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 IEC EN 62040-2 standard.

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

SOCOMET UPS reserves the right to modify their specifications at any time as far as this contributes to technical progress.

SAVETY REQUIREMNENT

Using conditions:
Do read carefully these operation instructions before using the JBUS/MODBUS interface.

Whatever the repairs, they must be made only by authorised staffs, which 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.

UPS operating reference
Respect the safety requirements.

Do read carefully the operation instructions of DELPHYS MX / MP.

For an optimal operation, it is recommended to maintain the ambient temperature and humidity of the UPS environment 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:

ENVIRONMENT

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.
INTRODUCTION

General purpose

This document provides required information of the JBUS/MODBUS protocol serial link.

Before connecting a supervision equipment or BMS system (Building management system) to the UPS, it is necessary to install and set up the serial interface.

This interface is located in the DELPHYS MX / MP « com-slot », and should be set through the control panel or via the graphic touch screen (optional).

DELPHYS MX / MP is able to manage up to 2 independent JBUS/MODBUS serial links.

JBUS/MODBUS protocol

This document does not explain the JBUS/MODBUS protocol management. Please refer on www.modbus.org web site for more information.

The DELPHYS MX / MP JBUS/MODBUS uses the following functions :
- function 3 for reading Input Registers (16 bits),
- function 6 for writing single Registers (to control UPS).

The data field is composed of words, defined by a MSB (most significant byte) and a LSB (lowest significant byte), and displayed in the following order on the serial link.

<table>
<thead>
<tr>
<th>b7</th>
<th>b0</th>
<th>b7</th>
<th>b0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 WORD DATA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data decoding

Status and alarms Information
This information are coding in bit. This means that 1 word defines 16 information. If the related bit is set to 1, this information is active or true.

Measurements and counters data
1 word defines a measurement or a counter. Some values are numeric decimal signed or unsigned (0 to 65535 or from -32767 to 32767), or in hexadecimal (0x0000 to 0xFFFF).

Compatibility with other SOCOMEC UPS products

In order to be fully compatible with other SOCOMEC UPS products such as MASTERYS, DELPHYS DS and DELPHYS DS elite, DELPHYS MX / MP proposes the same JBUS/MODBUS tables.
The « Com-Slots » integrates all communication interfaces, and it is located at the bottom of the UPS, on the right side. Slots 5 and 6 are dedicated to JBUS/MODBUS serial interfaces. Slots 1 to 4 are used for the alarm report boards, 3 inputs and 4 programmable relays (ADC).

**JBUS/MODBUS serial interface plug in**

The serial interface should be plugged in the corresponding slot, and fixed with 2 crews. *DELPHYS MX / MP* is able to manage up to 2 independent JBUS/MODBUS interfaces. Each interface can be set differently, like the slave numbers.

**JBUS interface in parallel system configuration**

There is only one JBUS/MODBUS serial link interface for a parallel system configuration. One serial interface is used for the whole installation. The access to the data of the UPS module or unit is managed by the table addressing¹.

¹ See chapter 5
Connections and cabling

**NOTE**: there is only one connection per interface (RS232 or RS422 or RS485)

- **RS232 connection**
  - Standard PC connection
  - Sub-D 9 pins connector
  - Pin 2 : Rx
  - Pin 3 : Tx
  - Pin 5 : GND

- **Isolated RS485 connection**
  - 2 wires connection
  - « dip-switch 1 » allows connecting the terminal resistor
  - Isolation via “opto-coupler”
  - 2 polarization resistors could be removed easily (if needed).

- **Isolated RS422 connection**
  - 4 wires connection
  - « dip-switch 1 and 2 » allows connecting the terminal resistors
  - Isolation via “opto-coupler”
  - 4 polarization resistors could be removed easily (if needed).

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**RECOMMENDATIONS**
Before making any connection, please check the cabling. A wrong connection or cabling can damage the serial link interface.
JBUS/MODBUS LINK

Serial link 1 and 2 default settings

Baud rate: 9600 bauds
Parity: NONE
Data: 8 bits
Stop: 1 bit
Slave: 1

The serial link settings can be set from the control panel or from the graphic touch screen.

How to change the serial link settings?

Available baud rate: 1200 - 2400 - 4800 - 9600 - 19200 bauds
Parity: EVEN - ODD - NONE
Slave number: 1 to 32

Settings screen of the control panel (last menu)

Select the settings with ENTER
Change the value with \ and \n
Graphic touch screen:

JBUS/MODBUS 1 settings are linked to the interface located in slot 5.
JBUS/MODBUS 2 settings are linked to the interface located in slot 6.

The serial interface should be activated by the CIM or the factory during the UPS commissioning.
**JBUS/MODBUS Protocol**

**Reminder:**
The JBUS/MODBUS protocol available on DELPHYS MX / MP is slave and in RTU mode. It uses the function 3 as ‘read registers’ and the function 6 as ‘write register’. The slave number is set via the control panel or via the graphic touch screen.

**Conventions**
The table addresses are written in hexadecimal, beginning with ‘0x’. Some PLC systems request a relative address starting from 400 (0x0190) or 40001 (0x9C41), on this address it’s necessary to add the first address of the JBUS/MODBUS table.

**Frame errors management:**
In case of wrong data request, the UPS answers with the following frame error:

<table>
<thead>
<tr>
<th>Error function code</th>
<th>Error code</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 + code function</td>
<td>1</td>
<td>Function error</td>
</tr>
<tr>
<td>80 + code function</td>
<td>2</td>
<td>Addresses error</td>
</tr>
<tr>
<td>80 + code function</td>
<td>3</td>
<td>Wrong data</td>
</tr>
<tr>
<td>80 + code function</td>
<td>6</td>
<td>busy</td>
</tr>
<tr>
<td>80 + code function</td>
<td>8</td>
<td>Write register error</td>
</tr>
</tbody>
</table>
SINGLE UNIT UPS JBUS/MODBUS TABLES

**JBUS/MODBUS tables**

<table>
<thead>
<tr>
<th>§</th>
<th>TABLE</th>
<th>Start addresses</th>
<th>Table length in words</th>
<th>JBUS/MODBUS FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UPS Identification</td>
<td>0x1000</td>
<td>12</td>
<td>3 READ</td>
</tr>
<tr>
<td>2</td>
<td>Date and hours</td>
<td>0x1360</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>3</td>
<td>UPS Configurations</td>
<td>0x10E0</td>
<td>32</td>
<td>3 READ</td>
</tr>
<tr>
<td>4</td>
<td>Status (96 bits)</td>
<td>0x1020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>5</td>
<td>Alarms (64 bits)</td>
<td>0x1040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>6</td>
<td>Measurements</td>
<td>0x1060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>7</td>
<td>Controls permission</td>
<td>0x15C0</td>
<td>2</td>
<td>3 READ</td>
</tr>
<tr>
<td>8</td>
<td>UPS Controls</td>
<td>0x15B0</td>
<td>1</td>
<td>6 WRITE</td>
</tr>
</tbody>
</table>

**How to read data:**
The identification, status and alarms tables should be read completely (this means the number of words to read is equal to the table length).
The measurements table could be read word by word or per group, without exceed the length of the table (from 0x1060 to 0x108F).

**Incoming data structure:**

**Example of 6 words**

<table>
<thead>
<tr>
<th>MSB 0</th>
<th>LSB 0</th>
<th>MSB 1</th>
<th>LSB 1</th>
<th>MSB 2</th>
<th>LSB 2</th>
<th>MSB 3</th>
<th>LSB 3</th>
<th>MSB 4</th>
<th>LSB 4</th>
<th>MSB 5</th>
<th>LSB 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>WORD 0</td>
<td>WORD 1</td>
<td>WORD 2</td>
<td>WORD 3</td>
<td>WORD 4</td>
<td>WORD 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b15</td>
<td>b0</td>
<td>b15</td>
<td>b0</td>
<td>b15</td>
<td>b0</td>
<td>b15</td>
<td>b0</td>
<td>b15</td>
<td>b0</td>
<td>b15</td>
<td>b0</td>
</tr>
<tr>
<td>S15</td>
<td>S00</td>
<td>S31</td>
<td>S16</td>
<td>S47</td>
<td>S32</td>
<td>S63</td>
<td>S48</td>
<td>S79</td>
<td>S64</td>
<td>S95</td>
<td>S80</td>
</tr>
<tr>
<td>A15</td>
<td>A00</td>
<td>A31</td>
<td>A16</td>
<td>A47</td>
<td>A32</td>
<td>A63</td>
<td>A48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M00</td>
<td>M01</td>
<td>M02</td>
<td>M03</td>
<td>M04</td>
<td>M05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**‘Concentrator mode’ in parallel system configuration**
The above JBUS/MODBUS table can be used in case of a parallel system configuration. The TOR data from all units or modules are managed in order to create a ‘virtual single unit’. The logic combination ‘OR’ is used to create the single unit data base, except following states and alarms:

<table>
<thead>
<tr>
<th>Information</th>
<th>Combination if redundant UPS</th>
<th>Combination if not redundant UPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>S00</td>
<td>OR</td>
<td>AND</td>
</tr>
<tr>
<td>S05</td>
<td>AND</td>
<td>OR</td>
</tr>
<tr>
<td>S15</td>
<td>AND</td>
<td>OR</td>
</tr>
<tr>
<td>A02</td>
<td>AND</td>
<td>OR</td>
</tr>
<tr>
<td>A07</td>
<td>AND</td>
<td>OR</td>
</tr>
<tr>
<td>A31</td>
<td>AND</td>
<td>OR</td>
</tr>
</tbody>
</table>
1. **UPS IDENTIFICATION**: Address 0x1000, 12 words

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>Number of Words</th>
<th>ADDRESS</th>
<th>Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>I00</td>
<td>UPS CODE</td>
<td>1 WORD</td>
<td>0x1000</td>
<td>Numeric value</td>
<td>515 = DELPHYS MX 516 = DELPHYS MX elite</td>
</tr>
<tr>
<td>I01</td>
<td>UPS Power</td>
<td>1 WORD</td>
<td>0x1001</td>
<td>Numeric value</td>
<td>In kVA * 10 5000 = 500kVA</td>
</tr>
<tr>
<td>I02</td>
<td>Module number</td>
<td>1 WORD</td>
<td>0x1002</td>
<td>Numeric value</td>
<td>1</td>
</tr>
<tr>
<td>I03</td>
<td>Serial number</td>
<td>5 WORDS</td>
<td>0x1003</td>
<td>1 word = 2 ASCII codes</td>
<td>LSB = 1. char  MSB = 2. char  UPS Code:CCCCCCaYYYYYYYYYYNNn  Code read :aXXXXXXXXXXn</td>
</tr>
<tr>
<td>I04</td>
<td>Reserved</td>
<td>1 WORD</td>
<td>0x1008</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I05</td>
<td>Reserved</td>
<td>1 WORD</td>
<td>0x1009</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I06</td>
<td>Reserved</td>
<td>1 WORD</td>
<td>0x100A</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I07</td>
<td>Reserved</td>
<td>1 WORD</td>
<td>0x100B</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

2. **DATE & HOURS**: Address 0x1360, 4 words

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>Number of Words</th>
<th>Address</th>
<th>Type</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>D00</td>
<td>Minutes / seconds</td>
<td>1</td>
<td>0x1360</td>
<td>Byte value</td>
<td>MSB = minutes  LSB = seconds</td>
</tr>
<tr>
<td>D01</td>
<td>Hours / day</td>
<td>1</td>
<td>0x1361</td>
<td>Byte value</td>
<td>MSB = day  LSB = hours</td>
</tr>
<tr>
<td>D02</td>
<td>Month / day of week</td>
<td>1</td>
<td>0x1362</td>
<td>Byte value</td>
<td>MSB = month  LSB = day of the week 1=Monday 7=Sunday</td>
</tr>
<tr>
<td>D03</td>
<td>year</td>
<td>1</td>
<td>0x1363</td>
<td>00 = 2000</td>
<td></td>
</tr>
</tbody>
</table>

3. **UPS CONFIGURATION**: Address 0x10E0, 32 words

<table>
<thead>
<tr>
<th>Code</th>
<th>Measurements</th>
<th>Unit</th>
<th>Address</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>T00</td>
<td>Nominal start input voltage</td>
<td>V</td>
<td>0x10E0</td>
<td></td>
</tr>
<tr>
<td>T01</td>
<td>Nominal start output voltage</td>
<td>V</td>
<td>0x10E1</td>
<td></td>
</tr>
<tr>
<td>T02</td>
<td>Nominal input frequency</td>
<td>Hz</td>
<td>0x10E2</td>
<td></td>
</tr>
<tr>
<td>T03</td>
<td>Nominal output frequency</td>
<td>Hz</td>
<td>0x10E3</td>
<td></td>
</tr>
<tr>
<td>T04</td>
<td>Version</td>
<td>value * 100</td>
<td>0x10E4</td>
<td>100 = V1.00</td>
</tr>
<tr>
<td>T05</td>
<td></td>
<td></td>
<td>0x10E5</td>
<td></td>
</tr>
<tr>
<td>T06</td>
<td></td>
<td></td>
<td>0x10E6</td>
<td></td>
</tr>
<tr>
<td>T07</td>
<td></td>
<td></td>
<td>0x10E7</td>
<td></td>
</tr>
<tr>
<td>T08</td>
<td>Nominal battery capacity</td>
<td>Ah * 10</td>
<td>0x10E8</td>
<td>3000 = 300Ah</td>
</tr>
<tr>
<td>T09</td>
<td>Number of battery elements</td>
<td></td>
<td>0x10E9</td>
<td></td>
</tr>
<tr>
<td>T10</td>
<td>Reserved</td>
<td></td>
<td>0x10EA</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>T11</td>
<td>Reserved</td>
<td></td>
<td>0x10EB</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>T12</td>
<td>Reserved</td>
<td></td>
<td>0x10EC</td>
<td></td>
</tr>
<tr>
<td>T13</td>
<td>Working mode</td>
<td>Bits field</td>
<td>0x10ED</td>
<td>b0 not used  b1 = with battery  b2 = Gen Set present  b3 = ‘energy saver’ enabled</td>
</tr>
<tr>
<td>T14</td>
<td>Redundancy level (only in //)</td>
<td>value</td>
<td>0x10EE</td>
<td>0 = without  1 = N+1</td>
</tr>
<tr>
<td>T15</td>
<td>Reserved</td>
<td></td>
<td>0x10EF</td>
<td>100</td>
</tr>
<tr>
<td>T16</td>
<td>Reserved</td>
<td></td>
<td>0x10F0</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>T31</td>
<td></td>
<td></td>
<td>0x10FF</td>
<td></td>
</tr>
</tbody>
</table>
4. **STATUS: Address 0x1020, 6 words**

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>BIT</th>
<th>ADDRESS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>S00</td>
<td>Rectifier Input supply present</td>
<td>0</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S01</td>
<td>Inverter ON</td>
<td>1</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S02</td>
<td>Rectifier ON</td>
<td>2</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S03</td>
<td>Load protected by inverter</td>
<td>3</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S04</td>
<td>Load on automatic bypass</td>
<td>4</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S05</td>
<td>Load on battery</td>
<td>5</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S06</td>
<td>Remote controls disable</td>
<td>6</td>
<td>0x1020</td>
<td>0 = controls enabled</td>
</tr>
<tr>
<td>S07</td>
<td>Eco-mode ON</td>
<td>7</td>
<td>0x1020</td>
<td>If this function is available</td>
</tr>
<tr>
<td>S08</td>
<td></td>
<td>8</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S09</td>
<td></td>
<td>9</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S10</td>
<td></td>
<td>10</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S11</td>
<td></td>
<td>11</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S12</td>
<td></td>
<td>12</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S13</td>
<td></td>
<td>13</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S14</td>
<td>Battery test failed</td>
<td>14</td>
<td>0x1020</td>
<td></td>
</tr>
<tr>
<td>S15</td>
<td>Battery near end of backup time</td>
<td>15</td>
<td>0x1020</td>
<td>IMMINENT STOP and end of backup time</td>
</tr>
<tr>
<td>S16</td>
<td>Battery discharged</td>
<td>0</td>
<td>0x1021</td>
<td>No alarm and battery circuit closed</td>
</tr>
<tr>
<td>S17</td>
<td>Battery OK</td>
<td>1</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S18</td>
<td></td>
<td>2</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S19</td>
<td></td>
<td>3</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S20</td>
<td></td>
<td>4</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S21</td>
<td></td>
<td>5</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S22</td>
<td></td>
<td>6</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S23</td>
<td></td>
<td>7</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S24</td>
<td></td>
<td>8</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S25</td>
<td></td>
<td>9</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S26</td>
<td>Bypass input supply present</td>
<td>10</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S27</td>
<td>Battery charging</td>
<td>11</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S28</td>
<td>Bypass input frequency out of tolerance</td>
<td>12</td>
<td>0x1021</td>
<td>Set to 1</td>
</tr>
<tr>
<td>S29</td>
<td></td>
<td>13</td>
<td>0x1021</td>
<td></td>
</tr>
<tr>
<td>S30</td>
<td>UPS on parallel system</td>
<td>14</td>
<td>0x1021</td>
<td>= 0 for single unit</td>
</tr>
<tr>
<td>S31</td>
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Status without description are not managed by DELPHYS MX / MP.
### 5. ALARMS: Address 0x1040, 4 words

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Alarms without description are not managed by DELPHYS MX / MP.
### 6. MEASUREMENTS: Address 0x1060, up to 48 words

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</tr>
<tr>
<td>M05</td>
<td>Battery Capacity</td>
<td>Ah*10</td>
<td>0x1065</td>
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</tr>
<tr>
<td>M06</td>
<td>Input bypass voltage phase 1</td>
<td>V</td>
<td>0x1066</td>
<td></td>
</tr>
<tr>
<td>M07</td>
<td>Input bypass voltage phase 2</td>
<td>V</td>
<td>0x1067</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M08</td>
<td>Input bypass voltage phase 3</td>
<td>V</td>
<td>0x1068</td>
<td>Set to 0xFFFF if one phase</td>
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<tr>
<td>M09</td>
<td>Output voltage phase 1</td>
<td>V</td>
<td>0x1069</td>
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<tr>
<td>M10</td>
<td>Output voltage phase 2</td>
<td>V</td>
<td>0x106A</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M11</td>
<td>Output voltage phase 3</td>
<td>V</td>
<td>0x106B</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M12</td>
<td></td>
<td></td>
<td>0x106C</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M13</td>
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<td></td>
<td>0x106D</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
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<td>M14</td>
<td></td>
<td></td>
<td>0x106E</td>
<td>Set to 0xFFFF (-1)</td>
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<td>M15</td>
<td>Output current phase 1</td>
<td>A*10</td>
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</tr>
<tr>
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<td>A*10</td>
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<td>A*10</td>
<td>0x1071</td>
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<td>M18</td>
<td>Input bypass frequency</td>
<td>Hz*10</td>
<td>0x1072</td>
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<td>M19</td>
<td>Output frequency</td>
<td>Hz*10</td>
<td>0x1073</td>
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<td>M20</td>
<td>Battery voltage (+)</td>
<td>V*10</td>
<td>0x1074</td>
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</tr>
<tr>
<td>M21</td>
<td>Battery voltage (-)</td>
<td>V*10</td>
<td>0x1075</td>
<td>Set to 0</td>
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<tr>
<td>M22</td>
<td>Ambient Temperature</td>
<td>°C</td>
<td>0x1076</td>
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<tr>
<td>M23</td>
<td>Remaining backup time</td>
<td>Minutes</td>
<td>0x1077</td>
<td>Set when the load is on battery</td>
</tr>
<tr>
<td>M24</td>
<td>Battery current</td>
<td>A*10</td>
<td>0x1078</td>
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<td>M25</td>
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<td>0x1079</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M26</td>
<td></td>
<td></td>
<td>0x107A</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M27</td>
<td></td>
<td></td>
<td>0x107B</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M28</td>
<td>Rectifier voltage (+)</td>
<td>V</td>
<td>0x107C</td>
<td></td>
</tr>
<tr>
<td>M29</td>
<td>Rectifier voltage (-)</td>
<td>V</td>
<td>0x107D</td>
<td>Set to 0</td>
</tr>
<tr>
<td>M30</td>
<td></td>
<td></td>
<td>0x107E</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M31</td>
<td></td>
<td></td>
<td>0x107F</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M32</td>
<td></td>
<td></td>
<td>0x1080</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
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<td>M33</td>
<td>Rectifier input voltage phase 1</td>
<td>V</td>
<td>0x1081</td>
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</tr>
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<td>M34</td>
<td>Rectifier input voltage phase 2</td>
<td>V</td>
<td>0x1082</td>
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</tr>
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<td>M35</td>
<td>Rectifier input voltage phase 3</td>
<td>V</td>
<td>0x1083</td>
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<tr>
<td>M36</td>
<td>UPS output power</td>
<td>kW*10</td>
<td>0x1084</td>
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<td>M37</td>
<td>Output power phase 1</td>
<td>kVA*10</td>
<td>0x1085</td>
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</tr>
<tr>
<td>M38</td>
<td>Output power phase 2</td>
<td>kVA*10</td>
<td>0x1086</td>
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<td>kVA*10</td>
<td>0x1087</td>
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</tr>
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<td></td>
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<td>0x1089</td>
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<td>M42</td>
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<td></td>
<td>0x108A</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M43</td>
<td></td>
<td></td>
<td>0x108B</td>
<td></td>
</tr>
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<td>M44</td>
<td></td>
<td></td>
<td>0x108C</td>
<td></td>
</tr>
<tr>
<td>M45</td>
<td></td>
<td></td>
<td>0x108D</td>
<td></td>
</tr>
<tr>
<td>M46</td>
<td></td>
<td></td>
<td>0x108E</td>
<td></td>
</tr>
<tr>
<td>M47</td>
<td></td>
<td></td>
<td>0x108F</td>
<td></td>
</tr>
</tbody>
</table>
7. **ENABLED CONTROLS TABLE:** Address 0x15C0, 2 words

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>BIT</th>
<th>ADDRESSES</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
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<tr>
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<tr>
<td>C02</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C03</td>
<td>Eco-mode enabled</td>
<td>3</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C04</td>
<td>normal Mode enabled</td>
<td>4</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C05</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C06</td>
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<tr>
<td>C07</td>
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<td></td>
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</tr>
<tr>
<td>C09</td>
<td></td>
<td>9</td>
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<td></td>
</tr>
<tr>
<td>C10</td>
<td>Automatic Bypass transfer enabled</td>
<td>10</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td>Inverter transfer enabled</td>
<td>11</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C12</td>
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<td>C15</td>
<td></td>
<td>15</td>
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</tr>
<tr>
<td>C16</td>
<td>Battery test enabled</td>
<td>1</td>
<td>0x15C1</td>
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</tr>
<tr>
<td>C17</td>
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<td>2</td>
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</tr>
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<td>C18</td>
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<tr>
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<tr>
<td>C21</td>
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</tr>
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<td>C22</td>
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</tr>
<tr>
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<td>C27</td>
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</tr>
<tr>
<td>C31</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. **CONTROLS SEND TO UPS:** Address 0x15B0, write 1 words

For a remote UPS control, it is necessary to set the serial interface in “remote” mode using the Human Machine Interface. Local controls of the control panel or graphic touch screen are no more available.

The control table below shows if the selected control is allowed or not. If the control sent to the UPS is not allowed, the function will be ignored.

*Controls available by JBUS/MODBUS connection:*

<table>
<thead>
<tr>
<th>Code</th>
<th>Controls</th>
<th>Value to write</th>
<th>ADDRESS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C03</td>
<td>Eco-mode</td>
<td>0x0003</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C04</td>
<td>Normal mode</td>
<td>0x0004</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C10</td>
<td>Automatic bypass transfer</td>
<td>0x000A</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td>Inverter transfer</td>
<td>0x000B</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test</td>
<td>0x0010</td>
<td>0x15B0</td>
<td></td>
</tr>
</tbody>
</table>
Reminder

In UPS parallel system configuration, there is only one JBUS/MODBUS interface. The addresses mapping gives the possibility to read data from each module and common bypass. There is no link between the JBUS/MODBUS salve number and the UPS unit or module one. The interface is plugged in the ‘com-slots’ of the common cabinet is case of central bypass installation or in the UPS unit 1 “com slots” in case of modular system (see bellow).

How to read data:

The identifications, status and alarms tables should be read completely in one JBUS/MODBUS frame; this means the number of word to read is equal to the table length.

The measurements table could be read word by word, without exceed the length of the table. (from 0x1060 to 0x108F).

Incoming data structure:

<table>
<thead>
<tr>
<th>Example of 6 words</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
</tr>
<tr>
<td>MSB 0 LSB 0 MSB 1 LSB 1 MSB 2 LSB 2 MSB 3 LSB 3 MSB 4 LSB 4 MSB 5 LSB 5</td>
</tr>
<tr>
<td>WORD 0 WORD 1 WORD 2 WORD 3 WORD 4 WORD 5</td>
</tr>
<tr>
<td>b15 b0 b15 b0 b15 b0 b15 b0 b15 b0 b15 b0</td>
</tr>
<tr>
<td>S15 S00 S31 S16 S47 S32 S63 S48 S79 S64 S95 S80</td>
</tr>
<tr>
<td>A15 A00 A31 A16 A47 A32 A63 A48</td>
</tr>
<tr>
<td>M00 M01 M02 M03 M04 M05</td>
</tr>
</tbody>
</table>

JBUS/MODBUS link setting

The setting of the link is made from the control panel or from the graphic touch screen of the common cabinet or of the UPS unit 1.
### JBUS/MODBUS tables in parallel system configuration with central bypass (AC)

<table>
<thead>
<tr>
<th>TABLE</th>
<th>Start addresses</th>
<th>Table length in words</th>
<th>JBUS/MODBUS FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification</td>
<td>0x8000</td>
<td>12</td>
<td>3 READ</td>
</tr>
<tr>
<td>Configurations</td>
<td>0x80E0</td>
<td>32</td>
<td>3 READ</td>
</tr>
<tr>
<td>Date and hours</td>
<td>0x8360</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>States CC (96 bits)</td>
<td>0x8020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms CC (64 bits)</td>
<td>0x8040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements CC</td>
<td>0x8060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 1 (96 bits)</td>
<td>0x2020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms module 1 (64 bits)</td>
<td>0x2040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements module 1</td>
<td>0x2060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 2 (96 bits)</td>
<td>0x3020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms module 2 (64 bits)</td>
<td>0x3040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements module 2</td>
<td>0x3060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 3 (96 bits)</td>
<td>0x4020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms module 3 (64 bits)</td>
<td>0x4040</td>
<td>4</td>
<td>3 READ</td>
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<td>Measurements module 3</td>
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<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 4 (96 bits)</td>
<td>0x5020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms module 4 (64 bits)</td>
<td>0x5040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements module 4</td>
<td>0x5060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 5 (96 bits)</td>
<td>0x6020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms module 5 (64 bits)</td>
<td>0x6040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements module 5</td>
<td>0x6060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States module 6 (96 bits)</td>
<td>0x7020</td>
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<td>Alarms module 6 (64 bits)</td>
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<td>Measurements module 6</td>
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<tr>
<td>Controls permission</td>
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</tr>
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<td>UPS Controls</td>
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### JBUS/MODBUS table in modular parallel system

<table>
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<tr>
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<th>Table length in words</th>
<th>JBUS/MODBUS FUNCTION</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Configurations UPS</td>
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<td>32</td>
<td>3 READ</td>
</tr>
<tr>
<td>Date and hours</td>
<td>0x1360</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Output UPS Measurements</td>
<td>0x8060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States unit 1 (96 bits)</td>
<td>0x2020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms unit 1 (64 bits)</td>
<td>0x2040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements unit 1</td>
<td>0x2060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States unit 2 (96 bits)</td>
<td>0x3020</td>
<td>6</td>
<td>3 READ</td>
</tr>
<tr>
<td>Alarms unit 2 (64 bits)</td>
<td>0x3040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements unit 2</td>
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<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States unit 3 (96 bits)</td>
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<td>6</td>
<td>3 READ</td>
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<td>3 READ</td>
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<tr>
<td>Measurements unit 3</td>
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<td>3 READ</td>
</tr>
<tr>
<td>States unit 4 (96 bits)</td>
<td>0x5020</td>
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<td>3 READ</td>
</tr>
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<td>Alarms unit 4 (64 bits)</td>
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<td>4</td>
<td>3 READ</td>
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<td>Measurements unit 4</td>
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<td>3 READ</td>
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<td>3 READ</td>
</tr>
<tr>
<td>Measurements unit 5</td>
<td>0x6060</td>
<td>48</td>
<td>3 READ</td>
</tr>
<tr>
<td>States unit 6 (96 bits)</td>
<td>0x7020</td>
<td>6</td>
<td>3 READ</td>
</tr>
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<td>Alarms unit 6 (64 bits)</td>
<td>0x7040</td>
<td>4</td>
<td>3 READ</td>
</tr>
<tr>
<td>Measurements unit 6</td>
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<td>48</td>
<td>3 READ</td>
</tr>
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### 1. UPS IDENTIFICATION: Address 0x1000 or 0x8000, 12 words

<table>
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<tr>
<th>CODE</th>
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<th>Number of WORDS</th>
<th>ADDRESS</th>
<th>Type</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>00</td>
<td>UPS CODE</td>
<td>1</td>
<td>0x1000</td>
<td>Numeric value</td>
<td>1018 = DELPHYS MX MODULAIRE.</td>
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<td></td>
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<td>1019 = DELPHYS MX // common by-pass</td>
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<td>1020 = DELPHYS MX elite modular</td>
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<td>1021 = DELPHYS MX elite // by-pass</td>
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<td>01</td>
<td>UPS Power</td>
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<td>0x1001</td>
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<td>ln kVA * 10</td>
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<td>5000 = 500kVA</td>
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<td>0x1003</td>
<td>1 word = 2 ASCII codes</td>
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<td>MSB = 2. char</td>
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<td>UPS Code:CCCCCCaYXXXXXXXXXNNn</td>
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<td>Code read :aXXXXXXXXXn</td>
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### 2. DATE & HOURS: Address 0x1360 or 0x8360, 4 words

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<tr>
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<td>Minutes / seconds</td>
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<td>0x1360</td>
<td>Byte value</td>
<td>MSB = minutes</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>LSB = seconds</td>
</tr>
<tr>
<td>01</td>
<td>Hours / day</td>
<td>1</td>
<td>0x1361</td>
<td>Byte value</td>
<td>MSB = day</td>
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<td></td>
<td></td>
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<td>LSB = hours</td>
</tr>
<tr>
<td>02</td>
<td>Month / day of week</td>
<td>1</td>
<td>0x1362</td>
<td>Byte value</td>
<td>MSB = month</td>
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<td>LSB = day of the week</td>
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<td>year</td>
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### 3. USP CONFIGURATION: Address 0x10E0 or 0x80E0, 32 words

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<th>Unit</th>
<th>Address</th>
<th>REMARKS</th>
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<td>V</td>
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<td>01</td>
<td>Nominal start output voltage</td>
<td>V</td>
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<td>Nominal output frequency</td>
<td>Hz</td>
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<tr>
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<td>Version</td>
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<td>0x10E4</td>
<td>100 = V1.00</td>
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<td>0x10E6</td>
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<td>07</td>
<td></td>
<td></td>
<td>0x10E7</td>
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</tr>
<tr>
<td>08</td>
<td>Nominal battery capacity</td>
<td>Ah * 10</td>
<td>0x10E8</td>
<td>3000 = 300Ah</td>
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<tr>
<td>09</td>
<td>Number of battery elements</td>
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<td>0x10E9</td>
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<td>10</td>
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<td>0x10EA</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>11</td>
<td>Reserved</td>
<td></td>
<td>0x10EB</td>
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</tr>
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<td>0x10EC</td>
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<td>Bits field</td>
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<td>b0 not used</td>
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<td></td>
<td>b2 = Gen Set present</td>
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<td></td>
<td>b3 = ‘energy saver’ enabled</td>
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<tr>
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<td>Redundancy level</td>
<td>value</td>
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<td>..</td>
<td>Reserved</td>
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### Preliminary remarks

The following JBUS/MODBUS addresses tables only indicate the LSB byte, the MSB depends of the module number requested.

An ‘X’ in the ‘CC’ (central bypass), ‘Module’ or ‘Unit’ column means that this information is available on this equipment. Please refer to § 4.4 for more details.

#### 4. STATUS : Address 0x20, 6 words

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<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>BIT</th>
<th>ADDRESS LSB byte</th>
<th>CC</th>
<th>Module</th>
<th>Unit</th>
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<td>S00</td>
<td>Rectifier Input supply present</td>
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<th>DESCRIPTION</th>
<th>BIT</th>
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<th>CC</th>
<th>Module</th>
<th>Unit</th>
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For more detail, please refer to the single unit UPS table §1.5
### 6. MEASUREMENTS: Address 0x60, 48 words

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<td>0x6D</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M14</td>
<td></td>
<td></td>
<td>0x6E</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M15</td>
<td>Output current phase 1</td>
<td>A*10</td>
<td>0x6F</td>
<td></td>
</tr>
<tr>
<td>M16</td>
<td>Output current phase 2</td>
<td>A*10</td>
<td>0x70</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M17</td>
<td>Output current phase 3</td>
<td>A*10</td>
<td>0x71</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M18</td>
<td>Input bypass frequency</td>
<td>Hz*10</td>
<td>0x72</td>
<td></td>
</tr>
<tr>
<td>M19</td>
<td>Output frequency</td>
<td>Hz*10</td>
<td>0x73</td>
<td></td>
</tr>
<tr>
<td>M20</td>
<td>Battery voltage (+)</td>
<td>V*10</td>
<td>0x74</td>
<td></td>
</tr>
<tr>
<td>M21</td>
<td>Battery voltage (-)</td>
<td>V*10</td>
<td>0x75</td>
<td>Set to 0</td>
</tr>
<tr>
<td>M22</td>
<td>Ambient Temperature</td>
<td>°C</td>
<td>0x76</td>
<td></td>
</tr>
<tr>
<td>M23</td>
<td>Remaining backup time</td>
<td>Minutes</td>
<td>0x77</td>
<td>Set when the load is on battery</td>
</tr>
<tr>
<td>M24</td>
<td>Battery current</td>
<td>A*10</td>
<td>0x78</td>
<td></td>
</tr>
<tr>
<td>M25</td>
<td></td>
<td></td>
<td>0x79</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M26</td>
<td></td>
<td></td>
<td>0x7A</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M27</td>
<td></td>
<td></td>
<td>0x7B</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M28</td>
<td>Rectifier voltage (+)</td>
<td>V</td>
<td>0x7C</td>
<td></td>
</tr>
<tr>
<td>M29</td>
<td>Rectifier voltage (-)</td>
<td>V</td>
<td>0x7D</td>
<td>Set to 0</td>
</tr>
<tr>
<td>M30</td>
<td></td>
<td></td>
<td>0x7E</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M31</td>
<td></td>
<td></td>
<td>0x7F</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M32</td>
<td></td>
<td></td>
<td>0x80</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M33</td>
<td>Rectifier input voltage phase 1</td>
<td>V</td>
<td>0x81</td>
<td></td>
</tr>
<tr>
<td>M34</td>
<td>Rectifier input voltage phase 2</td>
<td>V</td>
<td>0x82</td>
<td></td>
</tr>
<tr>
<td>M35</td>
<td>Rectifier input voltage phase 3</td>
<td>V</td>
<td>0x83</td>
<td></td>
</tr>
<tr>
<td>M36</td>
<td>UPS output power</td>
<td>kW*10</td>
<td>0x84</td>
<td></td>
</tr>
<tr>
<td>M37</td>
<td>Output power phase 1</td>
<td>kVA*10</td>
<td>0x85</td>
<td></td>
</tr>
<tr>
<td>M38</td>
<td>Output power phase 2</td>
<td>kVA*10</td>
<td>0x86</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M39</td>
<td>Output power phase 3</td>
<td>kVA*10</td>
<td>0x87</td>
<td>Set to 0xFFFF if one phase</td>
</tr>
<tr>
<td>M40</td>
<td></td>
<td></td>
<td>0x88</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M41</td>
<td></td>
<td></td>
<td>0x89</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M42</td>
<td></td>
<td></td>
<td>0x8A</td>
<td>Set to 0xFFFF (-1)</td>
</tr>
<tr>
<td>M43</td>
<td></td>
<td></td>
<td>0x8B</td>
<td></td>
</tr>
<tr>
<td>M44</td>
<td></td>
<td></td>
<td>0x8C</td>
<td></td>
</tr>
<tr>
<td>M45</td>
<td></td>
<td></td>
<td>0x8D</td>
<td></td>
</tr>
<tr>
<td>M46</td>
<td></td>
<td></td>
<td>0x8E</td>
<td></td>
</tr>
<tr>
<td>M47</td>
<td></td>
<td></td>
<td>0x8F</td>
<td></td>
</tr>
</tbody>
</table>

Rectifier and battery measurements are not available in the ‘CC’ table (common bypass)
7. **ENABLED CONTROLS TABLE**: Address 0x15C0, 2 words

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>BIT</th>
<th>ADDRESS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C00</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C01</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>C02</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C03</td>
<td>0x15C0</td>
<td>3</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C04</td>
<td>0x15C0</td>
<td>4</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C05</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C06</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C07</td>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C08</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
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<tr>
<td>C09</td>
<td></td>
<td>9</td>
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<td></td>
</tr>
<tr>
<td>C10</td>
<td>Automatic Bypass transfer enabled</td>
<td>10</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td>Inverter transfer enabled</td>
<td>11</td>
<td>0x15C0</td>
<td></td>
</tr>
<tr>
<td>C12</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C13</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C14</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C15</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 1</td>
<td>0</td>
<td>0x25C1</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 2</td>
<td>0</td>
<td>0x35C1</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 3</td>
<td>0</td>
<td>0x45C1</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 4</td>
<td>0</td>
<td>0x55C1</td>
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</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 5</td>
<td>0</td>
<td>0x65C1</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery test enabled module 6</td>
<td>0</td>
<td>0x75C1</td>
<td></td>
</tr>
</tbody>
</table>

Remark: A bit set to 0 means that the control is disabled by the UPS. The control will be not executed.

8. **TO SEND CONTROL TO UPS**: Address 0x15B0, write 1 words

For a remote UPS control, it is necessary to set the serial interface in “remote” mode using the Human Machine Interface.

Local controls of the control panel or graphic touch screen are no more available.

The control table below shows if the selected control is allowed or not. If the control sent to the UPS is not allowed, the function will be ignored.

Controls available by JBUS/MODBUS connection:

<table>
<thead>
<tr>
<th>CODE</th>
<th>Control</th>
<th>Value to write</th>
<th>ADDRESS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C03</td>
<td>Eco-mode</td>
<td>0x0003</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C04</td>
<td>Normal mode</td>
<td>0x0004</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C10</td>
<td>Automatic bypass transfer</td>
<td>0x000A</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td>Inverter transfer</td>
<td>0x000B</td>
<td>0x15B0</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery Test module 1</td>
<td>0x0010</td>
<td>0x25B0</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery Test module 2</td>
<td>0x0010</td>
<td>0x35B0</td>
<td></td>
</tr>
<tr>
<td>C16</td>
<td>Battery Test module 3</td>
<td>0x0010</td>
<td>0x45B0</td>
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</tr>
<tr>
<td>C16</td>
<td>Battery Test module 4</td>
<td>0x0010</td>
<td>0x55B0</td>
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</tr>
<tr>
<td>C16</td>
<td>Battery Test module 5</td>
<td>0x0010</td>
<td>0x65B0</td>
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<tr>
<td>C16</td>
<td>Battery Test module 6</td>
<td>0x0010</td>
<td>0x75B0</td>
<td></td>
</tr>
</tbody>
</table>
For specific needs

To optimize the data traffic between the UPS and the remote equipment, **DELPHYS MX / MP** is able to send in one frame all information, including states and alarms, and also measurements. The addressing map is absolute; this means that the first address defines the complete table. The next address defines an other data table.

To use this specific mapping, you need to check if your remote system is able to manage the address mapping independently of the length of it.

### Specific JBUS/MODBUS Tables

<table>
<thead>
<tr>
<th>TABLE</th>
<th>Absolute address</th>
<th>length</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common UPS DATA</td>
<td>0x0387</td>
<td>0x0397</td>
<td>11 (176 bits)</td>
</tr>
<tr>
<td>Common Measurements</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DATA unit 1</td>
<td>0x0381</td>
<td>0x0391</td>
<td>11</td>
</tr>
<tr>
<td>Measurements unit 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA unit 2</td>
<td>0x0382</td>
<td>0x0392</td>
<td>11</td>
</tr>
<tr>
<td>Measurements unit 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA unit 3</td>
<td>0x0383</td>
<td>0x0393</td>
<td>11</td>
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<tr>
<td>Measurements unit 3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DATA unit 4</td>
<td>0x0384</td>
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<td>Measurements unit 4</td>
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</tr>
<tr>
<td>DATA unit 5</td>
<td>0x0385</td>
<td>0x0395</td>
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<td>Measurements unit 5</td>
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<tr>
<td>DATA unit 6</td>
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</tr>
<tr>
<td>Measurements unit 6</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### DATA fields detail

The data list and measurements are available on request, please contact the factory.