C-PWR Configuration Software Manual

for use with:
CTF, CTF-Xtra, C4, C4-IR, CFW & CFW-Xtra

CTF
CTF-Xtra

C4
C4-IR

CFW
CFW-Xtra

CHROMALOX
Advanced Thermal Technologies

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Introduction

The C-PWR configuration software lets you configure and use the following CHROMALOX SCR power control devices: CTF, CTF-Xtra, C4, C4-IR, CFW, and CFW-Xtra. To simplify configuration, the program resembles a typical Windows™ environment.

Available operations:

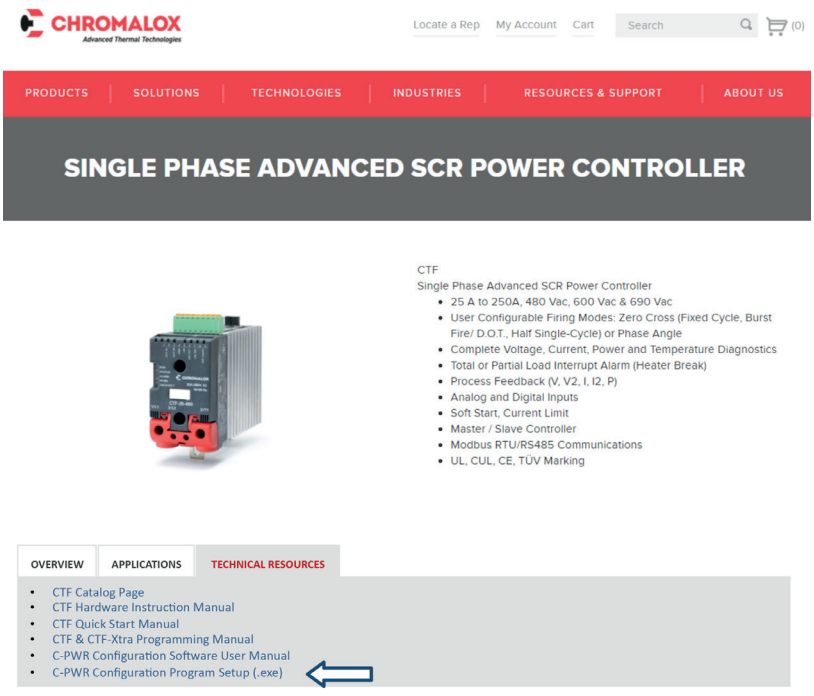
- Serial communication with the device using Modbus protocols (RTU or TCP)
- Parameter reading and writing
- Parameter saving in device flash memory
- Checking of device status

PC Requirements

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

Installation of C-PWR

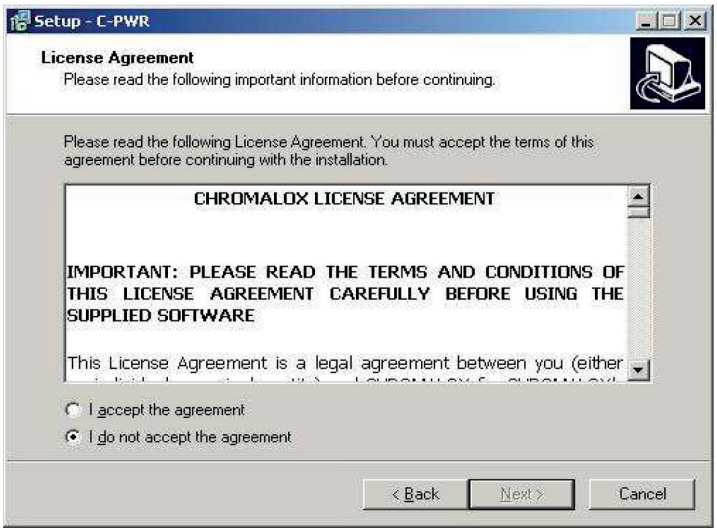
The C-PWR configuration program must be successfully installed on a PC before any controller programming may occur. Locate the C-PWR set-up file on the Chromalox website. It may be found within the Technical Resources tab of the Advanced SCR Controller product pages.



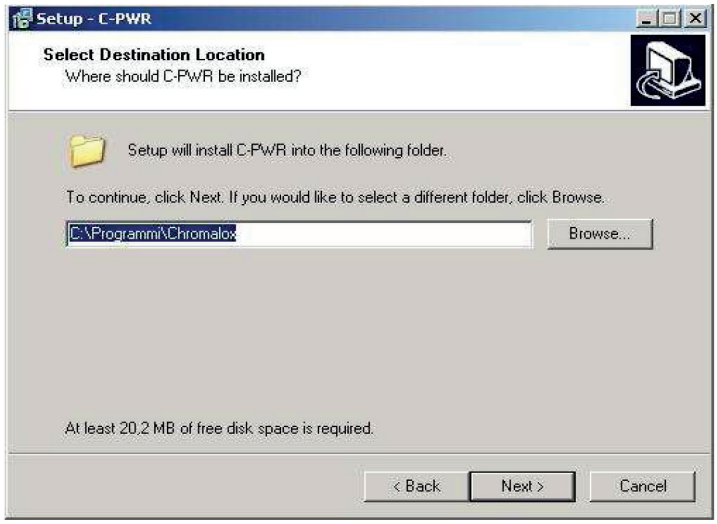
Follow the steps below to install the C-PWR configuration software program:

· Execute C-PWRSetup_version.exe and the welcome screen appears:

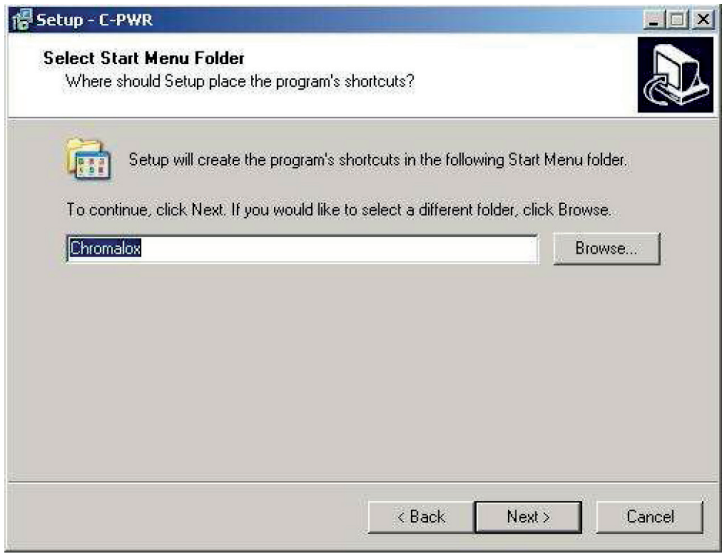
· Click ***Next*** to proceed to the next screen:



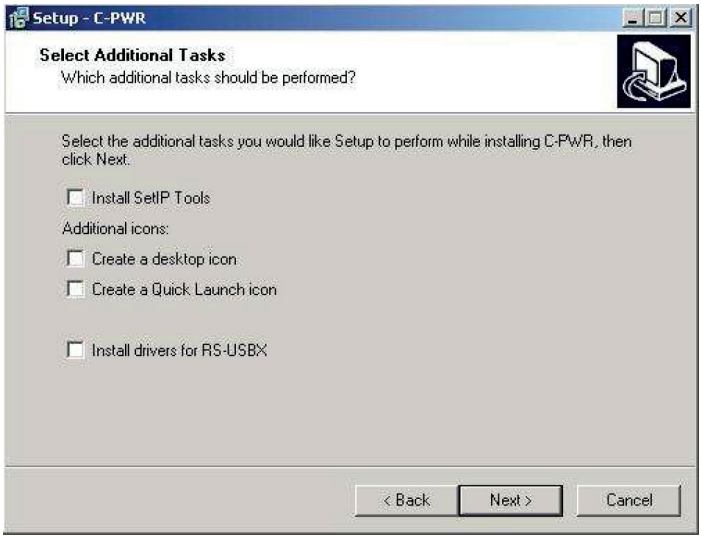
· Read the license agreement, choose ***I accept the agreement*** and click ***Next*** to proceed



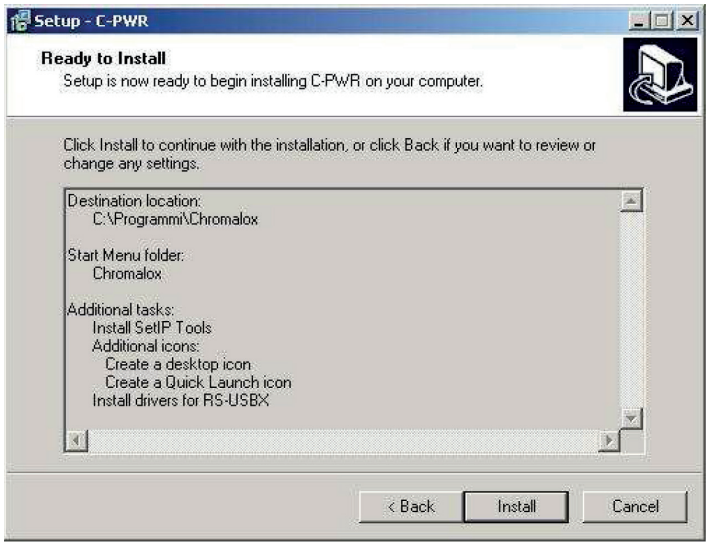
· Select the installation folder and click ***Next*** to proceed



· Select the program's shortcuts in the Start Menu and click ***Next*** to proceed

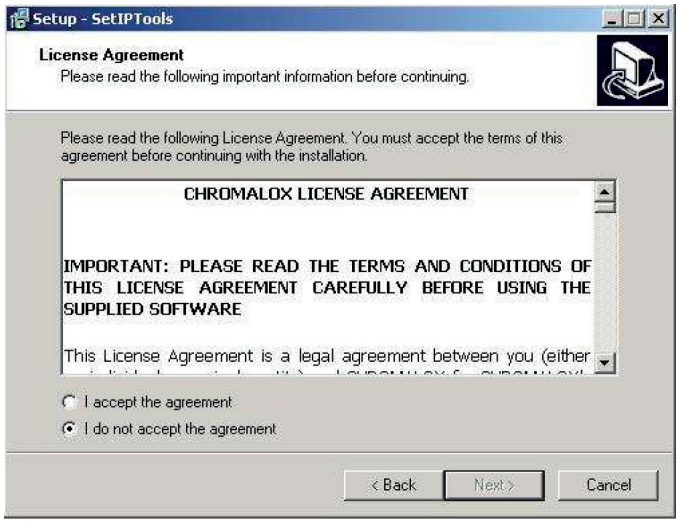


· Select additional Tasks to install and click ***Next*** to proceed

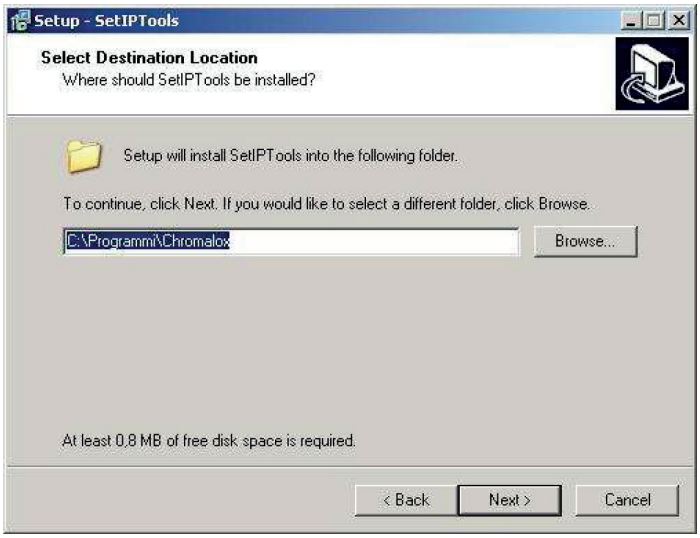


· Check the settings and click ***Install*** to proceed; the extract phase will start. When extract phase is finished, the welcome screen of SetIP Tools will appear:

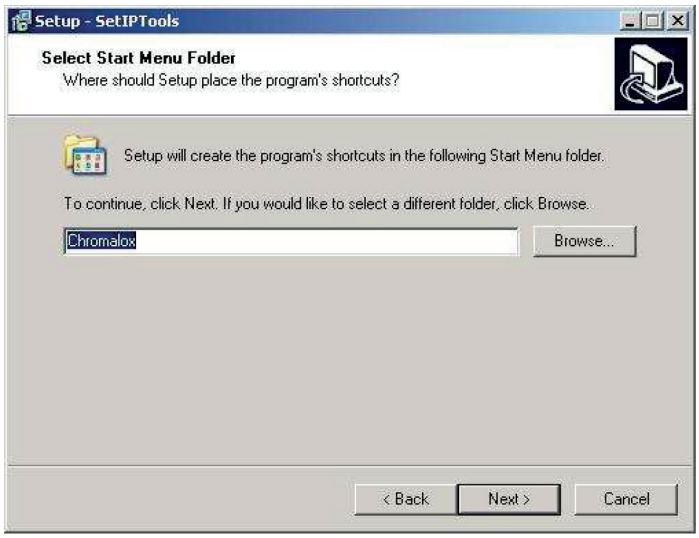
· Click ***Next*** to proceed to the next screen:



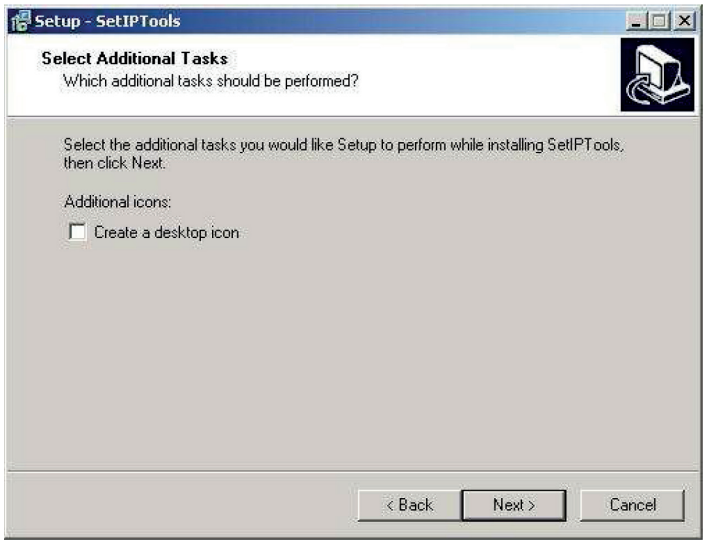
· Read the license agreement, choose ***I accept the agreement*** and click ***Next*** to proceed



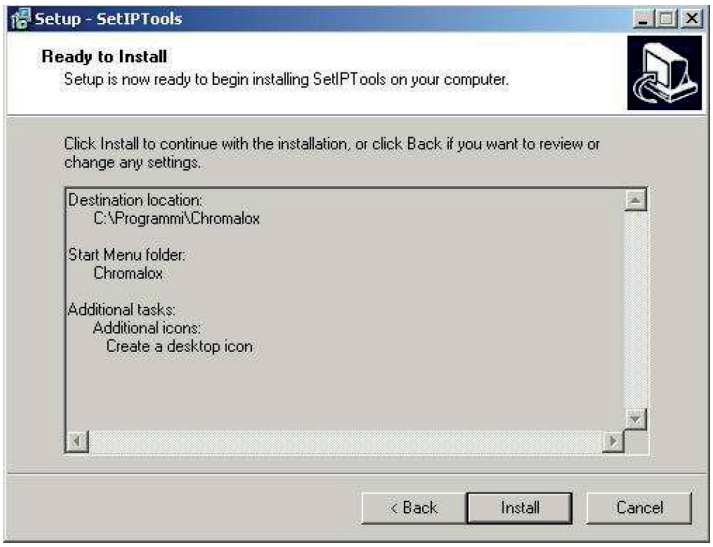
· Select the installation folder and click ***Next*** to proceed



· Select the program's shortcuts in the Start Menu and click ***Next*** to proceed



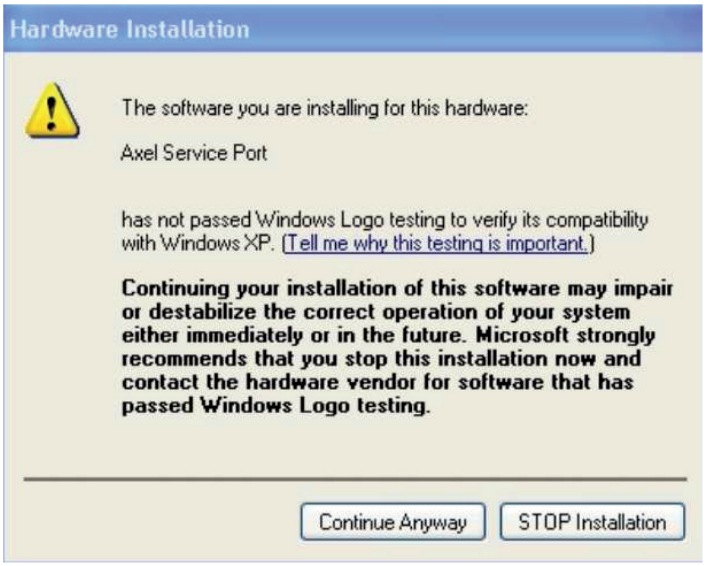
· Select additional Tasks to install and click ***Next*** to proceed



· Check the settings and click Install to proceed; the extract phase will start. At the end of the extract phase the last window appears:

· Click Finish to close the SetIP Tool setup program.

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

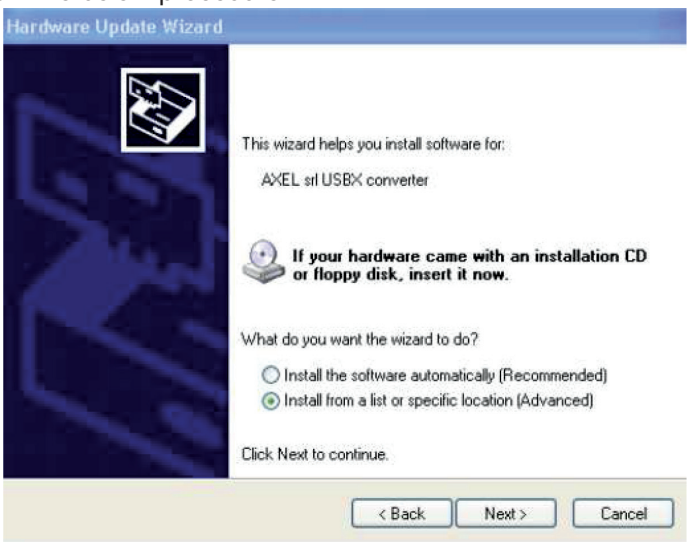


Otherwise the last window appears:

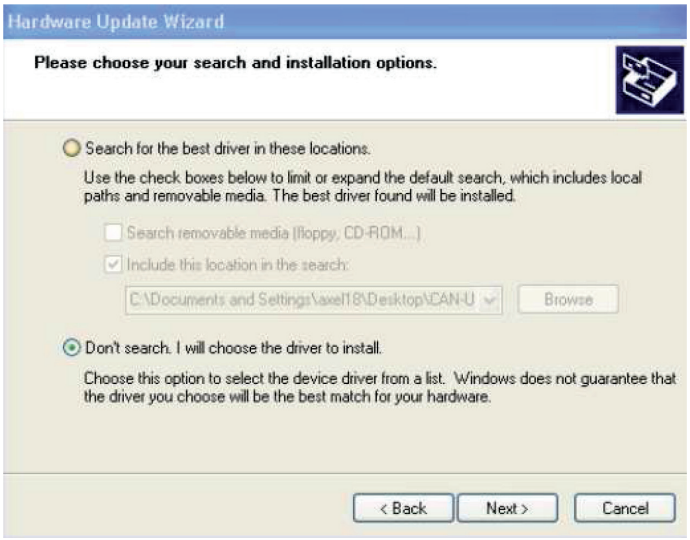
· Click ***Finish*** to close the setup program

Usage of RS-USBX with Windows XP

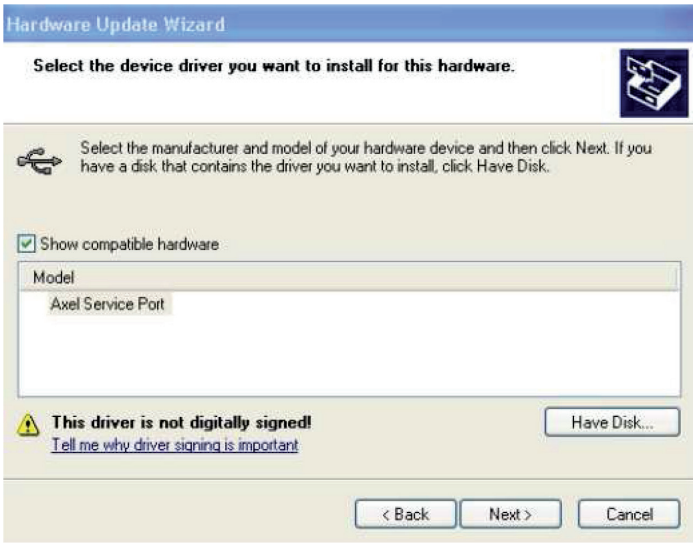
During the first usage of the interface on a specific USB port, it should be possible that a driver search message will appear. In this case follow the below procedure:



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



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



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

4. Ignore the Windows warning message and click **Continue Anyway** to proceed

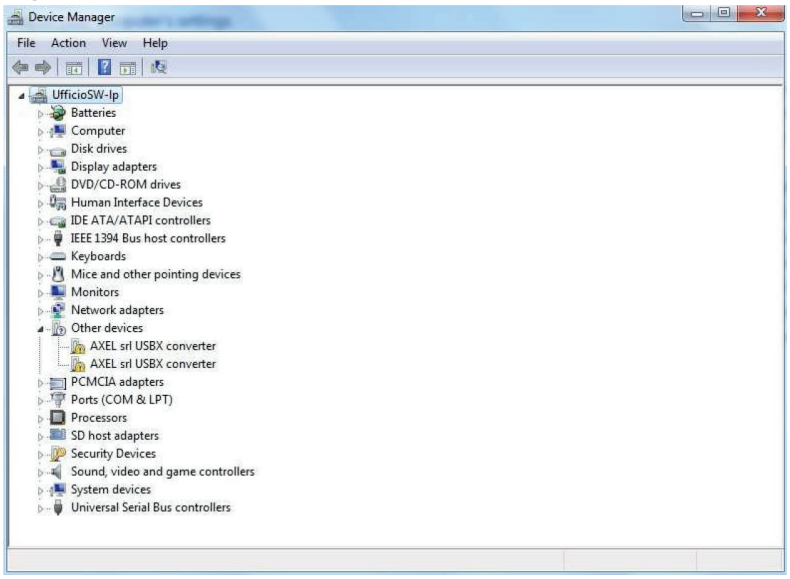
5. Click Finish for complete the procedure
6. **IMPORTANT: This procedure must be repeated twice because the RS-USBX has two different device drivers**

Usage of RS-USBX with Windows 7 64bit version

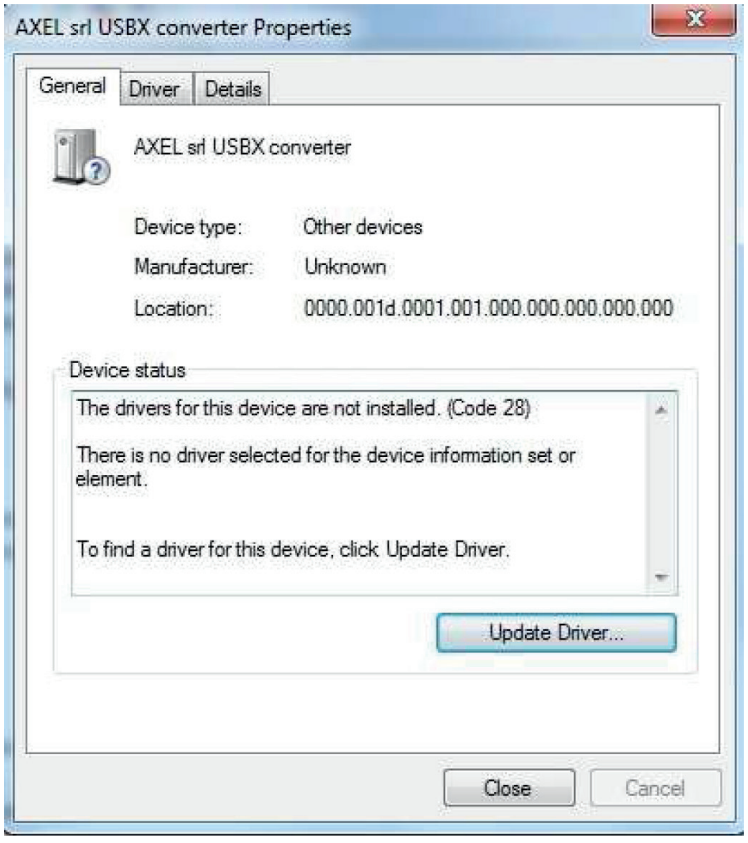
During the first usage of the RSUSBX interface on a specific USB port, the system could fail the automatic instal-

lation of the driver software. In this case follow the below procedure:

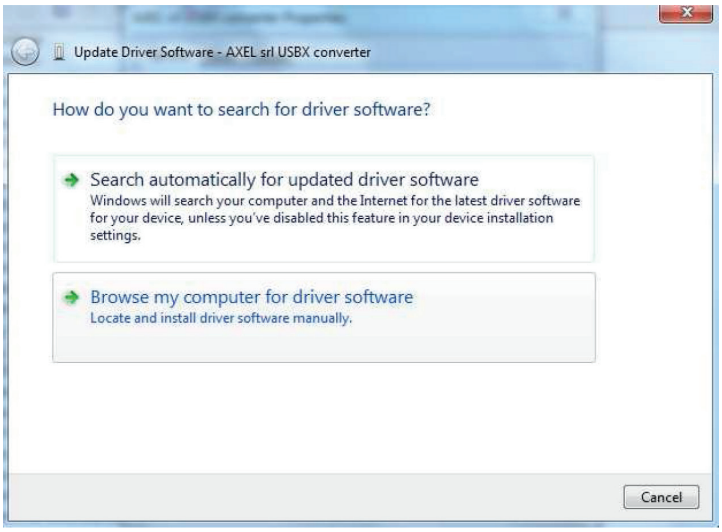
1. ***Choose Device Manager*** from ***Control Panel***



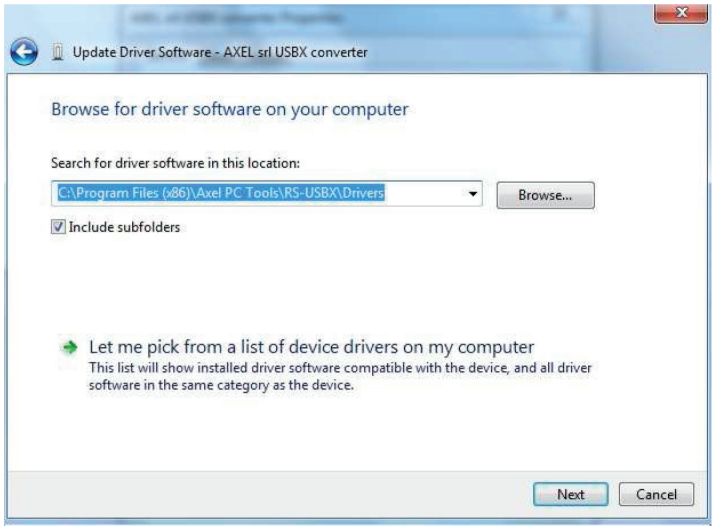
2. Click on the first ***Axel srl USBX converter*** in ***Other devices*** to proceed



3. Click ***Update Driver***… to proceed

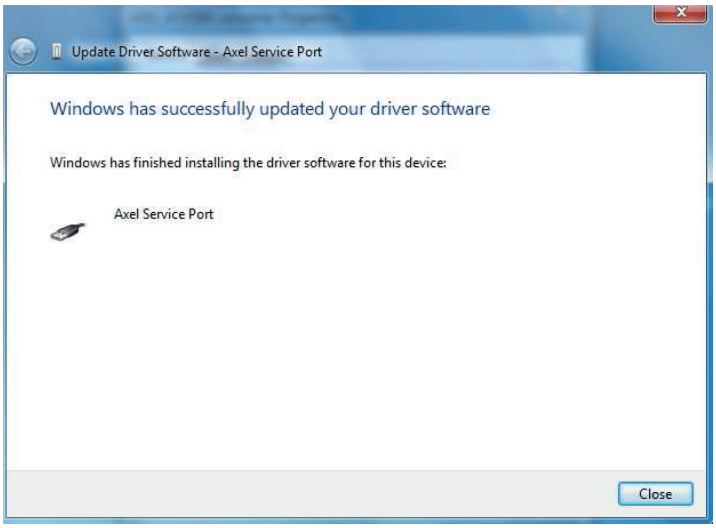


4. Click ***Browse my computer for driver software*** to proceed

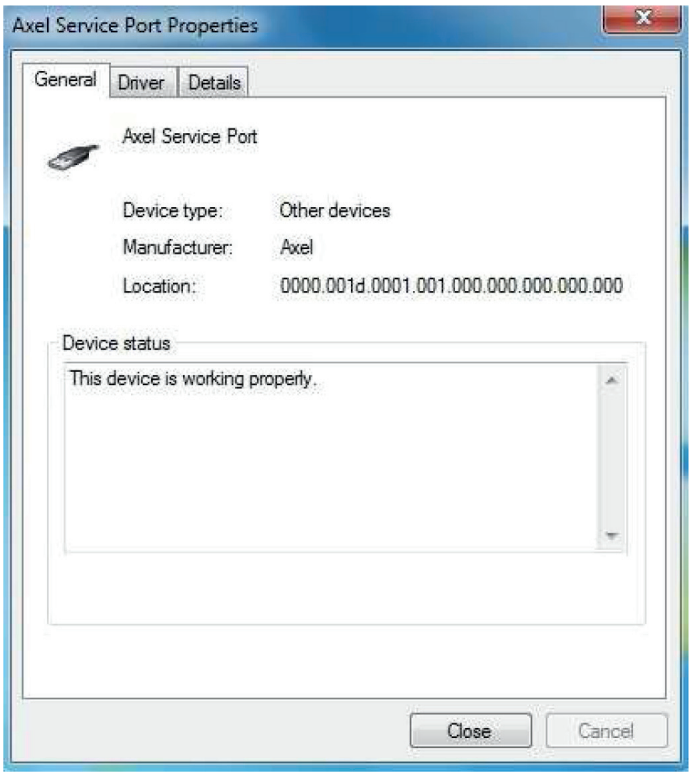


5. Click ***Next*** to proceed

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 that the device is working properly; click ***Close*** to 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.**

Connecting to the SCR Power Controllers

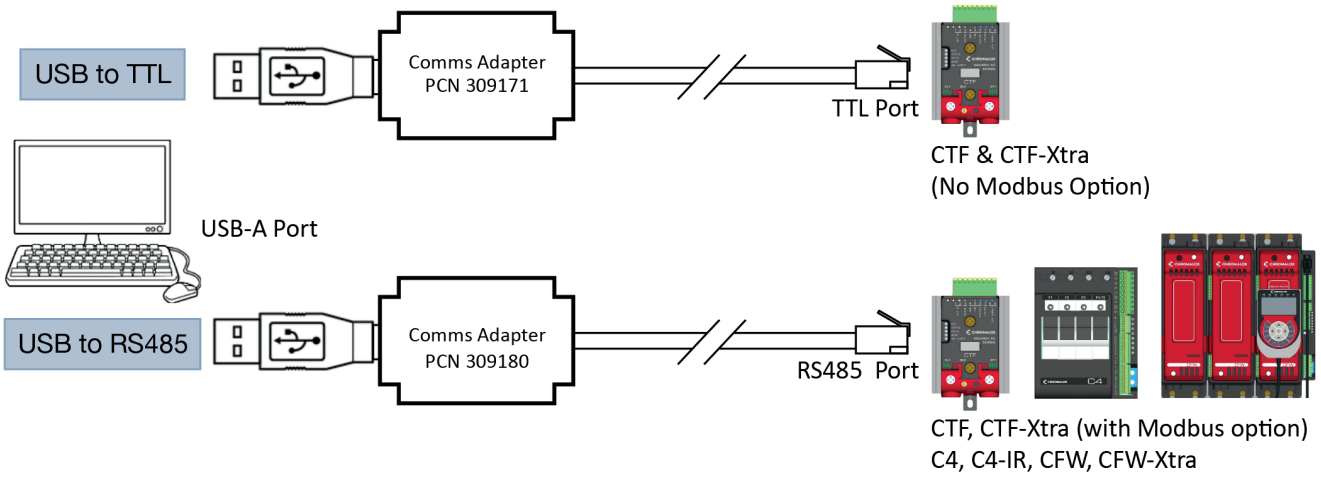
Controller configuration and programming is accomplished by connecting the Chromalox advanced SCR power controllers to a PC which is equipped with the Chromalox C-PWR configuration software program. Connection between the PC and the controller **MUST** be done with a custom USB to TTL or USB to RS485 adapter cable supplied by Chromalox.

See adapter cable options below.

NEVER connect TTL adapter to RS485 serial port of CTF.

NEVER connect TTL connector or CTF to a RS485 serial web port.

This will cause damage to the product!!



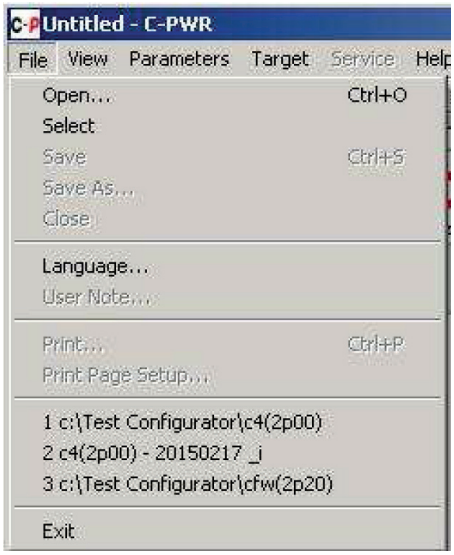
Working Session

To work with the C-PWR you are required to:

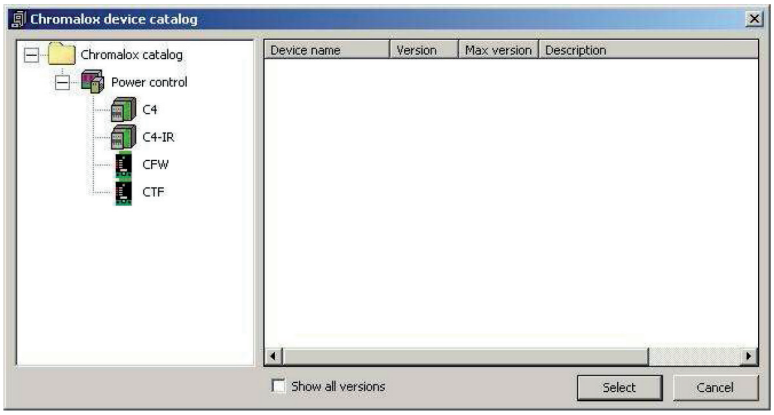
- Create a new configuration or use a previous session by opening a file with extension ".gfe"
- Properly configure the communication options (protocol type, COM port, baud rate)

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.

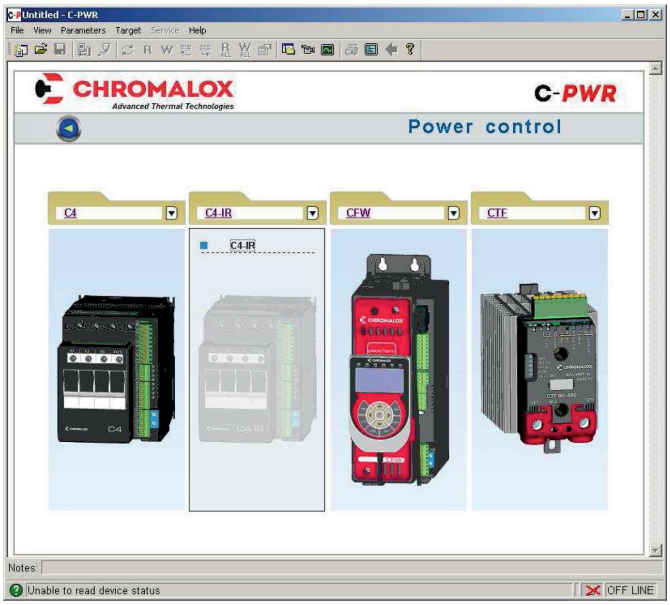


This command opens the “Chromalox devices catalog” window, which lets you choose a device from a list of devices grouped by category



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

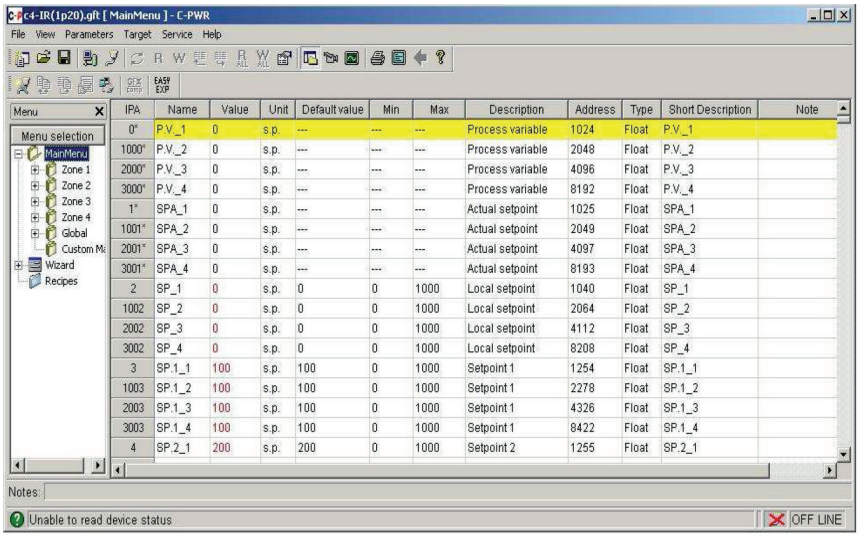
· Use the Wizard Mode to create a new session. To do this, first click the appropriate device category and then the device needed.



Parameters File

After starting the C-PWR 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	Name	Value	Unit	Default value	Min	Max	Description	Address	Type	Short Description	Note
0°	P.V._1	0	s.p.	---	---	---	Process variable	1024	Float	P.V._1	
1000°	P.V._2	0	s.p.	---	---	---	Process variable	2048	Float	P.V._2	
2000°	P.V._3	0	s.p.	---	---	---	Process variable	4096	Float	P.V._3	
3000°	P.V._4	0	s.p.	---	---	---	Process variable	8192	Float	P.V._4	
1°	SPA_1	0	s.p.	---	---	---	Actual setpoint	1025	Float	SPA_1	
1001°	SPA_2	0	s.p.	---	---	---	Actual setpoint	2049	Float	SPA_2	
2001°	SPA_3	0	s.p.	---	---	---	Actual setpoint	4097	Float	SPA_3	
3001°	SPA_4	0	s.p.	---	---	---	Actual setpoint	8193	Float	SPA_4	
2	SP_1	0	s.p.	0	0	1000	Local setpoint	1040	Float	SP_1	
1002	SP_2	0	s.p.	0	0	1000	Local setpoint	2064	Float	SP_2	
2002	SP_3	0	s.p.	0	0	1000	Local setpoint	4112	Float	SP_3	
3002	SP_4	0	s.p.	0	0	1000	Local setpoint	8208	Float	SP_4	
3	SP.1_1	100	s.p.	100	0	1000	Setpoint 1	1254	Float	SP.1_1	
1003	SP.1_2	100	s.p.	100	0	1000	Setpoint 1	2278	Float	SP.1_2	
2003	SP.1_3	100	s.p.	100	0	1000	Setpoint 1	4326	Float	SP.1_3	
3003	SP.1_4	100	s.p.	100	0	1000	Setpoint 1	8422	Float	SP.1_4	
4	SP.2_1	200	s.p.	200	0	1000	Setpoint 2	1255	Float	SP.2_1	

- 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.
- ADDRESS: Address of parameter into Modbus Object Dictionary

C-PWR parameters can be organized in different menus; this lets you display the complete list or a subset of the parameters.

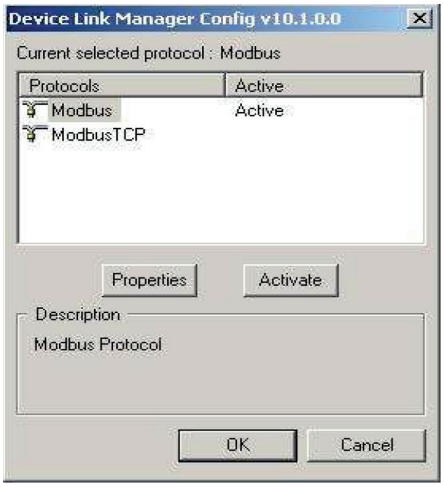
The user can change the values of only the read/write parameters.

If one or more parameters are changed and you want to close the work session, C-PWR automatically asks if you want to save the configuration in a .gfe file.

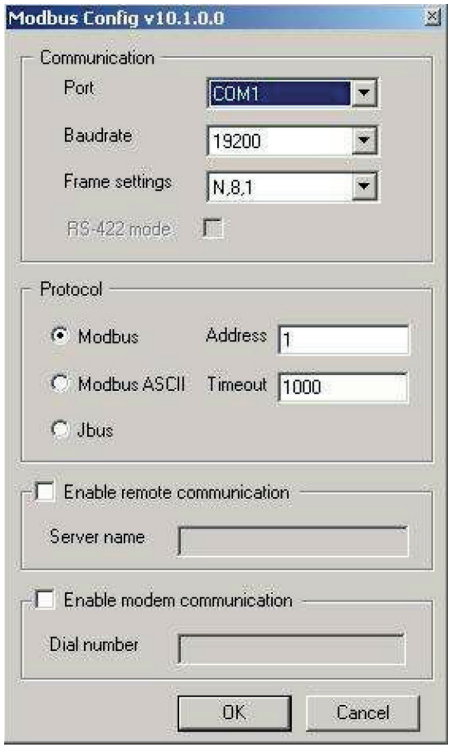
Communication

Communication with the device takes place via serial line. To communicate with the device, you need an appropriate serial 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 **C**onnect 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.

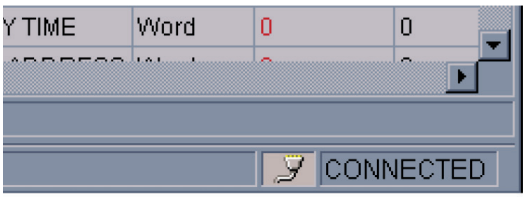


To activate a specific protocol, select the protocol and click “Activate”. Click “Properties” to enable the configuration window for the specific protocol.



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

NOTE: To correctly activate communication with the device, the device address must be the address set in C-PWR. Once the right address is selected, the parameters have to be saved on the device flash to make the setting definitive. C-PWR 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 Control

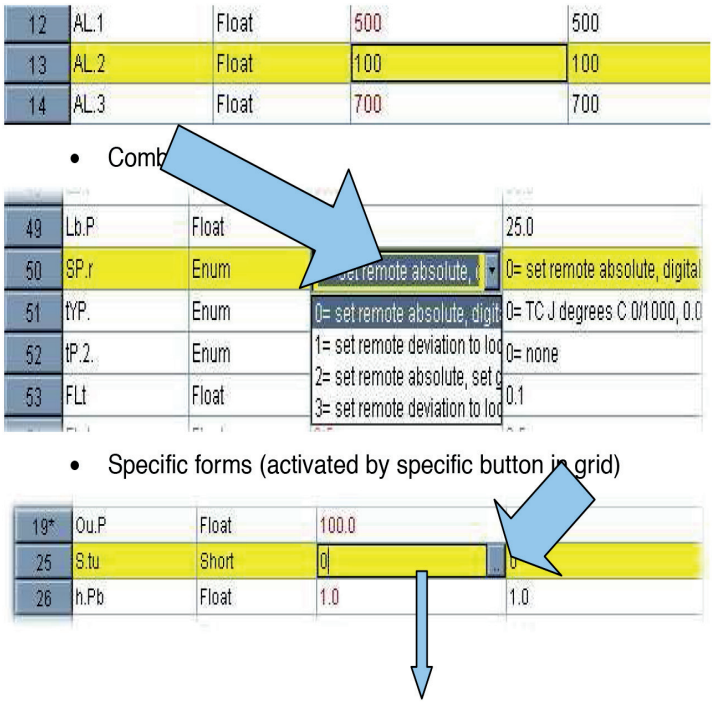
Parameter Value

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:

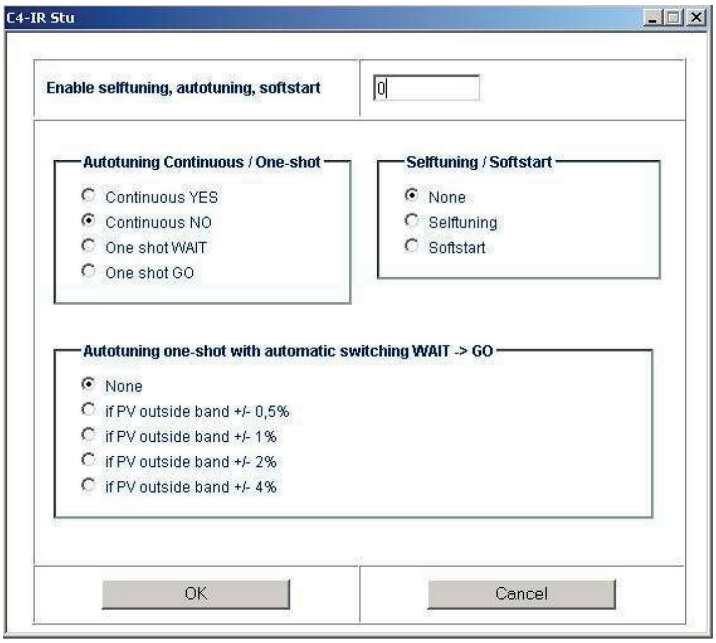
- they are just loaded after an “Open” procedure
- the user changes a value by editing it

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

- Textbox

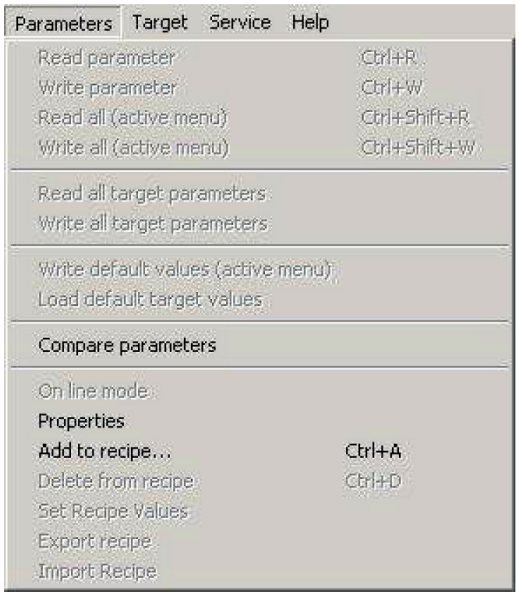


- Combo
- Specific forms (activated by specific button in grid)



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 C-PWR 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).

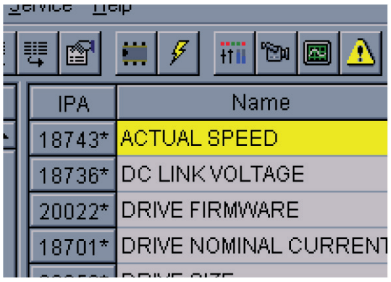


On-Line Mode

On-line mode, activated with the “Online” command, allows to C-PWR 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).



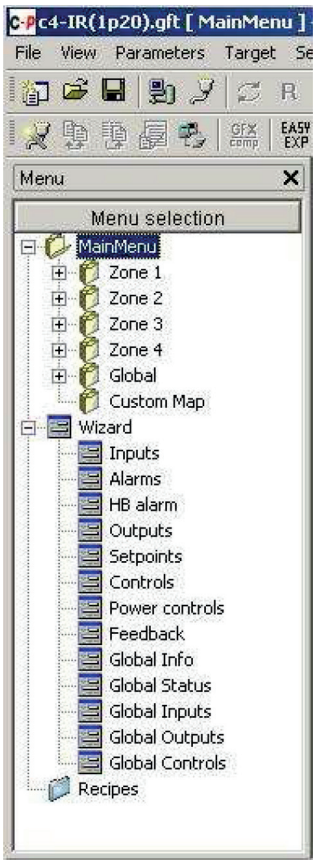
Saving Parameters

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

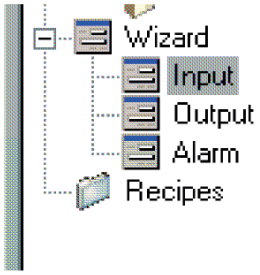
Parameter Selection Menu

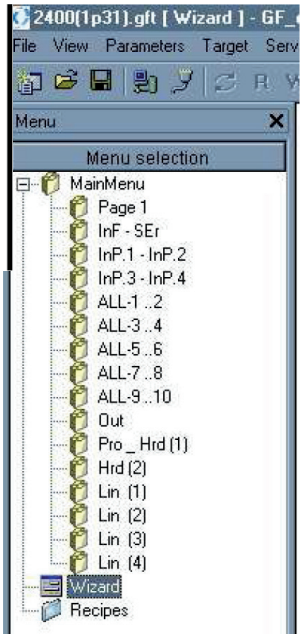
Parameters are divided into menus that are displayed in the Menu selection window and are organized in a tree structure for easy selection of parameter subsets.



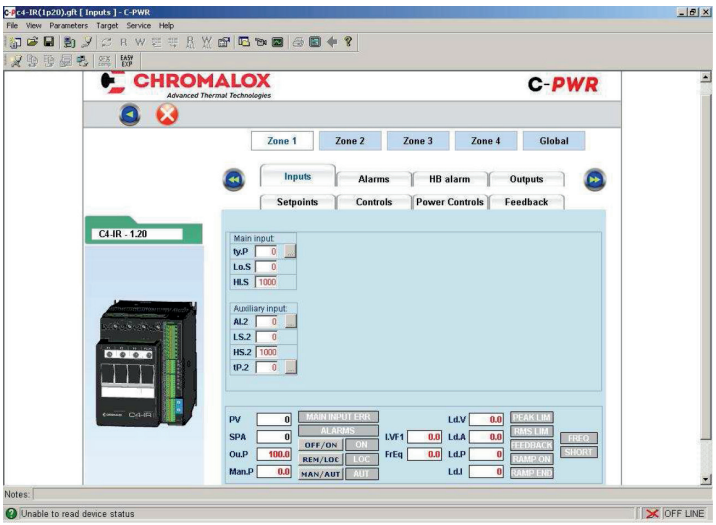
Wizard Selection Menu

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:

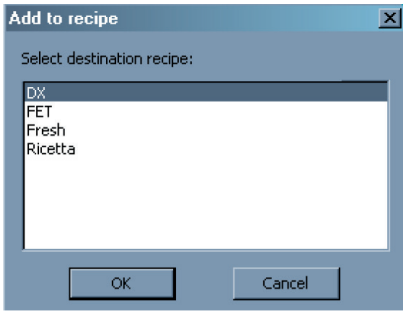


Recipe Selection

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 or Export Recipe Files

On the “Parameters” menu, or by right-clicking the mouse on “Recipes,” you can import or export single recipes in separate files.

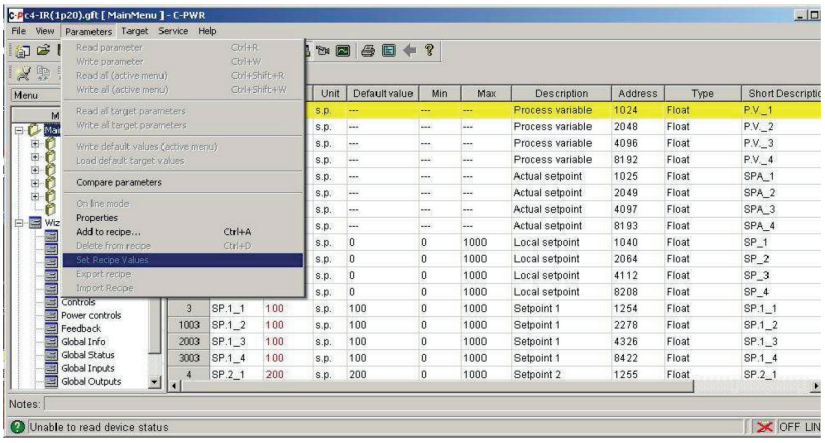
The reference file has extension .GFR and contains the recipe parameters list with assigned values (see below).

Set Recipe Value

The “Default Value” column takes the named “Recipe Value” in the recipes.

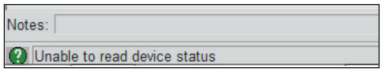
The “Recipe Value” column does not allow direct input. To change the value, you first have to change the value in the “Value” column and, on the “Parameters” menu, press Set Recipe Values, which copies the value from the “Value” column.

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.



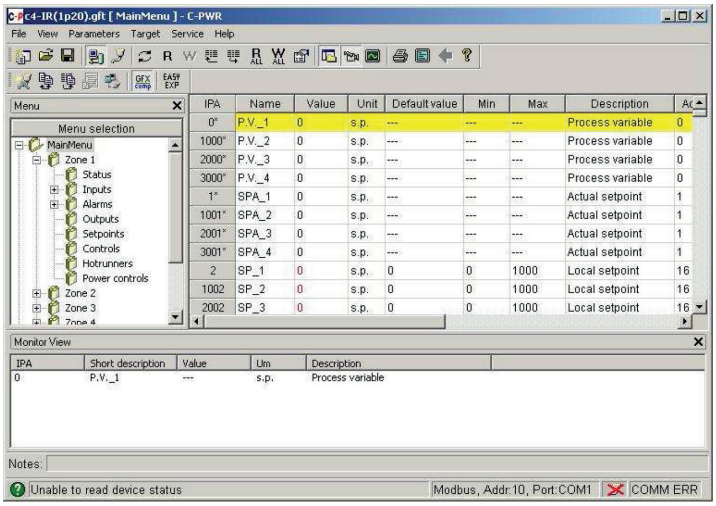
Alarms

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



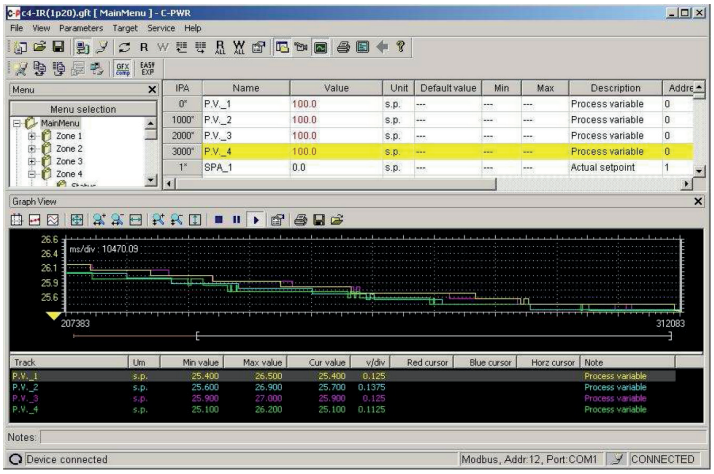
Monitor Window

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 color. A maximum of 8 tracks can be displayed simultaneously. This window also has a series of graphics display tools, such as (for example) zoom and scale.



Maintenance

C4, C4-IR, CFW

The device:
· C4
· C4-IR
· CFW (and CFW-Xtra)

have the following commands:

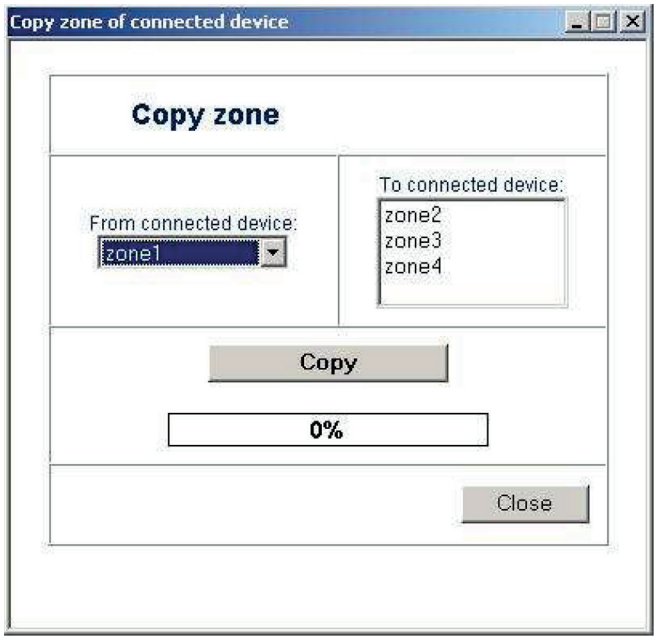
Auto Baud

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.



Limited Warranty:
Please refer to the Chromalox limited warranty applicable to this product at
http://www.chromalox.com/customer-service/policies/termsofsale.aspx.

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