OPERATING MANUAL

External maintenance bypass with PDU for PowerValue 11RT G2 6-10 kVA
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1 Important safety instructions

1.1 Save these instructions

THIS CHAPTER CONTAINS IMPORTANT SAFETY INSTRUCTIONS. READ IT CAREFULLY BEFORE DISASSEMBLING THE UNIT.

NOTE

THIS MANUAL CONTAINS IMPORTANT INSTRUCTIONS THAT SHOULD BE FOLLOWED DURING THE INSTALLATION AND MAINTENANCE OF THE PDU

NOTE

THE PDU MODELS THAT ARE COVERED IN THIS MANUAL ARE INTENDED FOR INSTALLATION IN ENVIRONMENTS WHERE TEMPERATURES ARE WITHIN 0 TO 50 °C AND ARE FREE OF CONDUCTIVE CONTAMINANTS.

1.2 Safety symbols and warnings

The following are examples of symbols used on the PDU to alert you to important information:

THIS SYMBOL IN CONJUNCTION WITH THE SIGNAL WORD “DANGER” INDICATES AN IMMINENT ELECTRICAL HAZARD. FAILURE TO OBSERVE THE RELATED SAFETY NOTE MAY CAUSE INJURY, DEATH OR EQUIPMENT DAMAGE.

THIS SYMBOL IN CONJUNCTION WITH THE SIGNAL WORD “WARNING” INDICATES A POTENTIALLY DANGEROUS SITUATION. FAILURE TO OBSERVE MAY CAUSE INJURY, DEATH OR EQUIPMENT DAMAGE.

THIS SYMBOL IN CONJUNCTION WITH THE SIGNAL WORD “NOTE” INDICATES OPERATOR TIPS OR PARTICULARLY USEFUL OR IMPORTANT INFORMATION FOR THE USE OF THE PRODUCT. THIS SYMBOL AND WORDING DO NOT INDICATE A DANGEROUS SITUATION.

THIS SYMBOL INDICATES THAT READING THE INSTRUCTION MANUAL/BOOKLET BEFORE STARTING WORK OR BEFORE OPERATING EQUIPMENT OR MACHINERY IS COMPULSORY.

DO NOT DISPOSE OF WITH ORDINARY TRASH.
1.3 Safety rules

**DANGER**

Terminal blocks may be energized, even if the system is disconnected from the AC power source.

**DANGER**

Dangerous voltage levels are present within the system.

**DANGER**

The system must be properly grounded: always connect the earth wire first.

**WARNING**

Caution! To reduce the risk of fire, only connect the unit to a circuit provided with branch circuit overcurrent protection for:
- 63A rating, for 6kVA models
- 80A rating, for 10kVA models

**WARNING**

Check that the indications on the rating label correspond with your AC powered system and the actual electrical consumption of all the equipment to be connected to the system.

**WARNING**

Never install the system near liquids or in an excessively damp environment.

**WARNING**

Never block the ventilation grilles grates of the system.

**WARNING**

Never expose the system to direct sunlight or other sources of heat.
NOTE
THE UPSTREAM CIRCUIT BREAKER FOR NORMAL AC/BYPASS AC MUST BE EASILY ACCESSIBLE. THE UNIT CAN BE DISCONNECTED FROM THE AC POWER SOURCE BY OPENING THIS CIRCUIT BREAKER.

NOTE
DISCONNECTION AND OVERCURRENT PROTECTION DEVICES ARE NOT INCLUDED AND MUST ALREADY BE INSTALLED FOR PERMANENTLY CONNECTED AC INPUT (NORMAL AC/BYPASS AC) AND AC OUTPUT CIRCUITS.

NOTE
FOR PLUGGABLE EQUIPMENT, THE SOCKET OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

NOTE
IF THE SYSTEM NEEDS TO BE STORED PRIOR TO INSTALLATION, STORAGE MUST BE IN A DRY PLACE.

NOTE
THE ADMISSIBLE STORAGE TEMPERATURE RANGE IS -25 TO +60 °C.

NOTE
THIS PDU IS DESIGNED TO WORK WITH UPS POWERVALUE 11RT G2 6 KVA AND UPS POWERVALUE 11RT G2 10 KVA.

1.4 UPS disposal and recycling

1.4.1 For professional users in the European Union

THE CROSSED WHEELED BIN SYMBOL ON THE PRODUCT(S) AND / OR ACCOMPANYING DOCUMENTS MEANS THAT USED ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) SHOULD NOT BE MIXED WITH GENERAL HOUSEHOLD WASTE.

IF YOU WISH TO DISPOSE OF ELECTRICAL AND ELECTRONIC EQUIPMENT (EEE), PLEASE CONTACT YOUR DEALER OR SUPPLIER FOR FURTHER INFORMATION.

CORRECT WASTE DISPOSAL OF THIS PRODUCT WILL HELP SAVE VALUABLE RESOURCES AND PREVENT ANY POTENTIAL NEGATIVE EFFECTS ON HUMAN HEALTH AND THE ENVIRONMENT, WHICH COULD OTHERWISE ARISE FROM INAPPROPRIATE WASTE HANDLING.
1.4.2 For disposal in countries outside of the European Union

THE CROSSED WHEELED BIN SYMBOL IS ONLY VALID IN THE EUROPEAN UNION (EU) MEANING THAT USED ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) SHOULD NOT BE MIXED WITH GENERAL HOUSEHOLDWASTE.

IF YOU WISH TO DISPOSE OF THIS PRODUCT PLEASE CONTACT YOUR LOCAL AUTHORITIES OR DEALER AND ASK FOR THE CORRECT METHOD OF DISPOSAL.

CORRECT WASTE DISPOSAL OF THIS PRODUCT WILL HELP SAVE VALUABLE RESOURCES AND PREVENT ANY POTENTIAL NEGATIVE EFFECTS ON HUMAN HEALTH AND THE ENVIRONMENT, WHICH COULD OTHERWISE ARISE FROM INAPPROPRIATE WASTE HANDLING.

1.5 Certification standards

- Safety: EN 62040-1.
- Performance: IEC/EN 62040-3.
- IEC 61000-4-2 (ESD): level 3.
- IEC 61000-4-3 (Radiated field): level 3.
- IEC 61000-4-4 (EFT): level 4.
- IEC 61000-4-5 (Fast transients): level 4.
- IEC 61000-4-6 (Electromagnetic field): level 3.
- IEC 61000-4-8 (Conducted magnetic field): level 4.
2 Introduction

This PDU allows service personnel to service or replace the UPS without interrupting the connected loads. Moreover, it offers the following:

- Terminal block connection design enables the PDU to be connected to other types of UPS.
- Rotatable 'rail kit' design for easy service operation in a rack cabinet.
- Flexible position installation.

WE RECOMMEND YOU TAKE THE TIME TO READ THIS MANUAL TO TAKE FULL ADVANTAGE OF THE MANY FEATURES OF YOUR PDU.

2.1 Environmental protection

Our products are developed using the eco-design approach.

2.1.1 Substances

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

2.1.2 Packing

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

<table>
<thead>
<tr>
<th>Materials</th>
<th>Abbreviations</th>
<th>Number in the symbols</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>

NOTE

FOLLOW ALL LOCAL REGULATIONS FOR THE DISPOSAL OF PACKING MATERIALS
3 Presentation

Front view:

1. Output Breaker
2. Output Breaker
3. Output socket group 1
4. Output socket group 2
5. Maintenance bypass switch
6. Maintenance switch cover
7. Input /Output terminal connected to power and load  (4pole IPL, IPN, OPL, OPN. PE is a screw)
8. Input switch
9. RJ11 (connect to UPS, only for RT UPS)
10. Input /Output terminal connected to UPS (4pole IPL, IPN, OPL, OPN. PE is screw)
4 Installation

NOTE
THE SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SAFETY REGULATIONS

4.1 Inspecting the equipment

WARNING
RISK OF FALLING: DISMANTLING THE UPS REQUIRES WORKING AT HEIGHT. TAKE THE NECESSARY PRECAUTIONS.

NOTE
IF ANY EQUIPMENT HAS BEEN DAMAGED DURING SHIPMENT, KEEP THE SHIPPING CARTONS AND PACKING MATERIALS FOR THE CARRIER OR PLACE OF PURCHASE AND FILE A CLAIM FOR SHIPPING DAMAGE. IF YOU DISCOVER THE DAMAGE AFTER ACCEPTANCE, FILE A CLAIM FOR CONCEALED DAMAGE

4.2 Unpacking the Unit

DANGER
UNPACKING THE UNIT IN A LOW-TEMPERATURE ENVIRONMENT MAY CAUSE CONDENSATION TO FORM BOTH INSIDE AND ON THE CABINET. DO NOT INSTALL THE UNIT UNTIL THE INSIDE AND OUTSIDE OF THE UNIT ARE DRY (RISK OF ELECTRIC SHOCK).
4.3 Checking the accessory kit

Verify that the following additional items are included with the unit:

<table>
<thead>
<tr>
<th>Item</th>
<th>Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables for UPS's Input / Output</td>
<td>V</td>
</tr>
<tr>
<td>RJ11 cable</td>
<td>V</td>
</tr>
<tr>
<td>Cable locker</td>
<td>V</td>
</tr>
<tr>
<td>Ear bracket (For tower installation)</td>
<td>V</td>
</tr>
<tr>
<td>Rail kit (For rack installation)</td>
<td>V</td>
</tr>
<tr>
<td>User Manual</td>
<td>V</td>
</tr>
</tbody>
</table>

4.4 Installing the PDU

We recommend connecting the ‘Cables for UPS's Input / Output’ and ‘RJ11 cable’ to the PDU side before installing the PDU in its final location.

1. Remove the cover from the terminal blocks and connect ‘Cables for UPS's Input/ Output’ to the terminal blocks, referring to the indication on the rear panel.

2. Replace the terminal block cover and insert the ‘RJ11 cable’.
4.4.1 Installing in the tower position

Follow these instructions, if you have purchased our UPS and are now installing the UPS in the tower position.

On our UPS, you can install the PDU in two positions; the additional space required is as below. We recommend selecting the ‘Left position’ as your final installation position according to the configuration length of ‘Cables for UPS’s Input / Output’ and the ‘RJ11 cable’.

1. Install ‘Ear bracket’ on the PDU, then attach the PDU to the UPS with M4 screws. The pictures below are examples of ‘Left position’ installation.
4.4.2 Installing in the rack position:

This PDU can be flexibly positioned in a rack cabinet as shown below.

We recommend selecting ‘Position 1’ as your final installation according to the configuration length of ‘Cables for UPS’s Input / Output’ and ‘RJ11 cable’.

- Position 1 (Rear of rack)
• Position 2 (Front of rack)

1. Attach the ‘Rail kit’ to the rack cabinet using M5 screws and washers.
2. Slide the PDU into the ‘rail kit’ and make sure you lock the PDU using the 2 clips.

4.4.3 Connecting the cables to the UPS:

1. Connect ‘Cables for UPS’s Input/Output’ to UPS’s terminal blocks in accordance with the diagram below.

2. Insert ‘RJ11 cable’ to ‘PDU PORT’ on the rear of the UPS.
5 AC Power cable connection to power/load (not included)

Recommended cable cross-sections

<table>
<thead>
<tr>
<th>UPS</th>
<th>11RT G2 6kVA</th>
<th>11RT G2 10kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input L, N, G</td>
<td>10mm² (8AWG)</td>
<td>16mm² (6AWG)</td>
</tr>
<tr>
<td>Max conductor cross section</td>
<td>10mm² (8AWG)</td>
<td>16mm² (6AWG)</td>
</tr>
</tbody>
</table>

5.1 AC source to PDU

HIGH LEAKAGE CURRENT
EARTH CONNECTION ESSENTIAL BEFORE CONNECTING SUPPLY
COMMON INPUT/OUTPUT SOURCE CONNECTION

NOTE
BEFORE CONNECTING, CHECK THAT THE UPSTREAM PROTECTION DEVICES
NORMAL AC SOURCE ARE OPEN "O" (OFF).

1. Remove the cover of the terminal block.
2. Connect the AC to the terminal blocks.

3. Replace the cover of the terminal block.

4. You can also select ‘Output socket group’ as the load connection; this PDU has a ‘Cable locker’ for the reliable connection of the outlet.
6 Service operation

6.1 How to switch PDU to BYPASS mode

1. Remove the ‘Maintenance switch cover’; the UPS will turn to bypass mode automatically.

2. Turn the maintenance switch to 'BYPASS'.

NOTE: AFTER BEING SWITCHED TO 'BYPASS', THIS PDU HAS A SYSTEM TO PREVENT THE 'BYPASS' BEING ACCIDENTALLY SWITCHED BACK TO 'UPS'. 
3. Turn the PDU’s ‘Input switch’ to ‘OFF’.
4. After these operations, the PDU will power the load directly via the maintenance switch.

**NOTE**

PLEASE ENSURE THE UPS IS TURNED TO THE BYPASS MODE BEFORE TURNING THE MAINTENANCE SWITCH TO THE BYPASS POSITION

6.2 How to disconnect cables between the PDU and UPS

This is how to disconnect ‘Cables for UPS’s Input / Output’ and the ‘RJ11 cable’.

The pictures below show the ‘Rack position’ only.

1. Unlock the clips and push the PDU out from the rack cabinet, then rotate the PDU as below.

2. Disconnect the ‘Cables for UPS’s Input / Output’ and ‘RJ11 cable’ as well as any other cables connected to the UPS.

3. Remove the UPS for service or replacement.

**NOTE**

ENSURE THE PDU UNIT IS NOT PUT UNDER STRONG PRESSURE DURING ITS ROTATION
6.3 How to switch the PDU to NORMAL mode

1. Check if the input/output/RJ11 cables are securely connected, then switch on the PDU input. The UPS will go to bypass mode.
2. Turn the maintenance switch to the normal position. Turn the maintenance switch cover to PDU.
3. Press the “ON” button on the LCD panel of the UPS. The UPS will turn to line mode.
7 Specifications

Power Module model list

<table>
<thead>
<tr>
<th>Model</th>
<th>UPS rated power</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDU 6k/10k</td>
<td>6000VA (6000W) / 10000VA (100000W)</td>
</tr>
</tbody>
</table>

Weight and dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>Weight (kg)</th>
<th>Dimensions (mm) W x H x D</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDU 6k/10k</td>
<td>2.4</td>
<td>426x84.5x80</td>
</tr>
</tbody>
</table>

Output IEC sockets

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of socket</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDU 6k/10k</td>
<td>IEC-320C13 (10A)</td>
<td>4 (2 sockets per group)</td>
</tr>
<tr>
<td></td>
<td>IEC-320C19 (16A)</td>
<td>2 (1 socket per group)</td>
</tr>
</tbody>
</table>

Environment and safety

Certifications

| EN 62040-1  |
| IEC/EN 62040-2: Cat. C2 |
| IEC/EN 62040-3 |
| EN 60950-1    |

EMC (Emissions)*

| IEC 61000-3-2 (-3-12) |
| IEC 61000-3-3 (-3-11) |

EMC (Immunity)

| IEC 61000-2-2 |
| IEC 61000-4-2, Level 4 |
| IEC 61000-4-3, Level 3 |
| IEC 61000-4-4, Level 4 (also on signal ports) |
| IEC 61000-4-5, Level 4, Criteria B |
| IEC 61000-4-6, Level 3 |
| IEC 61000-4-8, Level 4 |
| IEC 61000-4-11 |

Agency markings

| CE |

Operating temperature

| 0~40 °C full load no derating |
| 40~50 °C output power derating to 50% load, Charger current derating 50% |

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| **Storage temperature** | -15 to 40 °C (32 to 104 °F) with batteries  
-25 to 60 °C (5 to 140 °F) without batteries |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transit temperature</strong></td>
<td>-25 to 55 °C (-13 to 130 °F)</td>
</tr>
<tr>
<td><strong>Relative humidity</strong></td>
<td>0 to 95% no condensation</td>
</tr>
<tr>
<td><strong>Operating altitude</strong></td>
<td>Up to 3,000 meters (9,843 ft) above sea level with 10% derating per 1000 m</td>
</tr>
<tr>
<td><strong>Transit altitude</strong></td>
<td>Up to 10,000 meters (32,808 ft) above sea level</td>
</tr>
</tbody>
</table>
| **Audible noise**       | < 50 dBA at 1 meter typical for 6kVA models  
< 55 dBA at 1 meter typical for 10kVA models                       |

* for output cable < 10m.