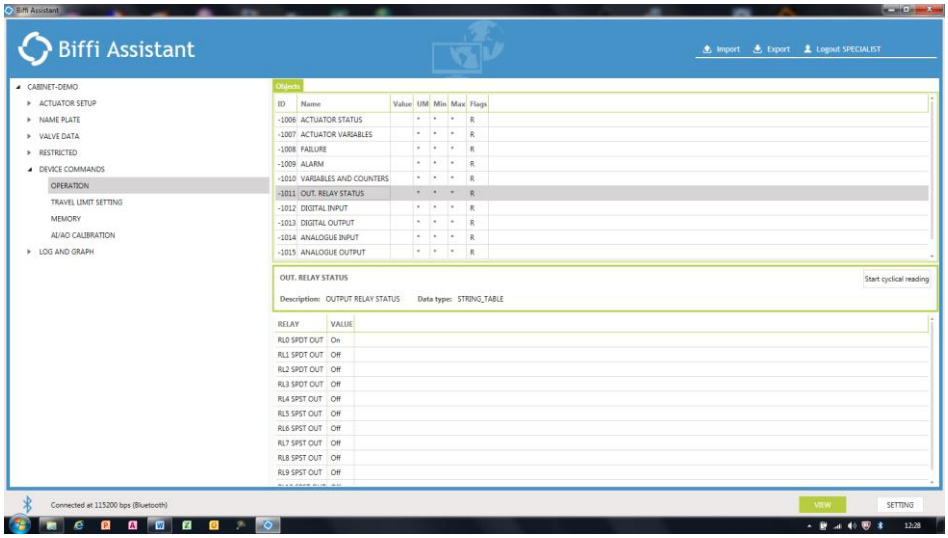


Right click of mouse on CLEAR FAIL-ALARM.

Left click of mouse on "Send command_ x".

Click on OK

12.1.5 Out. Relay Status

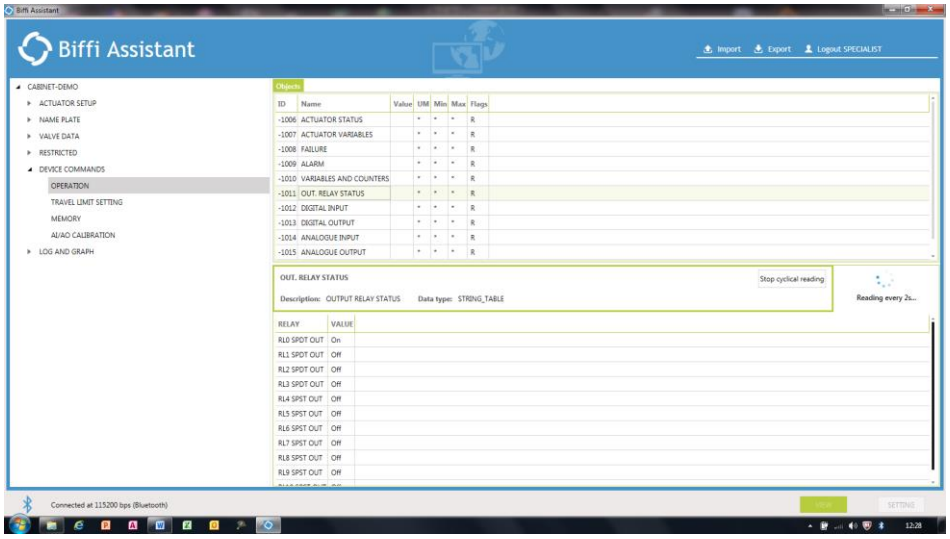


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on OUT. RELAY STATUS.

Left click of mouse on "**Start cyclical reading**".

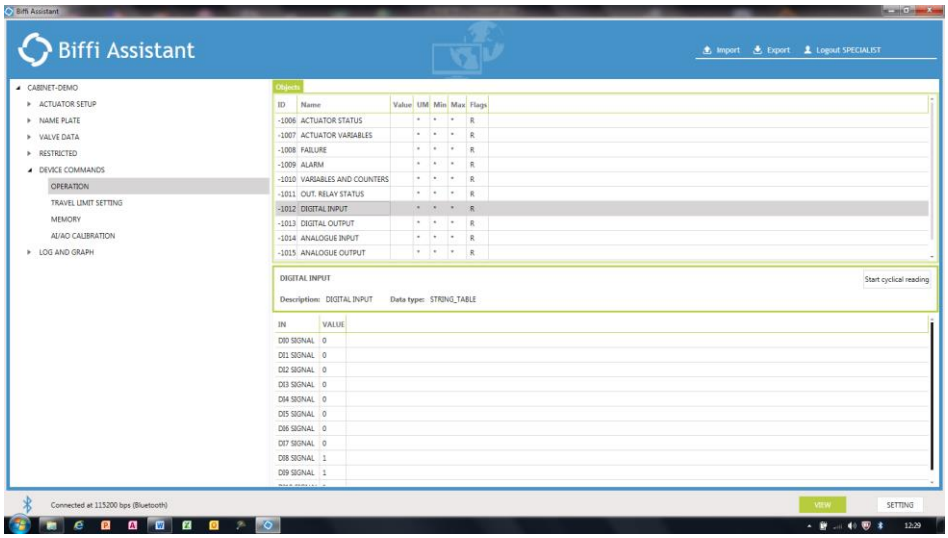


Use the scroll bar to see the list of relay status.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

Compare the relay status with the expected status of output contacts indicated in the electrical diagram of ECU1000.

12.1.6 Digital Input

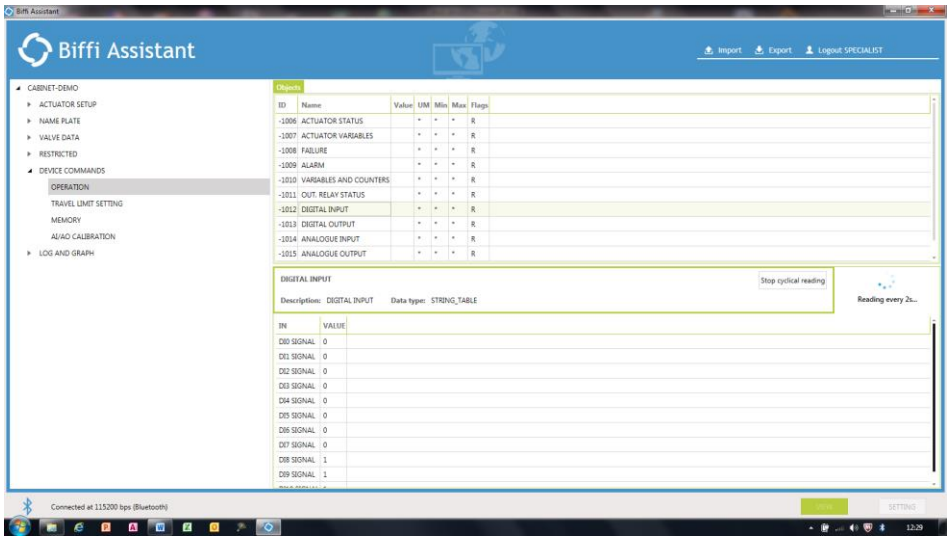


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on DIGITAL INPUT.

Left click of mouse on "**Start cyclical reading**".

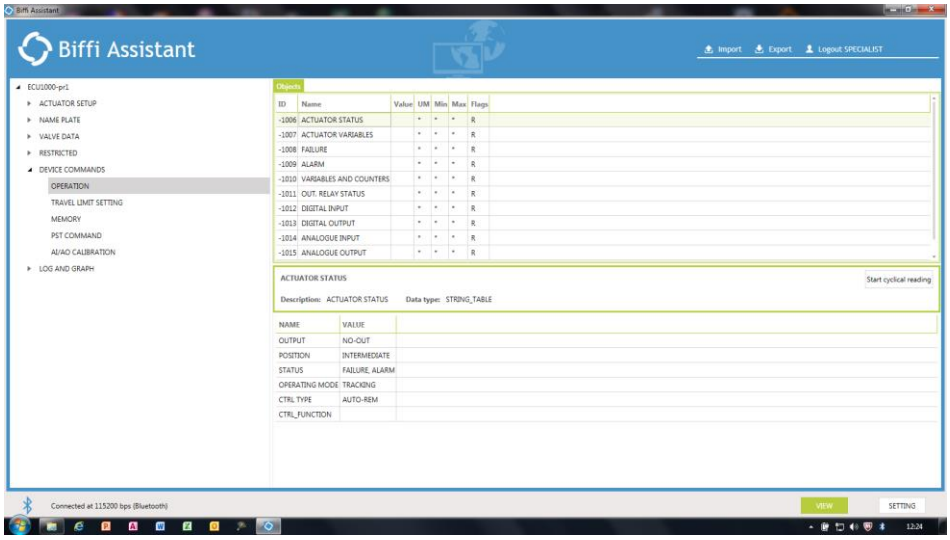


Use the scroll bar to see the list of relay status.

Left click of mouse on "**Stop cyclical reading**".

Compare the Digital Input with the hardware status of the digital inputs indicated in the electrical diagram of ECU1000.

12.1.7 Actuator Status

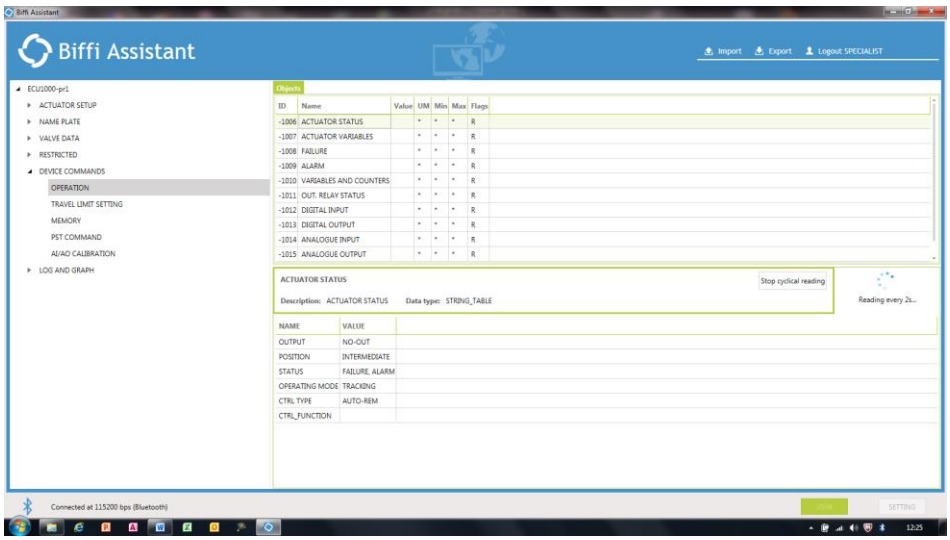


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on ACTUATOR STATUS.

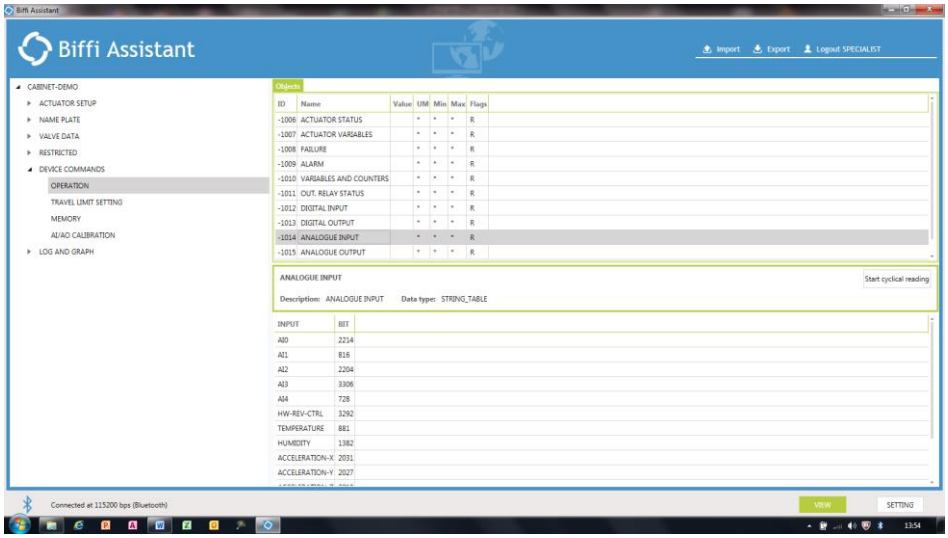
Left click of mouse on "**Start cyclical reading**".



Use the scroll bar to see the list of relay status.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

12.1.8 Analogue Input

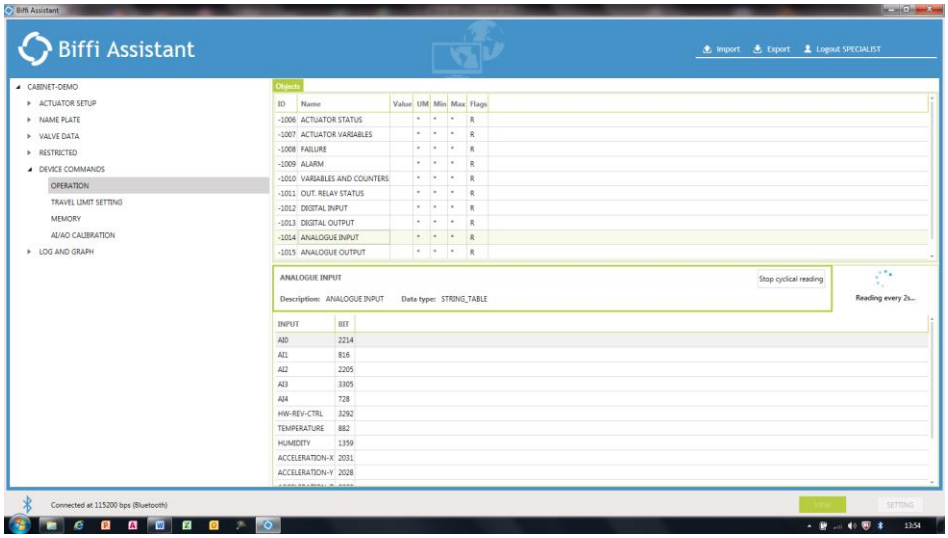


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on ANALOGUE INPUT.

Left click of mouse on "**Start cyclical reading**".

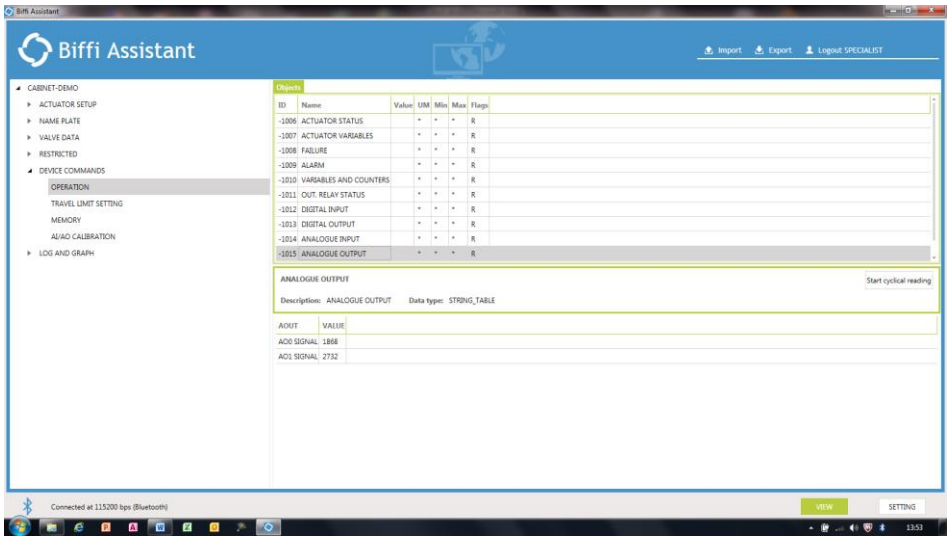


Use the scroll bar to see the list of relay status.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

Compare the Analogue Input with the hardware value of the analogue inputs indicated in the electrical diagram of ECU1000.

12.1.9 Analogue Output

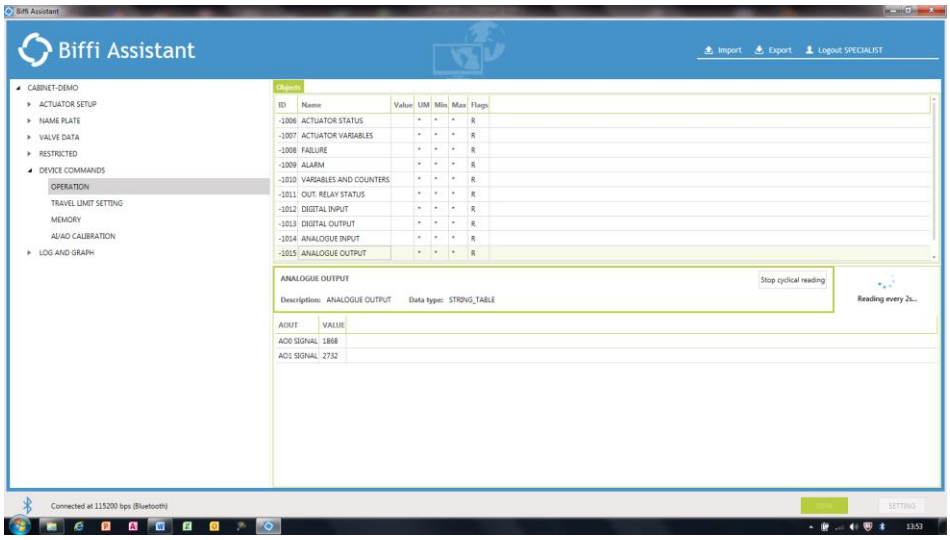


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on ANALOGUE OUTPUT.

Left click of mouse on "**Start cyclical reading**".

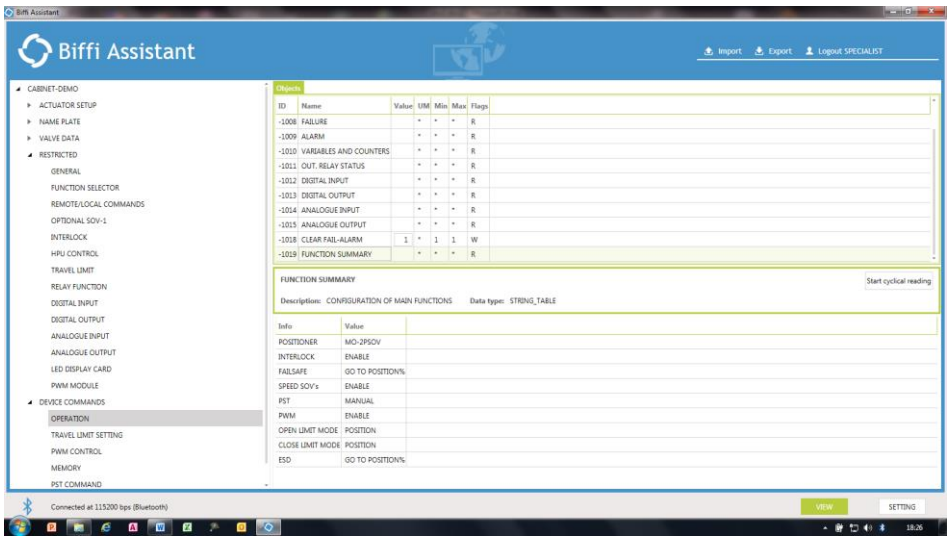


Use the scroll bar to see the list of relay status.

Left click of mouse on "**Stop cyclical reading**" to stop data updating.

Compare the Analogue Outputs with the hardware value of the analogue outputs indicated in the electrical diagram of ECU1000.

12.1.10 Function summary

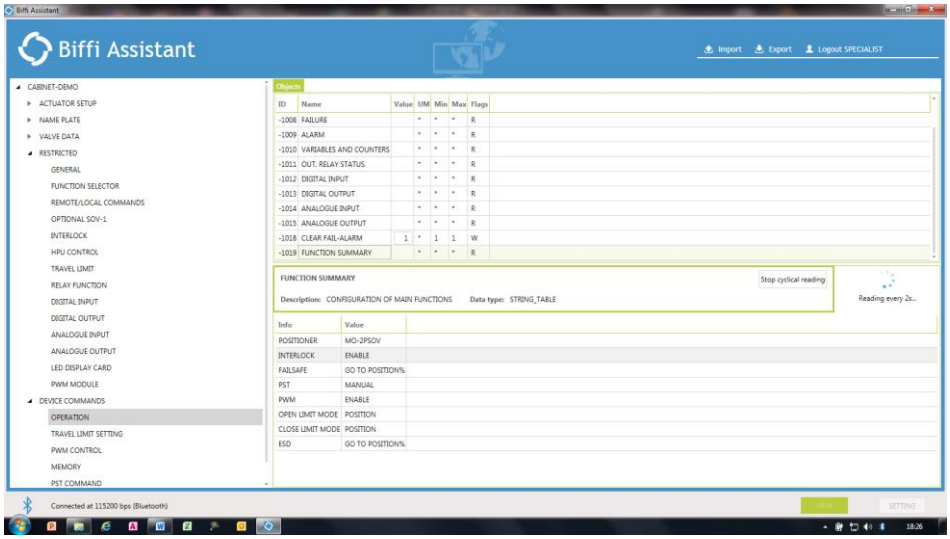


Maximize the function block DEVICE COMMANDS.

Left click of mouse on OPERATION.

Left click of mouse on FUNCTION SUMMARY.

Left click of mouse on "**Start cyclical reading**".

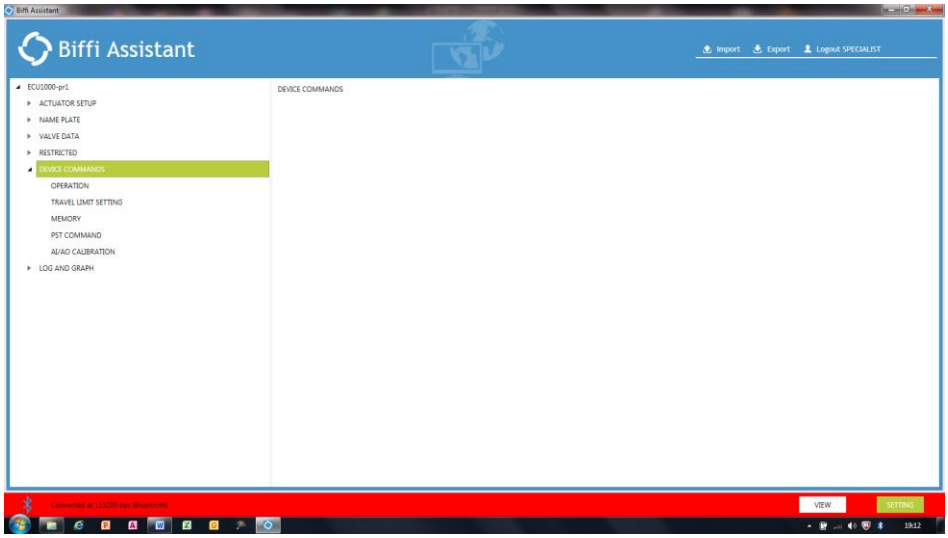


The command shows the list of ECU1000 functions enabled to work by the manufacturer. The command shows also the main characteristic of the functions (for instance: FAILSAFE is enabled and if it is performed the action will be "GO TO POSITION%)

Click on "**Stop cyclical reading**" to stop data updating.

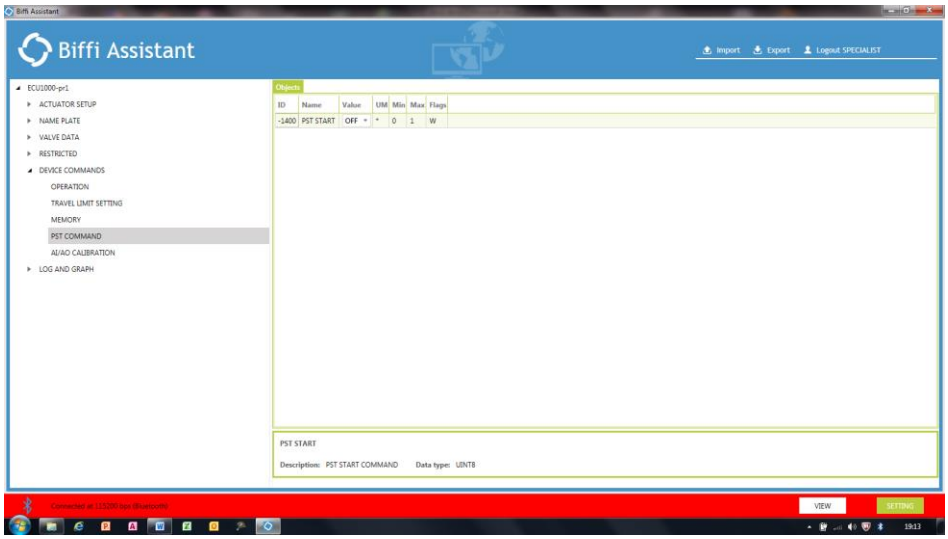
12.2 PST command

The command is performed only if the function PST is enabled in the ECU1000 device. The PST function is described in the instruction manuals DTDE326, DTDE327, DTDE328. Check that the parameters in the function block “Actuator Setup”, Tab “ PST SETUP” are correct.

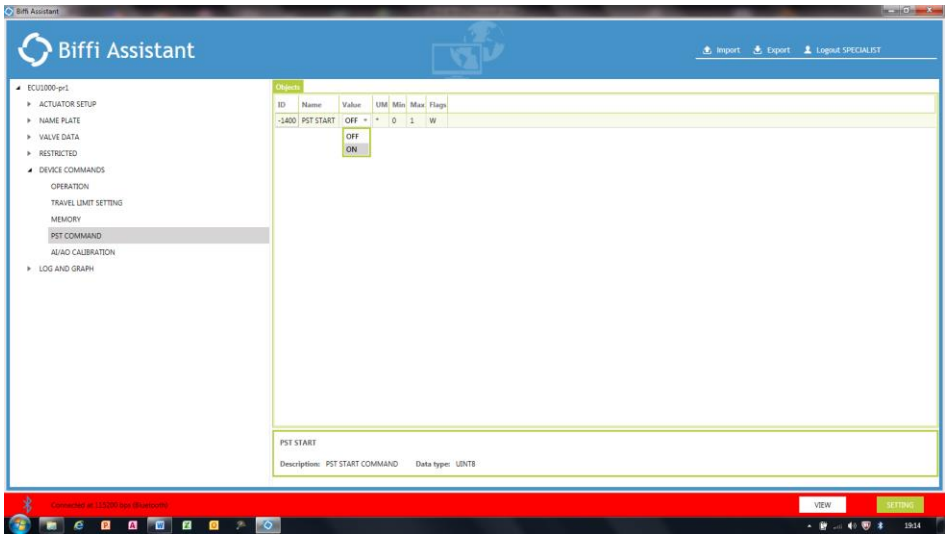


Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

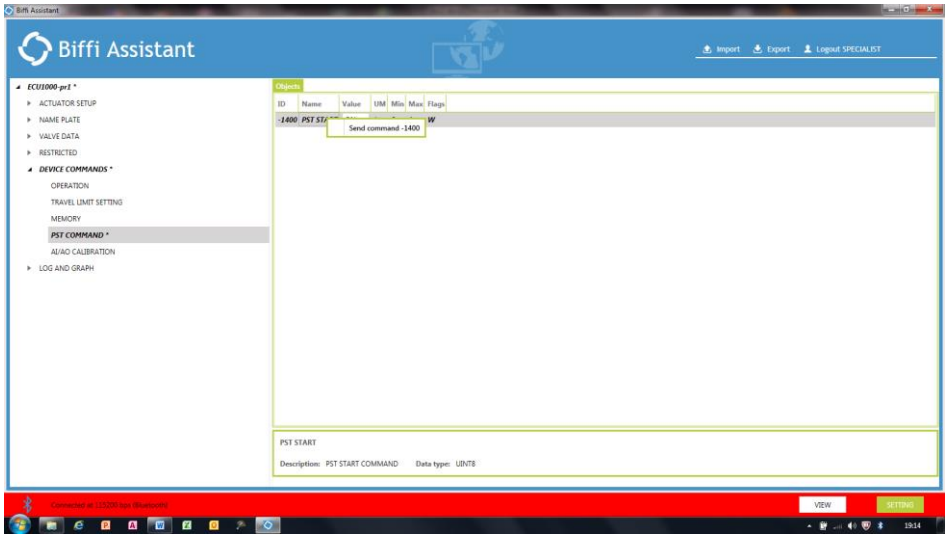


Left click of mouse on PST COMMAND.



If the value of PST START is OFF, left click of mouse on ▼ .

Left click of mouse on the value ON.

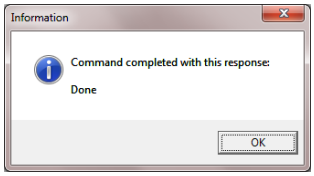


Right click of mouse on PST START.

Left click of mouse on "Send command _x".

Left click of mouse on the button **VIEW.**

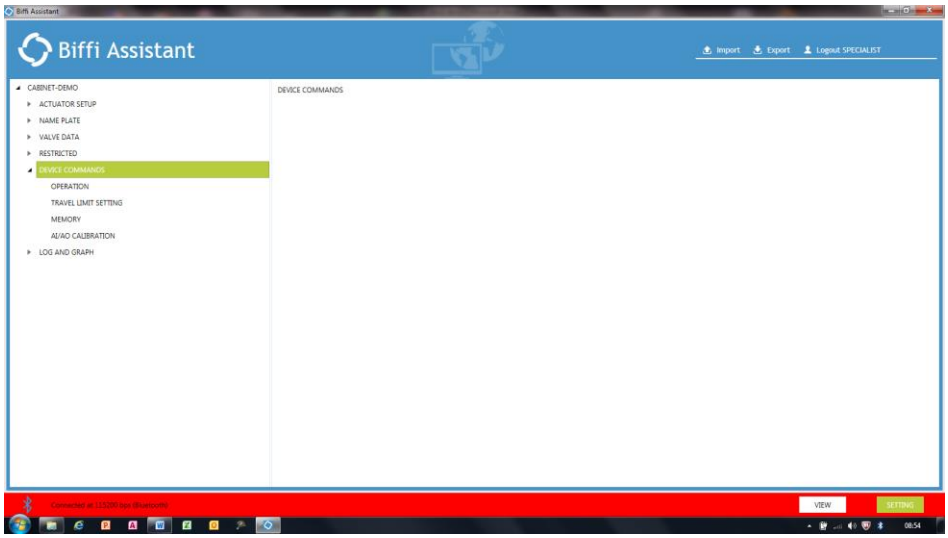
Wait for the response and then left click on OK.



12.3 OP Limit Autocalib

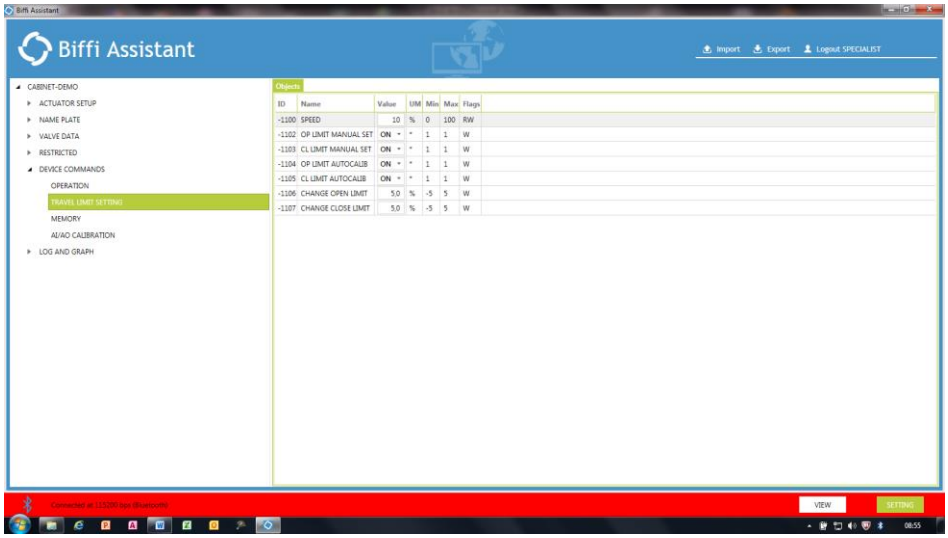
Warning: 	**Before executing the command it is mandatory to check that the calibration of 4-20mA Position feedback and the mechanical stops are OK, according to instructions in DTDE327"Travel Limit Setting". It is also mandatory to check that the configuration of parameters in the function Block "Restricted", TAB "Travel Limit" is OK.**

Important: 	**The procedure described below is valid also for the command "CL Limit Autocalib"**



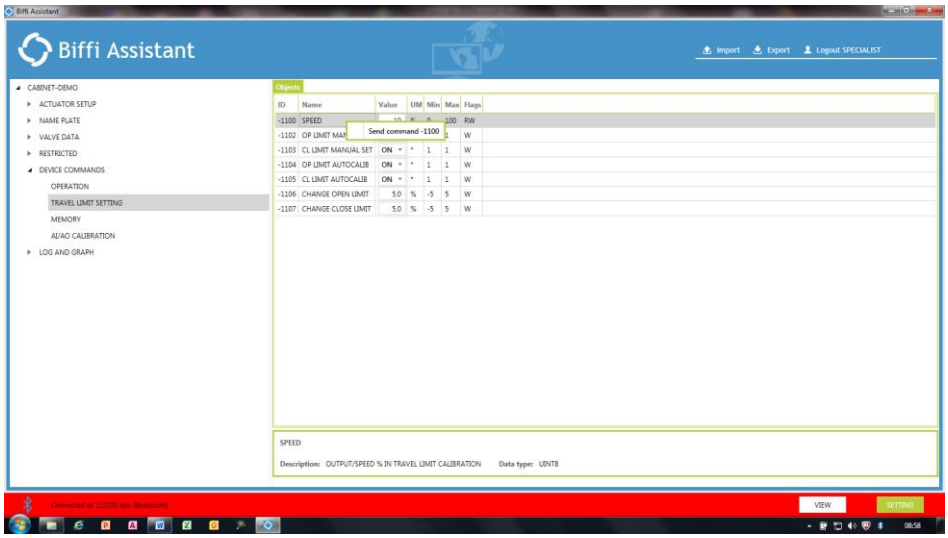
Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.



Check the value of SPEED. The default value is 10%.

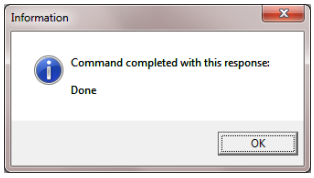
If necessary enter a new value (in case of actuator provided with PSOV's the value could be 70%). Then click the right key of mouse

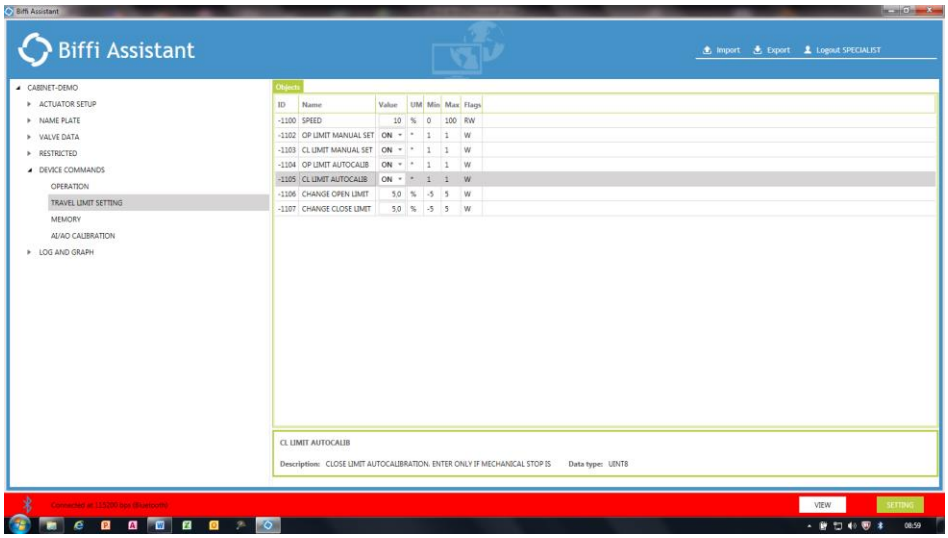


Right click of mouse on "SPEED"

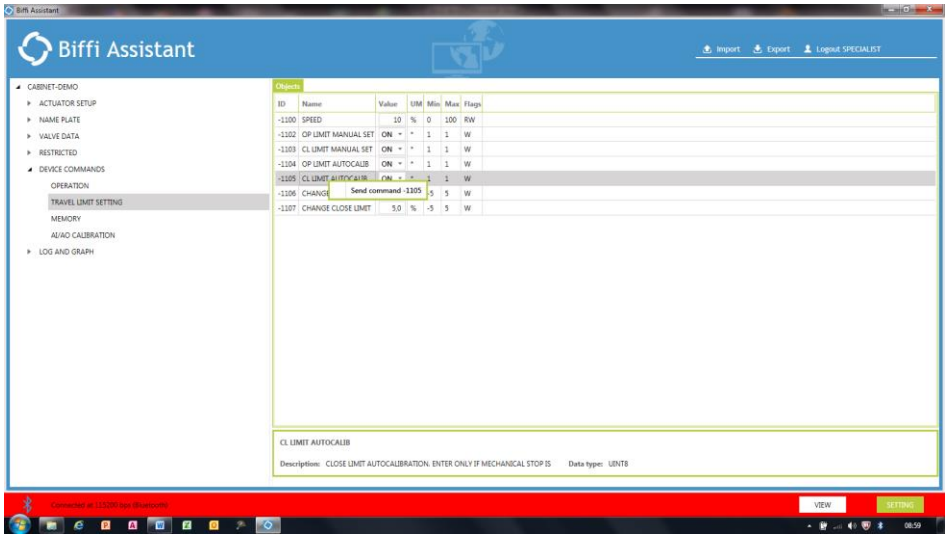
Left click of mouse on "Send command_x".

Click on OK





Left click of mouse on "OP LIMIT AUTOCALIB".

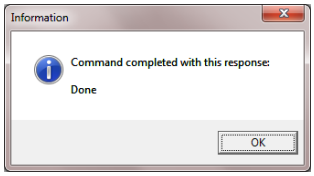


Right click of mouse on "OP LIMIT AUTOCALIB"

Left click of mouse on "Send command_x"

Click on OK.

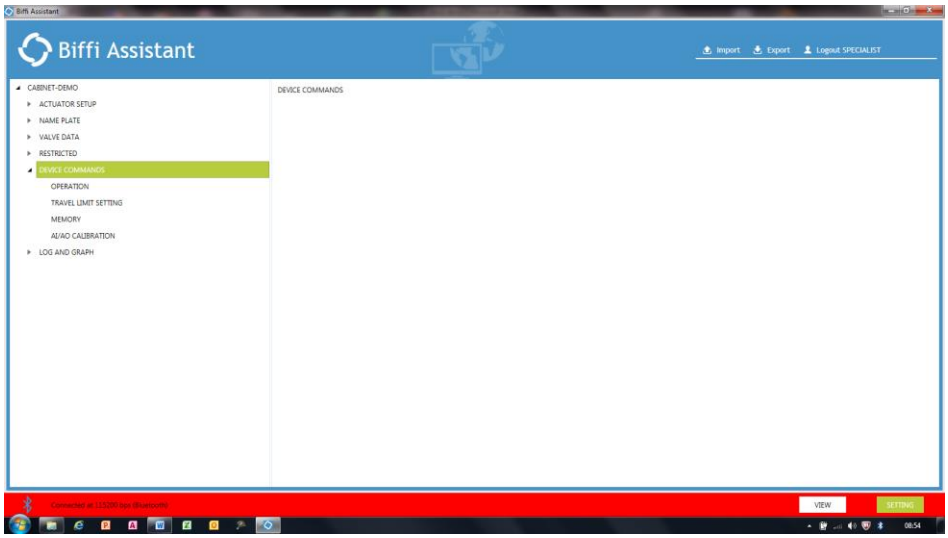
Click the button **VIEW**



12.4 Change Close Limit

Warning: 	**Before executing the command it is mandatory to check that the calibration of 4-20mA Position feedback and the mechanical stops are OK, according to instructions in DTDE327"Travel Limit Setting". It is also mandatory to check that the configuration of parameters in the function Block "Restricted", TAB "Travel Limit" is OK.**

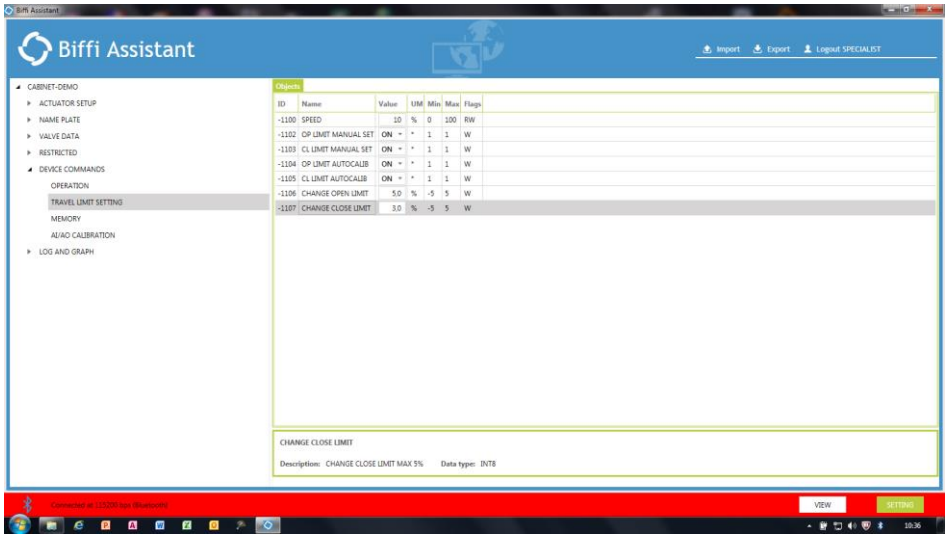
Important: 	**The procedure described below is valid also for the command "Change Open Limit"**



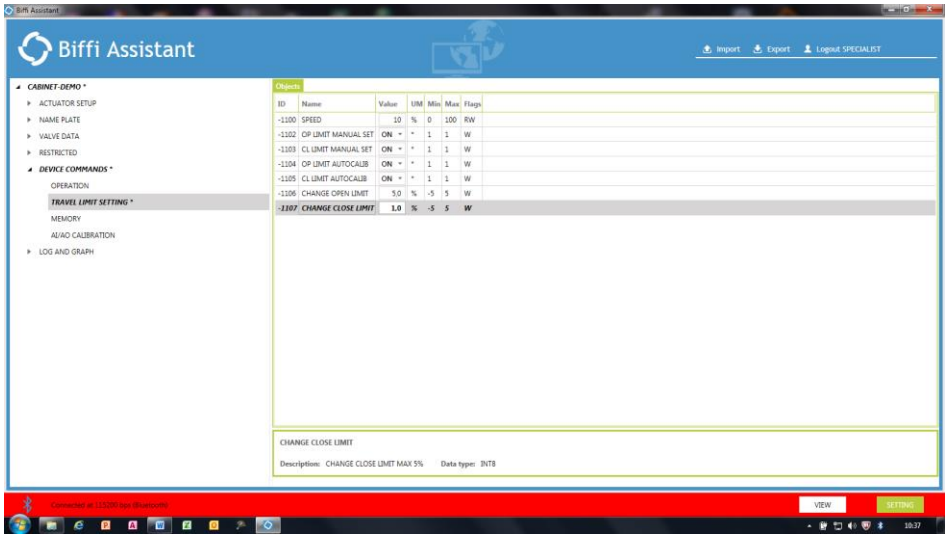
Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on "Travel Limit Setting"

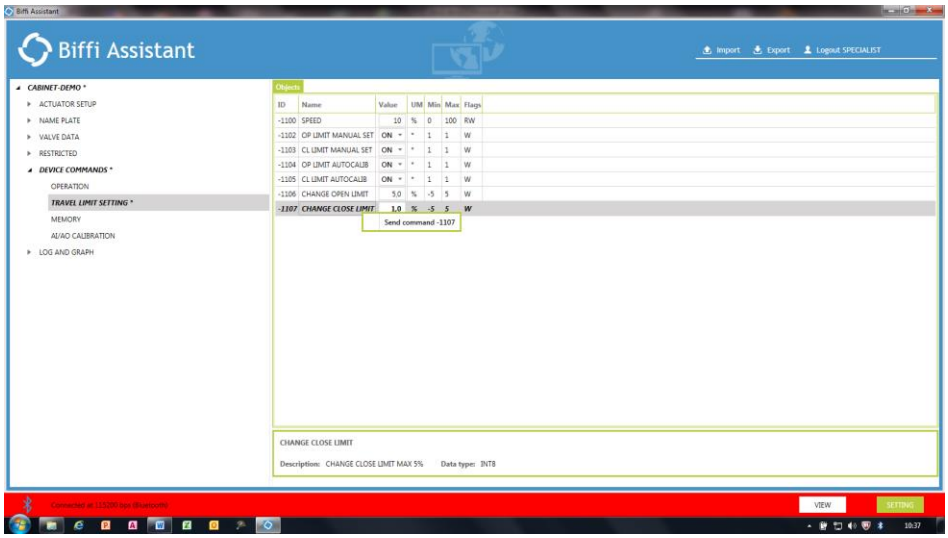


Left click of mouse on "CHANGE CLOSE LIMIT" .



Enter the new value.

Left click of mouse on "CHANGE CLOSE LIMIT".



Rigth click of mouse on "CHANGE CLOSE LIMIT".

Left click of mouse on "Send command_x".

Click on OK

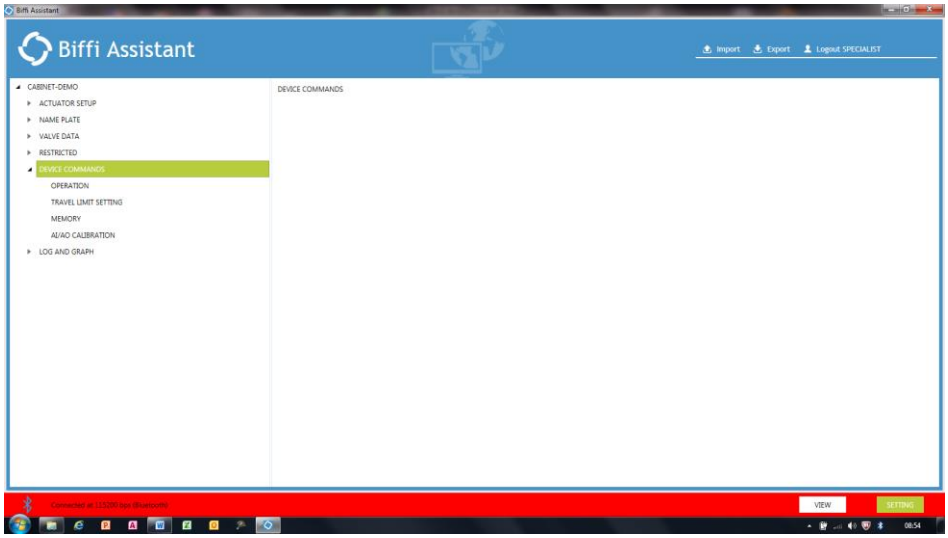
Click the button **VIEW**

12.5 CL Limit Manual Set

Warning: 	**Before executing the command it is mandatory to check that the calibration of 4-20mA Position feedback and the mechanical stops are OK, according to instructions in DTDE327"Travel Limit Setting". It is also mandatory to check that the configuration of parameters in the function Block "Restricted", TAB "Travel Limit" is OK.**

Important: 	**The procedure described below can be used only if the actuator is fully closed**

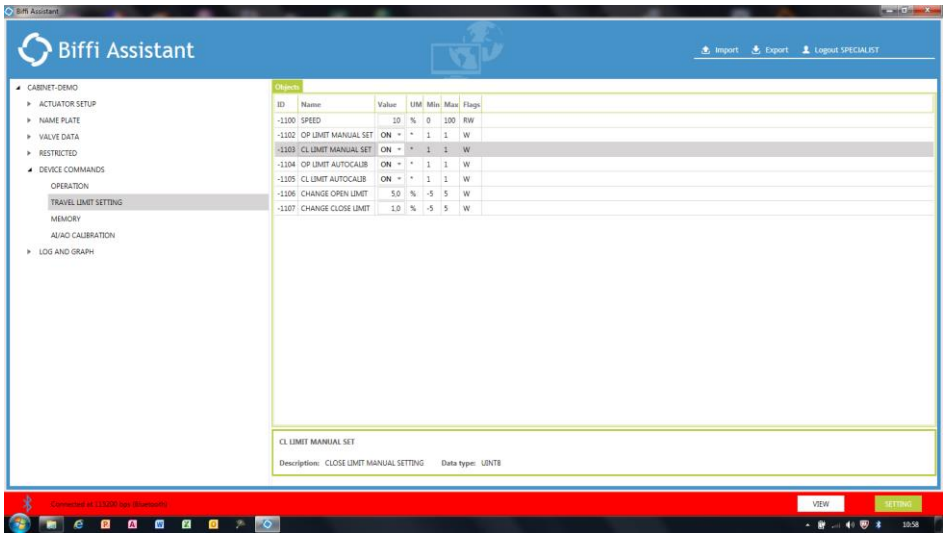
Important: 	**The procedure described below is valid also for the command "OP Limit Manual Set". The procedure can be used only if the actuator is fully open**



Left click of mouse on the button **SETTING**

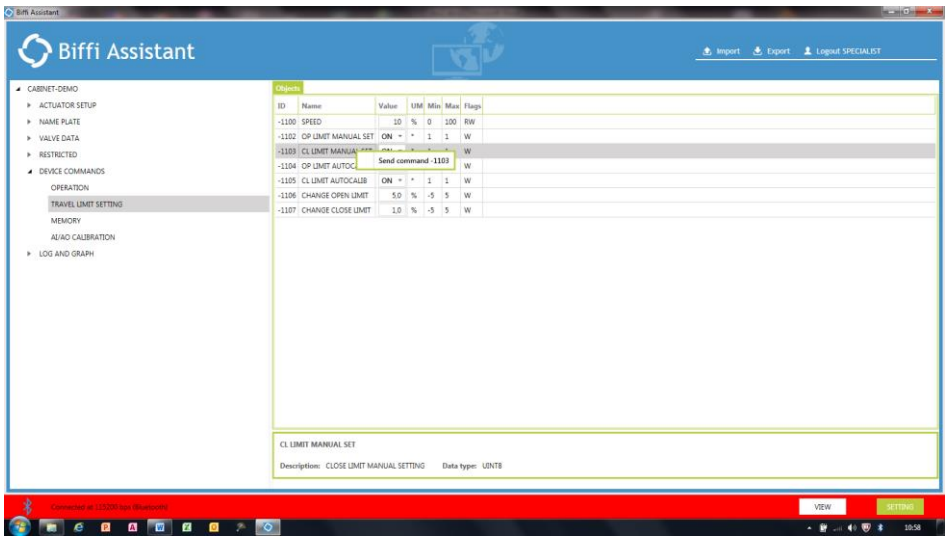
Maximize the function block DEVICE COMMANDS.

Left click of mouse on "Travel Limit Setting"



Enter the value “ON”.

Left click of mouse on “CLLIMIT MANUAL SET”.



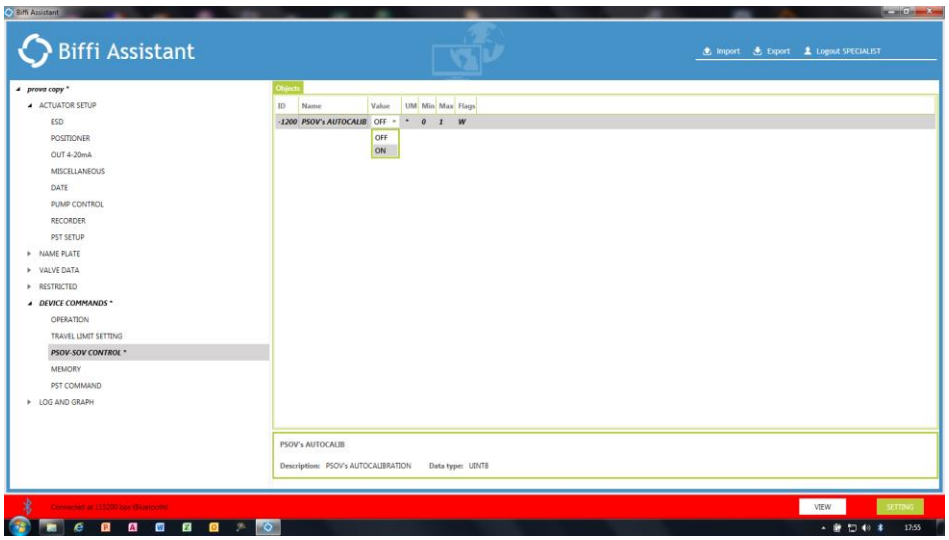
Right click of mouse on “CL LIMIT MANUAL SET”.

Left click of mouse on “Send command_x”.

Click on OK

Click the button **VIEW.**

12.6 PSOV autocalibration



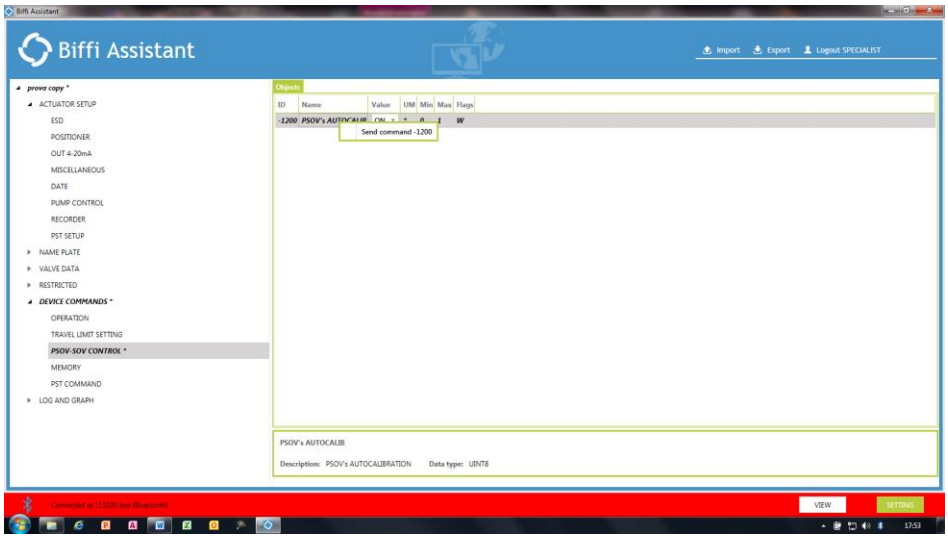
Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on “PSOV-SOV CONTROL”

Left click of mouse on “PSOV’s AUTOCALIB”

Left click of mouse on “ON”.



Left click of mouse on the line “PSOV’s AUTOCALIB”

Rigth click of mouse on “Send command_x”

Wait until the command ends

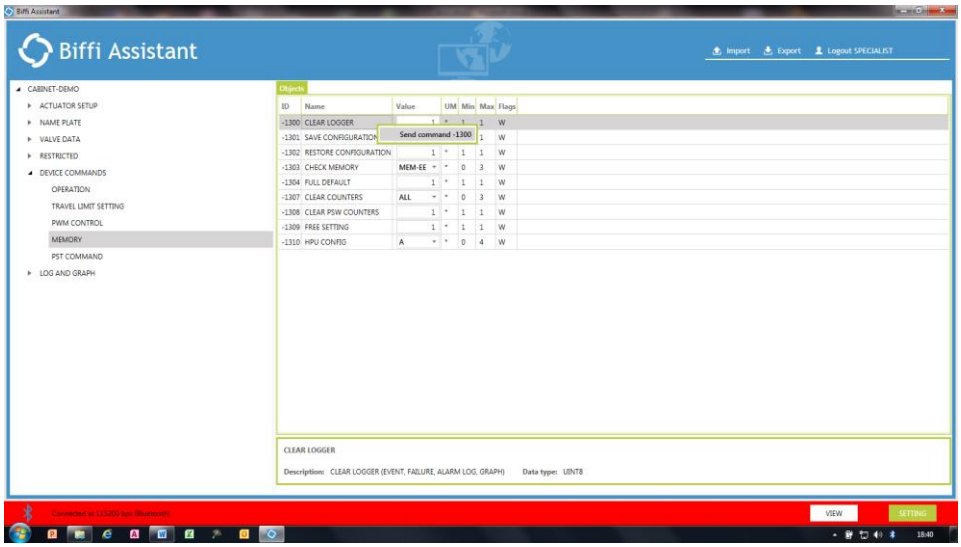
Click on OK

Click the button **VIEW.**

The above ECU command is available only if the parameter “positioner mode” is configured “MO-2PSOV” and the actuator is controlled by BIFFI **P**roportional **SO**lenoid **V**alves (PSOV). It used to set the minimum and maximum PWM signal to control the PSOV’s.

12.7 Clear logger

The command clears the EVENT, FAILURE and ALARM logger. It is available with password “SERVICE”, “SPECIALIST” and “GUEST2”.



Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on “MEMORY”

Left click of mouse on “CLEAR LOGGER”

Right click of mouse on “CLEAR LOGGER”.

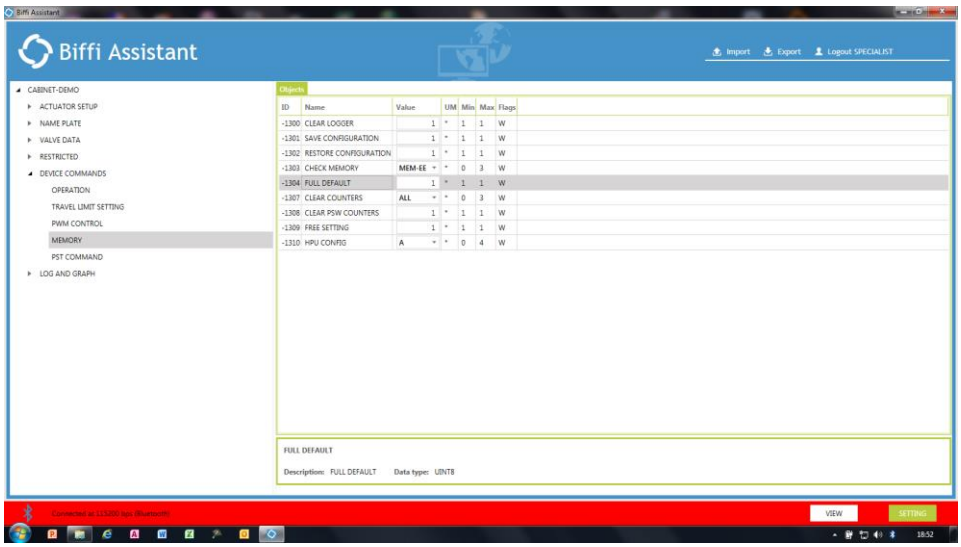
Left click of mouse on “Send command_x”.

Click on OK

Click the button **VIEW.**

12.8 Full default

The command is available only with username level "**service**", "**specialist**" and "**guest2**". The command sets each parameter of ECU1000 to the default value. The command is used after an ECU1000 firmware upgrade (see paragraph "Copy all parameters after a FW upgrade").

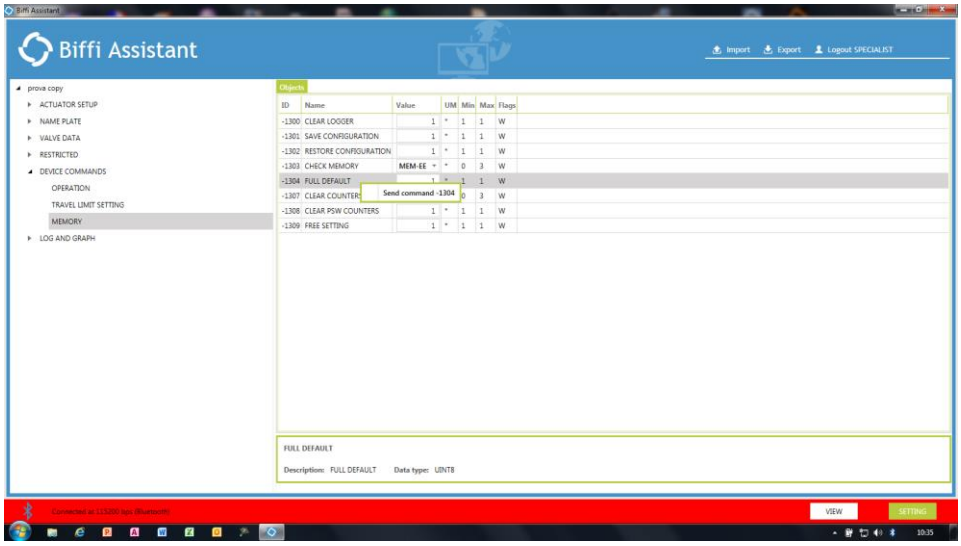


Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on "MEMORY"

Left click of mouse on "FULL DEFAULT"



Right click of mouse on "FULL DEFAULT".

Left click of mouse on "Send command_x".

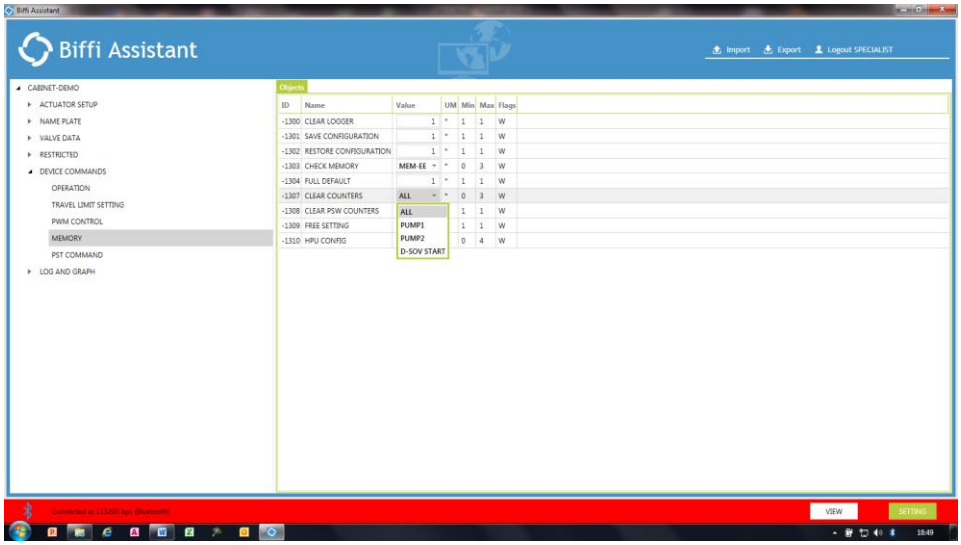
Click on OK

Click the button **VIEW.**

Warning: 	**By the above command each parameter of the ECU1000 is configured with its default value and the previous configuration is lost. It is mandatory to save the configuration of the ECU1000 in a file before executing the command and restore the configuration by the command "full copy" after having performed the command, as described in the paragraphs "Import and Export".** **The ECU1000 controls the actuator, it could control the ECU, it could drive generic electric, pneumatic, mechanic and hydraulic devices, it is mandatory to place the above devices in their safe condition to avoid injury of people and damage of equipment and ambient (see installation and maintenance manual)**

12.9 Clear Counters

The command is available only with username level "**service**", "**specialist**" and "**guest2**". The commands clears the counters "n° of start of pump1", "n° of starts of pump2", "number of starts of D-SOV". Each counter can be cleared individually with options "Pump1, PUMP2, D-SOV START" or all counters can be cleared with the option "ALL".



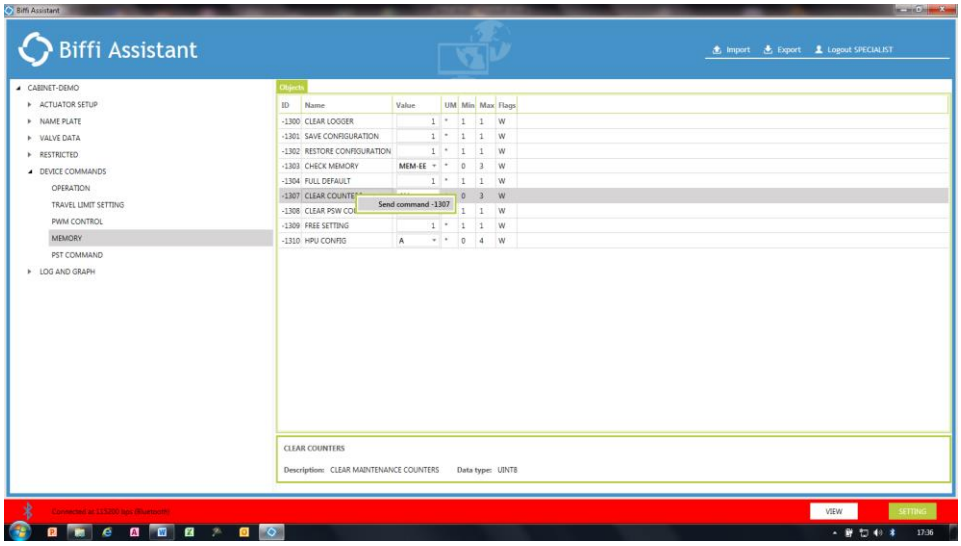
Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on "MEMORY"

Left click of mouse on "CLEAR COUNTERS"

Left click of mouse on the desired options "ALL, Pump1, PUMP2, D-SOV START".



Left click of mouse on CLEAR COUNTERS

Rigth click of mouse on CLEAR COUNTERS

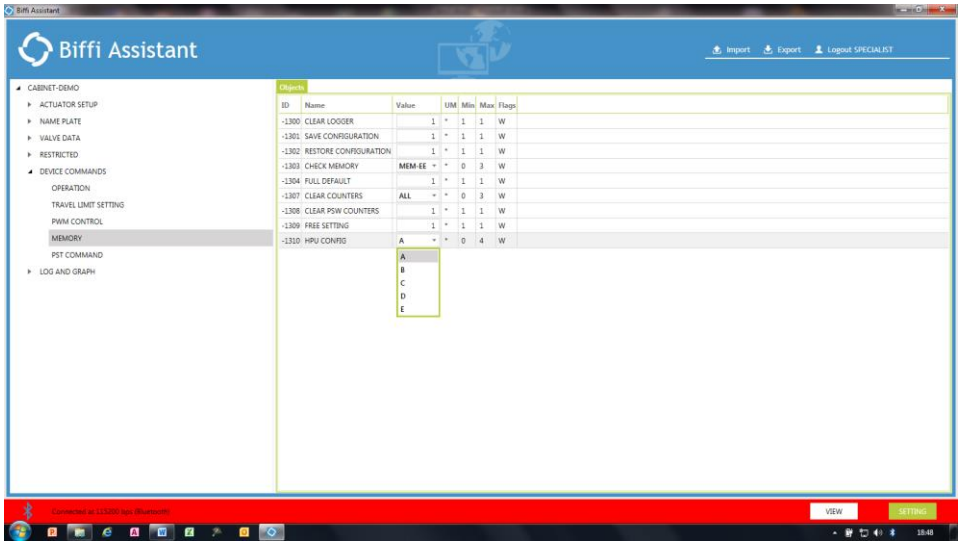
Left click of mouse on "Send command_x".

Click on OK

Click the button **VIEW** and check the value of counters in the statistic log.

12.10 HPU Config

The command is available only with username level "**specialist**" and "**guest2**". The command sets some typical parameters of the HPU. Below are listed the HPU parameters set by the command



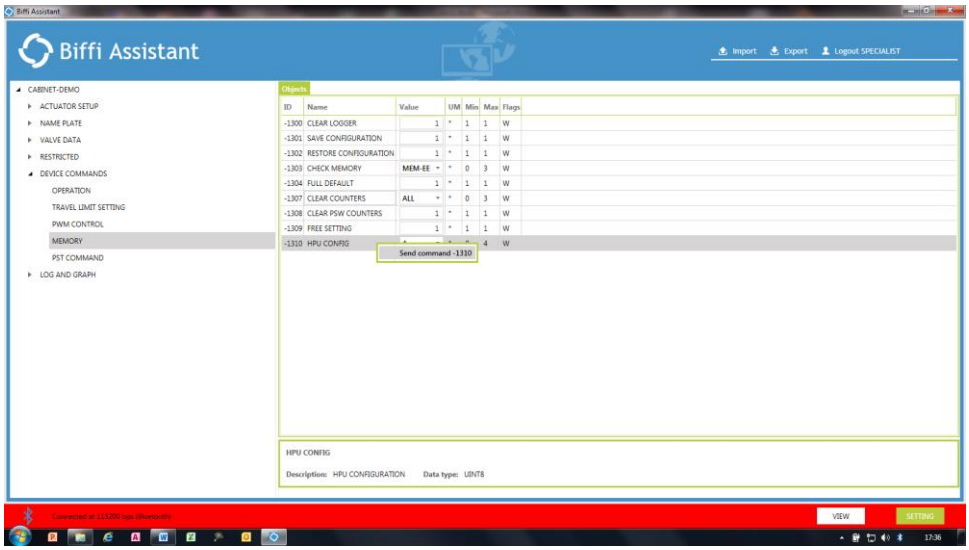
Left click of mouse on the button **SETTING**

Maximize the function block DEVICE COMMANDS.

Left click of mouse on "MEMORY"

Left click of mouse on "HPU CONFIG"

Left click of mouse on the desired options "A, B, C, D, E".



Left click of mouse on HPU CONFIG

Rigth click of mouse on HPU CONFIG

Left click of mouse on "Send command_x".

Click on OK

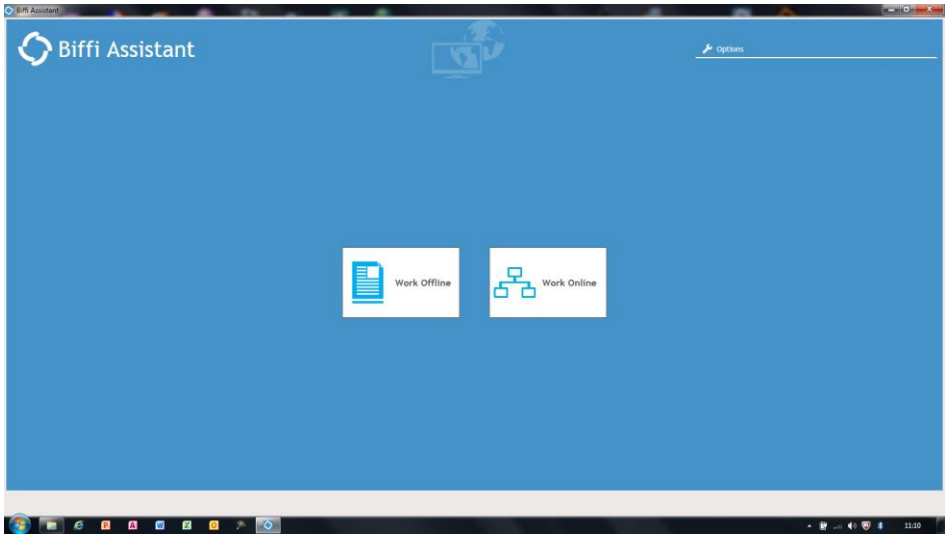
Click the button **VIEW** .

"**A**": hpu type=dual m-s, pressure discharge SOV=energized, oil pressure sensor=pres transm, DSOV mode=both, pump duty=continuous,max-time alarm=pump stop, mec-unloader=absent
"**B**": hpu type=single, pressure discharge SOV=absent, oil pressure sensor=pres tr-sw, DSOV mode=start-pump, pump duty=intermit, max-time alarm=pump run, mec-unloader=absent
"**C**": hpu type=single, pressure discharge SOV=energized, oil pressure sensor=pres transm, DSOV mode=both, pump duty=intermit, max-time alarm=pump stop, mec-unloader=absent
"**D**": hpu type=single, pressure discharge SOV=absent, oil pressure sensor=pres switch, DSOV mode=start pump, pump duty=intermit, max-time alarm=pump stop, mec-unloader=absent
"**E**" : hpu type=dual cycle, pressure discharge SOV=energized, oil pressure sensor=pres transm, DSOV mode=both, pump duty=intermit,max-time alarm=pump stop, mec-unloader=absent

13 Work Offline

The prevoius paragraphs describe the features of the BIFFI-Asssistant when it is connected to ECU1000 and works **Online.**
The next paragraph describes the features available when the BIFFI-Assistant works **Offline**, not connected to ECU1000. In such mode BIFFI-Assistant can handle only files previously saved with extension *. biffia. The Offline mode allows

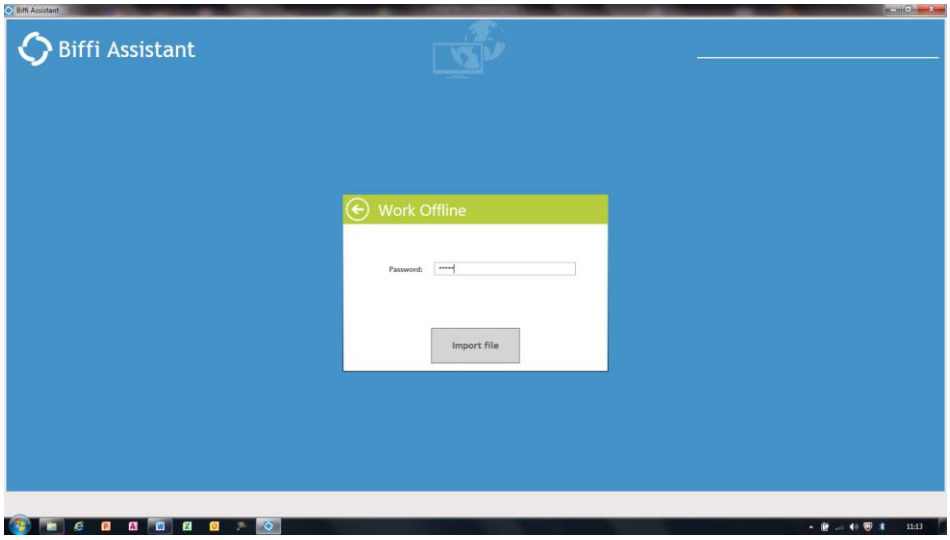
- Change the value of parameters and save them in a new file
- View the loggers
- View the graphs



Launch the program by the double left click of of mouse on the BIFFI-Assistant icon.

Click on Work Offline

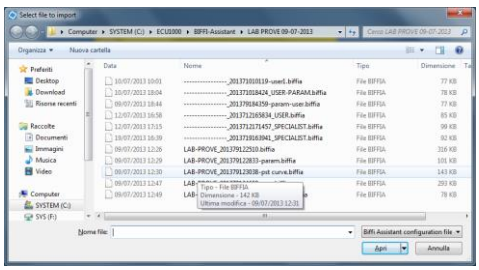
As described in the work **Online** mode use the left and right button of mouse and the PC keyboard to enter data.

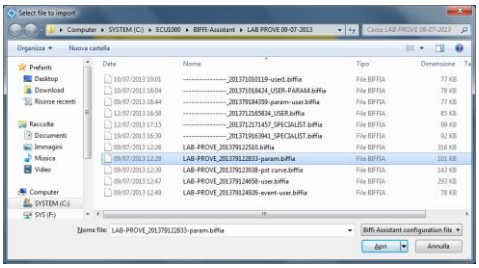


Enter the password.

The default password in Work Offline is "**biffi**".

The password can be changed by the user

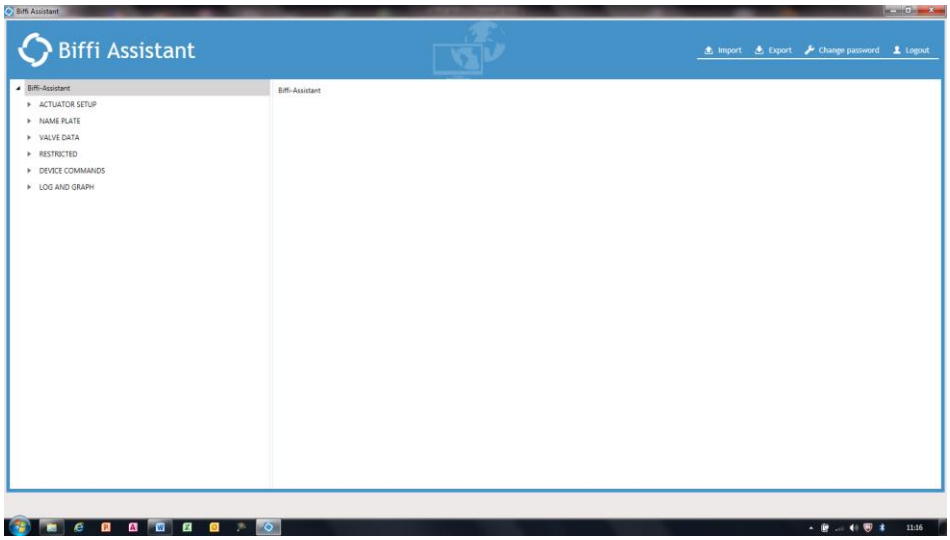




Select the file

Click the left key of mouse on **Import file.**

The following appears on the PC screen



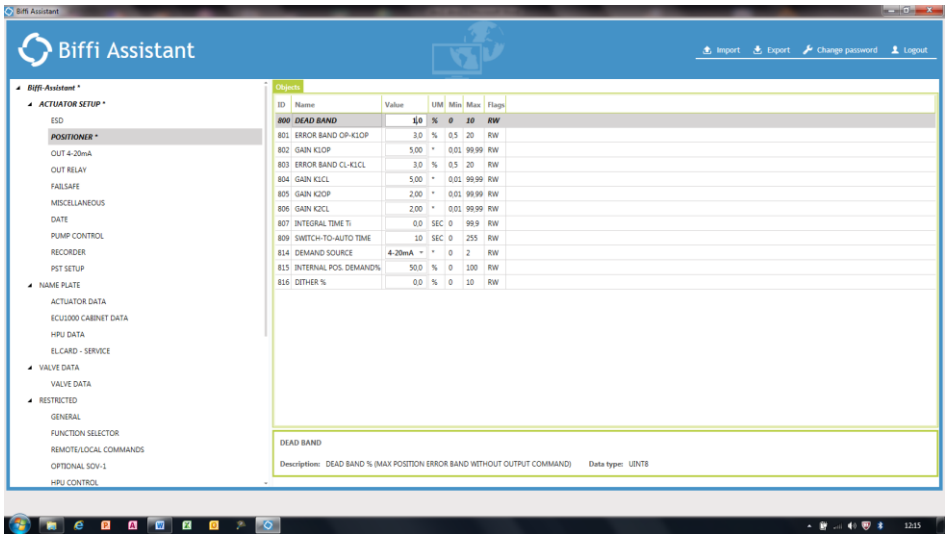
By the facilities described in the previous paragraphs minimize / maximize the menu and use the scroll bar to view function blocks, function TAB's, parameters / command lines, loggers and graphs. The commands "Write Object_x, Write Block_x, Write Tab_x" are active and are used to modify the value of parameters in the PC memory. The options available on the high right corner are:

- Import: to read a file from PC memory
- Export: to save the file in the PC memory
- Change password: to modify the existing password in Work Offline mode
- Logout : to exit

13.1 Change of value of a parameter and save it in a new file

Import the file to be modified by the procedure described in the prevoius paragraph. Maximize the function block and the TAB contaning the parameters. Modify the parameters. By the commands "write Object_x, write TAB_x, write Block_x, write all Objects" set the changes in the PC memory. Export the modified file in a new file.

Example 1: to change a parameter and save in a new file



Launch the BIFFI-Assistant and select Work Offline.

Enter the password.

Import the file to be modified.

By the mouse, select the function Block, select the TAB, select the Parameter.

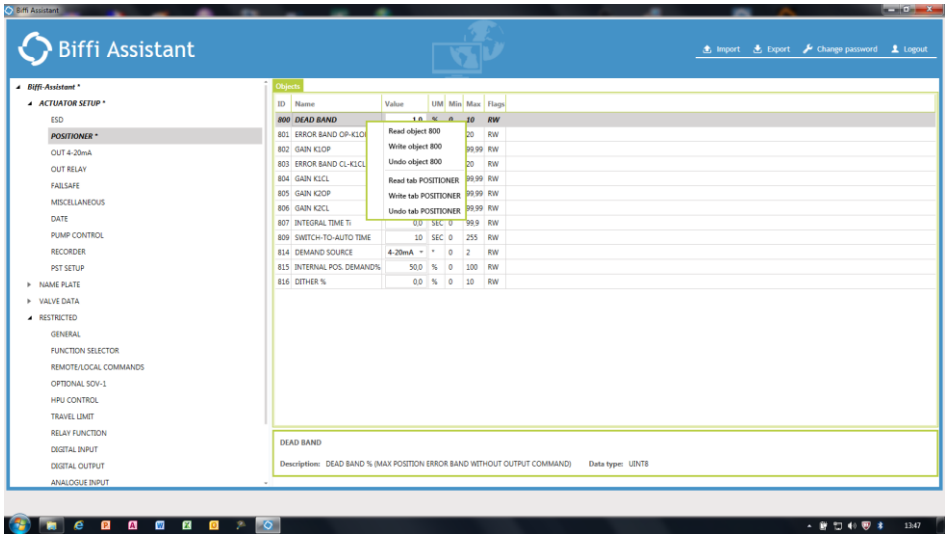
Enter the new value.

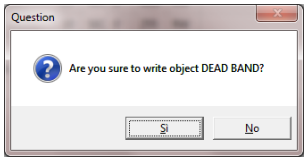
By the right key of mouse open the window with the available options.

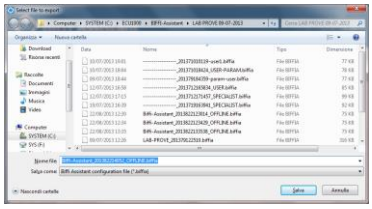
Select “write object _x”

Click YES to confirm

Left click of mouse on Export.



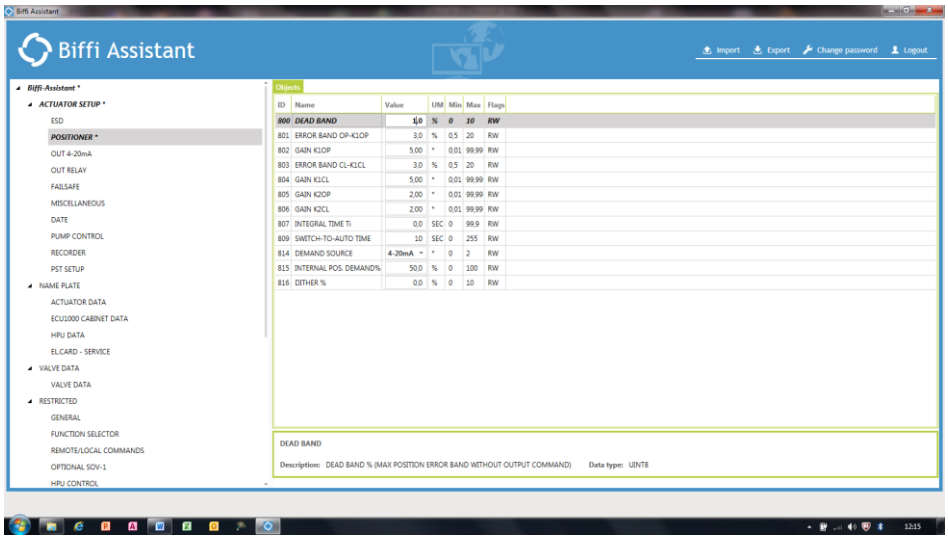




Enter the name of the new file. The default name is “Biffi-Assistant_date_time__OFFLINE.biffia.

Click the button SAVE

Example 1: to change 2 parameters in different TAB's and save them in a new file



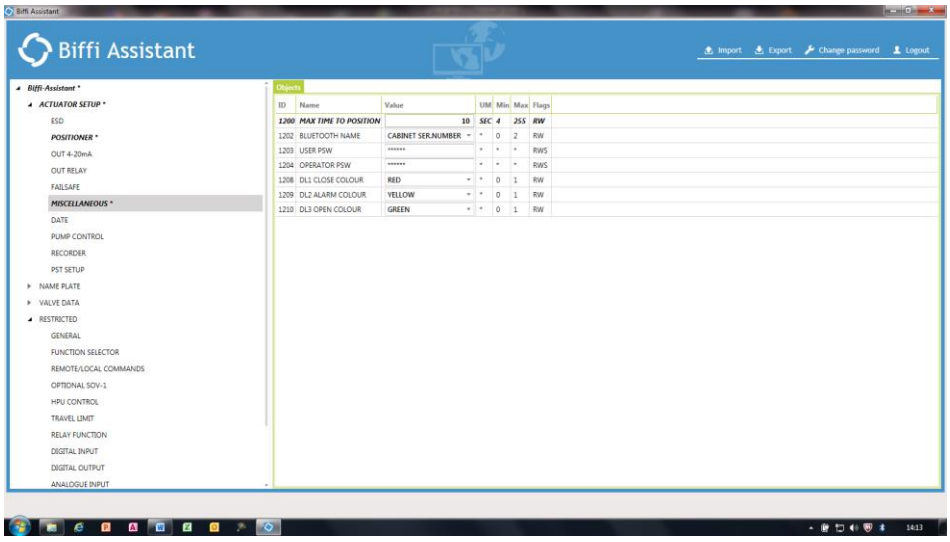
Launch the BIFFI-Assistant and select Work Offline.

Enter the password

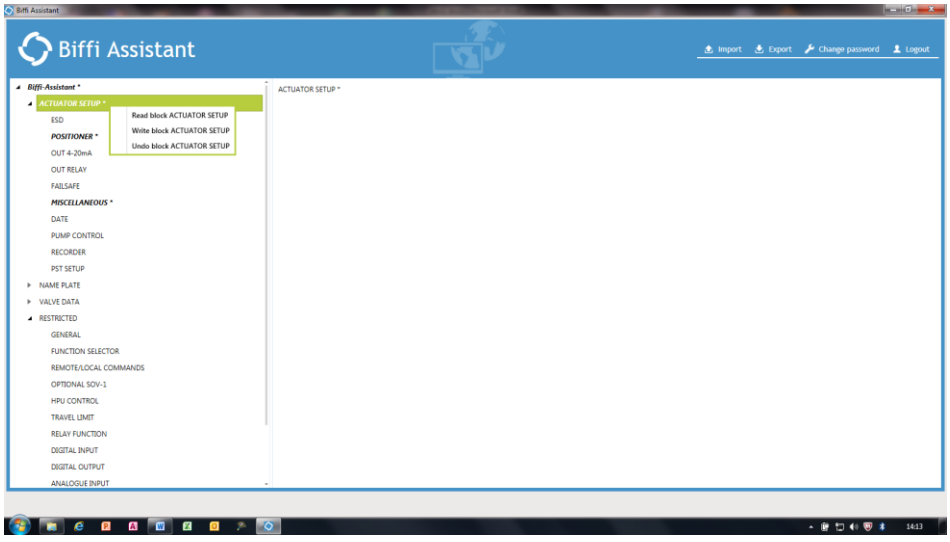
Import the file to be modified

By the mouse, select the function Block, select the TAB and the Parameter.

Enter the new value.



Select the TAB and change the second parameter

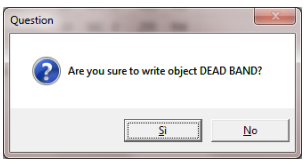


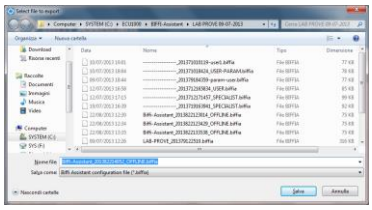
Click the right key of mouse on the Block name to open the window with the available options.

Select "write Block_ x"

Click YES to confirm

Click the left key of mouse on Export



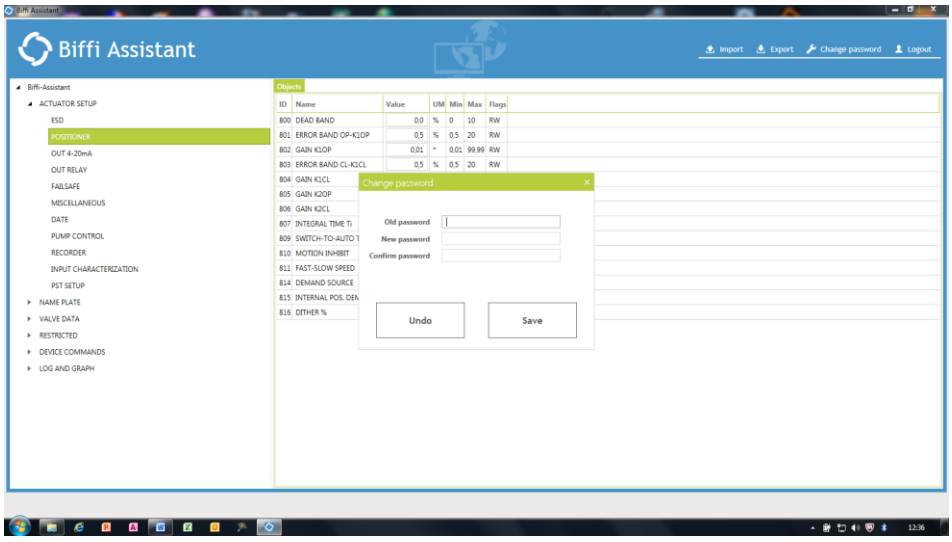


Enter the name of the new file. The default name is "Biffi-Assistant_date_time__OFFLINE.biffia.

Click the button SAVE

13.2 Change of Work Offline password

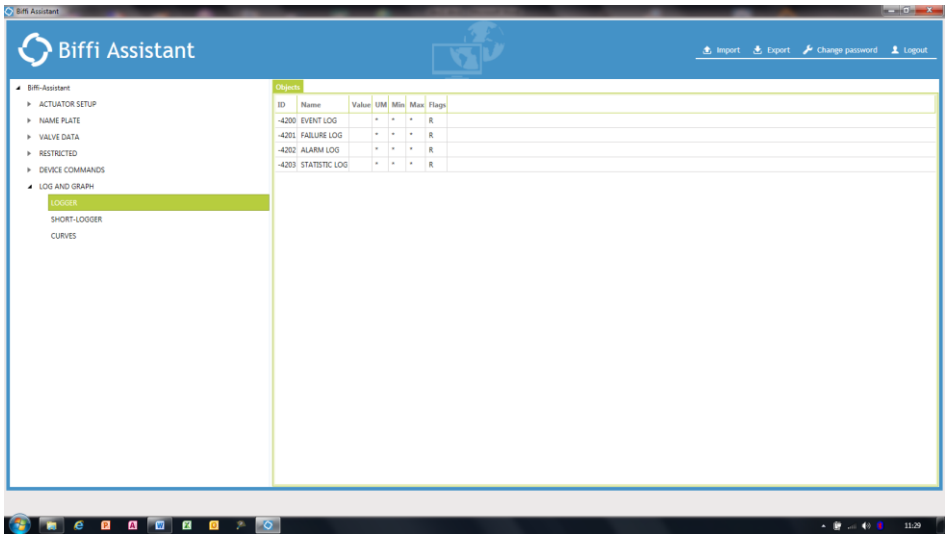
Launch the BIFFI-Assistant and select Work Offline.
Enter the password
Import the file.
Click the left key of mouse on "Change password"
Enter the old password
Enter the new password
Confirm the password
Click on SAVE
Now neither the old password nor the default one are valid



Important:	**It is important that the new password is not forgot. It is suggested to save it in a safe location. Contact Biffi Service if the password is lost**

13.3 View of loggers

The procedure to view the loggers is the same described in the previous paragraphs for the **Work Online** mode. The loggers previously saved can only be viewed, they cannot be modified.

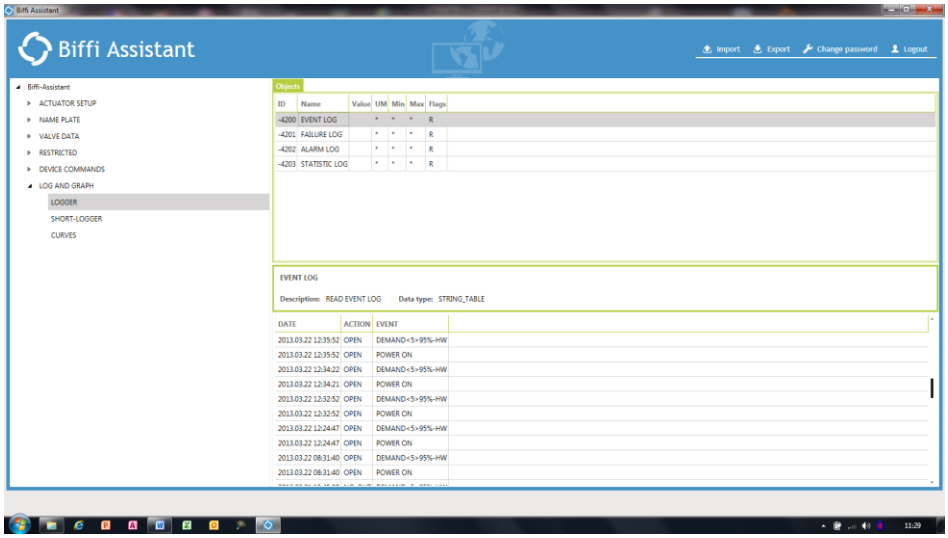


Launch the BIFFI-Assistant and select Work Offline.

Enter the password

Import the file to be viewed

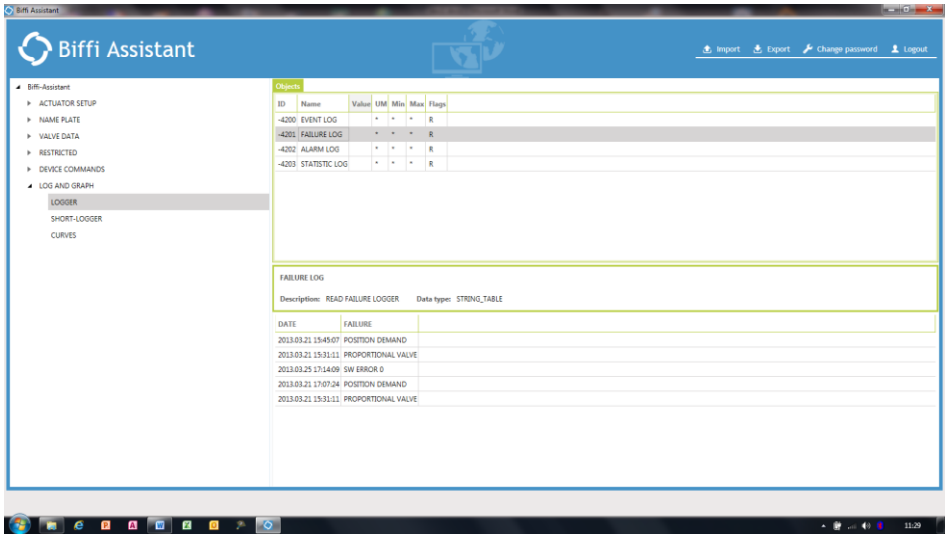
Maximize the function block “LOG and GRAPH”



Left click of mouse on TAB “LOGGER”.

Left click of mouse on “EVENT LOG”.

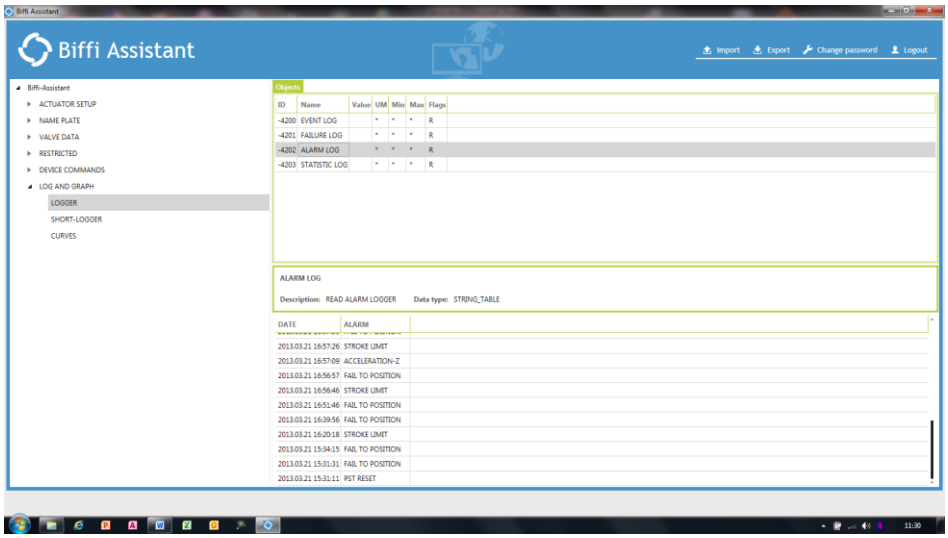
Use the scroll bar to view the events



Left click of mouse on TAB “LOGGER”.

Left click of mouse on “FAILURE LOG”.

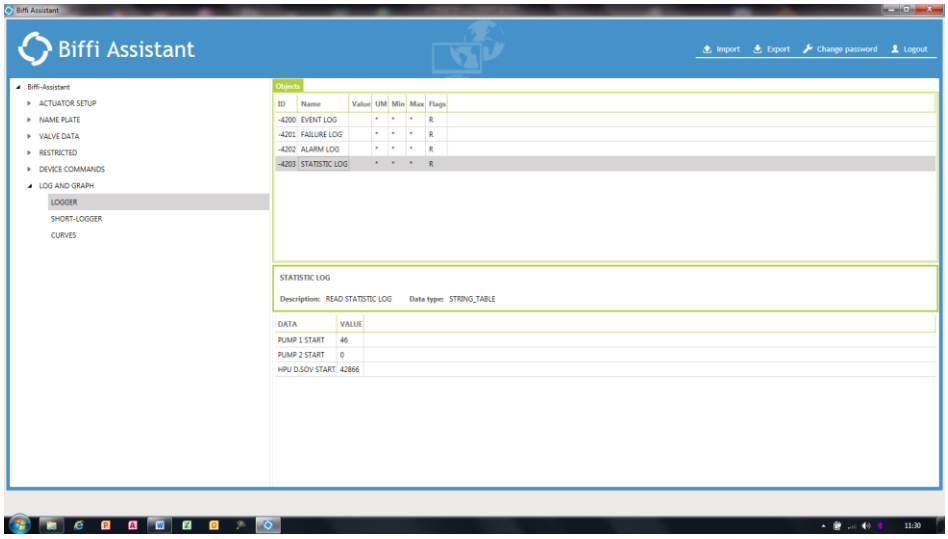
Use the scroll bar to view the events



Left click of mouse on TAB “LOGGER”.

Left click of mouse on “ALARM LOG”.

Use the scroll bar to view the events



Left click of mouse on TAB “LOGGER”.

Left click of mouse on “STATISTIC log”.

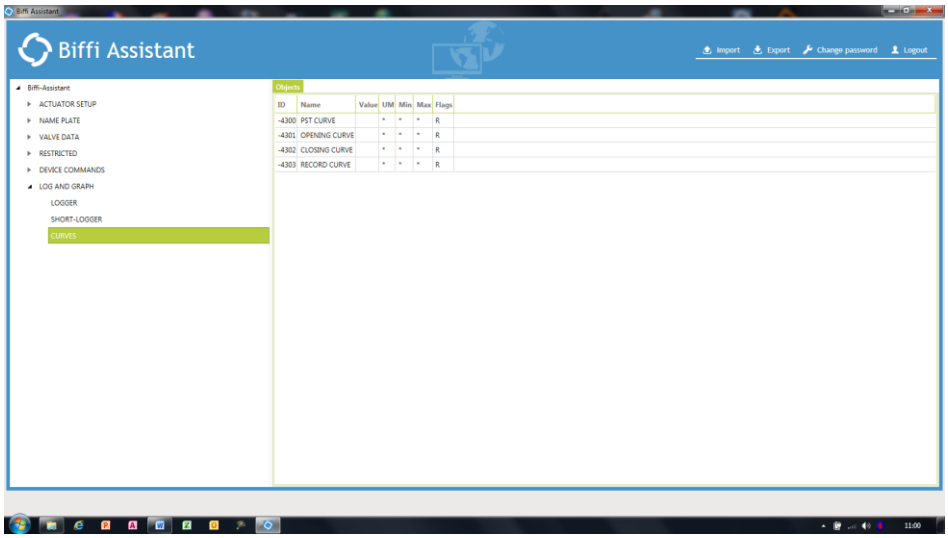
Use the scroll bar to view the events

13.4 View of short logger

The procedure to view the short logger is the same described for viewing the LOGGER.

13.5 View of graphs

The procedure to view the curves is the same described in the previous paragraphs in **Work Online** mode. The graphs previously saved can only be viewed, they cannot be modified. Here below is described the procedure to work on the “Opening curve”, but the procedure is the same for the “Closing, Recorder and PST curves”.

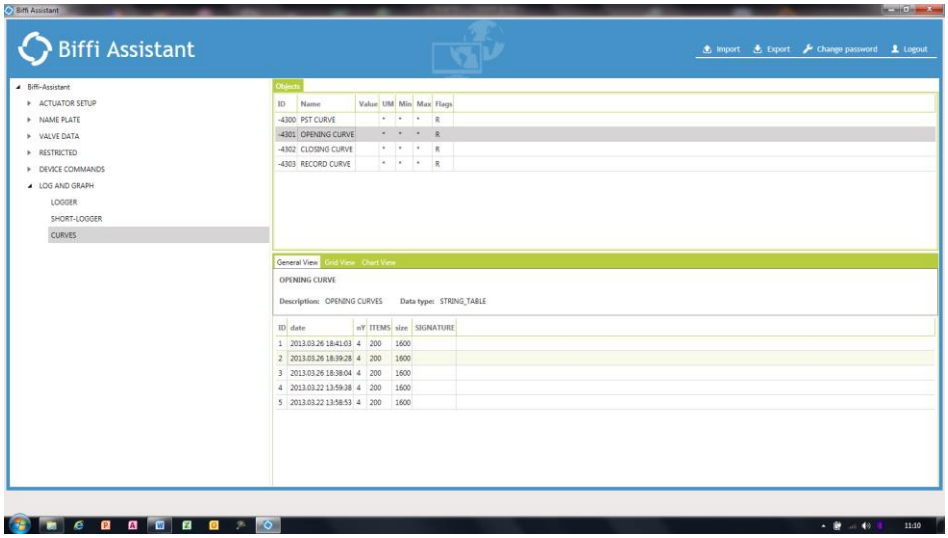


Launch the BIFFI-Assistant and select Work Offline.

Enter the password

Import the file to be viewed

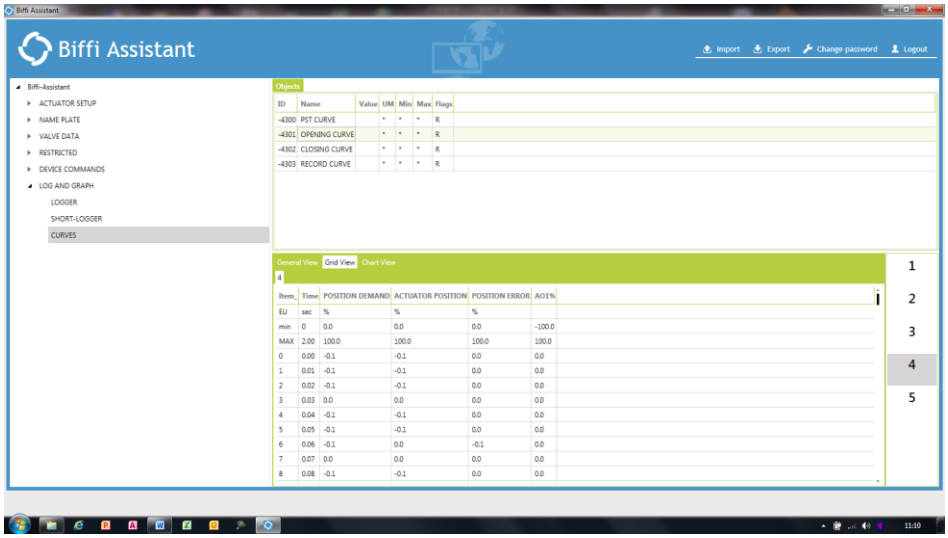
Maximize the function block “LOG and GRAPH”



Left click of mouse on TAB “CURVES”.

Left click of mouse on “OPENING CURVE”.

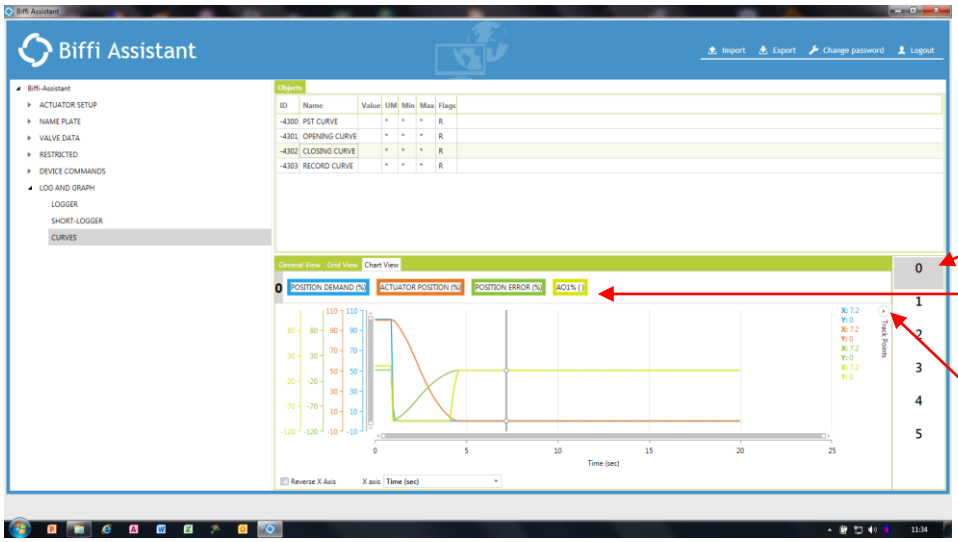
The General view shows the list of visible curves. The curve **number 0** is the signature (if it was previously set in **Work Online** mode)



Left click of mouse on “Grid View”.

Left click of mouse on the number of the curve (4).

The values are shown as table.



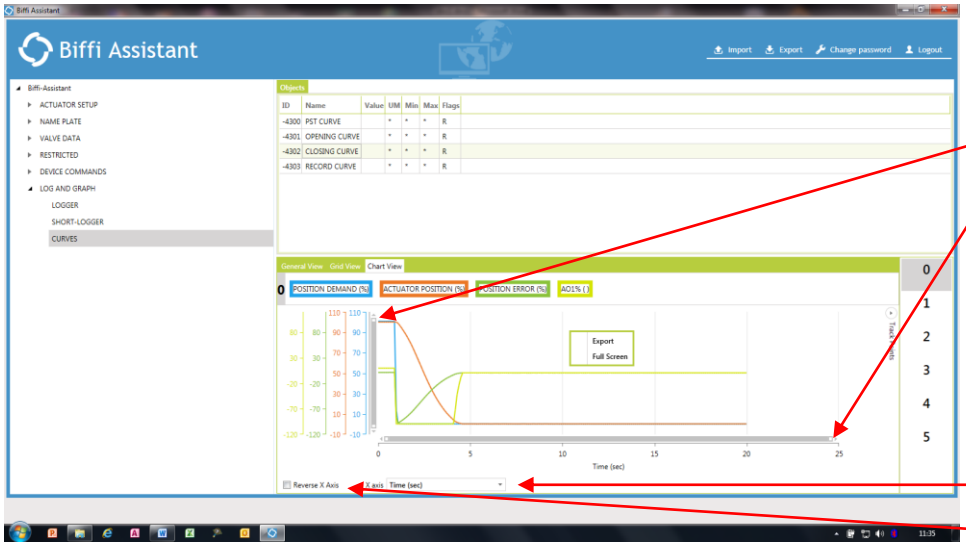
Left click of mouse on "Chart View".

Left click of mouse on the number of the curve (0).

Left click of mouse to select the variables "Actuator position, Position Demand, etc".

Left click of mouse on "Track point" to view the values.

Curve 0 = signature



Use the ZOOM function to zoom the picture

Right click of the mouse to view the options Export and Full screen

Left click of mouse on "Full Screen" to view the graph on the complete PC screen. Left click of mouse on Export to save the graph as *.png file.

Use "X axis" and "Reverse X axis" options to view the graph in Y-X mode

FULL SCREEN VIEW

Left click pf mouse on "**X**" to return to previous screen.

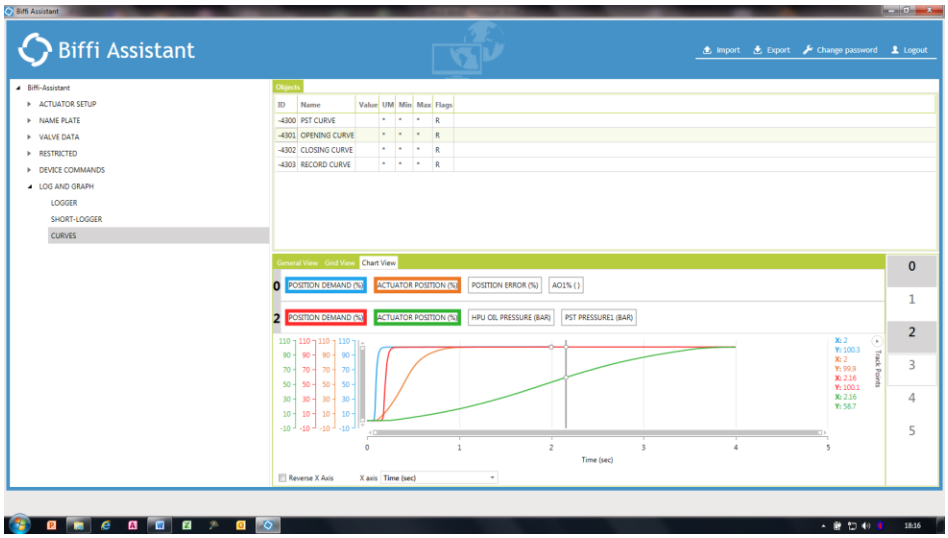
Use "Track point to view the measures

Use the ZOOM function to zoom the picture

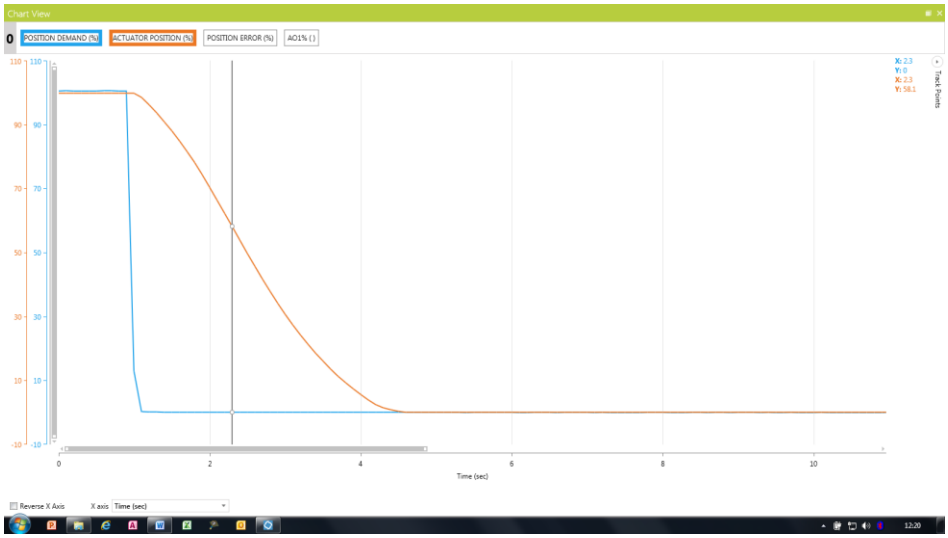
Right click of the mouse to view the option "Export"

Left click of mouse on "Export" to save the graph as *.png file.

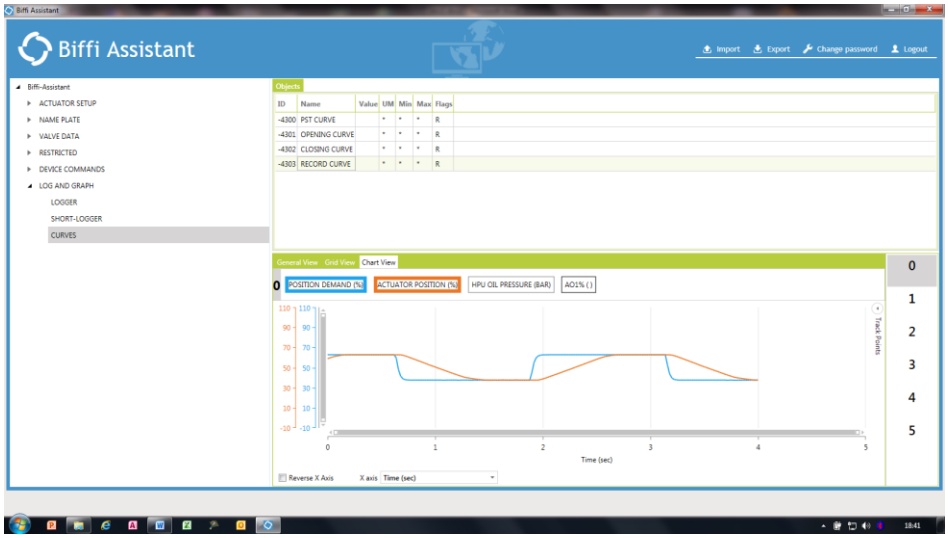
Use "X axis" and "Reverse X axis" options to view the graph in Y-X mode



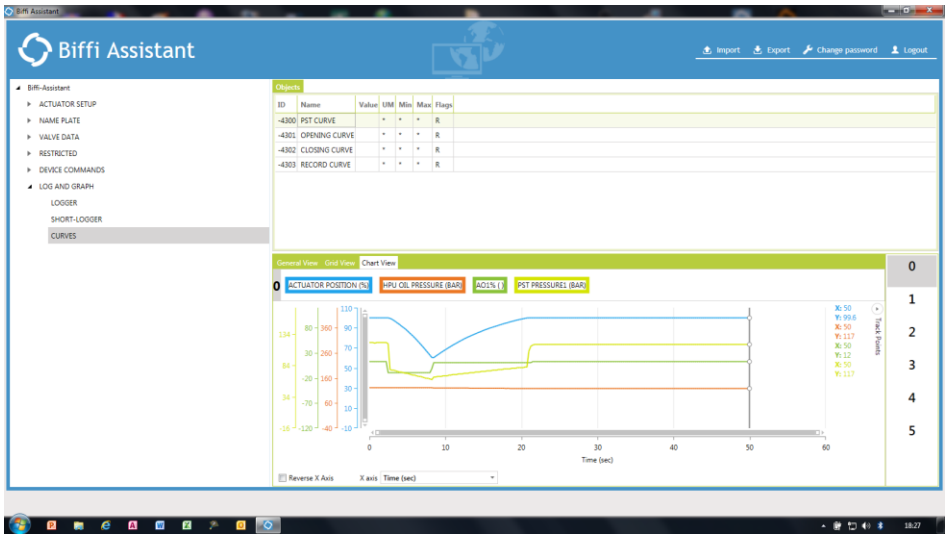
Graph of 2 curves, 2 variables each curve. Comparison between “signature” (curve 0) and curve 3



Full screen view of one closing curve with 2 variables.

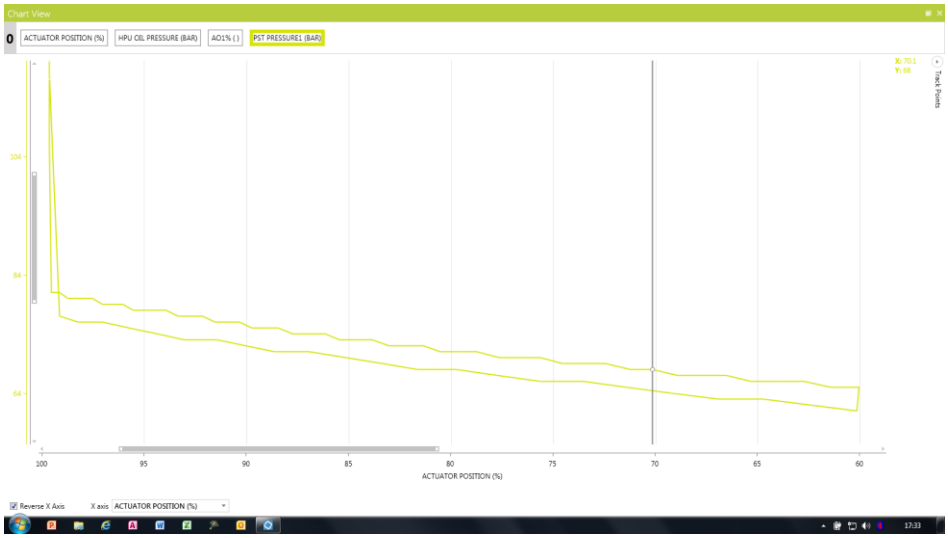


Graph of curve recorded in “Record” mode.



PST curve in closing.

Full screen view of Y-X graph “Pressure inside the cylinder in bar” versus “Actuator position in %”.



Full screen view of Y-X graph “Pressure inside the cylinder in bar” versus “Actuator position in %”. X in reversed mode

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