ChargeProfessional

ALC 8xxx Expert

Instruction manual

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1 General information

1.1 System requirements

The following requirements must be fulfilled at least for using the software "ChargeProfessional":
- Windows XP x64, 256 MB RAM, 1 GHz CPU, 50 MByte of free disc space or:
- Windows XP, 256 MB RAM, 1 GHz CPU, 50 MByte of free disc space or:
- Windows 2000, 128 MB RAM, 1 GHz CPU, 50 MByte of free disc space or:
- Windows Vista, 512 MB RAM, 1 GHz CPU, 50 MByte of free disc space.

Error messages or other unforeseeable problems are possible on systems equipped more weakly.

Version info:
- ALC 8500-2 Expert with firmware <2.00: Use ChargeProfessional <2.00 only, for update to firmware 2.0 use ChargeProfessional >=2.00.
- ALC 8500-2 Expert with firmware >=2.00: Use ChargeProfessional >=2.00 only
- ALC 8500, ALC 8000: Update to firmware 2.00 not possible. Use ChargeProfessional version <2.00

1.2 Support

Read the manual to the ALC 8xxx Expert before these instructions! The technical limiting values described there and the warning signs also apply to this software.

1.3 Contents of the shipped CD

Note: If you have downloaded this package from the Internet, the contents of the downloaded ZIP file correspond completely to the CD contents.

`firmware`
: There is an actual firmware in this directory for your ALC 8xxx Expert. A program for the DOS console which installs a new firmware is also stored in this directory. We recommend installing the firmware with the software "ChargeProfessional". You find nearer instructions in the corresponding chapter of these instructions.

`manual`
: There is both a manual to the ALC 8xxx Expert and these instructions here.

`driver`
: This directory contains the necessary driver software for the ALC 8xxx. The driver software should be installed before using ChargeProfessional so that the software can find the device.

`driver64`
: This directory contains a 64Bit-driver software for Windows XPx64.

`setup.exe`
: With this program which is located in the main directory of the CD you install the software "ChargeProfessional".

2 Driver installation

The device drivers are installed automatically during setup. The directory `driver` on the CD contains the required driver software for the ALC 8 xxx Expert.

3 Installation of ChargeProfessional

3.1 Instructions for the installation

Insert the CD in a CD-ROM drive. The program "`setup.exe`" is located in the main directory of the CD. Start this program and will start automatically if not turned off.

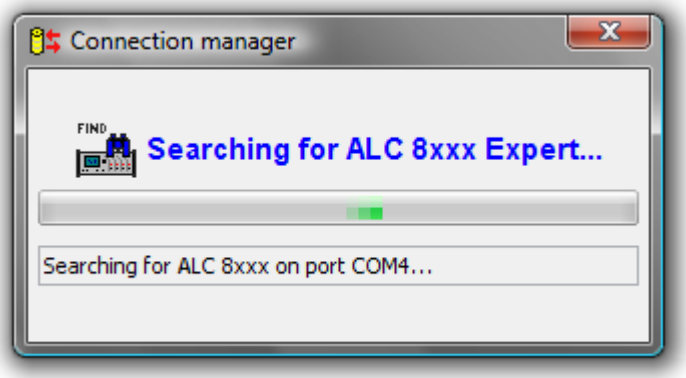
The individual steps are explained to you by the setup program. You find also further help there.

If the installation is completed, some links (program, manual) are added in the start menu in the folder ChargeProfessional. In addition, a link to ChargeProfessional is placed on the desktop.

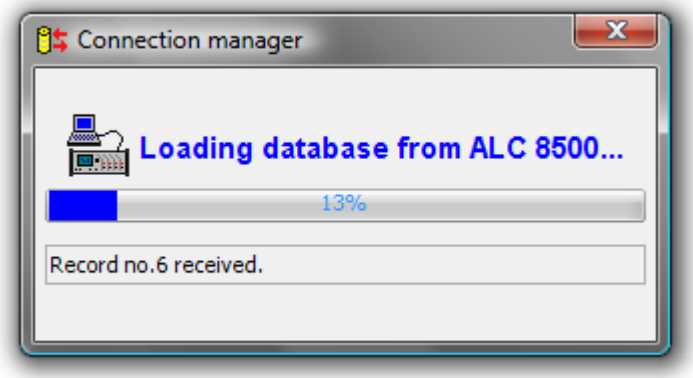
4 Use of ChargeProfessional

4.1 The connection manager

Before you start ChargeProfessional, you have to switch on and connect the ALC 8xxx to the PC. The software does only start when a device is found.



ChargeProfessional searches for an ALC 8xxx automatically and connects with it. If no device is found, please check whether the driver software is installed proper (chapter 2 of these instructions).



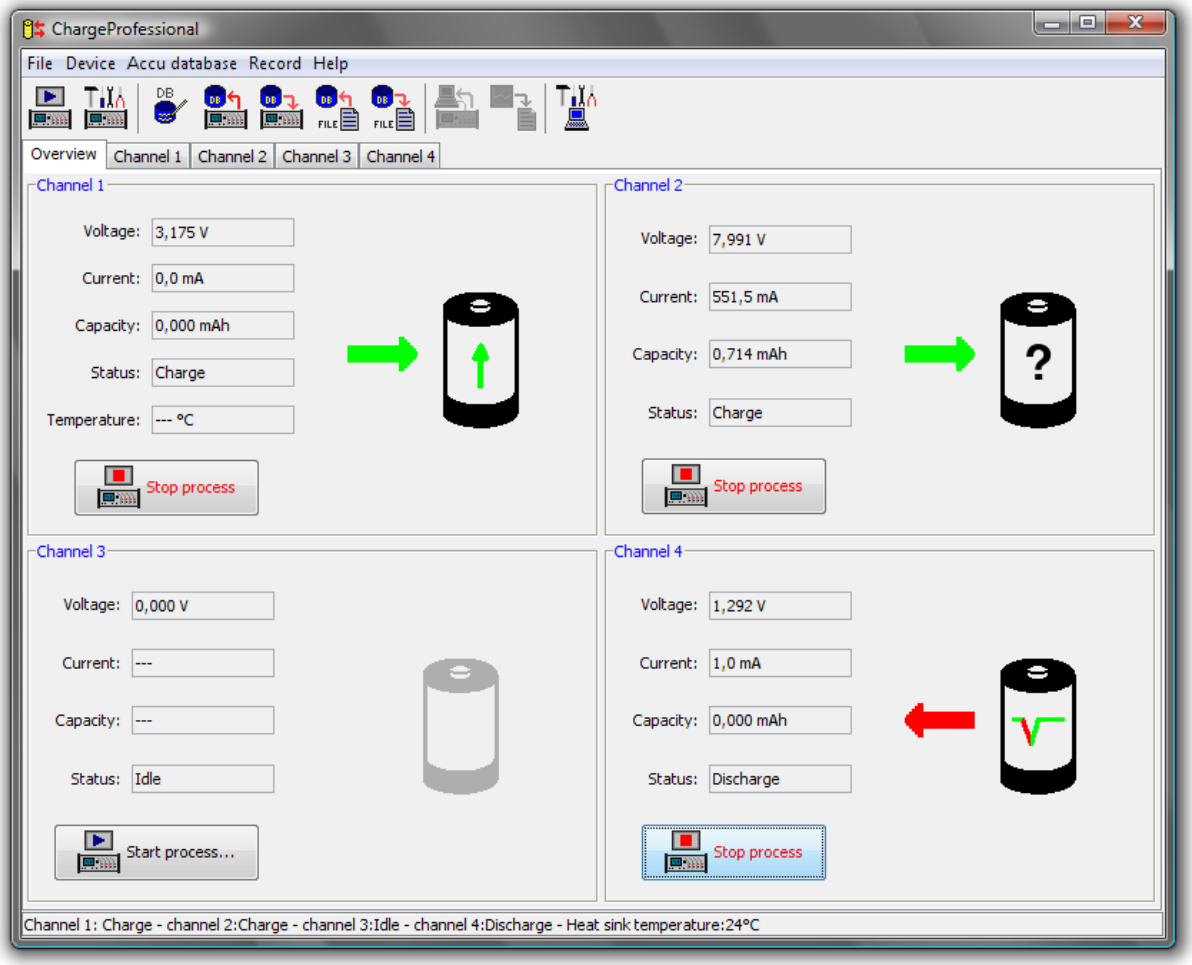
After connecting the accumulator database is copied from the ALC 8xxx to the PC. If you do not want the accumulator database to be copied at every program start, you can adjust in the program options that the accumulator database is copied by the device only manually.

Note: Do not switch off the device or disconnect the USB cable. If the connection is lost, the program displays a warning notice and exits. Not stored data are lost.

4.2 The main window

As soon as all accumulator data are copied from the accumulator database, the main program window appears and shows the channel overview. Current running procedures are indicated.

All channels are displayed at the same time in the overview window. Voltage, current, capacity, the current status and for channel 1 in addition the temperature. If a channel is idle, you can start a procesdure directly. In this case a new dialog (chapter 4.4) opens. Running procedures are stopped by clicking on "`Stop process`".

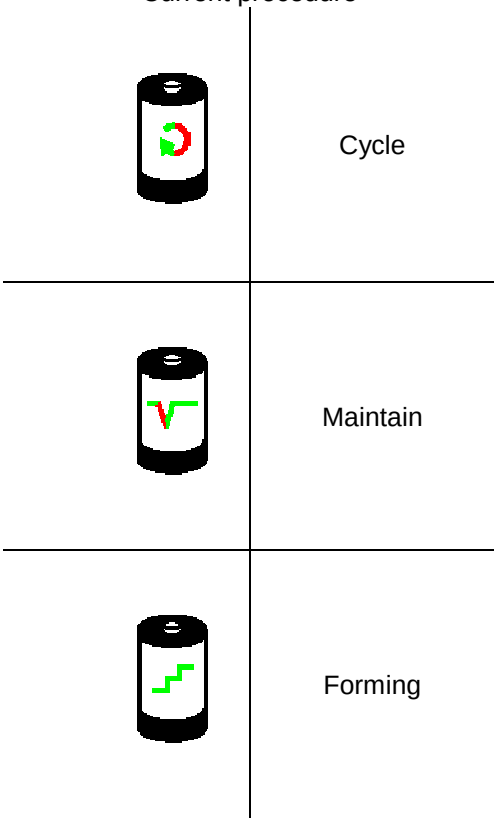


The temperature of the built-in heat sink in the ALC 8xxx is displayed in the status bar in addition besides the regular procedures.

All kinds of accumulator symbols and their meaning are explained in the following table. The symbol on left hand side indicates the current status, the symbol on right hand side the programmed function.

Current procedure		Function	
	Idle		Charging
	Charge		Trickle charge
	Discharge		Discharging
	Discharge → Charge		Discharged
	Test		Emergency shut-down
	Refresh		Break/ Waiting

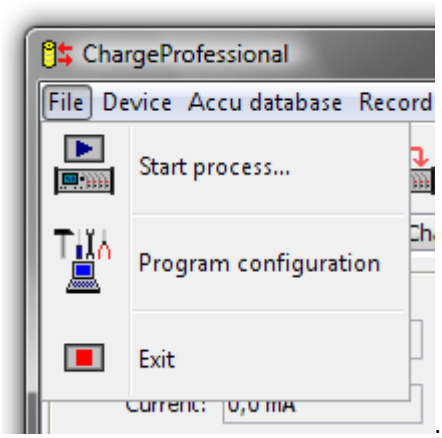
Current procedure



The symbols for the functions are animated and flashing. You can switch off flashing in the configuration for the program. The displayed measurements/ functions are updated automatically every 5 seconds. This time period is provided by the device and can not be changed.

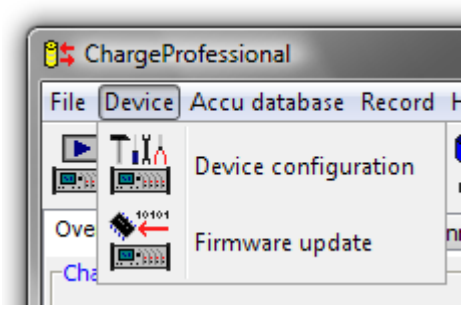
The following menu items are avaiable in the main screen and are explained more precisely in separate chapters of these instructions. The symbols in the tool bar have the same function as the corresponding functions in the main screen and allow an immediate access on functions frequently required.

4.2.1 Menu File



In this menu you can start a procedure at the ALC 8xxx, configure or exit the program.

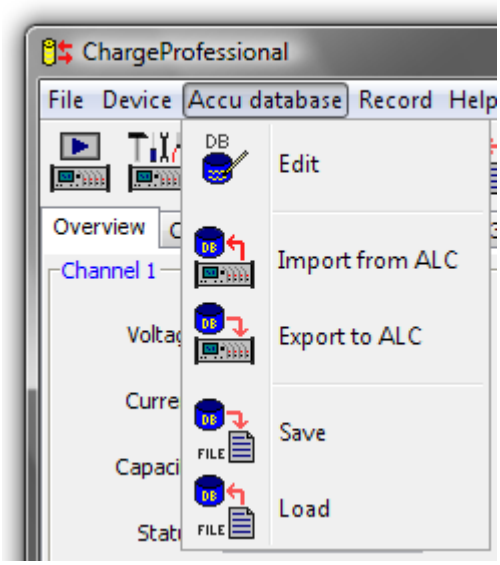
4.2.2 Menu device



This menu offers you the possibility of configuring the device. You can adjust some parameters there which influence the charging/ discharging behaviour.

In addition, you can start the firmware update of the ALC 8xxx from here. If you choose this menu item an assistant leads you through the individual steps.

4.2.3 Menu accumulator database



`Edit` opens a new window, you edit the accumulator database there. Notice that you always edit the accumulator database on the PC.

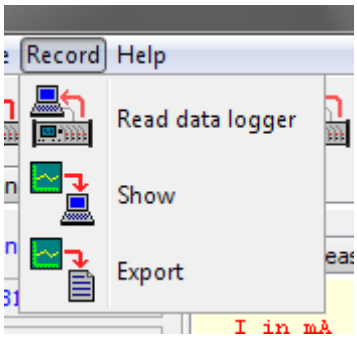
`Import from ALC` - The database is copied from the ALC to the PC. At every program start the database is copied to the PC automatically if you have not switched this function off in the program configuration.

`Export to ALC` - The database is copied form the PC to the ALC. Always choose this function when you have edited the database on the PC before you exit the program.

`Save` - Stores the accumulator database from the PC into a file.

`Load` - Loads a previosly stored accumulator databases to the PC load back.
You find nearer information in the chapter 4.7.

4.2.4 Menu data record



These functions are only available when you view a channel window otherwise its deactivated.

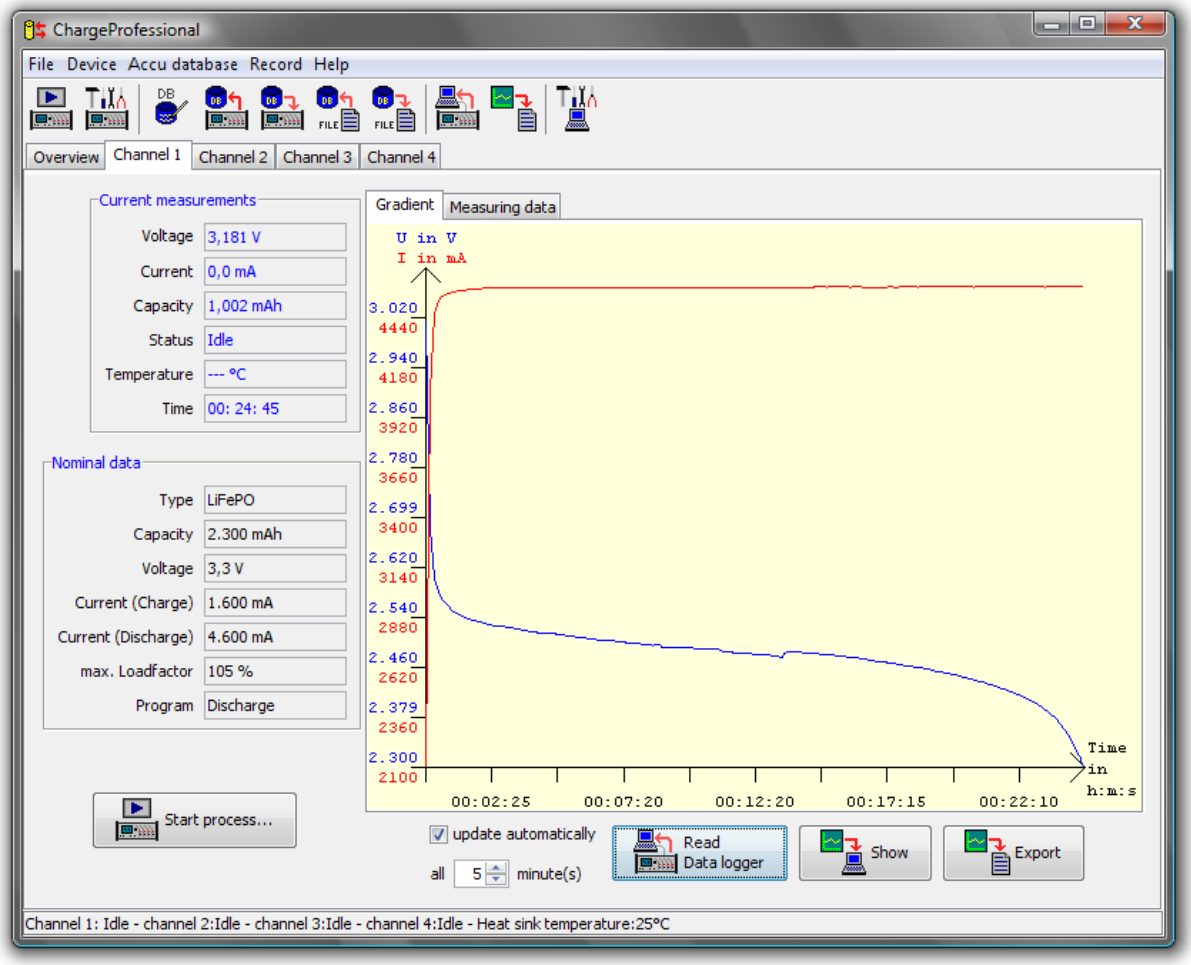
`Read data logger` - Copies the measured data of the chosen channel to the PC

`Show` - Displays the measured data for the choosen channel.

`Export` - Saves the measured data either as a text file in the format CSV or in graphic format as PNG.

4.3 The channel window

If you select one of the tabs in the main window you see the individual channel windows. The following screenshot shows such a channel window.



The channel window indicates the nominal dates of the accus and the current measured values of the selected channel.

All measurements are updated every 5 seconds, current and capacity are only displayed if a charge or discharge procedure is active.

The time is display as " hours: minutes: seconds, " and shows the elapsed time of the current procedure.

The measured curve in the right area is ***not*** refreshed in 5 seconds intervals. You have to click on `Read data logger` and on `Show` to display the actual measured curve. If you want to update the graphic automatically, mark the appropriate field `update automatically`. You can adjust the interval in the entry field. Independently of intervals adjusted here the data is measured in 5 seconds intervals, of course.

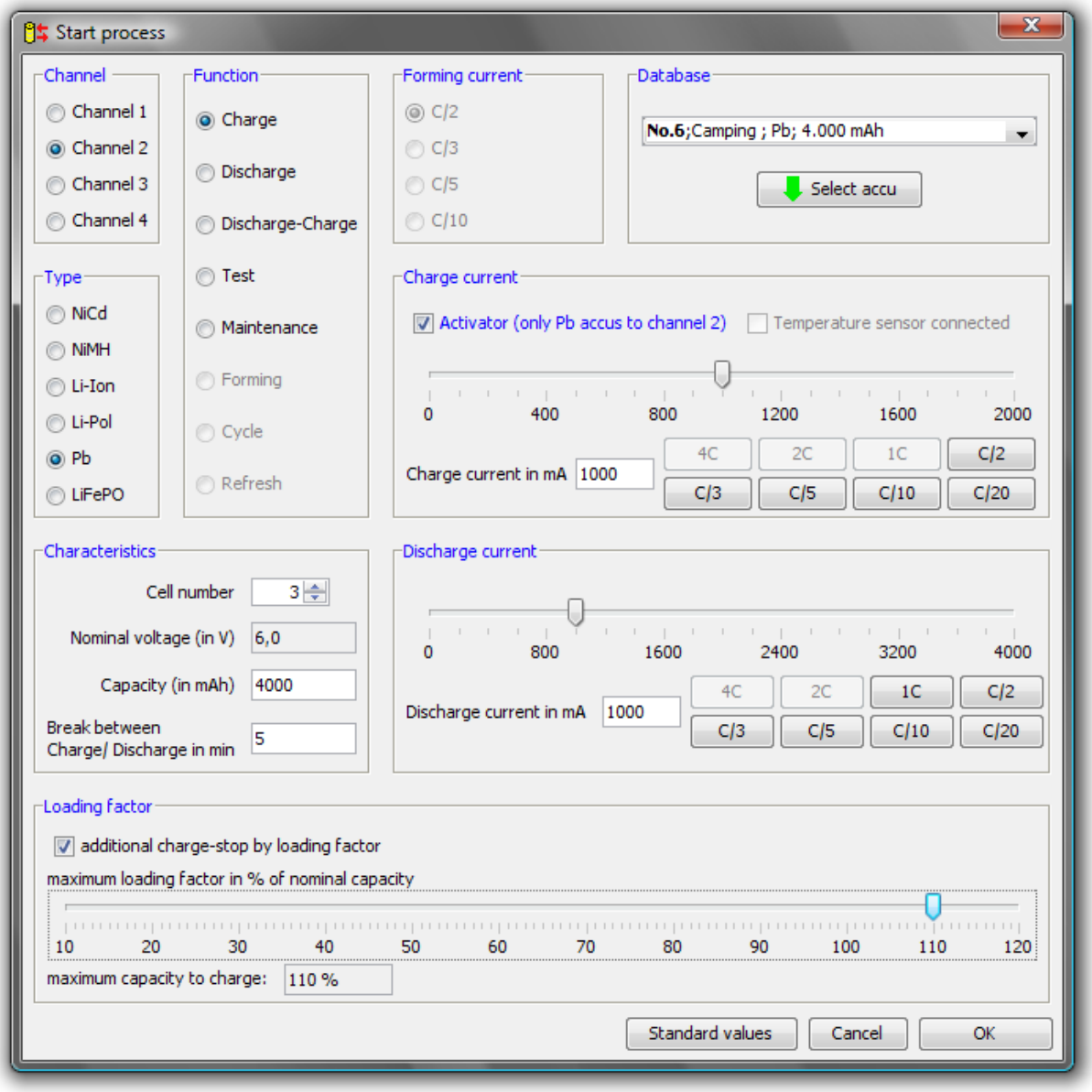
If you want to maximize a part from the measured curve click with the left mouse button into the graphic, keep the mouse button pushed down and pull a rectangle up. As soon as you release the mouse button again, the data of the rectangle is maximized. You reach back on original view again by clicking with the right mouse button into the graphic.

The scaling of the x- and the y-axes always adapt to itself to the selected area automatically.

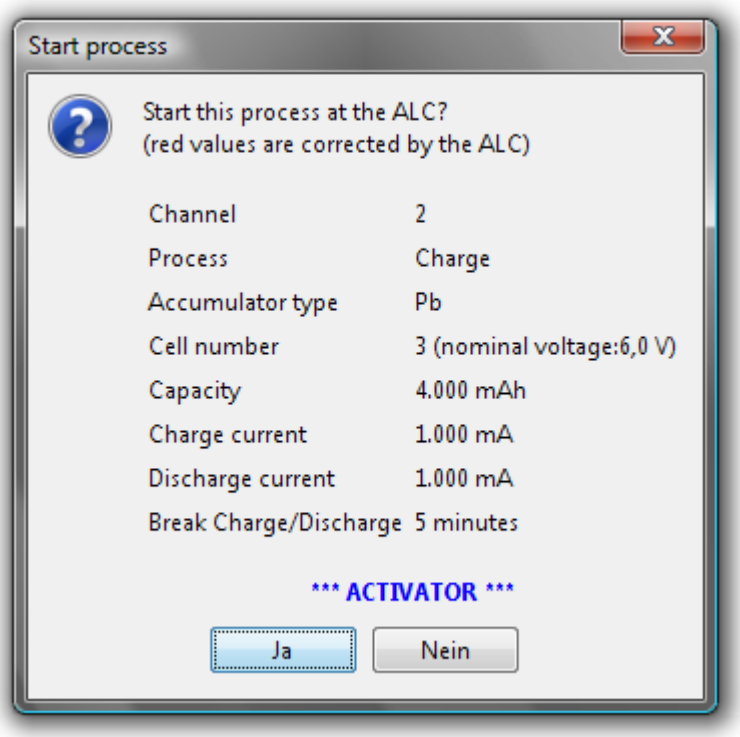
If no fuction is active, a new window appear with clicking on `ReadDatalogger`. Further information see in chapter 4.5: The data logger.

4.4 Starting procedures

You can start a procedure in several places in the program at the ALC 8xxx: From the menu, from the toolbar in the channel overview and in the single channel windows. The following window appears:



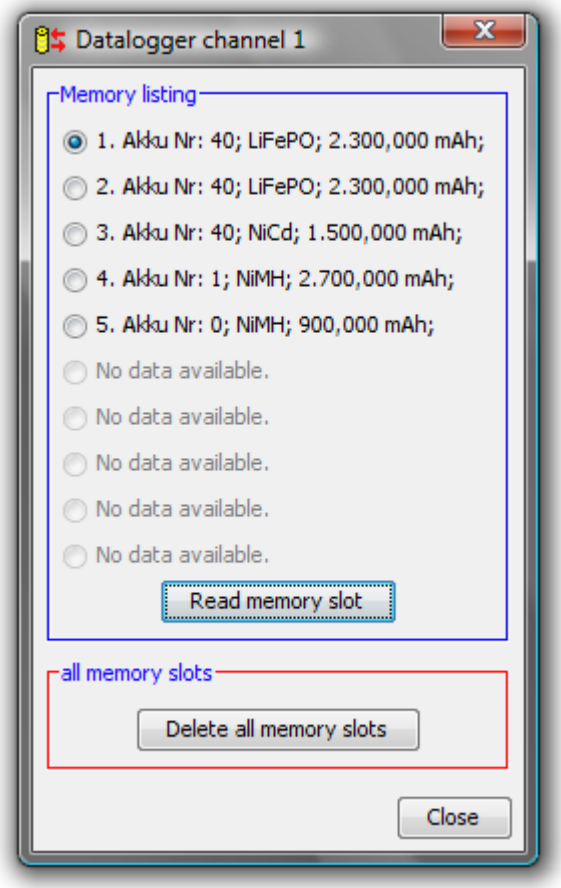
You can define all parameters for a procedure here. Notice the performance limits in the manual for the ALC 8xxx Expert. If a parameter cannot be changed, it is not supported by the ALC 8xxx: The temperature sensor e.g. is available only for channel 1 and can be selected only if you choose the channel 1 before.



If you click on OK, the data are transmitted to the ALC 8xxx. If the chosen channel is busy, a question if you want to stop the current procedure appears. If you want this, the running procedure is stopped and the new procedure is started.

Before the procedure is triggered definitely at the ALC 8 xxx Expert, an overview window appears. If a value is written in red color, the ALC 8xxx has corrected this value since the device conditional performance limits were exceeded.

4.5 The data logger



The build-in data logger can store 65,000 measurements for every channel. This corresponds approx. a note duration of 90 hours per channel. The recording of the measured values takes place independently of whether the PC is attached or not.

Caution: If you turn the ALC 8xxx off and on during a procedure, the last procedures are started again. The respective measuring memory is erased and overwritten.

The datalogger window appears if you try to read the dataloger during the channel is idle. Now you can choose one of the last ten processes and read the memory slot. A Click to `Delete all memory slots` will delete all data for the corresponding channel.

4.6 Export functions

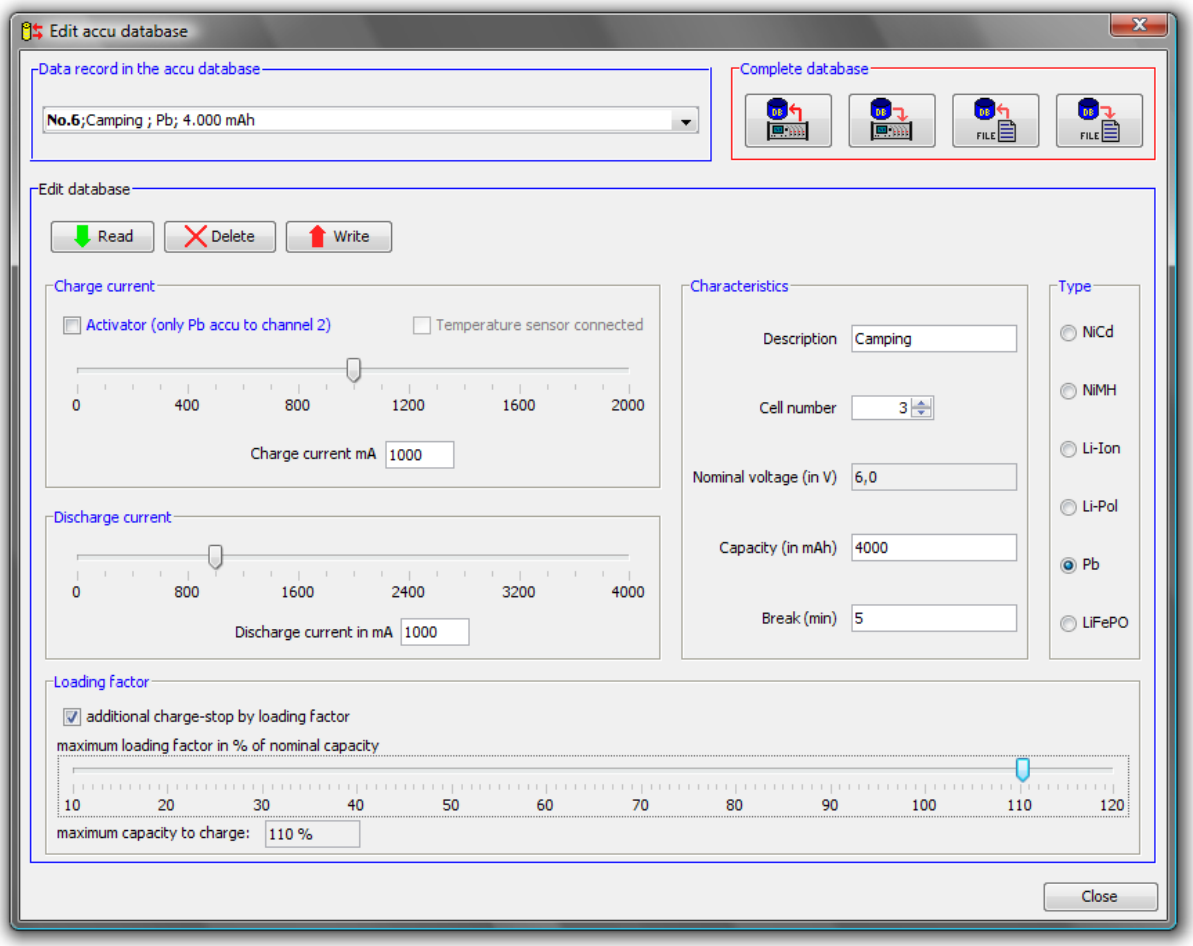
You can export both a complete measuring record and the graphic. If you want to export all measurements of a channel, click on `Read data logger`. After this, choose the tab `measured data` above the grafic and click `Export`. Select a folder and a file name and confirm the choice. The data are exported in the format CSV (Comma Separated Values) which means the individual data are separated from each other by commas. Since the German notation of decimal values already provides the comma for dividing the fractional digits off, the individual measurements are separated by semicolons. You may have to you indicate the separator at the import of these data in other programs.

ChargeProfessional also allows to export the graphical view. Choose "Gradient" and click on Show for a view. If you click on export now and select a file name and a folder, the graphic is stored as PNG (portable network graphic). This graphic format is quite widespread by now.

Note: There is only a button for exporting. Whether the tab `gradient` or `measured data` is selected, it will export either PNG or CSV.

4.7 Accumulator database

In the accumulator database you can copy the database from the ALC8xxx to the PC, edit the database and copy it back to the ALC8xxx. You also have the possibility of storing and loading the database in a file.



The symbols which are displayed in the window on the right above have the same meaning as in the toolbar.

Select an accu in the combo-box in the upper left area.. If you click on the button "read", the accu parameters are transferred into the window “Edit database”. The button "Delete" deletes the selected storage place and the button "Write" writes all settings of the window in the chosen storage place.

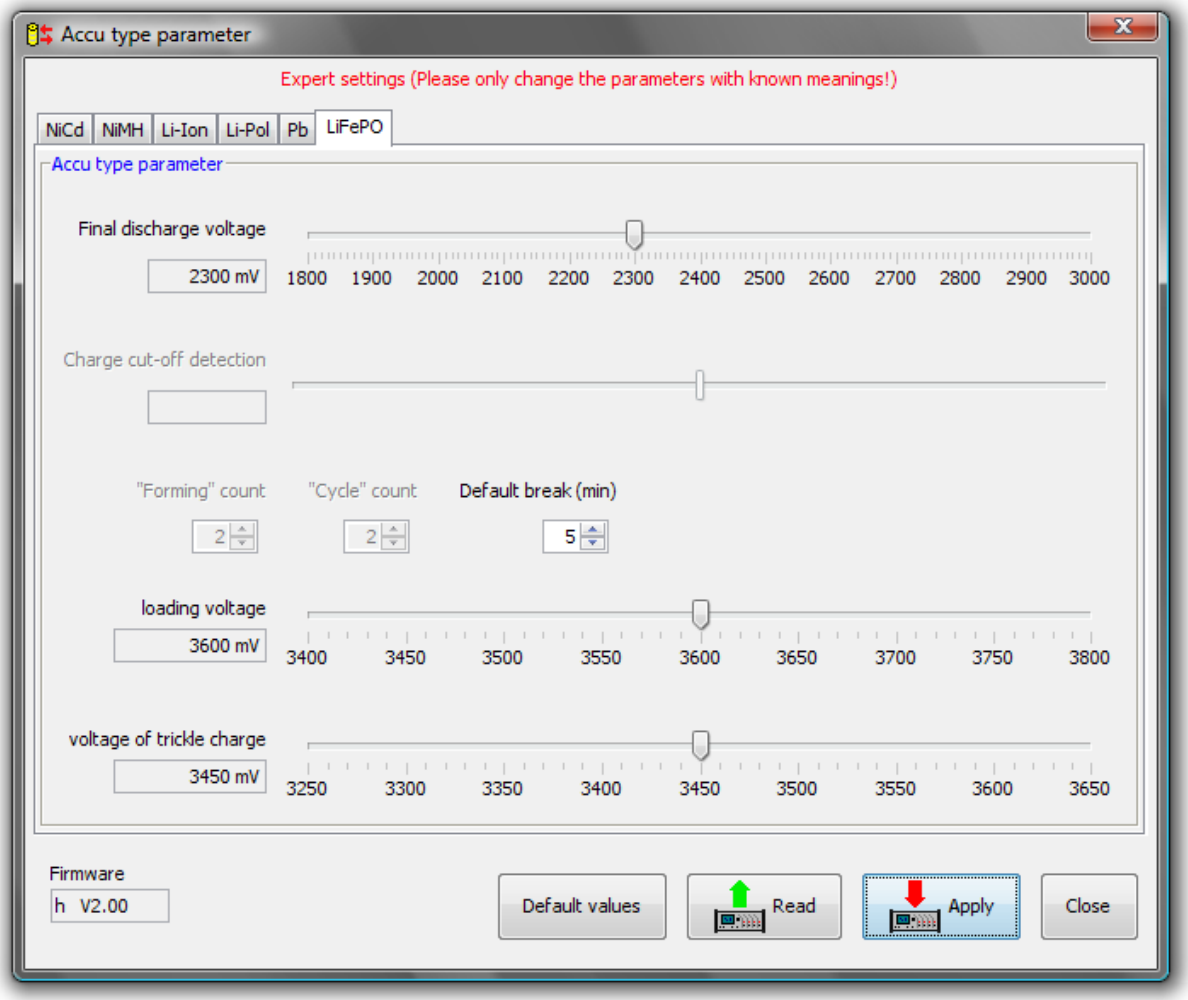
For the name of the accumulator 9 characters are at your disposal, you can only use the following characters:

- Small and capital letters
- the numbers from 0 to 9
- the special signs .-/ ä ö ü ß

After editing the database you can store it in a file and copy it back to the ALC 8xxx. Thus also all stored accu parameters are to you directly at the device at the disposal.

4.8 Device configuration

You can access the accumulator type parameter settings (device configuration) in the main menu by the menu item device or in the toolbar.



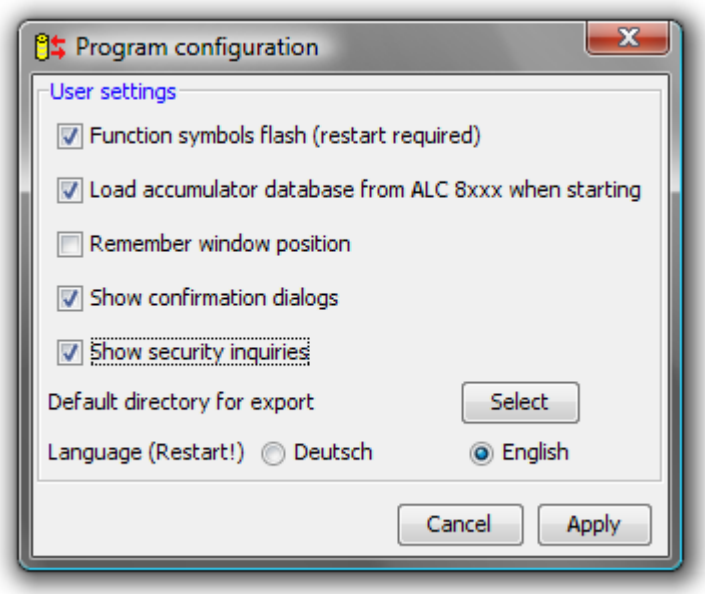
You can adjust charge and discharge parameters for every accumulator type in this window. Also you can enter the final discharging voltage and the percentage end of charging value. The break between charging und discharging can also be changed as the number of cycles in the functions “Forming” and “Cycle”. The loading voltage and the voltage of trickle charge can be changed for the accu types Li-Ion, Li-Pol, Li-Fe and Pb. Please read the warning notices in the manual to the ALC 8xxx and only change these parameters when you know exactly what you enter.

The button “Default values” resets the settings for all accumulator types to the factory default values. The button “Read” gets the settings from the ALC 8xxx and the button “Store” transfers all settings to the device. Please notice, that the buttons will take effect to all accumulator types and not only the visible once.

The firmware version of your ALC 8xxx is shown to you on the left below in window.

4.9 program configuration

If you invoke the program configuration in the main menu or in the tool bar, the following window is displayed.



The first option defines if the symbols displaying a function in the over-view window are flashing. With the second option you decide whether at every start the database is transferred to the PC by ChargeProfessional from the ALC 8xxx automatically. If you switch this option off, the database is always empty at the program beginning.

Remember window position - it indicates whether the program appears when starting either at the position on the screen, where it was exited last, or if the option is not selected, ChargeProfessional appears automatically always centered on the screen.

Show confirmation dialogs - If you do not want to have confirmation dialogs as soon as a regular operation (e.g. loading of the database) has been completed successfully, please uncheck this option. In this case, a notification dialog only appears when an operation has caused an error.

Show security inquiries - For some operations security queries are asked. If you switch this option off, all operations are executed directly.

Default directory for export - The program will start browsing in this directory when you want to export data.

Language - You define the language of the program here. The language setting takes effect only if you restart ChargeProfessional. The first time you start ChargeProfessional it will automatically detect your default language.

With Cancel you will leave the window without changing parameters and Apply takes over the new attitudes.

5 Firmware updates

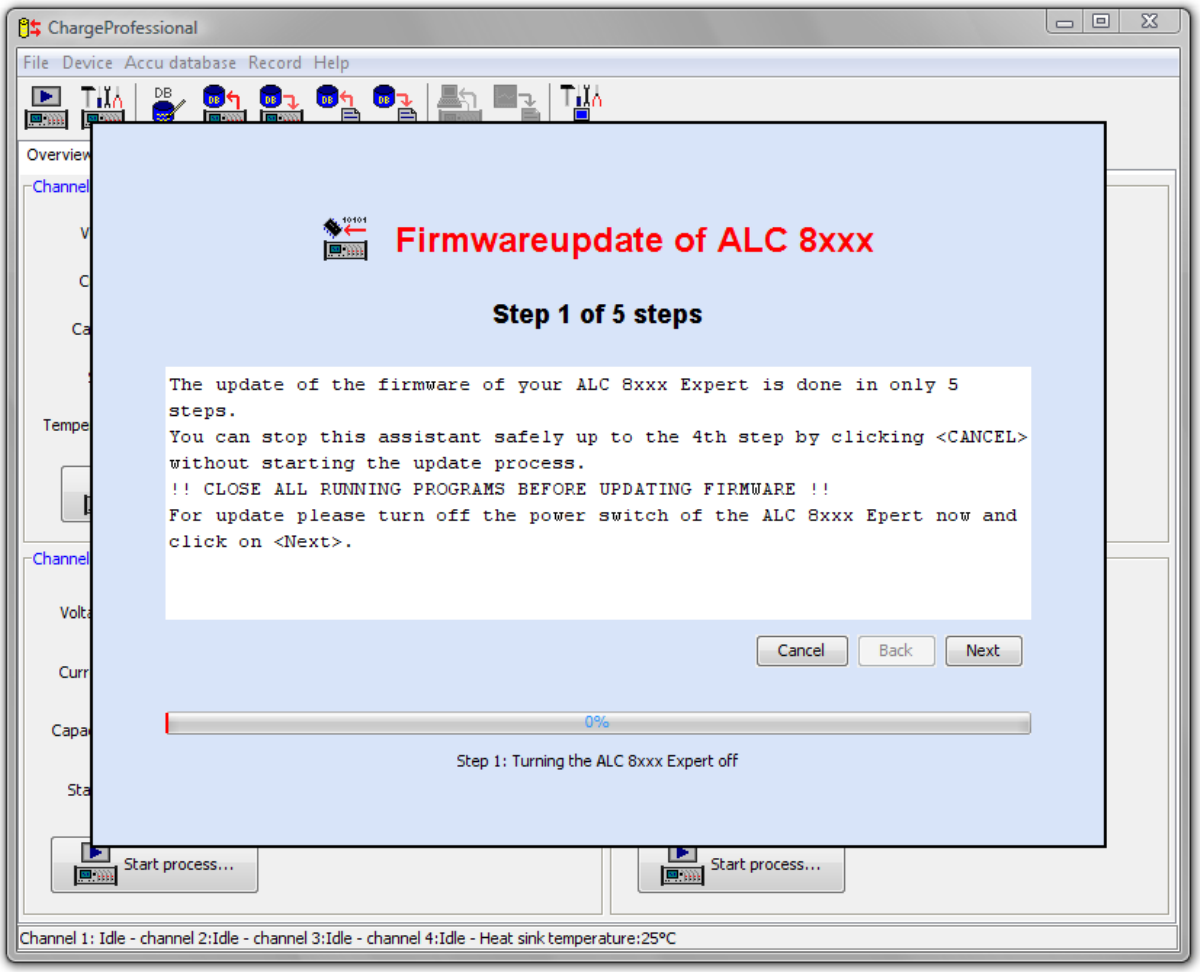
5.1 Firmware update in ChargeProfessional

With clicking this menu item you install a new firmware in the ALC 8xxx. Please follow all steps in exactly the order shown here; otherwise a firmware update will not be successful possibly.

You get a new firmware on the web pages of the manufacturer. If you have downloaded a packed archive there, first unpack this archive in a folder on your hard disk.

A current version of the firmware is contained on the shipped CD.

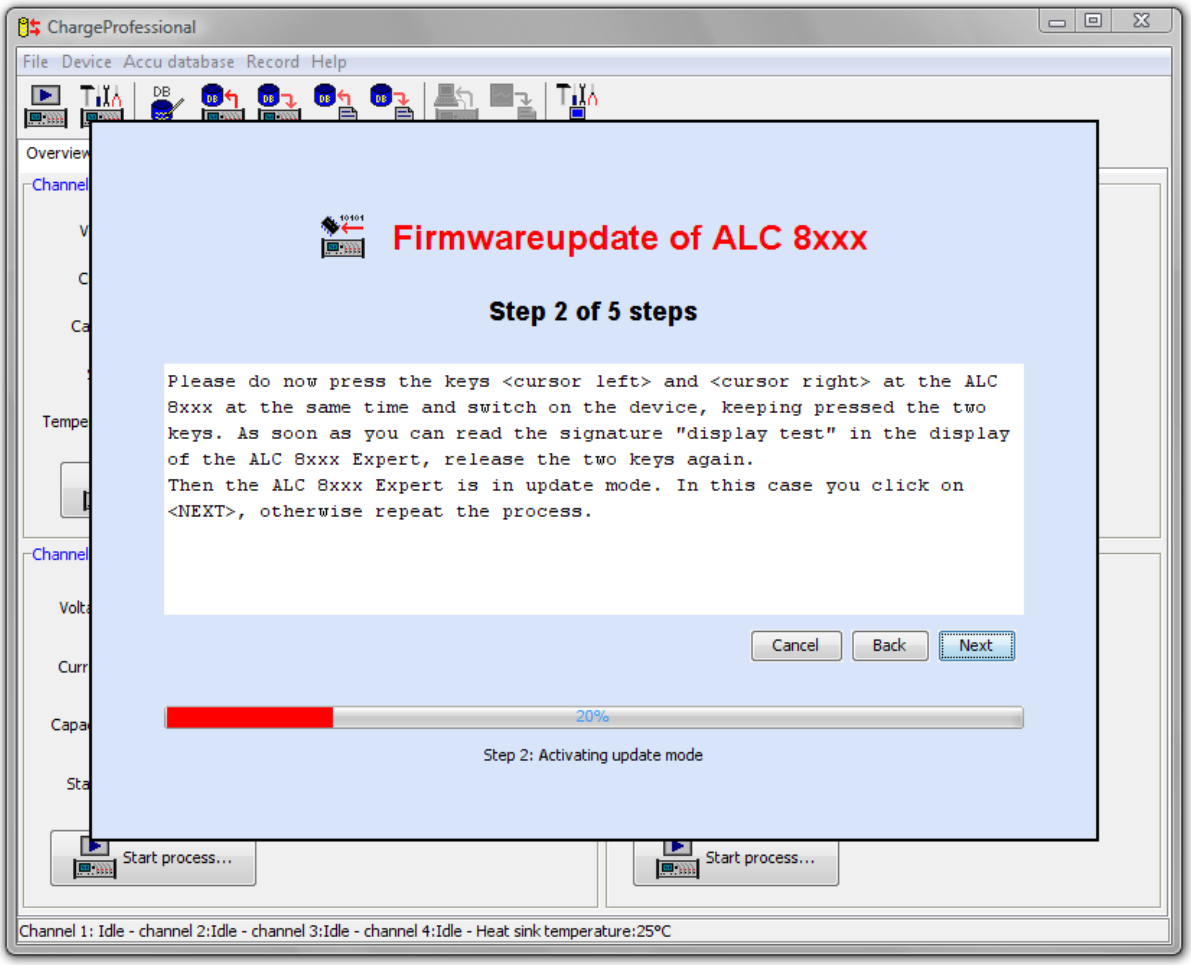
Click in the menu device on the item "`firmware update`" to invoke the assistant who leads you through the firmware update step by step.



Follow the statements in the note window and turn the device off now.

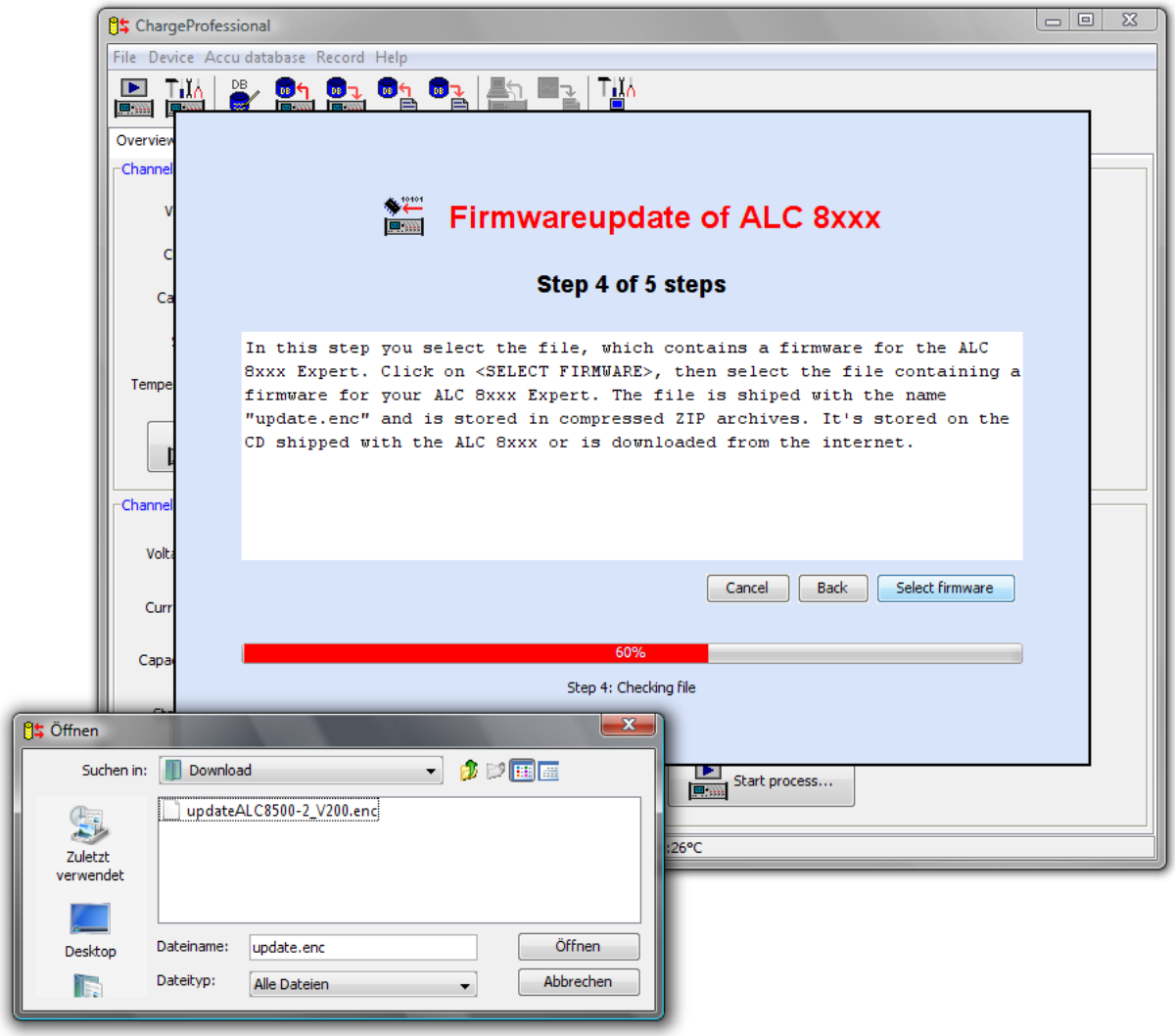
Attention: Do not disconnect the USB cable between device and PC, only turn off the device.

With click on `Next` you reach the next step.

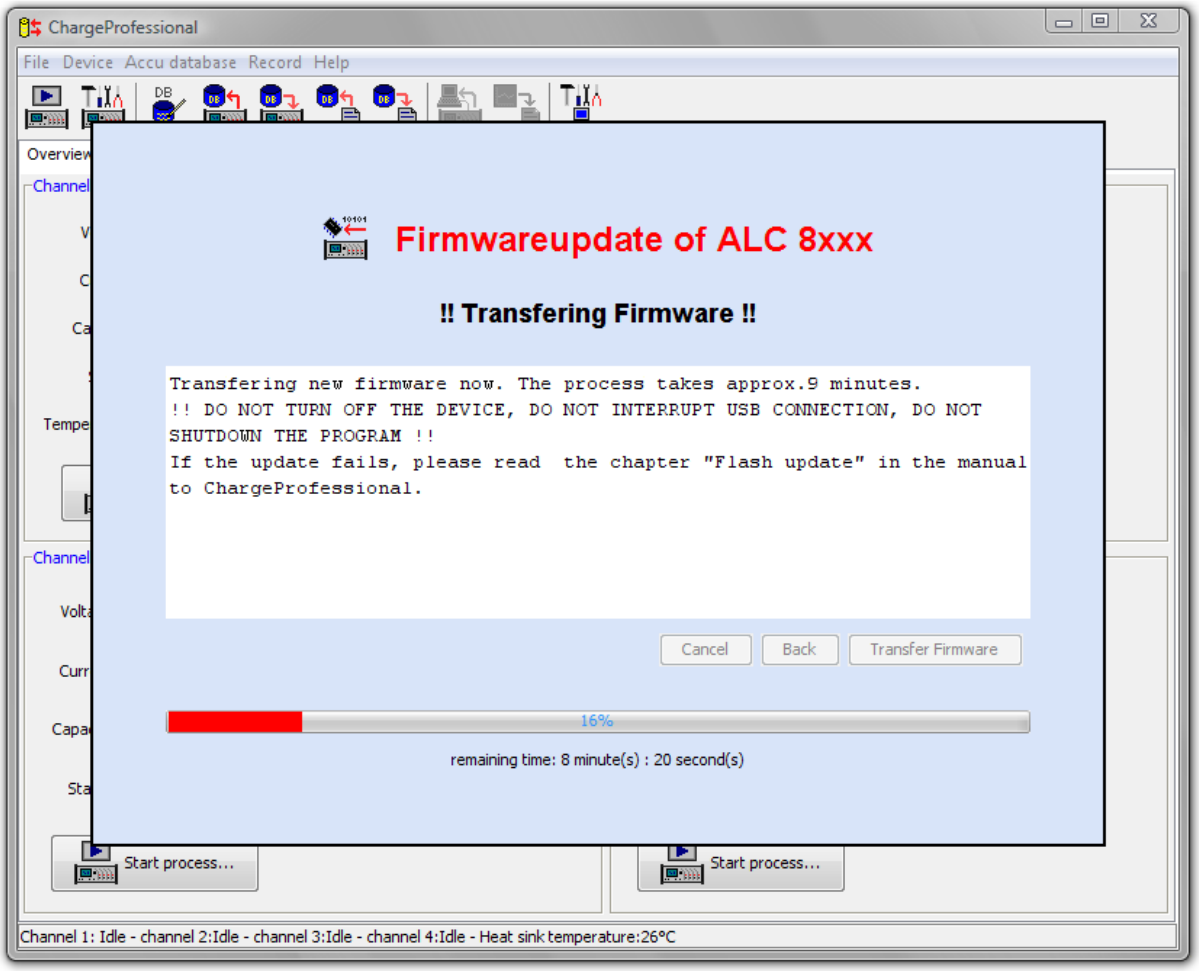


In the second step you bring the device in update mode. Follow the statements to this in the program window and click on `Next`.

Note: The device displays "`display test`" during the complete update process and starts after completion of the update autonomous.



In this step you select a firmware file. The firmware for the ALC8500-2 Expert starts with the name `updateALC8xxx-2_V`.

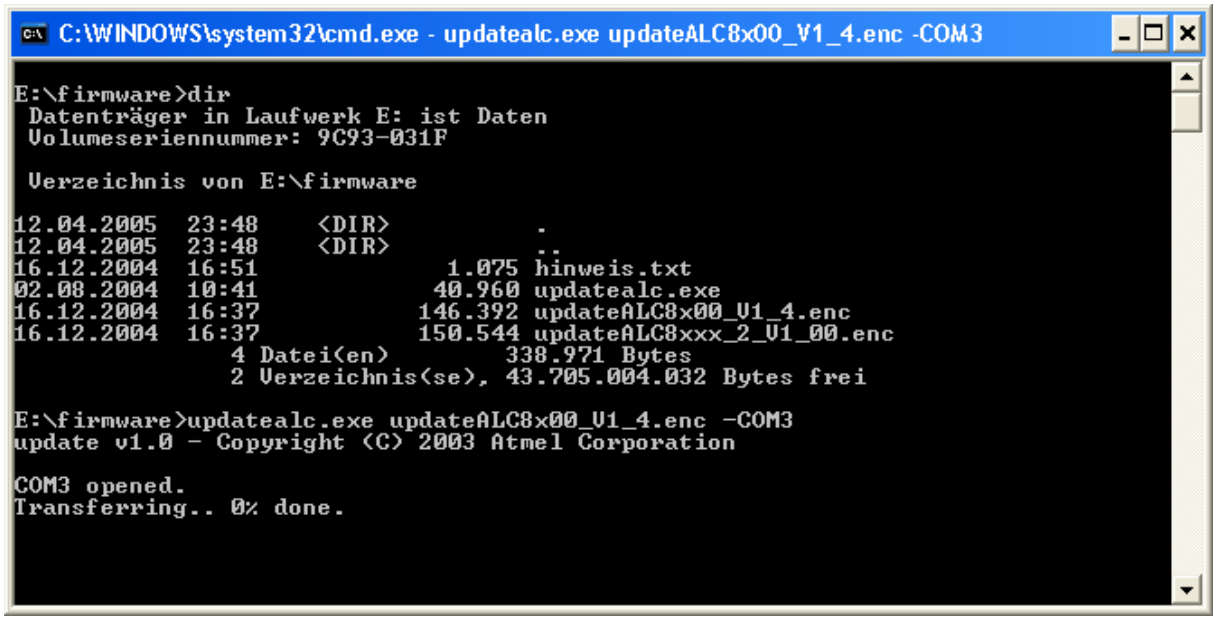


ChargeProfessional is checking now if the chosen file is a valid firmware. If an error message appears, you have selected a wrong file.

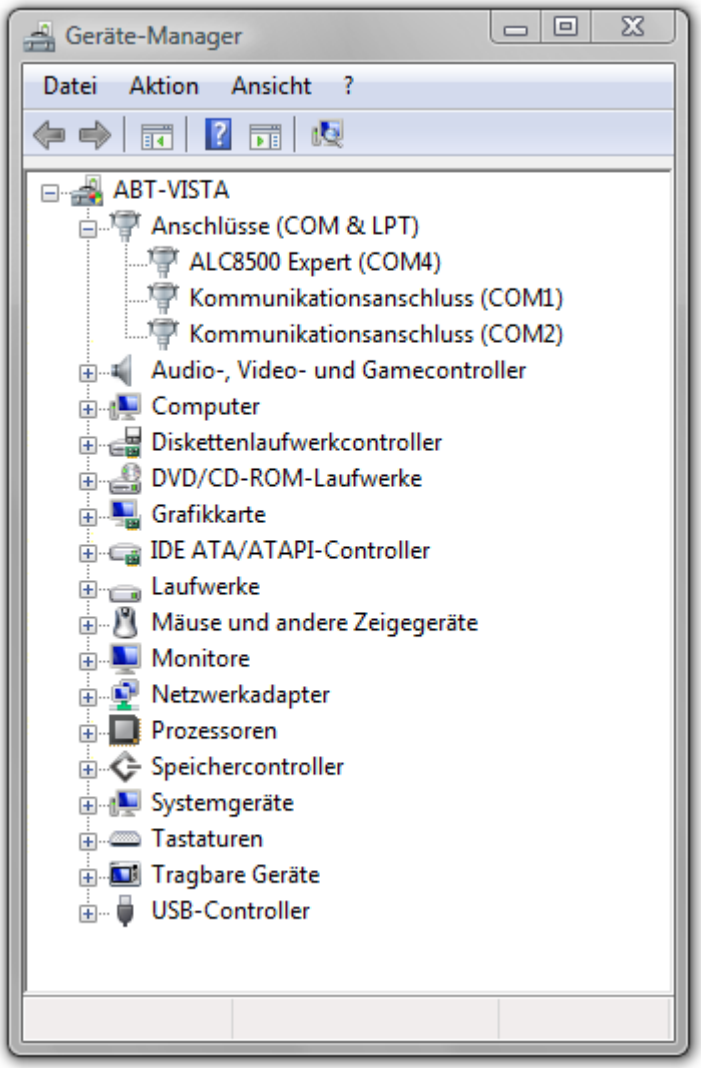
If you click on the button "Transfer Firmware", the transmitting process is started. During the process you have no more influence on the program. Please wait until the end of the transmitting process. A note appears after that, if the update was successful.

If the updating fails, the program is exited. Try it once more.
If e.g. by a power failure the transmitting is stopped, your ALC 8xxx is possibly no longer operationally. In this case it may happen that ChargeProfessional does not start any more because the device is found no longer reliable. In this case you can execute an update in a DOS console with a separate program.

5.2 Firmware update at DOS prompt



On the shipped CD there is a program named `updatealc` in the folder firmware. Please copy this program and the firmware file you want to install in the same directory of your hard disc. Open a DOS prompt in the directory you copied the files.



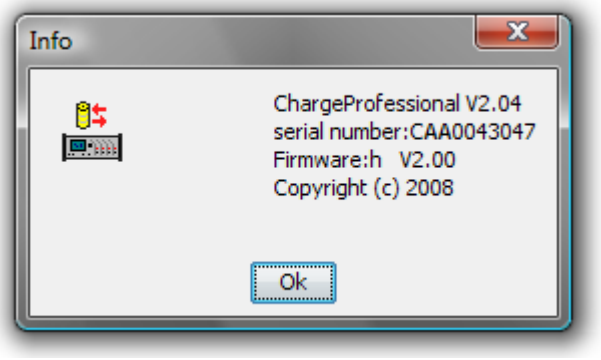
At first bring the device in update mode (the USB cable may not be removed during the complete procedure):

1. Turn the device off.
2. Hold down the two keys `<arrow to left>` and `<arrow to right>` on the ALC 8xxx.
3. While you are holding the two keys pushed down, turn on the device and release the two keys when you can read "`display test`" in the display of the ALC.
4. The stroke "display test" may disappear only after completion of the update, otherwise you have to repeat the process.

Start the program with the following parameters:
`updatealc <name of firmware file> -COMx`
The parameter `COMx` indicates the communication connection. The device manager of Windows can help you to find out the communication port number. (the screenshot it's `COM4`!!)
Example:
`updatealc updateALC8x00_V1_4.enc –COM3`

6 Support

6.1 Serial number and firmware version



If you are asked for the serial number and firmware version of your ALC 8xxx e.g. at the support hot-line, just click on `Info` in the help menu. Also the version of ChargeProfessional is displayed.