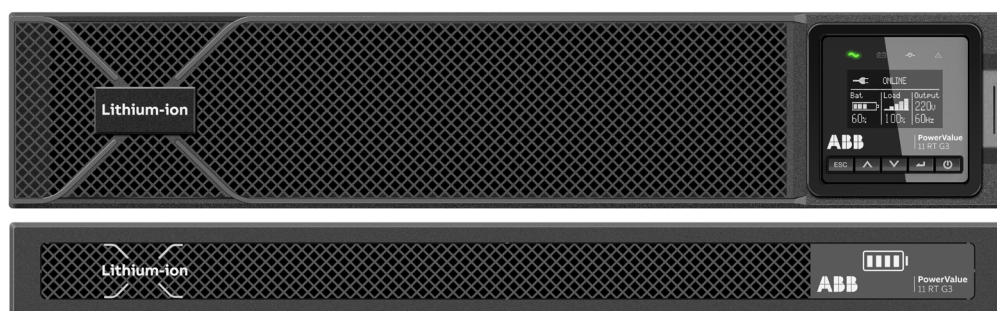


TECHNICAL DATASHEET

PowerValue 11RT G3 LIB

1-3kVA



Operating mode

Online

Module power rating

1-3 kVA

Output power factor

1.0

Efficiency

Up to 94% at normal mode

Input THDI

<5.5%

Communication ports

RPO, Dry in, Dry out, intelligent slot, USB, RS232

Classification

VFI-SS-111

Languages

Up to 7 languages

About this manual



Document information

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Table of contents

UPS features	.4
Advance BMS	4
Cold start.	4
Remote Power Off (RPO)	4
Frequency converter mode.	4
Rear view.	.5
Batteries.	.6
Options	.7
Network management card	7
Supported models	7
Relay interface card	7
Supported models	7
Monitoring software.	7
Technical specifications	.8
General data	8
Mechanical	8
Acoustic noise (ISO 7779&At front 1 m distance, without buzzer)	8
Safety	8
Electromagnetic compatibility	8
Environmental requirements	8
Additional and useful information	8
Options	8
Input characteristics	8
Output characteristics	9
Double conversion efficiency in normal mode, linear load	9
Bypass—automatic: static switch	9
Battery characteristics	.10
Backup time	.10
User interface – communication	.10
Clearances	.10
Heat dissipation	.11
Cable & breaker	.11

UPS features

The PowerValue 11RT G3 LIB 1-3KVA UPS uses an advanced double-conversion pure online architecture that continuously adjusts and filters the input voltage. When the mains power is interrupted, the battery will continue to provide power without interruption. In the event of an overload or inverter failure, the UPS will switch to bypass mode and be powered by the bypass. If the overload condition is eliminated, the UPS will automatically switch to the inverter power supply mode, providing high quality and reliable AC power for critical equipment.

Advance BMS

- Battery status and health warning and prediction in advance. (V/I/T warning, SOC/SOH prediction)
- In-time protection via both HW and FW BMS management.

Cold start

The PowerValue 11RT G3 LIB 1-3 kVA UPS can be started without being connected to the mains power supply (startup from the batteries). Before using this feature, the UPS must have been powered by utility power with output enabled at least once. This feature is especially useful in the following situations:

- To start up and operate the unit, even throughout a power outage.
- To help identify, during an unsuccessful system startup, if the malfunction is in the power supply, e.g. if the UPS starts up on the battery and does not transfer to the online or the bypass mode, it is most probable that there is a mains failure.

Remote Power Off (RPO)

When RPO is activated, the AC and the DC sources to the load are entirely disconnected. To recover the UPS's normal status, the RPO connector must be set back to its original configuration (normally closed through a jumper in the UPS rear panel). Following this, the RPO status must be cleared through the LCD menu and the UPS will recover its operation in the standby mode. To transfer the UPS to the inverter mode, press the power button.

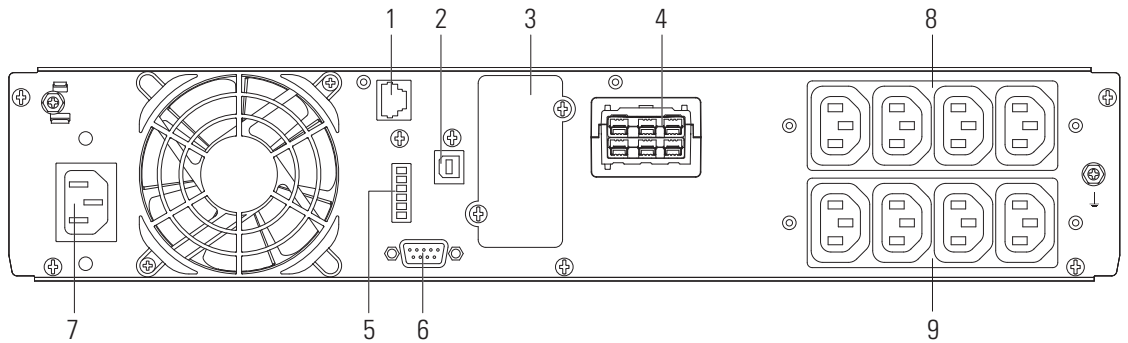
Frequency converter mode

CVCF is a specific output mode of UPS. Operating as a voltage and frequency converter, the PowerValue 11RT G3 LIB 1-3kVA UPS not only converts the power supply frequency (50 Hz to/ from 60Hz) but also protects the load from power disturbances and guarantees additional battery power in case of mains failure. The operation and installation is simple and requires correctly wiring the UPS and selecting the CVCF mode in the LCD display.

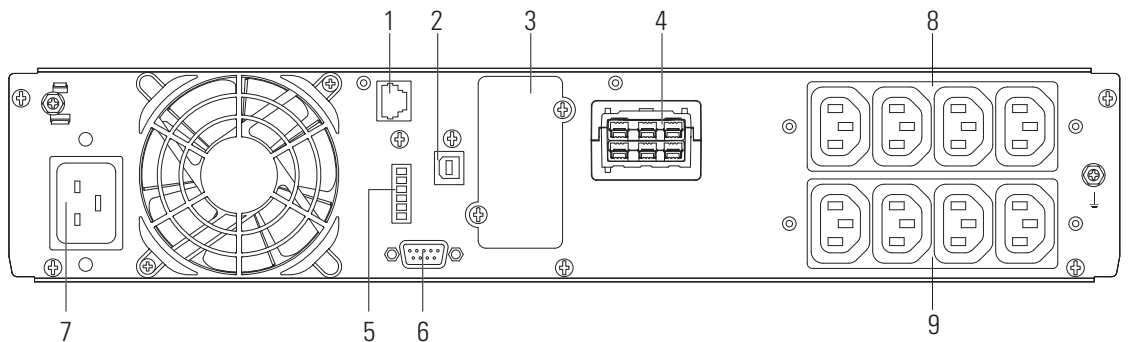
- Input frequency range: 40-70 Hz
- Output frequency: 50 Hz or 60 Hz
- Output derating: derating to 60%

Rear view

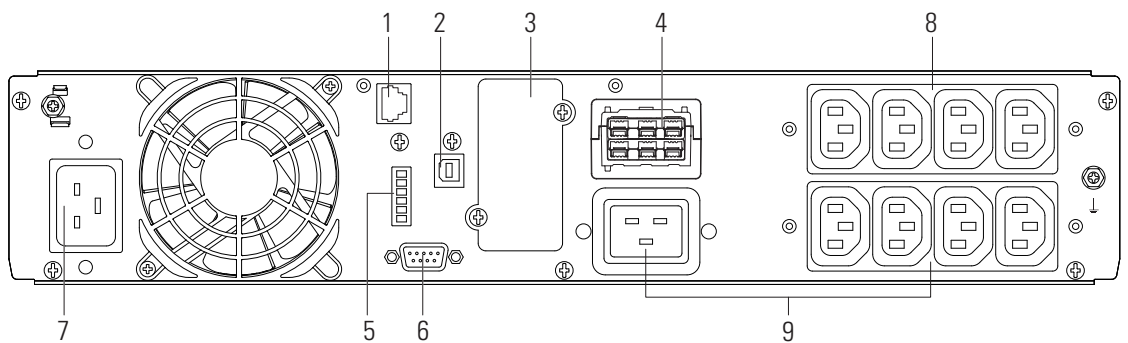
UPS PowerValue 11RT G3 LIB 1/1.5 kVA



UPS PowerValue 11RT G3 LIB 2 kVA



UPS PowerValue 11RT G3 LIB 3 kVA



No.	Description
1	EBM auto detection
2	USB
3	Slot Card Box
4	EBM Connector
5	RPO/Dry in/Dry out
6	RS 232
7	Input socket (1 k/1.5 k: 10A, 2 K/3K: 16 A)
8	Programmable output outlets (1-3 kVA: 10 A)
9	Output outlets (1-2 kVA: 10 A; 3 kVA: 10 A+16 A)

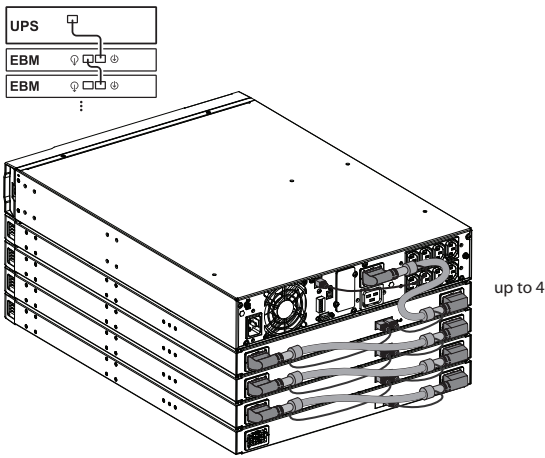
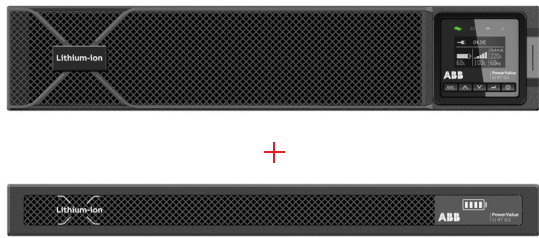
Ext batt mod 11RT G3 LIB 1-3KVA



No.	Description
1	EBM auto detection
2	EBM connector (power connections do not differentiate between “In” and “out”)
3	LED indicator

Batteries

PowerValue can be configured with matching battery modules to satisfy extended runtime demands. Easily replaceable batteries increase availability and reduce Mean Time to Repair (MTTR).



	Power (KVA)	Internal battery	Charging current
	1 K	1x9 Ah	1.5 A
	1.5 K	1x9 Ah	1.5 A
	2 K	1x9 Ah	1.5 A
	3 K	1x9 Ah	1.5 A

	Power	Dimensions (WxHxD) (mm)	Weight (kg)	Battery
	1 K	438*43*448	12	1x 12 Ah
	1.5 K	438*43*448	12	1x 12 Ah
	2 K	438*43*603	17.4	1x 12 Ah
	3 K	438*43*603	17.4	1x 12 Ah

Options

Network management card

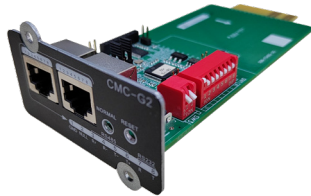
Enables real-time monitoring of the UPS system via a standard web browser or the included monitoring software. ABB's monitoring devices provide real-time visibility of the condition of your power equipment and help in solving problems before they become critical.

Supported models

- Network Management Card (NMC)



- ModBus Card (CMC)



- Temperature and humidity sensors(EMP)

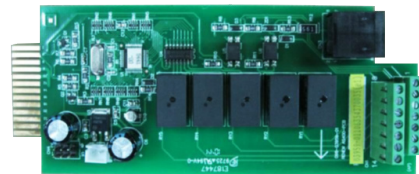


Relay interface card

Provides contact closures for remote monitoring of alarm conditions of POWERVALUE 11RT G3 LIB 1-3KVA UPS systems. The card is user-installable, hot-swappable and enables advanced communication between the UPS and the computer.

Supported models

- Relay card with potential-free contacts (AS400)



NMC Card	4NWP100110R0001
ModBus Card	4NWP104039R0001
EMP	4NWP104040R0001
AS400 Card	4NWP100120R0001

Monitoring software

This is an advanced UPS management software suite to allow remote control and monitoring of UPS equipped with network management cards in a LAN or Internet environment. It can manage a single or multiple UPSs and prevent data loss from power outage by programming a safe system shutdown.

Technical specifications

GENERAL DATA	1 kVA	1.5 kVA	2 kVA	3 kVA
Apparent power	1 kVA	1.5 kVA	2 kVA	3 kVA
Active power	1 kW	1.5 kW	2 kW	3 kW
UPS type	Online double conversion			
Battery	Inbuilt	Inbuilt	Inbuilt	Inbuilt
MECHANICAL				
Dimensions (width×height×depth) (mm)	438 x 85.5 x 445	438 x 85.5 x 445	438 x 85.5 x 600	438 x 85.5 x 600
Weight (with batteries)	14.95 kg	15.2 kg	21.1 kg	21.45 kg
ACOUSTIC NOISE (ISO 7779&At front 1 m distance, without buzzer)				
In normal mode (at ≤25 °C) at 100 / 50 % Load	<45 dB	<45 dB	<50 dB	<50 dB
In battery mode (at ≤25 °C) at 100 / 50 % Load	<45 dB	<45 dB	<50 dB	<50 dB
SAFETY				
Access	Operator	Operator	Operator	Operator
Degree of protection against hazards and water ingress	IP 20	IP 20	IP 20	IP 20
ELECTROMAGNETIC COMPATIBILITY				
Compliant to IEC 62040-2	Yes	Yes	Yes	Yes
Category Emission / Immunity	C2	C2	C2	C2
ENVIRONMENTAL REQUIREMENTS				
Storage temperature range	-25 to 55 °C (5 to 140°F) without batteries			
Operative temperature range	0 °C – +40 °C (40~50 °C needs to be derated)	0 °C – +40 °C (40~50 °C needs to be derated)	0 °C – +40 °C (40~50 °C needs to be derated)	0 °C – +40 °C (40~50 °C needs to be derated)
Storage (models with batteries)	0 °C – +40 °C	0 °C – +40 °C	0 °C – +40 °C	0 °C – +40 °C
Relative humidity	≤ 95% (non-condensing)			
Operating altitude	0~3000 m (the load derating 1 % every up 100 m @1000~3000 m)			
ADDITIONAL AND USEFUL INFORMATION				
Input sockets	1x IEC C14	1x IEC C14	1x IEC C20	1x IEC C20
Output outlets	1 main outlet group (with 4 x IEC C13) 1 programmable outlet group (with 4 x IEC C13)			1 main outlet group (With 1 x IEC C19 + 4 x IEC C13) 1 programmable outlet group (With 4 x IEC C13)
Cable entry	Rear	Rear	Rear	Rear
External battery cable entry	Rear	Rear	Rear	Rear
Accessibility	Front and rear	Front and rear	Front and rear	Front and rear
Air outlet	Rear	Rear	Rear	Rear
OPTIONS				
Network Management Card	Yes	Yes	Yes	Yes
AS400 card	Yes	Yes	Yes	Yes
Modbus card	Yes	Yes	Yes	Yes
RS232 Cable	Yes	Yes	Yes	Yes
Rail kit	Yes	Yes	Yes	Yes
INCLUDED (DEFAULT)	Yes	Yes	Yes	Yes
Sea freight packaging (pallet, carton box)	Included	Included	Included	Included
INPUT CHARACTERISTICS	1 kVA	1.5 kVA	2 kVA	3 kVA
Acceptance voltage (steady-state, r.m.s)	110-300 V AC			
Nominal voltage	160-300 V AC			
Tolerance	<110 V: Go to battery mode 110 V+100 x (Load% - 50%): 100%> load >50% 160 V~300 V: 100 % load >300 V: Go to battery mode			
Frequency, rated	50 Hz / 60 Hz (selectable)			
Frequency tolerance	45 Hz – 55 Hz (50 Hz system) / 54 Hz – 66 Hz (60 Hz system)			

Rated Input Current(Input Voltage 230 V)	4.9 A	7.4 A	9.4 A	14.1 A
Maximum current (with charging batt. and input voltage tolerance,continuous over load))	5.6 A	8.2 A	10.8 A	15.7 A
Total harmonic distortion (THDi)	< 5.5 % at 100% R load	< 5.5 % at 100% R load	< 5 % at 100% R load	< 5 % at 100% R load
Power factor	≥ 0.99 at 100% load	≥ 0.99 at 100% load	≥ 0.99 at 100% load	≥ 0.99 at 100% load
AC power distribution system	IT, TN-S, TT			
Phases required	1	1	1	1
Neutral required	Yes	Yes	Yes	Yes
Connection	3 wires: L + N + PE			
Cable entry	Rear	Rear	Rear	Rear

OUTPUT CHARACTERISTICS	1 kVA	1.5 kVA	2 kVA	3 kVA
Rated power	1000 W	1500 W	2000 W	3000 W
AC power distribution system	IT, TN-S, TT			
Available phases	1	1	1	1
Neutral available	Yes	Yes	Yes	Yes
Rated voltage (steady state, r.m.s.)	200/208/220/230/240 V AC (derating 10% at 208V, derating 20% at 200 V)			
Voltage accuracy	± 1%	± 1%	± 1%	± 1%
Total Harmonic Distortion (THDu), 100% Load, Normal Mode				
- Linear	< 1%	< 1%	< 1%	< 1%
- Non-linear (acc. to IEC 62040-3)	< 4%	< 4%	< 4%	< 4%
Total Harmonic Distortion (THDu), 100% Load, Battery Mode				
- Linear	< 1%	< 1%	< 1%	< 1%
- Non-linear (acc. to IEC 62040-3)	< 4%	< 4%	< 4%	< 4%
Voltage Transient And Recovery Time, 100% step load				
- Non-linear (acc. to IEC 62040-3)	100 ms	100 ms	100 ms	100 ms
Transfer time normal mode <--> battery mode	0 ms	0 ms	0 ms	0 ms
Frequency (steady-state), rated	Synchronized with the input mains: 45–55 Hz for 50 Hz systems 54–66 Hz for 60 Hz systems 40 Hz–70 Hz (CVCF mode, derating to 60%)			
Variation in free-running	± 0.1 Hz	± 0.1 Hz	± 0.1 Hz	± 0.1 Hz
Max slew-rate	< 1±0.5 Hz/s	< 1±0.5 Hz/s	< 1±0.5 Hz/s	< 1±0.5 Hz/s
Nominal current (In), r.m.s. rated	4.6 A	6.9 A	9.1 A	13.7 A
Overload on inverter	100%<load≤105% continuous. 105%< load ≤125% for 5 minutes 125%<load≤150% for 30 seconds. >150% for 500 ms.			
Fault clearing capability normal mode and battery mode (100 ms)* default	13 A	20 A	27 A	40 A
Crest factor (load supported)	3 : 1	3 : 1	3 : 1	3 : 1
Load power factor, rated	1.0	1.0	1.0	1.0
Connection	3 wires: L + N + PE			
Displacement (permissible lead-lag range)	0.3 lead – 0.3 lag (0.3~0.8: Derating to 30%; 0.8~1: No derating)	0.3 lead – 0.3 lag (0.3~0.8: Derating to 30%; 0.8~1: No derating)	0.3 lead – 0.3 lag (0.3~0.8: Derating to 30%; 0.8~1: No derating)	0.3 lead – 0.3 lag (0.3~0.8: Derating to 30%; 0.8~1: No derating)

DOUBLE CONVERSION EFFICIENCY IN NORMAL MODE, LINEAR LOAD:

100% load	91%	91%	93%	94%
75% load	91%	91%	93%	93%
50% load	89%	90%	92%	93%
25% load	85%	86%	90%	91%
Eco-mode efficiency, linear load	96%	97%	97%	97%

BYPASS—AUTOMATIC: STATIC SWITCH

Transfer time: inverter to bypass / bypass to inverter / inverter to eco mode / eco mode to inv.	≤4 ms/≤4 ms/≤4 ms/≤10 ms			
Overload on bypass mode	100%< rated current ≤110% continuous. 110%< rated current ≤130% for 10 minutes. 130%< rated current ≤150% for 5 minutes. >150% rated current for 500 ms.			

BATTERY CHARACTERISTICS	1 kVA	1.5 kVA	2 kVA	3 kVA
Material	Li-FePO ₄			
Number of 3.2 V cells	15S3P	15S3P	24S3P	24S3P
Battery charger rate current capability	1.5A	1.5A	1.5A	1.5A
Recharging time (up to 90%)	3.7h	3.7h	3.7h	3.7h
Floating voltage	3.515 V/Cell	3.515 V/Cell	3.515 V/Cell	3.515 V/Cell
Shutdown Point	3.05 VDC/Cell (Without BMS communication)			
Battery test	One self-test per mains power-on	One self-test per mains power-on	One self-test per mains power-on	One self-test per mains power-on

Backup time	1 kVA	1.5 kVA	2 kVA	3 kVA
UPS interal batteries	18/24/36/66	12/16/24/44	15/20/29/57	10/13/20/38
UPS + 1 batt module	42/56/84/154	28/37/56/102	35/47/69/134	23/31/46/90
UPS + 2 batt module	66/89/132/242	44/59/88/161	55/73/109/210	36/49/73/142
UPS + 3 batt module	91/121/180/330	60/80/121/220	75/100/148/287	49/66/100/194
UPS + 4 batt module	115/153/228/418	76/102/153/279	95/127/188/364	63/84/127/246

1) Battery autonomy in minutes at 100 / 75 / 50 / 25% load

Given runtimes are estimates and valid at 20 °C.

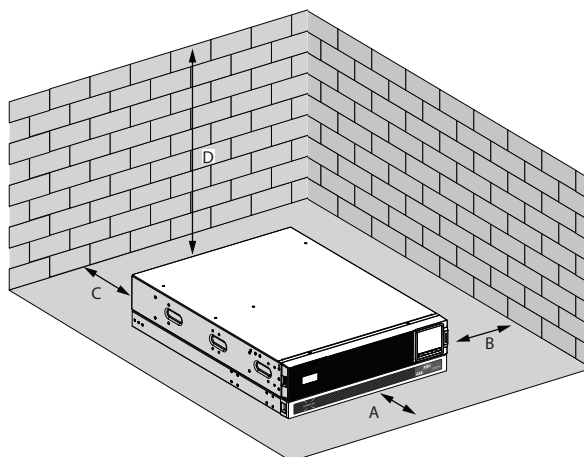
Actual runtime of the system will depend on many variables, including the age of the batteries and environmental conditions.

USER INTERFACE – COMMUNICATION

RS232 on Sub-D9 port	For service
Connectivity slot	For integration of optional connectivity and relay card
Display	LCD display
RPO	Remote Power Off
Dry IN/OUT contacts	Yes
USB (monitoring software)	Yes

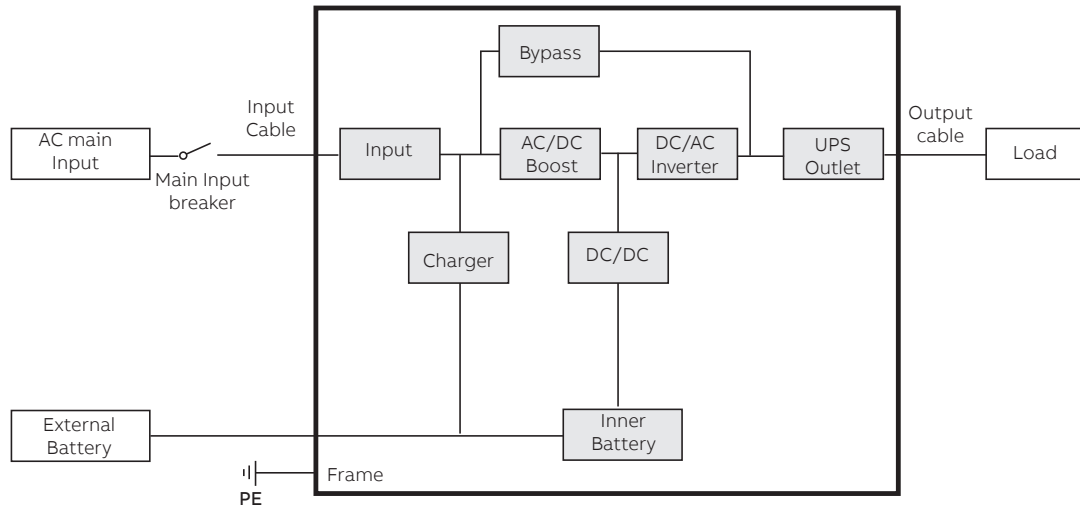
CLEARANCES

CLEARANCES	1 kVA	1 kVA	2 kVA	3 kVA
MINIMUM CLEARANCES FOR SINGLE UPS				
A	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches
B	0 cm	0 cm	0 cm	0 cm
C	25 cm /10 inches	25cm /10 inches	25 cm /10 inches	25 cm /10 inches
D	0 cm	0 cm	0 cm	0 cm
MINIMUM CLEARANCES FOR UPS PLUS OTHER CABINETS IN ROW				
A	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches
B	0 cm	0 cm	0 cm	0 cm
C	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches	25 cm /10 inches
D	0 cm	0 cm	0 cm	0 cm



HEAT DISSIPATION	1 kVA	1.5 kVA	2 kVA	3 kVA
Air-flow	Back	From front to back	From front to back	From front to back
Heat dissipation with 100% linear load	120W	170W	177W	226W
Heat dissipation with 100% non-linear load (acc. to 62040-3)	120W	170W	177W	226W
Air-flow (25° - 30°) with 100% non-linear load	37 m³/h	42 m³/h	44 m³/h	59 m³/h
Heat Dissipation without load	35W	49W	37W	45W

CABLE & BREAKER



RATINGS	1 kVA	1.5 kVA	2 kVA	3 kVA
Input cable	3x0.75 mm ²	3x0.75 mm ²	3x1.5 mm ²	3x1.5 mm ²
Output cable[L,N,PE]	3x0.75 mm ²	3x0.75 mm ²	3x0.75 mm ²	3x0.75 mm ² and 3x1.5 mm ²
Input breaker-DW Type	16 A	16 A	32 A	32 A



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www.abb.com/ups
ups.sales@ch.abb.com



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