

Communications manual

ZGR TOWER PRO

ZGR EFFICIENT RT



## ZGR TOWER PRO / EFFICIENT RT

Single-phase online UPS

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# 1 PRECAUTIONS

## 1.1 General precautions

For your own safety and that of the unit, you must read and understand the instructions contained in this document before starting work.

Keep these instructions in a place accessible to all the personnel who work with the unit so that they can be consulted.

Only expert and duly authorised personnel may operate our units.



**Danger warnings.** When handling or accessing the interior of the UPS, please remember that some parts may be live. Pay special attention to soldering points, printed circuits, connecting terminals, relay contacts, etc. Before opening the equipment, disconnect the voltage of all poles (both alternating and direct) and wait at least 5 minutes for the internal condensers to discharge.

**Arbitrary modifications are forbidden.** The unit must not be subjected to any modification regarding its construction or safety without **ZIGOR's** express consent. Any modification will free **ZIGOR** of any responsibility for any damage caused as a result of the modification. In particular, all repair work, soldering of printed circuit boards and replacing of components, modules and printed circuit boards, without the express authorisation of **ZIGOR**, is forbidden. Should spare parts be used, only ZIGOR original parts shall be utilised.

**Use the unit for the purpose for which it was designed.** The system supplied must be used only for the purpose for which it was designed. Any other use is strictly forbidden. **ZIGOR** cannot accept responsibility for any damage that might result from its use for any other purpose. In such cases, the user shall assume exclusive responsibility for any risk. The use for which the unit was designed is defined in the documentation. The system shall be exposed only to admissible environmental conditions. These are defined in the technical details provided for the equipment.

**ZIGOR** accepts no responsibility for any inadequate, negligent or incorrect installation of the equipment.

Please follow the indications set out below to operate under conditions of complete safety:

- The System must be checked once the installation has been completed by a qualified technician and before being put into operation. Should these indications not be adhered to, the warranty shall be considered null and void.

There is a risk of electric shock, do not remove the protective cover of the UPS.

- These units do not contain parts usable for other purposes by the user.
- If any liquid is spilt accidentally on the System, disconnect this and consult **ZIGOR** personnel.
- Should you have any problems with the contents of this manual, you must ask **ZIGOR** for assistance.

## 1.2 Environmental precautions

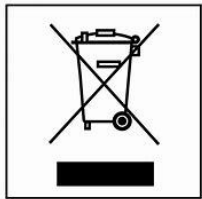


**Dispose of the packaging in an ecological way:** ZIGOR, based on the exceptions detailed in the First Additional Provision of Law 11/1997 on commercial or industrial packaging, informs that the final holder of the waste of used containers and packaging, as responsible for them, you must deliver them in appropriate conditions for reuse, to an authorized recuperator, recycler or re-valuer.

The subsets of the system are recyclable products and cannot be treated as household / municipal waste at the end of its useful life.

To preserve the environment, manage them in accordance with current environmental regulations and requirements in each country or community. In case of doubt, consult the manufacturer.

**Correct product disposal:** This electrical-electronic device (AEE) is marked with the symbol of compliance with the European Directive 2012/19 / EU (WEEE) regarding used electrical and electronic equipment (Waste electrical and electronic equipment WEEE, RD 110/2015).



The Directive provides the general framework valid throughout the European Union for the removal and reuse of waste from EEE.

To dispose of this product and ensure its proper management, follow the current local environmental legislation and regulations. In this way it will contribute to conserve the environment.

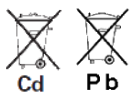
The wheeled bin crossed out on the product, in the documentation or on its packaging, means that the electrical-electronic devices and batteries must be collected separately at the end of their life cycle.

Before the deposit of the RAEE in their collection facilities, the batteries must be removed and deposited separately from the rest of the RAEE for proper management, according to the current local legislation and environmental regulations.

Never dispose of with household waste. In this way it will help preserve the environment.

These symbols are valid in the European Union and in those places where separate collection systems are available.

**Correct disposal of batteries:** Used batteries are reusable consumer products and a recycling process must be carried out.



Used batteries that do not go through the recycling process must be disposed of according to the instructions regarding special waste, in accordance with the regulations and environmental requirements in force in each country or community. This requirement applies in the European Union and in those places where separate collection systems are available.



In case of doubt, consult the manufacturer.

In this way it will contribute to conserve the environment.

## 2 HOW TO DISCOVER CARD IP ADDRESS



You do not need to open UPS device to install this card.

It can be done securely without electric shock risk by installing it on rear panel Intelligent slot.

If you do not have experience in IP network procedures to discover IP address assigned to your card, we provide Netility software as network scanner to discover UPS compatible cards.

Netility software is included on NetAgent software package or can be obtained separately.

This procedure is based on recent versions of Windows operating systems.

- Install and run Netility software with Administrator privileges.
- It will search your network for compatible cards.
- You will see discovered cards: general info, serial number and assigned IP by your DHCP service.



- It has an intuitive and easy menu. Just by selecting your card line and click on **Launch Web Interface**, you will access to built-in webserver to configure your card.
- And by click on **Network Settings**, you can change card IP address manually.

Each card model may have its own list of webserver options.

Not all options/protocols are described in this guide, only the most common ones.

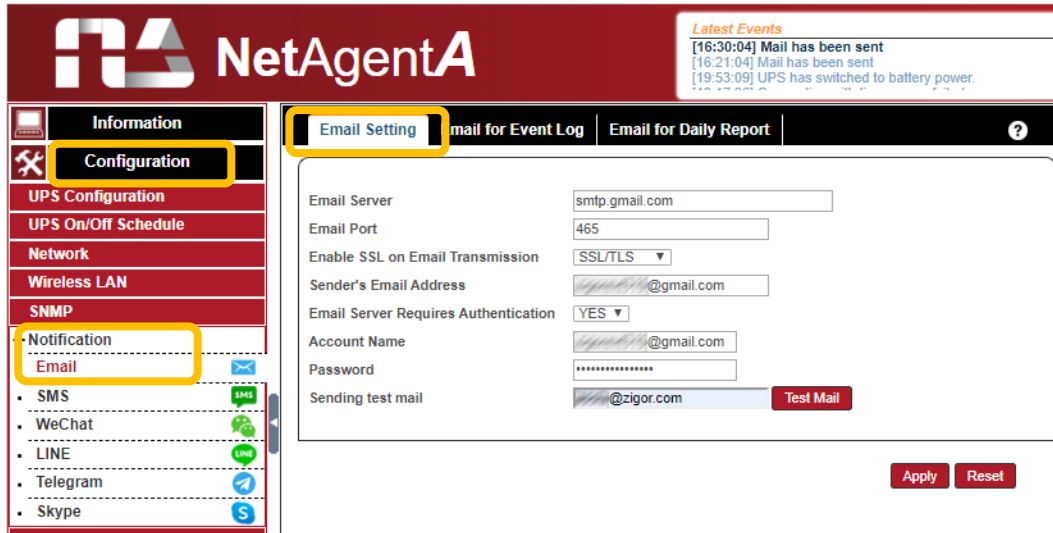
Not all technical definitions are described. Use your preferred web browser search engine to learn about them.

### 3 HOW TO SET EMAIL ALARM NOTIFICATION

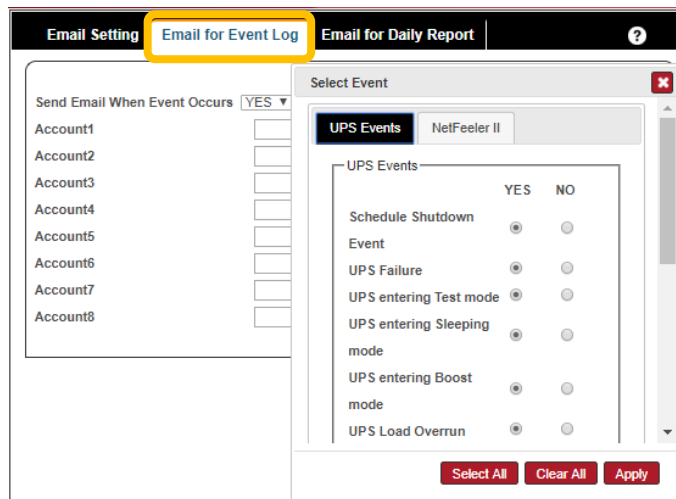
This card is able to notify UPS status by email or other methodes without the need of external software.

*NOTE: Not all notification methodes are available, it may vary depend on card model.*

- Access to built-in card webserver through your preferred Internet browser.
- Follow to CONFIGURATION / Notification / Email setting.



- Here you can configure your sender email address and authentication methodes. And there is a **TEST Mail** field to check mail configuration.
- Follow to CONFIGURATION / Notification / Event log and Daily report tabs if you want to add multiple notification receivers.
- Select your desired Events change to be notified.



*\*\*NOTE: If you use Gmail as your standard mail server, take in consideration latest Gmail authentication procedures based on OAuth protocol (1/Jun/2022). You need to create a special "aplication password". Otherwise, contact your network service support for help.*

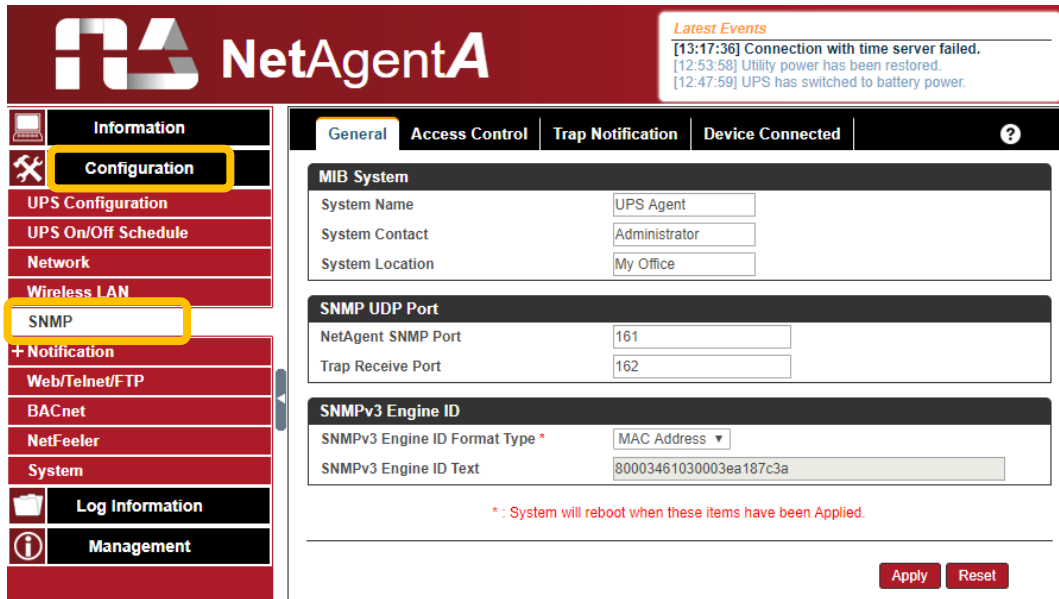
## 4 HOW TO SET DEVICE SNMP MONITORING

UPS status and measures can be remotely monitored by different methods, and one of the most common is SNMP protocol. It may be read by:

1. SNMP View software. (provided with NetAgent software set)
2. Your preferred software or SCADA system.

*NOTE: Download or ask ZIGOR for MIB file to use with your custom software.*

- Access to built-in card webserver through your preferred Internet browser.
- Follow to CONFIGURATION / SNMP setting.



**NetAgentA**

*Latest Events*  
 [13:17:36] Connection with time server failed.  
 [12:53:58] Utility power has been restored.  
 [12:47:59] UPS has switched to battery power.

**Configuration**

UPS Configuration  
 UPS On/Off Schedule  
 Network  
 Wireless LAN  
**SNMP**  
 + Notification  
 Web/Telnet/FTP  
 BACnet  
 NetFeeler  
 System

**Log Information**  
**Management**

**General** | Access Control | Trap Notification | Device Connected

**MIB System**

System Name	UPS Agent
System Contact	Administrator
System Location	My Office

**SNMP UDP Port**

NetAgent SNMP Port	161
Trap Receive Port	162

**SNMPv3 Engine ID**

SNMPv3 Engine ID Format Type *	MAC Address
SNMPv3 Engine ID Text	80003461030003ea187c3a

\*: System will reboot when these items have been Applied.

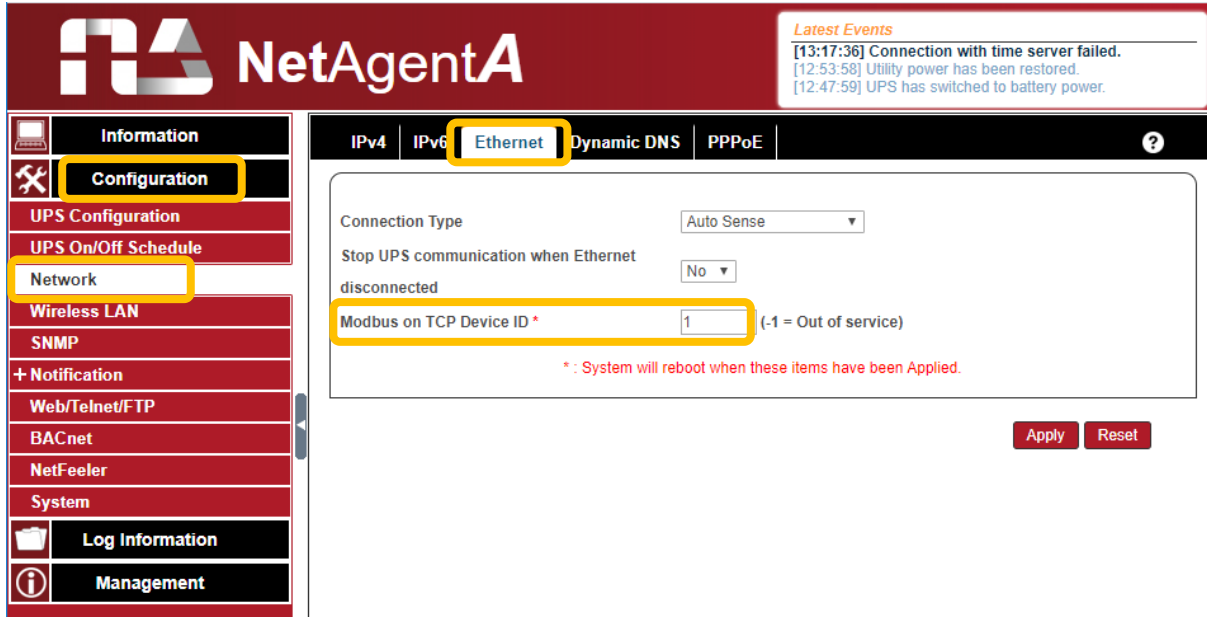
Apply Reset

- Ask your network manager to configure your own SNMP monitoring settings or left as default to monitor by most SNMP software.

## 5 HOW TO SET DEVICE MODBUS ID

This communication cards can be monitored by built-in Modbus TCP protocol.

- Access to built-in card webserver through your preferred Internet browser.
- Follow to CONFIGURATION / Network setting.
- Under Ethernet tab set your desired Modbus ID.
- You can check communication with your preferred software or SCADA system using standard TCP 502 port.



NetAgent A series card Configuration screen

### 5.1 General MODBUS TCP table

FUNCTION CODE 03 - READ HOLDING REGISTERS				
Battery Group				
REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40026	0025	UWORD	Battery Status	Integer Value: (1) unknown (2) battery Normal (3) battery Low
40027	0026	UWORD	Seconds on Battery	Seconds
40028	0027	UWORD	Battery Capacity	0-100%
40029	0028	UWORD	Battery Voltage	x0.01 V
40030	0029	UWORD	Battery Temperature	x0.1 °C
40031	0030	UWORD	Battery Current	x0.1 A
40032	0031	UWORD	Total Battery Voltage	x0.01 V



Input Group				
REGISTER	QUERY ADDRS	SIZE	MEASUREMENT	NOTES
40040	0039	UWORD	Input Line Voltage	x0.1 VAC
40041	0040	UWORD	Input Max Line Voltage	x0.1 VAC
40042	0041	UWORD	Input Min Line Voltage	x0.1 VAC
40043	0042	UWORD	Input Frequency	x0.1 Hz
40044	0043	UWORD	Input Current	x0.1 A
40045	0044	UWORD	Input True Power	Watts

Output Group				
REGISTER	QUERY ADDRS	SIZE	MEASUREMENT	NOTES
40050	0049	UWORD	Output Status	Integer Value: (1) unknown (2) onLine (3) onBattery (4) onBoost (5) sleeping (6) onBypass (7) rebooting (8) standBy (9) onBuck
40051	0050	UWORD	Output Voltage	x0.1 VAC
40052	0051	UWORD	Output Frequency	x0.1 Hz
40053	0052	UWORD	Output Load	0-100%
40054	0053	UWORD	Output Current	x0.1 A
40055	0054	UWORD	Output True Power	Watts

Rating Group				
REGISTER	QUERY ADDRS	SIZE	MEASUREMENT	NOTES
40060	0059	UWORD	Rating Voltage	x0.1 VAC
40061	0060	UWORD	Rating Power	VA
40062	0061	UWORD	Rating Battery Voltage	x0.01 V
40063	0062	UWORD	Rating Frequency	x0.1 Hz

**Alarm Group**

REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40064	0063	UWORD	Utility Fail	Integer Value: (1) Yes (2) No
40065	0064	UWORD	UPS Failed	Integer Value: (1) Yes (2) No
40066	0065	UWORD	Test in Progress	Integer Value: (1) Yes (2) No
40067	0066	UWORD	Shutdown Active	Integer Value: (1) Yes (2) No
40068	0067	UWORD	Beeper On	Integer Value: (1) Yes (2) No

**FUNCTION CODE 03 - READ HOLDING REGISTERS**

REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40091	0090	UWORD	Test Diagnostics Results	Integer Value: (1) ok (2) failed (3) invalidTest (4) testInProgress

**FUNCTION CODE 06 - WRITE SINGLE REGISTER**

**FUNCTION CODE 16 - WRITE MULTIPLE REGISTER**

**Config Group**

REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40070	0069	UWORD	Config ups Shut off Delay	The delay in seconds the UPS remains ON after set to turn off. Allowed values are 12, 18, 24, 30, 36, 42, 48, 54, 60, 120, 180, 240, 300, 360, 420, 480, 540 and 600 seconds.
40071	070	UWORD	Config Ups Sleep Time	Integer Value: 1 - 9999

**Control Group**

REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40080	0079	UWORD	Control UPS Off	Integer Value: (2) turnUpsOff
40081	0080	UWORD	Control Reboot Ups	Integer Value: (2) rebootUps
40082	0081	UWORD	Control UPS Sleep	Integer Value: (1) backUpsToNormal (2) setUpsToSleep

40083	0082	UWORD	Control Simulate Power Fail	Integer Value:	(2) simulatePowerFailure
40084	0083	UWORD	Control Flash And Beep	Integer Value:	(2) flashAndBeep
40085	0084	UWORD	Control Turn On UPS Load	Integer Value:	(2) TurnOnUpsLoad

**Test Group**

REGISTER	QUERY ADDR	SIZE	MEASUREMENT	NOTES
40090	0089	UWORD	Test Diagnostics	Integer Value: (2) testDiagnostics

## 6 HOW TO UPGRADE CARD FIRMWARE

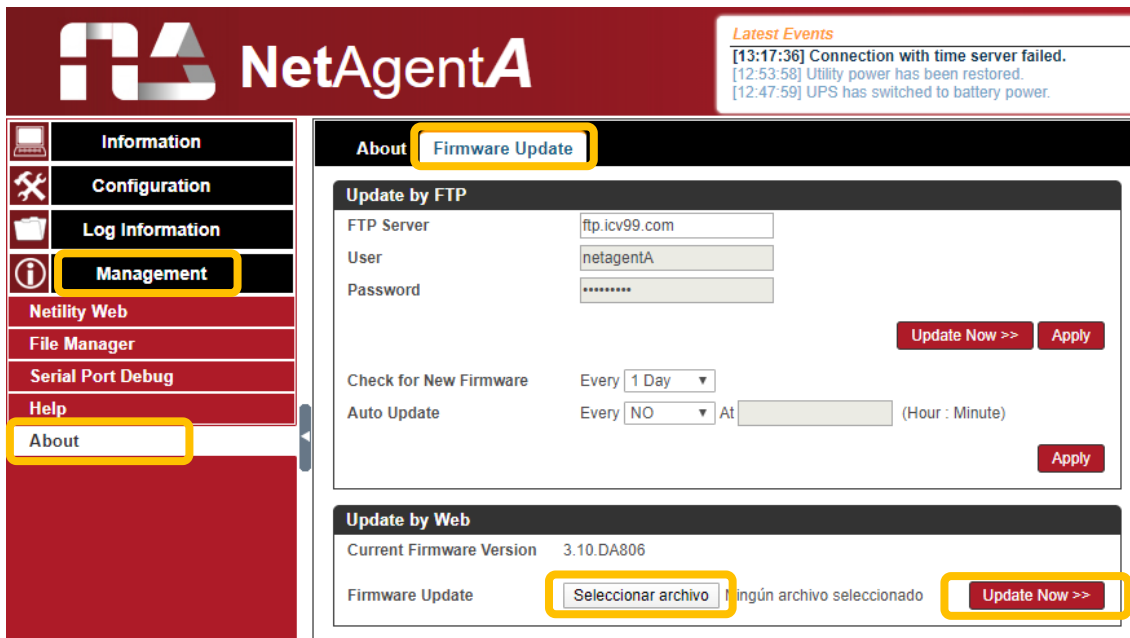
Firmware upgrade can be made by following methodes:

1. Built-in webserver page.
2. Netility software (provided with NetAgent software set).

### 6.1 Firmware upgrade by built-in webserver

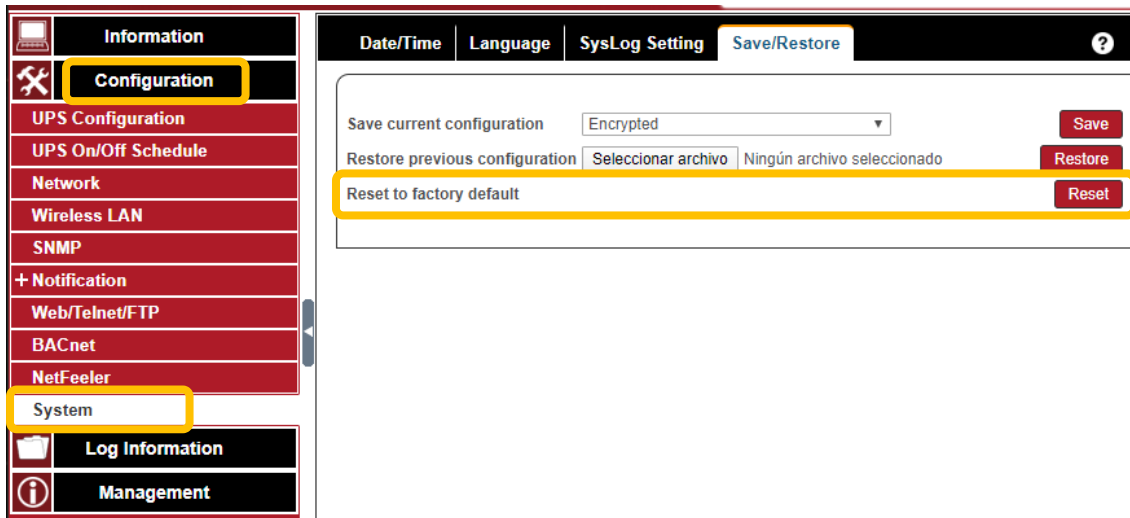
- Access to your communication card webpage IP through your preferred Internet browser.
- Follow to MANAGEMENT / About setting.
- Under Firmware update tab select Update by Web.
- Select provided firmware version and push **Update Now** button

*NOTE: Update can be done using remote FTP server, but we recommend local file upload method.*



The screenshot shows the NetAgentA web interface. The left sidebar has 'About' highlighted. The main content area shows the 'Firmware Update' page. Under 'Update by Web', the 'Update Now >>' button is highlighted in yellow. The 'Current Firmware Version' is 3.10.DA806. The 'Firmware Update' section shows a 'Seleccionar archivo' button and a 'Ningún archivo seleccionado' message, with the 'Update Now >>' button also highlighted.

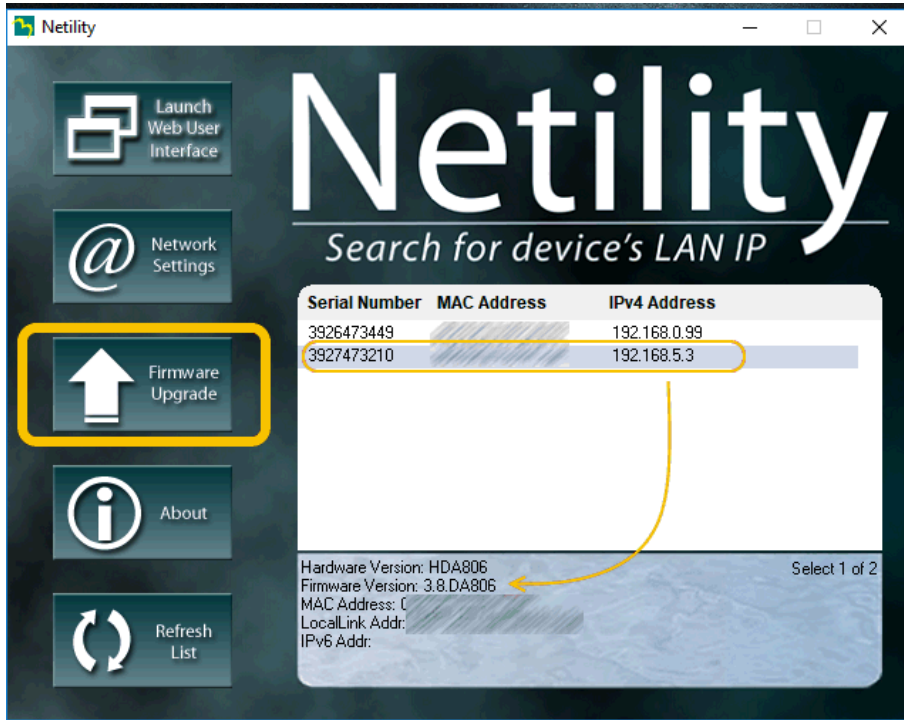
- Once full upgrade is completed, we recommend to make a full factory Reset



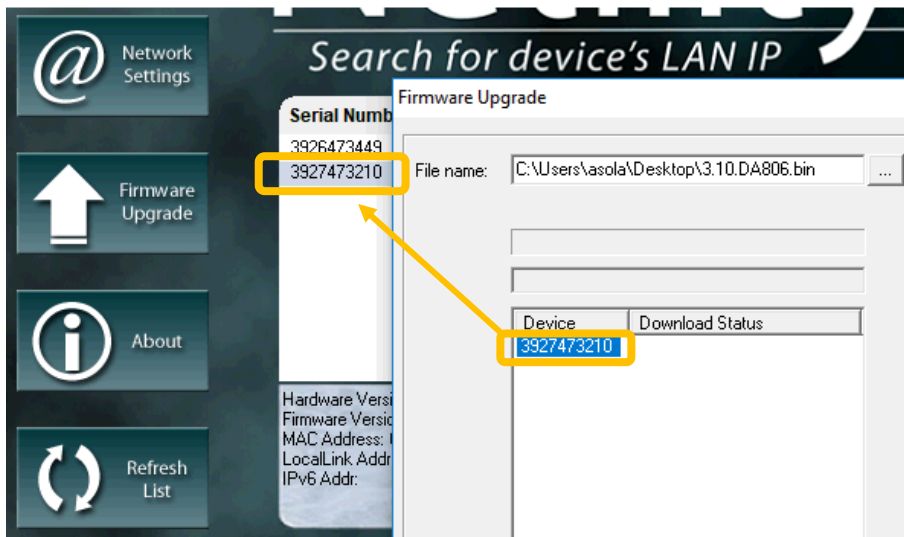
The screenshot shows the 'Save/Restore' configuration page. The 'Reset to factory default' button is highlighted in yellow. The 'Save current configuration' section has a 'Save' button. The 'Restore previous configuration' section has a 'Restore' button. The 'Reset to factory default' section has a 'Reset' button.

## 6.2 Firmware upgrade by Netility software

- Download and install Netility software.  
It will help you to scan and discover network IP for your UPS compatible cards
- Then you can easily make a Firmware Upgrade.



- Firmware upgrade is based on card serial number.



- Once full upgrade is completed, we recommend to make a full factory Reset



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*Las imágenes mostradas son sólo como referencia de uso y pueden cambiar dependiendo del modelo de producto.  
Images and menu settings are as configuration reference, they could be different depend on card model and/or version.*

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*Refer to our website in order to contact the commercial branches network*