

**Operating manual for**  
***DELPHYS MX and DELPHYS MX elite***  
**Uninterruptible Power Systems**  
with a basic control panel

**UPS/NTA GB/DELMX\_EXPC1C3C6.B**

**01/03/2005**

### **Certificate of Warranty**

The warranty conditions are stipulated in the sales contract, if not the following points shall apply.

The manufacturer exclusively guarantees his own products against any defect in construction or operation arising from faulty design, materials or workmanship according to the conditions set down below.

The manufacturer, at his discretion, is entitled to adapt his product in order to comply with the warranty or replace the faulty parts. The manufacturer's warranty does not apply in the following cases :

- Defects arising either from designs or parts imposed or supplied by the Purchaser.
- Failure due to fortuitous circumstances or force majeure.
- Replacements or repairs resulting from normal wear of units and machinery,
- Damage or injuries caused by negligence, lack of inspection or maintenance, or improper use of the products.

The period of validity of the warranty may never exceed 12 months after delivery.

Replacements, repairs or modifications of parts during the warranty period cannot extend the duration of the warranty.

For these stipulations to be valid, the Purchaser must, within a maximum of 8 days beyond which the warranty lapses, expressly inform the Manufacturer of the faulty design, or the material or manufacturing defect, stating in detail the grounds for his complaint.

Defective parts replaced free of charge by the Manufacturer are to be put at his disposal, so that he may become the sole owner.

The warranty legally ceases if the Purchaser has, of his own initiative, undertaken modifications or repairs on the Manufacturer's products without the written consent of the latter.

The Manufacturer's liability is limited to the obligations as defined herein (repair or replacement), all other items of damage being formally excluded.

The Purchaser is liable for taxes or duties of any kind in compliance with either the European regulations, or those of the country of import or transit.

## **FOREWORD**

We thank you for the trust you have in our Uninterruptible Power Systems.

This equipment is fitted with up to date technology. Rectifier and inverter subsets are provided with power semiconductors (IGBT) including a digital micro-controller.

Our equipment complies with standard CEI EN 62040-2.

**CAUTION:** “This is a product for restricted sales distribution to informed partners. Installation restrictions or additional measures may be needed to prevent disturbances”.

## **SAFETY REQUIREMENTS**

### **Using conditions:**

Do read carefully these operation instructions before using the UPS and comply with the safety notes mentioned.

Whatever the repairs, they must be made only by authorised staff, who have been suitably trained. It is recommended that the ambient temperature and humidity of the UPS environment are maintained below the values specified by the manufacturer.

This equipment meets the requirements of the European directives applied to this product. As a consequence it is labelled as follows:



## **REGULATIONS CONCERNED WITH ENVIRONMENTAL ISSUES**

### **Recycling of electrical products and equipment.**

Provision is made in European countries to break up and recycle materials making up the system. The various components must be disposed of in accordance with the legal provisions in force in the country where the system is installed.

### **Battery wastes**

Used batteries are considered as toxic wastes. It is therefore essential to entrust them solely and exclusively to firms specialised in their recycling. They can not be treated with other industrial or household wastes, as set out in local regulations in force.

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## ABBREVIATIONS:

- UPS: Uninterruptible Power Systems
- LCD: Liquid Crystal Display
- SC: Static switch.
- CIM: Commissioning, Inspection and Maintenance Department.

## 1. GENERAL

This document provides required information for operating **DELPHYS MX** and **DELPHYS MX elite** systems. It describes the facilities offered on the control panels :

- Scrolling through the menus displayed
- Load transfer onto the automatic and/or maintenance bypass
- System start up or shutdown

The operating instructions refer to the most frequently used configurations, i.e. :

- Single UPS's with bypass
- Modular systems
- Central bypass systems

## 2. PURPOSE AND UPS COMPOSITION

**DELPHYS MX** and **DELPHYS MX elite** provide :

- very low distortion and high power factor to the upstream power supply,
- voltage and frequency stability as well as continuity of supply to downstream loads –whatever the outages or disturbances on the upstream power supply-.

**The system is fitted with double conversion VFI-SS-111 technology.**

When the upstream mains is present, the UPS acts as a stabilizer. In the event of a mains failure, it acts as a source of electrical power. In such case, the required power is supplied by the battery, which is kept charged when the mains is present.

**DELPHYS MX** and **DELPHYS MX elite** provide three-phase sinusoidal output. The UPS is composed of :

- 1 fully controlled three-phase rectifier of DBC type (Double Bridge Converter),
- 1 three-phase inverter of S.V.M. type (Space Vector Modulation),
- 1 static bypass to transfer the load automatically and without interruption to the mains,
- 1 maintenance bypass which allows a seamless load transfer to the mains during maintenance operations,
- 1 battery,
- 1 DC/DC converter for recharging the batteries,
- 1 control panel made up of a mimic panel, an 8-line display and an intuitive user interface.

### 3. SAFETY

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAUTION</b> | <p>The equipment can only be switched on or used if the following conditions are fulfilled :</p> <ul style="list-style-type: none"> <li>- electrical connections comply with the regulation in force (earth bonding, appropriate protections and cross-section of cables)</li> <li>- all means to comply with the protection index of the system are in place, such as side panels, doors, glands, shields or whatever...).</li> </ul> |
| <b>ADVICE</b>  | <ul style="list-style-type: none"> <li>- Carefully follow the instructions described in this manual.</li> <li>- All handling must only be carried out by personnel who are suitably trained.</li> </ul>                                                                                                                                                                                                                                |
| <b>CAUTION</b> | <p><b>Do not forget that even when the load is stopped the unit is live :</b></p> <ul style="list-style-type: none"> <li>- because of the mains voltage, the rectifier and the bypass.</li> <li>- because of the voltage generated by the battery and by the rectifier.</li> <li>- because of the load voltage when the maintenance bypass Q5 is closed and the bypass mains is present.</li> </ul>                                    |
| <b>DANGER</b>  | <p><b>Any operation inside the cabinets is to be completed:</b></p> <ul style="list-style-type: none"> <li>- once the UPS is stopped and no longer live</li> <li>- after a 5-minute wait for the capacitors upstream of the rectifier and inverter to discharge.</li> </ul> <p><b>CAUTION : the residual voltage of the capacitors may still cause heavy electrical arcs after 5 minutes.</b></p>                                      |

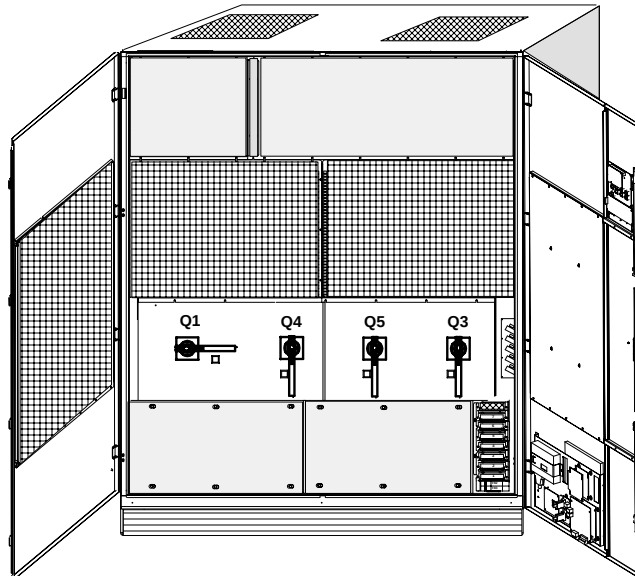
## 4. LAYOUT OF SWITCHES

### Description of switches :

- Q1 : rectifier input switch
- Q4 : automatic bypass switch
- Q3 : output switch
- Q5 : maintenance bypass switch

### Note :

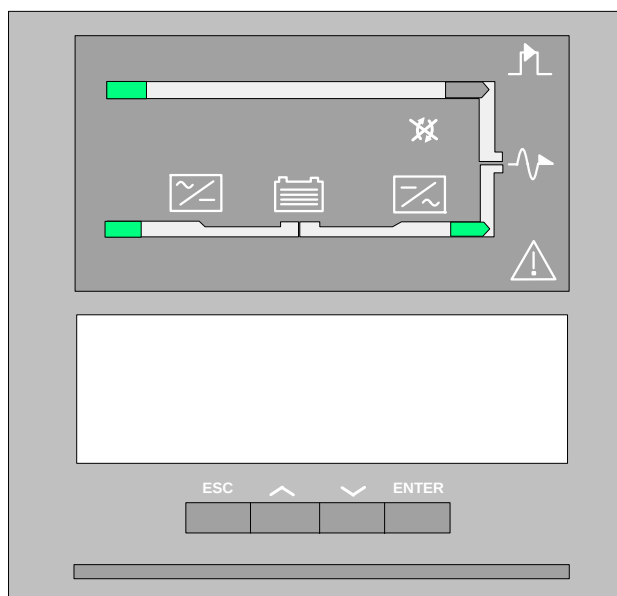
Q20 : battery protection is located in the battery cabinet or battery enclosure.



## 5. CONTROL PANEL WITH MIMIC PANEL

### 5.1.Overview

This control panel is provided on single UPS systems with bypass. For modular or central bypass configurations, please refer to sections 8 and 9.



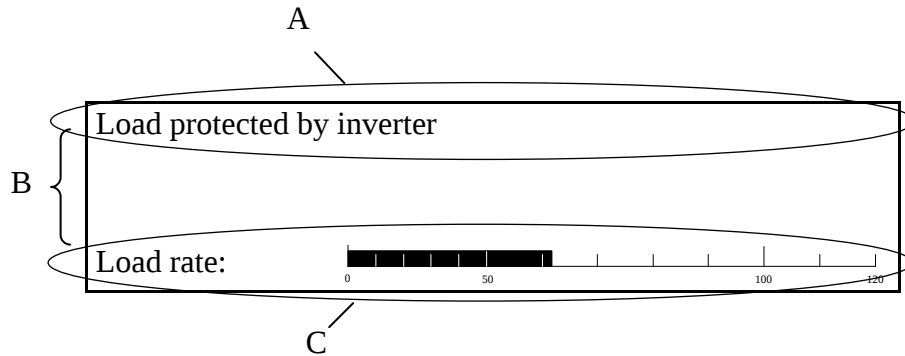
The control panel is composed of :

- 1 mimic panel
- 1 eight-line LCD display (with up to 40 characters)
- 1 four-key intuitive user interface :
  - o 1 validation key (ENTER)
  - o 1 ESC key
  - o 2 scrolling keys (UP/DOWN)
- 1 luminous status bar

## 5.2. LCD display

Various screens can displayed :

### - the permanent display by default



A) The load supply source is displayed, i.e. :

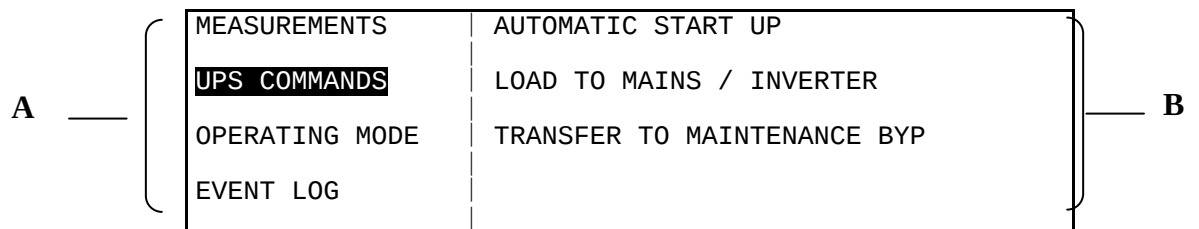
- LOAD PROTECTED BY INVERTER,
- LOAD SUPPLIED BY AUTOMATIC BYPASS,
- LOAD SUPPLIED BY MAINTENANCE BYPASS,
- OPERATING ON BATTERY,
- LOAD OFF,
- ECO-MODE ACTIVATED
- LOAD PROTECTED OR ENERGY SAVER ACTIVATED (for parallel systems).

B) The actual alarms are displayed as long as they have not been reset by the operator (or auto-reset).

C) The load rate is displayed as long as less than 4 alarms are not activated.

Note: if the "  " icon is displayed, some maintenance has to be planned.

### - The menu screen



A) The menus available are displayed.

B) The submenu related to the selected menu is highlighted on the display.

Note : the remaining displays are described in the corresponding paragraphs.

### 5.3.Luminous status bar

The colour or blinking status enable provide immediate indication about the operating conditions of the system. The following information can be displayed.

|                             |                                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Green bar :</b>          | the load is protected by the inverter<br>the load is supplied via the bypass path if in Eco-mode<br>the Energy saver mode is activated (in a parallel system, the number of operating units is automatically adjusted to the energy required on the output). |
| <b>Green blinking bar :</b> | battery test in progress.                                                                                                                                                                                                                                    |
| <b>Yellow bar :</b>         | the load is supplied via the automatic bypass<br>the load is supplied via the maintenance bypass<br>the battery is discharging.                                                                                                                              |
| <b>Yellow blinking bar:</b> | alarm displayed or request for servicing.                                                                                                                                                                                                                    |
| <b>Red bar :</b>            | the load is not supplied.                                                                                                                                                                                                                                    |
| <b>Red blinking bar:</b>    | the imminent shutdown alarm is given.                                                                                                                                                                                                                        |

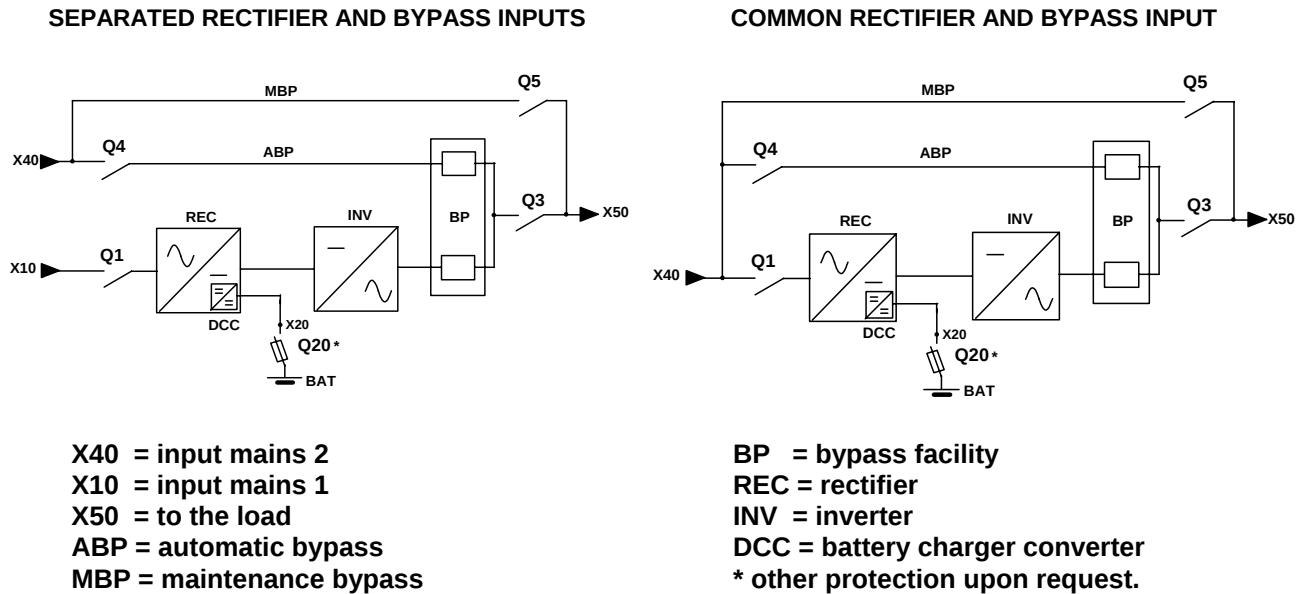
Please refer to section 6, 8 or 9 depending on the configuration of the system.

### 5.4. Contrast setting

The display contrast is set by the factory. It is automatically adjusted according to the local temperature. No setting is required.

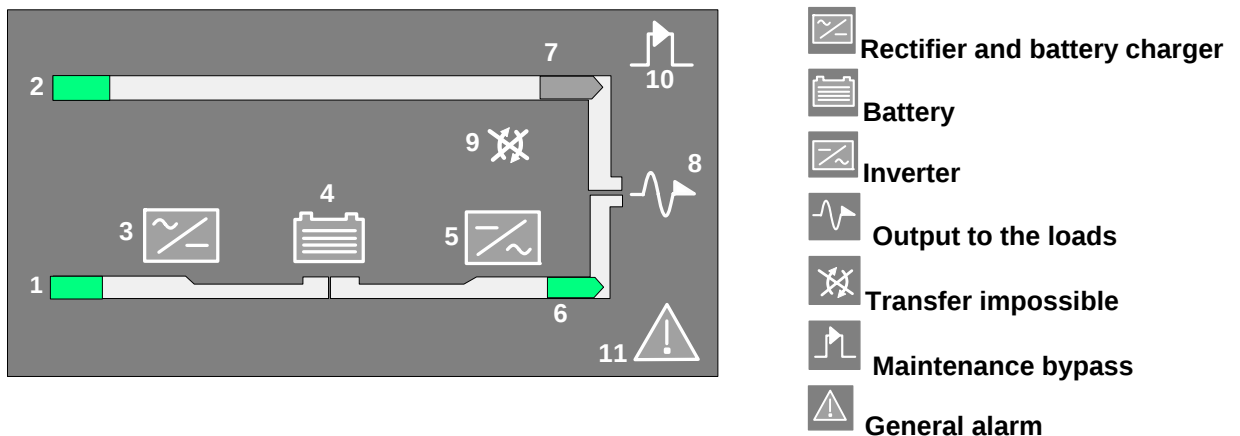
## 6. SINGLE UNITS WITH BYPASS

### 6.1. Standard basic schemes



**NOTE :** in any case, see the technical details of the drawing on the inner side of the UPS door.

### 6.2. Meaning of the pictograms



### 6.3.Mimic panel description

| LEDS                  | GREEN     | YELLOW      | RED          | BLINKING LED        |
|-----------------------|-----------|-------------|--------------|---------------------|
| 1 RECTIFIER MAINS     | OK        | Absent      |              |                     |
| 2 BYPASS MAINS        | OK        | Absent      |              |                     |
| 3 RECTIFIER           | ON        | Alarm ON    |              |                     |
| 4 BATTERY             | Charged   | discharged  |              | Green : discharging |
| 5 INVERTER            | ON        | Alarm ON    |              |                     |
| 6 LOAD ON INVERTER    | OK        | Eco-Mode ON |              |                     |
| 7 LOAD ON MAINS       | operating |             |              |                     |
| 8 LOAD OUTPUT         | supplied  |             | Not supplied | Red : imminent stop |
| 9 TRANSFER            |           | Impossible  |              |                     |
| 10 MAINTENANCE BYPASS |           | operating   |              |                     |
| 11 GENERAL ALARM      |           | Alarm ON    |              |                     |

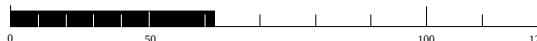
### 6.4.Description of the luminous status bar

|                             |                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------|
| <b>Green bar :</b>          | the load is supplied via the inverter (or via the bypass path if in Eco-mode).   |
| <b>Green blinking bar :</b> | battery test in progress.                                                        |
| <b>Yellow bar :</b>         | the load is supplied via the automatic / maintenance bypass, or via the battery. |
| <b>Yellow blinking bar:</b> | alarm displayed or request for servicing.                                        |
| <b>Red bar :</b>            | the load is not supplied.                                                        |
| <b>Red blinking bar:</b>    | the imminent shutdown alarm is given.                                            |

## 6.5. Menu structure

Load protected by inverter

Load rate :



Press the ENTER key

|   |                  |           |                                                                                                                     |
|---|------------------|-----------|---------------------------------------------------------------------------------------------------------------------|
| ▲ | MEASUREMENTS     | "ENTER" ▶ | UPS GENERAL OUTPUT<br>BYPASS. – INVERTER MAINS<br>RECTIFIER - BATTERY                                               |
|   | UPS COMMAND      | "ENTER" ▶ | AUTOMATIC START UP<br>LOAD ON MAINS / LOAD ON INVERTER<br>TRANSFER TO MAINTENANCE BYPASS                            |
|   | OPERATING MODE   | "ENTER" ▶ | TRANSFER TO NORMAL MODE / ECO MODE<br>ECO MODE PROGRAMMING                                                          |
|   | EVENT LOG        | "ENTER" ▶ | LATEST EVENTS<br>EARLIEST EVENTS                                                                                    |
|   | BATTERY          | "ENTER" ▶ | BATTERY TEST INFORMATION<br>BATTERY TEST PROGRAMMING<br>BATTERY MEASUREMENTS<br>BATTERY MANUAL TEST                 |
|   | UPS GENERAL DATA | "ENTER" ▶ | DIAGNOSTIC CODES<br>REFERENCES                                                                                      |
|   | STATUS           | "ENTER" ▶ | UPS GENERAL STATUS<br>AUXILIARY INPUTS                                                                              |
|   | SUBSET COMMAND   | "ENTER" ▶ | RECTIFIER ON / OFF<br>INVERTER ON / OFF<br>LOAD ON MAINS / LOAD ON INVERTER<br>LOAD DISCONNECTED / LOAD ON INVERTER |
|   | CLOCK            | "ENTER" ▶ | PROGRAMMING                                                                                                         |
|   | CONFIGURATION    | "ENTER" ▶ | LANGUAGE<br>BUZZER<br>ACCESS CODE<br>LOCAL / REMOTE                                                                 |
|   | JBUS LINK        | "ENTER" ▶ | PROGRAMMING                                                                                                         |

**Note**

Controls are only displayed when available.

## 7. OPERATING A SINGLE UPS

The « UPS COMMAND » menu is designed for the operation of the UPS.

|             |                                             |
|-------------|---------------------------------------------|
| <b>Note</b> | Controls are only displayed when available. |
|-------------|---------------------------------------------|

### 7.1. Starting up the UPS

- The system is live,
- close switches Q1 and Q4,
- wait for the control panels to light up.

The UPS is started from the "automatic start up" menu through an interactive procedure. Just follow the instructions displayed and validate your choice or action when "ENTER" is displayed.

*Title screen / UPS commands / automatic start up*

```

UPS COMMANDS : AUTOMATIC START UP

CONFIRM THE START UP WITH UPS

SYSTEM OUTPUT SWITCHING ON

cancel                                validate
ESC                                  ENTER
  
```

### 7.2. Load transfer from inverter to mains

The load transfer from inverter to mains is achieved from the "load to mains" menu, which enables the manual and seamless switching of the load from the inverter source to the non protected mains source.

*Title screen / UPS commands / automatic start up*

```

SUBSET COMMAND : LOAD TO MAINS

CONFIRM TRANSFER TO MAINS

cancel                                validate
'ESC'                                'ENTER'
  
```

### 7.3. Load transfer from mains to inverter

The load transfer from mains to inverter is achieved from the "load to inverter" menu, which enables the manual and seamless switching of the load from the non protected mains source to the inverter source.

*Title screen / UPS commands / automatic start up*

|                                   |                     |
|-----------------------------------|---------------------|
| SUBSET COMMAND : LOAD TO INVERTER |                     |
| CONFIRM TRANSFER TO INVERTER      |                     |
| Cancel<br>'ESC'                   | validate<br>'ENTER' |

### 7.4. UPS shutdown with transfer to the maintenance bypass

The transfer is achieved from the "transfer to maintenance byp" menu, which allows the load to be supplied while the UPS is shutdown, e.g. for servicing reasons. This is achieved through an interactive procedure. Just follow the instructions displayed and validate when "ENTER" is displayed.

*Title screen / UPS commands / automatic start up*

|                                     |                   |
|-------------------------------------|-------------------|
| UPS COMMANDS: TRANSFER TO M. BYPASS |                   |
| CONFIRM START OF PROCEDURE FOR      |                   |
| LOAD SUPPLY VIA MAINTENANCE BYPASS  |                   |
| cancel<br>ESC                       | validate<br>ENTER |

### 7.5. Operating mode

Note : the operating mode is displayed only if the configuration is available. Seek advice to the CIM department.

The UPS can either operate in normal or Eco mode. The mode can be selected manually or programmed to be made automatically.

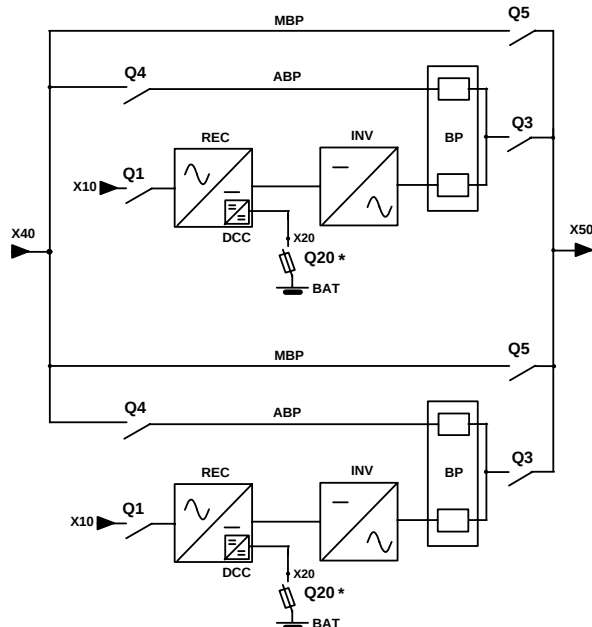
**Mode normal** : the load is supplied by the inverter. Should a problem occur on the rectifier-inverter path, the load is automatically transferred from inverter to mains.

**Eco mode** : the load is supplied by the mains. Should a problem occur on the bypass path, the load is automatically transferred from mains to inverter.

## 8. MODULAR SYSTEMS

Modular systems can include up to six UPS units. The main configurations available are as follows.

### 8.1.Modular systems with two redundant UPS units



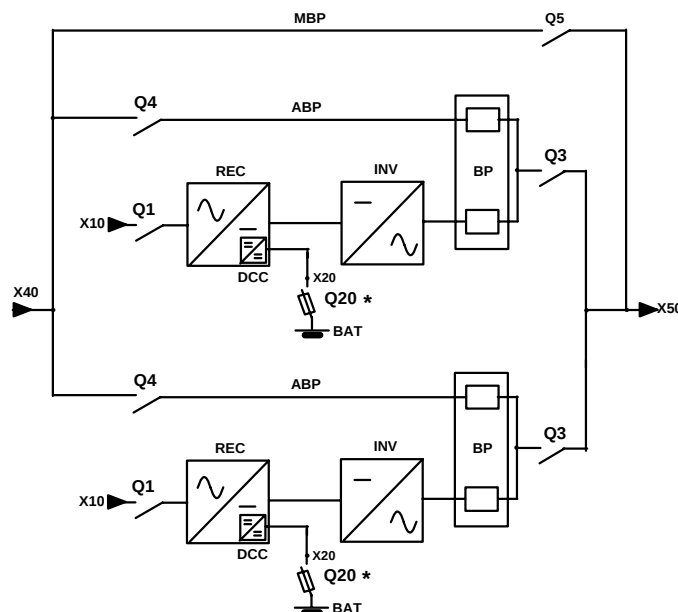
X10 : rectifier input  
X40 : bypass input  
X50 : to the load  
X20 : battery connection  
REC : rectifier  
INV : inverter  
BAT : battery  
DCC : battery charger converter  
BP : bypass facility  
ABP : automatic bypass  
MBP : maintenance bypass

\* other protection upon request.

NOTE : in such a configuration each UPS unit has its own maintenance bypass.

NOTE : in any case, see the technical details of the drawing on the inner side of the UPS door.

### 8.2.Modular systems with two non redundant UPS units



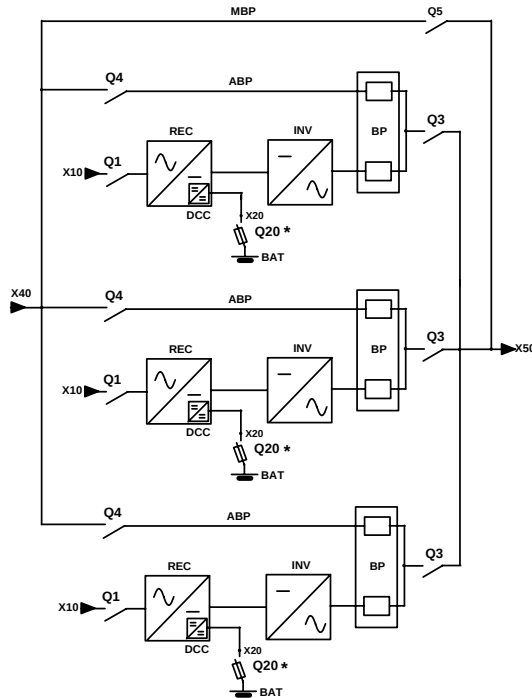
X10 : rectifier input  
X40 : bypass input  
X50 : to the load  
X20 : battery connection  
REC : rectifier  
INV : inverter  
BAT : battery  
DCC : battery charger converter  
BP : bypass facility  
ABP : automatic bypass  
MBP : maintenance bypass

\* other protection upon request.

NOTE : in such a configuration, the system is fitted with an EXTERNAL maintenance bypass.

NOTE : in any case, see the technical details of the drawing on the inner side of the UPS door.

### 8.3. Modular systems with three UPS units or more



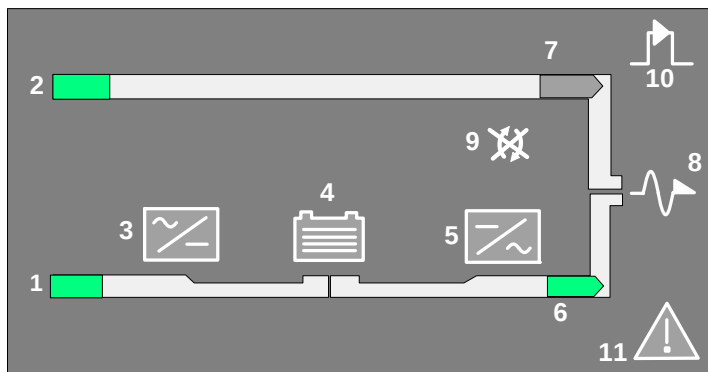
**X10 :** rectifier input  
**X40 :** bypass input  
**X50 :** to the load  
**X20 :** battery connection  
**REC :** Rectifier  
**INV :** Inverter  
**BAT :** battery  
**DCC :** battery charger converter  
**BP :** bypass facility  
**ABP :** automatic bypass  
**MBP :** maintenance bypass

\* other protection upon request.

**NOTE :** in such a configuration, the system is fitted with an **EXTERNAL** maintenance bypass.

**NOTE :** in any case, see the technical details of the diagram on the inner side of the UPS door.

### 8.4. Meaning of the pictograms



**Rectifier and battery charger**  
**Battery**  
**Inverter**  
**Output to the loads**  
**Transfer impossible**  
**Maintenance bypass**  
**General alarm**

## 8.5. Mimic panel description

| LEDS                  | GREEN     | YELLOW           | RED          | BLINKING LED        |
|-----------------------|-----------|------------------|--------------|---------------------|
| 1 RECTIFIER MAINS     | OK        | Absent           |              |                     |
| 2 BYPASS MAINS        | OK        | Absent           |              |                     |
| 3 RECTIFIER           | ON        | Alarm ON         |              |                     |
| 4 BATTERY             | Charged   | discharged       |              | Green : discharging |
| 5 INVERTER            | ON        | Alarm ON         |              |                     |
| 6 LOAD ON INVERTER    | OK        | Eco-Mode ON      |              |                     |
| 7 LOAD ON MAINS       | operating |                  |              |                     |
| 8 LOAD OUTPUT         | supplied  |                  | Not supplied | Red : imminent stop |
| 9 TRANSFER            |           | Impossible       |              |                     |
| 10 MAINTENANCE BYPASS |           | operating        |              |                     |
| 11 GENERAL ALARM      |           | General alarm ON |              |                     |

## 8.6. Description of the luminous status bar

- Green bar :** the load is protected by the inverter (or supplied via the bypass path if in Eco-mode).
- Green blinking bar :** battery test in progress.
- Yellow bar :** the load is supplied via the automatic / maintenance bypass, or via the battery.
- Yellow blinking bar:** alarm displayed or request for servicing.
- Red bar :** the load is not supplied.
- Red blinking bar:** the imminent shutdown alarm is given.

### 8.7. Structure of the system related menu

Display information about

UPS SYSTEM

UNIT

Cancel  
"ESC"

validate  
"ENTER"

Press the ENTER key

|   |                             |           |                                                     |
|---|-----------------------------|-----------|-----------------------------------------------------|
| ▲ | MEASUREMENTS                | "ENTER" ▶ | UPS GENERAL OUTPUT<br>SYSTEM BYPASS SUPPLY          |
|   |                             |           |                                                     |
|   | UPS COMMANDS                | "ENTER" ▶ | LOAD TO MAINS / LOAD TO INVERTER                    |
|   |                             |           |                                                     |
|   | EVENT LOG                   | "ENTER" ▶ | LATEST EVENTS<br>EARLIEST EVENTS                    |
|   |                             |           |                                                     |
|   | STATUS                      | "ENTER" ▶ | UPS GENERAL STATUS                                  |
|   |                             |           |                                                     |
|   | CLOCK                       | "ENTER" ▶ | PROGRAMMING                                         |
|   |                             |           |                                                     |
|   | CONFIGURATION               | "ENTER" ▶ | LANGUAGE<br>BUZZER<br>ACCESS CODE<br>LOCAL / REMOTE |
|   |                             |           |                                                     |
|   | JBUS LINK<br>(if available) | "ENTER" ▶ | PROGRAMMING                                         |
| ▼ |                             |           |                                                     |

|             |                                                       |
|-------------|-------------------------------------------------------|
| <b>Note</b> | Menus and controls are only displayed when available. |
|-------------|-------------------------------------------------------|

## 8.8. Structure of the unit related menus (Unit)

|                           |                     |
|---------------------------|---------------------|
| Display information about |                     |
| UPS SYSTEM                |                     |
| <b>UNIT</b>               |                     |
| Cancel<br>"ESC"           | validate<br>"ENTER" |

Press the ENTER key

|   |                |           |                                                                                                                   |
|---|----------------|-----------|-------------------------------------------------------------------------------------------------------------------|
| ▲ | MEASUREMENTS   | "ENTER" ▶ | UPS UNIT OUTPUT<br>INVERTER - BYPASS MAINS<br>RECTIFIER - BATTERY                                                 |
|   | UNIT COMMANDS  | "ENTER" ▶ | AUTOMATIC START UP<br>UNIT UNCOUPLING                                                                             |
|   | EVENT LOG      | "ENTER" ▶ | LATEST EVENTS<br>EARLIEST EVENTS                                                                                  |
|   | BATTERY        | "ENTER" ▶ | BATTERY TEST INFORMATION<br>BATTERY TEST PROGRAMMING<br>BATTERY MEASUREMENTS<br>BATTERY MANUAL TEST               |
|   | UNIT DATA      | "ENTER" ▶ | DIAGNOSTIC CODES<br>REFERENCES                                                                                    |
|   | STATUS         | "ENTER" ▶ | UPS UNIT STATUS                                                                                                   |
| ▼ | SUBSET COMMAND | "ENTER" ▶ | RECTIFIER ON / OFF<br>INVERTER ON / OFF<br>LOAD TO MAINS / LOAD TO INVERTER<br>UNIT UNCOUPLING / LOAD TO INVERTER |

|             |                                                       |
|-------------|-------------------------------------------------------|
| <b>Note</b> | Menus and controls are only displayed when available. |
|-------------|-------------------------------------------------------|

## 9. OPERATING THE MODULAR SYSTEM

Each unit has its own control panel. The menu structure is divided into two distinctive parts (Please, refer to sections 8.7 and 8.8) :

- one is intended for operating the unit (Unit)
- the second one is for operating the system (General UPS).

|             |                                             |
|-------------|---------------------------------------------|
| <b>Note</b> | Controls are only displayed when available. |
|-------------|---------------------------------------------|

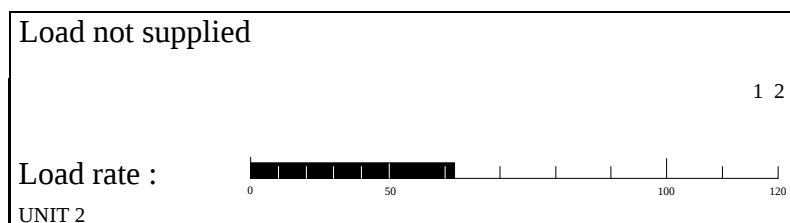
### 9.1. Starting up the modular system

**Prior to any operation, please refer to the basic scheme of the system.**

The system is live. Comply with the following chronology procedure :

- close switches Q1 and Q4 on the units,
- wait for the control panels to light up,
- successively start up each unit in the menu "unit / unit command / automatic unit start up".  
This menu is run through an interactive procedure. Just follow the instructions displayed and validate your choice or action when "ENTER" is displayed.

The display indicates the end of the automatic start up procedure :



Note : at the end of the start up sequence, the unit can be coupled to the common busbar, but does not supply the load.

- request the load supply by the mains from the menu "General UPS / UPS Command" on one of the units (at this stage all the units are supplying the load via the mains).
- if the maintenance bypass alarm is given, open switches Q5 on the units (or the one of the external maintenance bypass).
- request the load supply by the inverter from the menu "General UPS / UPS Command" on one of the units (at this stage the units are supplying the load via the inverter).

## 9.2. Load transfer from inverter to mains

The transfer command from inverter to mains can be achieved from any unit in the menu "General UPS / UPS Commands / load to mains".

*Title screen / General UPS / UPS commands / Load to mains*

|                             |                     |
|-----------------------------|---------------------|
| UPS COMMAND : LOAD TO MAINS |                     |
| CONFIRM TRANSFER TO MAINS   |                     |
| cancel<br>'ESC'             | validate<br>'ENTER' |

## 9.3. Load transfer from mains to inverter

The load transfer from mains to inverter can be achieved from any unit in the menu "General UPS / UPS Commands / load to inverter".

*Title screen / General UPS / UPS commands / load to inverter*

|                                |                     |
|--------------------------------|---------------------|
| UPS COMMAND : LOAD TO INVERTER |                     |
| CONFIRM TRANSFER TO INVERTER   |                     |
| Cancel<br>'ESC'                | validate<br>'ENTER' |

## 9.4. Switching to maintenance bypass - shutdown of the system

### 9.4.1. System with two redundant units

The transfer of the system to the maintenance bypass should be carried out as follows :

- request a "load to mains" command in the menu " General UPS / UPS commands" from any unit.
- close switches Q5 of all the units.
- Open switches Q3 of all the units.

|             |                                                                                         |
|-------------|-----------------------------------------------------------------------------------------|
| <b>NOTE</b> | <b>In a system with two redundant units, only one maintenance bypass can be closed.</b> |
|-------------|-----------------------------------------------------------------------------------------|

### 9.4.2. System with two non redundant units or more than two parallel units

The transfer of the system to the maintenance bypass should be carried out as follows :

- request a "load to mains" command in the menu " General UPS / UPS commands" from any unit.
- close switch Q5 of the external maintenance bypass.
- Open switches Q3 of all the units.

### 9.4.3. Shutdown of the units

Successively shutdown the units as per the following procedure :

- \* uncouple the unit in the menu "unit / subset commands / unit uncoupling",
- \* stop the inverter in the menu "unit / subset commands / inverter shutdown",
- \* open battery protection Q20,
- \* stop the rectifier in the menu "unit / subset commands",
- \* open switch Q4
- \* open switch Q1

Note : at this point the load is supplied by the maintenance bypass (without protection) and all the units are stopped.

|                |                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAUTION</b> | <b>Do not forget that even when the load is stopped the unit is live :</b> <ul style="list-style-type: none"> <li>- because of the mains voltage to the rectifier and the bypass.</li> <li>- because of the residual voltage of the capacitors.</li> <li>- because of the load voltage when the maintenance bypass Q5 is closed and the bypass mains is present.</li> </ul> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9.5. Operation of a unit

The unit can be operated through this menu in case of servicing operations on the unit.

### 9.5.1. Uncoupling a unit from the common busbar

|                |                                                                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAUTION</b> | <b>Unit uncoupling can only be achieved if the system is redundant, meaning that it can supply all the energy required to the load with one unit disconnected.</b> |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The uncoupling of a unit is to be made from its control panel :

- uncouple the appropriate unit in the menu "unit / unit commands / unit uncoupling",
- open switch Q3 on the appropriate unit.

Note: At this point the unit can be autonomously operated.

### 9.5.2. Shutdown of a unit

(The unit has been previously uncoupled - See previous paragraph)

Stop the unit in the following chronology order :

- \* stop the inverter in the menu "subset commands / inverter shutdown",
- \* open battery protection Q20,
- \* stop the rectifier in the menu "subset commands / rectifier shutdown",
- \* open switch Q4
- \* open switch Q1.

|                |                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAUTION</b> | <b>Do not forget that even when the load is stopped the unit is live :</b> <ul style="list-style-type: none"> <li>- because of the mains voltage to the rectifier and the bypass.</li> <li>- because of the residual voltage of the capacitors.</li> <li>- because of the load voltage coming from the common busbar (downstream of Q3).</li> </ul> |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 9.5.3. Unit switching on or coupling to the common busbar

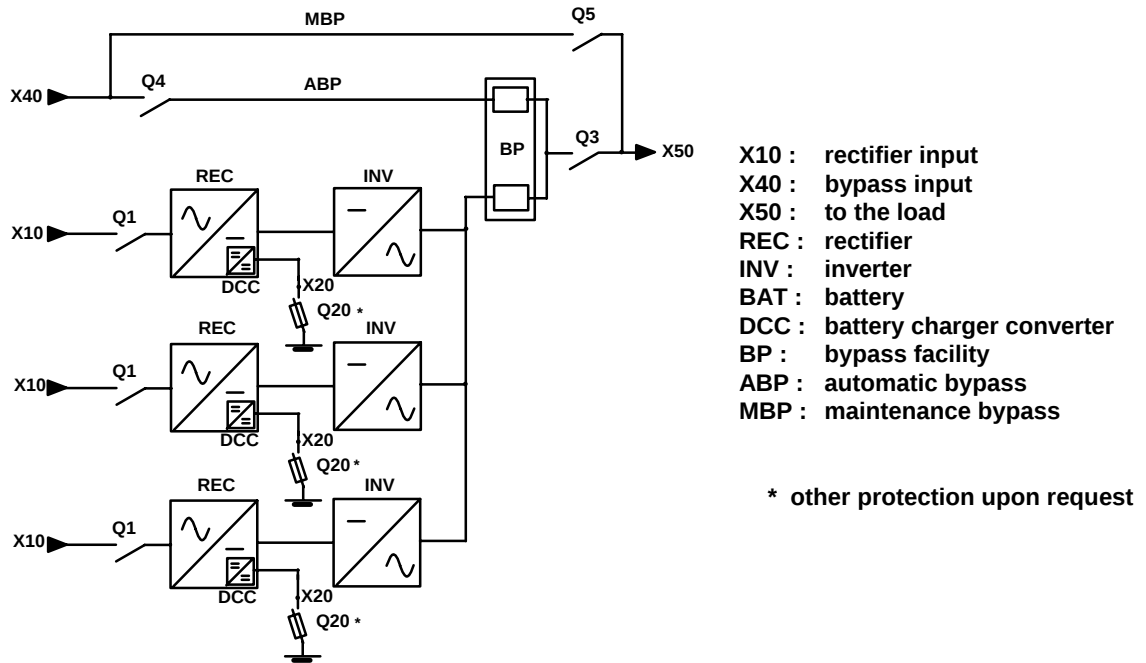
The system is live. Comply with the following operations to start up the unit :

- close switches Q1 and Q4 on the unit,
- wait for the control panel to light up,
- request an automatic start up of the unit in the menu "unit / unit commands / unit auto start up". This menu is run through an interactive procedure. Just follow the instructions displayed and validate when "ENTER" is displayed.

Note: at the end of the start up sequence the unit is coupled to the common busbar and Q3 is closed.

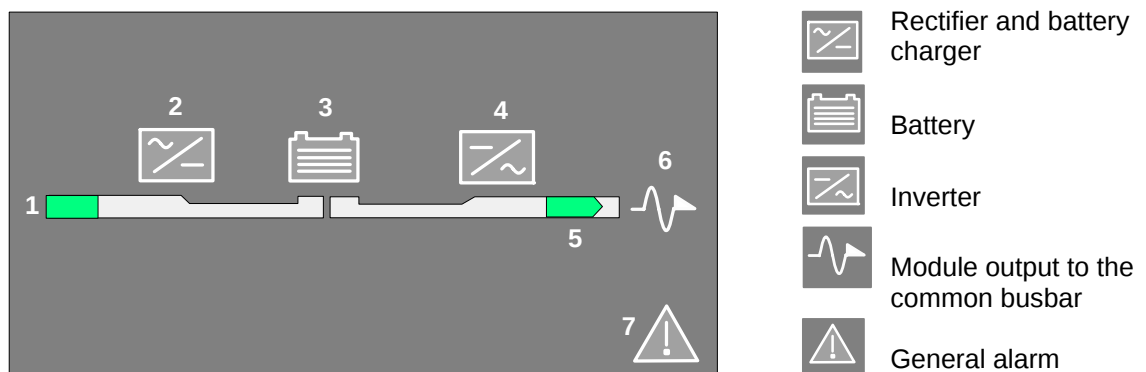
## 10. CENTRAL BYPASS SYSTEMS

### 10.1. Standard basic scheme



**NOTE :** in any case, see the technical details of the drawing on the inner side of the UPS door.

### 10.2. Mimic panel of a module (rect. – Batt. – Inv.)



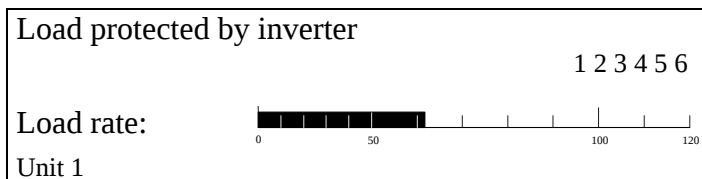
### 10.3.Mimic panel description

| LEDS                          | GREEN    | YELLOW      | RED          | BLINKING LED        |
|-------------------------------|----------|-------------|--------------|---------------------|
| 1 RECTIFIER MAINS             | OK       | Absent      |              |                     |
| 2 RECTIFIER                   | ON       | Alarm ON    |              |                     |
| 3 BATTERY                     | Charged  | discharged  |              | Green : discharging |
| 4 INVERTER                    | ON       | Alarm ON    |              |                     |
| 5 MODULE CONNECTED            | OK       | Eco-Mode ON |              |                     |
| 6 OUTPUT TO THE COMMON BUSBAR | supplied |             | Not supplied | Red : imminent stop |
| 11 GENERAL ALARM              |          | Alarm ON    |              |                     |

### 10.4.Description of the luminous status bar on a module

- Green bar :** the module is connected to the common busbar.  
**Green blinking bar :** battery test in progress.  
**Yellow bar :** the load is supplied via the battery (or the battery is discharged)  
**Yellow blinking bar:** alarm displayed or request for servicing.  
**Red bar :** the module is not connected to the common busbar  
**Red blinking bar:** the imminent shutdown alarm is given for the module.

## 10.5. Structure of the Unit menus

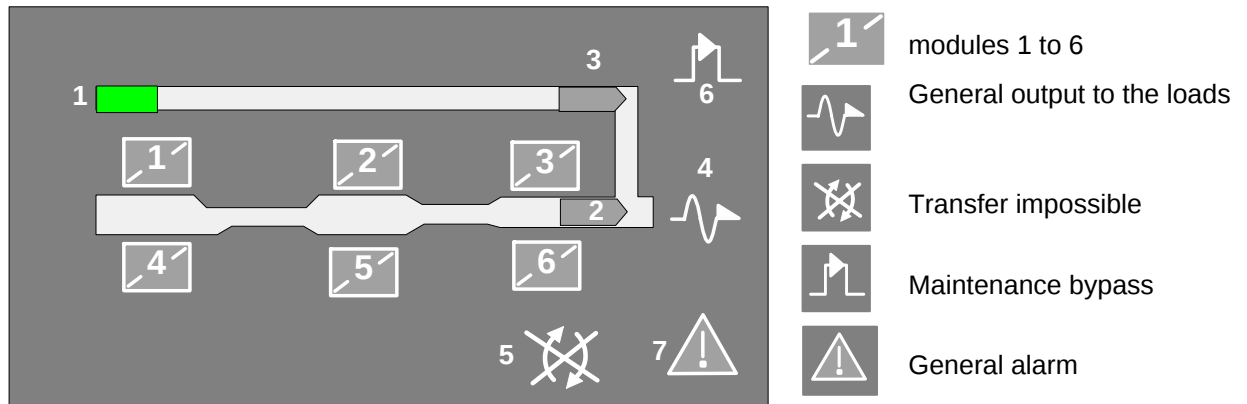


Press the ENTER key

|   |                  |           |                                                                                                     |
|---|------------------|-----------|-----------------------------------------------------------------------------------------------------|
| ▲ | MEASUREMENTS     | "ENTER" ▶ | UNIT OUTPUT<br>INVERTER<br>RECTIFIER - BATTERY                                                      |
|   | UNIT COMMANDS    | "ENTER" ▶ | AUTOMATIC START UP<br>UNIT COUPLING/UNCOUPLING                                                      |
|   | EVENT LOG        | "ENTER" ▶ | LATEST EVENTS<br>EARLIEST EVENTS                                                                    |
|   | BATTERY          | "ENTER" ▶ | BATTERY TEST INFORMATION<br>BATTERY TEST PROGRAMMING<br>BATTERY MEASUREMENTS<br>BATTERY MANUAL TEST |
|   | UPS GENERAL DATA | "ENTER" ▶ | DIAGNOSTIC CODES<br>UPS REFERENCES                                                                  |
|   | STATUS           | "ENTER" ▶ | UNIT STATUS<br>AUXILIARY INPUTS                                                                     |
| ▼ | SUBSET COMMAND   | "ENTER" ▶ | RECTIFIER ON / OFF<br>INVERTER ON / OFF<br>LOAD TO MAINS / LOAD TO INVERTER<br>UNCOUPLING           |

|             |                                             |
|-------------|---------------------------------------------|
| <b>Note</b> | Controls are only displayed when available. |
|-------------|---------------------------------------------|

## 10.6. Mimic panel of the central bypass cabinet



## 10.7. Mimic panel description

| LEDS                          | GREEN    | YELLOW      | RED          | BLINKING                |
|-------------------------------|----------|-------------|--------------|-------------------------|
| MODULES 1 to 6                | ON       | faulty      |              |                         |
| 1 BYPASS MAINS                | OK       | absent      |              |                         |
| 2 LOAD ON INVERTER            | OK       | Eco-mode ON |              |                         |
| 3 LOAD ON MAINS               |          | OK          |              |                         |
| 4 GENERAL OUTPUT TO THE LOADS | supplied |             | Not supplied | Red : imminent shutdown |
| 5 LOAD TRANSFER               |          | impossible  |              |                         |
| 6 MAINTENANCE Bypass          |          | ON          |              |                         |
| 7 GENERAL ALARM               |          | Alarm ON    |              |                         |

## 10.8. Description of the luminous status bar on the central bypass cabinet

### Green bar :

- the loads are protected by the inverters or,
- the loads are supplied via the bypass path if in Eco-mode or,
- the system operates on the "Energy Saver" mode, (i.e. the number modules ON depends on the energy required).

### Yellow bar :

- the loads are supplied via the bypass mains or,
- the loads are supplied via the maintenance bypass.

### Yellow blinking bar :

- the general alarm is given (or request for servicing).

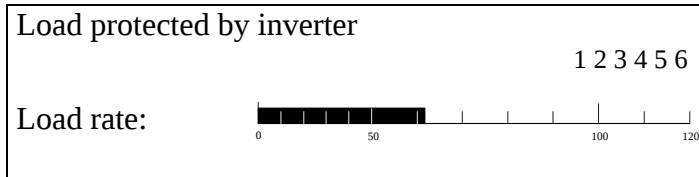
### Red bar :

- the loads are not supplied.

### Red blinking bar :

- the imminent shutdown alarm is given and the loads will shortly be disconnected.

### 10.9. Structure of the central bypass cabinet menu



Press the ENTER key

|   |                |           |                                                                                          |
|---|----------------|-----------|------------------------------------------------------------------------------------------|
| ▲ | MEASUREMENTS   | "ENTER" ▶ | UPS GENERAL OUTPUT<br>INVERTER / BYPASS MAINS                                            |
|   | UPS COMMANDS   | "ENTER" ▶ | AUTOMATIC START UP<br>LOAD TO MAINS / LOAD TO INVERTER<br>TRANSFER TO MAINTENANCE BYPASS |
|   | EVENT LOG      | "ENTER" ▶ | LATEST EVENTS<br>EARLIEST EVENTS                                                         |
|   | BYPASS DATA    | "ENTER" ▶ | DIAGNOSTIC CODES<br>REFERENCES                                                           |
|   | STATUS         | "ENTER" ▶ | UPS GENERAL STATUS<br>AUXILIARY INPUTS                                                   |
|   | SUBSET COMMAND | "ENTER" ▶ | LOAD TO MAINS / LOAD TO INVERTER<br>LOAD DISCONNECTION                                   |
|   | CLOCK          | "ENTER" ▶ | PROGRAMMING                                                                              |
|   | CONFIGURATION  | "ENTER" ▶ | LANGUAGE<br>BUZZER<br>ACCESS CODE<br>LOCAL / REMOTE                                      |
| ▼ | JBUS LINK      | "ENTER" ▶ | PROGRAMMING                                                                              |

|             |                                             |
|-------------|---------------------------------------------|
| <b>Note</b> | Controls are only displayed when available. |
|-------------|---------------------------------------------|

## 11. OPERATING THE CENTRAL BYPASS SYSTEM

### 11.1. Using

The central bypass cabinet has a control panel intended for the operation of the system. The control panel of the modules is only dedicated to the module operation.

### 11.2. Preliminary conditions

- Q4, Q5 and Q3 in the central bypass cabinet are open,
- Q1, Q2 and Q20 of each unit are open.

### 11.3. Starting up the UPS

The input of the bypass mains and of the modules is live. Comply with the following procedure:

**In the central bypass cabinet :**  
close switch Q4.

**In each unit :**  
close Q1,  
wait for the control panels to light up.

**In the central bypass cabinet :**  
The UPS is started from the menu "UPS commands /automatic start up" through an interactive procedure. Just follow the instructions displayed and validate when "ENTER" is displayed.

### 11.4. Load transfer from inverter to mains

**In the central bypass cabinet :**  
The transfer command from inverter to mains can be achieved from the menu "UPS Commands / load to mains" on the central bypass cabinet.

*Title screen / UPS commands / load to mains*

|                             |                     |
|-----------------------------|---------------------|
| UPS COMMAND : LOAD TO MAINS |                     |
| CONFIRM TRANSFER TO MAINS   |                     |
| cancel<br>'ESC'             | validate<br>'ENTER' |

### 11.5. Load transfer from mains to inverter

**In the central bypass cabinet :**

The load transfer from mains to inverter can be achieved in the menu "UPS Commands / load to inverter".

*Title screen / UPS commands / load to inverter*

|                                |                     |
|--------------------------------|---------------------|
| UPS COMMAND : LOAD TO INVERTER |                     |
| CONFIRM TRANSFER TO INVERTER   |                     |
| Cancel<br>'ESC'                | validate<br>'ENTER' |

### 11.6. UPS shutdown with switching to the maintenance bypass

**In the central bypass cabinet :**

The transfer of the system to maintenance bypass should be carried out as follows :

- request a load transfer to maintenance bypass in the menu " UPS commands / Transfer to maintenance bypass". This menu is run through an interactive procedure. Just follow the instructions displayed and validate when "ENTER" is displayed.

**In each unit :**

- follow the instructions given on the control panel of the unit.
- shutdown the rectifier.

Note : at this stage the load is supplied by the maintenance bypass (no protection) and the units are stopped.

## **12.COMMENTS CONCERNING THE MENUS**

### **12.1. Menu measurements**

This menu displays the following system measurements:

- general measurements of the UPS
- output power of the UPS,
- inverter and bypass measurements,
- rectifier measurements.

### **12.2. Menu UPS Commands**

The UPS command menu enables (Please refer to section related to the menu structure) :

- the automatic start up (interactive procedure)
- the transfer from the inverter to the mains (and vice-versa),
- the transfer to the maintenance bypass (interactive procedure),

Note : in the event of a modular system, the UPS COMMANDS menu is common to all the units connected. The control can be performed on whatever unit.

### **12.3. Menu Event log**

Principle :

The UPS has a memory enabling the record and date all alarms, status or commands that could arise during operation. This memory is saved utilising a separate supply.

The log can record up to 500 items according to the FIFO principle (First In - First out). When the log is filled up, the latest information recorded overwrites the earliest one.

Use :

To improve the user-friendliness of the display, the information is displayed over six lines.

"▲" : to scroll up to previous line,

"▼" : to scroll down to next line,

## 12.4. Battery

The battery test is for controlling the battery capacity to supply energy. The battery test can either be made manually or automatically.

### 12.4.1. Battery test information

This menu provides information to show:

- the result of the latest battery test (OK or faulty),
- date and time of the latest battery test,
- date and time of the next battery test.

### 12.4.2. Conditions to start the battery test

The battery test can only be started if the following conditions are fulfilled :

- rectifier operating
- no overload on inverter
- bypass available
- battery circuit closed
- no rectifier mains outage for at least 48 hours.

### 12.4.3. Test programming

The battery test can be made automatic from the control panel by setting the frequency, the day of the week and the time.

*Title screen / battery / battery test programming*

|                                    |                 |
|------------------------------------|-----------------|
| BATTERY : BATTERY TEST PROGRAMMING |                 |
| BATTERY TEST:                      | inactive        |
| PROGRAMMED ON:                     | Friday at 20:00 |
| EVERY:                             | 8 days ?        |

### 12.4.4. Starting the manual test

The test conditions being fulfilled, the manual test can be started by entering the menu "BATTERY / BATT MANUAL TEST".

## 12.5.UPS general data

### 12.5.1. Diagnostic codes

*Title screen / UPS general data / diagnostic codes.*

| UPS GENERAL DATA: DIAGNOSTIC CODES |           |           |            |
|------------------------------------|-----------|-----------|------------|
|                                    | STATUS    | ALARMS    | DIAGNOSTIC |
| RECT:                              | I00100000 | I00000000 | I00000000  |
| INV:                               | I00C00000 | I00000000 | I00000000  |
| BYP:                               | I00001000 | I00000000 | I00000000  |
| COM:                               | I00000000 | I00000000 | I00000000  |
| SYN:                               | I00000000 | I00000000 | I00000000  |

The summary of diagnostic codes enables the display on one single screen all basic information. Items are coded by subset and by category (Status, Alarms, Faults). For the global overview, the information is displayed in hexadecimal coding.

In case of UPS failure, the customer can transmit these codes to the CIM DEPARTMENT for complete diagnostic.

### 12.5.2. UPS references

This menu displays the following unit information :

- unit number,
- serial number,
- power in kVA.

### 12.5.3. Auxiliary inputs

Depending on the communication PCBs installed and the relays set, auxiliary inputs are available to report information that are external to the UPS.

## 12.6.Status menu

### 12.6.1. UPS general status

The activation or de-activation of each state is confirmed by YES or NO.

By means of the up and down keys, you can scroll the list.

At the beginning of the list ▲ is not displayed, and ▼ is not displayed at its end.

### 12.6.2. List of STATUS for single units and modular systems

| Wording                             | Comments                                                                        |
|-------------------------------------|---------------------------------------------------------------------------------|
| Bypass mains out of tolerances      | Bypass mains absent                                                             |
| Emergency stop                      | External information                                                            |
| Battery charging                    | Battery charging current > Battery floating current                             |
| Monitoring in remote mode           | Following a command on the control panel, the remote control is master          |
| SC conducts                         | ON request for static switch                                                    |
| Operation in ECO mode               |                                                                                 |
| Operation on generator set          | External information                                                            |
| Static switch KM40 closed           | Auxiliary contact of static switch KM40                                         |
| Output switch Q3 closed             | Auxiliary contact of switch Q3                                                  |
| Maintenance bypass switch Q5 closed | Auxiliary contact of switch Q5                                                  |
| Synchronise to bypass supply        | The inverter synchronisation source is the bypass mains                         |
| Synchronise to external supply      | The inverter synchronisation source is the external mains (UPS with ACS option) |

### 12.6.3. List of STATUS for central bypass systems

List of STATUS for central bypass cabinets

| Wording                             | Comments                                                                         |
|-------------------------------------|----------------------------------------------------------------------------------|
| Bypass mains out of tolerances      | Bypass mains absent                                                              |
| Emergency stop                      | External information                                                             |
| Monitoring in remote mode           | Following a command on the control panel, the remote control is master           |
| Static switch conducts              | The static switch is controlled                                                  |
| Operation on generator set          | External information                                                             |
| Units 1, 2, 3, 4, 5 and 6 operating |                                                                                  |
| Switch Q3 closed                    | auxiliary contact of switch Q3                                                   |
| Switch Q5 closed                    | auxiliary contact of switch Q5                                                   |
| Synchronise to bypass supply        | The inverter synchronisation source is the bypass mains                          |
| Synchronise to external supply      | The inverter synchronisation source is the external mains (UPS with ACS* option) |
| Load supplied by the inverter       |                                                                                  |
| Load supplied by the mains          |                                                                                  |
| Load not supplied                   |                                                                                  |
| Load supplied by maintenance bypass |                                                                                  |

List of STATUS for each module

| Wording                    | Comments                                            |
|----------------------------|-----------------------------------------------------|
| Emergency stop             | External information                                |
| Battery charging           | Battery charging current > Battery floating current |
| Operation on generator set | External information                                |
| Static Switch KM40 closed  | Auxiliary contact of static switch KM40             |
| Output switch Q2 closed    | Auxiliary contact of switch Q2                      |

## 12.7. Clock

The UPS is fitted with a clock that enables the time and date of every event to be known.  
The clock can only be set from the control panel.

*Title screen / clock / programming*

|       |                   |
|-------|-------------------|
|       | I PROGRAMMING     |
|       | I                 |
|       | I FRIDAY 09:09:21 |
|       | I                 |
|       | I                 |
|       | I 30/05/2000      |
|       | I                 |
| CLOCK | I                 |

The "ENTER" key enables to select the field to be modified.  
The "ESC" key enables to return to the previous field.  
The scrolling keys "▲ ▼" enable to change the parameters of the selected field.

## 12.8. Configuration

### 12.8.1. Language

Six different languages are available : French, English, German, Italian, Spanish and Dutch.  
You can choose three of them to be programmed on the control panel.

*Title screen / configuration / language*

|                         |          |
|-------------------------|----------|
| CONFIGURATION: LANGUAGE |          |
| ▲                       |          |
| Language:               | FRENCH   |
| ▼                       |          |
| cancel                  | validate |
| ESC                     | ENTER    |

The scrolling "▲ ▼" enable to select the appropriate language.

### 12.8.2. Buzzer

The buzzer can be activated or de-activated when the alarm appears by means of the scrolling keys "▲ ▼". The buzzer is activated by default.

*Title screen / configuration / buzzer.*

|                      |                   |
|----------------------|-------------------|
| CONFIGURATION:BUZZER |                   |
| Buzzer: YES          | ▲<br>▼            |
| cancel<br>ESC        | validate<br>ENTER |

### 12.8.3. Access code

The access code enables to lock the access to the following menus :

- UPS COMMANDS,
- OPERATING MODE,
- BATTERY / BATT TEST PROGRAMMING,
- SUBSET COMMAND,
- CLOCK,
- CONFIGURATION,
- JBUS LINK.

*Title screen / configuration / access code.*

|                             |
|-----------------------------|
| CONFIGURATION : ACCESS CODE |
| Type new access code:?????? |

The "ENTER" key enables to select the field to be modified.

The "ESC" key enables to return to the previous field.

Keys "▲ ▼" enable to change the parameters of the selected field.

This code can only be set from the control panel. It can contain up to 6 characters from "A" to "Z" and "0" to "9".

For coding with less than 6 characters, validation key needs to be pressed up to the sixth character, and once more for validation.

|                            |          |
|----------------------------|----------|
| CONFIGURATION: ACCESS CODE |          |
| CONFIRM NEW                |          |
| ACCESS CODE: ??????        |          |
| cancel                     | validate |
| ESC                        | ENTER    |

Note : the access code is only activated when the display is in standby, i.e. after 4 minutes without action on any key.

#### 12.8.4. Local / Remote

The UPS can be fitted with a remote control. By default the control panel is the master while the remote control is the slave. The local / remote menu enables the operator to convert the remote control into the master : thus the control panel automatically has slave function. This command can only be made from the local control panel.

*Title screen / configuration / local - remote*

|                                       |          |
|---------------------------------------|----------|
| CONFIGURATION: LOCAL - REMOTE         |          |
| ▲<br>Switch to: LOCAL MONITORING<br>▼ |          |
| cancel                                | validate |
| ESC                                   | ENTER    |

#### 12.9. JBUS link

Note : the JBUS link menu is only displayed if the setting is available on the UPS.

Configuration parameters are :

- the baudrate (1200 to 19200),
- the parity (none, even, odd),
- the slave number (001 to 255).

*Title screen / JBUS link / programming.*

|           |                   |
|-----------|-------------------|
|           | I PROGRAMMING     |
|           | I                 |
|           | I baudrate: 19200 |
|           | I                 |
|           | I Parity: NONE    |
|           | I                 |
|           | I Slave: 001      |
| JBUS LINK | I                 |

## 12.10. List of alarms

### 12.10.1. Display of activated alarms

When an alarm is activated, the description is displayed and an audible signal is given.

### 12.10.2. Resetting an alarm

The alarms can be reset by means of the "ENTER" key. Thus, the audible alarm is silenced, but its description remains displayed as long as the alarm is activated. If several alarms are displayed, each of them needs to be silenced individually.

### 12.10.3. List of alarms for single units and modular systems

| Wording                   | Comments                                                                                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Load imminent stop        | Informs about the risk of unit uncoupling                                                                                     |
| Battery discharged        | End of back up time                                                                                                           |
| Operating on battery      | The UPS is operating on battery                                                                                               |
| Battery general alarm     | May be several causes : end of slow discharge, battery connection open, battery discharged.                                   |
| Battery test interrupted  | Battery failed                                                                                                                |
| Battery protection open   | Switch Q20 is open                                                                                                            |
| Transfer locked           | Due to 4 transfers within 60 seconds<br>Inverter or mains source can still be chosen.                                         |
| Transfer impossible       | The load can not be transferred from one source to the other (mains or inverter)                                              |
| Battery room alarm        | Information concerning the battery room                                                                                       |
| Maintenance bypass alarm  | Q5 and Q3 closed simultaneously                                                                                               |
| Bypass general alarm      | Activated if an alarm or a fault occurred on the bypass                                                                       |
| Inverter general alarm    | Activated for every fault or alarm related to the inverter                                                                    |
| UPS overloaded            | While on inverter, if the load rate is > 103%<br>While on mains, if the load rate is > 105%                                   |
| Rectifier general alarm   | Activated for every fault related to the rectifier                                                                            |
| Monitoring general alarm  | Summary of alarms of the unit monitoring.                                                                                     |
| Mimic panel general alarm | Communication failure between:<br>- the mimic panel and the Com-slot frame,<br>- the mimic panel and the micro controller PCB |

#### 12.10.4. List of alarms for central bypass systems

##### List on the central bypass cabinet

| Wording                                  | Comments                                                                                                                      |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Imminent stop                            | Informs about the risk of load disconnection                                                                                  |
| Transfer blocked                         | Due to 4 transfers within 60 seconds (set by default)<br>Inverter or mains source can still be chosen.                        |
| Transfer impossible                      | The load can not be transferred from one source to the other (mains or inverter)                                              |
| Battery local alarm                      | Information concerning the battery room                                                                                       |
| Maintenance bypass fault                 | Q5 and Q3 closed simultaneously                                                                                               |
| Bypass general alarm                     | Activated if an alarm or a fault occurred on the bypass                                                                       |
| Inverter general alarm                   | Activated for every fault or alarm related to the inverter                                                                    |
| UPS overloaded                           | While on inverter, if the load rate is > 103%<br>While on mains, if the load rate is > 105%                                   |
| Monitoring general alarm                 | Summary of alarms of the unit monitoring                                                                                      |
| Mimic panel general alarm                | Communication failure between:<br>- the mimic panel and the Com-slot frame,<br>- the mimic panel and the micro controller PCB |
| General alarm on unit 1, 2, 3, 4, 5 or 6 | Informs about the unit failure                                                                                                |
| Alarm loss of redundancy                 | Refers to a redundant system where the loss of one unit causes an overload on the remaining units                             |

##### List of alarms of the module

| Wording                   | Comments                                                                                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Imminent stop             | Informs about the risk of unit uncoupling                                                                                     |
| Battery discharged        | End of back up time of the unit                                                                                               |
| Operating on battery      | The UPS is operating on battery (battery discharging)                                                                         |
| Battery alarm             | May be several causes : end of slow discharge, battery connection open, battery discharged.                                   |
| Battery test interrupted  | Battery can not supply energy                                                                                                 |
| Battery circuit open      | Switch Q20 is open                                                                                                            |
| Battery local alarm       | Information concerning the battery room                                                                                       |
| Inverter general alarm    | Activated for every fault or alarm related to the inverter                                                                    |
| Unit overloaded           | While on inverter, if the load rate is > 103%                                                                                 |
| Rectifier general alarm   | Activated for every fault related to the rectifier                                                                            |
| Monitoring general alarm  | Summary of alarms of the unit monitoring                                                                                      |
| Mimic panel general alarm | Communication failure between:<br>- the mimic panel and the Com-slot frame,<br>- the mimic panel and the micro controller PCB |