HFView
SOFTWARE
Rev 0

USER MANUAL

Page 1 / 58
## Contents

1. Introduction............................................................................................................................. 3
2. Installation.............................................................................................................................. 3
3. Parameters............................................................................................................................. 4
   3.1 Set language....................................................................................................................... 4
   3.2 Serial port.......................................................................................................................... 5
3.3 Configuration......................................................................................................................... 5
3.4 Enter password..................................................................................................................... 6
4. HF battery charger connected................................................................................................ 7
   4.1 Preparation......................................................................................................................... 7
   4.2 Quick consultation of data ............................................................................................... 7
   4.3 TAB Programming............................................................................................................. 7
   4.4 General parameters tab .................................................................................................... 8
   4.5 Table of Timer Parameters............................................................................................... 13
   4.6 Curve Set Parameters....................................................................................................... 14
   4.7 Table of Parameters for Special Functions..................................................................... 16
   4.8 Table of Curve Phase Parameters................................................................................... 18
   4.9 Configuration of special functions.................................................................................. 20
   4.10 Writing parameters ......................................................................................................... 22
   4.11 Monitor TAB .................................................................................................................... 26
   4.12 Info TAB ........................................................................................................................ 27
   4.13 Recorder TAB .................................................................................................................. 28
   4.14 Graphics TAB .................................................................................................................. 29
   4.15 Archiving Historical Data ............................................................................................... 30
5. Consulting OLD data............................................................................................................. 31
   5.1 HF Explorer ...................................................................................................................... 31
   5.2 OLD Data TAB .................................................................................................................. 32
   5.3 OLD Info TAB ................................................................................................................... 33
   5.4 OLD Graphics TAB.......................................................................................................... 34
   5.5 Programming TAB ............................................................................................................ 35
   5.6 Archive TAB ..................................................................................................................... 38
6. Customer/Operator Master Data .......................................................................................... 39
7. Edit associations..................................................................................................................... 41
8. Select database....................................................................................................................... 42
9. OLD Recorder.......................................................................................................................... 43

APPENDIX A ........................................................................................................................................ 44
   Use of the DFU program ........................................................................................................... 44

APPENDIX B ........................................................................................................................................ 45
   USB driver installation............................................................................................................. 45
   B1 - Installation of the USB DRIVER on Windows XP ............................................................. 45
   B2 - Installation of the USB DRIVER on Windows VISTA ....................................................... 48
   B3 - Installation of the USB DRIVER on Windows VISTA ....................................................... 51

APPENDIX C ........................................................................................................................................ 55
   C1 – DATABASE Opening on Windows VISTA ......................................................................... 55
   C2 – DATABASE Opening on Windows 7 .................................................................................. 57
1. Introduction

HFVIEW is an application for Windows (Windows98 and higher) for communication with HF battery chargers.

The HF battery charger communicates with the PC via the USB cable. It is possible to customize operation of the device by entering the data of the connected battery and required work settings. It is also possible to monitor all the work parameters in real time and to download the saved data (in the form of work cycles and graphs) to the local database on the PC. Once downloaded to the PC, the data can be viewed at any time without need for connection via USB cable.

The HFVIEW program can process the data of an unlimited number of HF battery chargers: there is a simple search system for finding and viewing the data of any single device.

The data displayed in the HFVIEW program can be printed by pressing a dedicated button.

Together with the HFVIEW program, another program called DFU is provided that updates the firmware of the HF battery charger.

2. Installation

Initial installation

Follow these instructions when installing the package for the first time:

- Open the folder that contains the package. Open the "Disk1" subfolder.
- Launch the Setup.exe program and follow the on-screen instructions.

At the end, the program bar will show the HFVIEW folder for access to the various components of the package. There will also be a link to the HFView program on the desktop.

Maintenance

To install new versions of the package, you first need to remove the version that is currently installed using the tools in Windows.
Once launched, the HFVIEW program opens the main page listing all the functions.

3. Parameters

The “Parameters” menu allows you to modify:
- The level of access to the functions according to password
- Configuration of the passwords for the various user levels
- The serial communication port
- The software language

3.1 Set language

Click the “Parameters” menu, select “Set Language” and choose the required language.

You need to restart the program to save the selected language.


3.2 Serial port

Click the “Parameters” menu, select “Serial port” and in the configuration window: select “Auto” to search automatically for the serial port for connection. Click the SmartUSB checkbox to select it.

NOTE:
The automatic search can take a few moments for each connection, depending on which method the operating system uses to assign the number to the serial port. It is advisable in these cases to find the number of the port (Windows Control Panel -> Device Manager -> Ports (COM and LPT)) and select the required port. If using the same serial port, it is possible to set the number of the port. This avoids wasting time with the automatic search.

3.3 Configuration

The HFVIEW program has 4 different access levels, some with passwords. The Level 1 password will give most users access to the information and parameters that they need to be able to change. Please contact Flight Systems Industrial Products if you believe you need access to additional password settings.

- No password:
  - Partial access to read-only data
  - No access to configuration of parameters relating to associations
  - Possibility of saving cycles and graphs on PC
  - No access to configuration of the programming parameters
  - No access to the calibration parameters

- Level 1 password (user level): (alfa)
  - Partial access to read-only data
  - Partial access to Import/Export of parameters relating to curves
  - Possibility of saving cycles and graphs on PC
  - Partial access to configuration of the programming parameters
  - No access to the calibration parameters
3.4 Enter password

Click the “Parameters” menu and select “Enter password” to change the access password.

- Select “Enter password” in the “Parameters” menu or press “Password” and enter your password
- Select Configuration to open the configuration window
- Change the password of your level or of a lower level

NOTE:
The default passwords for first-time installation are:
Level 1: “ALFA” (user)

The passwords are not “case sensitive” so it does not matter if the characters are in upper or lower case.
4. **HF battery charger connected**

The functions made available when you connect to the HF battery charger via USB or serial cable are described below. The **HFVIEW** program must already be configured as above.

### 4.1 Preparation

- Connect the USB cable (or serial cable) to the PC and HF battery charger (upon initial installation, you are requested to install the drivers for communication via USB port\(^1\))
- Launch the **HFView** program
- Enter the Password, if necessary, for the operations you wish to carry out
- Press the “Connect HF” connection button

**NOTE:**
Serial connection is indicated by the icon in the bottom left-hand corner of each TAB.

### 4.2 Quick consultation of data

This section describes all the functions made available when connected via USB cable. If serial connection is lost, a warning message appears and all automatic operations are stopped.

- To restore connection, you need to:
  - Disconnect the USB cable
  - Press OK when the warning message appears
  - Reconnect the USB cable
  - Press the “Connect HF” connection button

There are 5 selectable tabs at the top and 5 buttons at the bottom the functions of which vary according to the tab selected.
In particular, the 3 buttons marked “Password”, “HF explorer” and “Download data” are always active.

### 4.3 Programming TAB

The parameters accessed via this TAB are those relating to operation of the HF battery charger and the data collection method.
It is possible to read and/or write these parameters, depending on password level.
To edit the parameters, press the EDIT button and enter a new value for the parameter then press SEND to program the parameter on the battery charger.
The various menus and fields are described further on.

---

\(^1\) Communication via USB port requires previous installation of the drivers for Windows (APPENDIX B)
4.4 General parameters TAB

This TAB permits configuration of certain general parameters shown in the figure below:

- Battery ID
- User Parameters: Language, Temperature measurement, Graphics field time
- Rated Voltage Parameters: Rated Voltage of the battery charger (and HW), Minimum Voltage with Battery
- Nominal Temperature Parameters: Recovery time after battery temperature sensor fault
- Curve Selection: Configuration of the Default curve
- Current Nominal Parameters: Shunt value, Rated current, Nominal capacity
- HW configuration: Configuration of the DIP switches on logic card
- System configuration: Describes the logic configuration (standalone or master/slave)

To edit a parameter, press the EDIT button, configure the required value of the parameter and press SEND.
The various fields are explained in the table below.

**USER PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language HF250</td>
<td>Language for information on the local display</td>
<td></td>
<td>0=ENG 1= ITA 2=FRA 3=DEU</td>
</tr>
<tr>
<td>Temperature measurement</td>
<td>Select the unit of measurement for temperature, locally and on the PC</td>
<td>°C/°F</td>
<td>0=°C</td>
</tr>
<tr>
<td>Graphics field time</td>
<td>Sample time for saving graphics on the local memory</td>
<td>minutes</td>
<td>6</td>
</tr>
<tr>
<td>Quick Test</td>
<td>Enable quick times of 1 sec → 0.2sec, 1min → 1sec</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**RATED VOLTAGE PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC rated voltage</td>
<td>Defines the rated voltage of the battery charger</td>
<td>Volts</td>
<td>1.2 – 999.9V</td>
</tr>
<tr>
<td>Min voltage with Battery</td>
<td>Minimum voltage when there is presence of a battery</td>
<td>Volts</td>
<td>0.10 – 0.75*Vbnom</td>
</tr>
</tbody>
</table>
### NOMINAL TEMPERATURE PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset time after triggering of thermal protector</td>
<td>Time to reset the alarm after triggering of thermal protector</td>
<td>min</td>
<td>1-99 min</td>
</tr>
</tbody>
</table>

### CURVE SELECTION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURVE</td>
<td>Number of current curve</td>
<td>N</td>
<td>1-8</td>
</tr>
</tbody>
</table>

Each curve is given a unique release code of 3 + 4 digits.
### CURRENT NOMINAL PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>100mV Shunt Current of the module</td>
<td>Shunt current at 100mV</td>
<td>A</td>
<td>5-995</td>
</tr>
<tr>
<td>Rated Current of the module</td>
<td>Rated Current of the power module</td>
<td>A</td>
<td>5-1.2 * IShunt</td>
</tr>
<tr>
<td>BC rated current</td>
<td>Rated current of the battery charger (the same as the rated current of the module in standalone configuration or multiple in the case of Master-slave)</td>
<td>A</td>
<td>5-9950</td>
</tr>
<tr>
<td>Nominal capacity</td>
<td>Nominal capacity of the battery (used in Ah algorithm)</td>
<td>A</td>
<td>5-9999</td>
</tr>
</tbody>
</table>

### HARDWARE CONFIGURATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of HW(SW1.1-2-3-4)</td>
<td>Type of power module to be controlled</td>
<td>N</td>
<td>0: New PBM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1: OLD PBM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3: UNIV OLD</td>
</tr>
<tr>
<td>NTC (SW1.5)</td>
<td>Presence of NTC probe for controlling battery temperature</td>
<td>0-1</td>
<td>0: absent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1: present</td>
</tr>
<tr>
<td>Current PBM168</td>
<td>Number of PTM168 cards connected to the CPU</td>
<td>N</td>
<td>0: absent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1: 1 present</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2: 2 present</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3: 3 present</td>
</tr>
</tbody>
</table>
### SYSTEM CONFIGURATION

**System Configuration**
- Standard
- Master: No. of slaves
- Slave - Address

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>Architecture of the system:</td>
<td>N</td>
<td>0 = stand-alone&lt;br&gt;1-10 = slave&lt;br&gt;101-110 = master that controls 1-10 slaves</td>
</tr>
<tr>
<td></td>
<td>- Stand-alone: Only one control card</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- MASTER/SLAVE: Several control cards, including a Master one (which must know how many slaves to be controlled) and a N-1 SLAVE (each one is assigned an address)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ANALOG PARAMETERS

**Analog Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Analog Input</td>
<td>Type of analog connected to auxiliary port #1</td>
<td>0-OFF</td>
<td>0-OFF</td>
</tr>
<tr>
<td>Aux.1</td>
<td></td>
<td></td>
<td>1-POT1-V</td>
</tr>
<tr>
<td>Type Analog Input</td>
<td>Type of analog connected to auxiliary port #2</td>
<td>0-OFF</td>
<td>2-POT2-I</td>
</tr>
<tr>
<td>Aux.2</td>
<td></td>
<td></td>
<td>3-POT3-T</td>
</tr>
<tr>
<td>Type Analog Input</td>
<td>Type of analog connected to auxiliary port #3</td>
<td>0-OFF</td>
<td>4-NTC 5K Probe</td>
</tr>
<tr>
<td>Aux.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type Analog Input</td>
<td>Type of analog connected to auxiliary port #4</td>
<td>0-OFF</td>
<td></td>
</tr>
<tr>
<td>Aux.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type Analog Input</td>
<td>Type of analog connected to auxiliary port #5</td>
<td>0-OFF</td>
<td></td>
</tr>
<tr>
<td>Aux.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.5 Table of Timer Parameters

In this window it is possible to enable the General Purpose Timers:
- They can be enabled during any charging phase
- They can be associated with RELAYS or other outputs on the HF205 or power card or PBM168 expansions
- They can start with ON status (activated) or OFF status (pause)
- The activation times (Ton) and pause times (Toff) can be programmed
- They can be programmed in terms of number of repetitions

![Configuration of general purpose timers associated with the charging phases](image)

<table>
<thead>
<tr>
<th>TABLE FOR CONFIGURATION OF THE NOMINAL PARAMETERS OF TIMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Output</td>
</tr>
<tr>
<td>Start OUT</td>
</tr>
<tr>
<td>Delay T1</td>
</tr>
<tr>
<td>Delay T2</td>
</tr>
<tr>
<td>No. repetitions for output T1-T2</td>
</tr>
<tr>
<td>Start T1 phases</td>
</tr>
</tbody>
</table>
4.6 Curve Set Parameters

This table allows you to program certain general parameters of a selected curve.

Battery Voltage Parameters:
- Type of battery,
- Element Voltage,
- Max Control Voltage,
- Start without battery,
- Number of Battery Elements,
- Min Limit of Voltage Variation in relation to rated voltage of the BC

Battery Current Parameters:
- Nominal Current,
- Minimum Limit of Current Variation, Max Limit of Current Variation

Curve Parameters:
- Number of current phases,
- Timeout of current charging on/off, proportional Ah or dv/dt.

Programming of Equalization charging and trickle charge
<table>
<thead>
<tr>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number current phases</td>
<td>Number of current charging phases for the curve</td>
<td>N</td>
<td>1-7</td>
</tr>
<tr>
<td>F1/F7- Timeout current charging</td>
<td>General timeout for the F1/F7 phases</td>
<td>hh:mm</td>
<td>0=Off 0:01 ÷ 99:59</td>
</tr>
<tr>
<td>TSIC Fault Signal</td>
<td>Enables signalling of fault in the event of TSIC timeout</td>
<td>N</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>Tprop</td>
<td>Enables an end-of-charge control algorithm for proportional time</td>
<td>N</td>
<td>0=Off 1 = Tcalc (3+TFasiprec/4) 2 = Tcalc = (1÷4)h 3 = Tcalc = (1÷3)h</td>
</tr>
<tr>
<td>Ahprop</td>
<td>Enables a control algorithm in Ah (5+ 7% Cnom + 23% Cfp)</td>
<td>N</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>dVFTF</td>
<td>Enables a Phase 1 control algorithm for dV/dt defining the permitted voltage variation within the specific unit of time</td>
<td>mV/el</td>
<td>OFF  dV : mV (0÷99) dT: min(0÷99)</td>
</tr>
<tr>
<td>F8-PAUSE at charging end</td>
<td>Time of pause after charging</td>
<td>hh:mm</td>
<td>0:00÷99:59</td>
</tr>
<tr>
<td>F9/F12-EQUALIZATION off/cycles</td>
<td>Enables equalization charge for N sets of impulses in 24 hours</td>
<td>N</td>
<td>0=Off 250,255=∞</td>
</tr>
<tr>
<td>F9-Tskip 1’ Equalization on</td>
<td>Minimum charging time below which equalization is skipped</td>
<td>hours</td>
<td>0=Off 1÷250</td>
</tr>
<tr>
<td>F9-T.on Equalization</td>
<td>Duration of equalization impulse</td>
<td>minutes</td>
<td>1÷250</td>
</tr>
<tr>
<td>F9-Vlim Equalization</td>
<td>Minimum voltage below which the next impulse is activated in advance</td>
<td>V/el</td>
<td>Vbmin÷Vbmax</td>
</tr>
<tr>
<td>F9-Iref Equalization</td>
<td>Equalization current</td>
<td>A</td>
<td>0÷Inom</td>
</tr>
<tr>
<td>F10-T.off Equalization</td>
<td>Impulse Pause Time during Equalization</td>
<td>minutes</td>
<td>1÷250</td>
</tr>
<tr>
<td>F11-current equalization cycle T</td>
<td>Time, in hours, of total equalization cycle (e.g. 2 or 3 days)</td>
<td>hours</td>
<td>0=Off 1÷250</td>
</tr>
<tr>
<td>F12-Repeat Equal. Cycle Pause T.</td>
<td>Pause between two current equalization cycles</td>
<td>hours</td>
<td>0=Off 1÷250</td>
</tr>
<tr>
<td>F10-11-12-Vmin Equal. Restart</td>
<td>Minimum battery voltage for anticipated restart of equalization</td>
<td>V/el</td>
<td>off,0=Vbmin÷Vbmax</td>
</tr>
<tr>
<td>SET parameters</td>
<td>Description</td>
<td>U of M/Notes</td>
<td>Permitted values</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>F13-TRICKLE CHARGE</td>
<td>Enable trickle charge at constant voltage for ( n ) hours</td>
<td>hours</td>
<td>0=Off, ( 1\div250,255=\infty )</td>
</tr>
<tr>
<td>F13-Vref Trickle charge</td>
<td>Voltage for trickle charge</td>
<td>V/el</td>
<td>Vbmin÷Vbmax</td>
</tr>
<tr>
<td>F13-Iref Trickle charge</td>
<td>Max current for trickle charge</td>
<td>A</td>
<td>( 1\div\text{INOM} )</td>
</tr>
</tbody>
</table>

4.7 Table of Parameters for Special Functions

Enable and Configure interface with AGV

Enable and Configure BOOST charge function

Enable and Configure anti-charging (anti-opportunity) function

Enable and Configure signal mains presence function

Enable and Configure remote on/off
# Table for Configuration of Inputs/Outputs for Special Functions

<table>
<thead>
<tr>
<th>ID</th>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enable AGV: enable use of the interface with AGV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in_REMOTE</td>
<td>Remote control ON</td>
<td></td>
<td>bit</td>
<td>NO÷IN71</td>
</tr>
<tr>
<td>out_READY</td>
<td>Signals BC is OK and connected</td>
<td></td>
<td>bit</td>
<td>OUT0÷OUT47</td>
</tr>
<tr>
<td>out_ALARM</td>
<td>Signals BC is OK</td>
<td></td>
<td>bit</td>
<td>OUT0÷OUT47</td>
</tr>
<tr>
<td>out_CHARGING</td>
<td>Signals BC is charging</td>
<td></td>
<td>bit</td>
<td>OUT0÷OUT47</td>
</tr>
<tr>
<td>out_CHARGING ENDED</td>
<td>Signals BC has finished charging</td>
<td></td>
<td>bit</td>
<td>OUT0÷OUT47</td>
</tr>
</tbody>
</table>

**Enable BOOST/NORMAL charge: Enable the possibility of two types of charging (quick and normal) controlled by remote input**

<table>
<thead>
<tr>
<th>ID</th>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>in_BOOST_ON</td>
<td>Activation command</td>
<td></td>
<td>bit</td>
<td>NO÷IN71</td>
</tr>
<tr>
<td>Normal Current for Boost</td>
<td>Percentage of reduction in current for NORMAL charge</td>
<td></td>
<td>%</td>
<td>0=Off 10 ÷ 99</td>
</tr>
<tr>
<td>Timeout BOOST</td>
<td></td>
<td></td>
<td>mm:ss</td>
<td>0=Off 59:59 ÷ 15:00</td>
</tr>
</tbody>
</table>

**Enable ANTI-CHARGING (Anti-Opportunity) function: Enable the Battery Voltage control function before charging to avoid charging batteries that are already charged**

<table>
<thead>
<tr>
<th>ID</th>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>In_Anticharging_ON</td>
<td>Activation command</td>
<td></td>
<td>bit</td>
<td>NO÷IN71</td>
</tr>
<tr>
<td>Anti-charging max voltage</td>
<td></td>
<td></td>
<td>V/el</td>
<td>0=Off VelNOM÷VelMax</td>
</tr>
</tbody>
</table>

**Enable SIGNAL MAINS PRESENCE: Enables control of a relay that signals mains presence (e.g. to disable movement of the carriage during the charging process)**

<table>
<thead>
<tr>
<th>ID</th>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINS OUTPUT PRESENT</td>
<td>MAINS present for BC on board</td>
<td></td>
<td>bit</td>
<td>OUT0÷OUT47</td>
</tr>
</tbody>
</table>

**Enable REMOTE ON/OFF BUTTON: Enables a remote ON/OFF input**

<table>
<thead>
<tr>
<th>ID</th>
<th>SET parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>ON_OFF</td>
<td>On/off aux input</td>
<td>bit</td>
<td>NO÷IN71</td>
</tr>
</tbody>
</table>
4.8 Table of Curve Phase Parameters

<table>
<thead>
<tr>
<th>PHASE parameters</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>Type of test carried out during current phase</td>
<td>a: Stop t: Direct current U: Constant voltage W: Current Linear Decrease (from Imin to Imax)</td>
<td>V/el,PotV</td>
</tr>
<tr>
<td>Vref</td>
<td>Voltage of reference (for U test) and possibility of connection to PotV Potentiometer Input</td>
<td>V/el,PotV</td>
<td>VelNOM÷VelMax</td>
</tr>
<tr>
<td>Vmin</td>
<td>Minimum voltage and possibility of connection to Potentiometer Input</td>
<td>V/el,PotV</td>
<td>VelNOM÷VelMax</td>
</tr>
<tr>
<td>Vmax</td>
<td>Maximum voltage and possibility of connection to Potentiometer Input</td>
<td>V/el,PotV</td>
<td>VelNOM÷VelMax</td>
</tr>
<tr>
<td>Iref</td>
<td>Current of reference (for I test) and possibility of connection to Potl Potentiometer Input</td>
<td>%*INOM, potl</td>
<td>0÷ INOM</td>
</tr>
<tr>
<td>Imin</td>
<td>Minimum current and possibility of connection to Potl Potentiometer Input</td>
<td>%* INOM, potl</td>
<td>0÷ INOM</td>
</tr>
<tr>
<td>PHASE parameters</td>
<td>Description</td>
<td>U of M/Notes</td>
<td>Permitted values</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Imax</td>
<td>Maximum current and possibility of connection to PotT Potentiometer Input</td>
<td>%* INOM, potl</td>
<td>0 ÷ INOM</td>
</tr>
<tr>
<td>Tref</td>
<td>Time of reference and possibility of connection to PotT Potentiometer Input</td>
<td>hh:mm:ss,PotT</td>
<td>0 ÷ 99:59:59</td>
</tr>
<tr>
<td>TbRef</td>
<td>Temperature of reference</td>
<td>Off=255, 0-99°C</td>
<td></td>
</tr>
<tr>
<td>Cond1</td>
<td>Condition 1 for changing Phase</td>
<td>See TABCON</td>
<td></td>
</tr>
<tr>
<td>Next C1</td>
<td>Next Phase after Condition 1</td>
<td>F0 ÷ F8</td>
<td></td>
</tr>
<tr>
<td>Cond.ALL1</td>
<td>Condition 1 for Alarm</td>
<td>See TABCON</td>
<td></td>
</tr>
<tr>
<td>Next Call1</td>
<td>Alarm Status after Cond.ALL1</td>
<td>F14 ÷ F15</td>
<td></td>
</tr>
<tr>
<td>Cond.ALL2</td>
<td>Condition 2 for Alarm</td>
<td>See TABCON</td>
<td></td>
</tr>
<tr>
<td>Next Call2</td>
<td>Alarm Status after Cond.ALL2</td>
<td>F14 ÷ F15</td>
<td></td>
</tr>
<tr>
<td>Zero current</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table below describes the possible conditions for changing PHASE:

<table>
<thead>
<tr>
<th>ID</th>
<th>CONDITION</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>V&lt;Vmin</td>
<td>Voltage less than Vmin</td>
</tr>
<tr>
<td>2</td>
<td>V&gt;=Vmin</td>
<td>Voltage more than Vmin</td>
</tr>
<tr>
<td>3</td>
<td>V&lt;Vmax</td>
<td>Voltage less than Vmax</td>
</tr>
<tr>
<td>4</td>
<td>V&gt;Vmax</td>
<td>Voltage more than Vmax</td>
</tr>
<tr>
<td>5</td>
<td>V&lt;PotV</td>
<td>Voltage less than PotV value</td>
</tr>
<tr>
<td>6</td>
<td>V&gt;=PotV</td>
<td>Voltage more than PotV value</td>
</tr>
<tr>
<td>7</td>
<td>I&lt;Imin</td>
<td>Current less than Imin</td>
</tr>
<tr>
<td>8</td>
<td>I&gt;=Imin</td>
<td>Current more than Imin</td>
</tr>
<tr>
<td>9</td>
<td>I&lt;Imax</td>
<td>Current less than Imax</td>
</tr>
<tr>
<td>10</td>
<td>I&gt;=Imax</td>
<td>Current more than Imax</td>
</tr>
<tr>
<td>11</td>
<td>I'&lt;Potl</td>
<td>Current less than Potl value</td>
</tr>
<tr>
<td>12</td>
<td>I'&gt;Potl</td>
<td>Current more than Potl value</td>
</tr>
<tr>
<td>13</td>
<td>T&lt;Tref</td>
<td>Phase time less than Tref</td>
</tr>
<tr>
<td>14</td>
<td>T&gt;Tref</td>
<td>Phase time more than Tref</td>
</tr>
<tr>
<td>15</td>
<td>T&lt;Tprop</td>
<td>Phase time less than Tprop value</td>
</tr>
<tr>
<td>16</td>
<td>T&gt;Tprop</td>
<td>Phase time more than Tprop value</td>
</tr>
<tr>
<td>17</td>
<td>T&lt;Tpot</td>
<td>Time less than Tpot value</td>
</tr>
<tr>
<td>18</td>
<td>T&gt;Tpot</td>
<td>Time more than Tpot value</td>
</tr>
<tr>
<td>19</td>
<td>dV/dT&lt;dVF/dTF</td>
<td>dV/dt less than configured value</td>
</tr>
<tr>
<td>20</td>
<td>dV/dT&gt;=dVF/dTF</td>
<td>dV/dt more than configured value</td>
</tr>
<tr>
<td>21</td>
<td>Temp&lt;TbRef</td>
<td>Outside Temperature less than TbRef</td>
</tr>
<tr>
<td>22</td>
<td>Temp&lt;TbRef</td>
<td>Outside Temperature more than TbRef</td>
</tr>
<tr>
<td>23</td>
<td>Ah&lt;AhProp</td>
<td>Ah charged during phase less than Ahprop</td>
</tr>
<tr>
<td>24</td>
<td>Ah&gt;=AhProp</td>
<td>Ah charged during phase more than Ahprop</td>
</tr>
<tr>
<td>25</td>
<td>P_start</td>
<td>START Button (P1) pressed</td>
</tr>
<tr>
<td>26</td>
<td>P_info</td>
<td>INFO Button (P2) pressed</td>
</tr>
<tr>
<td>27</td>
<td>P_OK</td>
<td>OK Button (P3) pressed</td>
</tr>
</tbody>
</table>
4.9 Configuration of special functions

The special functions permit sending of commands via the outputs of the battery charger, in relation to the status of the latter.

<table>
<thead>
<tr>
<th>SpecFunc1</th>
<th>Description</th>
<th>U of M/Notes</th>
<th>Permitted values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpecFunc2</td>
<td>Permit control of the output signals of the selected phases</td>
<td></td>
<td>See Table TABFZSP_F</td>
</tr>
<tr>
<td>SpecFunc3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpecFunc4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpecFunc5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpecFunc6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpecFunc7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SpecFunc8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>Description</td>
<td>Command</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>RAUX5</td>
<td>Auxiliary relay 5</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>EN.CV3</td>
<td>En. CV3</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>RAUX11</td>
<td>Auxiliary relay 11</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>RAUX12</td>
<td>Auxiliary relay 12</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.1</td>
<td>Auxiliary relay 1 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.2</td>
<td>Auxiliary relay 2 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.3</td>
<td>Auxiliary relay 3 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.4</td>
<td>Auxiliary relay 4 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.5</td>
<td>Auxiliary relay 5 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.6</td>
<td>Auxiliary relay 6 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.7</td>
<td>Auxiliary relay 7 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168A.8</td>
<td>Auxiliary relay 9 for PBM168.1 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.1</td>
<td>Auxiliary relay 1 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.2</td>
<td>Auxiliary relay 2 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.3</td>
<td>Auxiliary relay 3 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.4</td>
<td>Auxiliary relay 4 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.5</td>
<td>Auxiliary relay 5 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.6</td>
<td>Auxiliary relay 6 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.7</td>
<td>Auxiliary relay 7 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168B.8</td>
<td>Auxiliary relay 9 for PBM168.2 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.1</td>
<td>Auxiliary relay 1 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.2</td>
<td>Auxiliary relay 2 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.3</td>
<td>Auxiliary relay 3 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.4</td>
<td>Auxiliary relay 4 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.5</td>
<td>Auxiliary relay 5 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.6</td>
<td>Auxiliary relay 6 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.7</td>
<td>Auxiliary relay 7 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
<tr>
<td>R168C.8</td>
<td>Auxiliary relay 9 for PBM168.3 card</td>
<td>0=off, 1=on</td>
<td></td>
</tr>
</tbody>
</table>
4.10 Writing parameters
To edit the parameters of the battery charger you need to have entered the password of at least the user level (Level 1). Follow the instructions below.
- Press the “Edit” button.
- After editing the parameters, press “Send” to transfer them.
- Pressing the “Cancel” button will disable the fields and the previous value of the HF battery charger is shown.

![Diagram of battery charger parameters]

Press EDIT button  Edit the parameter  Press the SEND button

IMPORT/EXPORT CURVE

It is possible to import and export all the curves of the battery charger. The Import function allows you to load onto the battery charger a curve saved on the PC in *.TXT format. The Export function allows you to save on the PC a curve programmed on the battery charger in *.TXT format.

NOTE: To do the above you need to have entered the password of at least the “curve” level (Level 2).

IMPORTING A CURVE TO THE BATTERY CHARGER
To import a curve to the battery charger, follow this procedure:
1) Enter the Programming Menu
2) Click on the “General” tab
3) Press the “Edit” button
4) Select the position required for loading the curve
5) Press the SEND button
6) Click on the CURVES PHASE PARAMETERS tab (or other tab relating to programming of the curve, below the BLUE line)
7) Press the EDIT button
8) Press the IMPORT button (in the top right-hand corner)

9) Select the curve file to be loaded

10) Press the SEND button to save the curve file on the battery charger
EXPORTING A CURVE FROM THE BATTERY CHARGER

1) Enter the Programming Menu
2) Click on the “General” tab
3) Press the “Edit” button
4) Select the curve to export from the battery charger to the PC

5) Press the SEND button
6) Click on the CURVES PHASE PARAMETERS tab (or other tab relating to programming of the curve, below the BLUE line)
7) Press the EDIT button
8) Press the EXPORT button (in the top right-hand corner)

9) Define the directory and filename to assign to the curve (it is advisable to keep the default name associated with the name used in PBM)
10) Press the SEND button to save the file
4.11 Monitor TAB

The Monitor Tab permits access, in real time, to the main status parameters of the battery and work parameters of the battery charger.

There are these sections:

A: representation of the charge curve and charge status
B: nominal parameters programmed on the battery charger
   - Battery voltage and capacity
   - Serial Number of the Battery
   - BIOS and FW version
   - Customer and Operator identification
   - Cycle number
   - Nominal data of the Battery (voltage and capacity)
C: Main charging data of the current cycle:
   - Capacity and cycle time
   - Capacity and time of current phase
D: Battery Capacity already charged (in Ah and %)
E: Ammeter
F: Voltmeter

There are several buttons at the bottom of the Monitor window:
- PASSWORD : to re-enter the PWD and edit access rights
- HF Explorer : to go OFFLINE and read the log data
- DOWNLOAD DATA: to download the data from the battery charger to the DATABASE
4.12 Info TAB

The Info TAB permits access, in real time, to the detailed parameters of a specific charge cycle. There are these sections:

A) Cycle number: the battery charger assigns an incremental index to each cycle, saving the data of the last 50. The memory is cyclical: the most recent charge cycle overwrites the oldest charge cycle.

B) Charge phase: the index of the current phase, from F0 (Autostart) to F15.

C) Nominal parameters: voltage and nominal capacity, identification code of the battery, current curve

Below are detailed data on the level of the single phases and on the overall level of the charge cycle

D) Times of the single charge phases and total time of the charge cycle

E) Ah charged for the single charge phases and Total Ah of the charge cycle

F) Battery Voltage at the end of the various phases and the max voltage at end of charging

G) Current at the end of the various phases and the max current at end of charging

H) Chronological list of any faults occurred during the charge cycle

Pressing the Print button sends the data on the monitor to the Printer device.
4.13 Recorder TAB

The Recorder TAB shows the progress of the current, voltage and temperature from the time the user connected to the battery charger and, therefore, entered online mode.

The values are:
- Charge current
- Battery voltage
- Nominal voltage programmed on the battery
- Rated current programmed on the battery
- Temperature (only if programmed)

A record is saved every six seconds.

The Recorder is able to save a total of 54,000 samples, the equivalent of 90 hours. Sample no. 54,001 overwrites sample no. 1.

If you leave a session and return after some time, the new data are added to the existing data, adding also to the last graph.

To start a new graph you first need to press the “Reset Recorder” button at the bottom. This does not cancel the previous data but saves the data automatically in a file with a predefined name (consisting of the Battery ID and Date and Time of saving). This makes it possible to consult the data any other time by pressing the "Recorder Old" button or clicking the "Archives-Old Recorder" menu in the main window.

On the Recorder TAB are three icons associated with the following functions:
- **Zoom**: to select and zoom into an area of the graph
- **Print preview**: to see how the information on the screen will appear on the printed page
- **Print**: sends the information shown on the screen to the printer

The “CSV” button exports current and voltage samples in the form of text files with defined fields (*.CSV). The files are assigned predefined names that can be changed at your discretion.
4.14 Graphics TAB

The Graphics TAB displays the progress of the current and voltage of the current cycle.

- The PC reads the graph automatically.
- The graph is updated at a rate configured in the general parameters of the battery charger and at least once every ten seconds.
- The maximum capacity of the graph is the one permitted by the device connected. You need to, therefore, consult the technical manual of the HF battery charger.

On the Graphics TAB are three icons associated with the following functions:

- **Zoom**: to select and zoom into an area of the graph
- **Print preview**: to see how the information on the screen will appear on the printed page
- **Print**: sends the information shown on the screen to the printer

The “CSV” button exports current and voltage samples in the form of text files with defined fields (*.CSV). The files are assigned predefined names that can be changed at your discretion.
4.15 Archiving Master Data

There is a “DOWNLOAD DATA” button on the Monitor TAB for downloading the data from the battery charger into a DATABASE on the PC. Pressing the “DOWNLOAD DATA” button opens the window for selecting the CUSTOMER and the OPERATOR who carried out the test. The fields are mandatory as they are required for searching saved data. After making your selection, check the data is correct and press “Download data”.

The charge cycles' CUSTOMER and OPERATOR associations can be edited with the “Edit associations” tool which is available offline.

- The “New” button is for entering a new customer / operator.
- The “Edit” button is for changing the name of a customer / operator (if not already saved in the database)
- The “Cancel” button is for removing the name of a customer / operator (if not already saved in the database)
- The “Close” button takes you back to the online page.

There is a checkbox below the DOWNLOAD button for selecting the DOWNLOAD MODE: to download all the cycles saved on the battery charger, or just the cycles that have not yet been downloaded onto the PC.
5. Consulting OLD data

It is possible to consult data downloaded onto one or more battery chargers, offline, by launching HF Explorer.

The “Archives” menu offers functions for consulting and managing databases:
- Consulting (HF Explorer)
- Edit Customer/Operator Master Data
- Edit associations
- Consult test cycle data saved in other databases.
- Consult test cycle graphs saved in other databases.

5.1 HF Explorer

HF Explorer permits consultation of saved data. This function can be accessed in the “Archives” menu or with the associated button on the main page or on online pages, by selecting the “HF Explorer” option.

HF Explorer opens a window with various TABS which are described below.
5.2 OLD Data TAB
The Old Data tab shows the main data of the selected work cycle.

There are these main sections:
A: Area for selecting the cycle with the search criteria:
   - Customer,
   - Operator,
   - HF205 identification,
   - Battery ID,
   - Selection of cycle number

B: Selected cycle number

C: registration data:
   - Rated voltage and nominal capacity,
   - Battery ID,
   - Curve

D: Charge data:
   - Charged capacity
   - Charging time
   - Max voltage during the charge cycle
5.3 OLD Info TAB

The Old Data window shows detailed data of the selected work cycle.

There are these sections:

A: Area for selecting the cycle with the search criteria:
   - Customer,
   - Operator,
   - HF205 identification,
   - Battery ID,
   - Selection of cycle number

B: Number of selected cycle and ID of last charge phase done

C: Registration data:
   - Rated voltage and nominal capacity,
   - Battery ID,
   - Curve

Below are detailed data on the level of the single phases and on the overall level of the charge cycle

D: Times of the single charge phases and total time of the charge cycle

E: Ah charged for the single charge phases and Total Ah of the charge cycle

F: Battery Voltage at the end of the various phases and the max voltage at end of charging

G: Current at the end of the various phases and the max current at end of charging

H: Chronological list of any faults occurred during the charge cycle

The “Print” button sends the data on the screen to the printer.
The “Close” button ends the offline session.
5.4 OLD Graphics TAB

The Graphics TAB shows the progress of the current and voltage of the selected cycle.

- The maximum capacity of the graph is the one permitted by the device connected. You need to, therefore, consult the technical manual of the HF battery charger.
- The time for sampling the data is given in the Sampling Time field on the “Programming” TAB (this cannot be edited during the cycle).

There are these sections:
A: graph of the voltage and current of the selected cycle
B: cycle selection tools

On the Graphics TAB are three icons associated with the following functions:
- **Zoom**: to select and zoom into an area of the graph
- **Print preview**: to see how the information on the screen will appear on the printed page
- **Print**: sends the information shown on the screen to the printer

The “CSV” button exports current and voltage samples in the form of text files with defined fields (*.CSV). The files are assigned predefined names that can be changed at your discretion.

The “Close” button ends the offline session.
5.5 Programming TAB

The Programming TAB shows the programming parameters of the selected cycle. The fields are explained in the section on online programming.
**Nominal Battery Voltage Parameters**
- **Type of Battery**: OPzS
- **Max Capacity**: 120 Ah
- **Max Control Volt**: 156 V
- **Start without battery (F8-F1)**
- **Enable Rated Voltage Variation**: 5
- **Number of Battery Elements**: 2
- **Battery Rated Voltage**: 120 V

**Nominal Battery Current Parameters**
- **Enable Nominal Current Variation**: 5
- **Nominal Charging Current**: 40 A

**System Parameters**
- **Enable AVG**: 0
- **Enable BOOST**: 0
- **Enable ANTI-CHARGING**: 0
- **Enable SIGNAL MAINS PRESENCE**: 0
- **Enable POWER ON BUTTON**: 0
The “Print” button sends the data on the screen to the printer.
The “Close” button ends the offline session.
5.6 Archive TAB

In this section it is possible to save the data in the database of reference in other dedicated databases. This is can be useful for several reasons:

- It reduces the size of the database of reference and speeds up related operations
- Dedicated databases can be created for single battery chargers or customers
- The data of interest can be backed up for sending to third parties
- Unwanted cycles can be cancelled

There are these sections:

A: data selection
B: buttons for selecting cycles to be archived
C: table of data selected for archiving
D: number of elements to be archived

The “++” button selects all the cycles of a battery
The “+” button selects a cycle
The “-” button deselects a cycle
The “basket” button deselects all

The “Archive” button opens a window for selecting the name of the file in which to archive the selected data. In the interest of ease, a directory and name are predefined according to the date of the operation. The “Close” button ends the offline session.
6. **Customer/Operator Master Data**

It is possible to edit the Customer/Operator master data, accessing it in one of the following ways:
- From the “Archives” menu
- By pressing the “Customer/Operator Master Data” button to access the master data of the customers and operators to whom the data saved on the HF battery charger are to be associated.
The “**New**” button is for entering a new customer / operator.
The “**Edit**” button is for changing the name of a customer / operator (if not already saved in the database)
The “**Cancel**” button is for removing the name of a customer / operator (if not already saved in the database)
The “**Close**” button takes you back to the online page.
7. Edit associations

The Edit Associations menu is for editing the Customer, Operator, Battery charger ID and Battery ID associated to each charge cycle.

Select “Edit Associations” in the “Archives” menu or by pressing the associated button, to access the section for editing the associations of data downloaded from the HF battery charger.

There are these sections:
A: menu for selecting cycles with their current associations
B: button for selecting configuration of the Customer/Operator master data (see §5.2)
C: menu for selecting the new association
D: button for confirming selected associations

PROCEDURE FOR EDITING:
- In the “CURRENT ASSOCIATIONS” section, select the CYCLES the associations of which are to be edited. It is possible to select one CYCLE at a time, or more than one at a time holding down the SHIFT key.
- In the “NEW ASSOCIATIONS” section, select and/or enter the new associations for the CYCLES.
- Press the “EDIT ASSOCIATIONS” button (D).
- In the “NEW ASSOCIATIONS” section, the CYCLES are shown with their new associations.
8. Select database

The “Select Database” menu permits configuration of a consultation database other than the default one and, therefore, to consult data previously saved in dedicated databases.

Select the “Select database” option in the “Archives” menu or by pressing the dedicated button, to open the window for selecting the database to consult.

The window is divided into these sections:
- **A**: directory and name of the selected database
- **B**: browse button
- **C**: set the database as the default one

**NOTE:** When the database is selected, only the offline explore functions are enabled until the default database is restored. The disabled menus and buttons are “hidden” as shown in the image below.
9. OLD Recorder

The “OLD Recorder” Menu permits access to Recorder graphs previously saved by the operator during an online session.

To access this function, select the “OLD Recorder” option in the “Archives” menu.

There are these sections:

A: selected database
B: Button for re-selecting an old “recorder”
C: area of the graph that shows:
   • Battery voltage and nominal voltage
   • Battery charger current and Nominal current

On the Graphics TAB are three icons associated with the following functions:
   • Zoom: to select and zoom into an area of the graph
   • Print preview: to see how the information on the screen will appear on the printed page
   • Print: sends the information shown on the screen to the printer

The “CSV” button exports current and voltage samples in the form of text files with defined fields (*.CSV). The files are assigned predefined names that can be changed at your discretion.

The “Close” button ends the offline session.
APPENDIX A
Use of the DFU program

The **DFU** program is for updating the firmware on the HF.

A copy of the update file (*.hex) needs to be installed on the PC to enable updating.
- Connect the serial cable between the HF and the PC.
- Launch the **DFU** program *(it is in the HFView program folder)*
- In the case of USB connection, select the SmartUSB checkbox
- Set manual selection of the communication port by selecting the Manual checkbox
- Select the COM port to be automatically associated with the HF.
  The SW automatically recognizes the port, selecting by default the port associated with connection to the HF
  If automatic recognition is not successful, it is possible to find the number of the port assigned by Windows, as follows: **Pannello di controllo** (Control Panel) -> **Gestione periferiche** (Device Manager) -> **Porte (COM e LPT)** (USB Serial Ports (COM and LPT))
  - Press the “Open ‘HEX’” button and select the update file with the *.HEX extension.
- Turn off the battery charger and remove the USB cable.
- Press P2 (INFO).
- Restart the battery charger and insert the USB cable while holding down P2
- Press the Upload button in the SW.
- Release the P2 button after 2 seconds.

The data now starts to download and the cycles are written.
  The progress bar shows the status of the update process.
  The DFU programming window is shown below.

The arrows in the picture point to the following parts:
A. Window where the HEX files are read
B. LOG window indicating upload status
C. Counters showing the progress of programming
D. Operation in progress (Write, Read, Verify)
E. Selection of the communication port
F. Selection of use of a USB port
APPENDIX B

USB driver installation

B1 - Installation of the USB DRIVER on Windows XP

1) Connect the USB cable to the computer’s USB port and the HF. The new hardware is found.

2) Follow the guided installation procedure. Select: "Install from a list of specific location (advanced)"

   Click “Avanti” (Next)

3) Select: "Search for the best driver in these locations"

   Select: "Include this location in the search"

   Press “Sfoglia” (Browse) and select the driver location.

   “C:\Programmi\HFView\Drivers” (location created during HFView installation).

   Click “Avanti” (Next)
4) Wait for installation to start

5) Click “Continua” (Continue)

6) Wait for installation to end
   Click “Fine” (Finish)

7) Right-click “Risorse Del Computer” (My Computer). Click: “Proprietà” (Properties)
8) Select the “Hardware” tab.

Click “Gestione periferiche” (Device manager)

9) In the list, select: “Porte (LPT e COM)” (USB Serial Ports (LPT and COM))

Make sure the SmartIR USB-IRDA port is correctly installed.

The port number is given. In the picture, the port number is COM7.

Close all the windows.

10) Open HFView

From the main menu select “Impostazione” (Settings) and then “Porta Seriale” (Serial Port)

11) Select the required serial port and press OK.
### B2 - Installation of the USB DRIVER on Windows VISTA

1) Connect the USB cable to the computer’s and HF USB port. The new hardware is found.

2) Follow the guided installation procedure. Select: “Individuare e installare il driver (scelta consigliata)” (Locate and install driver software - recommended)

3) Select: “Cerca il software del driver nel computer” (Browse my computer for driver software)

4) Click “Sfoglia” (Browse) and browse to the folder where the driver has been stored. “C:\Programmi\HFView\Drivers” (location created during HFView installation).

Select: “Includi sottocartelle” (include subfolders)

Click “Avanti” (Next)
5) Wait for installation to start

6) Click “Install il software del driver” (Install driver software)

7) Wait for installation to end
   Click “Chiudi” (Close)

8) Right-click on “Risorse Del Computer” (My Computer)
   Select: “Proprietà” (Properties)
9) Select “Gestione dispositivi” (Hardware)

Click “Gestione periferiche” (Device Manager)

10) In the list, select: “Porte (LPT e COM)” (USB Serial Ports LPT and COM)

Make sure the SmartUSB port is correctly installed.

The port number is given. In the picture, the port number is COM11.

Close all the windows

11) Open HFView

From the main menu select “Impostazione” (Settings) and then “Porta Seriale” (Serial Port)

12) Select the required serial port and press OK.
**B3 - Installation of the USB DRIVER on Windows VISTA**

Open device manager with “**Start → Computer → right-click → Gestione (Manage)**”

Select “**Gestione dispositivi (Device Manager)**”
Select “Porte (COM & LPT) (COM & LPT Ports) → SmartUSB(Comxx)”

Select “(right-click → Aggiornamento software driver (Update driver software))”

Select manual driver search:
Using the “Sfoglia” (Browse) function, find the path where the driver file was previously saved (E.g.:\...\...\Driver\Win7)

Allow the system to install the selected software.

Verify that installation was completed correctly by way of the SmartUSB_W7(COMxx) wording, where xx (for example here xx=4) is the serial port number to be remembered and inserted in the control software setup.
**NOTE:** If the device is under the heading **Other devices**:

Select:

**Mouse Right button  SW Driver Update**  
*(In Italian Mouse Right Button  Aggiornamento Software Driver)*

Follow the steps to page 52
APPENDIX C

C1 – DATABASE Opening on Windows VISTA

Procedure for disabling user control to be able to open and write databases:

Open device manager with “start → Pannello di controllo (Control Panel)”
Select the “Account utente e protezione per la famiglia (User account and family protection)” menu

Select “Account utente (User Account)”
Select “Attiva o disattiva Controllo account utente (Activate or deactivate User account control)”

Remove the “Per proteggere il computer, utilizzare il controllo dell'account utente (Protect the computer using user account control)” flag and press “OK”.

Restart the computer by pressing “Riavvia ora (Restart now)”
**C2 – DATABASE Opening on Windows 7**

Procedure for disabling user control to be able to open and write to databases:

Open the device manager with “**start → Pannello di controllo (Control panel)**”

Select the “**Account utente e protezione per la famiglia (User account and family protection)**” menu

Select “**Account utente (User Account)**”
Select “Modifica le impostazioni di Controllo dell’account utente (Modify control settings for user account)”

Move the cursor from the predefined position (3rd level) to the lowest one and press “OK”.

---

Page 58 / 58