Pulsar M
2200 RT 2U
2200 RT 3U
3000 RT 2U
3000 RT 3U
3000 RT 3U XL
EXB RT 3U

Installation and user manual
Thank you for selecting an MGE UPS SYSTEMS product to protect your electrical equipment.

The Pulsar M range has been designed with the utmost care.
We recommend that you take the time to read this manual to take full advantage of the many features of your UPS (Uninterruptible Power System).

Before installing Pulsar M, please read the booklet on the required safety instructions. Then follow the indications in this manual.

To discover the entire range of MGE UPS SYSTEMS products and the options available for the Pulsar M range, we invite you to visit our web site at www.mgeups.com or contact your MGE UPS SYSTEMS representative.

Environmental protection
MGE UPS SYSTEMS has implemented an environmental-protection policy.
Products are developed according to an eco-design approach.

Substances
This product does not contain CFCs, HCFCs or asbestos.

Packing
To improve waste treatment and facilitate recycling, separate the various packing components.
- The cardboard we use comprises over 50% of recycled cardboard.
- Sacks and bags are made of polyethylene.
- Packing materials are recyclable and bear the appropriate identification symbol.

<table>
<thead>
<tr>
<th>Material</th>
<th>Abbreviation</th>
<th>Symbol number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene terephthalate</td>
<td>PET</td>
<td>01</td>
</tr>
<tr>
<td>High-density polyethylene</td>
<td>HDPE</td>
<td>02</td>
</tr>
<tr>
<td>Polyvinyl chloride</td>
<td>PVC</td>
<td>03</td>
</tr>
<tr>
<td>Low-density polyethylene</td>
<td>LDPE</td>
<td>04</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>PP</td>
<td>05</td>
</tr>
<tr>
<td>Polystyrene</td>
<td>PS</td>
<td>06</td>
</tr>
</tbody>
</table>

Follow all local regulations for the disposal of packing materials.

End of life
MGE UPS SYSTEMS will process products at the end of their service life in compliance with local regulations.
MGE UPS SYSTEMS works with companies in charge of collecting and eliminating our products at the end of their service life.

Product
The product is made up of recyclable materials.
Dismantling and destruction must take place in compliance with all local regulations concerning waste.
At the end of its service life, the product must be transported to a processing centre for electrical and electronic waste.

Battery
The product contains lead-acid batteries that must be processed according to applicable local regulations concerning batteries.
The battery may be removed to comply with regulations and in view of correct disposal.
The "Material Safety Data Sheets" (MSDS) for the batteries are available on our web site*.

(*) For more information or to contact the Product Environmental manager, use the "Environmental Form" on the site: www.mgeups.com -> About us -> Environment.
Introduction

Pictograms

Important instructions that must always be followed.

Information, advice, help.

Visual indication.

Action.

Audio signal.

In the illustrations on the following pages, the symbols below are used:

LED off

LED on

LED flashing
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1. Presentation

1.1 Standard positions

Tower position

<table>
<thead>
<tr>
<th>Dimensions (H x W x D) in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulsar M 2200 RT 2U</td>
</tr>
<tr>
<td>Pulsar M 2200 RT 3U</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 2U</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 3U</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 3U XL</td>
</tr>
<tr>
<td>Pulsar M EXB RT 3U</td>
</tr>
</tbody>
</table>

Weights in kg

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulsar M 2200 RT 2U</td>
<td>31</td>
</tr>
<tr>
<td>Pulsar M 2200 RT 3U</td>
<td>30</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 2U</td>
<td>31</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 3U</td>
<td>30</td>
</tr>
<tr>
<td>Pulsar M 3000 RT 3U XL</td>
<td>17</td>
</tr>
<tr>
<td>Pulsar M EXB RT 3U</td>
<td>42</td>
</tr>
</tbody>
</table>

Rack position
1. Presentation

1.2 Rear panels

Pulsar M 2200 / 3000

1.3 Control panel

Pulsar M EXB (optional battery module)

16 A outlet for connection of equipment
(8) Two groups of 2 programmable outlets for connection of equipment
(9) Groups of 4 outlets for connection of equipment
(10) Socket for connection to AC-power source
(11) LED (SWF) indicating distribution system phase/neutral reversal
(12) Connectors for battery modules (to the UPS or to the other battery modules)
(13) Connectors for automatic recognition of battery modules

(20) Load protected LED
(21) Downgraded operation LED
(22) Load not protected LED
(23) Alphanumeric display
(24) Escape (cancel) button
(25) Scroll button
(26) Enter (confirm) button
(27) ON/OFF button for UPS and outlets
2. Installation

2.1 Unpacking and contents check

(30) Pulsar M 2200 or 3000 UPS
(31) connection cable to AC-power source
(32) 2 connection cables for the protected equipment
(33) RS232 communications cable
(34) USB communications cable
(35) 2 systems to secure power plugs
(36) Solution-Pac CD-ROM
(37) Documentation

Elements supplied depending on the version or optional
(38) Mounting kit for 19-inch bays
(39) 2 supports for the upright position (2U version only)
(40) FlexPDU module (optional)
(41) connection cable between FlexPDU module and UPS
(42) NMC communication card (optional)
(43) HotSwap MBP module (optional)
(44) connection cables between HotSwap MBP module and UPS

Packing materials must be disposed of in compliance with all local regulations concerning waste. Recycling symbols are printed on the packing materials to facilitate sorting.
2. Installation

2.2 Installation in tower position

It is advised to first install the battery module, then the power module above.

Follow steps 1 to 4 for module mounting on the rails.

The rails and necessary hardware are supplied by MGE UPS SYSTEMS.

2.3 Installation in rack position

It is advised to first install the battery module, then the power module above.

Follow steps 1 to 4 for module mounting on the rails.
2. Installation

2.4 Communication ports

Connection of RS232 or USB communication port (optional)

The RS232 and USB communication ports cannot operate simultaneously.

1 - Connect the RS232 (33) or USB (34) communication cable to the serial or USB port on the computer equipment.

2 - Connect the other end of the communication cable (33) or (34) to the USB (1) or RS232 (2) communication port on the UPS.

The UPS can now communicate with MGE UPS SYSTEMS power management software.

Installation of the communication cards (optional)

It is not necessary to shutdown the UPS before installing a communication card.

1 - Remove the UPS cover (4) secured by screws.

2 - Insert the communications card in the slot.

3 - Put the UPS cover back in place using the screws.
2. Installation

2.5 Connections with a FlexPDU (Power Distribution Unit) module (optional)

1. Connect the UPS socket (10) to the AC-power source using the cable (31) supplied.

2. Connect the input socket on the FlexPDU module (48) to the UPS outlet (7) using the cable (41) supplied. The cable and the connectors are marked in red.

3. Connect the equipment to the outlets (45), (46) and (47) on the FlexPDU module. These outlets differ, depending on the version of the FlexPDU module.

4. Fit the connection securing system that prevents the plugs from being pulled out accidentally.

2.6 Connections with a HotSwap MBP module (optional)

The HotSwap MBP module makes it possible to service or even replace the UPS without affecting the connected loads (HotSwap function).

1. Connect the input socket (56) on the HotSwap MBP module to the AC-power source using the cable (31) supplied.

2. Connect the UPS input socket (10) to the "UPS Input" (55) on the HotSwap MBP module, using the cable (44) supplied. These cables and the connectors are marked blue.

3. Connect the UPS outlet (7) to the "UPS Output" (54) on the HotSwap MBP module, using the cable (44) supplied. These cables and the connectors are marked red.

4. Connect the equipment to the outlets (49) and (50) on the HotSwap MBP module. These outlets differ, depending on the version of the HotSwap MBP module.

Caution. Do not use UPS outlets (8) and (9) to supply equipment because use of switch (53) on the HotSwap MBP module would cut supply to the equipment. It is advised not to remove the protective film from outlets (8) and (9).
2. Installation

HotSwap MBP-module operation

The HotSwap MBP module has a rotary switch (53) with two positions:
- Normal - the load is supplied by the UPS,
- Bypass - the load is supplied directly by the AC-power source.

UPS start-up with the HotSwap MBP module

1 - Check that the UPS is correctly connected to the HotSwap MBP module.
2 - Set switch (53) to the Normal position.
3 - Start the UPS by pressing the ON/OFF button (27) on the UPS control panel.
   The load is supplied by the UPS.
   LED (51) "UPS ON - OK to switch" on the HotSwap MBP module goes ON.

HotSwap MBP-module test

1 - Set switch (53) to the Bypass position and check that the load is still supplied.
2 - Set switch (53) back to the Normal position.

2.7 UPS connection without a FlexPDU or HotSwap MBP module

Check that the indications on the name plate located on the back of the UPS correspond to the AC-power source and the true electrical consumption of the total load.

1 - Connect the supplied cable (31) (250 V - 16 A) to the socket (10), then to the AC-power source.
2 - Connect the loads to the UPS using the cables (32).
   It is preferable to connect the priority loads to the four outlets marked (9) and the non-priority loads to the four outlets marked (8) that can be programmed in pairs (1 and 2).
   Connect any high-power devices to the 16 A outlet (7).

   To program shutdown of outlets (8) during operation on battery power and thus optimise the available backup time, the MGE UPS SYSTEMS communications software is required.

3 - Fit the connection securing system (35) that prevents the plugs from being pulled out accidentally.

Note. The UPS charges the battery as soon as it is connected to the AC-power source, even if button (27) is not pressed.
Once the UPS is connected to the AC-power source, eight hours of charging are required before the battery can supply the rated backup time.
3. Operation

3.1 Start-up and normal operation

For the initial start, AC power must be present to detect any wiring errors. Subsequently, the UPS can start even if AC power is not present.

Press button (27) for approximately 1 second.

- The buzzer beeps once and all the LEDs go ON simultaneously.
- The buzzer then beeps twice during the self-test, then button (27) remains ON, indicating that the load outputs are supplied.

The connected devices are protected by the UPS.

- LED (20) is ON.
- If LED (22) is ON, a fault has occurred (see the "Troubleshooting" section).
- During normal operation, the scroll button (25) may be used to read UPS measurements (voltage on normal and bypass AC inputs, operating mode, battery capacity and UPS serial number).

UPS personalisation

If UPS personalisation is desired, it is advised to enter the personalisation mode at this time. This mode may be entered using the buttons on the control panel or the Personal Solution-Pac software (Windows) included on the Solution-Pac CD-ROM provided by MGE UPS SYSTEMS.

3.2 Operation on battery power

Transfer to battery power

- The connected devices continue to be supplied by the UPS when AC power is no longer available. The necessary energy is provided by the battery.
- LEDs (20) and (21) go ON.
- The audio alarm beeps every ten seconds.

The connected devices are supplied by the battery. The display indicates the remaining backup time.

Low-battery warning

- LEDs (20) and (21) go ON.
- The audio alarm beeps every three seconds.

The remaining battery power is low. Shut down all applications on the connected equipment because automatic UPS shutdown is imminent.
3. Operation

End of battery backup time

- All the LEDs go OFF.
- The audio alarms stops.

The UPS is completely shut down.

3.3 Return of AC power

Following an outage, the UPS restarts automatically when AC power returns (unless the restart function was disabled via UPS personalisation) and the load is again supplied.

3.4 UPS shutdown

Press button (27) for approximately 2 seconds.

The devices connected to the UPS are no longer supplied.

3.5 Using the UPS remote control functions

Pulsar has the choice of two remote control options.

- **RPO**: Remote Power Off allows a remote contact to be used to disconnect all the equipment connected to the UPS from the power supply. Restarting the UPS requires manual intervention.
- **ROO**: Remote ON/OFF allows remote action of button (27).

These functions are obtained by opening a contact connected between the appropriate pins of connector (5) on the rear panel of the UPS (see diagram on following page).

Remote control connection and test

1 - Check the UPS is shut down and the electrical supply network disconnected.
2 - Remove connector (5) after unscrewing the screws.
3 - Connect a normally closed volt-free contact (60 Vdc / 30 Vac max, 20 mA max, 0.75 mm² cable cross section) between the two pins of connector (5), see diagram.
3. Operation

Contact open: shut down of UPS
Contact closed: start-up of UPS (UPS connected to the network and network energized)

**Note:** local On/Off control via button (27) has priority over the remote control order.

Contact open: shut down of UPS
To return to normal operation, deactivate the external remote shut down contact and restart the UPS using button (27).

4 - Plug connector (5) into the back of the UPS.
5 - Connect and restart the UPS according to the previously described procedures.
6 - Activate the external remote shut down contact to test the function.

**Warning:** this connector must only be connected to SELV (Safety Extra Low Voltage) circuits.
4. Access to measurements and personalisation data

4.1 Display menus arrangement

4.2 Access to measurements

Press the scroll button (25) to access any status conditions and alarms, then the measurements for voltage, current, frequency, power output and battery backup time.

4.3 Personalisation using the control panel

Press the scroll button (25) several times until the personalisation menu is reached. Press the Enter button (26) to access the different possibilities. Finally, confirm the selection by pressing the Enter button (26) again.

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory setting</th>
<th>Other available settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>English</td>
<td>French, Spanish, German, Italian, Dutch</td>
</tr>
<tr>
<td>Audio alarm</td>
<td>Enabled</td>
<td>Disabled</td>
</tr>
</tbody>
</table>
4. Access to measurements and personalisation data

Output personalisation

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory setting</th>
<th>Other available settings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage (1)</td>
<td>230 Volts AC</td>
<td>200/208/220/240 Volts AC</td>
<td></td>
</tr>
<tr>
<td>Frequency converter (1)</td>
<td>Disabled</td>
<td>Enabled</td>
<td>The connected devices are never transferred to the bypass.</td>
</tr>
<tr>
<td>Output frequency (1)</td>
<td>Automatic selection</td>
<td>50 or 60 Hz</td>
<td>User selectable only if the frequency-converter function is enabled.</td>
</tr>
<tr>
<td>Transfer to the bypass AC input (1)</td>
<td>Bypass AC power must be within tolerances</td>
<td>Bypass AC power may be outside tolerances</td>
<td></td>
</tr>
<tr>
<td>Overload level (1)</td>
<td>102%</td>
<td>50 / 70%</td>
<td>Alarm if threshold is overrun.</td>
</tr>
</tbody>
</table>

(1) These parameters may be modified only when the UPS is OFF. Detailed comments are available in the Personal Solution-Pac software.

ON/OFF personalisation

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory setting</th>
<th>Other available settings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start on battery power</td>
<td>Enabled</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Automatic restart</td>
<td>Enabled</td>
<td>Disabled</td>
<td>The UPS restarts automatically when AC power returns.</td>
</tr>
<tr>
<td>Energy savings</td>
<td>Disabled</td>
<td>Enabled</td>
<td>When function enabled, battery shuts down when power drops to &lt;5%.</td>
</tr>
<tr>
<td>Detection of phase/neutral inversion (SWF)</td>
<td>Disabled</td>
<td>Enabled</td>
<td>When function enabled, the UPS remains OFF if the system detects phase/neutral inversion.</td>
</tr>
</tbody>
</table>

Battery personalisation

<table>
<thead>
<tr>
<th>Function</th>
<th>Factory setting</th>
<th>Other available settings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery test</td>
<td>Weekly test</td>
<td>No test / daily test / monthly test</td>
<td></td>
</tr>
<tr>
<td>Low-battery warning</td>
<td>20%</td>
<td>0 to 100%</td>
<td>Adjustable in 1% steps.</td>
</tr>
<tr>
<td>Selection of the backup time</td>
<td>Automatic detection of number of battery modules</td>
<td>65 to 400 Ah</td>
<td></td>
</tr>
<tr>
<td>Battery protection against excessive discharges</td>
<td>Enabled</td>
<td>Disabled</td>
<td>When function disabled, MGE UPS SYSTEMS warranty no longer applies.</td>
</tr>
</tbody>
</table>

4.4 Personalisation using external software

- Insert the Solution-Pac CD-ROM in the drive.
- On the first navigation screen, select “Point to Point solution” and follow the instructions on how to install the Personal Solution-Pac software.
- Then select “Settings”, “Advanced settings” and “UPS settings”. Note that the Linux/Unix/MacOS versions of the Personal Solution-Pac software do not offer this possibility.
## 5. Maintenance

### 5.1 Troubleshooting

If LED (21) or (22) is ON, a fault or an alarm has occurred. Use the escape button (24) to stop the audio alarm.

<table>
<thead>
<tr>
<th>Indication</th>
<th>Diagnostic</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The UPS does not start, the alphanumeric display indicates: COLD START NOK \ CHECK AC WIRING</td>
<td>The AC input power is not connected or is connected to the UPS output.</td>
</tr>
<tr>
<td>2</td>
<td>LED (22) is ON, the SWF LED (11) at the rear of the UPS is ON. The alphanumeric display indicates: SITE WIR. FAULT \ CHECK AC WIRING</td>
<td>Phase inversion on AC input power. The UPS does not start.</td>
</tr>
<tr>
<td>3</td>
<td>LED (22) is ON, the alphanumeric display indicates: NO BATTERY \ CHECK CONNECTION</td>
<td>The battery is incorrectly connected.</td>
</tr>
<tr>
<td>4</td>
<td>LED (22) is ON, the alphanumeric display indicates: BATTERY FAULT \ SERV REQUIRED</td>
<td>A fault is detected on the battery.</td>
</tr>
<tr>
<td>5</td>
<td>LED (21) is ON, the alphanumeric display indicates: OVERLOAD ALARM \ REDUCE LOAD</td>
<td>The load level exceeds the programmed overload level or UPS capacity.</td>
</tr>
<tr>
<td>6</td>
<td>LED (22) is ON, the alphanumeric display indicates: LOAD UNPROTECTED \ OUTPUT OVERLOAD</td>
<td>The UPS is overloaded. Devices connected to the UPS are fed directly by the electrical network via the By-pass.</td>
</tr>
<tr>
<td>7</td>
<td>LED (22) is ON, the alphanumeric display indicates: REDUCE LOAD \ RESTART UPS</td>
<td>After repetitive overloads, the UPS is locked in the By-pass position. Devices connected to the UPS are fed directly by the electrical network.</td>
</tr>
<tr>
<td>8</td>
<td>LED (22) is ON, the alphanumeric display indicates: OVERLOAD FAULT \ REDUCE LOAD</td>
<td>The UPS shut down automatically because of overload at the UPS output.</td>
</tr>
<tr>
<td>9</td>
<td>LED (22) is ON, the alphanumeric display indicates: LOAD SHORT-CIRCU \ CHECK WIRING</td>
<td>The UPS shut down automatically because of a short-circuit at the UPS output.</td>
</tr>
<tr>
<td>10</td>
<td>LED (22) is ON, the alphanumeric display indicates: INTERNAL FAULT \ SERV REQUIRED</td>
<td>A UPS internal fault has occurred. There are two possible situations: ▶ the load is still supplied, but directly with AC power via the bypass, ▶ the load is no longer supplied.</td>
</tr>
<tr>
<td>11</td>
<td>The alphanumeric display indicates: REMOTE POWER OFF \ RPO</td>
<td>Switching of the Remote Power Off (RPO) has led to the shut down of the UPS.</td>
</tr>
</tbody>
</table>
5. Maintenance

Troubleshooting a UPS equipped with the HotSwap MBP module

<table>
<thead>
<tr>
<th>Indication</th>
<th>Diagnostic</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>The protected devices are connected to the UPS output instead of to the HotSwap MBP module.</td>
<td>Check the wiring between the UPS and the HotSwap MBP module (see section 2.6).</td>
</tr>
<tr>
<td>11</td>
<td>The UPS is shut down.</td>
<td>Start the UPS.</td>
</tr>
<tr>
<td>12</td>
<td>The AC-power cord is connected to the UPS input instead of to the HotSwap MBP module.</td>
<td>Check the wiring between the UPS and the HotSwap MBP module (see section 2.6).</td>
</tr>
</tbody>
</table>

If a fault leads to UPS shutdown, press the ON/OFF button (27) to clear the fault.

5.2 Battery-module replacement

Safety recommendations

The battery can cause electrocution and high short-circuit currents. The following safety cautions are required before servicing the battery components:

- Remove watches, rings, bracelets and all other metal objects from the hands and arms,
- Use tools with an insulated handle.

Battery-module removal

A - Unscrew the left-hand side of the front panel (two screws).
B - Remove the part.
C - Disconnect the battery block by separating the two connectors (never pull on the wires).
5. Maintenance

Mounting the new battery module
Carry out the above instructions in reverse order.

To ensure safety and high performance, use only batteries supplied by MGE UPS SYSTEMS.
Take care to firmly press together the two parts of the connector during remounting.

5.3 Maintenance on a UPS equipped with the HotSwap MBP module

The HotSwap MBP module makes possible to service or even replace the UPS without affecting the connected loads (HotSwap function).

Maintenance:
1. Set switch (53) to the Bypass position. The red LED on the HotSwap MBP module goes ON, indicating that the load is supplied directly with AC power.
2. Stop the UPS by pressing the ON/OFF button (27) on the UPS control panel. LED (51) “UPS ON - OK to switch” goes OFF, the UPS can now be disconnected and replaced.

Return to normal operation:
1. Check that the UPS is correctly connected to the HotSwap MBP module.
2. Start the UPS by pressing the ON/OFF button (27) on the UPS control panel. LED (51) “UPS ON - OK to switch” on the HotSwap MBP module goes ON (otherwise, there is a connection error between the HotSwap MBP module and the UPS).
3. Set switch (53) to the Normal position. The red LED on the HotSwap MBP module goes OFF.

D - Remove the metal protection cover in front of the battery (two screws).
E - Pull the plastic tab to remove the battery block and replace it.
5.4 Training centre

To fully master operation of your MGE UPS SYSTEMS product and carry out level 1 servicing, see our complete range of technical training courses, available in both French and English.

**50 Hz training centre**

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Tel. +33 (0)4 76 18 34 14  
Fax +33 (0)4 76 18 45 21  
training@mgeups.com  
www.mgepowerlearning.com  
(Catalogue and registration available on line)

**60 Hz training centre**

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www.mgepowerlearning.com  
(Catalogue and registration available on line)
6. Appendices

6.1 Technical specifications

<table>
<thead>
<tr>
<th>Output power</th>
<th>Pulsar M 2200</th>
<th>Pulsar M 3000</th>
<th>Pulsar M 3000 XL</th>
<th>Pulsar M EXB</th>
</tr>
</thead>
<tbody>
<tr>
<td>2200 VA (1)</td>
<td>3000 VA (2)</td>
<td>3000 VA (2)</td>
<td>3000 VA (2)</td>
<td>3000 VA (2)</td>
</tr>
<tr>
<td>1980 W</td>
<td>2700 W (3)</td>
<td>2700 W</td>
<td></td>
<td></td>
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</tbody>
</table>

**Electrical supply network**
- **Rated input voltage**: Single phase 230 V
- **Input voltage range**: 110 / 140 / 200 V to 284 V (4)
- **Frequency**: 50/60 Hz (autoselection)
- **Power factor**: > 0.95
- **Leakage current**: < 2 mA

**Load output**
- **Voltage**: Single phase 230 V ±3% (5)
- **Frequency**: 50/60 Hz ±0.5% (6)
- **Harmonic distortion**: < 4% for linear load, < 6% for nonlinear load
- **Overload capacity**: 102% continuous, 105% 20s, > 130% 1.5s
- **Current**: 9.6 A (7) 13 A (8)

**Battery**
- **6 x 12V - 7 Ah, sealed lead acid, maintenance free**
- **6 x 12V - 9 Ah, sealed lead acid, maintenance free**
- **without internal battery**
- **Two 6 x 12 V - 9 Ah strings, sealed lead acid, maintenance free**

**Environment**
- **Operating temperature range**: O°C to 40°C
- **Relative humidity**: 20% to 90% (without condensation)
- **Storage temperature range**: -25°C to 40°C
- **Altitude**: 1000 m
- **Noise level**: < 46 dBA < 50 dBA

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(1) Depending on the output voltage selected: 200V / 208V / 220V / 230V / 240V, the output power is 1980VA / 1980VA / 2200VA / 2200VA / 2200VA.
(2) Depending on the output voltage selected: 200V / 208V / 220V / 230V / 240V, the output power is 2700VA / 2700VA / 3000VA / 3000VA / 3000VA.
(3) Standard output power is 2700 W, 2400 W with an EXB module.
(4) Values for 33% / 66% / 100% of UPS output.
(6) Frequency-converter mode is programmable using the UPS Config software.
(7) Depending on the output voltage selected: 200V / 208V / 220V / 230V / 240V, the maximum output current is 9.6A / 9.5A / 10A / 9.6A / 9.2A.
(8) Depending on the output voltage selected: 200V / 208V / 220V / 230V / 240V, the output current is 13.5A / 13A / 13.6A / 13A / 12.5A.
### 6.2 Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td><strong>Bypass AC input</strong></td>
<td>Bypass line from the AC-power source, controlled by the UPS, used to directly supply the load if an overload or a malfunction occurs on the UPS.</td>
</tr>
<tr>
<td><strong>Backup time</strong></td>
<td>Time during which the load can be supplied by the UPS operating on battery power.</td>
</tr>
<tr>
<td><strong>Battery test</strong></td>
<td>Internal UPS test to check battery status.</td>
</tr>
<tr>
<td><strong>Equipments</strong></td>
<td>Devices connected to the UPS output.</td>
</tr>
<tr>
<td><strong>Excessive discharge</strong></td>
<td>Battery discharge beyond the permissible limit, resulting in irreversible damage to the battery.</td>
</tr>
<tr>
<td><strong>FlexPDU</strong></td>
<td>Module with UPS outlets for installation in a bay. There are different modules with different types of outlets.</td>
</tr>
<tr>
<td><strong>Frequency converter</strong></td>
<td>Operating mode used to convert the AC-power frequency between the UPS input and output (50 Hz -&gt; 60 Hz or 60 Hz -&gt; 50 Hz).</td>
</tr>
<tr>
<td><strong>HotSwap MBP</strong></td>
<td>UPS manual-bypass module for maintenance. There are different modules with different types of outlets.</td>
</tr>
<tr>
<td><strong>Low-battery warning</strong></td>
<td>This is a battery-voltage level indicating that battery power is low and that the user must take action in light of the imminent break in the supply of power to the load.</td>
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<tr>
<td><strong>Normal AC input</strong></td>
<td>The AC-power line supplying the UPS under normal conditions.</td>
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<tr>
<td><strong>Percent load</strong></td>
<td>Ratio of the power effectively drawn by the load to the maximum output of the UPS.</td>
</tr>
<tr>
<td><strong>Personalisation</strong></td>
<td>It is possible to modify certain UPS parameters set in the factory. Certain UPS functions can also be modified by the Personal Solution-Pac software to better suit user needs.</td>
</tr>
<tr>
<td><strong>Programmable outlets</strong></td>
<td>These outlets can be automatically shut down during operation on battery power (shutdown time delays can be programmed with the Personal Solution Pac software). The UPS has two sets of two programmable outlets.</td>
</tr>
<tr>
<td><strong>Start on battery power</strong></td>
<td>The devices connected to the UPS can be started even if AC power is not available. The UPS operates on battery power alone.</td>
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<tr>
<td><strong>UPS</strong></td>
<td>Uninterruptible Power System.</td>
</tr>
<tr>
<td><strong>UPS ON/OFF controlled by software</strong></td>
<td>This function enables or disables initiation of UPS ON/OFF control sequences by computer power management software.</td>
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