

OPERATING MANUAL

External maintenance bypass with PDU for PowerValue 11RT G2 6-10 kVA

PREPARED		STATUS SECURITY LEVEL					
2019-05-21	Product Marketing	Approved	Public	Public			
APPROVED		DOCUMENT KIND	· ·				
2019-05-21	Gabriele Poccia	Operating manual	Operating manual				
OWNING ORGAN	IZATION	DOCUMENT ID.	REV.	LANG.	PAGE		
ABB Power Protection		4NWD003886	с	EN	1/22		
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1 Important safety instructions

1.1 Save these instructions



NOTE

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

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

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 INDICATES A SAFETY NOTE: "ATTENTION! HAZARDOUS VOLTAGE!" INSTALLATION BY A CERTIFIED SERVICE ENGINEER ONLY." 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.

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1.3 Safety rules



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.

DANGER

CAUTION! TO REDUCE THE RISK OF FIRE, ONLY CONNECT THE UNIT TO A CIRCUIT PROVIDED WITH BRANCH CIRCUIT OVERCURRENT PROTECTION FOR:

- _
- 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.

WARNING

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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.
DISCONNECTION AND OVERCURRENT PROTECTION DEVICES ARE NOT INCLUDED AN MUST ALREADY BE INSTALLED FOR PERMANENTLY CONNECTED AC INPUT (NORMAL AC/BYPASS AC) AND AC OUTPUT CIRCUITS.
FOR PLUGGABLE EQUIPMENT, THE SOCKET OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.
IF THE SYSTEM NEEDS TO BE STORED PRIOR TO INSTALLATION, STORAGE MUST BE IN A DRY PLACE.
THE ADMISSIBLE STORAGE TEMPERATURE RANGE IS -25 TO +60 °C.
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

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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.
- EMC: IEC/EN 62040-2.
- 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.

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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

Materials	Abbreviations	Number in the symbols	è L
Polyethylene terephthalate	PET	01	
High-density polyethylene	HDPE	02	
Polyvinyl chloride	PVC	03	
Low-density polyethylene	LDPE	04	
Polypropylene	PP	05	
Polystyrene	PS	06	



FOLLOW ALL LOCAL REGULATIONS FOR THE DISPOSAL OF PACKING MATERIALS

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3 Presentation

Front view:



Rear 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)

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4 Installation



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



INSTALLATION AND COMMISSIONING SHALL BE IN COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL SAFETY REGULATIONS AND MUST BE CARRIED OUT BY SUITABLY QUALIFIED PERSONS AS PER NATIONAL, STATE, AND LOCAL REQUIREMENTS.

4.1 Inspecting the equipment



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

4.2 Unpacking the Unit



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).



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I 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



DISCARD OR RECYCLE THE PACKAGING IN A RESPONSIBLE MANNER OR STORE IT FOR FUTURE USE.

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.

4.3 Checking the accessory kit

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

Cables for UPS's Input / Output	V
RJ11 cable	V
Cable locker	V
Ear bracket(For tower installation)	V
Rail kit(For rack installation)	V
User Manual	V

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'.

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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'.





Left position

Top position

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.

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EXTERNAL MAINTENANCE BYPASS WITH PDU FOR POWERVALUE 11RT G2 6-10 KVA



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)



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• Position 2 (Front of rack)



1. Attach the 'Rail kit' to the rack cabinet using M5 screws and washers.



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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.

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EXTERNAL MAINTENANCE BYPASS WITH PDU FOR POWERVALUE 11RT G2 6-10 KVA



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5 AC Power cable connection to power/load (not included)

Recommended cable cross-sections

UPS	11RT G2 6kVA	11RT G2 10kVA
Input L, N, G	10mm^2 (8AWG)	16mm^2(6AWG)
Max conductor cross section	10mm^2 (8AWG)	16mm^2(6AWG)

5.1 AC source to PDU



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



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

1. Remove the cover of the terminal block.



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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.

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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'.





AFTER BEING SWITCHED TO 'BYPASS', THIS PDU HAS A SYSTEM TO PREVENT THE 'BYPASS' BEING ACCIDENTALLY SWITCHED BACK TO 'UPS'.

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Please refer to Installing the 'Maintenance switch cover' above.

- 3. Turn the PDU's 'Input switch' to 'OFF'.
- 4. After these operations, the PDU will power the load directly via the maintenance switch.



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.



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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.

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7 Specifications

Power Module model list

Model	UPS rated power
PDU 6k/10k	6000VA (6000W) / 10000VA (100000W)

Weight and dimensions

Model	Weight (kg)	Dimensions (mm) W x H x D	
PDU 6k/10k	2.4	426x84.5x80	

Output IEC sockets

Model	Type of socket	Quantity	
PDU 6k/10k	IEC-320C13 (10A)	4 (2 sockets per group)	
	IEC-320C19 (16A)	2 (1 socket per group)	

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				
Transit temperature	-25 to 55 °C (-13 to 130 °F)				
Relative humidity	0 to 95% no condensation				
Operating altitude	Up to 3,000 meters (9,843 ft) above sea level with 10% derating per 1000 m				
Transit altitude	Up to 10,000 meters (32,808 ft) above sea level				
Audible noise	< 50 dBA at 1 meter typical for 6kVA models < 55 dBA at 1 meter typical for 10kVA models				

* for output cable < 10m.

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