

Power Systems Solutions

XL+ UPS

1 – 3 kVA



USER MANUAL

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1 Introduction

The XL+ series was developed in the early 2000s with the principle of **Rugged Simplicity**. Over the years, it has been refined to deliver a **Pure Sinewave Line-Interactive UPS** with exceptional reliability and an extendable runtime through external battery modules (EBXLs). The **XL+ series** features a **versatile design**, suitable for both **rack and tower mounting**.

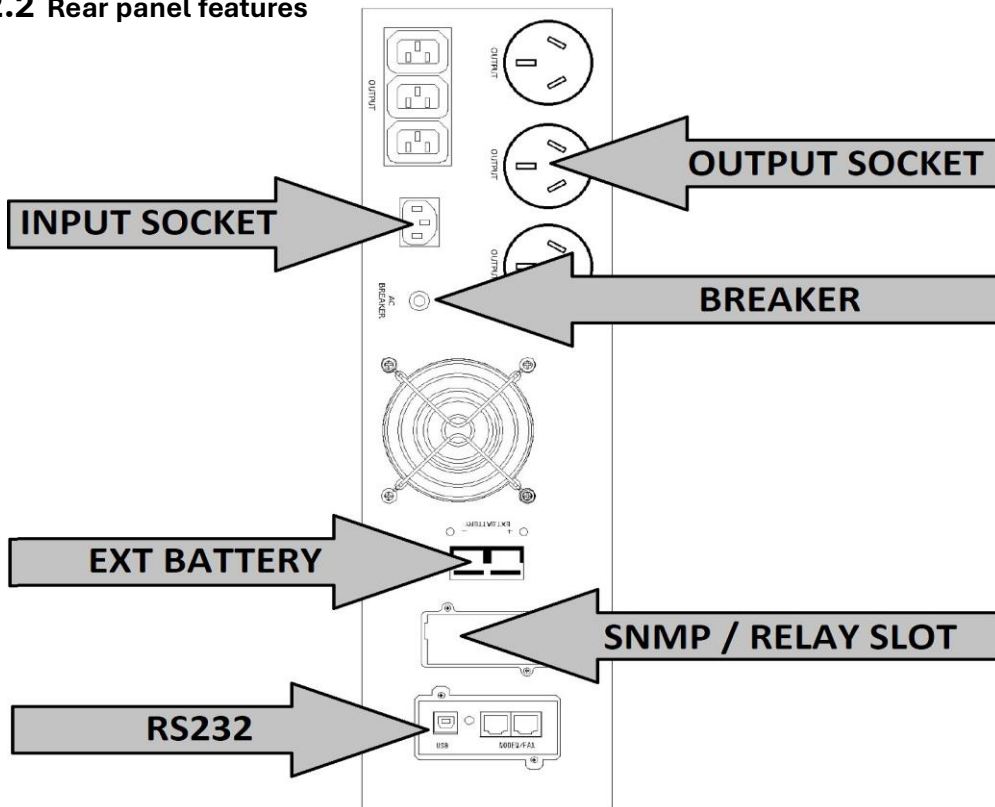
2 Safety Information

- Charge the UPS for at least 8 hours before first use.
- If the battery has been discharged or stored for more than 3 months, charge it for at least 8 hours to ensure it is fully recharged.
- Maintain a distance of at least 50 cm from a monitor when installing the UPS.
- It is normal for the UPS enclosure to feel warm during operation.
- Do not overload the UPS.
- Do not open the UPS cabinet due to the risk of electric shock. For maintenance or repairs, contact your local PSS service centre.
- Do not place liquids on or near the UPS, as this may cause damage.
- If a fault persists, switch off the UPS and contact PSS for service.
- Do not install or use the UPS in the following environments.
 - Areas with poor ventilation
 - Near flammable gases, corrosive materials, or excessive dust
 - Locations exposed to extreme temperatures (above 40°C or below 0°C) or high humidity (above 90%)
 - Areas with direct sunlight or heat sources
 - Outdoor environments
- The UPS should only be serviced by a PSS-trained professional.
- Battery life may be shortened at high ambient temperatures. Regular battery replacement ensures optimal UPS performance.
- Ensure the UPS is earthed when connected to utility power.
- Follow all instructions in this manual for proper operation.
- Wiring must comply with Australian Standards. PSS recommends using an appropriate RCD to feed the load.

2.1 Front panel features



2.2 Rear panel features



3 Installation

3.1 Unpacking & Inspection

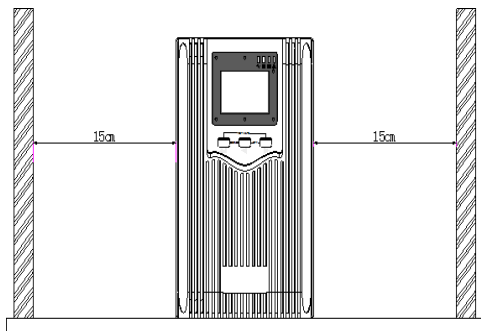
- Upon receipt, inspect the UPS package and its contents. Included accessories:
 - Power cord
 - User manual
 - Communication cable
 - CD-ROM
 - Battery connection cable
 - Two pairs of stabilizer brackets
- Check for any damage during transport. If the UPS is damaged, do not power it on. Contact the carrier and dealer immediately.
- Verify that the unit matches the model purchased by checking the nameplate.

Note: Retain the original box and packaging materials for future transport. The UPS is heavy—handle with care.

3.2 Installation Guidelines

3.2.1 Safety precautions

- Install the UPS in a well-ventilated area with at least 150mm clearance on all sides and above.



- Keep the ambient temperature below 40°C.
- Charge the battery for at least 8 hours before first use. The UPS will automatically charge the battery when connected to utility power.

3.2.2 Installation – Tower Mount

- Assemble the stabilizing feet as shown in Figure 3.2.4.2.

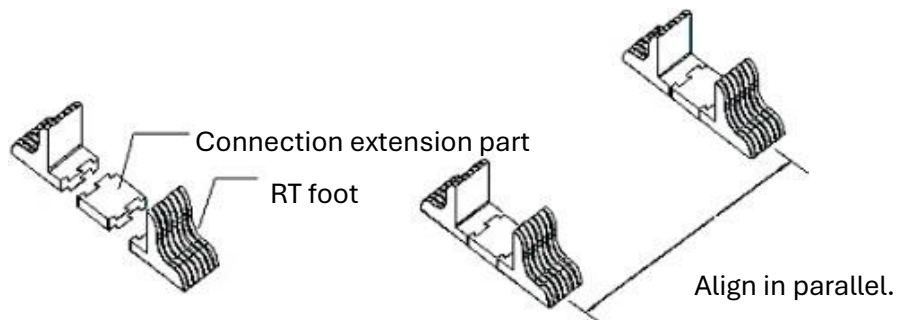
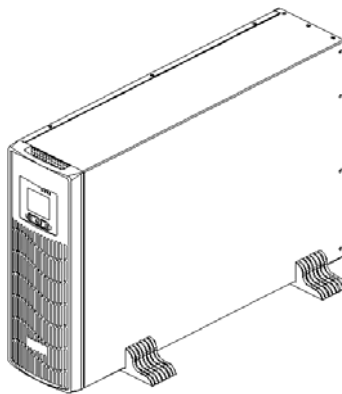


Fig. 3.2.4.2 Assembly diagram of foot pieces

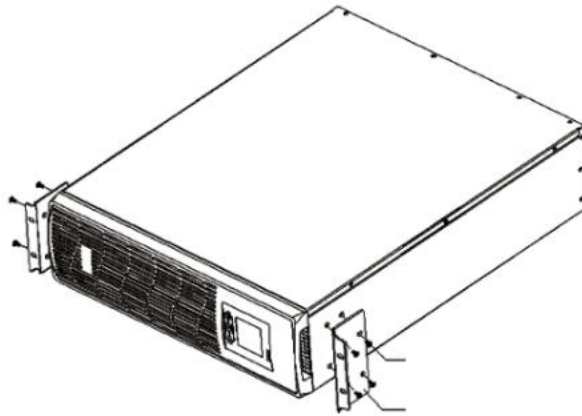
- Align the feet at a proper distance on a flat surface.



- Position the UPS upright with the LCD display facing forward.
- Do not turn the UPS upside down.
- Connect the load plug into the UPS output socket.
- Connect the external battery pack(s) (if supplied) using the provided cables.
- If applicable, switch on circuit breaker(s) on the battery pack(s).
- Connect the power cord to the utility power socket and the UPS input connection.
- Once utility power is switched on, the UPS will automatically start and perform a self-test. After approximately 15 seconds, the UPS should switch to inverter mode, with only the green LED illuminated.

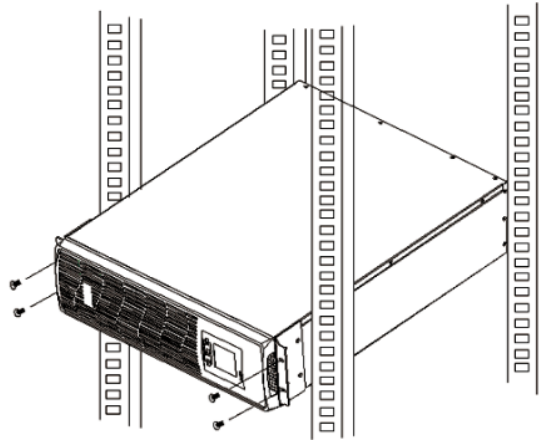
3.2.3 Installation – Rack Mount

- Secure the rack-mount brackets to both sides of the UPS cabinet using screws (*refer to diagram*).



Installation of rack-mount brackets

- Mount the UPS onto the rack after installing the brackets (*refer to diagram*).



- Connect the load plug into the UPS output socket.
- Connect the external battery pack(s) (if supplied) using the provided cables.
- If applicable, switch on circuit breaker(s) on the battery pack(s).
- Connect the power cord to the utility power socket and the UPS input connection.
- Once the utility power is switched on, the UPS will automatically start and perform a self-test. After approximately 15 seconds, the UPS should switch to inverter mode, with only the green LED illuminated.

4 Operation

4.1 Buttons operation



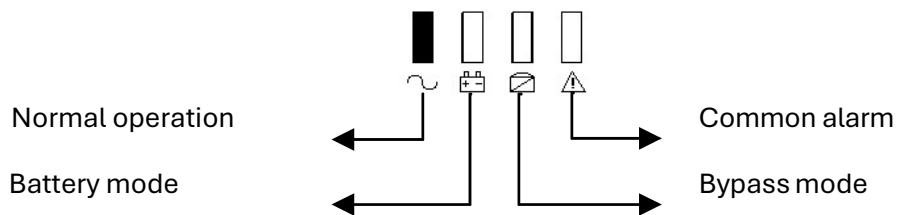
SRT Panel buttons





Tower panel buttons

Button	Use	Function
	Power ON button	Press and hold two buttons at the same time for more than 3 seconds, the UPS is turned on.
	Power OFF button	Press and hold two buttons at the same time for more than 3 seconds, the UPS is turned off.
	Mute button	In battery mode, press the button for 0.5 seconds to mute the alarm
	Test button	In the condition of mains present, press the two buttons at the same time for 0.5 seconds, battery discharge test will occur for 15 seconds.

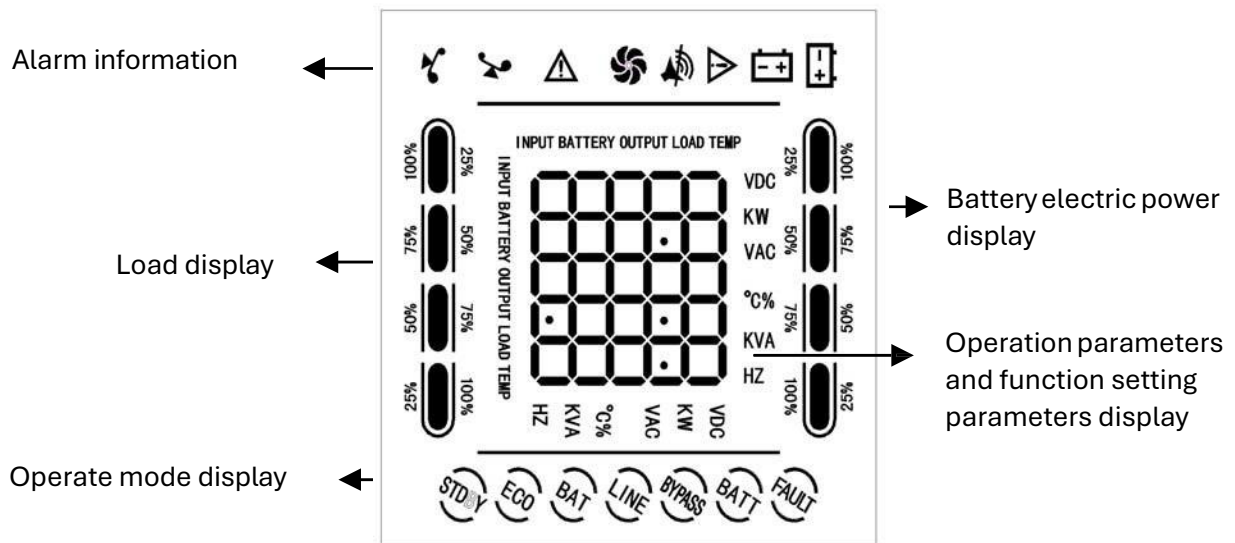
4.2 LED Indicator light








Icon	Use	Description
	Normal operation	When the green LED is illuminated, it indicates that the UPS is operating on mains mode or inverter mode.
	Battery mode	When the red LED is illuminated, it indicates that the UPS is operating on batteries.

	Bypass mode	When the yellow LED is illuminated, it indicates that the UPS is operating in bypass mode, there is not battery back up in this mode.
	Common alarm	When the red LED flashes, it indicates a UPS fault. Contact PSS

4.3 LCD display interface



3.4 LCD Icon function description

Icon	Use	Description
	Overload indication	The load icon flashes when there is overload on UPS.
	Alarm indication	The icon flashes when the system emits an audible alarm
	Fan	Display the operating status of fans. The fan icon rotates when the fan is in operation.
	Alarm display	The icon flashes when the system is abnormal, emitting an audible alarm.
	Battery indicator	The icon flashes when the battery fails.

4.4 UPS On/Off operation

4.4.1 Turn on the UPS

- **Startup with utility power**

After connecting to utility power, UPS will start up and begin self-test automatically (by bypass output) and enter normal working state in 15 seconds. When UPS is working normally the green LED is illuminated.

4.4.2 Turn off the UPS

- **Shutdown with utility power**

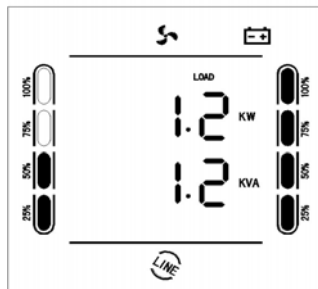
Press Power OFF button (◀ + ▶) on the front panel for 3 seconds, the UPS should enter standby mode. The bypass (yellow LED) is illuminated. It is safe to disconnect the input power now.

4.5 Parameter query operation

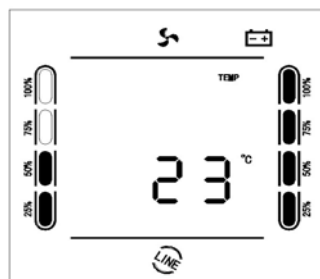
- To scroll, press either ◀ or ▶ for 2 seconds to check output, loads, temperature, input and battery information in turn.
- Output: Display UPS output voltage and output frequency.



- Load: Display WATT and VA values of the connected load, depending on load type and load capacity, as shown below.



- Temperature: Display the temperature inside the cabinet.



- Input: Display the input voltage and input frequency.



- Battery: Display the battery voltage and battery capacity, as shown below:





5 Troubleshooting

5.1 Fault messages

No.	Fault	LCD Display	Corrective Action
1	Output short circuit	SHORT	Check if there is a short circuit on the load.
2	Output high voltage	OUT H	Inverter is abnormal, contact the supplier.
3	Output low voltage	OUT L	Inverter is abnormal, contact the supplier.
4	Output overload	LOAD	Check the load. Reduce load on system.
5	Input relay failure	RELAY	The inverter is abnormal, contact the supplier.
6	MOSFET overcurrent	MOSC	Check if there is overload or short circuit on the load. Contact the supplier if there is no abnormal situation.
7	MOSFET over temperature	MOST	Reduce load. If the problem still exists, contact the supplier.
8	MOSFET temperature probe is disconnected	SENSOR	The inverter is abnormal, contact the supplier.
9	Transformer over temperature	TRANT	Reduce load. If the problem still exists, contact the supplier.
10	Inverter high voltage	INV H	The inverter is abnormal, contact the supplier.
11	Inverter low voltage	INV L	The inverter is abnormal, contact the supplier.
12	Inverter soft start fault	SOFT	Check if the cable connection between transformer and power board is correct. Contact the supplier if there is no abnormal situation.
13	BUS high voltage (the battery voltage is overcharged when charging the batteries)	BUS H	The inverter is abnormal, contact the supplier.
14	Charging overcurrent	CHARGE	The inverter is abnormal, contact the supplier.
15	Battery overvoltage	BATH	Check if the battery voltage is too high.
16	Low-voltage battery cut-off	EOD	Check if the batteries have completely discharged or batteries are damaged. Contact the supplier if there is no abnormal situation.

5.2 Common faults and processing

Carry out the following to diagnose common faults. If the problem still exists, please contact PSS

Problem	Solution
The utility power is normal, while UPS cannot connect to it	<ul style="list-style-type: none"> • Check whether the power cord is loose or not. • Check whether the fuse on the rear of the UPS has been triggered. Reset if triggered.
The utility power is normal, while UPS cannot start normally. The failure indicator is normally on, “!” icon is normally on, and LCD function display area displays OFF	<ul style="list-style-type: none"> • Check whether the battery wire is connected or not. • Confirm whether the battery is damaged or not.
In utility mode, the buzzer beeps continuously, “  ” icon flashes, and the UPS works in bypass mode after a while; in inverter mode, the buzzer beeps continuously, “  ” icon flashes, and the UPS is shut down automatically after a while	Output overload; check whether the condition of overload occurs in UPS load display or not. Reduce the load.
UPS cannot be turned on after the “ON” button is pressed	<ul style="list-style-type: none"> • The “ON” button is pressed too briefly. Press the “ON” button continuously for more than 3 seconds to start UPS. • Check whether the battery is connected. • UPS has internal failure. Please contact the supplier.
The battery discharge time is too short	<ul style="list-style-type: none"> • The battery has not been fully charged. Keep UPS connected to utility power for more than 8 hours to charge the battery again. • UPS is overloaded. Check load capacity, and reduce the load. • The battery is old and needs replacing. Please contact the supplier to obtain the battery and components for replacement.

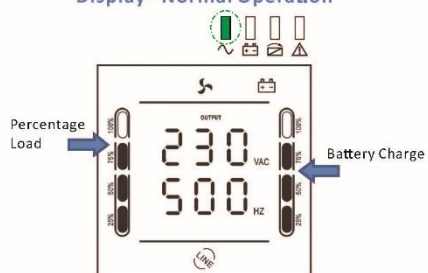
6 Maintenance

The preventive maintenance of UPS system can ensure UPS reliability and long-term service. We recommend that the XL+ Series is serviced every 12 months when operating in a dust-free environment. Contact PSS on 1300 882 447 to discuss maintenance solutions.

7 Quick Start

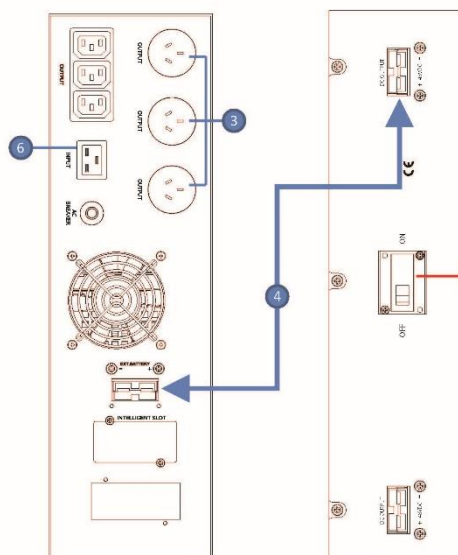
- 1 Unpack UPS and battery bank/EBXL and inspect for damage.
- 2 Position UPS and battery bank/EBXL in a well-ventilated place and ensure the heat vents and fan peripherals of the chassis meet the ventilation conditions at a distance of 150mm or above. Keep away from water, combustible gases and corrosives.
- 3 Connect load plug to the output socket of UPS.
- 4 Connect the battery bank/EBXL with supplied battery connection cables.
- 5 Turn on battery bank/EBXL circuit breaker.
- 6 Connect the UPS to the wall outlet using the appliance plug.
- 7 UPS will start automatic start-up test. Wait up to 20 seconds. LED Display will show single green LED if working correctly. No further action required. Battery bank/EBXL do not have indication lights.

Display - Normal Operation



PLEASE REFER TO USER MANUAL

XL+ QUICK START GUIDE



*only one battery bank/EBXL to be connected with each UPS

TROUBLESHOOTING GUIDE

Picture	Display	Solution
	Single green LED.	Normal Operation - UPS is operating as intended. No further action is needed. If load has no power/is not operating, check cable is properly connected to UPS.
	Solid orange Led over Bypass symbol. No sound.	UPS off/in bypass – (in this state UPS will not operate in the event of a power failure) To turn on: hold the 2 'ON' buttons for 5 seconds. UPS will self test and present single green LED
	Solid red LED on batteries. Flashing red on the warning triangle (Will beep every 5 seconds for 30 seconds. Stop beeping until it gets to low battery)	Power failure! - UPS is supplying power to load until batteries run low. • If load does not have power check it is connected to UPS • If site has no power failure check - Input cable to UPS is properly connected - Check power is being provided to outlet by plugging in another appliance (if not check distribution board breakers)
	Solid Green LED. Flashing red on the warning triangle. Flashing battery symbol Top right of the screen	Aged batteries or Battery fault. Contact PSS Distributor for a battery change/maintenance.
	Solid RED and Orange LED over Warning and Bypass. Solid Beep. (may present no power to load)	UPS Overload – Load on UPS is too large, decrease load.
	Single green LED	Does not run during power failure or short runtime - When UPS is in normal operation yet does not provide power during a power failure, or has a short runtime. 1. Check UPS is in normal operational mode (single green LED). 2. If battery bank is connected, check it cables are correct and battery bank is turned on (Points 4 & 5 in quick install guide). 3. Contact PSS Service team.

Turning on UPS

Follow Quick install guide for full installation.

If UPS is already connected, Follow trouble shooting point 2.

Disconnecting UPS/load

Hold the 2 'OFF' Buttons.



UPS will present fault as in point 2 of trouble shooting – Indicating it is turned off.

(in this state UPS will not operate in the event of a power failure)

Disconnect load if required.

Disconnect UPS from Mains input and remove if required.



1300 882 447

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SCAN FOR
MORE DETAILS

8. Specifications

Model	XL+1000	XL+2000	XL+3000
Capacity	1KVA/800W	2KVA/1.6KW	3KVA/2.4KW
Input			
Voltage range	177-300VAC		
Frequency	50 - 60Hz + / - 10% (Auto sensing)		
Phase	Single phase		
Max current Amps	5A (10A Aus 3-Pin Plug)	8A (10A Aus 3-Pin Plug)	12A (15A Aus 3-Pin Plug)
Output			
Output voltage	220V, 230V, 240V LCD selectable		
Output voltage regulation	Nominal Voltage + / - 5%		
Frequency	50 - 60 Hz + / - 0.1Hz		
Wave form - AC mode	Pure sine wave		
Wave form - battery mode	Pure sine wave - entire battery range		
Transfer time	≤6ms		
Load crest factor	3:1		
Outlets	2 x 10A Aus, 1 x IEC	3 x 10A Aus, 3 x IEC	3 x 10A Aus, 3 x IEC
Battery			
Battery type	Sealed maintenance free lead acid batteries		
Number of batteries	2 x 12V 7.5AH	3 x 12V 9AH	4 x 12V 9AH
Recharge time	90% within 4 hours		
Battery start	UPS can be started without an AC source		
Automatic restart	Restart after battery low and mains returns		
Protection			
Surge protection	1600 Joules / 40,000 Amps		
Input protection	Compliance with IEEE 587		
Short circuit	Resettable circuit breaker		
Safety & EMC	EN50091-1-1, EN50091-2, C Tick		
Modem	RJ45, Full time network protection		
Comms & Management			
Software	Windows 95/98/NT/2000/XP/7, Windows Server 2003/2008 Linux Debian, Redhat, Fedora, Suse, Ubuntu, Centos, Novell, Mac, FreeBSD		
Ports	USB standard		
Optional	SNMP, RS232, Relay contact output, AS400 relay contact		
LCD display	UPS status, I/P & O/P voltage frequency, load %, battery voltage & %, temperature, model		
LED display	Normal (Green), back up (Yellow), fault (Red)		
Audible alarm	Alarm - on battery, overload, short circuit, over temperature, abnormal operation		
Characteristics			
Audible noise	< 40dB at 1 Metre		
Temperature & humidity	0-40°C, 0-90% (non-condensing)		
Ventilation	Fan forced front to back. Requires 50mm at the front and 150mm at the rear		
Dimensions (WxDxH) / weight	440x338x88(2RU)/12.2kg	440x410x132(3RU)/21.3kg	440x410x132(3RU)/26.7kg
Shipping dimensions / weight	616x443x190/18kg	545x545x245/24.5kg	545x545x245/29.7kg
EBXL+ dimensions / weight	440x468x88(2RU)/10-24kg		
EBXL+ shipping dimensions / weight	580x590x200/13-27kg		

Specifications are subject to change without prior notice