SmartViewII

USER manual

Document Rev.	Document date		SmartViewII release	Notes
1.0	11/04/2007		2.31	Prerelease
1.01	24/04/2007		2.31	Release
1.1	26/02/2010		2.41	Release
1.2	06/10/2010		2.41	Release

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1 – Foreword

Smart.ViewII is an application for Windows95 or higher, developed to communicate with the following devices of the Smart.IC family:

- SmartON
- SmartON +
- SmartIC2
- SmartIC2 V3

Smart.IC device means any device belonging to the Smart.IC family.
The Smart.IC device communicates with the PC through AP160, an infrared adapter for an RS232 port, or through AP160UIR for an USB port. This makes it possible to customize the operation of the device just by inserting the data concerning the battery used and the operating modes desired.
In addition it is possible to display all the operating parameters in real time and download the stored data (in form both of working cycles and in graphic form) onto the PC local database.
Once data have been downloaded onto the PC, they can be displayed without needing to be connected through an infrared adapter.
The *SmartViewII* program can manage the data of an endless number of Smart.IC devices: there is an easy search system which allows to find and display only the data of the devices desired.
The data displayed through *SmartViewII* can be printed by means of a dedicated pushbutton.
Together with the *SmartViewII* program an additional program, called *DFU,* is delivered, which allows the firmware on Smart.IC devices to be updated.

2 – Installation

The installation CD of *Smart.ViewII* is on issue with any Smart.IC devices. It can also be downloaded from the "Download" area of the "SmartService" pages, which registered users can reach from www.alfaprogetti.com.

First installation

When installing the package for the first time, perform the following steps:

- Enter the folder containing the package and enter the "Disk1" subfolder
- Start the Setup.exe program and follow installation instructions

Now you will find the SmartView folder on the program bar which allows you access to different package items. You will also find a link to the SmartView program on the desktop.

Maintenance

Before installing more updated versions of the package, remove the old version using Windows tools.

NOTE:

- *if the currently installed version is lower than V2.30 it is recommended to save a backup copy of the SmartViewII.mdb file in the installation folder (usually c:\programmi\SmartViewII) before performing the removal, to avoid loosing the data collected so far*
- *it may happen that data of the version to be updated can not be read from the updating version because of a substantially different data format. In such a case you have to ask for the data updating tool by specifying both old and new version.*

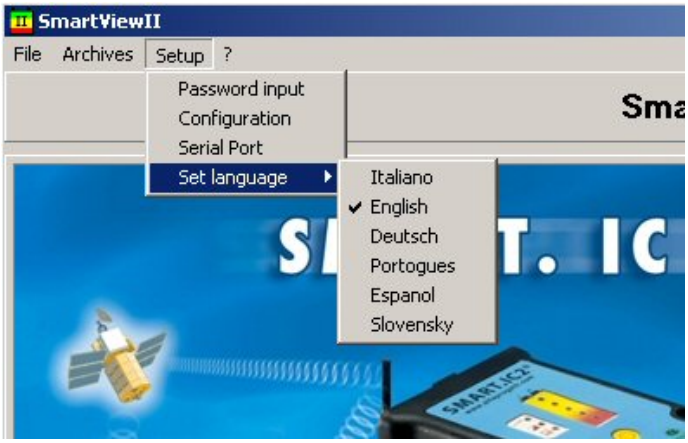
WARNING**: If you use the operating system **Vista or Windows 7**, the path of the database is as follows **c:\users\"username"\AppData\Local\VirtualStore\Program Files\SmartViewII** **("Username" is the user name that is used for logging in to Windows 7).

3 – Settings

After starting the *SmartViewII*, use the "Settings" menu to configure it.

3.1 – Set language

Use the "Settings" menu to select "Set language" and choose the desired language.



To make changes effective, start the program again.

3.2 – Serial port

Use the "Settings" menu to select "Serial port" and enter the configuration mask: select "Auto" for automatically searching the serial port for connection or select the used port, if known.

<u>*NOTES*</u>*:*

- *Each time a connection is performed, the automatic search can last a few seconds. This happens especially if the AP160UIR adapter is used for an USB port. This depends on the way the operating system assigns the serial port number. In such a case it is suggested to determine the port number (scan Windows Control Panel -> management of the Peripherals -> Ports (COM and LPT)) and select it.*
- *If the AP160UIR adapter for an USB port is used, use the same USB port each time a connection is performed to prevent Windows from assigning a port number different from the programmed one.*

3.3 – Configuration

The *SmartViewII* program has 3 different access levels available:

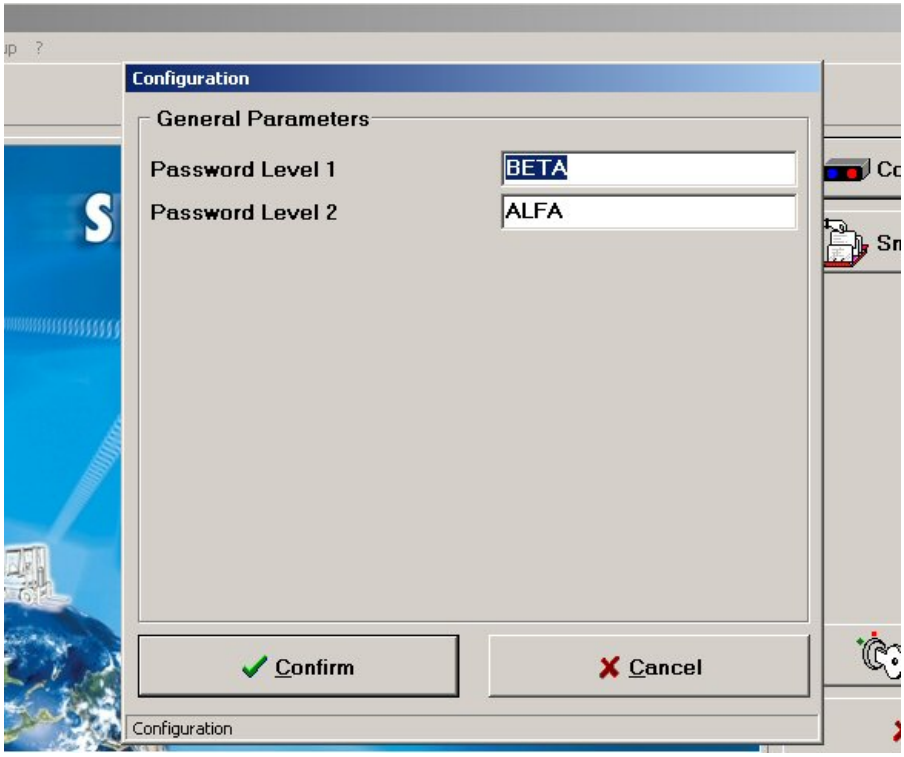
- no password:
  - partial access to data reading
  - writing of the programming and association parameters not possible
  - cycles and diagrams can not be stored on a PC
- level 1 password:
  - partial access to data reading
  - writing of programming and associations parameters not possible
  - cycles and diagrams can be stored on a PC
- level 2 password:
  - complete access to data reading
  - complete access to programming and association
  - complete access to writing of the programming parameters and associations
  - possibility to store cycles and diagrams on PC

Access passwords can be changed as follows:

- Select "Insert password" in the "Settings" menu or press the "Password" pushbutton and insert your password
- Select "Configuration" and enter the configuration mask
- Change your password level or a lower one

NOTE:

- *When first installing the program, default passwords are as follows:*
  - *level 1: "BETA"*
  - *level 2: "ALFA"*
- *Passwords are not "case sensitive", that is characters used can be written both in capital and small letters.*



4 – Smart.IC connected

The functions described below are available when a connection to a Smart.IC device is performed through an adapter.
The *SmartViewII* program should be already configured as explained above.

4.1 – Preparation

- Connect the infrared adapter to the PC (AP160 adapter to an RS232 port or AP160UIR adapter to an USB[1] port)
- Start the *SmartViewII* program
- Insert the Password necessary for the operations desired
- Press the Connect push-button

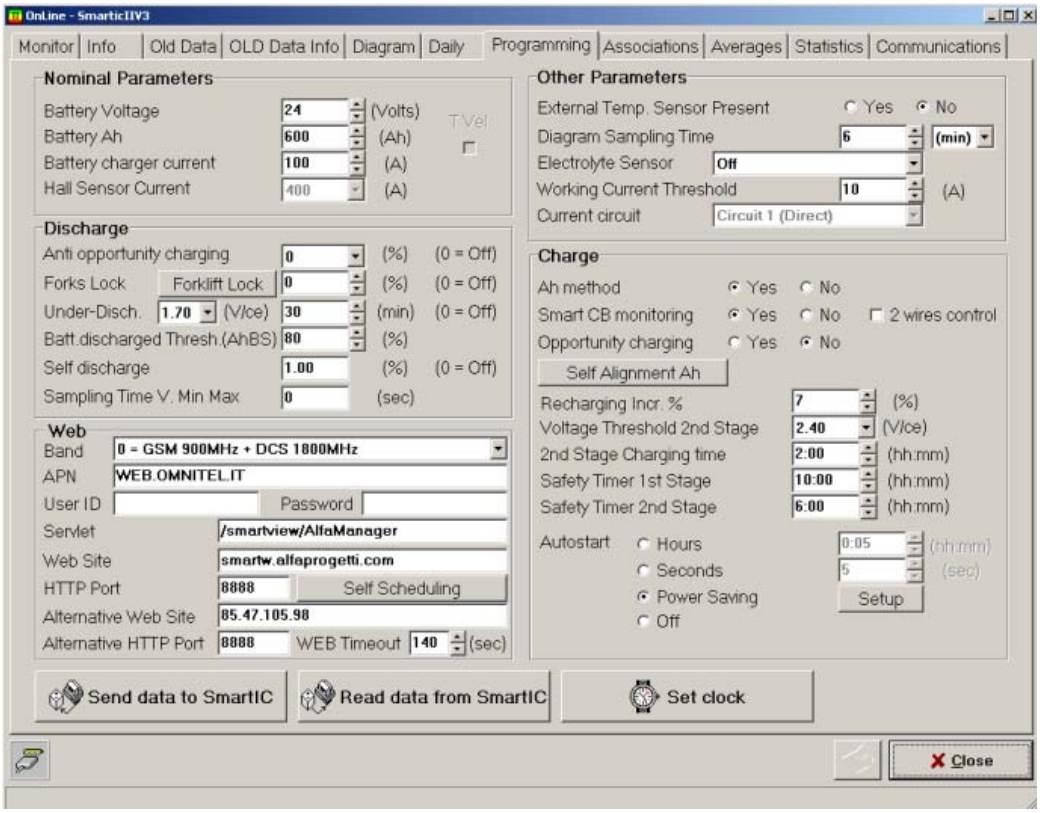
NOTE:
The presence of a serial connection is signalled by an icon on the left on each TAB on the bottom.

4.2 – How to consult instantaneous data

This section describes all TAB's accessible when a connection through an infrared adapter is performed.

4.2.1 – Programming TAB

This TAB allows access to parameters which determine how the Smart.IC device will operate and how data will be collected.
Depending on the password level, parameters can be read and/or written.
The different devices of the Smart.IC family feature different programming parameters. The figure below refers to SmartIC2 because parameters of other Smart.IC devices are sub-sets.



[1] The AP160UIR device needs to be installed in advance through a driver for Windows

The table shows the single fields, the devices using them and the password required for reading and writing.

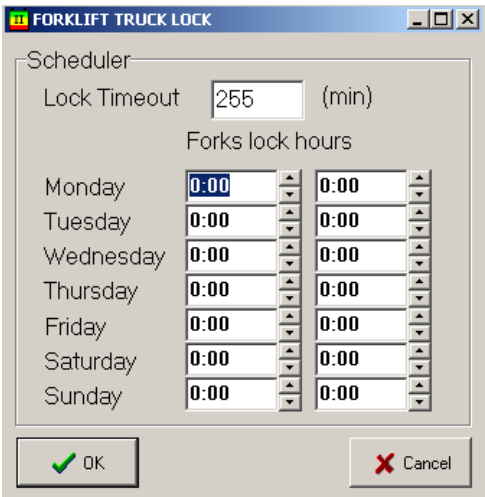
FIELD NAME	DESCRIPTION	Smart.IC				PW	
		ON	ON+	IC2	IC2 V3	Rd	Wr
Nominal Parameters							
Battery Voltage	Battery voltage rated value	X	X	X	X	-	2
Battery Ah	Battery capacity rated value	X	X	X	X	-	2
Battery charger current	Battery charger current rated value	X	X	X	X	-	2
Shunt current	Valore nominale Shunt	X	X			-	NA
Hall Sensor Current	Current sensor rated value			X	X	-	NA
T Vel.	Fast test mode	X	X	X	X	-	NA
Other Parameters							
External temp. sensor present	Selection of the outside temperature sensor			X	X	-	2
Diagram sampling time	Diagram sampling time for voltage and current stored graphics (1, .., 127 min / 1, .., 127 sec)	X	X	X	X	-	2
Electrolyte sensor	Threshold value for electrolyte level sensor			X		-	2
Electrolyte sensor	Selection of input and operation of electrolyte level sensor				X	-	2
Working current threshold	Discharge current beyond which working time and number of discharges are calculated (see Info TAB)	X	X	X	X	-	2
Current circuit	Selection of current circuit				X	-	NA
Discharge							
Anti opportunity charging	Selection of anti-opportunity charging function		X	X	X	-	2
Forks lock	Selection of forks lock function		X	X	X	-	2
Forklift lock	Selection of forklift lock timing range		X		X	2	2
Underdischarge	If the voltage is lower than the set value (V/cell) for the set time (min.) the capacity is forced to (100-AhBS)% of the rated battery capacity	X	X	X	X	-	2
Batt. Discharged Threshold (AhBS)	On exceeding this threshold (AhBS) battery is considered as empty (see Info TAB)	X	X	X	X	-	2
Self-discharge	Self-discharged capacity in 24 hours	X	X	X	X	-	2
Charge							
Ah-method	Recharge mode selection: capacity (yes) or time (No)	X	X	X	X	-	2
SmartCB Controlling	Selection of charge control through SmartCB battery charger / SmartEnergy		X	X	X	-	2
Opportunity Charging	Selection of timed counting of working cycles (Opportunity Charging mode)	X	X	X	X	-	2
Self alignment Ah	Self alignment setting parameters button		X		X	2	2
Recharging incr. %	Percentage energy dissipated during the charging process	X	X	X	X	-	2
Voltage threshold 2nd stage	Gassing Point: it makes the charging process switch from the first to second charging stage and produces the relevant calculations (see Info TAB)	X	X	X	X	-	2
2ns Stage charging time	Charging stage developing after reaching the gassing point in time controlled charging processes and during the alignment cycle	X	X	X	X	-	2
Safety timer 1st stage	Should voltage not reach the "Voltage threshold 2nd stage" within this time, an alarm is generated (see Info TAB)	X	X	X	X	-	2
Safety timer 2nd stage	Should capacity not reach this nominal value by this time calculated from reaching of the "Voltage threshold 2nd stage", an alarm is generated (see Info TAB)	X	X	X	X	-	2
Autostart	Autostart delay selection if a SmartCB is used		X	X	X	-	2
Setup	Selection pushbutton of Autostart delays day by day if the power saving function is enabled and a SmartCB is used		X	X	X	-	2

FIELD NAME	DESCRIPTION	Smart.IC				PW	
		ON	ON+	IC2	IC2 V3	Rd	Wr
Web							
Band	Operating band of the GPRS module			X	X	-	2
APN	APN code of the GPRS network chosen			X	X	-	2
User ID	User ID of the GPRS network chosen			X	X	-	2
Password	Password of the GPRS network chosen			X	X	-	2
Servlet	WEB application			X	X	-	2
Web Site	WEB application address			X	X	-	2
http port	GPRS access port			X	X	-	2
Self scheduling	Self scheduling setting parameters button			X	X	-	2
Alternative Web Site	Alternative address of the WEB application			X	X	-	2
Alternative http port	Alternative port for GPRS access			X	X	-	2
WEB timeout	Automatic disconnection time due to failure to communicate via GPRS			X	X	-	2

4.2.1.1 – Clock setting
To set the dating device of any Smart.IC device just press the “Set clock” pushbutton.
Since the operation transfers the PC date and time onto the Smart.IC device, you have to check that the PC dating device is set properly.

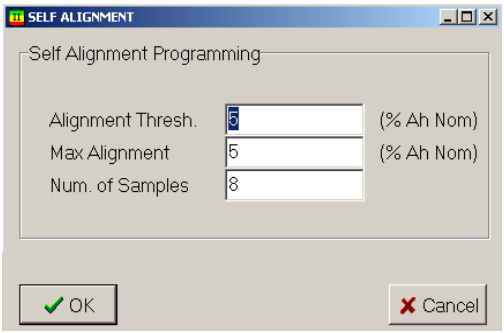
4.2.1.2 – Writing of general parameters
Once parameters have been changed, press the “Send data to Smart.IC” pushbutton to transfer them. To be sure that the transfer has been performed properly, press the “Reread data from Smart.IC” pushbutton, and check that the loaded parameters coincide with the desired data.

4.2.1.3 – Writing of Forklift lock parameters
If allowed by the SmartIC device, it is possible to set, for every day of the week, start and stop timing range to force the forklift lock. When both start and stop matches, the lock is disabled. Timeout is the inactivity time before the lock is mandatory.



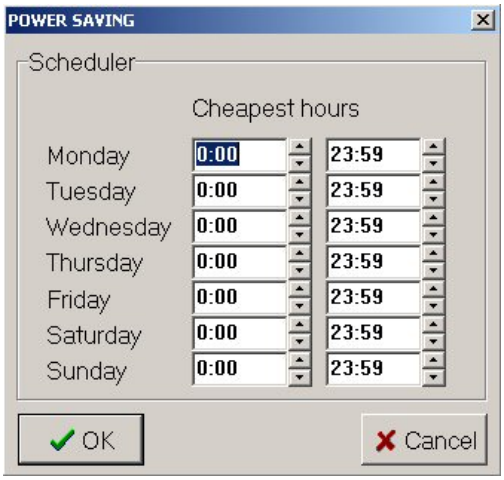
4.2.1.4 – Writing of Self alignment Ah parameters

The self alignment corrects automatically the measured value of battery Ah. The parameters represents the threshold over which the correction is performed, the maximum alignment and the sampling number used for self alignment procedure.



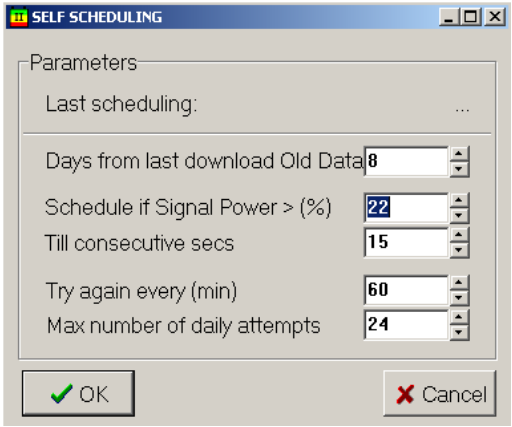
4.2.1.5 – Writing of power saving parameters (for SmartIC2 only)

If "Power saving" has been selected in the charge section, the relevant setup mask can be accessed. Once data have been changed, close the mask by pressing the OK pushbutton.
To transfer data to the Smart.IC device press the "Send data to Smart.IC" pushbutton and keep it held down.



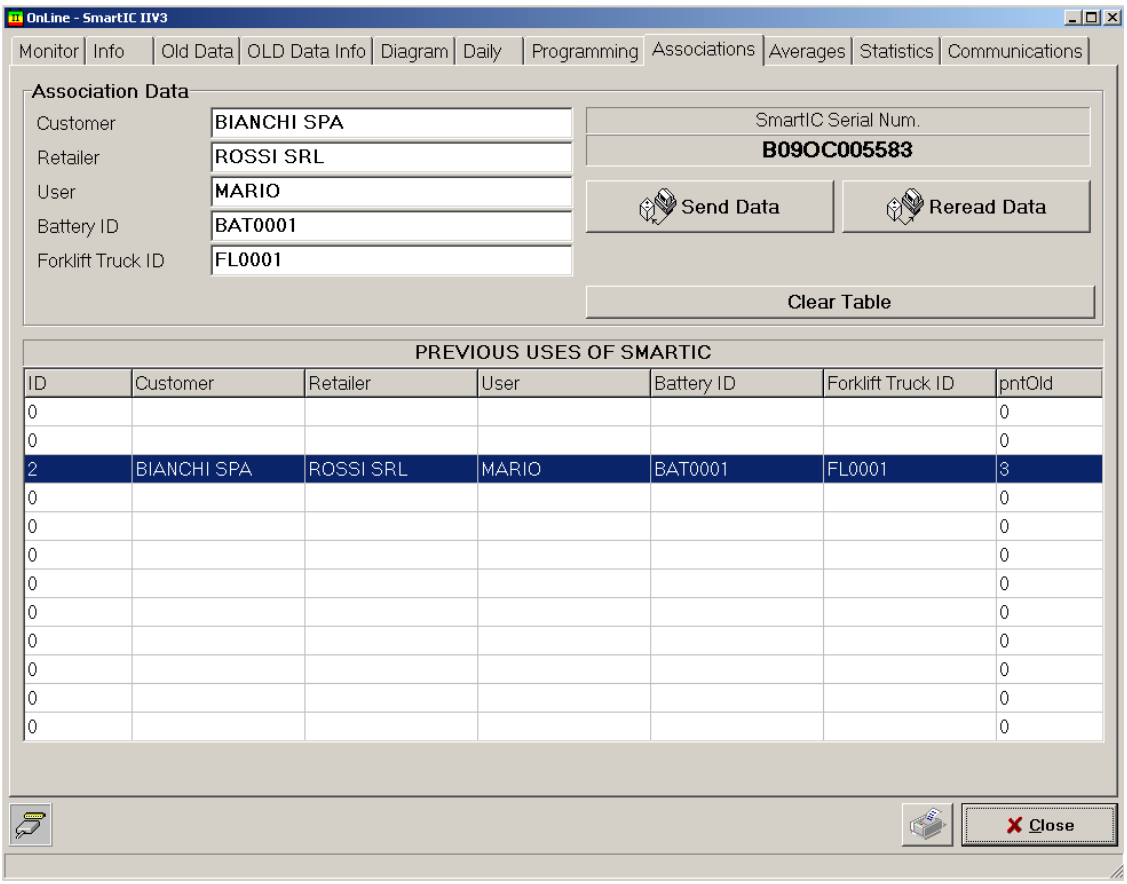
4.2.1.6 – Writing of Self alignment parameters. (for SmartIC2 only)

It is possible to set the parameters that rules the self scheduling.



4.2.2 – Associations TAB

Associations are parameters which working cycles and diagrams collected by the Smart.IC devices during operation refer to. When cycles and diagrams are downloaded onto a PC, they can be identified and selected thanks to such parameters.
Depending on the password level, those parameters can be read and/or written.
For more details on the parameters, please refer to the relevant manuals of the Smart.IC devices.



Once fields of the "Associations data" have been filled, press the "Send data" pushbutton and check that a new line with the compiled parameters appears in the underlying table.

<u>NOTE</u>:
During the life of the Smart.IC device associations may need to be changed. This happens, for example, when the device is installed onto a different battery. In such a case all data downloaded after changing the association will refer to the new association.

4.2.3 – Monitor TAB

The Monitor TAB allows access in real time to the main parameters concerning battery operation and state.
You will find following sections:

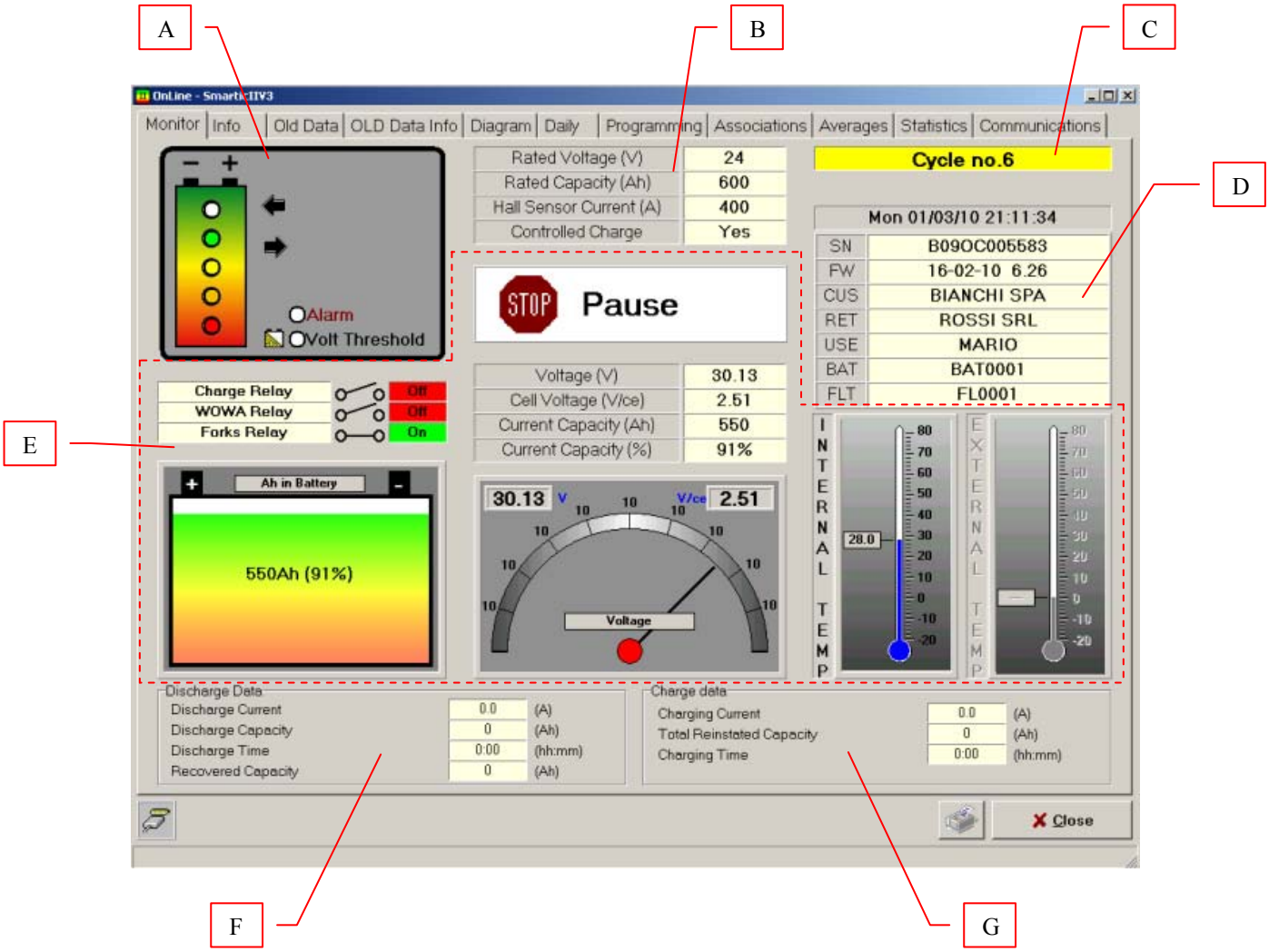
- A: Smart.IC device representation
- B: nominal parameters programmed in the device
- C: current cycle number
- D: associations programmed in the device
- E: battery / Smart.IC device state
- F: main discharge data of the current cycle
- G: main charging data of the current cycle

The meaning of each field is clear.

The fields of the Monitor TAB for the different Smart.IC devices differ in:

- Display of the state of the forks relay for SmartIC2
- Reading of the external temperature for SmartIC2 (only if enabled by Programming).

The figure below refers to a SmartIC2.



4.2.4 – Info TAB

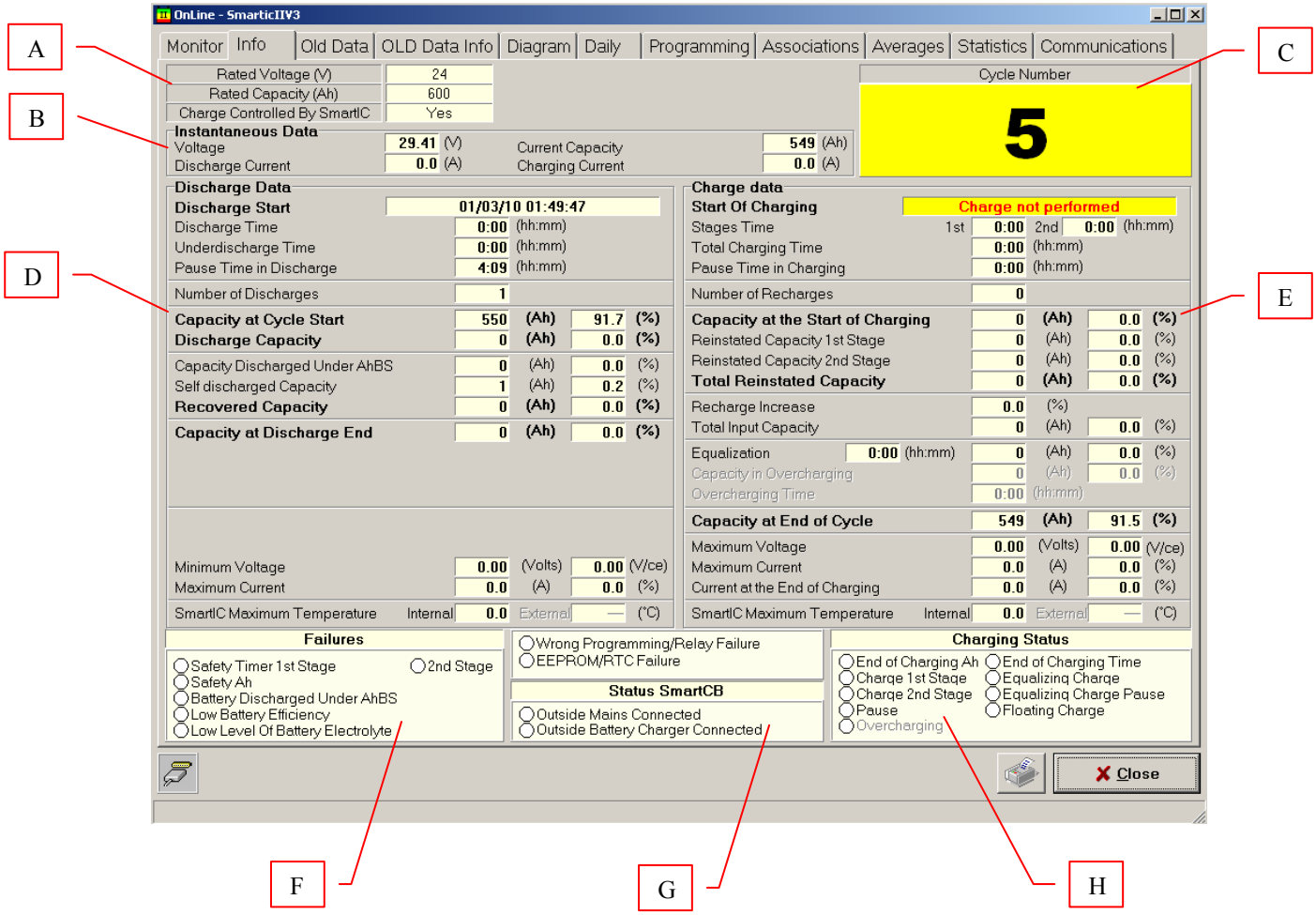
The Info TAB allows access in real time to detailed state and operation parameters of the battery. You will find the following sections:

- A: main rating
- B: main instantaneous data
- C: number of the current cycle
- D: discharge data of the current cycle
- E: charge data of the current cycle
- F: failures
- G: SmartCB state
- H: battery state at charge end

The fields of the Info TAB for the different Smart.IC devices differ in:

- Reading of the external temperature for SmartIC2 (only if enabled in Programming).
- Signalling a Low Electrolyte Level

The figure below refers to a SmartIC2.



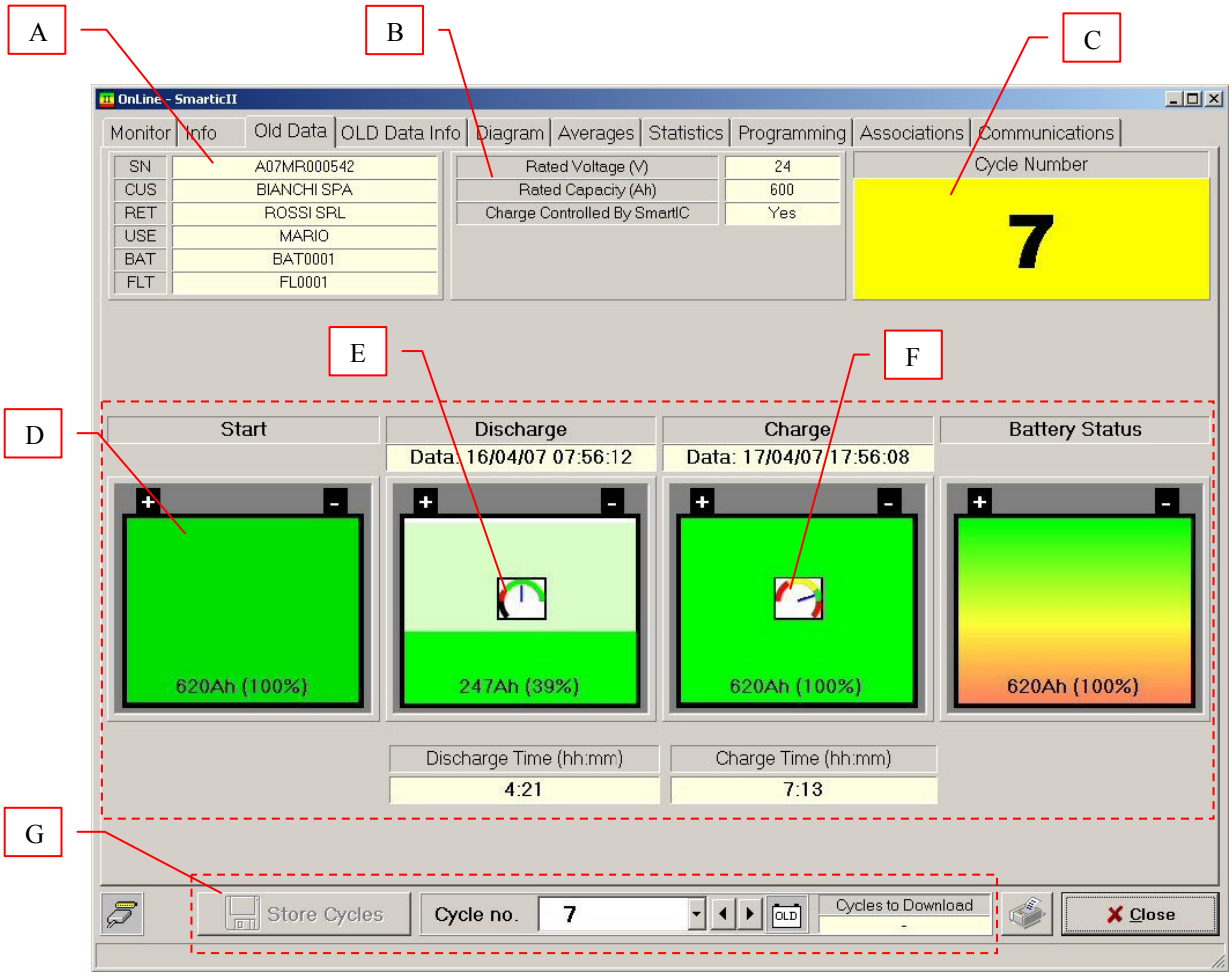
The different fields are explained in the table below.

FIELD NAME	DESCRIPTION
Rated Voltage	Battery voltage rated value
Rated Capacity	Battery capacity rated value
Charge controlled by Smart.IC	Enabled if "SmartCB control" has been selected in Programming
Cycle Number	Current number of the working cycle
Instantaneous data	
Voltage	Instantaneous battery voltage
Current Capacity	Instantaneous battery capacity
Discharge Current	Instantaneous discharge current
Charging Current	Instantaneous charging current
Discharge Data	
Discharge Start	Date and time of discharge start
Discharge Time	Overall time of all charging stages (discharge current > 0)
Underdischarge Time	Overall discharge time with battery voltage < "Underdischarge Voltage" (see Programming)
Pause time After Discharge	Overall pause time during discharge
Number of Discharges	Times in which discharge current switched from a value below "Threshold working current for contracts" (see Programming) to a higher value
Capacity at Cycle Start	Battery capacity at the beginning of of the cycle
Discharge Capacity	Overall discharged capacity
Capacity discharged under AhBS	Discharged total capacity under (100-AhBS)% of the rated capacity (see programming)
Self discharged Capacity	Discharged capacity because of self-discharge according to the "Self-discharge coefficient" (see Programming)
Recovered Capacity	Overall capacity recovered during the discharging process and through energy recovering systems on the forklift truck, if any
Capacity at Discharge End	Battery residual capacity at the end of the charging process
Minimum Voltage (discharge)	Minimum voltage during the discharging stage
Maximum Current (discharge)	Maximum discharge current
Maximum Temperature Internal (discharge)	Maximum temperature detected by the internal probe during the discharge stage
Maximum Temperature External (discharge)	Maximum temperature detected by the external probe during the discharge stage
Charge data	
Start of Charging	Date and time of charge start
Stages Time (1st)	Charging stage time (charging current > 0) before the battery voltage reaches the "Voltage Threshold 2nd stage" (see programming). Overcharging and Equalization are excluded
Stages Time (2nd)	Charging stage time (charging current > 0) after reaching the "Voltage threshold 2nd stage" (see programming). Overcharging and Equalization are excluded.
Total Charging Time	Total "Stages time (1st)" + "Stages time (2nd)"
Pause time After Charging	Overall pause time during charging
Number of Recharges	Times in which the charging current switched from 0 to a positive value
Capacity at the Start of Charging	Battery capacity at charge start
Reinstated capacity 1st stage	Overall capacity recovered during the charging stages (charging current > 0) before the battery voltage reached "Voltage threshold 2nd stage" (see programming). Overcharging and Equalization are excluded.
Reinstated capacity 2nd stage	Overall capacity recovered during the charging stages (charging current > 0) after recharging the "Voltage Threshold 2nd stage" (see programming). Overcharging and Equalization are excluded.
Total reinstated capacity	Total "Reinstated capacity 1st stage" + "Reinstated capacity 2nd stage"
Total Input capacity	Overall capacity delivered to battery during the different charging stages (charging current > 0). Overcharging and equalization are excluded.
Recharge increase	Percentage increase comparing charged capacity with reinstated capacity
Equalizing (time)	Overall time of the equalizing stages (only with SmartCB)
Equalizing (capacity)	Overall charge of the equalizing stages (only with SmartCB)
Overcharge capacity	Overall charge delivered to a full battery with a 9% limit
Overcharging time	Overall overcharging time

Capacity at End of Charging	Battery capacity at the end of the charging process
Maximum Voltage (charge)	Maximum voltage during the charging stage
Maximum Current (charge)	Maximum charging current
Current at the End of Charge	Charging current when the charging process stops
Maximum Temperature Internal (charge)	Maximum temperature detected by the internal probe during the charge stage
Maximum Temperature External (charge)	Maximum temperature detected by the external probe during the charge stage
Faults	
Safety timer 1st Stage	Battery voltage has not reached the "Voltage Threshold 2nd stage" within the "Safety time 1st stage" (see Programming) during the charging process
Safety timer 2nd Stage	Battery capacity has not reached the rated capacity within the "Safety time 2nd stage" (see Programming) during the charging process
Safety Ah	During recharge, in 1st stage, the battery reached 110% of the rated capacity.
Battery discharged under AhBS	During discharge the battery capacity falled under (100-" Battery discharged threshold AhBS") % of the rated capacity (see programming)
Low Battery Efficiency	Battery is underdischarged for a time ≥ "Underdischarge Control" when the percentage of battery residual capacity is ≥ (100-"Battery discharged threshold AhBS") (see programming)
Low level of Battery Electrolyte	The electrolyte level sensor signals an electrolyte level below the lowest value
Wrong Programming /Relay Failure	By selecting SmartCB (see Programming) a charging current is present in spite of "Charging relay" open.
EEprom Failure / RTC	A failure in the storage support or in the real time clock has been detected
SmartCB state	
External battery charger connected	The Smart.IC device is connected to a SmartCB battery charger
Outside mains connected	The SmartCB battery charger signals mains presence
Charge status	
End of Charging Ah	Charge ended with Ah method selected (see Programming)
End of Charging Time	Charge ended with Ah method not selected (see Programming)
Charge 1st Stage	Initial charge or first stage being performed
Charge 2nd Stage	Final charge or second stage being performed
Pause	The charging process is pausing
Equalizing charge	Equalizing charge being performed: only with SmartCB selected (see Programming)
Equalizing Charge Pause	Pause during the Equalizing charge is being performed: only with SmartCB selected (see Programming)
Floating charge	The charging process is in Floating stage: only with SmartCB selected (see Programming)
Overcharging	Battery is in Overcharging

4.2.5 – OLD Data TAB

The OLD Data TAB allows access to the main working cycles data downloaded by the Smart.IC device connected.



You will find following sections:

- A: associations data
- B: main rating
- C: current cycle number
- D: representation of the working cycle
    - Charge state at cycle start
    - discharge: capacity and times
    - charge: capacity and times
    - charge state at cycle end
- E: discharge quality indication
    - green: discharge OK
    - red: too much discharged - above 80%
    - black: too much discharged – above 100%
- F: charge quality indicator
    - red I: charge not enough – below 20% at charge end
    - yellow: charge not enough – below 80% at charge end
    - green: charge OK
    - red II: overcharge (shown also by boiling symbol above battery)
- G: tools bar
    - "Select cycle" switches
    - "Store cycle" push-button
    - Indication of the cycles to be downloaded (not stored yet)

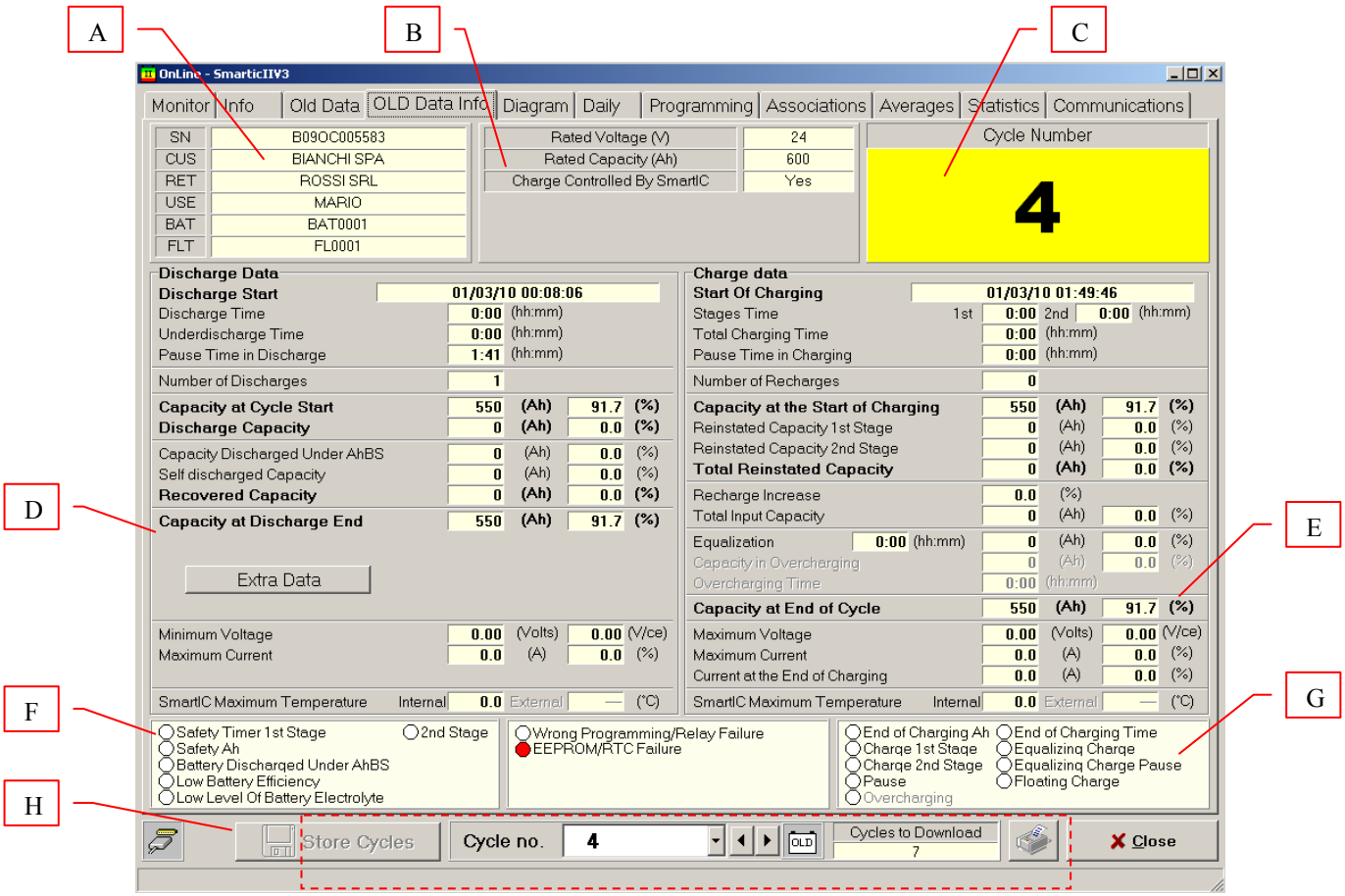
By pressing the "Store cycles" pushbutton (only if you have a password level 1 or higher), the data of all working cycles not yet downloaded, with the exception of the current cycle (as you can see in the Monitor and Info TAB's) are transferred to the local database.
By means of the "Select cycle" pushbuttons, data of all stored cycles can be displayed.

4.2.6 – OLD Data Info TAB

The Old Data Info TAB allows access to detailed status and operation parameters of the working cycles downloaded by the Smart.IC device connected.
You will find the following sections:

- A: associations data
- B: main rating
- C: number of the current cycle
- D: discharge data of the selected cycle
- E: charge data of the selected cycle
- F: failures stored in the selected cycle
- G charge state at the end of the charging process in the selected cycle
- H: tools bar
    - "Cycle select" switches
    - "Cycle store" pushbutton
    - Indication of cycles to be downloaded (not yet stored)

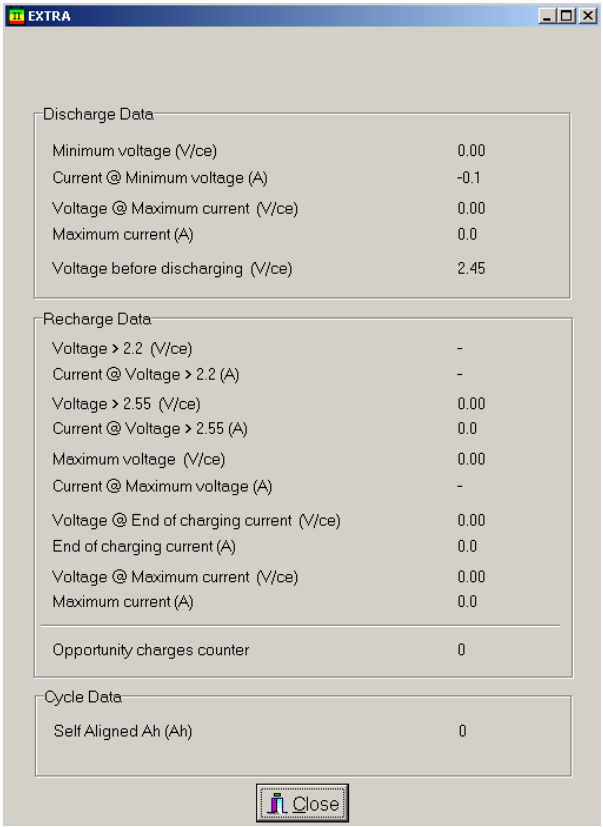
As happens with the OLD data TAB, by pressing the "Cycle store" pushbutton (only if you have a password level 1 or higher), data of all working cycles not yet downloaded, with the exception of the current cycle (as you can see in the Monitor and Info TAB's), are transferred to the local database.
By means of the "Cycle select" pushbuttons, data of all stored cycles can be displayed.



Fields coincide with those of the Info TAB (see paragraph 4.2.4).

Furthermore it is possible to open the Extra Data window where are indicated:

- Discharge data, with intuitive meanings
- Recharge data
- Opportunity charges counter: number of changes from charging stage to discharging stage in the same cycle.
- Self aligned Ah



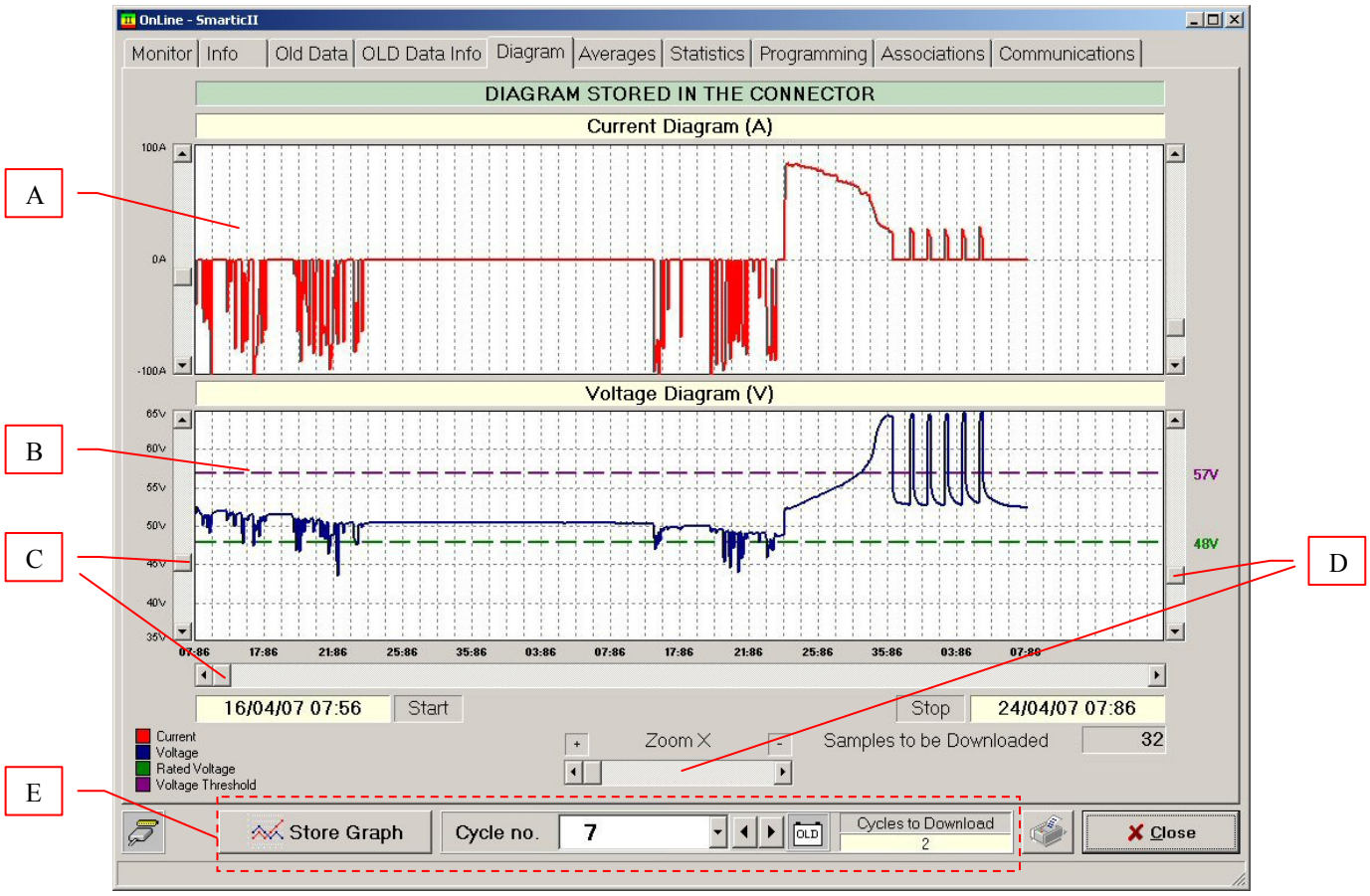
4.2.7 – Diagram TAB

The diagram TAB allows access to the voltage and current diagrams of the working cycles downloaded by the Smart.IC device connected.
You will find the following sections:

- A: voltage diagram of the selected cycle
- B: diagram of the selected cycle
- C: diagram moving bars
- D: graphic zoom bars
- E: tools bar
    - "Cycle select" switches
    - "Store graph" pushbutton
    - Indicator of cycles to be downloaded (not yet stored)

By pressing the "Store graph" pushbutton (only if you have a password level 1 or higher), data of all working cycles not yet downloaded are transferred to the local database.

<u>NOTE</u>:
The cycle storage by means of the OLD data and Old data info TAB's will not result in any diagram storage. To save diagrams on the local database, press the "Save Diagram" pushbutton.

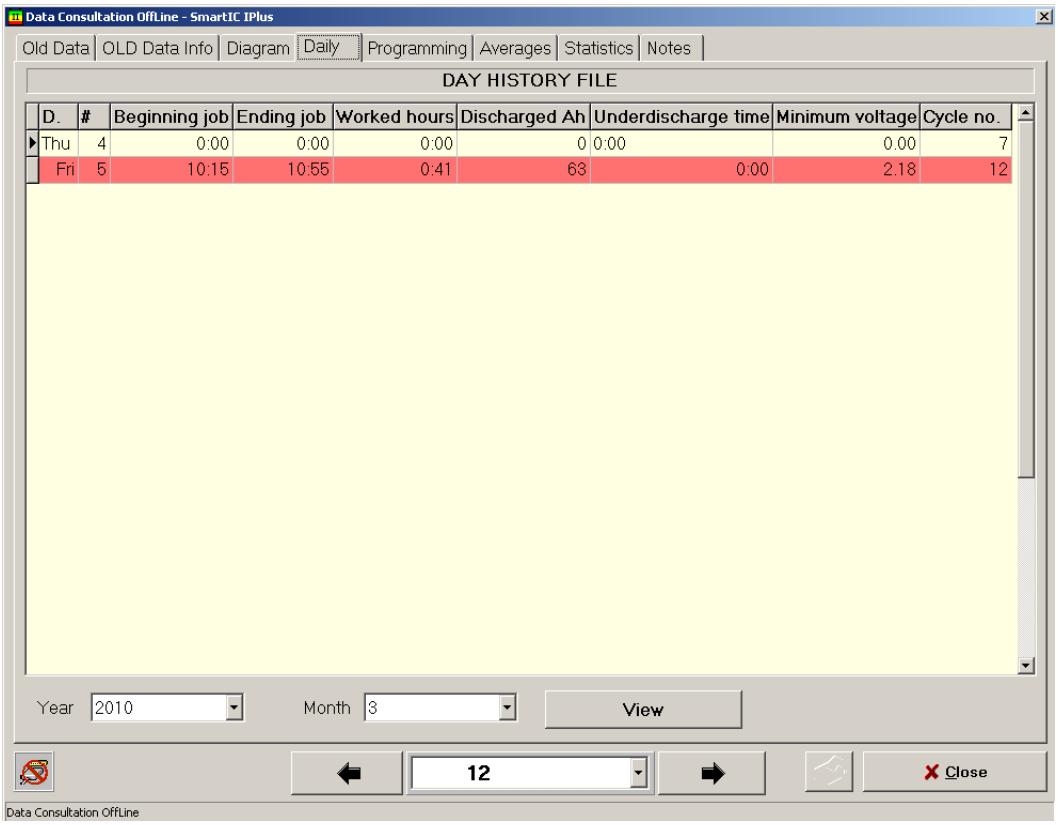


4.2.8 – Daily TAB

From the daily TAB it is possible to watch the main data about the daily work of the battery.
Following data are shown:

- D: Day of the week
- #: Day of the month
- Beginning job:Work starting time
- Ending job: Work ending time
- Worked hours: total working time
- Discharged Ah: total discharged Ah
- Underdischarge time: total underdischarge time (see §4.2.1 – Programming TAB)
- Minimum voltage
- Cycle no.:
    - A) No faults that day: number of the cycle related to the first cycle of the day
    - B) One or more faults: number of the cycle related to the last fault of the day

NOTE: In case of faults, the daily line is red highlighted.

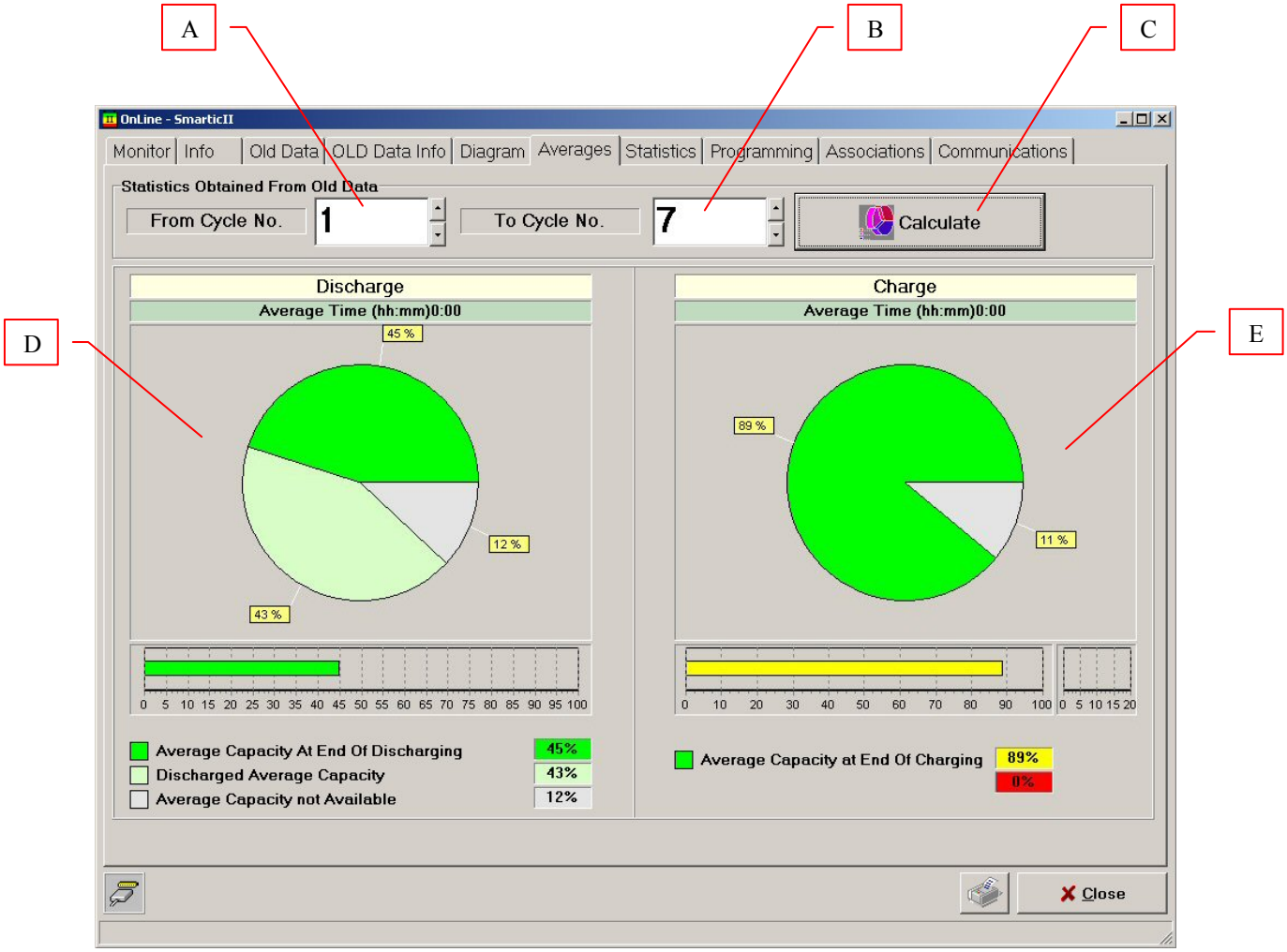


4.2.9 – Avarages TAB

The Averages TAB allows to perform an average analysis of the working cycles stored in the Smart.IC device connected.
By selecting the cycle where the analysis has to begin from and the cycle where the analysis has to finish to, you will get the average trends in graphic form of all cycles belonging to the range selected, as far as time, discharge, and charge capacity are concerned.
In particular you will see the average capacities at the end of the charging and discharge processes, the average capacity not available (due to uncompleted charging processes), and the overcharged average capacity.
You will find following sections:

- A: initial cycle selector
- B: final cycle selector
- C: pushbutton for analysis calculation
- D: averages during the discharge processes
- E: averages during the charging processes

NOTE:
Averages are calculated taking into account only the cycles performed after the alignment

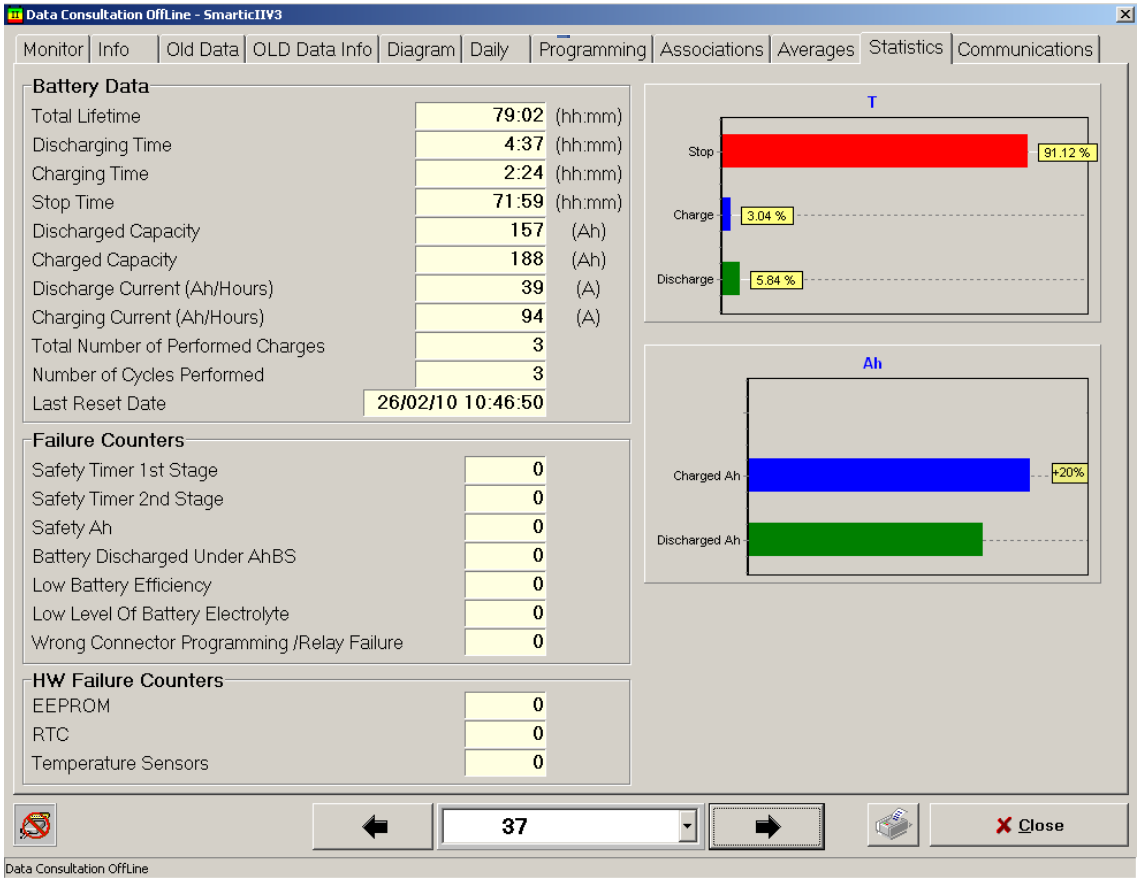


4.2.10 – Statistics TAB

The Statistics TAB allows access to the statistics concerning the whole life of the Smart.IC device, either from the beginning or from last reset.
In particular all data are listed concerning battery working cycles and failures detected.

A few data can not be seen, depending on the password level.

NOTE:
The change in associations and programming does not result in a statistics reset.

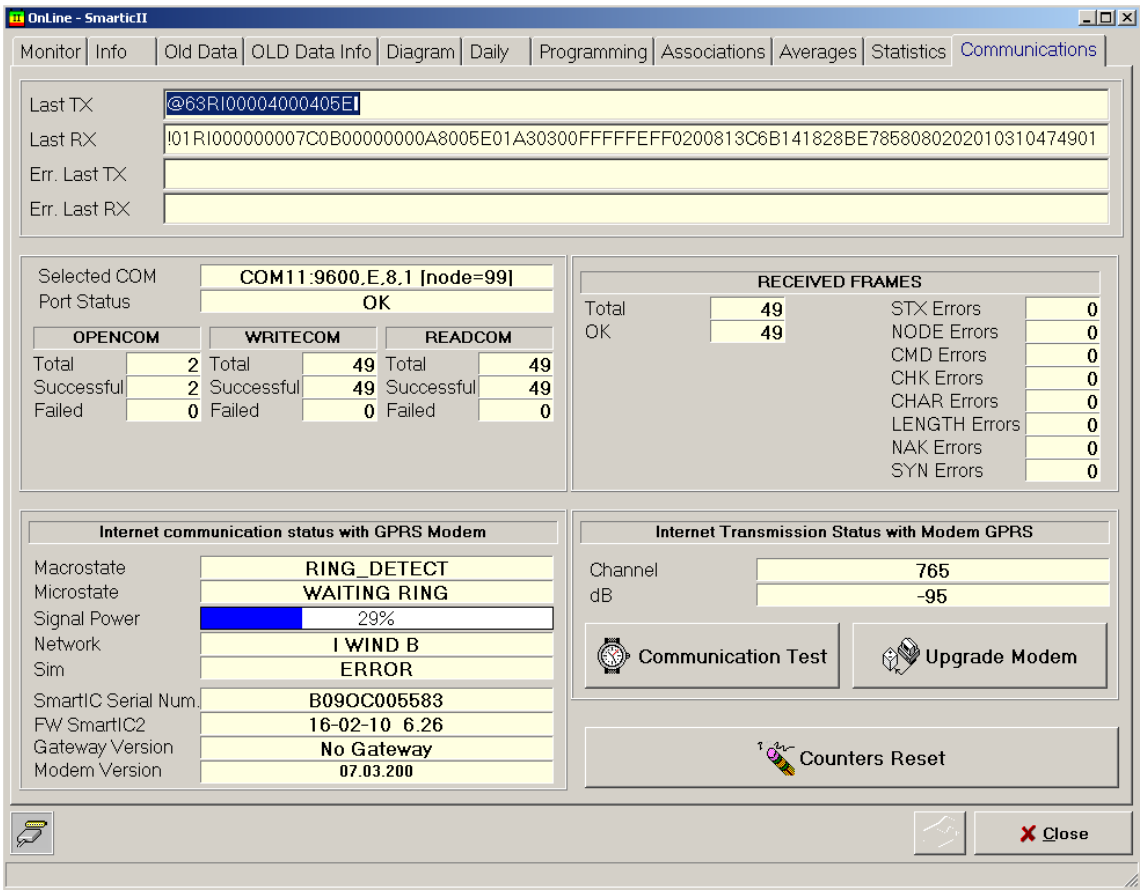


4.2.11 – Communication TAB (for SmartIC2 only)

The Communications TAB allows access to the data concerning the GPRS communication module and to information on connection to WEB server.
Depending on the password level, a few data data can not be displayed.

- The information to check the GPRS network lock are in the "Internet communication statu with GPRS Modem"
- Signal power: it shouldn't fall down under 20%
- Network: choosen provider identifier (depending on the used Sim Card) or the one selected from the network in case of roaming.
- Sim:
    - READY: the Sim Card is well inserted in the GPRS module
    - ERROR: the Sim Card is not present or not well inserted
    - The field is empty during initialization phase
- SmartIC Serial Num.: serial number of the SmartIC device
- FW SmartIC2: firmware version of the SmartIC device
- Gateway version:
    - SmartIC2 device: firmware version on the communication board
    - SmartIC2 V3 device -> "No Gateway"
- Modem version: GPRS module version

When SmartIC2 is connected to the GPRS network you will always have indications on the signal power and the network.
When the device opens a GPRS channel to communicate with the WEB server, the signal power and quality bars will turn into grey.



5 – Smart.IC not connected

All data from different devices, saved when connected through an adapter, can be accessed even later when devices are not connected any longer.

5.1 – Preliminary steps

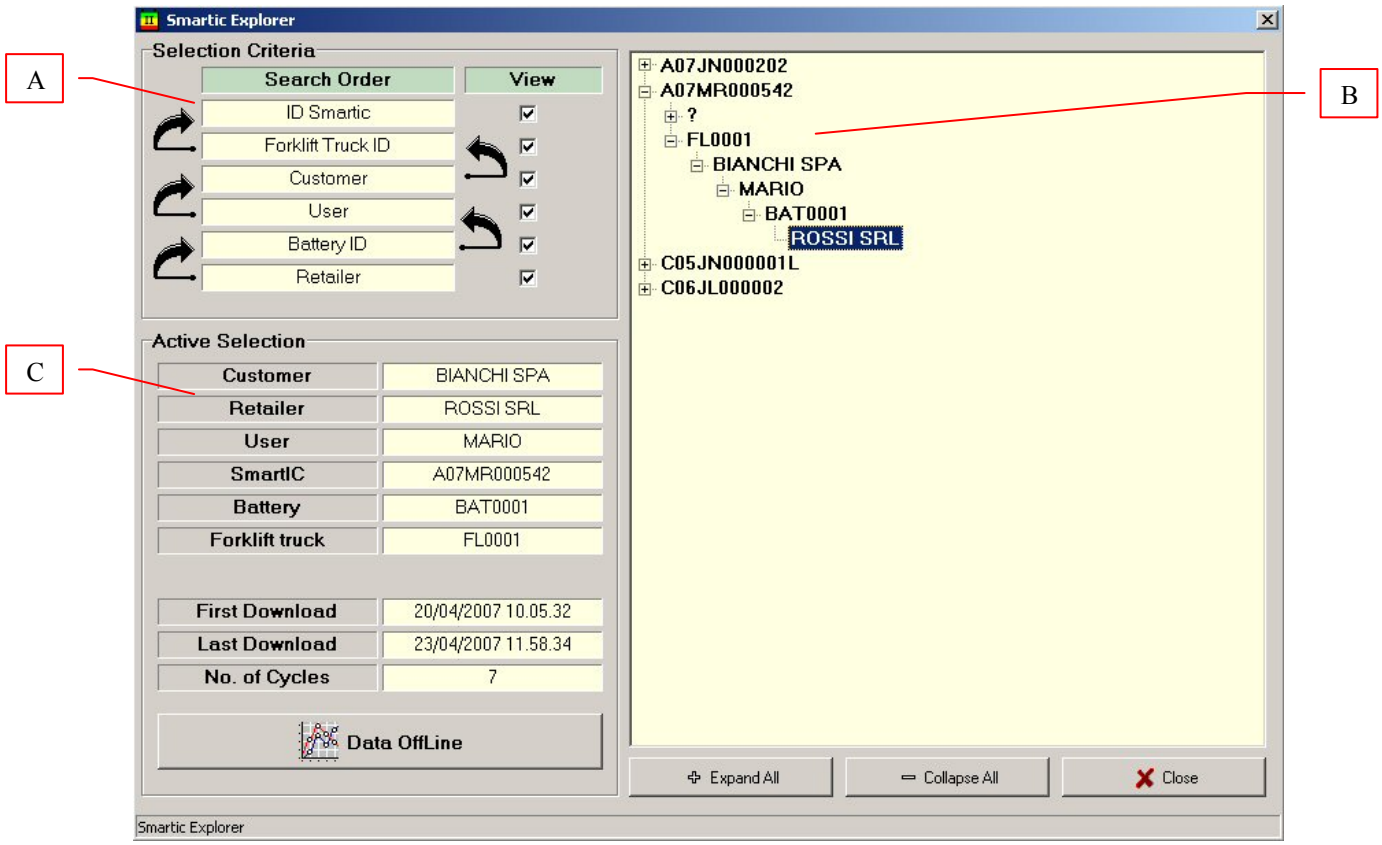
- Start the *SmartViewII* program
- Insert the Password required for the operations desired, if any
- Press the "Smart Explorer" push-button

5.2 – Device selection with Smartic Explorer

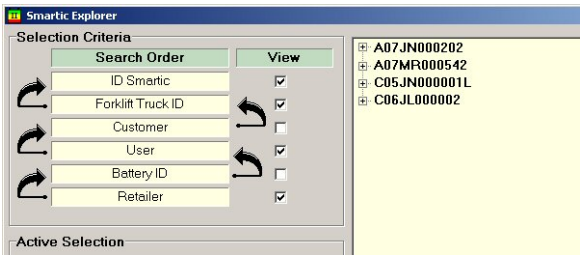
Smartic Explorer allows selection of data previously downloaded from each single device.
Keys to single out the data desired are the **serial number** and the **associations** parameters.
In the figure below you will find following parts:

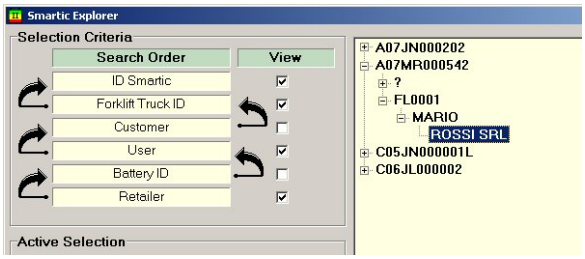
- A: "Selection Criteria" section. In this section you can choose:
    - Which keys (serial number of the device or associations parameters) have to be used to single out the device desired. To leave out a key it is enough to untick the relevant box
    - The sequence in which you can display the keys that you choose to use. To change the sequence, just select a key by clicking with a mouse and move it to the position desired
- B: section of devices display and selection. By clicking on an item, the key tree will open according to the selected criteria.
- C: section "Active Selection". You can find here selection keys of the selected device and a few information on data downloads performed by the device itself.

Once you have found and selected the desired data, press "Data Offline" to access them.

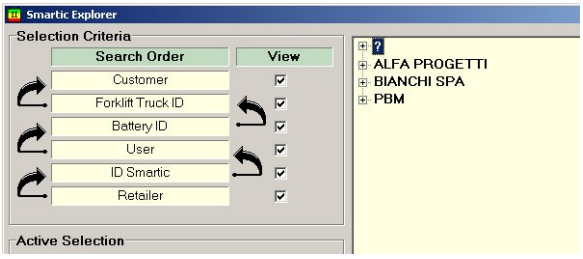


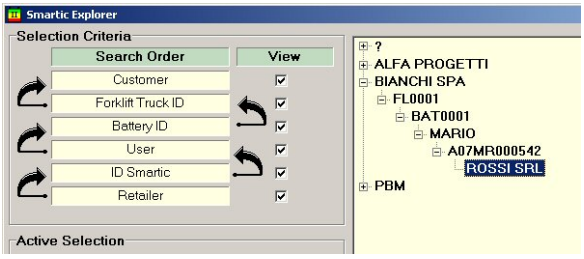
The figures show two different settings of active keys and their sequences which allow the same data block to be singled out.





Smart.IC serial number as main key. A few keys are disabled





Customer name as main key. In such a case all keys are disabled

<u>NOTE</u>:
Associations data which were not given (see 4.2.2) are displayed here as question marks.

5.3 – How to consult data

In this section all TAB's are described accessible when data downloaded from the different Smart.IC devices are consulted.

5.3.1 – OLD data TAB

The OLD data TAB allows access to the main data of the working cycles block singled out by the association selected through Smartic Explorer (see 4.2.5).

NOTE:
Unlike what happens when you are ONLINE, data concerning the cycle being performed when data are being saved are not available.

5.3.2 – Old data info TAB

The Old data info TAB allows access to detailed state and operating parameters of the working cycles block singled out by the association selected by means of Smartic Explorer (see 4.2.6.).

NOTE:
Unlike what happens when you are ONLINE, data concerning the cycle being performed when data are being saved are not available.

5.3.3 – Diagram TAB

The Diagram TAB allows access to the voltage and current diagrams of the working cycles of the block singled out by the association selected through Smartic Explorer (see 4.2.7).

NOTE:
Unlike what happens when you are ONLINE, data concerning the cycle being performed when data are being saved are not available.

5.3.4 – Daily TAB

From the daily TAB it is possible to watch the main data about the daily work of the battery. (see 4.2.8).

5.3.5 – Averages TAB

The averages TAB allows to perform average analyses on the working cycles of the block singled out by the association selected through Smartic Explorer (see 4.2.9).

5.3.6 – Statistics TAB

The Statistics TAB allows access to statistic concerning the whole life of the Smart.IC device selected, either from its beginning or from last reset (see 4.2.10).

NOTE:
"Cycle select" switches make it possible to recall statistics stored in the selected cycle.

5.3.7 – Programming TAB

The Programming TAB allows access to the programming parameters relating the to cycle selected by means of the cycle select switches (see chapter 4.2.1).

5.3.8 – Notes TAB

The Notes TAB allows to write, save and reread notes, if any, relating to the cycle selected by means of the selectors.
Written notes will appear also when printing Old Data, Old Data Info, Diagrams and Statistics TAB's.

APPENDIX A: how to use the DFU programme

The **DFU** programme is used to perform the firmware updating in the Smart.IC devices.
To perform the updating you need to have a copy of the updating file (*hex*) available in your PC.

- Connect the infrared adapter to the PC and insert the connector (IR side) to the Smart.IC device powered
- Start the DFU program
- Select the serial port used by the adapter. If an USB adapter is used, determine the port number assigned by Windows: Windows Control Panel -> Peripherals Management -> Ports (COM and LPT)
- Press the "Open HEX" pushbutton and select the updating file.
- Press the "Upload" pushbutton to carry out the updating. The progress bar shows the updating status.

On completion of the updating, the Smart.IC device restarts its functions.

The figure shows the following parts:

- A: "Open 'HEX'" pushbutton
- B: Upload/Abort pushbutton
- C: Bar showing the upload progress
- D: serial port selection

NOTE:
The firmware updating will not change the values of parameters and associations previously programmed.

IMPORTANT:
To upgrade SmartIC2 and SmartON devices, use the DFU.exe program
To upgrade the "SmartIC2 V3" device use the **DFU_dsPIC_SmartViewIII.exe** program.