GEFRAN

GF_eXpress

USER GUIDE

codice: **80168F - 07-2017 - ENG**

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Installation and/or maintenance workers MUST read this manual and scrupulously follow all of the instructions in it and in its attachments. GEFRAN will not be liable for damage to persons and/or property, or to the product itself, if the following terms and conditions are disregarded.

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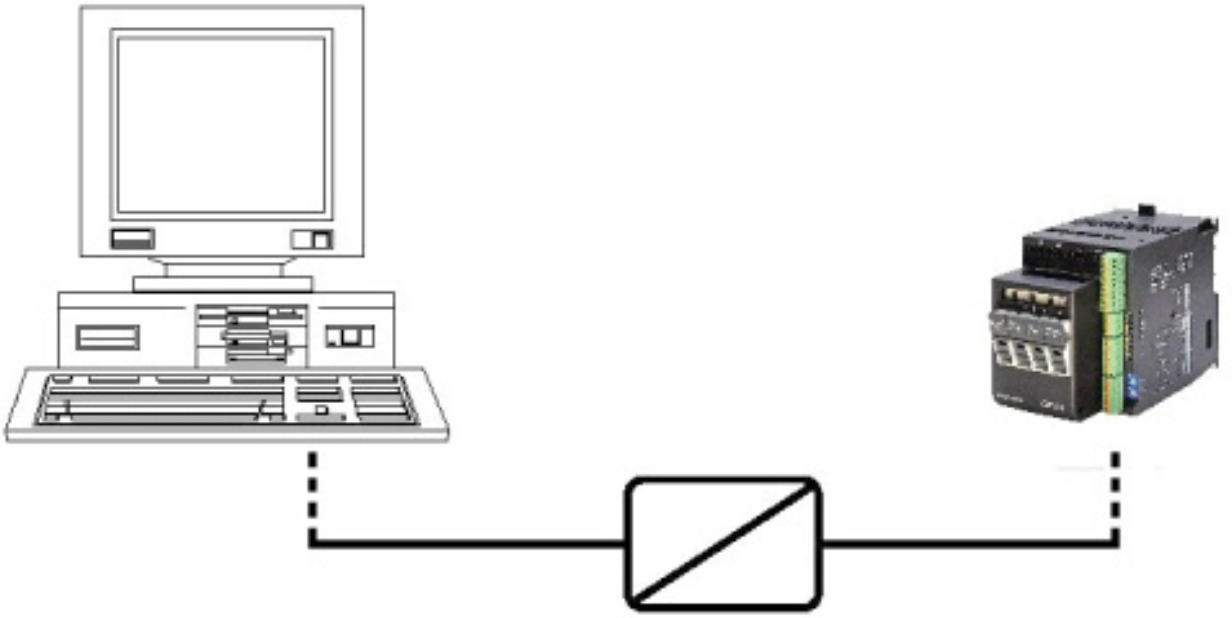
INTRODUCTION

The GF_eXpress configurator lets you configure and use GEFRAN devices. To simplify configuration, the programme resembles a typical WindowsTM environment, with toolbar and statusbar.
Possible operations:

- Serial communication with the device (SLINK3, CANopen, Cencal, Modbus protocols)
- Parameter reading and writing
- Parameter saving in device flash memory
- Checking of device status

PC REQUIREMENTS

- Pentium (or higher) processor
- Adapter for RS232/RS485/TTL and/or CANopen communication
- Windows 2000 (or higher) operating system



Communication adapter

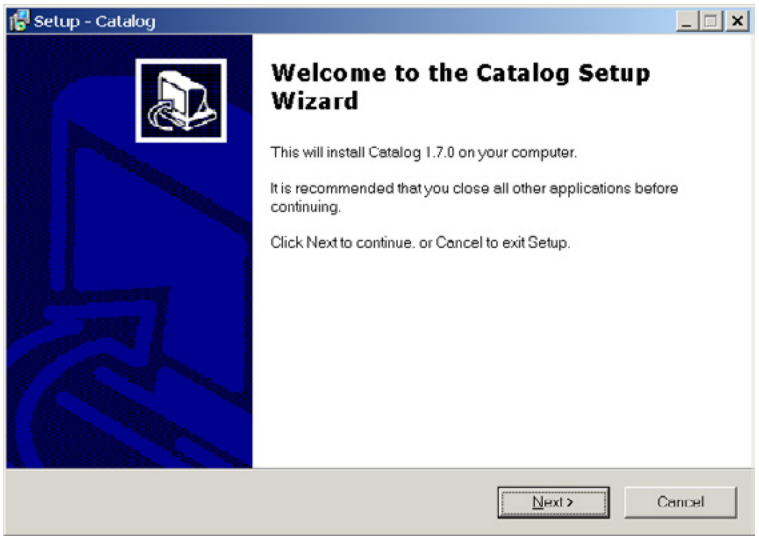
INSTALLATION

The GF_eXpress installation must be preceded by the installation of Catalog.

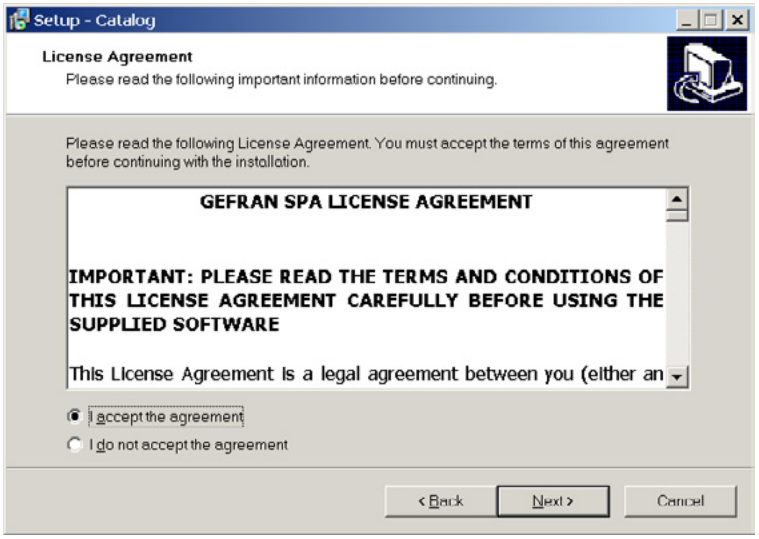
Installation of Catalog

Follow the steps below to install Catalog:

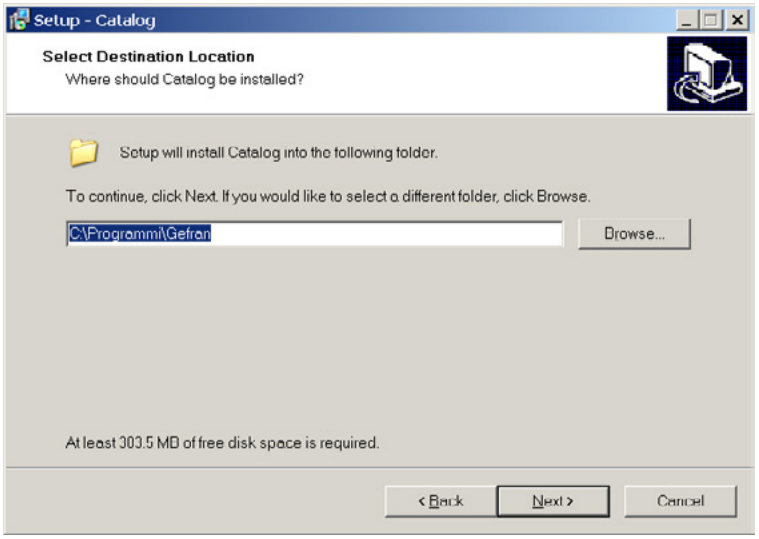
-
- Execute GF_ *Catalog _#version#.exe* and the welcome screen appears:



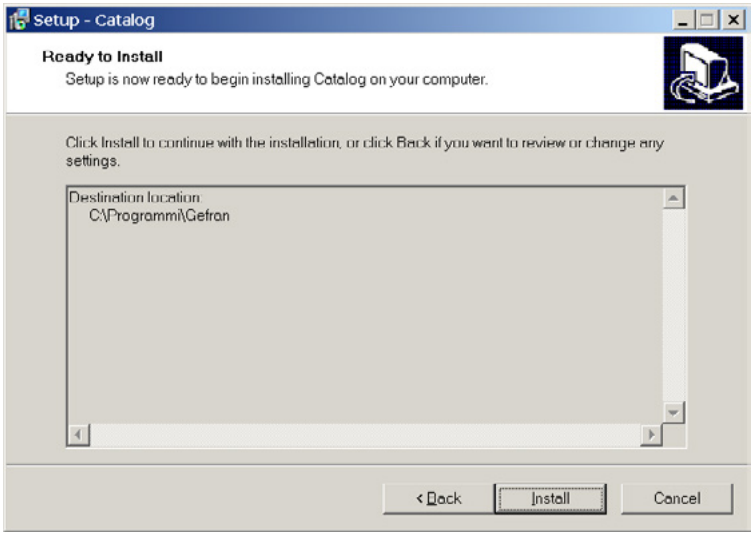
- Click *Next* to proceed to the next screen



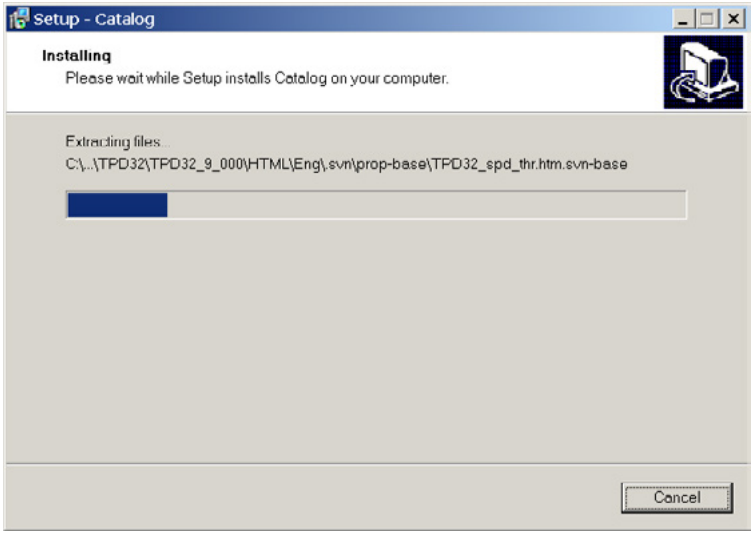
- Read the license agreement, choose *I accept the agreement* and click *Next* to proceed



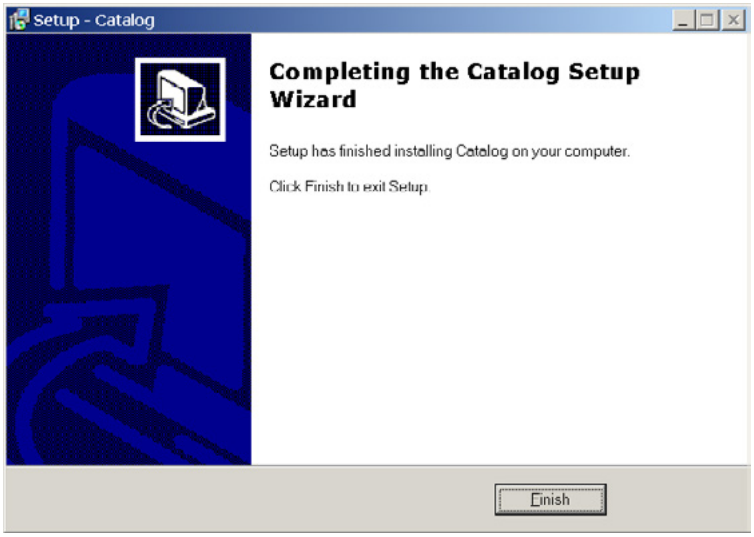
• Select the installation folder and click *Next* to proceed



• Check the settings and click *Install* to proceed; the extract phase starts



• At the end of the extract phase the last window appears:



• *Finish* to close the setup program

Installation of GF_eXpress and RS-USBX driver

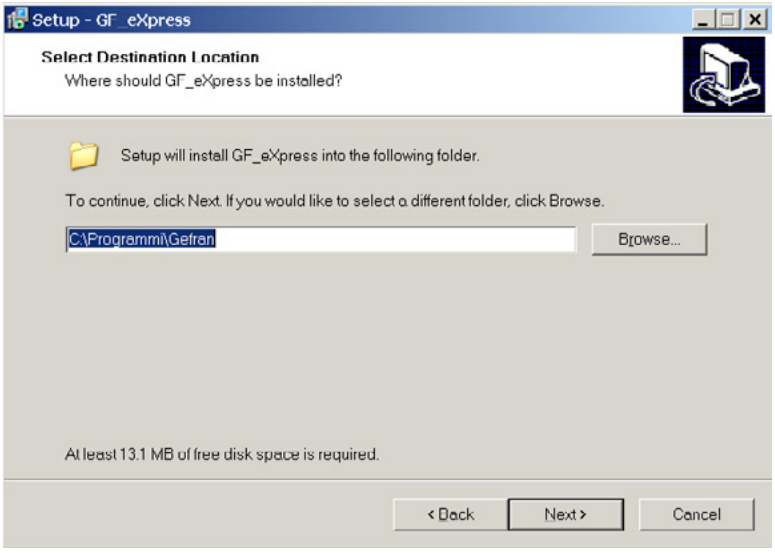
Follow the steps below to install GF_eXpress:

• If you need to install the RS-USBX interface make sure to disconnect it from USB port

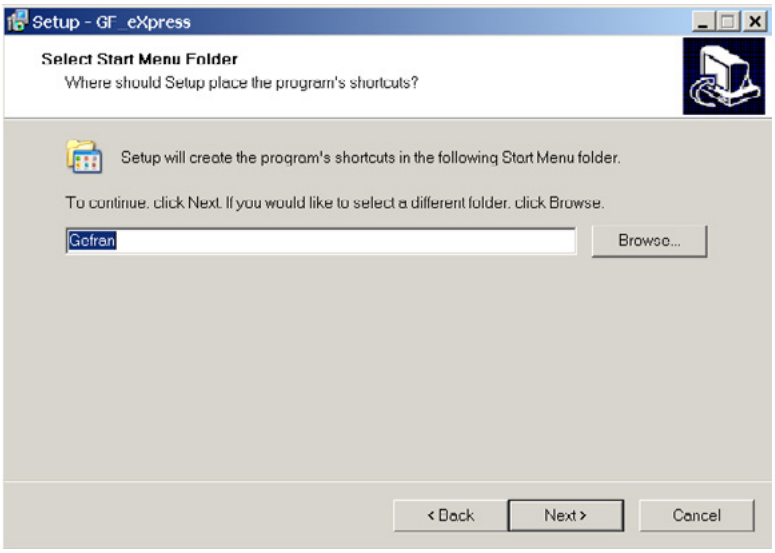
• Execute *GF_eXpress_#version#.exe* and the welcome screen appears:

• Click *Next* to proceed to the next screen

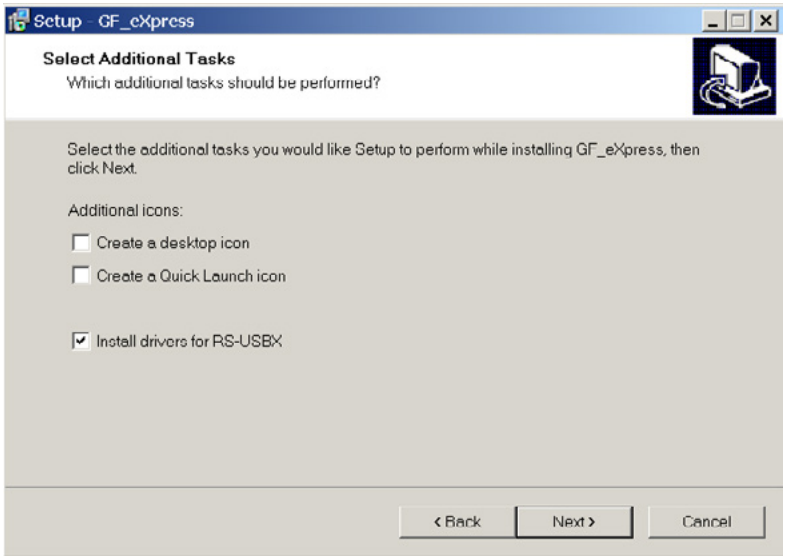
• Read the license agreement, choose *I accept the agreement* and click *Next* to proceed



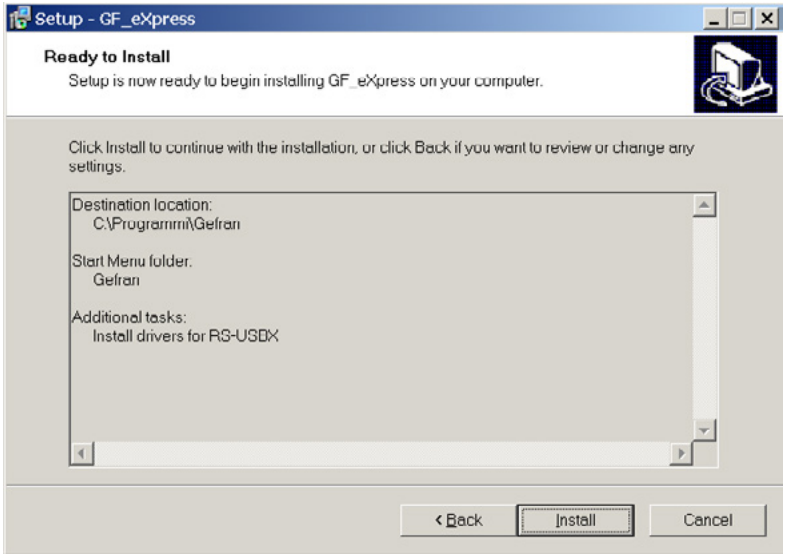
• Select the installation folder and click *Next* to proceed



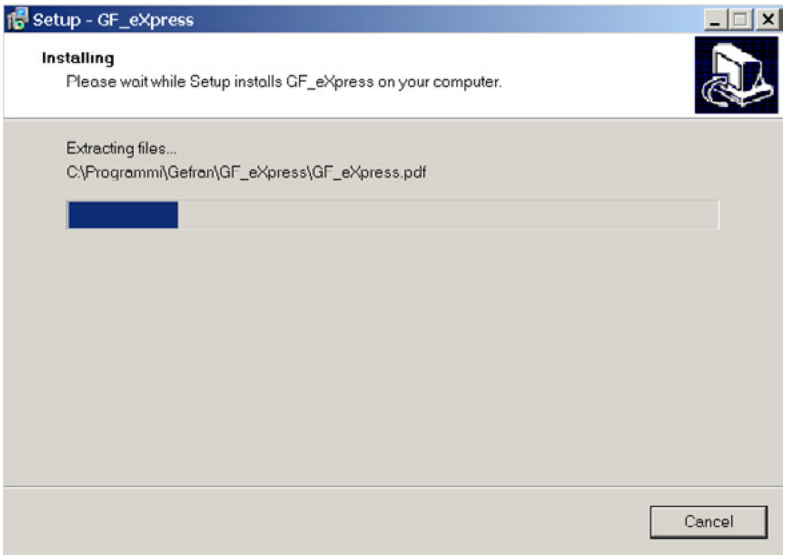
• Select the Start menu folder and click *Next* to proceed



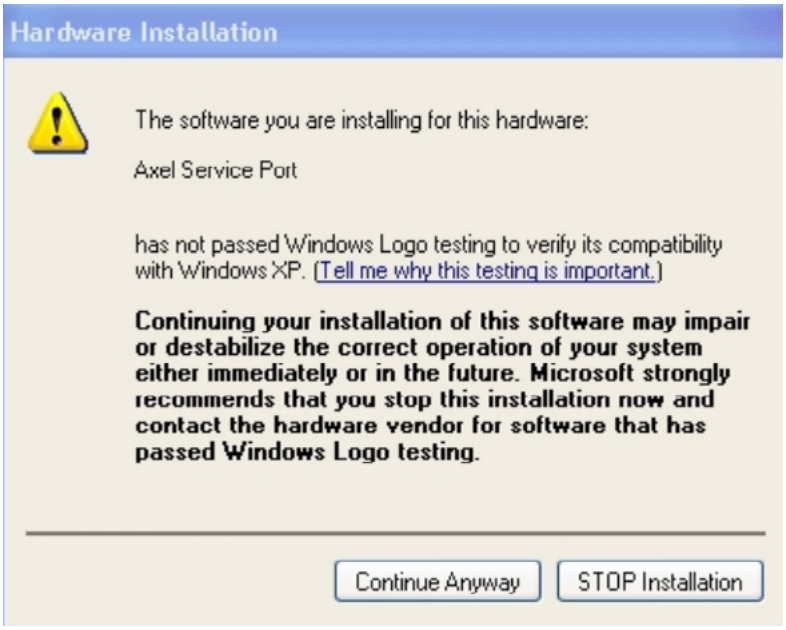
• Select the additional tasks you want to install (for example drivers for RS-USBX) and click *Next* to proceed



• Check the settings and click *Install* to proceed; the extract phase starts

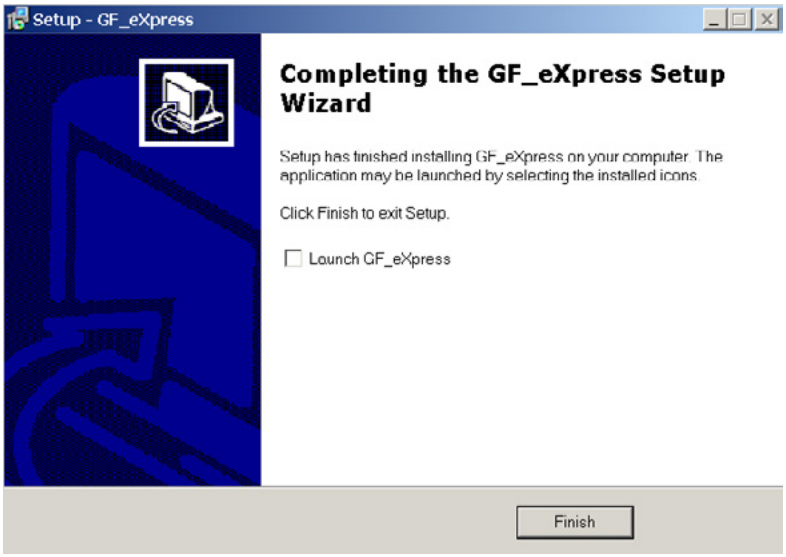


• *Only when install drivers for RS-USBX:* the following message may appear on PCs running Windows XP, when setup program begins to install the USB drivers:



• Ignore this message and continue with installation

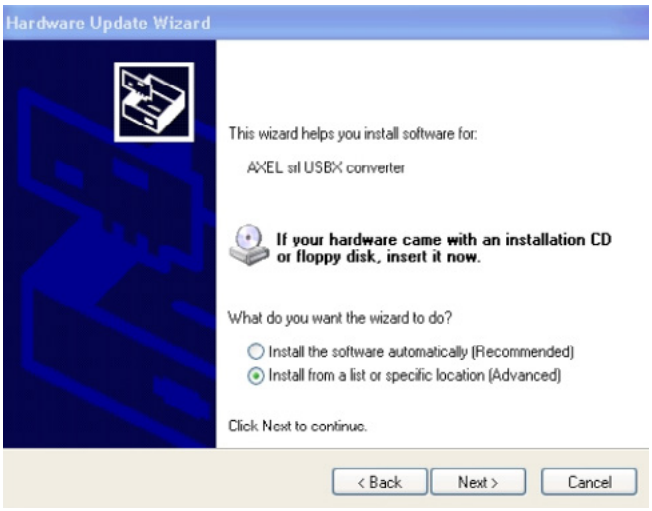
• At the end of the extract phase the last window appears:



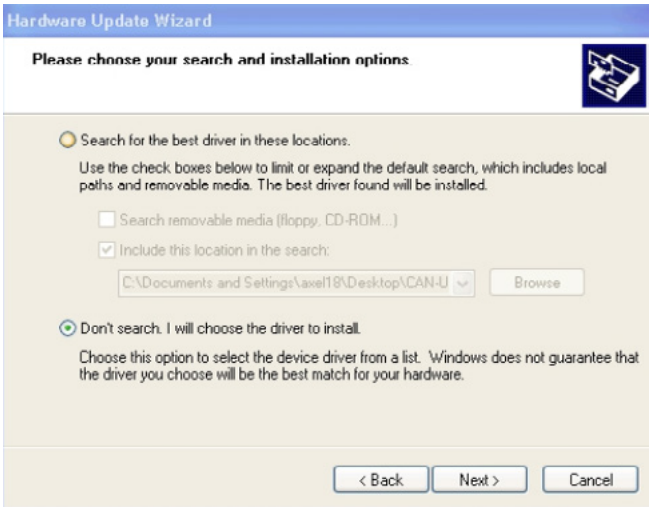
• Click *Finish* to close the setup program

Usage of RS-USBX with Windows Xp

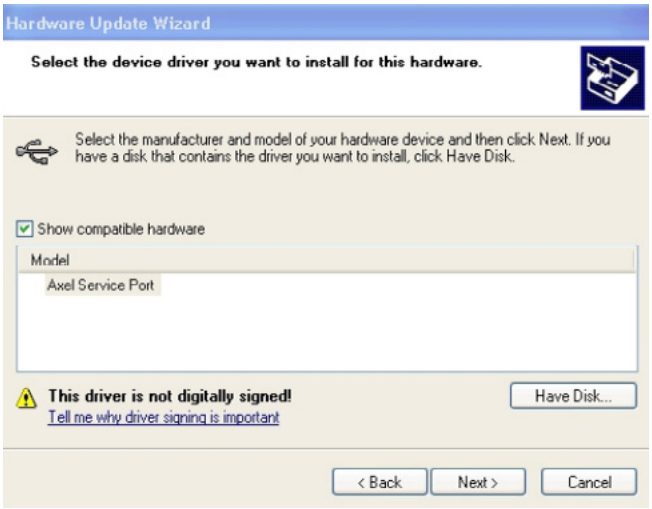
During the first usage of the interface on a specific USB port, it should be possible that a driver search message will appear. In this case follow the below procedure:



1. Choose *Install* from a list or specific location and click *Next* to proceed



2. Choose Don't search the driver and click *Next* to proceed



3. Select the compatible hardware (appears only one choice) and click *Next* to proceed

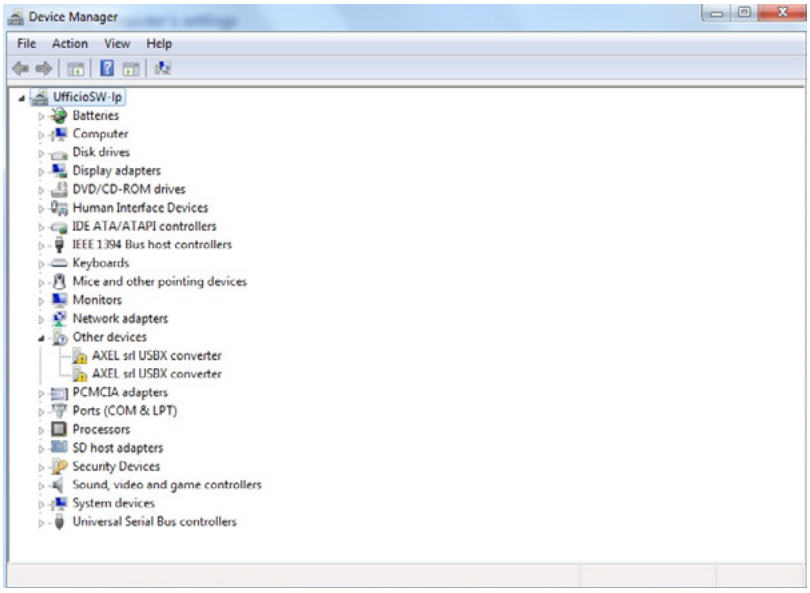
4. Ignore the Windows Logo message and click Continue to proceed

5. Click *Finish* for complete the procedure
6. **IMPORTANT:** the procedure must be repeated twice because the RS-USBX has two different device drivers

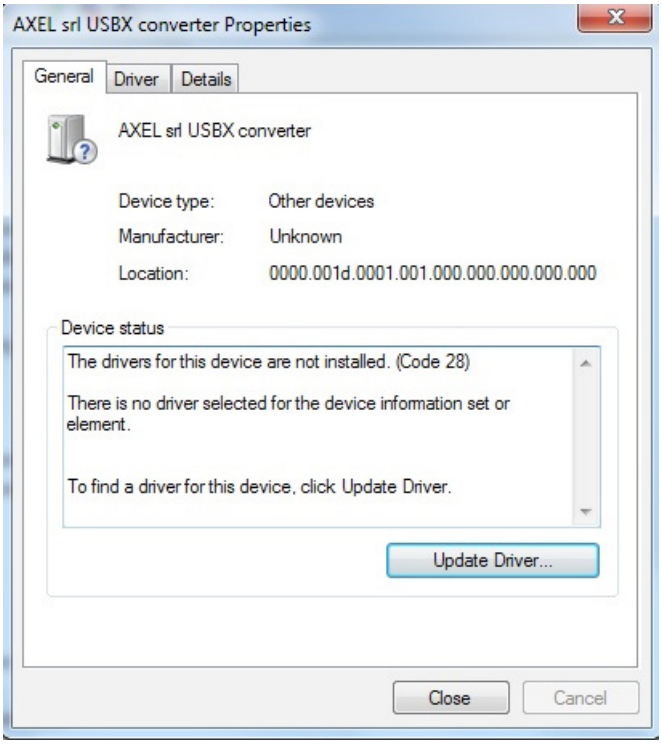
Usage of RS-USBX with Windows 7 64bit version

During the first usage of the RSUSBX interface on a specific USB port, the system could fail the automatic installation of the driver software. In this case follow the below procedure:

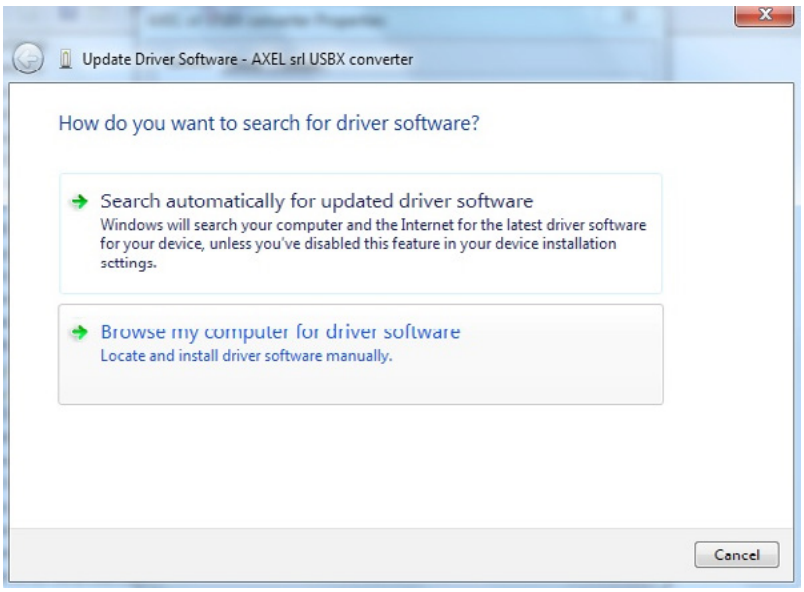
1. Choose *Device Manage*r from *Control Panel*



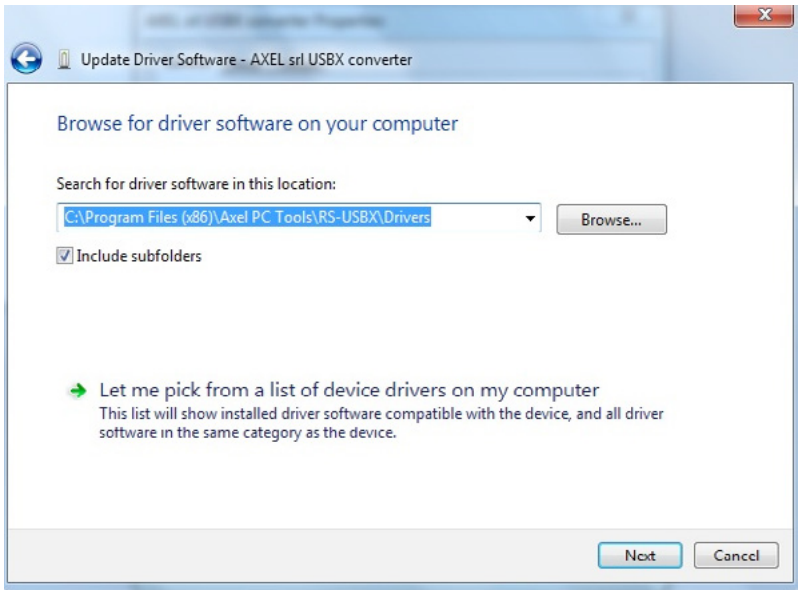
2. Click on the first *Axel srl USBX converter* in *Other devices* to proceed



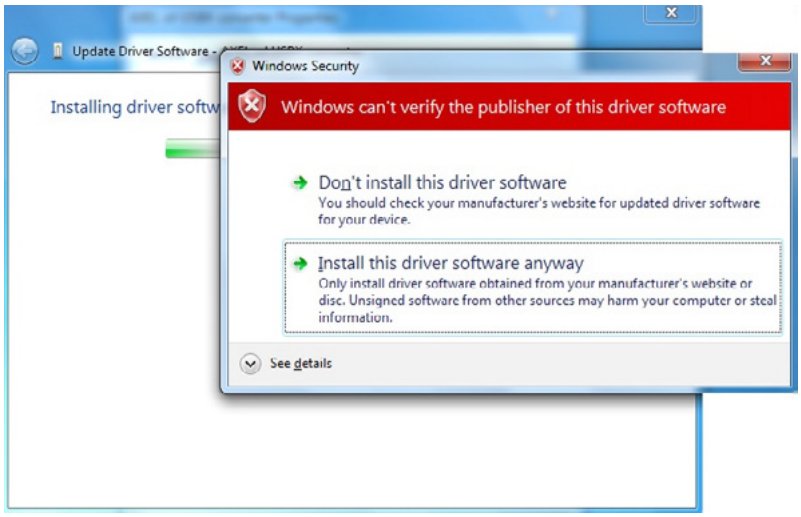
3. Click *Update Driver*… to proceed



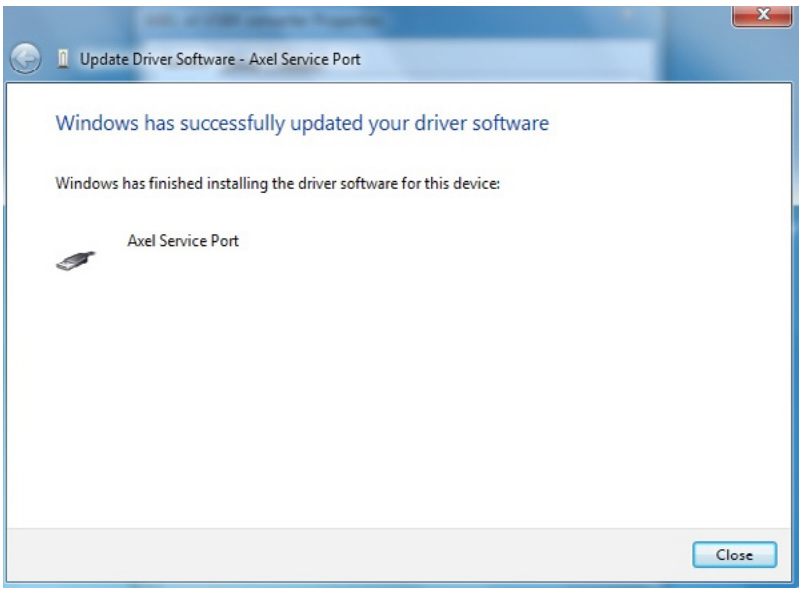
4. Click *Browse my computer for driver software* to proceed



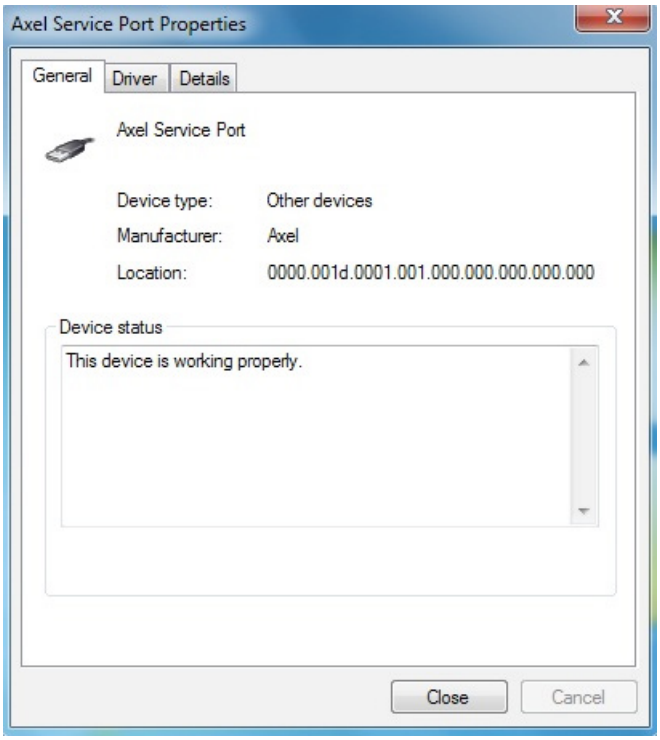
5. Click *Next* to proceed



6. Ignore the Windows Security message and click *Install this driver software anyway* to proceed



7. Click *Close* to proceed

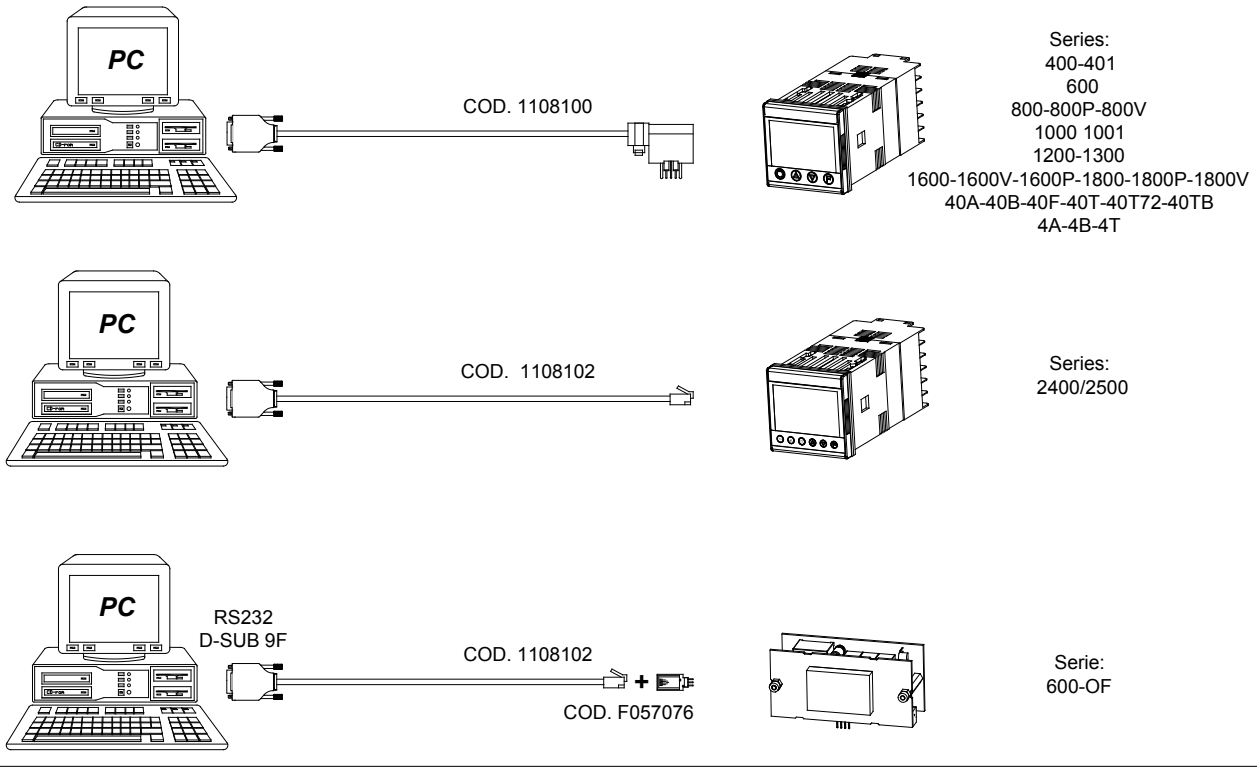


8. Verify in the Device status box the device is working properly; click *Close* for complete the procedure
9. **IMPORTANT:** the procedure must be repeated for the second *Axel srl USBX converter* in *Other devices* because the RS-USBX has two different device drivers

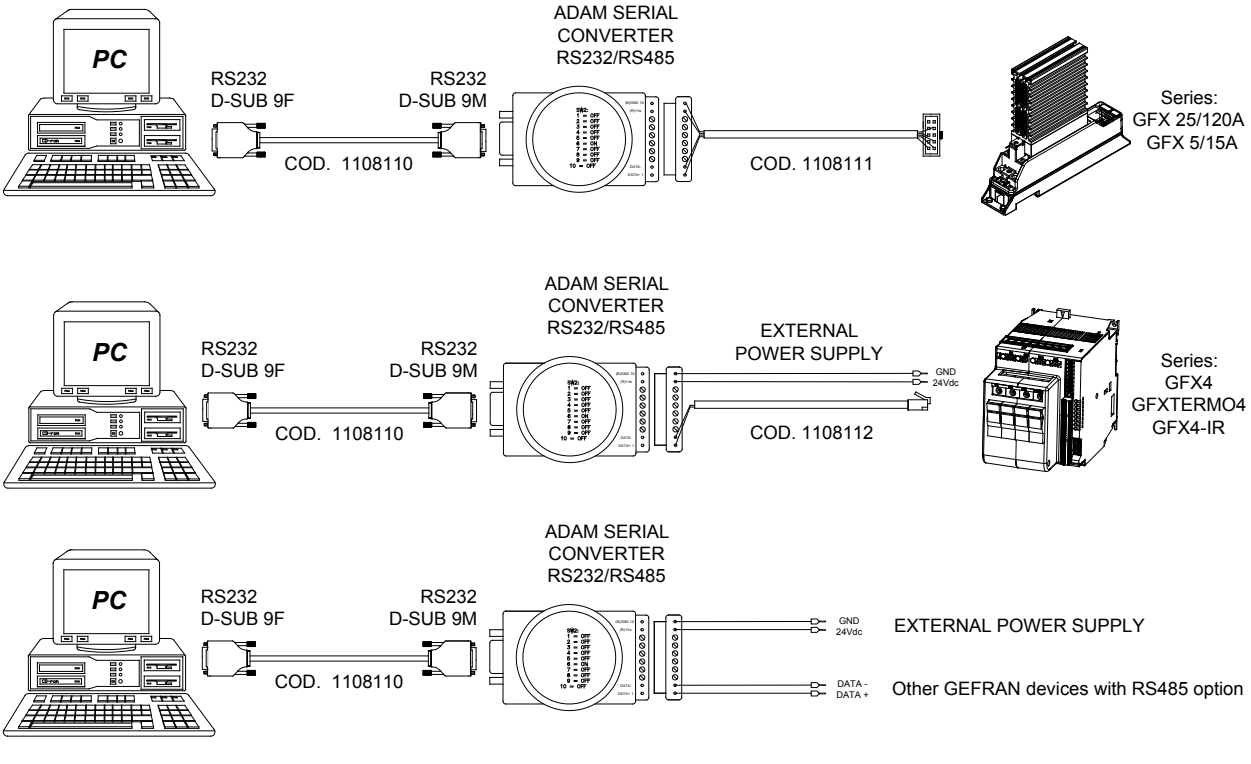
Wiring with Gefran instrumentation

The connection between PC and Gefran instrumentation is possible by using the interface kits and wiring called GF_eXK-x-x-x.

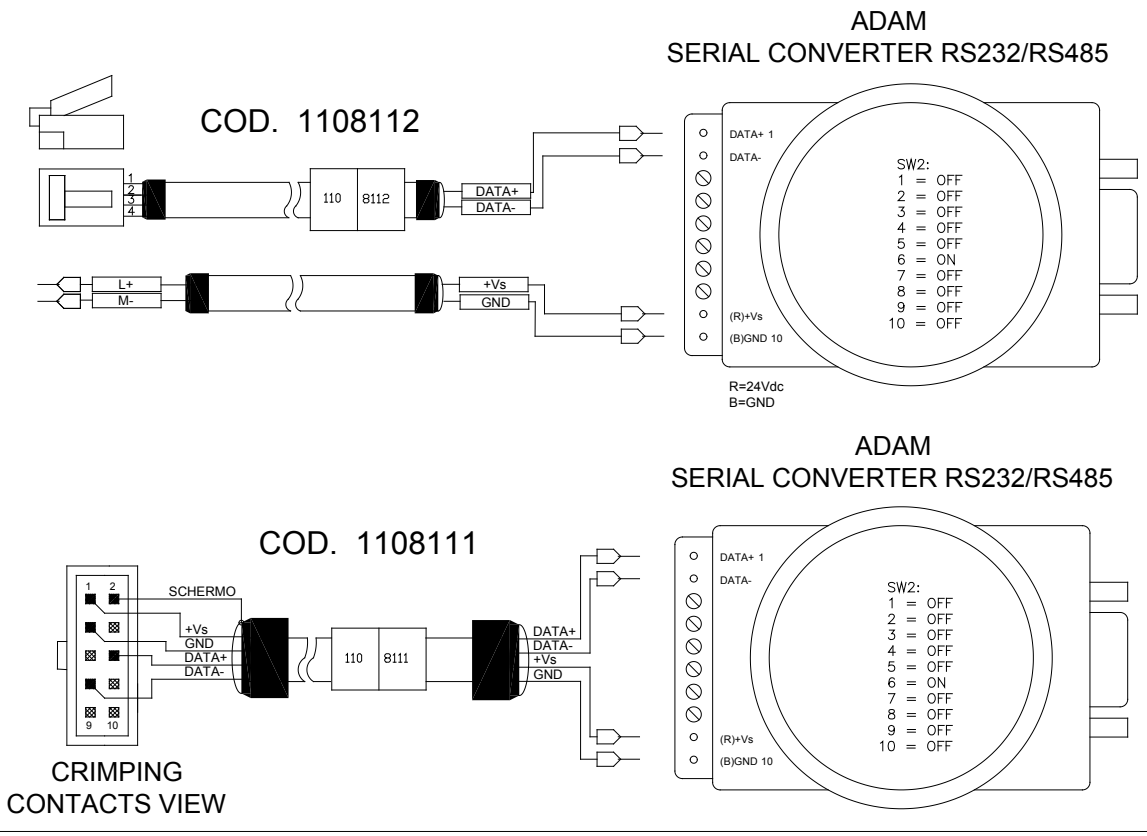
GF_eXK-0-0-0: RS232 (PC side)-TTL (instrument side)



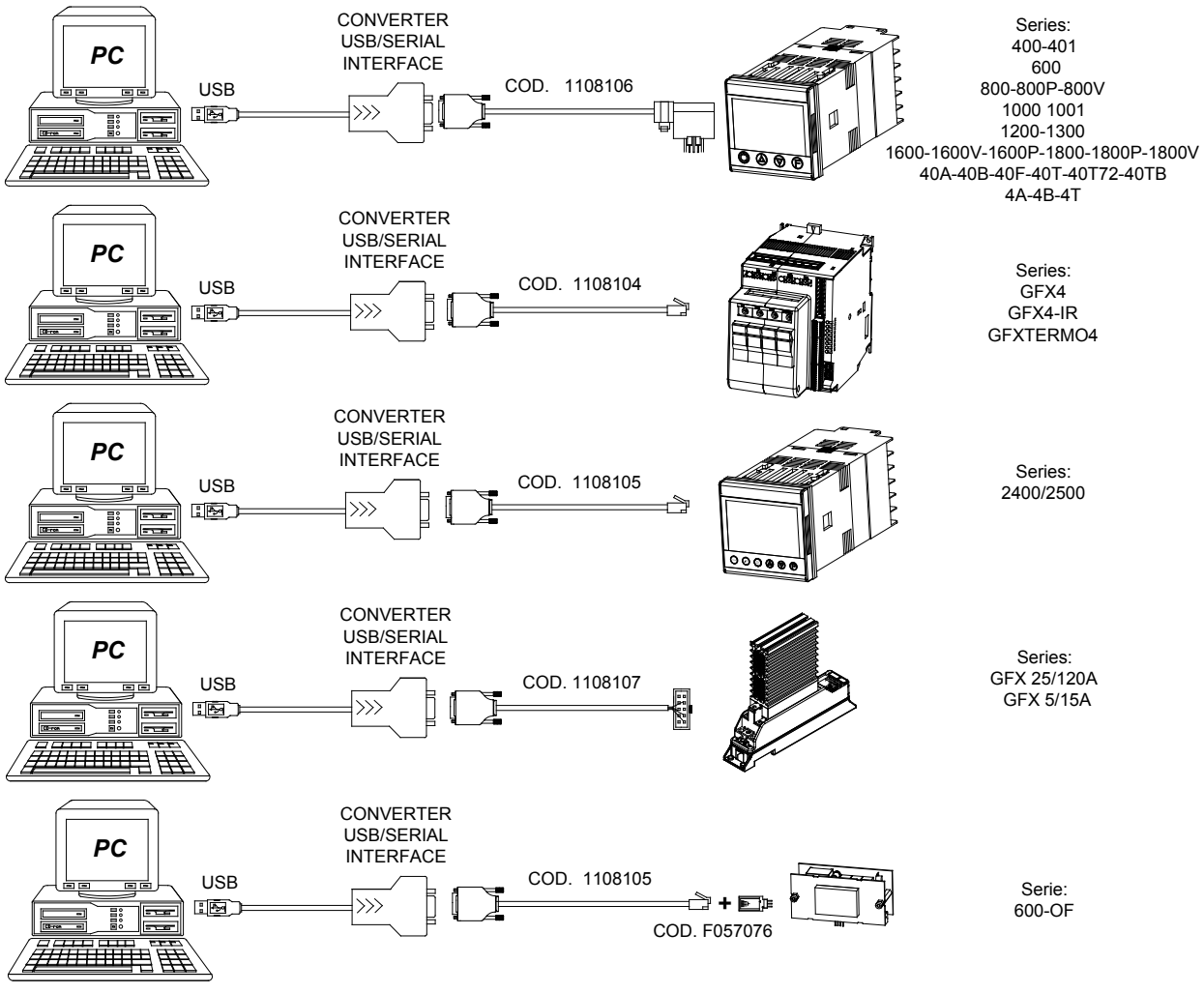
GF_eXK-1-1-0: RS232 (PC side)-RS-485 (instrument side)



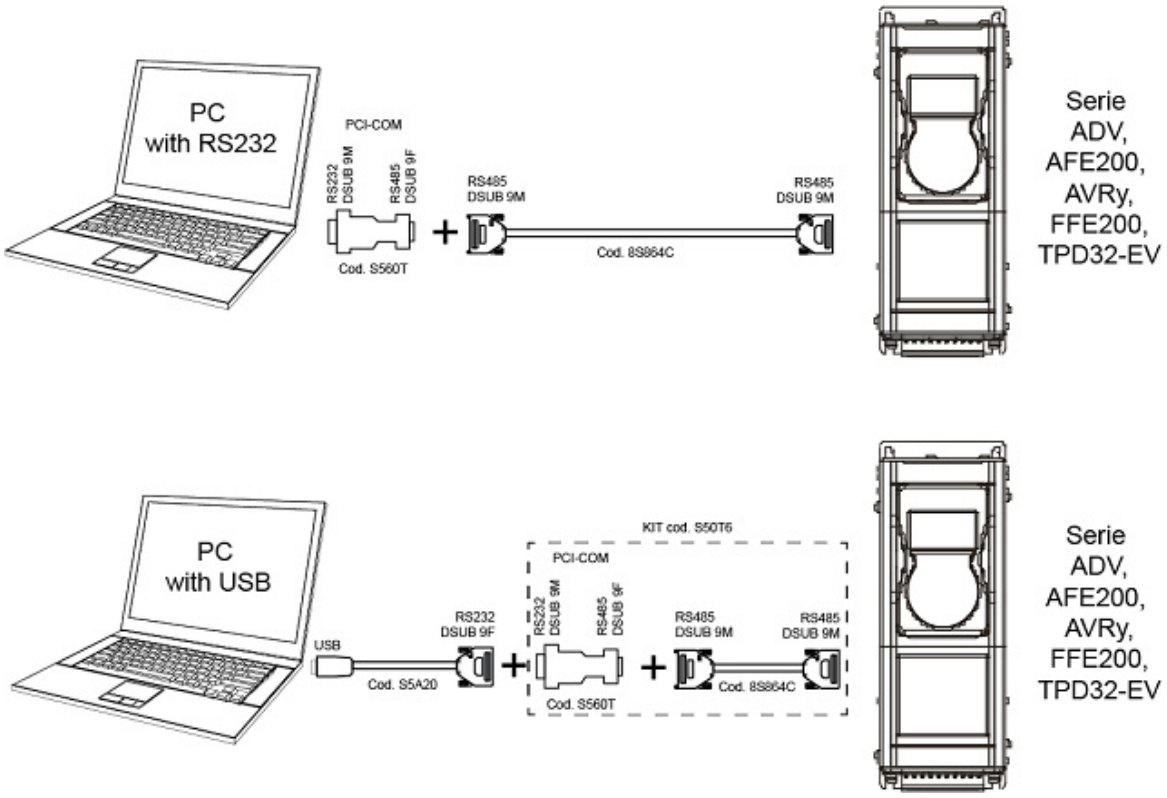
GF_eXK-1-1-0: wiring details



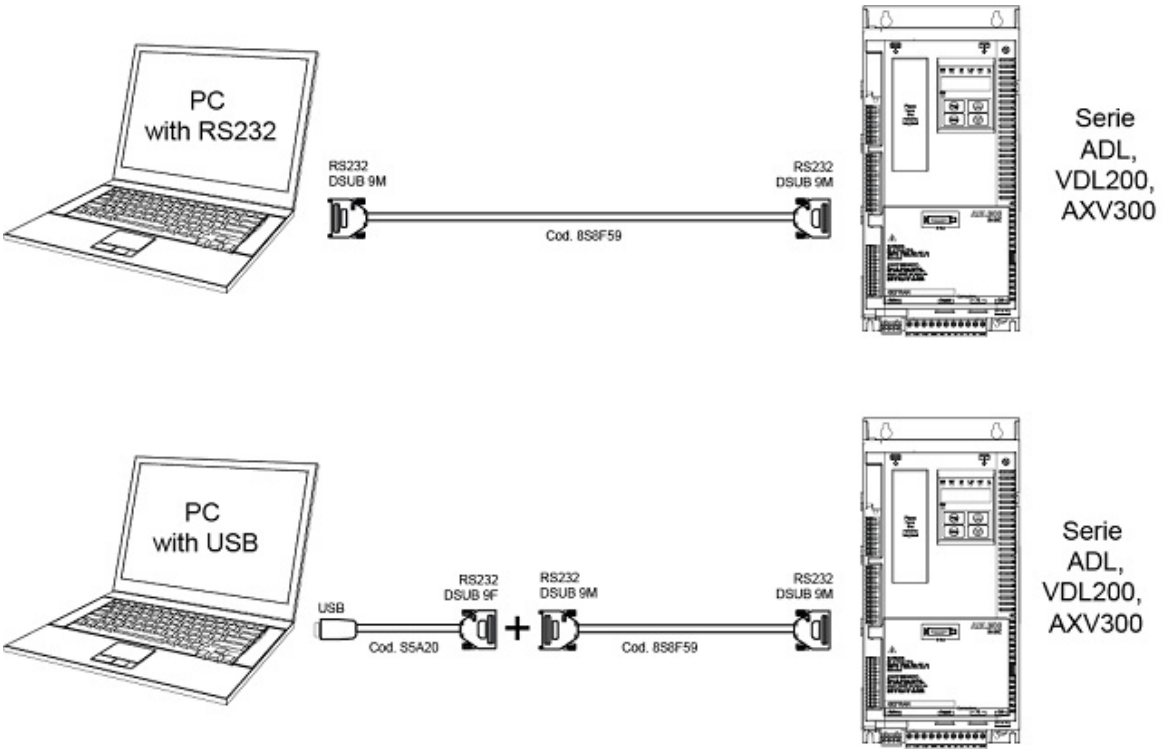
GF_eXK-2-0-0: USB (PC side)-TTL (instrument side) and USB (PC side)-RS-485 (instrument side)



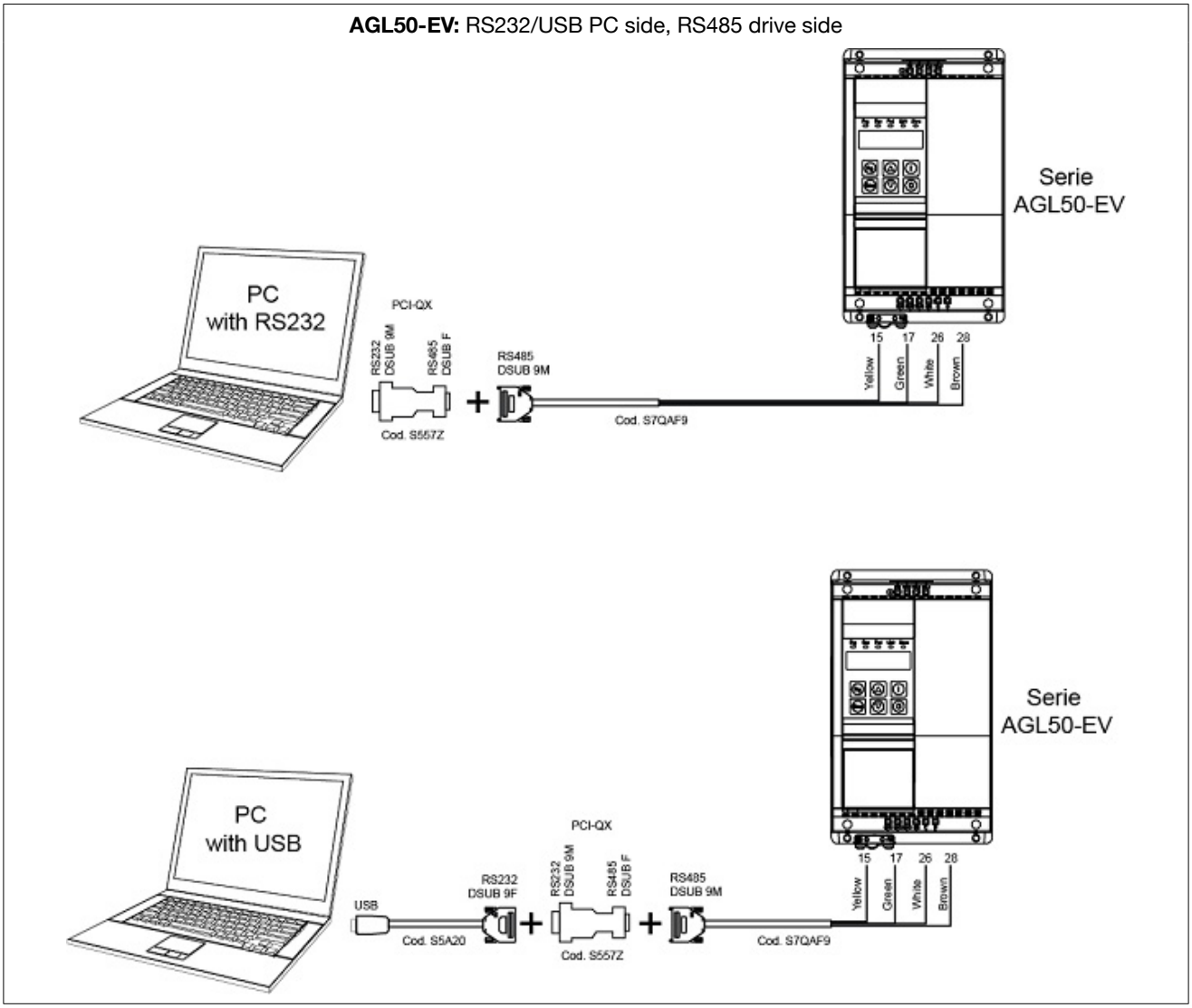
ADV, AFE200, ADP200, AVRy, FFE200, TPD32-EV: RS232/USB PC side, RS485 drive side



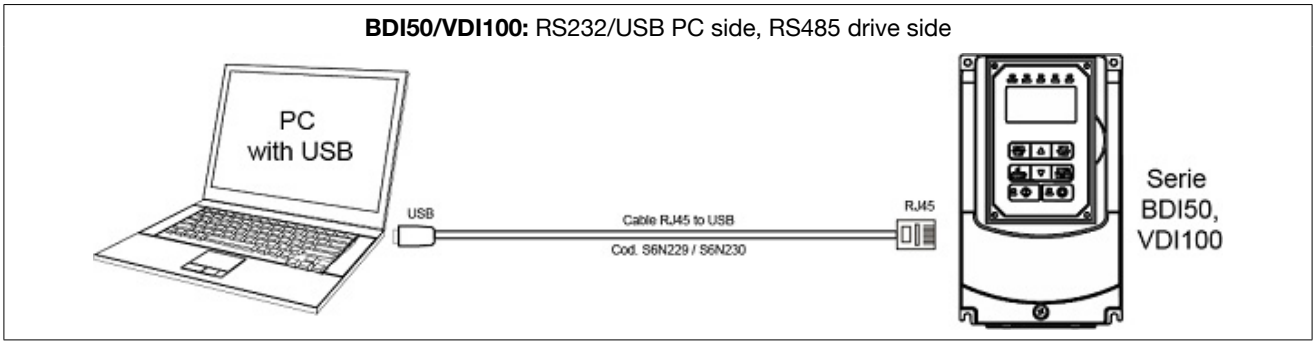
ADL, VDL200, AXV300: RS232/USB PC side, RS232 drive side

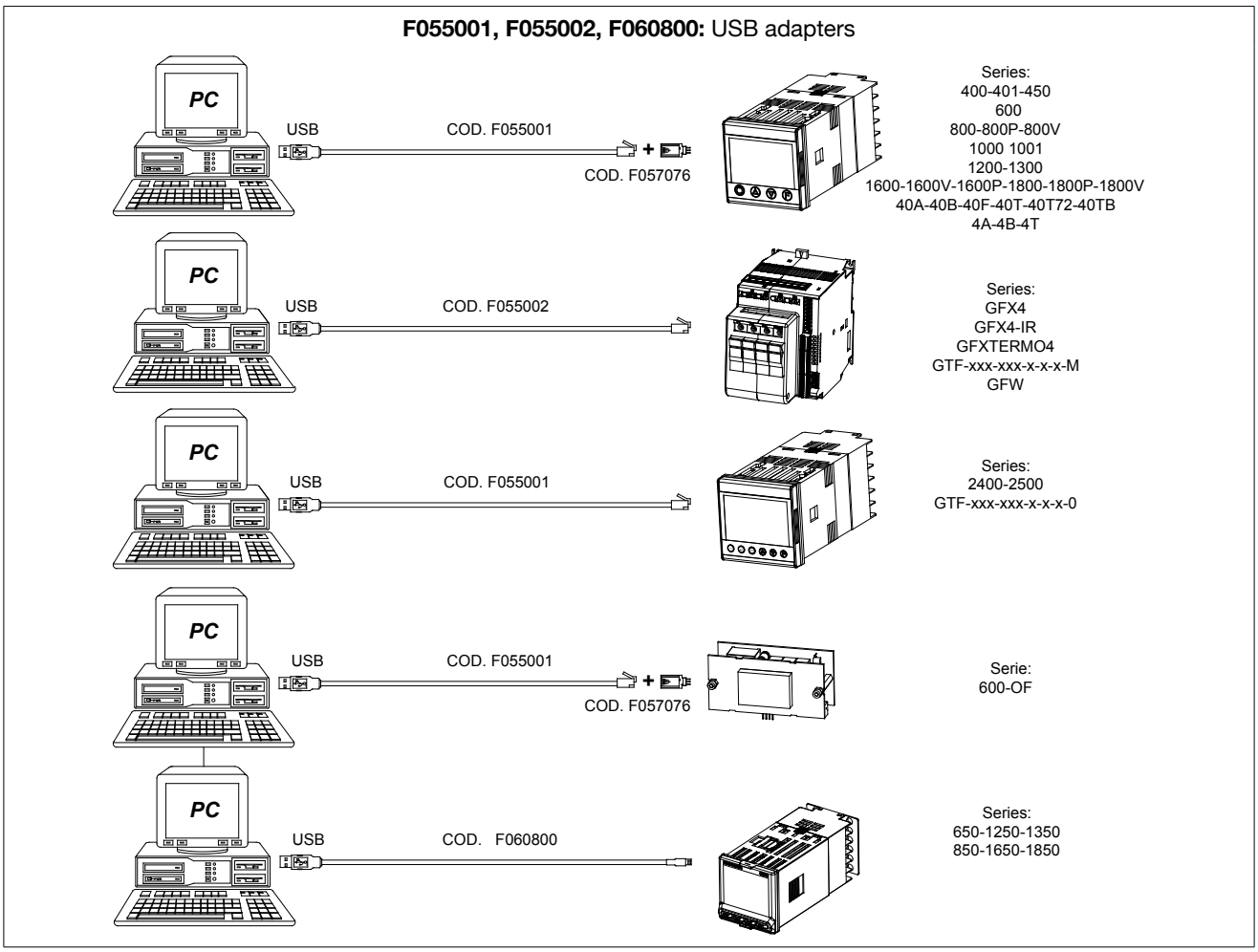


AGL50-EV: RS232/USB PC side, RS485 drive side



BDI50/VDI100: RS232/USB PC side, RS485 drive side





In order to use USB adapters, showed in the previous picture, is necessary:

1) Install related Driver (available on www.gefran.com site into download section of GF_eXpress configurator)

2) Check COM port number assigned to the USB adapter into : Control Panel, Device Manager,... (see picture below)

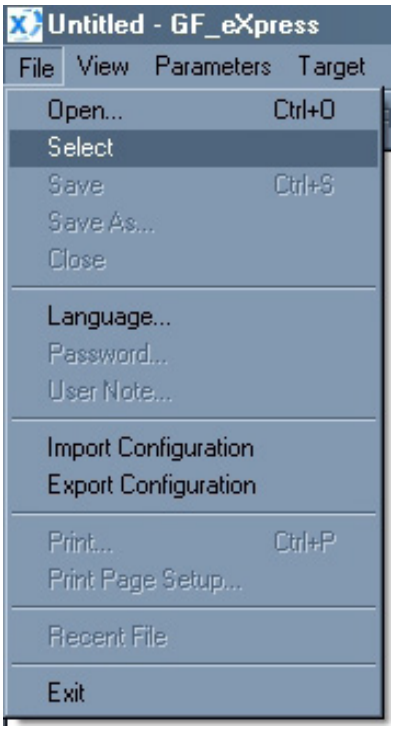
WORK SESSION

To work with the GF_eXpress you have to:

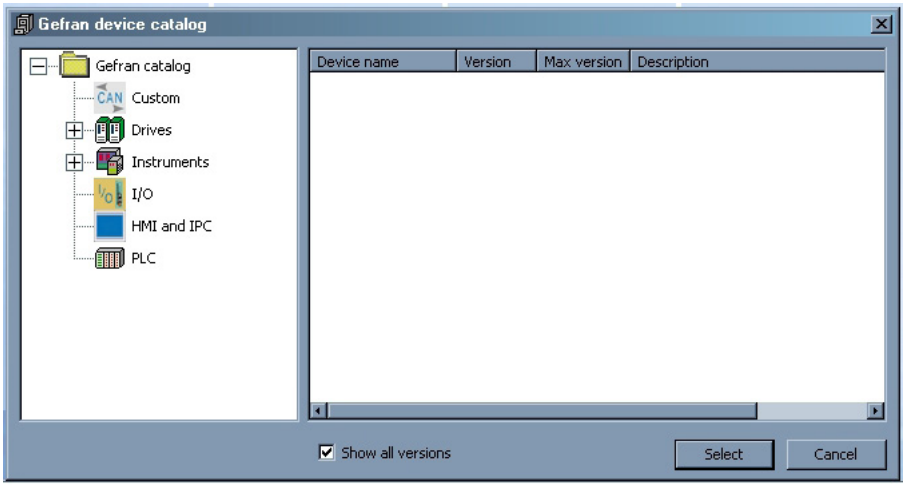
- Create a new configuration or use a previous session by opening a file with extension ".gfe"
- Properly configure the communication options (protocol type, COM port, baud rate)

There are three ways to start a work session:

- Open a parameters file with extension "gfe" via the "Open" command on the "File" menu. Do this every time you want to work with a previously saved configuration.
- Create a new configuration with "New configuration" on the "File" menu.



This command opens the "Gefran devices catalogue" window, which lets you choose a device from a list of devices grouped by category



Selecting a device displays the main HTML page of the device.

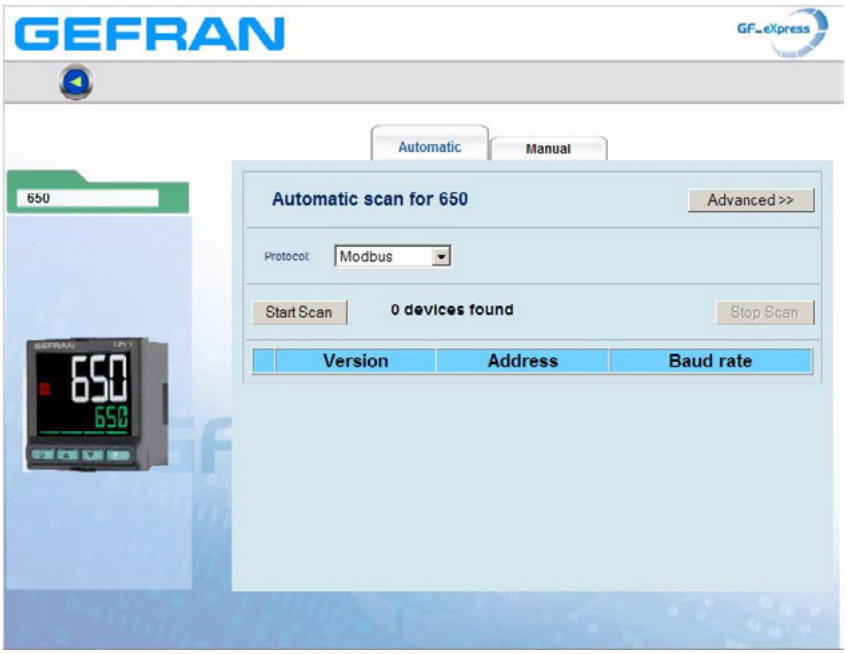
- Use wizard mode to create a new session. To do this, first click the appropriate device category and then the device needed

Device access

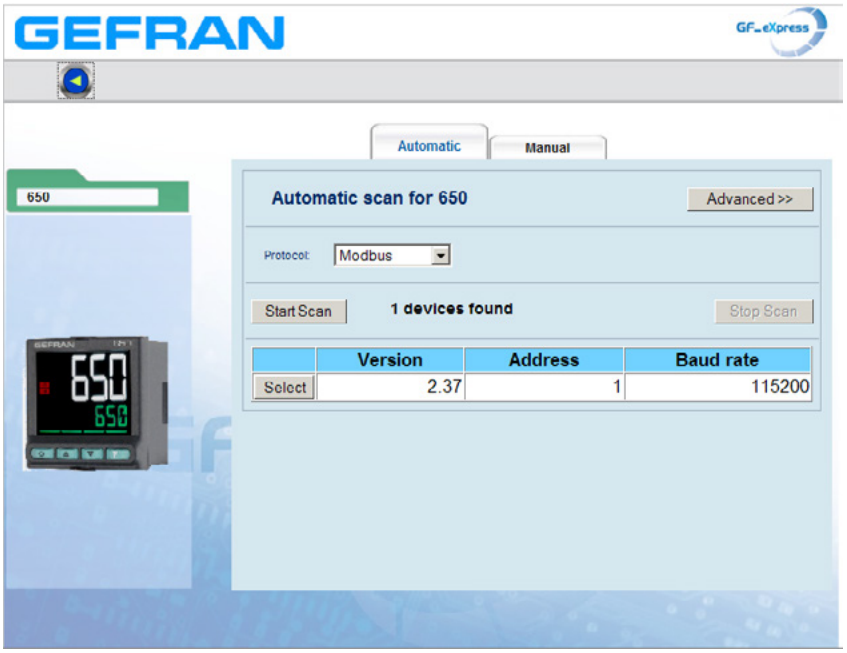
Once the device is selected, a screen will appear with two tabs:

- Automatic (default)
- Manual

to select the mode to start communications with the target (see following illustration).



When started GF_eXpress tries to reconnect to the last hub it communicated with (the connection parameters are saved whenever the configurator closes). If it succeeds, the following screen appears:

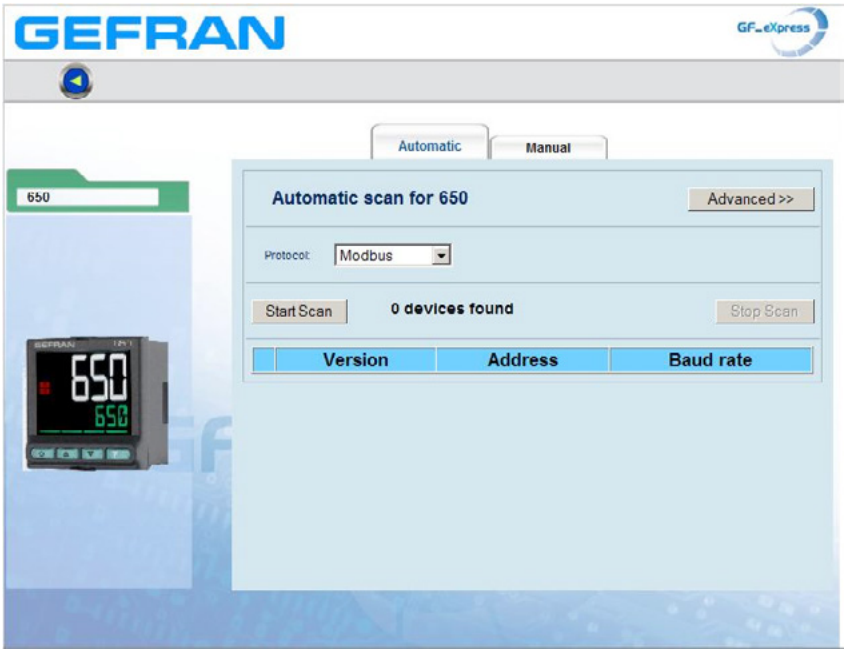


Indicating:

- **Version:** FW version found on the connected target
- **Address:** Modbus hub address
- **Baud rate:** communication baud rate

Select the Select key to establish GF_eXpress communications with the connected target, starting to exchange data with the latter.

Should the connected target be a different one (different connection parameters), the following screen appears:



At this point, the user can decide to:

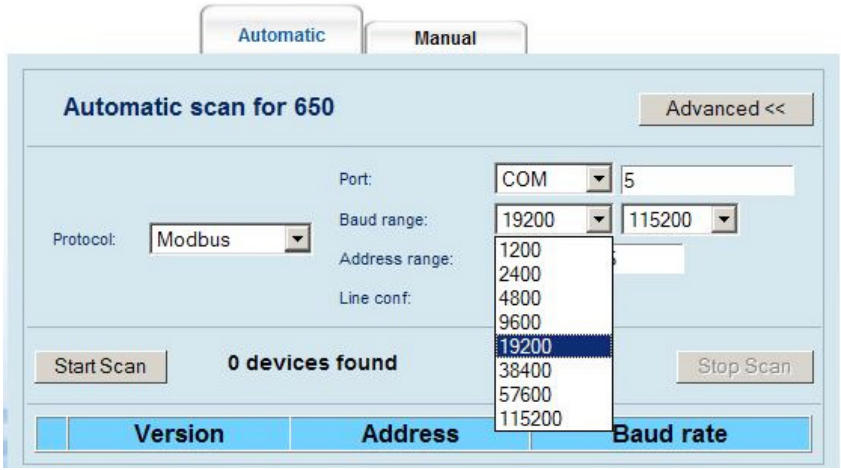
- Run an automatic scan of the network
- Run a manual connection

Automatic Mode

In Automatic mode, when the Start Scan key is pressed, GF_eXpress scans all devices connected to the selected port (settable by pressing the Advanced key)

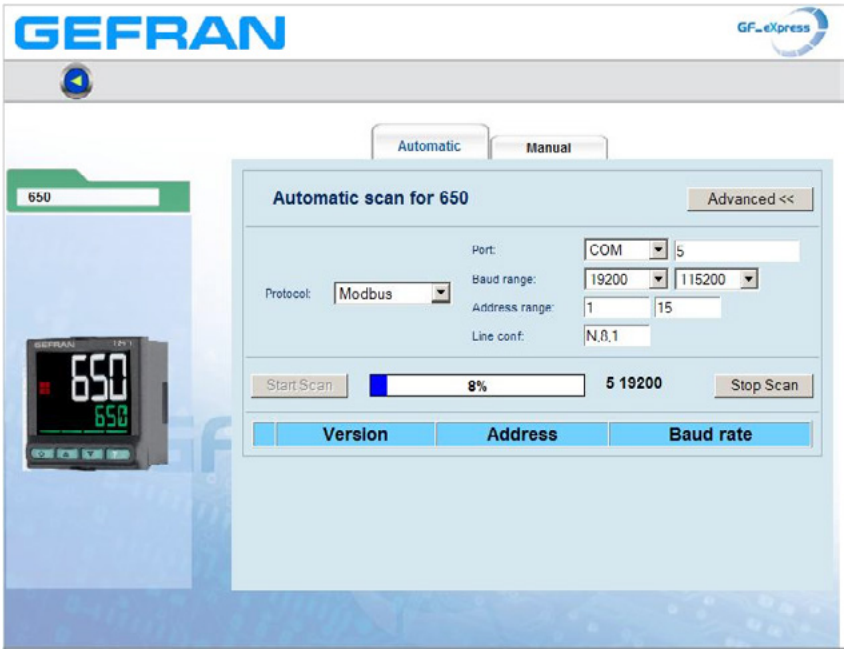
using:

- all foreseen baud rates between a minimum and maximum (limit values settable by pressing the Advanced key)
-

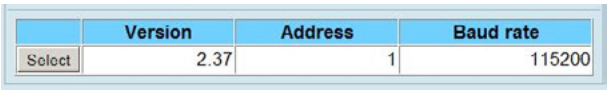


- all hubs between a minimum and maximum (limit values settable by pressing the Advanced key)
- Databit, Parity and Stop bit settable by pressing the Advanced key

During the scan, a scroll bar will appear with the percent progress next to the baud rate and number of the hub in use (see following illustration)

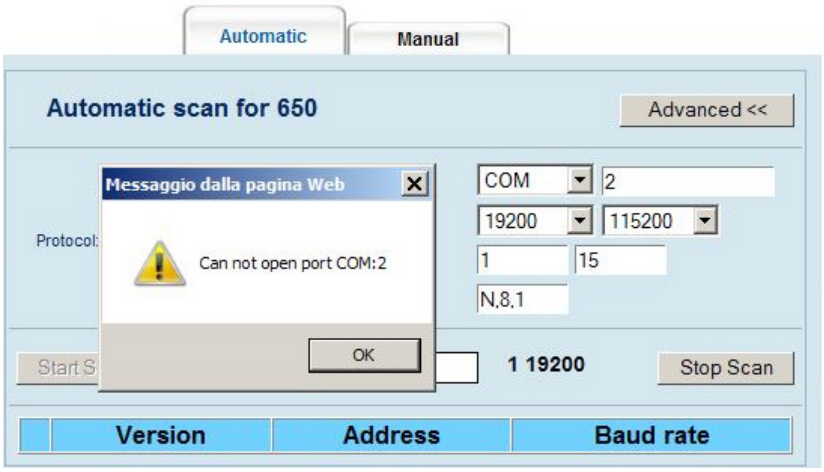


All devices found during the scan are listed in the table



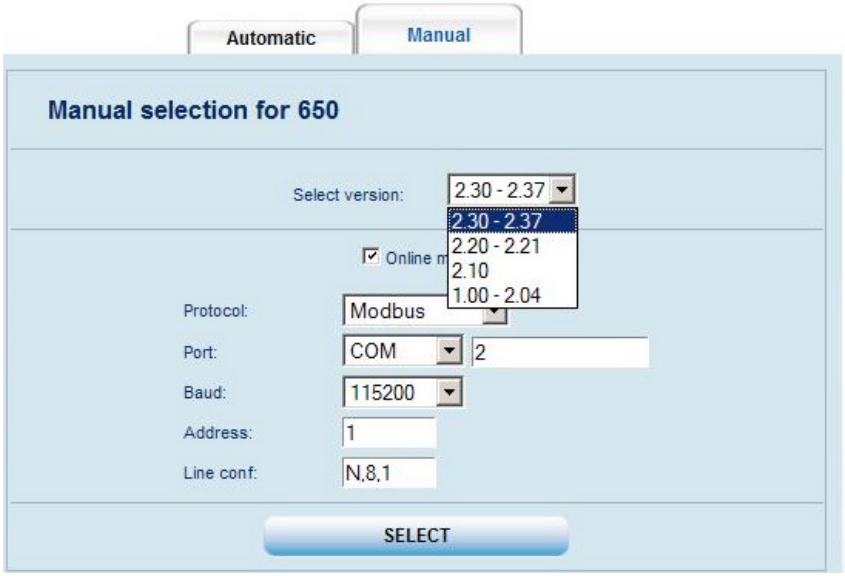
If no hubs that meet the scanned network parameters are found at the end of the scan, message **“0 devices found”** will appear.

If the set port is not available, the following warning screen will appear:

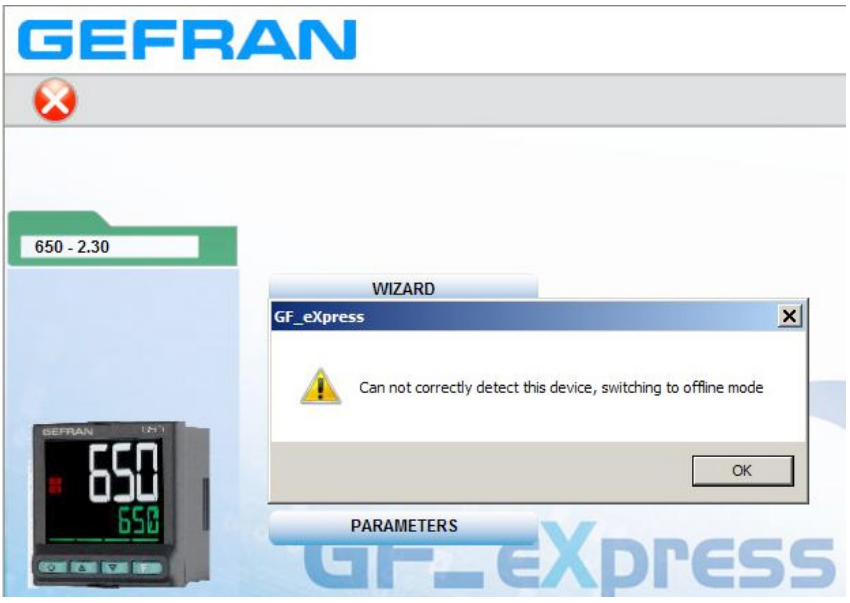


Manual Mode

By selecting Manual mode, the user can directly set the value of the parameter set to use to start exchanging data with the target in the FW version.

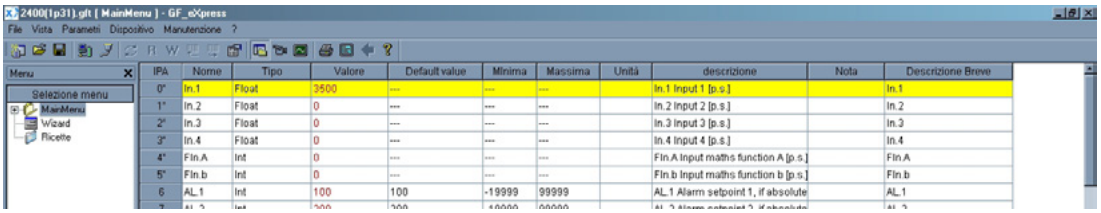


Once the value of the various variables is set, select Online mode and press the “SELECT” key to have the configurator start exchanging data with the target.
Should the target not meet all set parameters, the following screen will appear.



PARAMETERS FILE

After starting the GF_eXpress work session by opening the appropriate parameters file, you can display the information for the parameters.
Each parameter is defined by the following fields:

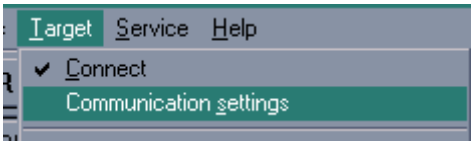


- IPA: identifies the parameter
- NAME: mnemonic name used to identify the parameter
- TYPE: type of parameter datum (ex.: int, enum...)
- VALUE: current parameter value
- DEFAULT VALUE: parameter default value
- MIN: minimum parameter value
- MAX: maximum parameter value
- UNIT: unit of measurement for the parameter value
- DESCRIPTION: explicit description of the parameter
- NOTES: optional information on the parameter
- BRIEF DESCRIPTION: contains a brief description of the parameter.

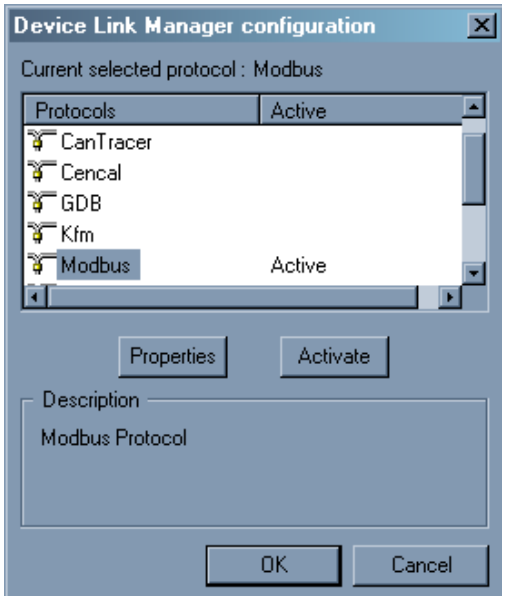
GF_eXpress parameters can be organized in different menus; this lets you display the complete list or a subset of the parameters.
The user can change the values of only the read/write parameters.
If one or more parameters are changed and you want to close the work session, GF_eXpress automatically asks if you want to save the configuration in a gfe file.

COMMUNICATION

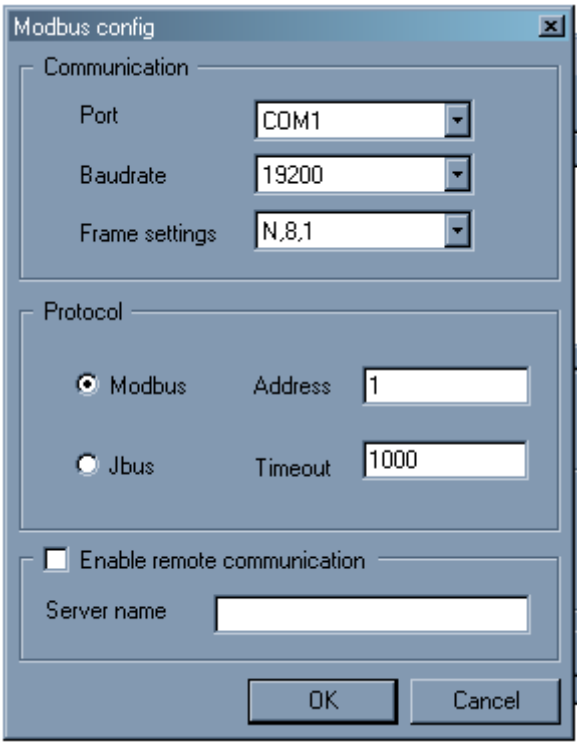
Communication with the device takes place via serial or CAN line. To communicate with the device, you need an appropriate serial or CAN adapter. Communication with the device starts every time the user opens a parameters file or creates a new configuration. The user can also enable or disable the connection via Connect on the target menu. When the connection is active, the item Connect is checked and the toolbar button is pushed.



The “Communication settings” command lets you select and define communication options. A window lets you select and set the specific protocol.



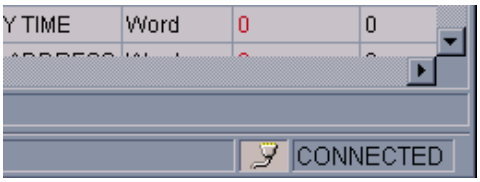
To activate a specific protocol, select the protocol and click “Activate”. Click “Properties” to enable the configuration window for the specific protocol..



Each protocol has specific default values, which may vary from device to device.
EXAMPLES :

Device	Protocol	Communication properties
XVY	Slink3	COM1, 38400 baud, no parity, 8 data bits, 1 stop bit, address 0, time out 1000
GFX4	Modbus	COM1, 19200 baud, no parity, 8 data bits, 1 stop bit, address 0, time out 1000

Note: To correctly activate communication with the device, the device address must be the address set in GF_eXpress. Once the right address is selected, the parameters have to be saved on the device flash to make the setting definitive. GF_eXpress displays every communication error in a message box containing the specific error code and its description. Communication status is shown on the right side of the status bar.



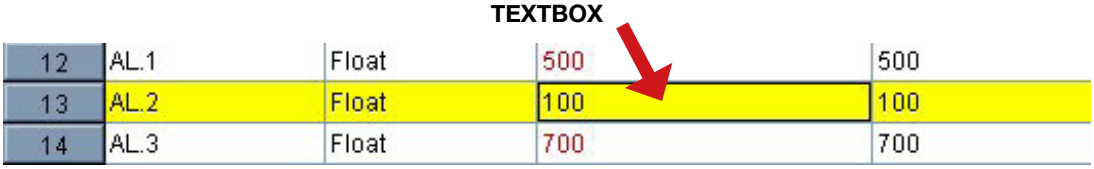
Parameter value

When a parameter value is not updated with the device value, it is displayed in red. It is assumed that parameters are not updated when:

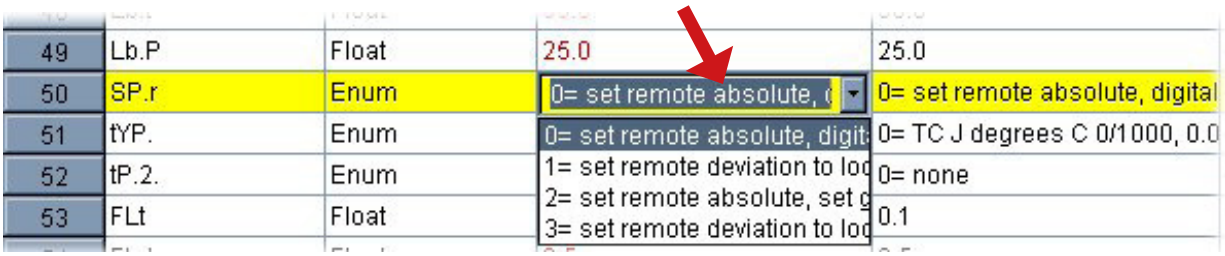
- they are just loaded after an “Open” procedure
- the user changes a value by editing it

It is assumed that the value is updated after a read or after a write procedure. A value can be changed via:

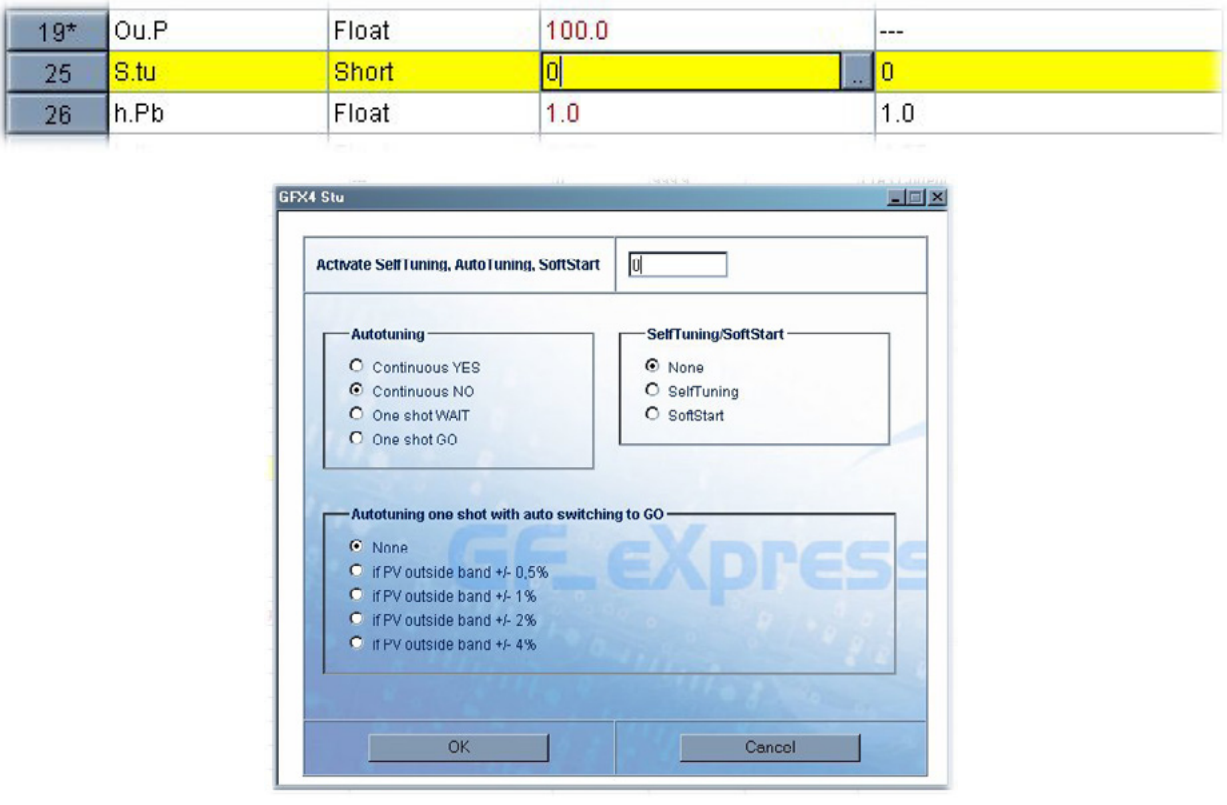
TEXTBOX



COMBOBOX

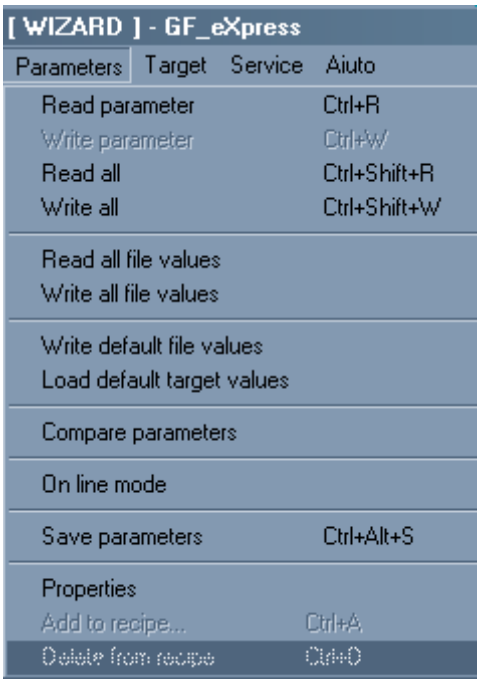


SPECIFIC FORMS (activated by specific button in grid)



Read and write commands

To send a parameter value to the device, the user can use the “Write parameter” command. The user can also read the current value of a parameter directly on the device with the “Read parameter” command. The read and write commands refer to the currently selected parameter on the GF_eXpress grid. You can also read and write all parameters or a set of parameters by using the “Read all” and Write all” commands. To read or write all device parameters regardless of the currently selected menu, use the “Read all file values” and “Write all file values” commands. By using “Write default file values” you can load the device with the default values contained in the parameters file. For some devices, you can use “Load default values,” which tells the device to load its default values (these values are contained in the device).

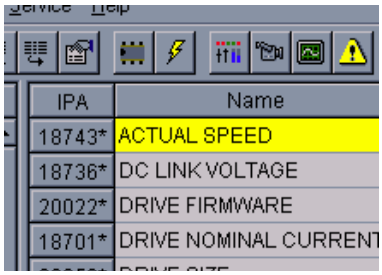


On-line mode

On-line mode, activated with the “Online” command, allows to GF_eXpress to update the value of every parameter displayed into active window (only those ones). Likewise, the parameter is immediately transmitted to the device each time the user changes the value of the parameter selected on the grid.

Read-only parameters

Some parameters are read-only and are called variables. Variables cannot be edited or written, and are marked by an asterisk next to the IPA of the parameter in the IPA field (see figure below).



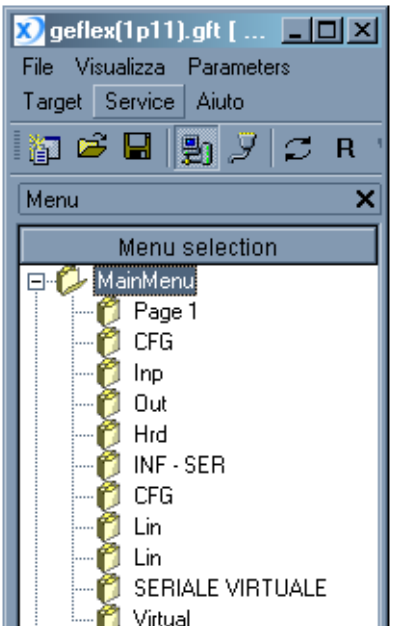
Saving parameters

Parameters are saved in the device flash via the “Save parameters” command. Saving in the flash is required in order to permanently save values in the device. For some devices, this command is inactive because Write also includes saving directly in the device flash.

MENU SELECTION WINDOWS

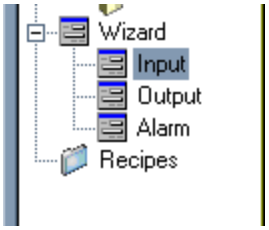
Parameter selection menu

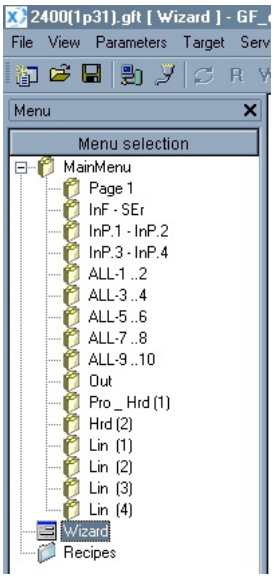
Parameters are divided into menus that are displayed in the Menu selection window and are organized in a tree structure for easy selection of parameter subsets.



Wizard selection menu

The Menu selection window can also contain a list of wizard pages and/or a list of recipes.

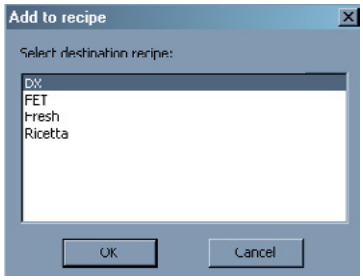




The wizard pages can be used to control some parameters as shown in the following figure:

Recipe selection

A recipe is a subset of parameters. This subset is a menu defined by the user.
To create a new recipe, just right-click the “recipes” menu, select “add”, and write the recipe name.
To insert a parameter in a recipe, just select the parameter from the grid and drag it to the recipe. As an alternative, you can select the parameter you want, select “Add to recipe” on the “Parameters” menu, and select the destination recipe as shown in the figure.

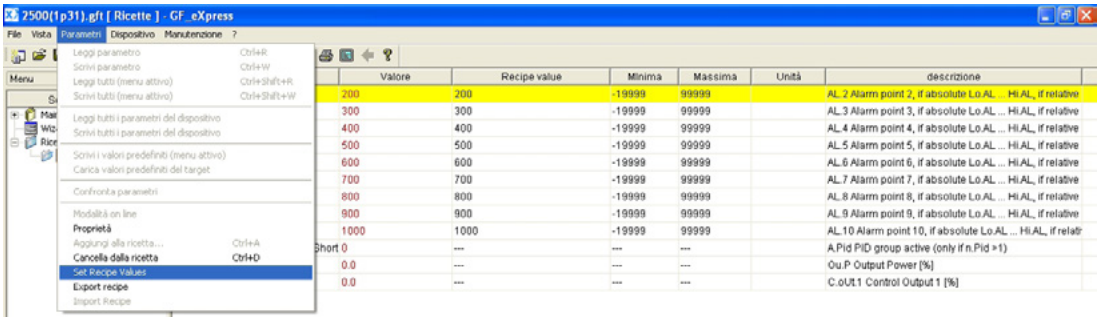


Import Export

On the “Parameters” menu, or by right-clicking the mouse on “Recipes,” you can import or export single recipes in separate files. The reference file has extension .GFR and contains the recipe parameters list with assigned values (see below).

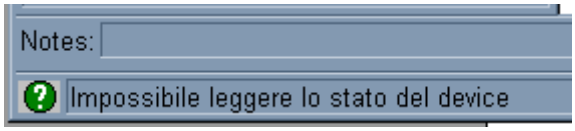
Set Recipe Value

The “Default Value” column takes the named “Recipe Value” in the recipes.
The “Recipe Value” column does not allow direct input. To change the value, you first have to change the value in the “Value” column and, on the “Parameters” menu, press Set Recipe Values, which copies the value from the “Value” column.
As opposed to the “Value” column, which is changed after read/write operations, the “Recipe Value” column is never changed. In this way, the recipe value is protected against any accidental changes..



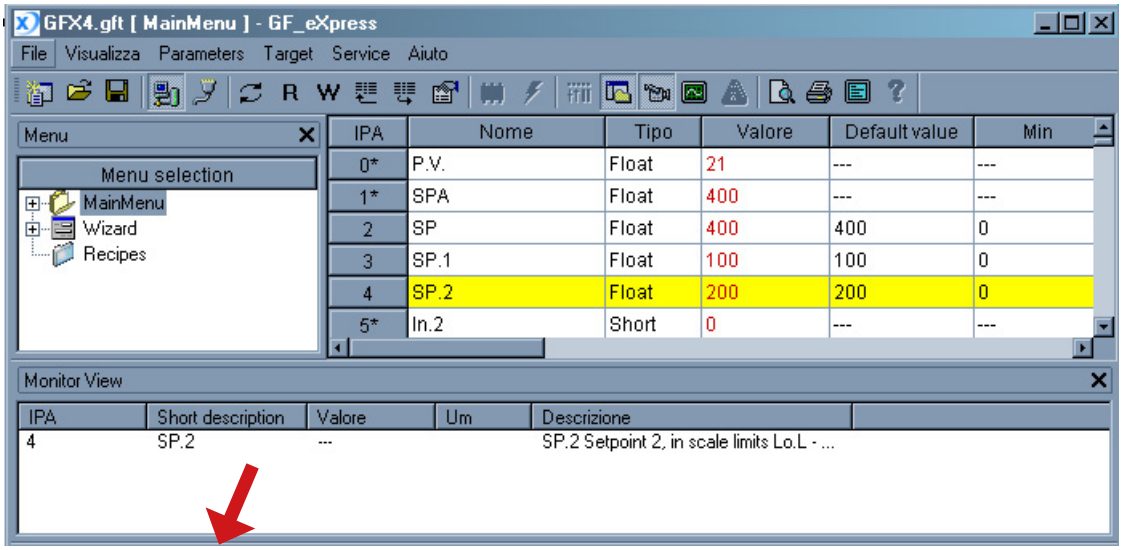
ALARMS

The current device status (normal work or alarm) is displayed on the right side of the status bar.



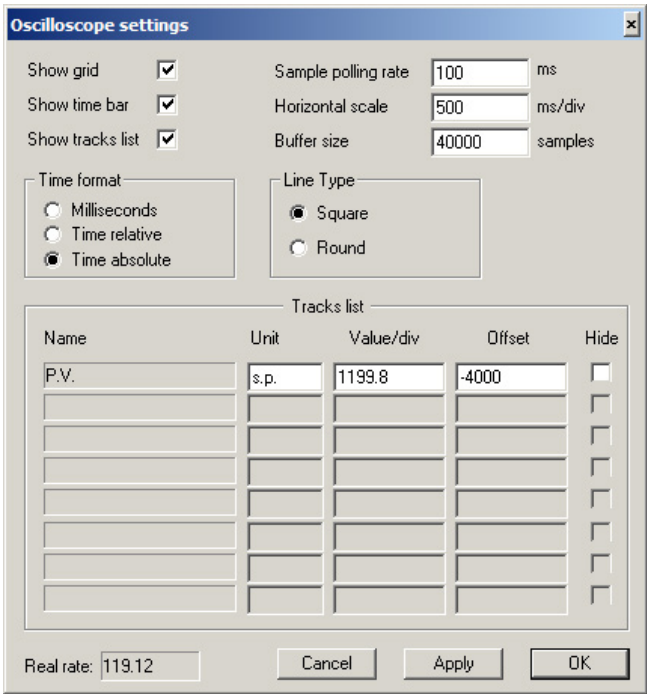
MONITOR WINDOW

The monitor window displays the value of the current parameter (or parameters). The value displayed in the monitor window is constantly updated with the current device value. The user can insert the required parameter in the monitor window by selecting it and dragging it from the parameters grid.

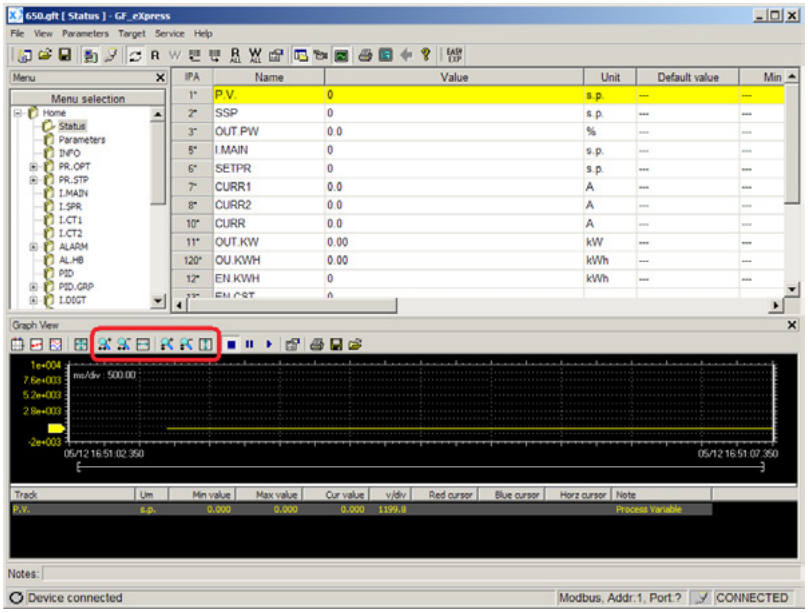


GRAPHIC WINDOW

The graphics window is a tool that displays the graphics flow of some parameter values. The parameters to be displayed can be dragged from the parameters grid to the graphics window. A track is assigned to each parameter; each track has a different colour. A maximum of 8 tracks can be displayed simultaneously.
Each record has a maximum number of samples available (identical for all variables), settable from a minimum of 500 to a maximum of 100,000. Once this limit is reached, the first samples are overwritten by new ones. Settings for the graph can be set in the “Oscilloscope settings” dialog window using the icon

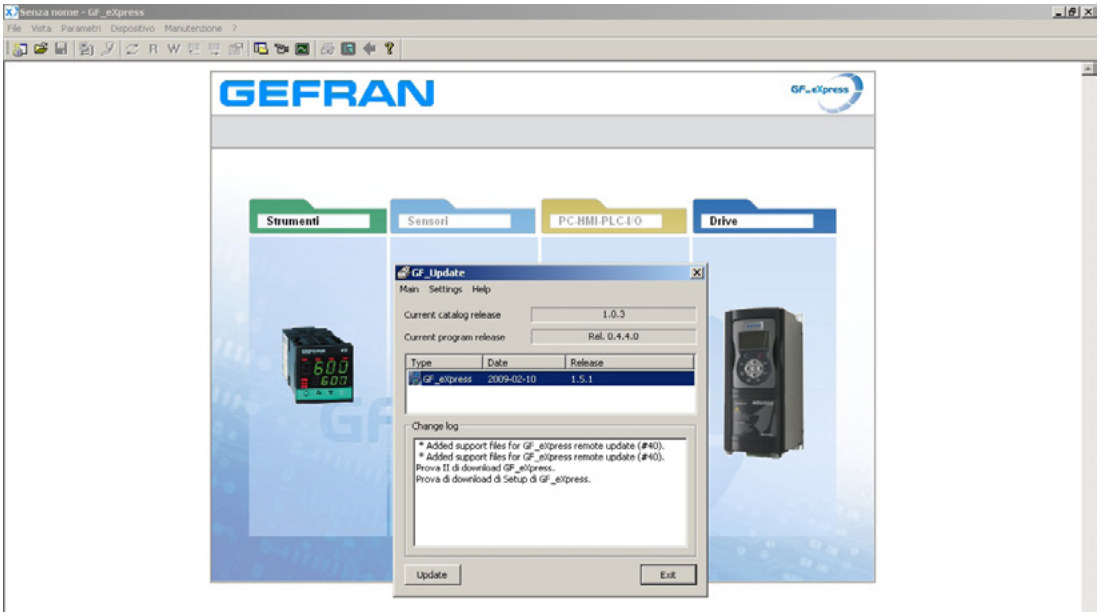


The oscilloscope window also has a series of viewing utilities such as zoom and scale.

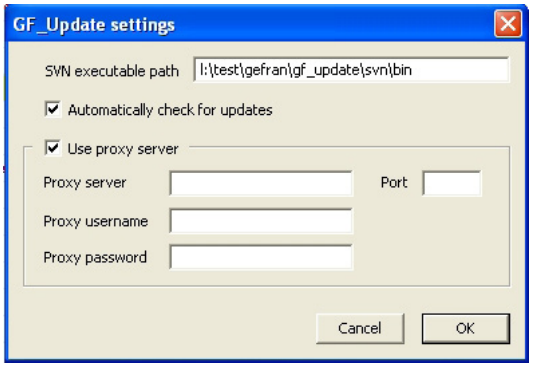


REMOTE UPDATE

By default, remote updating of the program starts automatically when the software launches.
To start it manually, press “?” on the menu and launch “Check for updates.”
GF_Update will check for updates on the Gefran website and will display any new versions of the catalog and software in the window.



To update the program and the catalog, select the update and press the “Update” button.
The Change Log window lists the changes included in the new version.
You can deactivate automatic updating by unchecking “Automatically check for updates” on the “Connection Settings” menu in “Settings” and manually setting any network settings for the proxy. On the first startup, any such settings will be automatically imported by Internet Explorer.

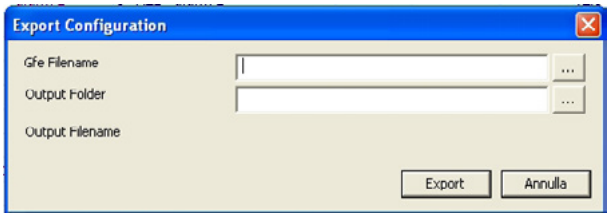


In case of problems with the remote updating of Catalog or GF_eXpress, it is possibile proceed with a manual updating following these steps:

- From Windows Control Panel uninstall the programs:
  - Catalog
  - GF_eXpress
  - SetIpTools (if installed)
- Verify that the folder where Catalog and GF_eXpress were installed (eg c: \ Program Files \ Gefran) is empty; if not execute the backup and then delete them
- Delete, if exists, the GF_EXPRESS.ini file in c: \Documents and Setting\User\ Application Data
- Download from **www.gefran.com** the setup files of Catalog and GF_eXpress, and procceed with their installation

IMPORT EXPORT CONFIGURATION

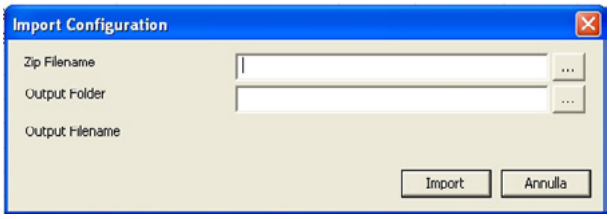
With the “Import Configuration” and “Export Configuration” commands on the “File” menu, you can import and export GFE files with assigned GFT in a single ZIP packet.
This function lets you reuse the configuration and the definition of a specific custom device created by the user.
It is used to export to another PC a device not inserted in the standard catalog ; typically a device written with MDPLC program.



This window tool has the following input boxes:

- Gfe FileName : path of the input file (.gfe)
- Output Folder: path of the folder containing the .zip output file

It builds a .zip file containing the .gfe file and the relative .gft file, inclusive of all over folders until Catalog\.
For example, if the saved file.gfe refers to .gft file ADV200_1_X_0.gft,
located in C:\Programmi\Gefran\Catalog\Custom\App\ADV200_1_X_0, then the program will generate a .zip file named saved file.zip, containing the file saved.gfe and the folder Custom\App\ADV200_1_X_0\ADV200_1_X_0.gft



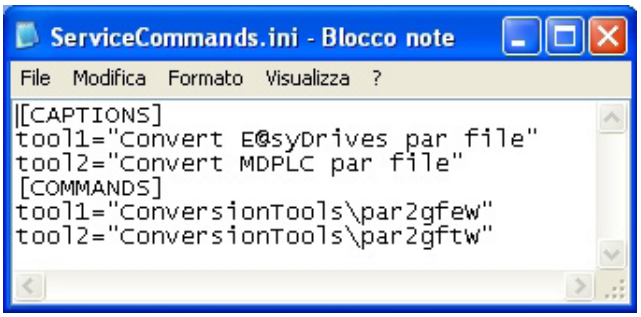
This window tool has the following input boxes:

- Zip FileName : path of the input file (.zip), already made by exportaion option
- Output Folder: path of the .gfe file just extracted

It unzips the .zip file checked, then places the .gft file in the original position and saves the .gfe file in the desired path.
All the existing files will be overwritten.

MAINTENANCE

The “Maintenance” menu has a list of specific commands for each device.
You can also add external tools by means of the ServiceCommand.INI file. Links to the two conversion tools par2gfeW and par2gftW are present by default..



GFX4

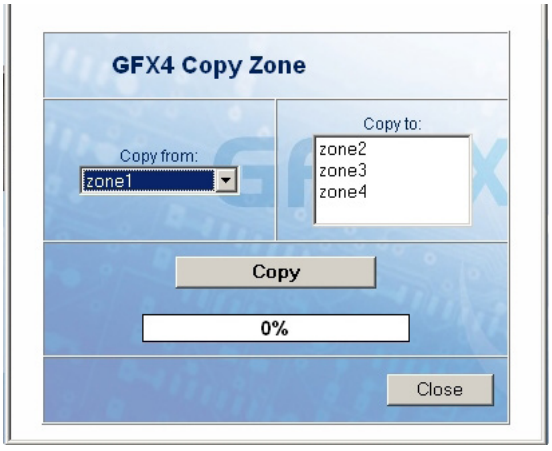
The GFX4 device has the following commands:

Auto Baud

The AutoBaud command is used for setting device Baud Rate and Parity via software.
Press the Start key to send values to the device.

Copy zone

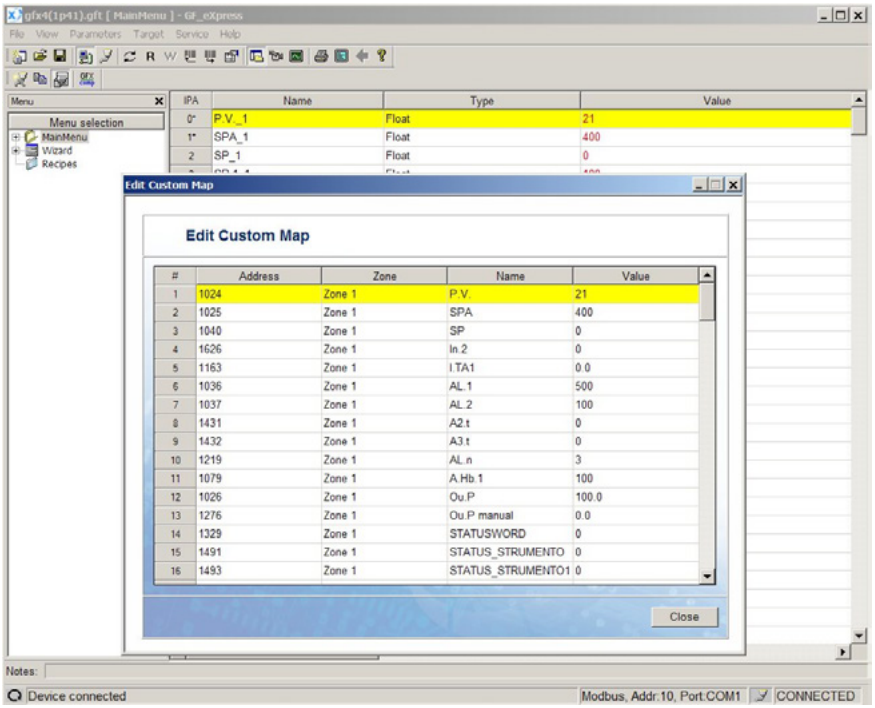
The Copy Zone command is used for copying the values of a Zone and pasting them in another zone. Values are automatically copied and pasted when the Copy key is pressed. You can copy values to one or more destination zones by selecting multiple zones in the “Copy to“ list.



Edit custom map (GFX4 e GFX4-IR)

The GFX4, GFX4-IR and GFW devices let you configure a portion of their Modbus dictionary (from address 0 to 119), indicated as a Custom Map.
This map can be managed ONLY when the devices work in GFX4 mode.

With GF_eXpress, connect to the GFX4 or GFX4-IR or GFW, configured in GFX4 mode, the icon will be activated on the Toolbar.
Click the icon to access the following window:.



by means of which you can configure\display the Modbus dictionary of the custom map.
The table shows a series of columns:

- “#”: indicates the JBUS address (Modbus Address + 1) assigned to the object on the custom map
- “Address”: lets you set the Modbus address of the parameter to be managed on the custom map. Modifying the content of this column automatically updates the content of the “Zone” and “Name” columns.
- “Zone”: lets you set the zone (from 1 to 4 or Common) that is the source of the parameter to be managed on the custom map. Modifying the content of this column automatically updates the content of the “Address” column.
- “Name”: the name of the parameter to be managed on the custom map. Modifying the content of this column automatically updates the content of the “Address” column.
- “Value”: displays the (approximate) value of the parameter managed on the custom map.

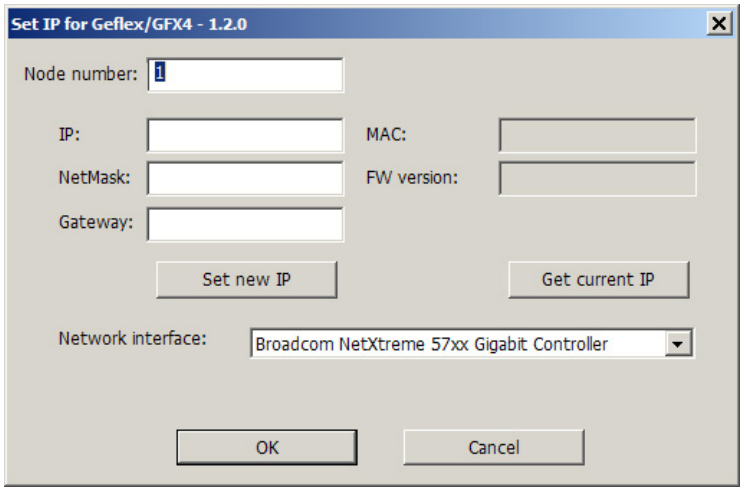
By means of the “Address,” “Zone,” and “Name” columns, you can configure the custom map of the device as you wish.
Every change made in one of these columns is instantly transmitted to the connected device.

Set IP Address (Modbus TCP) for GFX4, GFX4-IR and GFW

The “Set IP Address (Modbus TCP)” command lets you set network settings:
- IP Address
- NetMask
- Gateway

For devices:
- GFX4
- GFX4-IR
- GFW

The the network expansion that implements Modbus TCP protocol is installed
The following dialog appears when the command is launched



Once the PC is connected to the device by a cross Ethernet cable or hub/switch, simply
- set the Node number field so that it complies with the real GFX4\GFX4\GFW rotary value.
- Select the “Network interface” to which the node is physically linked
- press the “Get current IP” key to view network settings associated with the connected node. The IP address, subnetwork mask, default gateway and MAC address can be viewed.
- set the required parameters and click on the key to sent Set new IP data.
- reboot GFX4\GFX4-IR\GFW.

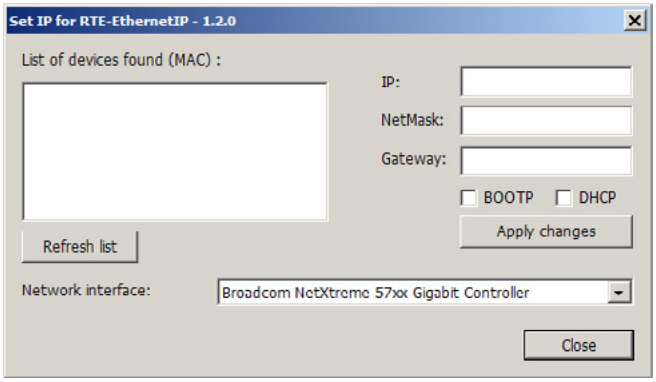
Set IP Address (Ethernet IP) for GFX4, GFX4-IR, GFW, ADV200, ADV200S and AFE200

The “Set IP Address (Ethernet IP)” command lets you set network settings:
- IP Address
- Netmask
- Gateway

For devices:
- GFX4
- GFX4-IR
- GFW
- ADV200
- ADV200S
- AFE200

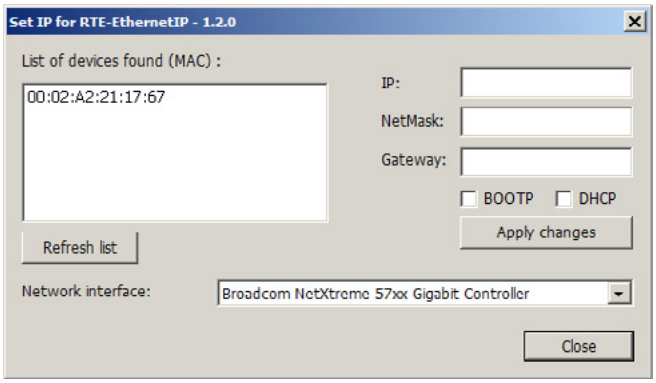
The network expansion that implements Ethernet IP protocol is installed.

The following dialog appears when the command is launched.

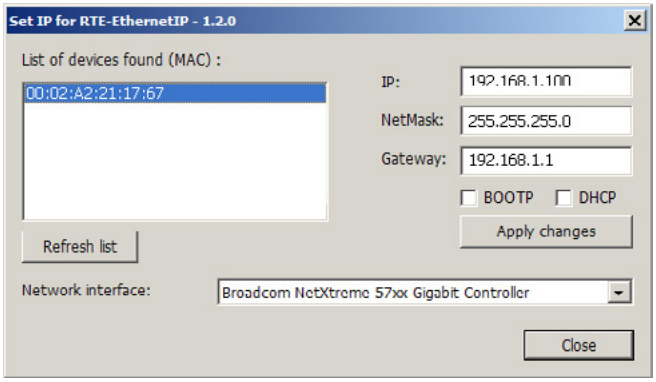


Once the PC is connected to the device by a cross Ethernet cable or hub/switch, simply

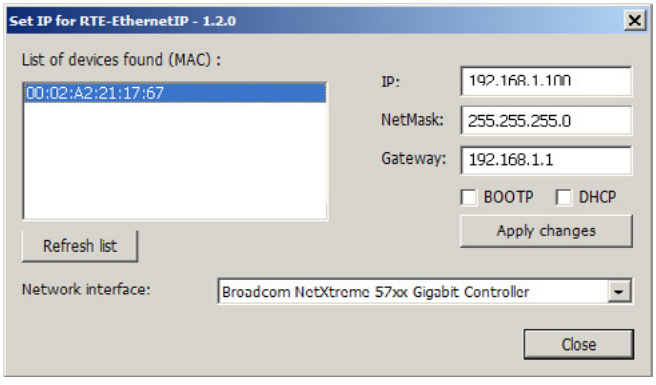
- Select the “Network interface” to which the node is physically linked
- Select the “Refresh List” key to create the connected device list



- Select the MAC address of the device to be set. Network parameters (IP, NetMask and Gateway) linked to the device will be displayed in a specific section



- Set new IP, NetMask and Gateway values and click “Apply changes”



Download firmware (ADV, ADL, AFE200, ADP200, AXV300, AVRy, FFE200, VDL200, ecc)

This command allows to download the Drive & Motion Control Unit products firmware (drive and converters ADV, ADL, AFE200, ADP200, AXV300, AVRy, FFE200, VDL200, etc. series) with drive – PC connection by **PCI-COM** adapter.

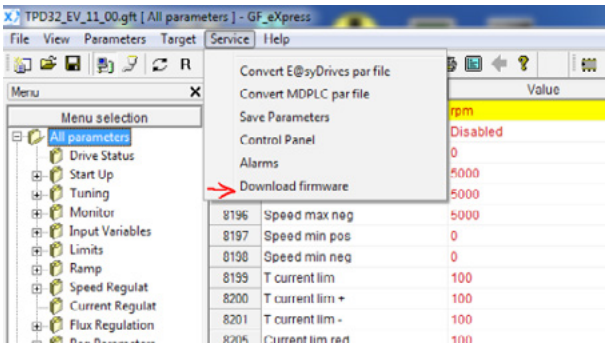
For TPD32-EV this functionality is available from Catalog version V2.34.
The firmware download is not available on BDI50 / VDI100 drives.

i.e. firmware upload with TPD32-EV converter

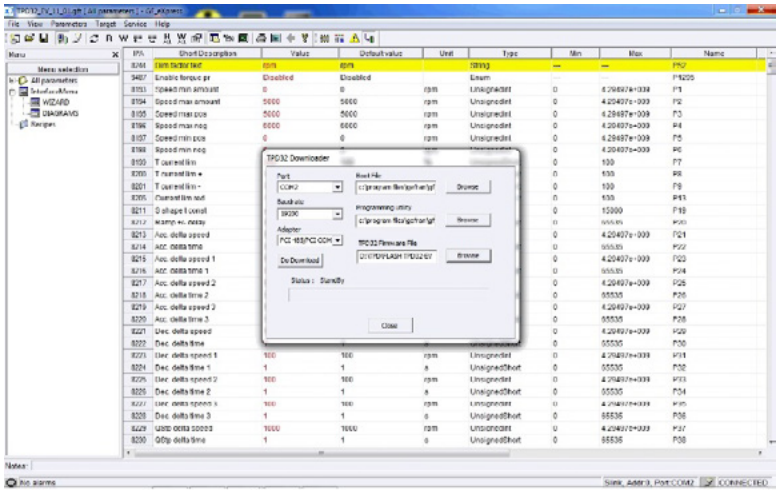
From menu select Service / **Download firmware**

or

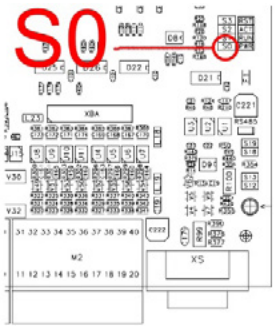
click on icon:

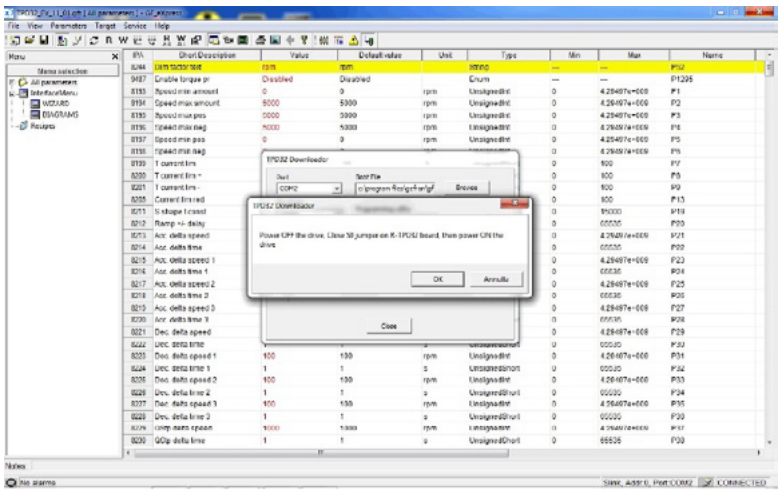


This will open a window where you will have to be set Port, Baudrate, Adapter and the path of the file to upload (TPD32 Firmware file). At the end click on *Do Download*.

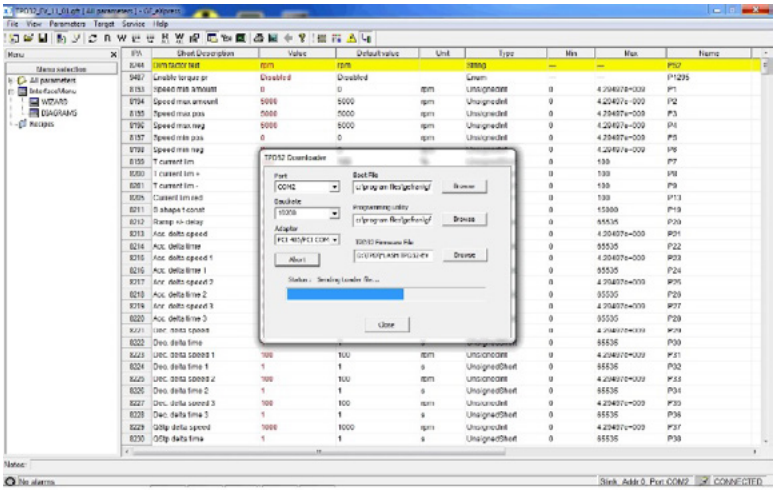


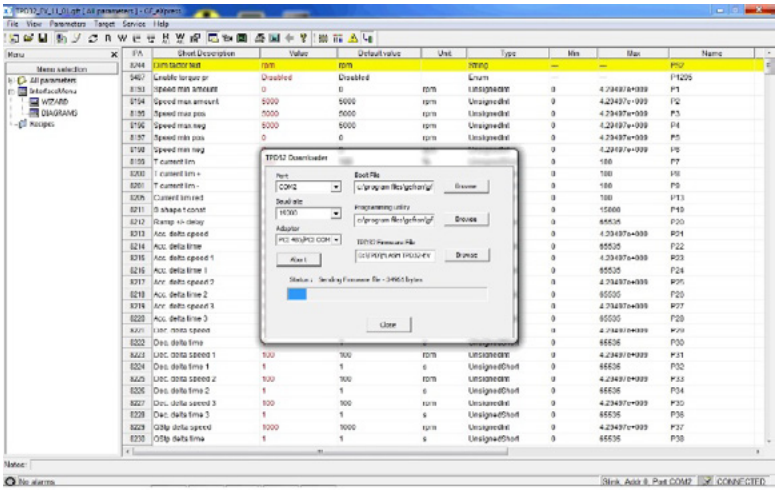
At this point (only for the TPD32 EV converter) you will be asked to switch off the drive, close the S0 jumpers on the R-TPD32 card and restart the drive..

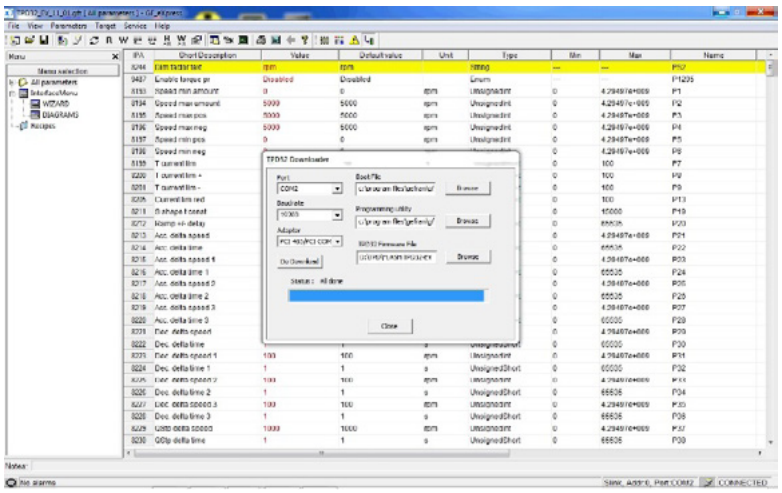




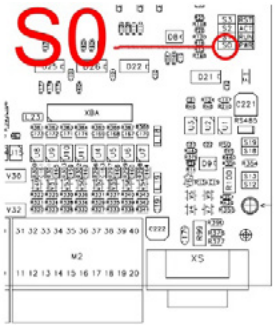
Then press *OK* to start the download..
Windows progress will be displayed and at the end it will shown "*All done*".

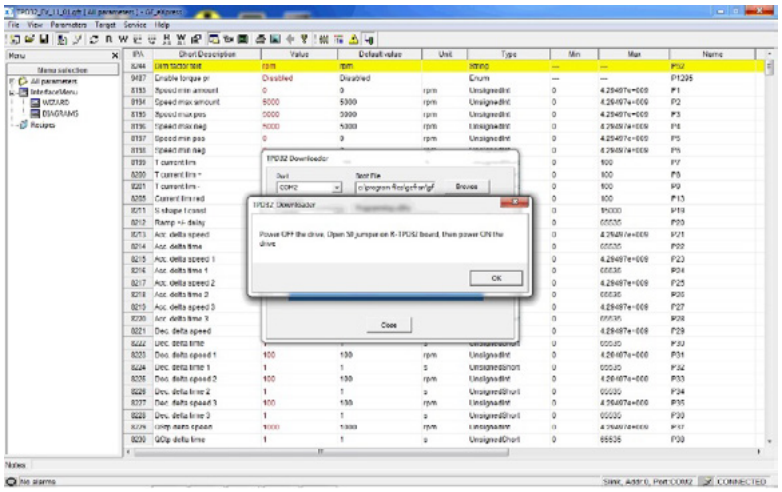






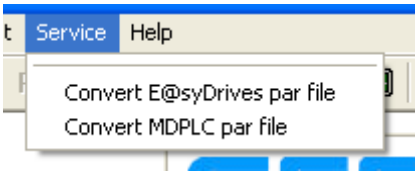
At this point (only for the TPD32 EV converter) you will be asked to switch off the drive, open the S0 jumpers on the R-TPD32 card and restart the drive.

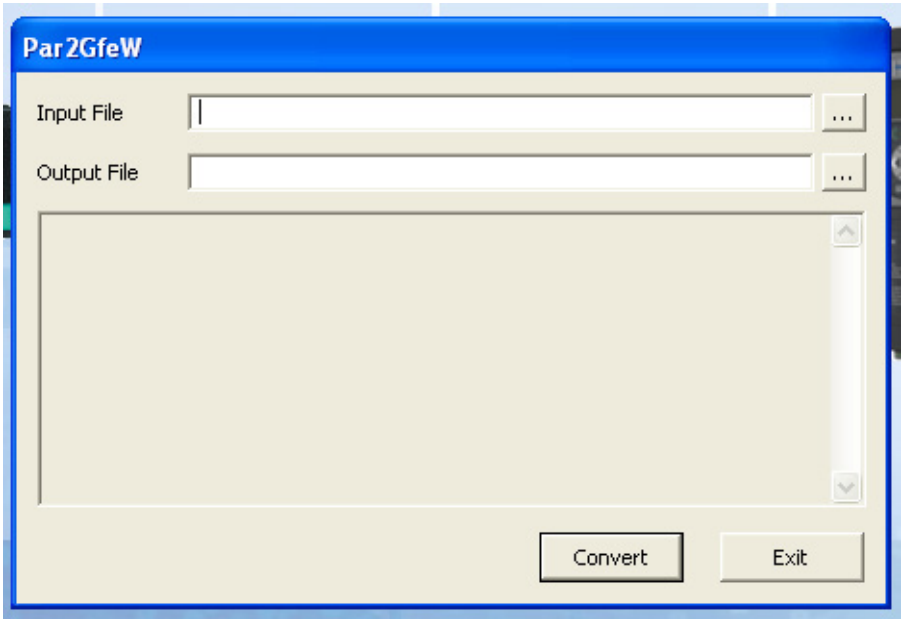




When finished, press the *OK* button and then click on *Close* to exit.

CONVERTING E@SYDRIVES SAVED .PAR FILE



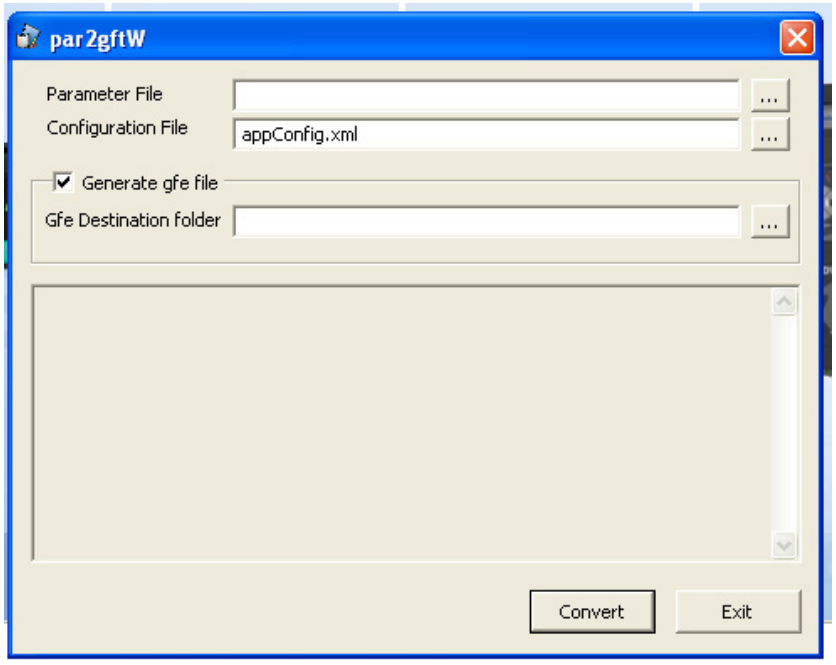


This program has the following input boxes:

- Input File : path of the input file (.par)
- Output File: path of the output file (.gfe)

It builds an .xml file extended as .gfe (Output File) starting from a .par saved file (Input File) of a version already existing inside Catalog.

CONVERT MDPLC PAR FILE



This tool is to convert a par file created by MDPLC.
This program has the following input boxes:

- Parameter File: path of the input file (.par)
- Configuration File : path of the configuration file (AppConfig.xml)
- gfe destination folder: path of the folder containing the .gfe output file (optional)

It builds :

- a .xml file extended as .gfe (Output File)
- a .gft file of the MDPLC application (Output File), that will be used from GF_Net (network setting tool)

starting from a .par file.
Configuration File path is already set.

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