NMC Transverse - 66074

Environment Sensor - 66846
Table of Contents

1 MGE NETWORK SOLUTION ......................................................................................................................... 5
  1.1 INTRODUCTION ........................................................................................................................................ 5
      1.1.1 Connecting the UPS / STS to the Network ....................................................................................... 5
  The Network Management Card: .................................................................................................................. 5
      1.1.2 Protecting the computers / servers ................................................................................................. 6
      1.1.3 Monitoring the UPSs over the network ............................................................................................ 6
      1.1.4 Connection ...................................................................................................................................... 7
  1.2 PRESENTATION OF THE NETWORK MANAGEMENT CARDS (NMC) .................................................... 7
  1.3 PRESENTATION OF THE ENVIRONMENT SENSOR SOLUTION ................................................................. 8
  1.4 DIRECT SENDING OF E-MAIL .................................................................................................................. 8
  1.5 SENDING TEXT MESSAGES (SMS) ............................................................................................................ 8
  1.6 COMPATIBILITY WITH THE NETWORK MANAGEMENT SYSTEMS (NMS) – TRAP SENDING ............... 8
  1.7 TECHNICAL DATA ...................................................................................................................................... 9
      1.7.1 Configuration .................................................................................................................................... 9
      1.7.2 Administration ................................................................................................................................. 9
      1.7.3 Network .......................................................................................................................................... 9
      1.7.4 MIB (Management Information Base) ............................................................................................ 9
      1.7.5 Environment sensor ....................................................................................................................... 9

2 INSTALLATION AND CONFIGURATION ....................................................................................................... 11
  2.1 INSTALLATION ......................................................................................................................................... 11
      2.1.1 Installing the card in the UPS / STS ............................................................................................... 11
      2.1.2 Connecting the card to the IT network ............................................................................................ 11
      2.1.3 Understanding front panel signals ................................................................................................ 11
  2.2 BASIC CONFIGURATION .......................................................................................................................... 11
      2.2.1 List of default parameters .............................................................................................................. 11
      2.2.2 Adjusting the network parameters ................................................................................................. 11
      2.2.3 Rebooting the card .......................................................................................................................... 11
      2.2.4 Restoring factory configuration .................................................................................................... 11
      2.2.5 Lost password – restoring the default password ........................................................................ 11
      2.2.6 Checking that the card is working ................................................................................................. 11
  2.3 ENVIRONMENT SENSOR .......................................................................................................................... 11

3 SUPERVISION / ADMINISTRATION VIA A WEB BROWSER ......................................................................... 12
  3.1 OPTIMISING THE PERFORMANCE OF YOUR BROWSER ........................................................................ 12
  3.2 UPS / STS .................................................................................................................................................. 13
      3.2.1 “UPS properties” page ................................................................................................................... 13
      3.2.2 “STS properties” page ................................................................................................................... 15
      3.2.3 About ............................................................................................................................................. 16
      3.2.4 On-line help .................................................................................................................................... 17
      3.2.5 UPS 3-Phase display ...................................................................................................................... 19
      3.2.6 STS 3-Phase display ...................................................................................................................... 21
      3.2.7 UPS Control ................................................................................................................................ 22
      3.2.8 UPS weekly schedule programming ............................................................................................. 24
      3.2.9 Shutdown parameters .................................................................................................................... 25
      3.2.10 Viewing the alarms ..................................................................................................................... 26
  3.3 LOGS .......................................................................................................................................................... 27
      3.3.1 UPS Measurements ....................................................................................................................... 27
      3.3.2 STS Measurements ....................................................................................................................... 28
3.3.3 UPS Event log ______________________________________ __________________________ 30
3.3.4 STS Event log ______________________________________ __________________________ 30
3.3.5 System log ______________________________________ __________________________ 32

3.4 Notification ______________________________________ __________________________ 34
3.4.1 UPS Email Notification ______________________________ __________________________ 34
3.4.2 STS Email Notification ______________________________ __________________________ 36
3.4.3 Email Message Settings ______________________________ __________________________ 37
3.4.4 Email Example ______________________________________ __________________________ 39

3.5 Configuration ______________________________________ __________________________ 40
3.5.1 Network Settings __________________________________ __________________________ 41
3.5.2 System _____________________________________________ _________________________ 43
3.5.3 UPS Notified Applications __________________________ _____________________________ 45
3.5.4 Central Shutdown Configuration _______________________ _____________________________ 47
3.5.5 STS Notified Applications __________________________ _____________________________ 48
3.5.6 Access control _____________________________________ ___________________________ 50
3.5.7 Time _______________________________________________ _________________________ 53

3.6 Environment ______________________________________ __________________________ 54
3.6.1 Characteristics ____________________________________ ____________________________ 54
3.6.2 Environment status _________________________________ ___________________________ 55
3.6.3 UPS Environment Settings ___________________________ ___________________________ 57
3.6.4 Log ________________________________________________ _________________________ 59

4 Servers Protection, UPS Only __________________________ _____________________________ 60
4.1 Set-up of the Shutdown Parameters __________________________ _____________________________ 60
4.1.1 Shutdown criteria managed by the Management Card ___ ______________________________ 60
4.1.2 Specific set-up for long autonomy installation (> 30 mn) ______________________________ 61

4.2 The Different Server and UPS Shutdown Sequences ______________ _____________________________ 62
4.2.1 Extended power outage, shutdown initiated by the Shutdown Timer ______________________ 62
4.2.2 Extended power outage, shutdown initiated by the “Low battery power” message ____________ 63
4.2.3 Extended power outage, shutdown initiated by the Shutdown Timer, but utility restoration before the end of the Shutdown Duration ___________________________________________________________ 64
4.2.4 Off/On command _____________________________________ _________________________ 64

5 Configuring a Set of Cards with MUpgrade ___________ _____________________________ 65

6 Configuration in Local Mode and Via Telnet or SSH ____________________________ 65
6.1 Configuration in Local Mode _____________________________________________________________ 65
6.1.1 Choice 1: SNMP agent configuration menu __________________ ___________________________ 66
6.1.2 Choice 2: UPS / STS parameters ______________________________ ___________________________ 67
6.1.3 Choice 3: Access control _____________________________________________________________ 67
6.1.4 Choice 4: Restore default configuration ______________________________ ___________________________ 68
6.1.5 Choice 5: Reset the card _____________________________________________________________ 68

6.2 Configuration via Telnet _____________________________________________________________ 69
6.3 Configuration via SSH _____________________________________________________________ 69
6.3.1 PuTTY SSH Client Program _____________________________________________________________ 69

7 Maintenance _____________________________________________________________ 72
7.1 Software Upgrade _____________________________________________________________ 72
7.1.1 Card firmware upgrade using Mupgrade (Windows) ______________________________ ____________ 72
7.1.2 Card software upgrade via TFTP (UNIX and Windows) ______________________________ ____________ 72
7.1.3 Recovery tool software Msupgrade (Windows) via the serial link ______________________________ ____________ 72

8 Appendices _____________________________________________________________ 73
8.1 Tables of Alarms and Events___________________________________________________________ 73
8.1.1 UPS Alarm table __________________________________________________________ 73
8.1.2 STS Alarm table ________________________________________________________ 73
8.1.3 UPS event table _________________________________________________________ 74
8.1.4 STS event table _________________________________________________________ 76
8.1.5 System alarm table ______________________________________________________ 78
8.2 GLOSSARY _______________________________________________________________ 79
1 MGE Network Solution

1.1 Introduction

- provides information on events concerning the supply of power to the computers connected to your computer network,
- carries out automatic shutdown of computer systems,
- monitors and controls all the UPSs connected to the network,
- monitors all the STS connected to the network,

As illustrated in the picture below, MGE Network Solution provides these 3 main functions:

- connecting the UPS / STS to the Network,
- protecting the computers powered by UPS,
- monitoring the UPSs / STSs over the Network

1.1.1 Connecting the UPS / STS to the Network

This function can be performed either through network Cards inserted in the UPS (Network Management Card).

The Network Management Card:
- manages communication with the UPS / STS,
periodically accesses the information concerning the UPS / STS,
makes this information available to the connected applications (Network Shutdown Modules, Web
Browser, Network Management Systems, Enterprise Power Manager)
Operation may be in standard secure mode (the default mode) or in SSL secure mode (Secure Socket Layer
SSL).

1.1.2 Protecting the computers / servers
This function is performed by the Network Shutdown Module installed on each of the servers to be protected.
Note that the Shutdown Module is available on several Operating Systems.
The Network Shutdown module (only available for UPS, not for STS):
continuously waits for information from the Network Management Card connected to the MGE UPSs.
warns administrators and users if AC power fails and proceeds with graceful system shutdown before the
end of battery backup power is reached.

1.1.3 Monitoring the UPSs over the network
Depending on your needs, you can either use:
your Internet browser to monitor each UPS, as Management Card include a Web server.
your company’s standard Network Management System (HP-Openview, CA Unicenter, HP Insight
Manager, IBM Tivoli Netview). To simplify integration of MGE UPSs with these NMS, you can use one of
the Network Management System Kits for MGE devices. These kits are available on Management Pac 2
CD-Rom. (ref 66923)
the MGE supervisor " Enterprise Power Manager "


1.1.4 Connection

1.1.4.1 How to connect UPS / network :
- Insert the optional card in the UPS / STS and connect the device to the computer network.
- Start the MGE UPS / STS, then the computers.

1.1.4.2 Setting up the protection, for UPS only
- Set up the Network Management Card (see user manual).
- Install Network Shutdown Module on all machines that are to be protected by the UPS (supplied with UPS battery backup power).

The software components for each platform and the user manuals are supplied free-of-charge on the Solution-Pac 2 CD are available or for download on the [www.apc.com](http://www.apc.com) Web site.

1.2 Presentation of the Network Management Cards (NMC)
MGE provides one form factors for its Network Management Cards:
NMC Transverse for UPS, in UPS slot, like the MGE Galaxy PW, MGE Galaxy PW 1000, MGE Galaxy 3000, MGE Galaxy 4000 US, MGE Galaxy 5000, MGE Galaxy 5000 US

NMC Transverse for UPS, using the Network Management Link, like the Comet 3000, Comet S31, MGE Galaxy 6000, MGE Galaxy 9000, EPS 6000 US, EPS 7000 US, EPS 8000 US

NMC Transverse for STS, in STS slot, like the MGE Epsilon STS and MGE Upsilon STS.

The Network Management Cards acquire information on the operation status of the UPS / STS systems and provide remote control of these systems by means of an ETHERNET network from any SNMP administration station or Web browser. They also supply alarms to the Network Shutdown Modules to trigger shutdown or other automatic actions for protected servers.

A simple html browser is used for supervision and configuration. Network Management Cards are compatible with:

- Network Shutdown Modules
- Entreprise Power Manager
- Management-Pac 2
- ISXC

1.3 Presentation of the Environment Sensor solution

The Environment Sensor solution comprises a box to be connected to the Card Settings port of the Network Management Cards:

Environment Sensor enables measurement of temperature and humidity around the UPS, consideration of external alarms via 2 dry contacts and notification of alarms according to pre-programmed thresholds.

1.4 Direct sending of E-mail

When a UPS / STS event occurs, the Network Management Card can directly notify up to 4 intranet or extranet addressees by e-mail (see Email Notification and Email Message Settings).

1.5 Sending text messages (SMS)

SMS messages can be sent by specific configuration of the e-mail function via the internet access providers making the e-mail / SMS transfer.

1.6 Compatibility with the Network Management Systems (NMS) – Trap sending

The Network Management Cards are compatible with the major Network Management Systems (IBM Tivoli, CA Unicenter, HP Insight Manager ..),. The Management-Pac 2 offering includes the necessary SNMP plug-in to allow an easy integration in the NMS. Events are notified by SNMP trap

- NMS can subscribe on page "Notified Application"
- SNMP sequences are described in chapter "Server protection"

The trap list can be looked over in the document “Agent’s MIB description” available on apc.com.
1.7 Technical data

1.7.1 Configuration

The user can configure the card with one of the following means:
- Web browser
- Local serial link
- Telnet console
- BOOTP/DHCP
- Mupgrade

1.7.2 Administration

- Up to 50 workstations protected
- Up to 15 browsers connected at the same time
- E-mail sending configurable according to UPS alarms and transmission of a periodical report
- Measurement of temperature and humidity, adjustable thresholds, possibility of sending e-mails and shutting down the installation
- Control of UPS on/off switching via the HTML interface
- Adjustment and control Power via the HTML interface, sequential starting of the installation and optimisation of backup time by shutting down non-priority systems
- Adjustment of date and time via NTP server - Daylight Saving Time management
- Protection by encrypted password
- Protection by secured connection SSL and SSH
- Saving of logs in the non-volatile memory
- Automatic language detection according to browser configuration
- Languages available: English / French / Spanish / German / Italian
- On-line help available for each page
- Card firmware updated via the network
- Card configuration deployment on your installed base through network utility (Mupgrade)

1.7.3 Network

- Fast ETHERNET 10/100 Mbits compatibility with auto-negotiation on the RJ45 outlet
- SNMP trap port modifiable (by default = 162)

1.7.4 MIB (Management Information Base)

- MIB IETF UPS (RFC1628) for UPS
- MIB MGE V1.7 AD, for UPS
- MIB MGE V2.2 AA, for STS

1.7.5 Environment sensor

- Temperature measurement from 0 to 70 °C with +/- 1 °C accuracy
- Measurement of humidity from 0 to 100 % with +/- 6 % accuracy
- Min / max time-stamped function for temperature and humidity
- Choice of temperature readings in Celsius or Fahrenheit
- High and low thresholds, hysteresis and offset adjustable via Web interface
Network Management Card

User Manual

- Possibility of notification of status changes by e-mail, SMS or SNMP traps
- Position detection of 2 dry contacts (maximum sensor/contact distance: 20 m)
- Name and status of each configurable contact
- Recording of events and measurements in the card log
- Possibility of shutting down the installation in the event of a threshold being exceeded or on opening / closure of a dry contact
- Connection to the card with straight CAT5 RJ45 network cables (maximum card/sensor distance: 20 m)
2 Installation and Configuration

For the following sections, read the installation manual supplied with the card or available for download on the www.apc.com web site in the “Download area” section.

2.1 Installation

2.1.1 Installing the card in the UPS / STS

2.1.2 Connecting the card to the IT network

2.1.3 Understanding front panel signals

2.2 Basic configuration

2.2.1 List of default parameters

2.2.2 Adjusting the network parameters

2.2.3 Rebooting the card

2.2.4 Restoring factory configuration

2.2.5 Lost password – restoring the default password

2.2.6 Checking that the card is working

2.3 Environment Sensor

Read the installation manual supplied with the box.
3 Supervision / Administration via a Web browser

A JVM (Java Virtual Machine) is required to ensure correct display of information in HTML pages.

- On a computer equipped with a Web browser (Internet Explorer or Netscape recommended), enter the address initialised previously in the Installation chapter (e.g.: http://213.30.17.30.)
- The “UPS properties” or “STS properties” home page is displayed.

3.1 Optimising the performance of your browser

- To view status changes on the UPS in real time, the browser must be configured so that it automatically refreshes all the objects on the current page.
  Example on IE: Tools / Internet Options / General / Parameters menu, tick Every time this page is visited and validate.
3.2 UPS / STS

3.2.1 “UPS properties” page

This page gives instant access to the essential information about your UPS. This page is automatically refreshed every 10 seconds (by default). To change this value, go to the “System” page.

**UPS Properties**

- **UPS Status**
  - Communication: OK
  - Power source: AC Power
  - Battery: Charging
  - Output load level: 0%
  - Output: Protected

- **Battery Status**
  - Battery charge level: 100%
  - Remaining backup time: 1h 47min 0sec
  - Last periodic test: OK

- **System**
  - Computer Room
  - Last update: 2010/02/19 15:00:36

3.2.1.1 UPS zone: general information on the UPS.

Indication of the picture and generic name of the UPS range

**Computer room**: Customised name of your system corresponding to the “upsIdentName” object of the UPS MIB (RFC 1628)
You can change this name on the “System” page.

- **Normal operation**
- **Alarm present. This icon links directly to the alarm page**

3.2.1.2 “UPS status” zone: essential information

The various icons showing the status of the UPS are:
“Communication”: indicates the status of the communication between the card and the UPS
“Power source”: indicates whether the power comes from the utility or from the UPS battery
“Batteries”: indicates whether the battery is being charged or discharged
“Output load level”: indicates the power percentage used at UPS output
“Output”: indicates if the UPS output is protected, Powered or not Powered

3.2.1.3  “Battery status” zone:
  ▶ “Bargraph”: Graph showing the remaining battery charge (in percent).
  ▶ “Battery charge level”: Remaining battery charge (in percent).
  ▶ “Remaining backup time”: Estimation of the maximum backup time remaining before UPS shutdown.
    This time can be modified by the adjustments on the “Shutdown parameters” page
  ▶ “Last periodical test”: Result of the last automatic battery test carried out by the UPS

    Possible values are:
    - OK: the test was completed correctly
    - NOK: the battery needs to be checked
    - Deactivated: the automatic battery test is not validated on the UPS
3.2.2 “STS properties” page

This page gives instant access to the essential information about your STS. This page is automatically refreshed every 10 seconds (by default). To change this value, go to the “System” page.

### STS Properties

**STS**

- STS Properties
- 3-Phase Display
- Alarm Table

**Logs and Notification**

- Measurements
- Event Log
- System Log
- Email Notification

**Settings**

- Network
- System
- Notified Applications
- Access Control
- Time

**Environment**

- Status
- Settings
- Log

---

#### 3.2.2.1 STS zone: general information on the STS.

Indication of the picture and generic name of the UPS range

**Computer room:** Customised name of your system corresponding to the “upsIdentName” object of the UPS MIB (RFC 1628)

You can change this name on the “System” page.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![ok]</td>
<td>Normal operation</td>
</tr>
<tr>
<td>![alarm]</td>
<td>Alarm present. This icon links directly to the alarm page</td>
</tr>
</tbody>
</table>

#### 3.2.2.2 “STS status” zone: essential information

The various icons showing the status of the UPS are:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Loss of communication]</td>
<td>Loss of communication with the STS</td>
</tr>
</tbody>
</table>
“Communication”: indicates the status of the communication between the card and the STS
“Output”: indicates whether the output is or not powered
“Output load level”: indicates the power percentage used at STS output
“Transfer”: indicates if it is possible to switch from one used source to the other.

3.2.2.3  “Sources status” zone:

◗ “Active source”: indicate which source is currently used.
  Possible values are:
  - 1: for source 1
  - 2: for source 2
  – Unknown: if value unknown (initialization, lost of communication)

◗ “Preferred source”: indicate which source is used, if none source is faulty
  Possible values are:
  - 1: for source 1
  - 2: for source 2
  – Unknown: if value unknown (initialization, lost of communication)

3.2.3  About

The “About your UPS” or “About your STS” zone provides information on the UPS / STS, in particular, the name range and software version. Are also available, the current NMC firmware release.

About your UPS / STS

<table>
<thead>
<tr>
<th>GALAXY 5000 60 KVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS STS Name:</td>
</tr>
<tr>
<td>UPS STS Firmware revision:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Management Card</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware revision:</td>
</tr>
<tr>
<td>IA38 (SN 43a458002)</td>
</tr>
</tbody>
</table>
3.2.4 On-line help

On-line contextual help in English is available at the top of each page by clicking on the Help link, which is always located on the top right corner.

The Help page always opens a new window. There is two help pages, dedicated to the device: one help for UPS, other one for STS.

UPS Properties Help

This is the page by default, displaying the fundamental status of the UPS.

- **UPS feature** identifies the UPS, which is powering the electrical network.

- **About your UPS**: provides information on the UPS and the Network Management Card.

**UPS Status**

- **Communication**: indicates the status of the communication between the card and the UPS.
- **Power source**: indicates either the power comes from the utility or from the UPS battery.
- **Battery**: indicates either the battery is being in charge or in discharge.
- **Output load level**: indicates the power percentage used at UPS output.

- **Utility power present**
- **UPS is on battery**
- **Battery fault or unavailable**
- **Communication lost with the UPS**
- **Outlet powered - Flashing when an on/off sequence is in progress**
- **Outlet not powered or not protected**

**Battery Status**

- **Battery charge level**: Remaining battery charge (in percent).
- **Remaining backup time**: Estimation of the remaining battery backup time before UPS shutdown.
- **Last periodic test**: Result of the last automatic battery test carried out by the UPS.

**Refresh**: The Web browser refreshes this page according to the period defined by the parameter **Refresh Rate** in the page **System Settings**.

**Note**: A Java Virtual machine is required to show properly HTML pages.
STS Properties Help

This is the page by default, displaying the fundamentals status of the STS.

### STS Status

- **Communication**: indicates the status of the communication between the card and the STS.
- **Output**: indicates if the load is powered or not.
- **Output load level**: indicates the power percentage used at STS output.
- **Transfer**: indicates if possible to supply the load with the other source, in the place of current one.

### Sources Status:

- **Active source**: which source is powering the load.
- **Preferred source**: the customer preferred source.
- **About your STS**: provide information on the STS and the Network Management Card.

**Refresh**: The Web browser refreshes this page according to the period defined by the parameter **Refresh Rate** in the page **System Settings**.
3.2.5 UPS 3-Phase display

Click 3-phase display to access to the detailed monitoring page. This item is added to the menu for all single UPSs having a three-phase output.

The link on the gauge symbols gives access to the measurement page related to the function.

Function symbols are outlined in red when an alarm is present.

The red triangle, linked to the alarm page, appears when an alarm is present, otherwise a green symbol is displayed.

This page is automatically refreshed every 10 seconds (by default). To change this value, go to the “System” page.

### 3-Phase Display

**Frequency and power factor**

<table>
<thead>
<tr>
<th>GALAXY 5000 60 kVA</th>
<th>Output</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Ph1</td>
<td>Ph2</td>
</tr>
<tr>
<td>64 kW</td>
<td>5 kW</td>
<td>5 kW</td>
</tr>
<tr>
<td>26 kWh</td>
<td>5 kW</td>
<td>5 kW</td>
</tr>
<tr>
<td>20 A</td>
<td>20 A</td>
<td>20 A</td>
</tr>
<tr>
<td>404 V (u12)</td>
<td>404 V (u23)</td>
<td>404 V (u31)</td>
</tr>
<tr>
<td>233 V</td>
<td>233 V</td>
<td>233 V</td>
</tr>
</tbody>
</table>

**Active power – Global and per phase**

**Apparente power – Global and per phase**

**Output current**

**Output voltage Phase / Phase**

**Output voltage Phase / neutral**

---

3.2.5.1 Normal input measurements

### 3-Phase Display

**Input current**

**Input voltage Phase / Phase**
3.2.5.2 Battery measurements

**3-Phase Display**

<table>
<thead>
<tr>
<th>GALAXY 5000 60 kVA</th>
<th>Battery</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining backup time:</td>
<td>11 min 0 sec</td>
<td><strong>Remaining backup time estimated by the UPS</strong></td>
</tr>
<tr>
<td>Battery charge level:</td>
<td>75 %</td>
<td><strong>Battery charge level</strong></td>
</tr>
<tr>
<td>Battery voltage:</td>
<td>491.0 V</td>
<td><strong>Battery voltage</strong></td>
</tr>
<tr>
<td>Battery current:</td>
<td>0 A</td>
<td><strong>Battery current – Negative when discharging</strong></td>
</tr>
<tr>
<td>Battery temperature:</td>
<td>23 °C</td>
<td><strong>Battery temp. – Internal temperature probe</strong></td>
</tr>
</tbody>
</table>

3.2.5.3 By Pass measurements

**3-Phase Display**

<table>
<thead>
<tr>
<th>GALAXY 5000 60 kVA</th>
<th>Bypass input</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph1</td>
<td>0 A</td>
<td><strong>By Pass current</strong></td>
</tr>
<tr>
<td>Ph2</td>
<td>0 A</td>
<td><strong>By Pass voltage Phase / Phase</strong></td>
</tr>
<tr>
<td>Ph3</td>
<td>0 A</td>
<td></td>
</tr>
</tbody>
</table>

50.0 Hz
3.2.6 STS 3-Phase display

Click 3-phase display to access to the detailed monitoring page.

This item is added to the menu for all single UPSs having a three-phase output.

The link on the gauge symbols gives access to the measurement page related to the function.

Function symbols are outlined in red when an alarm is present.

The red triangle, linked to the alarm page, appears when an alarm is present, otherwise a green symbol is displayed.

This page is automatically refreshed every 10 seconds (by default). To change this value, go to the “System” page.
3.2.6.1 Source 2 input measurement

![Source 1 current](image1)

Source 1 current

Source 1 voltage Phase / Phase

Source 1 frequency

Source 1 neutral current (if wiring 3 phases + neutral)

3.2.6.2 Source 2 input measurement

![Source 2 current](image2)

Source 2 current

Source 2 voltage Phase / Phase

Source 2 frequency

Source 2 neutral current (if wiring 3 phases + neutral)

3.2.7 UPS Control

Click on the "UPS Control" section in the menu.

If the UPS is not compatible with this function, a warning message is sent to the user. UPS configuration may also prevent the commands from being properly run. Read the UPS manual for more information.

**UPS Control**

![Galaxy 5000 60 kVA UPS Control](image3)

This page enables triggering of startup and shutdown sequences for the UPS main output. The status of output is displayed by a symbol associated with the Off label (red symbol) or Powered (green symbol).
The shutdown sequences take into account the time required for the registered servers to shut down without losing data (see shutdown parameters). Once the sequence has started, the commands are disabled until it ends.

After a startup sequence, the commands are disabled for 120 seconds to enable the servers to fully restart.

The Check column proposes six different commands, and a command is only actually started after clicking on 'Execute':

- **“Safe power down”**: a sequence to switch off output power is launched immediately. The symbol representing the output flashes, indicating that the sequence is in progress. The systems supplied are shut down correctly while the shutdown sequence is running, then the output is cut.

- **“Safe power down & reboot”**: A sequence to switch off then restore output power is launched immediately. The symbol representing the output flashes, indicating that the shutdown sequence is in progress. The powered systems are shut down correctly during the shutdown sequence, then the output is switched off. Finally, the restart sequence is launched at the end of the time delay specified in the “Toggle duration” parameter. The output status is updated.

- **“Immediate On”**: a sequence to switch on output power is launched immediately. The output is re-powered and the systems supplied start up again correctly.

- **“Delayed, safe power down”**: this is the same switch off sequence as for the “Safe power down” command, but postponed by the number of seconds programmed in the “Off Delay” parameter.

- **“Delayed, safe power down & reboot”**: this is the same switch off then on sequence as for the Safe power down & reboot command, but postponed by the number of seconds programmed in the “Off Delay” parameter.

- **“Delayed On”**: this is the same switch on sequence as for the “Immediate On” command, but postponed by the number of seconds programmed in the “On Delay” parameter.

The **Save** button saves the Off Delay, Toggle duration and On Delay parameters on the card.

**Security**: The administrator must click on **Save** and enter his login / password to save modifications or run commands. The login and password by default are: **MGEUPS**.
3.2.8 UPS weekly schedule programming

Click on the “Weekly schedule” section of the menu.

If the UPS is not compatible with this function, a warning message is sent to the user.
UPS configuration may also prevent the commands from being properly run. Read the UPS manual for more information.

The weekly schedule enables the administrator to optimise power consumption or program a reboot of the protected equipment at a set time.

In a shutdown sequence, the Network Shutdown Modules connected to the card are informed and ensure that each machine is shut down correctly before the UPS output is switched off (dependant of the UPS settings and UPS type).
Up to 7 UPS shutdown sequences (dependant of the UPS settings and UPS type) can be programmed in one week, with a minimum shutdown delay of 30 minutes.

Security: the administrator clicks on “Save” and enters his/her login / password to save any edits. The login and password by default are: MGEUPS.

**Weekly Schedule**

<table>
<thead>
<tr>
<th>Day</th>
<th>Shutoff Time</th>
<th>Restart Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>21:30</td>
<td>22:00</td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Save changes**
3.2.9 Shutdown parameters

- Click on the “Shutdown parameters” section in the menu to see the list of parameters.

**Important note:**
For installations that do not use **Network Shutdown Module** (backup units, routers and other internetworking equipment, automated systems, etc.) or in the event of long backup periods, the card will send a command to the UPS (dependant of the UPS settings and UPS type) to shut off end of the programmed **Shutdown After** time. To prevent this, the **Shutdown After** box must be not selected (default)

### Shutdown Parameters

<table>
<thead>
<tr>
<th>Output</th>
<th>On battery</th>
<th>System Shutdown</th>
<th>Restart</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Master]</td>
<td>![Shutdown if Remaining time under: 180 set]</td>
<td>![Shutdown duration: 120 set]</td>
<td>![After: 0 min]</td>
</tr>
<tr>
<td>![Shutdown if Capacity under: 20 %]</td>
<td>![After: 1092 min]</td>
<td>![See also additional settings on Environment Settings]</td>
<td>![If Battery charged for: 0 min]</td>
</tr>
<tr>
<td>![If Capacity exceeds: 0 %]</td>
<td>![Save changes]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This page enables viewing and configuration of UPS operation parameters in battery mode and for power restoration.

When you tick the **Show advanced parameters** option, extra parameters are displayed. These parameters enable, in particular, adjustment of certain thresholds related to the percentage of remaining battery charge level.

The **Output** column enables each output to be named (maximum 30 characters).

**Note**

For the output:
- **Shutdown after** is the operating time in minutes left for users after a switch to backup before starting the shutdown sequences of the UPS and its equipment (from 0 to 1092).
- **If remaining time under** (from 0 to 9999 seconds) and **If Capacity under** (from 0 to 100%) are two extra conditions for remaining backup time and battery level that can trigger shutdown sequences before the “Shutdown after” period runs out.
- **Shutdown duration** is the time required for complete shutdown of systems when a switch to backup time is long enough to trigger the shutdown sequences. It is calculated automatically at the maximum of Shutdown duration of subscribed clients but can be modified in the Advanced mode.
- **Restart after** is the minimum shutdown time before restarting the UPS after a shutdown sequence. It is thus possible to limit repeated restarts that may be due to several successive utility failures.
- **If the Battery is charged for** and **If Capacity exceeds** are two extra conditions for minimum battery level and maximum recharge time to be reached before restarting the UPS after utility restoration.

**Security:** The administrator has to click on **Save** and enter his login/password to save any modifications. The default login and password are: **MGEUPS**
3.2.10 Viewing the alarms

Click on the “Alarm table” section in the menu to view the list of current alarms. The table of managed alarms is included in the appendix.

**Note:** The alarm number is not related to the SNMP trap number

### Alarm Table

<table>
<thead>
<tr>
<th>Alarm ID</th>
<th>Alarm Time</th>
<th>Alarm Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>2010/01/25 16:01:54</td>
<td>Utility Failure</td>
</tr>
<tr>
<td>31</td>
<td>2010/01/25 16:02:59</td>
<td>Output On By-pass</td>
</tr>
</tbody>
</table>
3.3 Logs

3.3.1 UPS Measurements

Click on the “Measurements” section in the menu.

The following measurements are saved and time-stamped:

- **Input voltage**: Value of the utility voltage supplying your UPS (average of 3 phases for UPS’ equipped with a 3-phase input)
- **Input frequency**: Value of the utility frequency feeding your UPS
- **Output voltage**: Value of the output voltage of your UPS (average of the 3 phases for UPS’ with a 3-phase output)
- **Output load**: Value of the percentage of load at UPS output (Value of the most loaded phase for 3-phase UPS’)
- **Output current Ph x**: Value of the output current for each phase on three-phase UPSs
- **Battery capacity**: Percentage of charge available in the battery
- **Remaining time**: Estimation of the remaining backup time

The save frequency of these values is defined in the “System” page (60 seconds by default). Approximately 1000 time-stamps are stored permanently on the card. The oldest time-stamps are automatically deleted.

- **Save** enables all saved values to be opened or saved in CSV format (compatible with Excel type spreadsheets)
- **Clear** enables deletion of all records. The administrator must enter his login / password to validate this action if he has not already done so during the current session.

**Measurements index page**

<table>
<thead>
<tr>
<th>GALAXY 5000 60KVA</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save Log</td>
<td>Clear Log</td>
</tr>
</tbody>
</table>

- From 2010/01/25 15:00:00
- From 2010/01/25 14:56:00 To 2010/01/25 14:59:00

Select the time range to view
3.3.2 STS Measurements

Click on the “Measurements” section in the menu.

The following measurements are saved and time-stamped:
- “Source 1 voltage”: Value of the utility voltage supplying your STS (value of the first phase)
- “Source 1 frequency”: Value of the utility frequency feeding your STS
- “Source 2 voltage”: Value of the utility voltage supplying your STS (value of the first phase)
- “Source 2 frequency”: Value of the utility frequency feeding your STS
- “Output voltage”: Value of the output voltage of your STS (value of the first phase)
- “Output load”: Value of the percentage of load at STS output (value of loaded for the 3-phase)
- “Output current Ph x”: Value of the output current for each phase on three-phase STSs

The save frequency of these values is defined in the “System” page (60 seconds by default).
Approximately 1000 time-stamps are stored permanently on the card. The oldest time-stamps are automatically deleted.

- “Save” enables all saved values to be opened or saved in CSV format (compatible with Excel type spreadsheets)
- “Clear” enables deletion of all records. The administrator must enter his login / password to validate this action if he has not already done so during the current session.
**Measurements index page**

- From 2013/02/08 15:00:00
- From 2013/02/08 14:30:00 To 2013/02/08 14:59:00
- From 2013/02/08 14:00:00 To 2013/02/08 14:29:00
- From 2013/02/08 13:30:00 To 2013/02/08 13:59:00
- From 2013/02/08 13:00:00 To 2013/02/08 13:29:00

Select the time range to view

**Measurements**

<table>
<thead>
<tr>
<th>Log Date (yyyy/mm/dd)</th>
<th>Log Time (hh:mm:ss)</th>
<th>Source 1 Voltage (Volts)</th>
<th>Source 1 Frequency (Hertz)</th>
<th>Source 2 Voltage (Volts)</th>
<th>Source 2 Frequency (Hertz)</th>
<th>Output Voltage (Volts)</th>
<th>Output Load (%)</th>
<th>Output Current Ph1(A)</th>
<th>Output Current Ph2(A)</th>
<th>Output Current Ph3(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/02/08 14:30:00</td>
<td></td>
<td>400</td>
<td>49</td>
<td>404</td>
<td>50</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:31:00</td>
<td></td>
<td>403</td>
<td>49</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:32:00</td>
<td></td>
<td>400</td>
<td>49</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:33:00</td>
<td></td>
<td>401</td>
<td>50</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:34:00</td>
<td></td>
<td>402</td>
<td>50</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:35:00</td>
<td></td>
<td>401</td>
<td>49</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:36:00</td>
<td></td>
<td>400</td>
<td>49</td>
<td>404</td>
<td>49</td>
<td>404</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:37:00</td>
<td></td>
<td>402</td>
<td>49</td>
<td>406</td>
<td>49</td>
<td>406</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:38:00</td>
<td></td>
<td>401</td>
<td>50</td>
<td>405</td>
<td>49</td>
<td>405</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013/02/08 14:39:00</td>
<td></td>
<td>401</td>
<td>50</td>
<td>406</td>
<td>50</td>
<td>406</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
3.3.3 UPS Event log

Click in the “Event log” section of the menu.

- “Save Log” enables all values saved to be opened or saved in CSV format (compatible with Excel type spreadsheets).
- “Clear Log” enables deletion of all records. The administrator must enter his/her login / password to validate this action.

Select the time range to view:

**Event Log data**

<table>
<thead>
<tr>
<th>Date (yyyy/mm/dd)</th>
<th>Time (hh:mm:ss)</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/01/25</td>
<td>15:13:24</td>
<td>Output on Bypass</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:13:29</td>
<td>UPS off sequence completed</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:13:32</td>
<td>Output switch (Q5N) open</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:14:39</td>
<td>UPS fault</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:15:40</td>
<td>Bypass : Return on UPS</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:15:48</td>
<td>Output switch (Q5N) closed</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:16:17</td>
<td>UPS OK</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>15:34:54</td>
<td>Output on battery</td>
</tr>
</tbody>
</table>

See the table of events generated in the [UPS event table](#).

3.3.4 STS Event log

Click in the “Event log” section of the menu.
“Save Log” enables all values saved to be opened or saved in CSV format (compatible with Excel type spreadsheets).
“Clear Log” enables deletion of all records. The administrator must enter his/her login / password to validate this action.

**Event Log index page**

<table>
<thead>
<tr>
<th>Upsilon STS 250 A</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save Log</td>
<td>Clear Log</td>
</tr>
</tbody>
</table>

- From: 2010/02/08 10:28:08
- From: 2010/02/06 12:49:10 To: 2010/02/08 10:26:08
- From: 2010/02/05 11:28:17 To: 2010/02/05 11:28:45
- From: 2010/02/04 10:14:52 To: 2010/02/04 15:17:23
- From: 2010/02/02 16:55:36 To: 2010/02/02 16:56:00
- From: 2010/02/02 16:46:54 To: 2010/02/02 16:47:17
- From: 2010/02/02 16:29:42 To: 2010/02/02 16:30:06

Select the time range to view:
3.3.5 System log

Click in the “System log” section in the menu.

- “Save” enables all values saved to be opened or saved in CSV format (compatible with Excel type spreadsheets).
- “Clear” enables deletion of all records. The administrator must enter his/her login / password to validate this action.
System Log index page

Select the time range to view:

From 2010/01/25 14:55:38

System Log data

<table>
<thead>
<tr>
<th>Date (yyyy/mm/dd)</th>
<th>Time (hh:mm:ss)</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/01/25</td>
<td>14:55:31</td>
<td>Agent event log cleared</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>14:55:35</td>
<td>Environment log cleared</td>
</tr>
</tbody>
</table>

See the table of events generated in the System Alarm Table.
3.4 Notification

3.4.1 UPS Email Notification

The card offers the possibility of redirecting UPS alarms to an e-mail server. The format of these e-mails is compatible with mobile telephone transfer systems using text messages (SMS).

Email Notification

- **Notified events:**
  The left side of the page shows the events that can be notified. By default, only the main events of battery operation and a few UPS alarms are accessible. All the events appear if the **Show advanced events** option is ticked off.

- **Environment alarms:** (accessible when **Show advanced events** option is ticked off)
Environment alarms must be selected to activate e-mail notification of events concerning the Environment Sensor. The detail of notified events is accessed via the Configure Environment link.

Recipient List:

On the right side of this page, up to four recipients can be configured to receive e-mails from the card. Each addressee has its own trigger events, selected from the left side of the page, for which an e-mail is sent. The card’s log indicates e-mail transmission errors.

Each recipient is configured with the following parameters:

Recipient: this is the e-mail address of the person or department to receive the e-mail. The default value is recipientx@domain.com.

Attached files: The files selected (UPS measurements, Event log, System log or Environment measurements) are enclosed with each e-mail sent. The files are sent in CSV format.

Periodic report: In addition to the e-mails sent when events occur, a periodical e-mail containing the 4 log files can be sent to the recipient every x days at the time specified by the user. To configure the first transmission, specify the day, time and frequency of the next transmission in the Day of next report box. After this date, the page will show the date and time of the next transmission. Data are sent in CSV format.

Save: Saves any modifications.

Test: enables an e-mail to be sent to the recipient immediately. This is one way of checking e-mail transmission, particularly access to the SMTP server configured in “Network settings”. A transmission report is added to the system log. In the event of failure, the card will repeat the transmission 3 times, at one minute intervals, before producing a transmission report. The event label in the subject and text of the message is replaced with a test label. If the user makes any modifications to the page, they must be saved before using the “Test” function.

E-mail message configuration: see next page

Network settings: enables the name of the SMTP server to be entered. See “Network settings”

Security: The administrator has to click on Save and enter his login/password to save any modifications. The default login and password are: MGEUPS
3.4.2 STS Email Notification

The card offers the possibility of redirecting STS alarms to an e-mail server. The format of these e-mails is compatible with mobile telephone transfer systems using text messages (SMS).

**Email Notification**

- **Notified events:**
  The left side of the page shows the events that can be notified. By default, only the events Output not powered and the STS general alarm are selected. The user can modify this pre-selection by ticking other events or can, on the contrary, restore the initial configuration by clicking on **By default**.
  - **Environment alarms** must be selected to activate e-mail notification of events concerning the Environment Sensor. The detail of notified events is accessed via the **Configure Environment** link.
  - **Other settings:**
    See UPS Email notification
3.4.3 Email Message Settings

This page enables customisation of the content of the messages received by recipients of e-mails sent by the card.

Customisation is common to the four recipients that can be notified (see E-mail notification).

3.4.3.1 UPS Email Message Settings

**Email Message Settings**

<table>
<thead>
<tr>
<th>Galaxy PW Single/</th>
<th>Help</th>
</tr>
</thead>
</table>

These settings are common for all the recipients, which can be notified by E-mail.

- **Sender**: ups@domain.com

- **Subject**: Schneider Electric - <Event message>
  - Schneider Electric
  - UPS / STS Name
  - UPS / STS Location
  - Event message

- **Message text**:  

- **Save changes**

- **Sender**

  (32 characters maximum) identifies the source of the message. The default value is ups@domain.com. This field is free. However, depending on the type of SMTP server configuration, it is possible that the server checks that the domain name contained in the From address exists, and even that the user in the From address belongs to this domain.

- **Subject**

  enables the user to specify the subject of the e-mail to be sent. By entering some free text and selecting from several optional fields, if desired, the message subject is built:
  - **UPS / STS name** recalls the name of the UPS, can be selected or not.
  - **UPS / STS location** recalls the geographic location of the UPS (see System Settings), can be selected or not.
  - **Event message** identifies the event generating the e-mail, can be selected or not.
- **Message text** is a free zone.
  The body of the e-mail sent is composed of:
  - **Message text**, which is free text.
  - the date and time of the event, as saved in the log.
  - URL of the card, enabling a direct link with the card to be established.
  - Attachments, as configured for the e-mail recipients.
  - duplication of the subject, as configured.

### 3.4.3.2 STS Email Message Settings

**Email Message Settings**

These settings are common for all the recipients, which can be notified by E-mail.

**Sender:**
sts@domain.com

**Subject:**
- Schneider Electric - (Event message)
- Schneider Electric
- UPS / STS Name
- UPS / STS Location
- Event message

**Message text:**

**Detail settings:** see UPS Email setting
3.4.4 Email Example

Recipient:
recipient2@domain.com

To:
sts@domain.com

Subject:
Schneider Electric - Check mail

Date (yyyy/mm/dd): 2010/02/19  Time (hh:mm:ss): 17:07:37

http://10.816.134.48

MEASUREMENTS_2010021917.CSV  EVENT_2010021917.CSV  SYSTEM_2010021917.CSV  ENVIRONMENT_2010021917.CSV
3.5 Configuration

The parameters of this menu can only be modified after entering the “User Name” and “Password”. The following screen is proposed automatically:

User Name and password by default are: MGEUPS

Each field accepts up to 10 characters max.

After entering the login and password, these identifiers remain active as long as the browser is open, so you only have to enter them once.

If the browser is closed, they will have to be re-entered.

Tick the “Save this password in your password list” box if you want to avoid systematic re-entry.

An error in either field results in systematic rejection of the requested action (save, page access, card reboot, etc.). After three unsuccessful attempts, the browser must be rebooted.

These two fields do not travel “decoded” on the IT network, they are encrypted with an MD5 type algorithm, ensuring total confidentiality.
### 3.5.1 Network Settings

Click on the “Network” section in the menu.

This menu enables the administrator to configure the network parameters of the card and authorisation of the remote upgrade of the embedded system.

#### Network Settings

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>123.49.134.84</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>255.255.254.0</td>
</tr>
<tr>
<td>Gateway Address</td>
<td>123.49.134.1</td>
</tr>
<tr>
<td>Hostname</td>
<td>ups5F2C</td>
</tr>
<tr>
<td>Domain Name</td>
<td>ups.domain.com</td>
</tr>
<tr>
<td>Telnet Connection</td>
<td>Enabled</td>
</tr>
<tr>
<td>BootP/DHCP</td>
<td>Enabled</td>
</tr>
<tr>
<td>Network Upgrade</td>
<td>Enabled</td>
</tr>
<tr>
<td>Primary DNS Server</td>
<td>123.49.129.94</td>
</tr>
<tr>
<td>Secondary DNS Server</td>
<td>123.49.129.95</td>
</tr>
<tr>
<td>SMTP Server (for Email Notification)</td>
<td>smtpserver.domain.com</td>
</tr>
</tbody>
</table>

**IP Address**: The IP address of the card (e.g.: 123.49.134.36).

**Subnet Mask**: The mask of the sub-network of your network (e.g.: 255.255.254.0).

**Gateway Address**: Indicate the IP address of the gateway to access the stations located outside the card’s sub-network (e.g.: 123.49.134.1).

**Hostname** must be suited to the card. This is the first part of the full qualified domain name, used by the DNS (name must be compatible with DNS rules)
Domain name is the domain to which the card belongs. This is the part of the full qualified domain name that follows the host name and is used by the DNS. The default value of the two parameters comprising the full qualified domain name: ups.domain.com

TELNET connection: Authorises (choose enable) remote connection with a terminal to access the maintenance menu.
See “Configuration in local mode and via Telnet” for more information

BootP/DHCP: Authorises (choose enable) configuration of network parameters with your BootP/DHCP server when the card is booted
Mode of card operation with server: after any reboot, if this option is enabled, the card tries to recover the network parameters from the server for 10 sec. If no response is received from the server, the card boots with the last saved parameters from the previous start. These parameters are those shown on the page
The default value for this parameter is “Enable”

Note:
The IP address supplied by the DHCP server must be fixed to maintain connection with the clients installed on the stations to be protected.

Network Upgrade: Authorises (choose enable) remote upgrading of the embedded system on the card using the Mupgrade tool. Read the “Maintenance” section for more details.

Primary DNS server: contains the IP address of the main DNS server ensuring conversion of the domain name to IP address.

Secondary DNS server: contains the IP address of the secondary DNS server ensuring conversion of the domain name to IP address if the primary DNS server is not available.

SMTP server: contains the name or IP address of the local server with which the card connects to send e-mails.
It may be filled in either as host + domain name (DNS resolution), or directly with the IP address
The default value is smtpserver.domain.com. The card uses port 25 to send e-mails.

The Authentication option must be selected if the SMTP server requires this parameter for query submission (see the RFC 2554 for SMTP authentication) for commercial reasons, access control, etc.
When authentication is selected, the User and Password parameters must be specified for identification with the local SMTP server.
Default values are MGEUPS/MGEUPS.

Note: The card must be rebooted after any changes to these parameters. See “System”

Security: the administrator must click on Save and enter his login/password to save any modifications.
3.5.2 System

Click the “System” section in the menu. This menu enables the customisation of the information on the UPS properties / STS properties and Environment pages.

**System Settings**

<table>
<thead>
<tr>
<th>System Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS / STS Contact</td>
<td>Computer Room Manager</td>
</tr>
<tr>
<td>UPS / STS Location</td>
<td>Computer Room</td>
</tr>
<tr>
<td>History Log Interval (Sec)</td>
<td>60</td>
</tr>
<tr>
<td>Refresh Rate (Sec)</td>
<td>10</td>
</tr>
<tr>
<td>Default Language</td>
<td>English</td>
</tr>
<tr>
<td>Environment Log Interval (Sec)</td>
<td>300</td>
</tr>
<tr>
<td>Environment Refresh Rate (Sec)</td>
<td>60</td>
</tr>
<tr>
<td>Environment Input grace period (Sec)</td>
<td>1</td>
</tr>
</tbody>
</table>

- **UPS contact:** This text field is limited to 32 characters. Enter the name of the person responsible for UPS administration at IT network level and/or electrical maintenance. This field does not appear on any other Web page. By default, its value is “Computer Room Manager”.
- **UPS location:** Enter a description (limited to 32 characters) of the location of the UPS in your installation (e.g. Computer room E1-C066). This text is displayed on the home page at the top right, above the name of the UPS. Its value by default is “Computer room”.
- **History Log interval**: [5 to 99999 seconds]. Measurement save period. Default value = 60 sec.
- **Refresh rate**: [5 to 99999 seconds]. Home page and alarms table refresh period. Default value = 10 sec.
- **Default language**: Enables initialisation of the browser language at card connection.
  - **Auto**: Automatically displays the Web page texts in the same language as your browser. If the Network Management Card is not able to display the recognised language, the pages will be displayed in English.
Choice of one of the available languages: **English, French, Italian, German, Spanish** changes the language of the html interface pages

- **Note:**
  - Alarm notification remains in English / French (reboot the browser after modification).
  - SNMP message remain in English.
- **Environment log interval:** [from 5 to 99999 sec]. Temperature and humidity measurement save period. Default value = 300 sec. (only visible if the sensor is present).
- **Environment refresh rate:** [from 5 to 99999 sec]. “Environment status” page refresh rate. Default value = 60 sec. (only visible if the sensor is present).
- **Environment input grace period:** [from 0 to 9 sec]. Period during which a status change by one of the inputs is not considered. Default value = 1 sec. (only visible if the sensor is present).
- **“Reset communication” button:** performs a remote reboot of the card without modifying the configuration. This action is compulsory for consideration of any changes made on the “Network settings” page. Security of this operation is ensured by requesting Login and Password.
- **“Factory Reset” button:** enables restoration of the default configuration of all the card’s parameters. The TCP/IP parameters: IP address, subnet mask, gateway and BootP/DHCP value are maintained if the “Keep TCP/IP parameters” option is selected. Security of this operation is ensured by requesting Login and Password. Default login and Password are: **MGEUPS**
  - **Note:**
    - If any of these parameters are changed, the card must be rebooted.
3.5.3 UPS Notified Applications

Click the “Notified Application” section in the menu.

Security: the administrator has to enter his login/password to view this information.

This menu enables:
- The addition of the supervision stations receiving traps and configuration of the trap type.
- To list all the Notified Applications and the main parameters.
- Simulate events to test notification and shutdown of the Notified Applications.

Up to 50 destinations can be managed by the card.

The card is compatible with the Network Shutdown Module

Note: It is not necessary to add the Network Shutdown Modules protecting your servers in this list as it is done automatically.

Notified Applications

<table>
<thead>
<tr>
<th>Nr</th>
<th>Hostname or IP Address</th>
<th>Application Name</th>
<th>Output</th>
<th>Configuration</th>
<th>Shutdown Duration (sec)</th>
<th>Shutdown After (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.216.134.30</td>
<td>Trap</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>WINFRAPPCMOE0115D</td>
<td>Shutdown Module V3.05 Master Central</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select the applications to be removed.
Select the applications to be tested.
Select the Network Management System to be modified.

Select an entry in the list to modify the values in the edit zone at the bottom of the page. Note that the Network Shutdown Module must not be manually modified.

The applications in the table appears in the order they have subscribed to the card. Following informations are displayed:

- **Nr**: is the index where the application is stored into the table.
- **Hostname or IP Address**: By priority the hostname of the computer is displayed when the IP address can be converted into a hostname with a DNS server or if the application has been entered as a hostname (see page Network Management System settings). Otherwise the IP address is displayed.
- **Application Name**: sent by the application at subscribe time or manually entered.
- **Output**: is the number of the output from which the client is powered.
- **Configuration**: shows where the parameters of Network Shutdown Module comes from: **Local** (coming from the application) or **Central** (coming from the card).
- The Central Shutdown Configuration is available by clicking on Configuration link.
- **Shutdown duration**: is the shutdown duration necessary to properly shutdown the computer.
ShutDown after : is the time available to the user from the Power failure until the launch of the shutoff sequence of the UPS. This parameter is optionnal.

Many actions are available on this page:

- **Remove**: Depending on the kind of application, the selected ones will definitively disappear from the table as SNMP applications, or they will disappear and automatically re-subscribe as the Network Shutdown Module application.

- **Utility failure Test**: Two alarms 'Utility failure' and 'Utility restored' spaced of 60 seconds will be sent to the applications selected, making sure that the applications can be reached over the network.

- **ShutDown Test**: This test simulates a UPS on battery operation, it sends alarms to the selected applications. It enables an easy check to see if the server protection works correctly. No intervention on the UPS is required.
  - Simulated alarms will be processed by the applications selected only.
  - Warning: This test will generate a REAL shutdown sequence of servers on which Network Shutdown Module is running.

**Add NMS** allows to add a SNMP trap receiver as a Network Management System.

**Modify NMS** allows to modify a SNMP trap receiver.

Both buttons make an appear a new window where it is possible to enter the Application name, the Hostname or IP Address, the Trap community and the severity.
TRAP community indicates the name of the SNMP community
For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.

3.5.4 Central Shutdown Configuration
Click the “Notified Application” section in the menu then in “Configuration”.

- Trap community indicates the name of the SNMP community
- For more details, read the MIB description document: available on the www.apc.com site.
Central Shutdown Configuration

This configuration will be used by the Network Shutdown Modules, on next connection.

- **Shutdown After (time before shutdown)**: This is the time in seconds that the system waits following failure of AC power before initiating the system-shutdown procedure. This value must be selected to provide users with enough time to close their applications and disconnect, but within the battery backup time provided by the UPS.
  - If another criterion occurs before the end of the shutdown timer, the shutdown procedure is immediately run.
  - This parameter is optional, uncheck it to invalidate

- **Shutdown Duration**: This is the time in seconds required by the system to go through its shutdown procedure.

- **Broadcast**: Send network notifications to the Administrators and Users groups on events

If you wish to set up a new configuration for the Network Shutdown Modules already set to centralized-configuration mode, proceed as indicated below.

- Change the Network Shutdown Module parameters in the page “Central Shutdown Configuration”.
- Click the **Save** button. Open the List of notified applications.
- Select the Network Shutdown Modules to receive the new configuration.
- Press the button “**Remove**” They reconnect and use the new configuration

### 3.5.5 STS Notified Applications

Click the **“Notified Application”** section in the menu.

**Security**: the administrator has to enter his login/password to view this information.

This menu enables:
- The addition of the supervision stations receiving traps and configuration of the trap type.
- To list all the Notified Applications and the main parameters.
- Simulate events to test notification and shutdown of the Notified Applications.

Up to 50 destinations can be managed by the card.
Select an entry in the list to modify the values in the edit zone at the bottom of the page. Note that the Network Shutdown Module must not be manually modified.

The applications in the table appear in the order they have subscribed to the card. Following information is displayed:

- **Nr**: is the index where the application is stored into the table.
- **Hostname or IP Address**: By priority the hostname of the computer is displayed when the IP address can be converted into a hostname with a DNS server or if the application has been entered as a hostname (see page Network Management System settings). Otherwise, the IP address is displayed.
- **Application Name**: sent by the application at subscribe time or manually entered.

Many actions are available on this page:

- **Remove**: Depending on the kind of application, the selected ones will definitively disappear from the table as SNMP applications, or they will disappear and automatically re-subscribe as the Network Shutdown Module application.

- **STS general alarm Test**: This test simulates alarm ‘STS general alarm’, making sure that the applications can be reached over the network.

- **Add NMS** allows to add a SNMP trap receiver as a Network Management System.
- **Modify NMS** allows to modify a SNMP trap receiver.

Both buttons make appear a new window where it is possible to enter the Application name, the Hostname or IP Address, the Trap community and the severity.
Trap community indicates the name of the SNMP community
For more details, read the MIB description document: available on the [www.apc.com](http://www.apc.com) site.

### 3.5.6 Access control

Click the “Access control” section in the menu.

To access this page, the login and password are systematically requested if they have not already been entered.

This menu enables configuration of the different parameters enabling secure access to the card via a browser or SNMP.
### Access Control

**Enter New Manager Login**: Text field limited to 10 characters. Enables secure access and modification of pages. Default value "MGEUPS".

**Enter New Password**: Text field limited to 10 characters. Enables secure access to the sections of the Configuration menu. Default value "MGEUPS".

**Confirm New Password**: Text field limited to 10 characters. Must be strictly identical (including upper/lower case) to the field above.

**SNMP Access Control**: permits to limit or disable SNMP access.
- **Read / Write**: All SNMP operations are allowed
- **Read only**: only read operations can be done. When selecting this mode,
- **Disable**: Card doesn't manage SNMP

**Current Community Read-only is**: Enables read-only SNMP access control (GET). Default value “public”.

<table>
<thead>
<tr>
<th>GALAXY 5000 60 kVA</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter New Manager Login:</td>
<td>MGEUPS</td>
</tr>
<tr>
<td>Enter New Password:</td>
<td>******</td>
</tr>
<tr>
<td>Confirm New Password:</td>
<td>******</td>
</tr>
</tbody>
</table>

**SNMP Access Control**: Read/Write

| Current community Read-Only is: | public |
| Change Community Read-Only: | public |

| Current community ReadWrite is: | public |
| Change Community ReadWrite: | public |

| Change Trap Port Number: | 162 |

SSL Activation

Authentication for All Html Pages
Change Community Read-only: Text field limited to 31 characters. This field is only validated after clicking on “Save”. Default value “public”.

Current Community Read/Write: Enables read and write SNMP access control (GET and SET). Default value “public”.

Change Community Read/Write: Text field limited to 31 characters. This field is only validated after clicking on “Save”. Default value “public”.

Change Trap Port Number: Numeric field limited to 65534. Enables forwarding of traps sent by the card to a port other than the port usually used for SNMP. Default value 162.

SSL Activation: When selected, access to Web interface is made in secure mode (https). Telnet access is disabled and the card is accessible in SSH.
Connections with Network Shutdown Modules stay in standard mode (secure TCP)

SSL Security Implementation

- SSL ➔ version 3.0
- Method ➔ TLS_RSA_WITH_RC4_128_MD5
- Auth ➔ RSA
- Key Exchange ➔ RSA
- Encryption ➔ RC4_128
- Digest ➔ MD5

SSH Security Implementation

- SSH v1
- Method ➔ SSH_CIPHER_3DES
- Encryption ➔ Triple_DES in CBC mode

This change takes effect after a card reboot.

Authentication for all html pages: Login/password Authentication is required for all pages.
### 3.5.7 Time

Click the "Time" section in the menu.

This menu enables initialisation of the date and time of the card in three different ways.

#### Setting Time

<table>
<thead>
<tr>
<th>Setting Time</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Date and Time</strong></td>
<td></td>
</tr>
<tr>
<td>(yyyy/mm/dd)</td>
<td>(hh:mm:ss)</td>
</tr>
<tr>
<td>Date: 2010/01/25</td>
<td>Time: 16:53:21</td>
</tr>
<tr>
<td><strong>Setting Time</strong></td>
<td></td>
</tr>
<tr>
<td>☑ Set manually</td>
<td></td>
</tr>
<tr>
<td>(yyyy/mm/dd)</td>
<td>(hh:mm:ss)</td>
</tr>
<tr>
<td>Date: 2010/01/25</td>
<td>Time: 16:53:20</td>
</tr>
<tr>
<td>☑ Synchronize with computer time</td>
<td></td>
</tr>
<tr>
<td>(yyyy/mm/dd)</td>
<td>(hh:mm:ss)</td>
</tr>
<tr>
<td>Date: 2010/01/25</td>
<td>Time: 16:55:47</td>
</tr>
<tr>
<td>☑ Synchronize with NTP Server</td>
<td></td>
</tr>
<tr>
<td>Name or IP Address: 0.0.0.0</td>
<td></td>
</tr>
<tr>
<td>Time Zone: (GMT-05:00) Eastern Time (US &amp; Canada)</td>
<td></td>
</tr>
<tr>
<td>☐ Manual Daylight Saving Time (add 1 Hour)</td>
<td></td>
</tr>
</tbody>
</table>

- **Synchronise manually**: Enables initialisation of the date and time of the card, with the values entered in the Date and Time fields. Values are updated after clicking the "Save" button.

- **Synchronise with computer time**: Enables the date and time of your PC to be transferred to the card. This transfer is made after clicking on the "Save" button. Time is not adjusted regularly, it is set **one time** after clicking the "Save" button.

- **Synchronise with an NTP server**: Enables connection with a time server, either available on the company’s internal network or on the Web. This server communicates GMT time. The IP address of the time server must be entered, and the time zone of your geographic area must then be selected from the
list. Connection is made with the server and the date and time are set after clicking on the “Save” button. Time is updated every hour.

The card uses the NTP protocol (UDP 123 port) and the firewall must be set accordingly, no error message is generated if the time server contact fails

- **Daylight Saving Time**: Enables corrections due to summer / winter time changes, this option must be supported by the NTP server.

**Note 1:**
Time drift is related to card electronics. It may be up to a maximum of +/- 2min/month.

### 3.6 Environment

The environment sensor is an option that enables temperature and humidity to be measured, and indication of the position of two external contacts. It is connected with a standard network cable to the **Card Settings** port of the Network Management Card.

On startup, the card automatically detects sensor presence. The main menu then displays an additional section “Environment” with the following elements:

- **Status**
- **Configuration**
- **Log**

**Note 1** This function is only accessible with the DA version software (or superior) for the card. This software can be downloaded on the [www.apc.com](http://www.apc.com) site, from the download section.

**Note 2**: To switch the serial port to the configuration mode, just disconnect the sensor cable and reinitialise the card by pressing “Reset”. The reverse operation must be performed to manage the environment sensor once again.

### 3.6.1 Characteristics

- Temperature measurement from 0 to 70 °C with +/- 1°C accuracy
- Humidity measurement from 0 to 100 % with +/- 6 % accuracy
- Min. / max. time-stamped function for temperature and humidity
- Choice of displaying temperature in Celsius or Fahrenheit
- High and low thresholds, hysteresis and offset adjustment via Web interface
- Possibility of notification of status changes by e-mail, SMS or SNMP trap
- Position detection of 2 dry contacts (maximum sensor/contact distance: 20m)
Name and status of each contact can be configured
- Recording of events and measurements in the card log
- Possibility of shutting down the installation safely if one of the thresholds is exceeded or if a dry contact closes
- Connection to the Network Management Card by CAT5 straight RJ45 network cables (maximum card/sensor distance: 20m)

3.6.2 Environment status

**Environment Status**

**GALAXY 5000 60 kVA**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Last Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>21.8 °C</td>
<td>2010/01/22 at 14:16:32</td>
</tr>
<tr>
<td>Humidity</td>
<td>26 %</td>
<td>2010/01/21 at 22:48:59</td>
</tr>
</tbody>
</table>

Min/Max values and high and low thresholds can be set on the Environment Settings page. When the measured value enters one of these zones, an alarm can be notified. Time-stamped minimum and maximum temperatures show the extreme values recorded since the last reset. Min and Max can be forced at any time to the current value by clicking on the Reset Min/Max button.

For both measurements, a graduated gauge proposes the following functions:
- The cursor indicates the current value.
- Two red zones to the left and right represent the high and low thresholds that can be set on the Environment Settings page.
- When the measured value enters one of these zones, an alarm can be notified (see Notification parameter in the Environment Settings page).
- Time-stamped minimum and maximum temperatures show the extreme values recorded since last Reset Min/Max. A thin dotted line shows their positions on the gauge.
- Min and Max can be forced at any time to the current value by clicking on the Reset Min/Max button.

**Input #1**
- Input #1 closed
  - Last change: 2010/01/25 at 16:14:26

**Input #2**
- Input #2 closed
  - Last change: 2010/01/25 at 16:14:26

Calibrate: the sensor is calibrated in the factory, but the user can apply an offset to adjust the measurement. Input #1 and Input #2 show the position of the two contacts acquired by the sensor. The position is displayed with the parameters entered in the Environment Settings page.
The last status change of each contact is time-stamped.

The Internet browser updates this page regularly according to the Environment refresh rate parameter on the System settings page.
3.6.3  UPS Environment Settings

3.6.3.1  UPS Environment Settings

**Environment Settings**

The environment sensor measures temperature, humidity and gives the status of the 2 contacts (used for door, alarms or generator unit).

The temperature and humidity thresholds can be adjusted and can trigger notification and correct shutdown of the protected system.

The **Sensor name** is the function name given to the sensor, usually it enables location of the sensor.

**Temperature:** choose the temperature unit (°C or °F) from the selection box.

- **High threshold:** if this value is exceeded, a **notification** is sent if this is validated. Default value is 40 °C / 104 °F.
- **Low threshold:** if this value is exceeded, a **notification** is sent if this is validated. Default value is 5 °C / 41 °F.

**Hysteresis** must be set to prevent multiple notifications if temperature fluctuates around a threshold. Default value is 2 °C / 3.6 °F. (Advanced parameter s)
The high alarm cannot be reactivated while temperature remains above the High threshold – Hysteresis value.
The low alarm cannot be reactivated while temperature remains below Low threshold + hysteresis value.

Humidity
High threshold: if this value is exceeded, a notification is sent if enabled. Default value is 90%.
Low threshold: if this value is exceeded, a notification is sent if enabled. Default value is 5%.
Hysteresis must be set to prevent multiple notifications if humidity fluctuates around a threshold.
Default value is 5%. (Advanced parameters)

The high alarm cannot be reactivated while humidity remains above the High threshold – Hysteresis value.
The low alarm cannot be reactivated while humidity remains below Low threshold + hysteresis value.

Input No 1 and Input No 2: enter an identifier corresponding to the acquired contact (e.g.: rack door, air conditioning, generator unit, etc.). Max. length is 28 characters.
If contact closed and if contact open: are the names associated to the two contact positions. (e.g.: "open" and "closed" for a door, "On" and "Off" for a generator).
Each status change triggers a notification if enabled.

Notification includes: Log, Notification by e-mail and generation of SNMP Trap. The list of messages is given in the appendix.

System shutdown can be triggered for each notification if this option is enabled. If notification is disabled, the Shutdown option cannot be used. (Advanced parameters)

Security: the administrator has to click on Save and enter his login/password to save any modifications.

3.6.3.2 STS Environment Settings
Same feature than for UPS, without the system shutdown only available for UPS. For detail see the UPS environment settings.

3.6.4 Log

Environment log

<table>
<thead>
<tr>
<th>Log Date (yyyy/mm/dd)</th>
<th>Log Time (hh:mm:ss)</th>
<th>Temperature (°C)</th>
<th>Humidity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/01/25</td>
<td>16:15:00</td>
<td>21.8</td>
<td>26</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>16:20:00</td>
<td>21.8</td>
<td>26</td>
</tr>
<tr>
<td>2010/01/25</td>
<td>16:25:00</td>
<td>21.8</td>
<td>26</td>
</tr>
</tbody>
</table>

The environment sensor’s two measurements, Temperature and Humidity, are recorded at an interval defined by the Environment log interval parameter on the System settings page. By default, this period is 300 seconds. Each measurement is dated and stored in the log of the UPS’ communication card. The size of log files is limited by a time indexing system. The user can Save the log on his workstation at any time, in a CSV format file. He can also Clear the files contained in the card to reset the log.
4 Servers protection, UPS only

4.1 Set-up of the shutdown parameters

The Network Shutdown Module, on protected server boot, subscribes itself automatically to Notified Applications list and sends its essential data:

- **IP address or name of the server on which it is installed**, to be notified by the card of any power events
- **Time required to shutdown the server** (Shutdown Duration, configurable in the Shutdown Module “set-up” menu):
  
  The card takes into account the longest shutdown time of all the Network Shutdown Modules subscribed to manage UPS shutdown without affecting any of the servers protected.

In case of a major power event, the Shutdown Module receives messages from the card and regularly checks its accessibility. The most important messages can generate actions and are sent back to the administrator and users via the network.

When the server shuts down, the Shutdown Module unsubscribes itself from the Notified Applications.

4.1.1 Shutdown criteria managed by the Management Card

During an extended power failure, three criteria may cause the server shutdown procedure to be initiated. If several criteria are selected, the first criterion encountered will launch the shutdown procedure.

At the end of the shutdown procedure, when all servers have been shut down, the UPS may shut down to avoid unnecessary discharge of its batteries, depending on its configuration.

4.1.1.1 Backup time before initiating the shutdown procedure  (**Shutdown After**)

When the UPS switches to battery, the **Network Management Card** starts the Shutdown Timer countdown and launches the system shutdown procedure at the end of the countdown.

This value must be chosen so that users have time to complete their tasks and disconnect, without exceeding battery backup time.

By default, this value is set to 30 minutes. Since GA release, this criterion is not selected in the default configuration

**Note 1:**

The Network Shutdown Module can also manages its own Shutdown Timer (configurable in the Shutdown Module “set-up” menu)

Note that if this criterion is selected to initiate system shutdown, automatic system reboot when power is restored is not guaranteed (e.g. power restoration if only this system was shut down).

By default, this parameter is not selected.

4.1.1.2 Initiating the shutdown procedure when the battery level is lower than: (**if capacity under**)

When the card detects that the remaining backup time percentage is less than the configured level, the shutdown sequence is started.

By default, the card uses the value set in the UPS.

**Note:**

Certain types of UPS only accept pre-defined minimum battery level values. Check the UPS documentation.
4.1.1.3  Shutdown when backup time is less than
When the Network Management Card detects that the percentage of backup time remaining is less than the value set, the shutdown sequence is started.

4.1.1.4  Shutdown duration
Duration required for the systems protected by the Shutdown Modules to shut down (in seconds).

4.1.2  Specific set-up for long autonomy installation  (> 30 mn)
For installation where the backup period is longer than 30 minutes, the Network Management Card will initiate automatically a shutdown at the end of the shutdown timer if this parameter is selected on the “Shutdown parameters” page.
4.2 The different server and UPS shutdown sequences

4.2.1 Extended power outage, shutdown initiated by the Shutdown Timer

During battery backup time, the **Shutdown Timer of the Network Management Card** is reached: after a user-defined backup time period, the shutdown of all servers is initiated, followed by the UPS shutdown (depending on its configuration). The UPS restarts when utility power is restored (depending on its configuration).

- **Shutdown Duration**: Maximum value of shutdown times of the Network Shutdown Modules subscribed to the card and depending on the main UPS output. This value is updated each time a client subscribes/unsubscribes.

**Note**: During battery operation, these values are not updated.

Shuts down after the ShutDown Timer + Shutdown Duration after having stopped the servers
Restarts when utility power is restored (possibility of programming a restart delay)

<table>
<thead>
<tr>
<th>Utility</th>
<th>ON</th>
<th>OFF</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trap 17</td>
<td>ShutDown Timer</td>
<td>Trap 18</td>
<td></td>
</tr>
<tr>
<td>Trap 11, Trap 29</td>
<td>Trap 31</td>
<td>Shutdown Duration</td>
<td></td>
</tr>
<tr>
<td>Trap 32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM</td>
<td>Shutdown</td>
<td>Reboot</td>
<td></td>
</tr>
<tr>
<td>UPS output</td>
<td>OFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2.2 **Extended power outage, shutdown initiated by the “Low battery power” message**

When the "Low battery power" message is displayed, the UPS is shut off after taking into account the shutdown duration of the servers.

**“Low battery power”**: The message appears if either of the two following criteria is checked:
- Low Battery Level
- Minimum remaining backup time (Low Battery Delay)

![Diagram of UPS output and related status]
4.2.3 Extended power outage, shutdown initiated by the Shutdown Timer, but utility restoration before the end of the Shutdown Duration

If utility power is restored before the end of the Shutdown Duration, the UPS is shut off after the Shutdown Duration for a period equal to the forced reboot time delay.

4.2.4 Off/On command

Off/On command is sent from the “UPS control” page. After a power on, controls are disabled during 120 seconds to allow the server to reboot.
5 Configuring a set of cards with Mupgrade

This feature is particularly useful to configure large UPSs / STSs installed base.

The Remote configuration features of Mupgrade allows you to import, modify and export configuration files from and to Network Management Cards.

Configure all your Network Management Cards in four step:

1. Configure a Network Management Card located on the network through the html interface to create a master configuration.

2. Import this configuration from the master card in Mupgrade.

3. Edit and change some parameters, **select the fields which must be overwritten in the destination cards** and save the new configuration in a file.

4. Export the new configuration to other cards which have **same firmware release** as the master card.

Read the relevant documentation available for download on the [www.apc.com](http://www.apc.com) web site.

6 Configuration in local mode and via Telnet or SSH

6.1 Configuration in local mode

- Use the cable supplied with the card.
- Connect the card to a computer equipped with a hyper-terminal type emulator. The serial link should be set at 9600 bauds, 8 bits, no parity, 1 stop bit and no flow control.
- Check that UPS power is on.
- A few seconds after terminal opening, press the "Enter" button. The menu asks you to enter your password (MGEUPS by default), and then press "%Enter%".
- The card will disconnect itself after 3 minutes of inactivity.
- The menu is in English only.

```
+====================================================================================================
+|          [ MGE UPS SYSTEMS SNMP/Web agent Configuration menu ]                                    |
+====================================================================================================
+| Enter Password: ****** |
+====================================================================================================
+|          [ MGE UPS SYSTEMS SNMP/Web agent Configuration menu ]                                    |
+====================================================================================================
+ 1. Agent Configuration
+ 2. UPS/STS Parameters
+ 3. Access Control Table
+```
4. Reset Configuration To Default
5. Reset Agent
0. Exit

Please Enter Your Choice =>

6.1.1 Choice 1: SNMP agent configuration menu

The blue lines are those displayed on screen.

SNMP/Web Agent Version: IAb6 (SN 49ej45007)
Indicates the version level of the software and the serial number of the card.

Ethernet address: 00 E0 D8 0D 6F 2A
MAC address of the card.

Agent BIOS Version: 6.16
Version number of the BIOS.

1. IP Address: 123.49.132.74
To change the IP address of the card, press “1” then “Enter”. Specify an IP address, then press “Enter”.

2. Gateway Address: 123.49.132.1
Enter the name of the gateway to be used to communicate with other sub-networks.

3. Network Mask: 255.255.254.0
Enter the mask of the sub-network defining the user group to which the card is connected.

4. sysContact: Computer Room Manager
Enter the name of the person responsible for the UPS.

5. sysName: MGEUPS
Enter a string of characters to identify the UPS.
32 characters maximum

6. sysLocation: Computer Room
Enter a string of characters to identify the installation location of the UPS.
32 characters maximum

7. Community Read-Only: public
Enter the name of the read-only community (by default = public)
31 characters maximum

8. Community Read/Write: public
Enter the name of the read/write community. This name is used by the NSM to subscribe to the table of notified Clients. It is recommended to personalise this name.
Value by default “public”.
31 characters maximum

9. HTTP Login Username: MGEUPS
Text field limited to 10 characters. Enables secure access to the sections of the Configuration menu. Default value “MGEUPS”.

a. Manager Password : *

b. BOOTP/DHCP Enabled : Enabled

Authorises the configuration of network parameters with your BootP/DHCP as a startup mode (choose enable). Card operating mode with the server: after all reboots, the card (if this option is enabled), attempts to recover the network parameters from the server for 10 seconds. If no response is obtained from the server, the card boots with the last parameters saved from the previous start.

0. Return to previous menu

Goes back to the previous menu.

6.1.2 Choice 2: UPS / STS parameters

The blue lines are those displayed on screen.

SNMP/Web Agent Version : IAb6 (SN 49ej45007)
Ethernet address : 00 E0 D8 0D 6F 2A
Agent BIOS Version : 6.16

1. Log Periodicity : 60

Value between 20 and 99999. Enables initialisation of the save frequency of Measurements, Events and System in the Log menu. Default value = 60 sec.

2. Trap Port Number : 162

Numeric field limited to 65534. Enables forwarding of the traps sent by the card to a port other than the one usually used for SNMP. Default value 162

3. System Date (yyyy/mm/dd) : 2010/01/22

Enables adjustment of the date

4. System Time (hh:mm:ss) : 12:43:21

Enables adjustment of the time

0. Return to previous menu

6.1.3 Choice 3: Access control

<table>
<thead>
<tr>
<th>IP Address</th>
<th>Community String</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1] 0.0.0.0</td>
<td>public</td>
<td>NotAccess</td>
</tr>
</tbody>
</table>
This menu enables configuration of access to the four supervision stations (identified by the IP address) with read/write community names different to those already defined in the card “1” menu. First enter the figure corresponding to the command to be carried out, then the number of the target input. The example below shows how to configure the read/write rights for a station (172.17.1.1) with a community name MyCom:

Please Enter Your Choice => 1
Entry Number : 1
Enter IP address : [0.0.0.0] 172.172.1.1
Enter Community String : [public] MyCom
Select Access Type :
[NotAccess]
1. Read
2. Read/Write
3. NotAccess

Please Enter Your Choice => 2

+============================================================================+
|   IP Address       Community String      Access                            |
|============================================================================|
[1] 172.172.1.1             MyCom                Read/Write

6.1.4 Choice 4: Restore default configuration

Use this function to restore the card’s factory configuration. Reboot the card so that the network parameter changes are taken into account.

6.1.5 Choice 5: Reset the card

Use this function to reboot the card
6.2 Configuration via Telnet
You can access the configuration menu (see “configuration in local mode” section) from a station equipped with the Telnet protocol.
As soon as the card is accessible on the network, enter the command:

telnet < card IP address > to access the menu.

The password defined by default is MGEUPS.
The card will disconnect automatically after 3 minutes of inactivity.

6.3 Configuration via SSH
You can access the configuration menu (see “configuration in local mode” section) from a station equipped with the SSH protocol when https option is selected.

when user connect to NMC by SSH, the screen will hold about 10 seconds for process encryption cipher.

Note: SSH connection is allowed, when SSL Activation is checked in the Access Control Page.
In this case, the telnet connection will be not available.

6.3.1 PuTTY SSH Client Program
PuTTY is a free implementation of Telnet and SSH for Win32 and Unix platforms, along with an xterm terminal emulator. You can get the PuTTY by
http://www.chiark.greenend.org.uk/~sgtatham/putty/
Here after, we will show you how to set up PuTTY programme for connecting to NMC card by SSH V1 protocol.
Execute PuTTY and select the following options:

Select SSH:
and Clic on « Open » to start connection
7 Maintenance

7.1 Software upgrade

7.1.1 Card firmware upgrade using Mupgrade (Windows)
This feature is particularly useful to upgrade a large UPS installed base in one operation.

Read the relevant documentation available for download on the www.apc.com web site.

7.1.2 Card software upgrade via TFTP (UNIX and Windows)
Upgrading is also possible with TFTP command.

Generic command, with default value, is:
tftp -i @IP put nmc_fb.bin upgrade@MGEUPS@MGEUPS

Where:
-i indicates binary mode
@IP is the address of the NMC card
nmc_fb.bin is the firmware name

Caution the last parameter upgrade@MGEUPS@MGEUPS, represent the default value of
upgrade@password@username. This parameter is build like an unique word, without any blank character inside.
password value defined in the acces control page
username value defined in the acces control page

Check syntax depending of your operating system

7.1.3 Recovery tool software Msupgrade (Windows) via the serial link
Read the relevant documentation available for download on the www.apc.com web site.
8 Appendices

8.1 Tables of alarms and events

8.1.1 UPS Alarm table

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Fault</td>
<td>Défaut batterie</td>
</tr>
<tr>
<td>Output On Battery</td>
<td>Sortie alimentée par batterie</td>
</tr>
<tr>
<td>Low Battery</td>
<td>Fin d’autonomie</td>
</tr>
<tr>
<td>UPS Over Temperature</td>
<td>Défaut température</td>
</tr>
<tr>
<td>Output not protected</td>
<td>Sortie non protégée</td>
</tr>
<tr>
<td>UPS Overload</td>
<td>Surcharge onduleur</td>
</tr>
<tr>
<td>Output On Bypass</td>
<td>Sortie sur Bypass</td>
</tr>
<tr>
<td>Charger Fault, Not Charging Battery</td>
<td>Défaut chargeur</td>
</tr>
<tr>
<td>Utility failure</td>
<td>Perte secteur</td>
</tr>
<tr>
<td>No Battery</td>
<td>Pas de batterie</td>
</tr>
<tr>
<td>Replace Battery</td>
<td>Batterie à remplacer</td>
</tr>
<tr>
<td>Unavailable Battery</td>
<td>Batterie indisponible</td>
</tr>
<tr>
<td>Boost Activated on UPS</td>
<td>Onduleur en mode Boost</td>
</tr>
<tr>
<td>Buck Activated on UPS</td>
<td>Onduleur en mode Buck</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is above high threshold xx ° C</td>
<td>&lt;Sensor name&gt;: La température est au dessus du seuil haut xx ° C</td>
</tr>
<tr>
<td>“&lt;Sensor name&gt;: Humidity is above high threshold xx %”,</td>
<td>&lt;Sensor name&gt;: L’humidité est au dessus du seuil haut xx %”</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is below low threshold xx ° C</td>
<td>&lt;Sensor name&gt;: La température est en dessous du seuil bas xx ° C</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Humidity is below low threshold xx %</td>
<td>&lt;Sensor name&gt;: L’humidité est en dessous du seuil bas xx %</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when closed label&gt;</td>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when closed label&gt;</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when open label&gt;</td>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when open label&gt;</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when closed label&gt;</td>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when closed label&gt;</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when open label&gt;</td>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when open label&gt;</td>
</tr>
</tbody>
</table>

8.1.2 STS Alarm table

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source 1 Static Switch fault</td>
<td>Défaut Contacteur Statique source 1</td>
</tr>
<tr>
<td>KM1 fault</td>
<td>Défaut Contacteur source 1 (KM1)</td>
</tr>
<tr>
<td>Source 2 Static Switch fault</td>
<td>Défaut Contacteur Statique source 2</td>
</tr>
<tr>
<td>KM2 fault</td>
<td>Défaut Contacteur source 2 (KM2)</td>
</tr>
<tr>
<td>Source 1 voltage fault</td>
<td>Défaut tension source 1</td>
</tr>
<tr>
<td>Source 1 frequency fault</td>
<td>Défaut fréquence source 1 hors tolerances</td>
</tr>
<tr>
<td>Source 2 voltage fault</td>
<td>Défaut tension source 2</td>
</tr>
<tr>
<td>Source 2 frequency fault</td>
<td>Défaut fréquence source 2 hors tolerances</td>
</tr>
<tr>
<td>Output not powered</td>
<td>Charge non alimentée</td>
</tr>
<tr>
<td>Transfer forbidden</td>
<td>Transfert interdit</td>
</tr>
<tr>
<td>English</td>
<td>French</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Sources out of synchronization</td>
<td>Déphasage sources 1 / 2</td>
</tr>
<tr>
<td>Emergency stop activated</td>
<td>Défaut arrêt d'urgence active</td>
</tr>
<tr>
<td>Output Thermal overload</td>
<td>Défaut surcharge thermique</td>
</tr>
<tr>
<td>Output overload</td>
<td>Défaut surcharge</td>
</tr>
<tr>
<td>STS internal fault</td>
<td>Défaut interne</td>
</tr>
<tr>
<td>STS general alarm</td>
<td>Défaut Alarme Générale</td>
</tr>
<tr>
<td>STS communication failure</td>
<td>Défaut Communication interne</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: Temperature is above high threshold xx °C&quot;</td>
<td>&lt;Sensor name&gt;: La température est au dessus du seuil haut xx °C</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: Humidity is above high threshold xx %&quot;</td>
<td>&lt;Sensor name&gt;: L'humidité est au dessus du seuil haut xx %</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: Temperature is below low threshold xx °C&quot;</td>
<td>&lt;Sensor name&gt;: La température est en dessous du seuil bas xx °C</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: Humidity is below low threshold xx %&quot;</td>
<td>&lt;Sensor name&gt;: L'humidité est en dessous du seuil bas xx %</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when closed label&gt;&quot;</td>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when closed label&gt;</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when open label&gt;&quot;</td>
<td>&lt;Sensor name&gt;: &lt;Input #1 label&gt; &lt;when open label&gt;</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when closed label&gt;&quot;</td>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when closed label&gt;</td>
</tr>
<tr>
<td>&quot;&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when open label&gt;&quot;</td>
<td>&lt;Sensor name&gt;: &lt;Input #2 label&gt; &lt;when open label&gt;</td>
</tr>
</tbody>
</table>

8.1.3 UPS event table

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery fault</td>
<td>Défaut batterie</td>
</tr>
<tr>
<td>Battery OK</td>
<td>Fin défaut batterie</td>
</tr>
<tr>
<td>Replace battery</td>
<td>Batterie à remplacer</td>
</tr>
<tr>
<td>Battery replaced</td>
<td>Batterie remplacée</td>
</tr>
<tr>
<td>Low battery</td>
<td>Fin d’autonomie</td>
</tr>
<tr>
<td>UPS return from low battery</td>
<td>Fin préalarme d’autonomie</td>
</tr>
<tr>
<td>UPS battery charger is not active</td>
<td>Chargeur batterie arrêté</td>
</tr>
<tr>
<td>UPS battery charger is active</td>
<td>Chargeur batterie en marche</td>
</tr>
<tr>
<td>UPS battery entering minimum condition</td>
<td>Batterie en charge minimum</td>
</tr>
<tr>
<td>UPS battery exiting from minimum condition</td>
<td>Fin batterie en charge minimum</td>
</tr>
<tr>
<td>Output on battery</td>
<td>Sortie alimentée par batterie</td>
</tr>
<tr>
<td>Return on UPS</td>
<td>Sortie sur onduleur</td>
</tr>
<tr>
<td>Output on Bypass</td>
<td>Sortie sur Bypass</td>
</tr>
<tr>
<td>Bypass : Return on UPS</td>
<td>Sortie sur onduleur</td>
</tr>
<tr>
<td>UPS bypass unavailable</td>
<td>Bypass indisponible</td>
</tr>
<tr>
<td>UPS bypass available</td>
<td>Bypass disponible</td>
</tr>
<tr>
<td>Utility failure</td>
<td>Perte secteur</td>
</tr>
<tr>
<td>Utility restored</td>
<td>Retour secteur</td>
</tr>
<tr>
<td>Boost activated on UPS</td>
<td>Onduleur en mode Boost</td>
</tr>
<tr>
<td>Boost de-activated on UPS</td>
<td>Mode Boost désactivé</td>
</tr>
<tr>
<td>UPS overload</td>
<td>Surcharge onduleur</td>
</tr>
<tr>
<td>UPS return to normal load</td>
<td>Fin de surcharge onduleur</td>
</tr>
<tr>
<td>UPS over temperature</td>
<td>Défaut température</td>
</tr>
<tr>
<td>Event Description</td>
<td>French Description</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>UPS return to normal temperature</td>
<td>Fin de défaut température</td>
</tr>
<tr>
<td>%s on sequence started</td>
<td>Début séquence de démarrage %s</td>
</tr>
<tr>
<td>%s on sequence cancelled</td>
<td>Arrêt séquence de démarrage %s</td>
</tr>
<tr>
<td>%s on sequence in progress</td>
<td>Séquence de démarrage %s en cours</td>
</tr>
<tr>
<td>%s on sequence completed</td>
<td>Fin séquence de démarrage %s</td>
</tr>
<tr>
<td>%s off sequence started</td>
<td>Début séquence d’arrêt %s</td>
</tr>
<tr>
<td>%s off sequence cancelled</td>
<td>Arrêt séquence d’arrêt %s</td>
</tr>
<tr>
<td>%s off sequence in progress</td>
<td>Séquence d’arrêt %s en cours</td>
</tr>
<tr>
<td>%s off sequence completed</td>
<td>Fin séquence d’arrêt %s</td>
</tr>
<tr>
<td>%s toggle (off/on) sequence started</td>
<td>Début séquence d’arrêt/marche %s</td>
</tr>
<tr>
<td>%s toggle (off/on) sequence cancelled</td>
<td>Arrêt séquence d’arrêt/marche %s</td>
</tr>
<tr>
<td>%s toggle (off/on) sequence in progress</td>
<td>Séquence d’arrêt/marche %s en cours</td>
</tr>
<tr>
<td>%s toggle (off/on) sequence completed</td>
<td>Fin séquence d’arrêt/marche %s</td>
</tr>
<tr>
<td>UPS onduleur</td>
<td>Perte de communication avec l’onduleur</td>
</tr>
<tr>
<td>UPS communication failed</td>
<td>Retour de communication avec l’onduleur</td>
</tr>
<tr>
<td>UPS communication restored</td>
<td>Batterie indisponible</td>
</tr>
<tr>
<td>Unavailable battery</td>
<td>Batterie disponible</td>
</tr>
<tr>
<td>Battery available</td>
<td>Batterie disponible</td>
</tr>
<tr>
<td>UPS waiting for battery charging condition</td>
<td>UPS waiting for battery charging condition</td>
</tr>
<tr>
<td>UPS reached battery charging condition</td>
<td>UPS reached battery charging condition</td>
</tr>
<tr>
<td>UPS fault</td>
<td>défaut interne</td>
</tr>
<tr>
<td>UPS OK</td>
<td>Fin défaut interne</td>
</tr>
<tr>
<td>UPS passed battery test</td>
<td>Test batterie terminé</td>
</tr>
<tr>
<td>UPS failed battery test</td>
<td>Test batterie en défaut</td>
</tr>
<tr>
<td>UPS enter environment external alarm</td>
<td>UPS enter environment external alarm</td>
</tr>
<tr>
<td>UPS exit environment external alarm</td>
<td>UPS exit environment external alarm</td>
</tr>
<tr>
<td>Buck activated on UPS</td>
<td>Onduleur en mode Buck</td>
</tr>
<tr>
<td>Buck de-activated on UPS</td>
<td>Mode Buck désactivé</td>
</tr>
<tr>
<td>Normal input switch (Q1) closed</td>
<td>Interrupteur d’entrée (Q1) fermé</td>
</tr>
<tr>
<td>Normal input switch (Q1) open</td>
<td>Interrupteur d’entrée (Q1) ouvert</td>
</tr>
<tr>
<td>Bypass switch (Q4S) closed</td>
<td>Interrupteur bypass (Q4S) fermé</td>
</tr>
<tr>
<td>Battery switch (QF1) closed</td>
<td>Disjoncteur batterie QF1 fermé</td>
</tr>
<tr>
<td>Battery switch (QF1) open</td>
<td>Disjoncteur batterie QF1 ouvert</td>
</tr>
<tr>
<td>Manual bypass switch (Q3BP) closed</td>
<td>Interrupteur bypass manual (Q3BP) fermé</td>
</tr>
<tr>
<td>Manual bypass switch (Q3BP) open</td>
<td>Interrupteur bypass manual (Q3BP) ouvert</td>
</tr>
<tr>
<td>Output switch (Q5N) closed</td>
<td>Interrupteur de sortie (Q5N) fermé</td>
</tr>
<tr>
<td>Output switch (Q5N) open</td>
<td>Interrupteur de sortie (Q5N) ouvert</td>
</tr>
<tr>
<td>Output not protected</td>
<td>Sortie non protégée</td>
</tr>
<tr>
<td>Output On</td>
<td>Sortie alimentée</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is below low threshold %d °C</td>
<td>&lt;Sensor name&gt;: La température est en dessous du seuil bas %d °C</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is above high threshold %d °C</td>
<td>&lt;Sensor name&gt;: La température est au dessus du seuil haut %d °C</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is in normal range</td>
<td>&lt;Sensor name&gt;: La température est revenue à un niveau normal</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Humidity is below low threshold %d %</td>
<td>&lt;Sensor name&gt;: L'humidité est en dessous du seuil bas %d %</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Humidity is above high threshold %d %</td>
<td>&lt;Sensor name&gt;: L'humidité est au dessus du seuil haut %d %</td>
</tr>
</tbody>
</table>
### 8.1.4 STS event table

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source 1 Static Switch fault</td>
<td>Défaut Contacteur Statique source 1</td>
</tr>
<tr>
<td>KM1 fault</td>
<td>Défaut Contacteur source 1 (KM1)</td>
</tr>
<tr>
<td>Source 2 Static Switch fault</td>
<td>Défaut Contacteur Statique source 2</td>
</tr>
<tr>
<td>KM2 fault</td>
<td>Défaut Contacteur source 2 (KM2)</td>
</tr>
<tr>
<td>Source 1 voltage fault</td>
<td>Défaut tension source 1</td>
</tr>
<tr>
<td>Source 1 frequency fault</td>
<td>Défaut fréquence source 1 hors tolérances</td>
</tr>
<tr>
<td>Source 2 voltage fault</td>
<td>Défaut tension source 2</td>
</tr>
<tr>
<td>Source 2 frequency fault</td>
<td>Défaut fréquence source 2 hors tolérances</td>
</tr>
<tr>
<td>Load not powered</td>
<td>Charge non alimentée</td>
</tr>
<tr>
<td>Transfer forbidden</td>
<td>Transfert interdit</td>
</tr>
<tr>
<td>Displacement source 1 / source 2</td>
<td>Déphasage sources 1 / 2</td>
</tr>
<tr>
<td>EPO present</td>
<td>Défaut arrêt d'urgence activé</td>
</tr>
<tr>
<td>Thermal overload</td>
<td>Défaut surcharge thermique</td>
</tr>
<tr>
<td>Overload fault</td>
<td>Défaut surcharge</td>
</tr>
<tr>
<td>Internal failure</td>
<td>Défaut interne</td>
</tr>
<tr>
<td>General alarme</td>
<td>Défaut Alarme Générale</td>
</tr>
<tr>
<td>Communication failure</td>
<td>Défaut Communication interne</td>
</tr>
<tr>
<td>Source 1 circuit breaker (Q1) closed</td>
<td>Interrupteur Q1 fermé</td>
</tr>
<tr>
<td>Source 1 circuit breaker (Q1) open</td>
<td>Interrupteur Q1 ouvert</td>
</tr>
<tr>
<td>Source 2 circuit breaker (Q2) closed</td>
<td>Interrupteur Q2 fermé</td>
</tr>
<tr>
<td>Source 2 circuit breaker (Q2) open</td>
<td>Interrupteur Q2 ouvert</td>
</tr>
<tr>
<td>Output circuit breaker (Q3) closed</td>
<td>Interrupteur Q3 fermé</td>
</tr>
<tr>
<td>Output circuit breaker (Q3) open</td>
<td>Interrupteur Q3 ouvert</td>
</tr>
<tr>
<td>Source 1 bypass switch (Q1BP) closed</td>
<td>Interrupteur Q1BP fermé</td>
</tr>
<tr>
<td>Source 1 bypass switch (Q1BP) open</td>
<td>Interrupteur Q1BP ouvert</td>
</tr>
<tr>
<td>Source 2 bypass switch (Q2BP) closed</td>
<td>Interrupteur Q2P fermé</td>
</tr>
<tr>
<td>Source 2 bypass switch (Q2BP) open</td>
<td>Interrupteur Q2P ouvert</td>
</tr>
<tr>
<td>Source 1 active</td>
<td>Source 1 active</td>
</tr>
<tr>
<td>Source 2 active</td>
<td>Source 2 active</td>
</tr>
<tr>
<td>Source 1 preferred</td>
<td>Source 1 prioritaire</td>
</tr>
<tr>
<td>Source 2 preferred</td>
<td>Source 2 prioritaire</td>
</tr>
<tr>
<td>Transfer available</td>
<td>Transfert autorisé</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is below low threshold %d °C</td>
<td>&lt;Sensor name&gt;: La température est en dessous du seuil bas %d °C</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is above high threshold %d °C</td>
<td>&lt;Sensor name&gt;: La température est au dessus du seuil haut %d °C</td>
</tr>
<tr>
<td>&lt;Sensor name&gt;: Temperature is in</td>
<td>&lt;Sensor name&gt;: La température est revenue à</td>
</tr>
<tr>
<td>normal range</td>
<td>un niveau normal</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: Humidity is below low threshold %d %</td>
<td><code>&lt;Sensor name&gt;</code>: L'humidité est en dessous du seuil bas %d %</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: Humidity is above high threshold %d %</td>
<td><code>&lt;Sensor name&gt;</code>: L'humidité est au dessus du seuil haut %d %</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: Humidity is in normal range</td>
<td><code>&lt;Sensor name&gt;</code>: L'humidité est revenue à un niveau normal</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #1 label&gt;</code> &lt;when closed label&gt;</td>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #1 label&gt;</code> &lt;when closed label&gt;</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #1 label&gt;</code> &lt;when open label&gt;</td>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #1 label&gt;</code> &lt;when open label&gt;</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #2 label&gt;</code> &lt;when closed label&gt;</td>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #2 label&gt;</code> &lt;when closed label&gt;</td>
</tr>
<tr>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #2 label&gt;</code> &lt;when open label&gt;</td>
<td><code>&lt;Sensor name&gt;</code>: <code>&lt;Input #2 label&gt;</code> &lt;when open label&gt;</td>
</tr>
</tbody>
</table>
### 8.1.5 System alarm table

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold boot</td>
<td>Démarrage de la carte</td>
</tr>
<tr>
<td>Warm boot</td>
<td>Réinitialisation de la carte</td>
</tr>
<tr>
<td>Network link up</td>
<td>Carte connectée au réseau</td>
</tr>
<tr>
<td>Network link down</td>
<td>Carte déconnectée du réseau</td>
</tr>
<tr>
<td>Agent Card Restart</td>
<td>Redémarrage de la carte</td>
</tr>
<tr>
<td>Parameters reset to default</td>
<td>Paramètres par défaut reprogrammés</td>
</tr>
<tr>
<td>Firmware upgrade with version xx</td>
<td>Carte reprogrammée avec version xx</td>
</tr>
<tr>
<td>History log cleared</td>
<td>Historique des mesures effacé</td>
</tr>
<tr>
<td>UPS event log cleared</td>
<td>Historique des événements effacé</td>
</tr>
<tr>
<td>Agent event log cleared</td>
<td>Historique système effacé</td>
</tr>
<tr>
<td>History log interval changed</td>
<td>Période des historiques modifiée</td>
</tr>
<tr>
<td>Communication failure</td>
<td>Perte de communication</td>
</tr>
<tr>
<td>Communication restored</td>
<td>Retour de communication</td>
</tr>
<tr>
<td>Time changed by user</td>
<td>Date et heure réglées manuellement</td>
</tr>
<tr>
<td>Time changed by server</td>
<td>Date et heure synchronisées par serveur</td>
</tr>
<tr>
<td>Time changed by RTC</td>
<td>Date et heure réglées par RTC</td>
</tr>
<tr>
<td>Access to SMTP server failed to mail to recipient</td>
<td>L'accès au serveur SMTP a échoué pendant l'envoi au destinataire de mail</td>
</tr>
<tr>
<td>Access to SMTP server succeed to test mail to recipient</td>
<td>L'accès au serveur SMTP a réussi pour le test d'envoi au destinataire de mail</td>
</tr>
<tr>
<td>Environment log cleared</td>
<td>Historique des mesures environnement effacé</td>
</tr>
<tr>
<td>&lt;Sensor name&gt; communication failed</td>
<td>&lt;Sensor name&gt; communication restored</td>
</tr>
</tbody>
</table>
8.2 Glossary

**Bootp:**
Protocol based on UDP used to allocate an IP address corresponding to an Ethernet card during the startup phase. Defined by the RCF 951

**Community name:**
Access key to access SNMP agent information

**DHCP Dynamic Host Configuration Protocol**
This IETF protocol enables remote, automatic, self-configuration of the IP addresses of a workstation.

**DNS Domain Name Service**
The DNS protocol ensure correspondence between the name of a machine and its IP address

**DST Daylight Saving Time**
Extension of the NTP protocol to manage time changes in summer and winter

**E-mail**
Electronic means of transmitting messages and/or files.

**Gateway**
Interconnection equipment between networks with different conventions, to enable communication between them

**HTML**
(HyperText Markup Language) Language used to describe hypertext pages on the web.

**HTTPS**:
is the secure version of HTTP, the communication protocol of the World Wide Web. It was invented by Netscape Communications Corporation to provide authentication and encrypted communication and is used in electronic commerce.

**IP**
Internet Protocol. Network layer protocol in the TCP/IP stack offering a no-connection inter-network service.
The IP protocol offers functions for addressing, service type specification, fragmentation and re-assembling and security. Defined in RFC 791.

**MD5**
Message Digest 5. Algorithm producing an output message from an input message of arbitrary length, in the form of a replica or signature 128 bit message. Intended for digital signature applications requiring large files to be compressed in total security before being coded with a private key, using a public key algorithm, like RSA.

**MIB MANAGEMENT INFORMATION BASE**
- Group of software commands to control and administrate a device through the network. Each type of device (server, hub, PC, UPS, etc.) has its own MIB
– The IETF has proposed a standard MIB for each group of devices (hubs, for example) to simplify administration if they come from different suppliers

**MultiSlot**
Expander module for MGEUPS communication card.
Network Management Card
User Manual

NETWORK MANAGEMENT CARD
Communication cards to supervise UPS and communicate with Network Shutdown Module to insure power protection on servers

NMS NETWORK MANAGEMENT STATION (SNMP)
The dedicated PC or workstation is used on the company’s networks to administrate all devices connected to the network. Data are transmitted using the SNMP protocol. Popular NMS systems include HP OpenView, IBM Tivoli, CA Unicenter, etc.

NETWORK SHUTDOWN MODULE
Protection software installed on a PC or server to protect it

NTP Network Time Protocol
Protocol to position a set of machines on a network at the same time.

REBOOT –
To restart a system after an interruption.
– To perform an obstacle-free “reboot”, it is essential that the system is correctly and carefully shut down beforehand.
– The reboot is usually automatic if the computer is re-supplied with electricity (from the utility or from the UPS).

RFC
Request for Comments. All documents defining internal Internet operation.

SNMP (SIMPLE NETWORK MANAGEMENT PROTOCOL)
Protocol used to remote-supervise, administrate and control devices connected to a company network.

SMTP (SIMPLE MAIL TRANSFER PROTOCOL)
Enables message transfer between e-mail servers or between the client and its server. It is based on the server’s port 25. It is described in RFC 821

SSL (Secure Sockets Layers) is a protocol developed by Netscape Communications Corporation for securing data transmission in commercial transactions on the Internet. Using public-key cryptography, SSL provides server authentication, data encryption, and data integrity for client/server communications

Subnet mask:
Mask of bits used to identify and differentiate the network address and the equipment address in an IP address. Normally, the mask is automatically determined by the class of address, which defines in a unique manner the network part/equipment part division of the IP address.
- Class A: internet address: 255.0.0.0.
- Class B: internet address: 255.255.0.0.
- Class C: internet address: 255.255.255.0.

TCP/IP

Telnet
Internet protocol used for terminal emulation, i.e. enabling a computer to connect with a server as if it was a simple terminal locally connected to this server.
Trap (SNMP)
This term describes an event that affects an MIB variable. Traps are sent to the manager, which is programmed to perform specific tasks upon reception of the traps.